

## संपादक परिचय



प्रोफेसर (डॉ.) प्रमोद कुमार वार्ष्णेय बी. कॉम., बीएड, एम.कॉम, पी-एच.डी., 25/11/1991 से लोक सेवा आयोग, उत्तर प्रदेश से चयनित होकर राजकीय यू.जी. एवं पी.जी. कॉलेजों में प्रवक्ता, रीडर, एसोसिएट प्रोफेसर, एवं 11/05/2016 को उत्तर प्रदेश शासन द्वारा प्रोन्नति पाकर, राजकीय स्नातकोत्तर महाविद्यालय, बदायूं एवं 16/08/2017 को राजकीय रजा. पी. जी. कॉलेज, रामपुर के प्राचार्य रहे हैं। सम्प्रति आप 01/06/2018 से 08/06/2019 तक संयुक्त निदेशक, उच्च शिक्षा निदेशालय, उत्तर प्रदेश, प्रयागराज के पद पर कार्यरत रहे हैं। इसी क्रम में राजकीय महाविद्यालय खलीलाबाद, पुनः राजकीय रजा स्नातकोत्तर महाविद्यालय रामपुर, राजकीय महिला पीजी कॉलेज बिंदकी फतेहपुर में प्राचार्य एवं वर्तमान में दमयंती राय आनंद राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, जिला बदायूं, में प्राचार्य के पद पर कार्यरत हैं। आपके निर्देशन में 14 पी-एच.डी. अवार्ड हो चुकी हैं। 23 लघु शोध-प्रबंध 74 राष्ट्रीय अन्तर्राष्ट्रीय सेमिनार में सहभागिता कर शोध पत्र प्रस्तुत कर चुके हैं तथा वाणिज्य विषय की 4 पुस्तकें भी प्रकाशित हो चुकी हैं, आकाशवाणी रामपुर एवं आकाशवाणी छतरपुर से अनेकों समसामयिक विषय एवं बजट पर वार्ताएं प्रसारित हुई हैं। आपने UGC द्वारा संचालित स्कॉलरशिप योजना RGNF-MANF के अंतर्गत 3 शोधार्थियों का शोध कार्य पूर्ण करवाया है।



डॉ. मदन मोहन वार्ष्णेय (एम.कॉम., बी.एड, पी-एच.डी.,) दमयंती राय आनंद राजकीय पी.जी. कॉलेज बिसौली (बदायूं), जो एम.जे.पी. रोहिलखंड विश्वविद्यालय बरेली से संबद्ध है, में वाणिज्य विभाग में सहायक प्रोफेसर और विभागाध्यक्ष के पद पर कार्यरत हैं। आपने उदारीकरण, वैश्वीकरण और निजीकरण के क्षेत्र में अपनी पीएच.डी. पूरी की है। आप 18 से अधिक वर्षों से शिक्षा के क्षेत्र में हैं और विभिन्न शोध परियोजनाओं में शामिल हैं। आपके प्रतिष्ठित राष्ट्रीय और अंतर्राष्ट्रीय पत्रिकाओं में 23 से अधिक अनुभवजन्य शोध प्रकाशन प्रकाशित हुए हैं और आपके द्वारा राष्ट्रीय और अंतर्राष्ट्रीय सम्मेलनों में शोधपत्र प्रस्तुत किए हैं साथ ही आपकी तीन पाठ्य पुस्तकें एवं एक संदर्भ पुस्तक 'डिजिटल मार्केटिंग' पूर्व में प्रकाशित हो चुकी हैं। आप कॉलेज पत्रिका 'प्रेरणा' के प्रधान संपादक हैं। आपने उच्च शिक्षा विभाग, उत्तर प्रदेश सरकार के सहयोग से दो दिवसीय दो राष्ट्रीय संगोष्ठियाँ एवं दो दिवसीय एक अंतर्राष्ट्रीय संगोष्ठी भी आयोजन सचिव के रूप में आयोजित की हैं। आपके निर्देशन में 3 स्कॉलर अपनी पी-एच.डी कर रहे हैं।



कैप्टन (डॉ.) प्रवेश कुमार वर्तमान में राजकीय रजा पोस्ट ग्रेजुएट कॉलेज खुसरो बाग, रामपुर उत्तर प्रदेश के शिक्षक शिक्षा विभाग में एसोसिएट प्रोफेसर के रूप में कार्यरत हैं। उन्होंने अपनी पीएच.डी., शिक्षाशास्त्र में महात्मा ज्योतिबा फुले रोहिलखंड विश्वविद्यालय, बरेली से की है और शिक्षाशास्त्र से यूजीसी नेट उत्तीर्ण किया। आपने रसायन विज्ञान, अर्थशास्त्र और हिंदी में स्नातकोत्तर डिग्री के साथ-साथ एलएलबी भी की है। आपने इग्नू नई दिल्ली से 'दूरस्थ शिक्षा' में स्नातकोत्तर डिप्लोमा किया है। आपने 75 से अधिक अंतर्राष्ट्रीय और राष्ट्रीय सेमिनारों, सम्मेलनों और कार्यशालाओं में भाग लिया है और आपके लेख/अध्याय आदि प्रतिष्ठित पत्रिकाओं में प्रकाशित हुए हैं; और आईएसएसएन/आईएसबीएन संख्या वाली पुस्तकों का संपादन भी किया है। आप 2015 से अब तक, 23 UP BN NCC, Moradabad से कॉलेज में एसोसिएट एनसीसी अधिकारी हैं और आपको 2012 से 2016 तक एनएसएस कार्यक्रम अधिकारी के रूप में 04 साल का अनुभव है। आप कॉलेज में इग्नू और यूपीआरटीओयू अनुशासन विषय और मानव अधिकारिता सेल के परामर्शदाता भी हैं। आपने डॉ. भीम राव अंबेडकर पुलिस अकादमी, मुरादाबाद और विभिन्न कॉलेजों में 100 से अधिक व्याख्यान अतिथि के रूप में दिए हैं। आप कॉलेजों में IQAC NACC 36 संचालन समितियों जैसे प्रवेश समिति, आरटीआई, अनुसंधान विकास समिति एवं कॉलेजों में विभिन्न समितियों के सदस्य भी हैं।

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## Preface

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**Vasudhaiva Kutumbakam**, an ancient Indian phrase meaning “The world is one family”, pithily captures the spirit of India’s approach to all aspects of life including economic & social growth. The Sustainable Development Goals are, thus part and parcel of the country’s long standing tradition and heritage.

As the fastest growing major economy of the world today, India is uniquely placed to deliver on its commitments to inclusive and sustainable development. Externally the country has played a key role in shaping the Sustainable Development Goals and ensuring the balance among its three pillars- economic, social and environmental. Internally, it has launched many programs to make progress towards these goals.

The current year (2024) marks the midpoint for the implementation of the 2030 Agenda, also known as the Sustainable Development Goals (SDGs), for their midway monitoring and evaluation is likely to show that the SDGs faced set-backs due to the Covid-19 pandemic, geopolitical conflicts such as the Ukraine- Russia conflict, the Afghanistan crisis, and the emerging new world order.

At the global level, an acceleration of the pace of achieving the SDGs needs to be done keeping in mind the demands of the emerging new world order. As envisioned under SDG 17, collaborative and supporting policies, at all levels of governance are keys to achieving the targets. further, these supportive strategies and policies will need to be accompanied by improved access to energy and development contribution, finance, technology, and capacity – building support, India translated the vision of “सबका साथ, सबका विकास, सबका विश्वास, सबका प्रयास” (Together, for every one’s growth, with every one’s trust and every one’s efforts) into action through policy and institutional coherence at both the domestic and global level. At the global level, capacity building and knowledge – sharing initiatives such as ISA and CDRI advance the energy requirements of the present as well as future generations in a sustainable and environment- friendly way. To strengthen international cooperation and partnerships, countries must share knowledge, expertise and best practices and mobilise adequate, affordable, and accessible financing. Intrinsic to SDG17 is global interdependence, cooperation, and solidarity which India wants to see enhanced and strengthened in every way for facilitating the achievement of the SDGs and 2030 Agenda.

In today’s interconnected world, global partnerships play a pivotal role in driving economic and social growth. As a leading nation with a rich cultural heritage and a rapidly growing economy, India is committed to forging collaborative initiatives that not only benefit its own citizens but also contribute to the prosperity of the global community. Through strategic partnerships and inclusive development programs, India aims to foster economic progress, social empowerment, and sustainable growth, there -by creating a more prosperous and equitable world for all.

India’s collaborative initiatives for economic & social growth exemplify the country’s commitment to global partnership and inclusive development. By leveraging strategic collaborations, India aspires to create a more prosperous and equitable world, where economic opportunities abound, social well beings is prioritized, and sustainable development is realized. Through these efforts, India seeks to contribute meaningfully to the global community while advancing its own journey towards progress and prosperity.



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07 फरवरी, 2024

### सन्देश

मुझे यह जानकर अत्यन्त प्रसन्नता हुई कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बदायूँ द्वारा 24 एवं 25 फरवरी, 2024 को "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल" विषयक अंतर्राष्ट्रीय संगोष्ठी का आयोजन किया जा रहा है।

आशा करती हूँ कि संगोष्ठी में भारत द्वारा अन्तर्राष्ट्रीय स्तर पर आर्थिक एवं सामाजिक विकास हेतु की जा रही पहल पर सकारात्मक विचार-विमर्श होगा, जिससे प्रतिभागियों के साथ-साथ विद्यार्थीगणों का भी ज्ञानार्जन होगा।

संगोष्ठी के सफल आयोजन हेतु मैं अपनी हार्दिक शुभकामनाएं प्रेषित करती हूँ।

आनंदीबेन  
( आनंदीबेन पटेल )





मुख्य मंत्री  
राजस्थान

## संदेश

प्रसन्नता का विषय है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बिसौली (बदायूँ), उत्तरप्रदेश द्वारा "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल" पर संगोष्ठी का आयोजन किया जा रहा है और इस अवसर पर शोध-सार का प्रकाशन भी किया जा रहा है।

माननीय प्रधानमंत्री श्री नरेन्द्र मोदी जी के नेतृत्व में अंतरराष्ट्रीय स्तर पर भारत के प्रभाव और उपस्थिति में वृद्धि हुई है, जो इसकी बढ़ती विकास गाथा को बताती हैं। भारत दुनिया में सभी के लिए एक न्यायसंगत और समान विकास को बढ़ावा दे रहा है।

मुझे आशा है कि इस संगोष्ठी में होने वाली चर्चा से आर्थिक और सामाजिक क्षेत्र में वैश्विक चुनौतियों के समाधान से जुड़े विचारों से रूबरू होने का अवसर मिलेगा।

मैं सम्मेलन और शोध-सार की सफलता के लिए अपनी शुभकामनाएं प्रेषित करता हूँ।

(भजन लाल शर्मा)

योगेन्द्र उपाध्याय  
मंत्री  
उच्च शिक्षा, विज्ञान एवं प्रौद्योगिकी,  
इलेक्ट्रॉनिक्स एवं सूचना प्रौद्योगिकी विभाग



कक्ष सं०-63बी / टी, मुख्य भवन  
विधान भवन, लखनऊ।  
दूरभाष- 2238051(कार्यालय)  
दिनांक-



### संदेश

यह हर्ष का विषय है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, बदायूँ "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल" विषय पर दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी का आयोजन करने जा रहा है। इस मुद्दे पर अन्तर्राष्ट्रीय संगोष्ठी अत्यन्त ही समाचीन है तथा भारतीय अर्थव्यवस्था से प्रत्यक्ष रूप से जुड़ा है।

मुझे पूरा विश्वास है कि अन्तर्राष्ट्रीय संगोष्ठी के दो दिनों में देश, विदेश के विभिन्न हिस्सों से आए विद्वानों के विचार मंथन से देशहित में कुछ बहुमूल्य विचार निकल कर आयेंगे। अन्तर्राष्ट्रीय संगोष्ठी की सफलता के लिए प्राचार्य एवं आयोजक मण्डल के सदस्यों को बधाई एवं शुभकामनाएँ।

(योगेन्द्र उपाध्याय)

डॉ. प्रमोद कुमार वार्ष्णेय,  
प्राचार्य,  
दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय,  
बिसौली, बदायूँ-243720

**प्रो. के. पी. सिंह**  
कुलपति



**महात्मा ज्योतिबा फुले**  
**रुहेलखण्ड विश्वविद्यालय**  
बरेली (उ.प्र.) - 243 006, भारत  
ग्रेड A++ मान्यता प्राप्त



दिनांक: 19.02.2024

### सन्देश

मुझे यह जानकारी प्रसन्नता हुई है कि दमयन्ती राज आनंद राजकीय स्नातकोत्तर महाविद्यालय, बिसौली (बदायूं) दिनांक 24 एवं 25 फरवरी, 2024 को वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल (Global Partnership: India's Collaborative Initiatives for Economic and Social Growth)" विषय पर दो दिवसीय अन्तर्राष्ट्रीय सेमिनार आयोजित करने जा रहा है। इस अवसर पर महाविद्यालय द्वारा एक शोध-सार का भी प्रकाशन किया जा रहा है। मुझे आशा है कि इस शोध-सार के प्रकाशन से महाविद्यालय के विद्यार्थियों को सार्थक एवं प्रेरणादायी पाठ्य-सामग्री उपलब्ध होगी तथा इसके अतिरिक्त विद्यार्थियों को अपनी रचनात्मक प्रतिभा को अभिव्यक्त करने का अवसर भी मिल सकेगा।

उक्त सेमिनार के सफल आयोजन एवं शोध-सार के सफल प्रकाशन हेतु मेरी हार्दिक शुभकामनाएं।

(के.पी. सिंह)

प्राचार्य,  
दमयन्ती राज आनंद राजकीय स्नातकोत्तर महाविद्यालय,  
बिसौली (बदायूं)।



Website: [www.mjpru.ac.in](http://www.mjpru.ac.in) ई-मेल: [vc@mjpru.ac.in](mailto:vc@mjpru.ac.in), [vcoffice@mjpru.ac.in](mailto:vcoffice@mjpru.ac.in)  
फोन : निवास +91 - 581 - 2523378, कार्यालय +91 - 581 - 2527282



**प्रो० ब्रह्मदेव**  
निदेशक उच्च शिक्षा, उ० प्र०



उच्च शिक्षा निदेशालय उ० प्र०  
सरोजनी नायडू मार्ग, प्रयागराज-211001  
0532.2623874 (का०)  
0532.2423919 (फैक्स)  
ई.मेल infodheup21@gmail.com

पत्रांक .....

दिनांक 13/02/2024

### सन्देश

मुझे यह जानकर अत्यन्त हर्ष हो रहा है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, बदायूँ द्वारा "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल" (Global Partnership : India's Collaboration Initiatives for Economic and Social Growth) विषय पर दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी का आयोजन किया जा रहा है, जिसमें बहुत से शिक्षाविद् सम्मिलित होंगे। महाविद्यालय द्वारा संगोष्ठी का शोध-सार भी प्रकाशित किया जायेगा।

मुझे आशा ही नहीं पूर्ण विश्वास है कि अन्तर्राष्ट्रीय संगोष्ठी के शोध-सार के प्रकाशन से शोधार्थियों, छात्र-छात्राओं एवं नीति नियन्ताओं को विषय से सम्बन्धी वृहद जानकारी प्राप्त होगा। संगोष्ठी की सफलता एवं शोध-सार के प्रकाशन हेतु मेरी हार्दिक शुभकामनाएं।

  
प्रो० (ब्रह्मदेव)

प्रो०(डी०) प्रमोद कुमार वार्ण्य,  
प्राचार्य,  
दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय,  
बिसौली, बदायूँ।



डॉ० कृष्ण चन्द्र वर्मा  
संयुक्त निदेशक(उच्च शिक्षा)



उच्च शिक्षा निदेशालय,  
उत्तर प्रदेश, प्रयागराज  
मो० नं०. 8318355803  
ई-मेल [rhonrj@gmail.com](mailto:rhonrj@gmail.com)



संदेश

हर्ष का विषय है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय विसौली (बदायूँ) उ०प्र० दिनांक 24 एवं 25 फरवरी 2024 को दो दिवसीय अंतर्राष्ट्रीय संगोष्ठी का आयोजन करने जा रहा है जिसका विषय "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल" (Global Partnership: India's Collaboration Initiatives for Economic and Social Growth) है।

नब्बे के दशक से प्रारम्भ हुआ वैश्वीकरण अब अपना तीन दशकों से अधिक का समय पूर्ण कर चुका है। जिसमें L.P.G.—लिबरलाइजेशन, प्राइवेटाइजेशन तथा ग्लोबलाइजेशन की चरणबद्ध प्रक्रिया को पूरा करते-करते भारत वर्ष भी बहुत आगे बढ़ चुका है। आगे बढ़ने की इस दौड़ में आर्थिक और सामाजिक दोनों पहलू में सामंजस्य स्थापित करने में महाविद्यालय में आयोजित संगोष्ठी सफल साबित होगी।

इसी आशा और विश्वास के साथ सकल शुभकामनाएँ

डॉ० (क०सी० वर्मा)  
संयुक्त निदेशक (उ०शि०)  
उच्च शिक्षा निदेशालय, प्रयागराज (उ०प्र०)

सेवा में

प्राचार्य,  
दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय,  
विसौली (बदायूँ)

डॉ० अपर्णा मिश्रा  
संयुक्त निदेशक(उच्च शिक्षा)



उच्च शिक्षा निदेशालय,  
उत्तर प्रदेश, प्रयागराज

### संदेश

अत्यधिक हर्ष का विषय है कि दमयन्ती राज आनंद राजकीय स्नातकोत्तर महाविद्यालय बिसौली, बदायूं द्वारा दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी "वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल पर आयोजित किया जा रहा है।"

वैश्वीकरण अब अपना 30 वर्षों से अधिक का समय पूर्ण कर चुका है। लिबरलाइजेशन, प्राइवेटाइजेशन तथा ग्लोबलाइजेशन की चरणबद्ध प्रक्रिया को पूरा कर भारत देश भी बहुत विकास कर चुका है। उक्त संगोष्ठी से छात्र/छात्रएं एवं महाविद्यालय के शिक्षक लाभान्वित होंगे।

संगोष्ठी के सफल संचलान हेतु महाविद्यालय परिवार को मेरी हार्दिक शुभकामनाएँ।

डॉ० ( अपर्णा मिश्रा )  
संयुक्त निदेशक(उच्च शिक्षा)

सेवा में,

प्राचार्य

दमयन्ती राज आनंद राजकीय स्नातकोत्तर महाविद्यालय  
बिसौली, बदायूं।

डॉ. बिन्दावन लाल शर्मा  
सहायक निदेशक, उच्च शिक्षा



उच्च शिक्षा निदेशालय, उ.प्र.,  
प्रयागराज

0532-2623874 (का.)

0532-2423919 (फैक्स)

8299795178 (मो.)

दिनांक : 06 / 02 / 2024

## सन्देश

हर्ष का विषय है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, बदायूँ द्वारा 'वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल' (*Global Partnership: India's Collaboration Initiatives for Economics and Social Growth*) विषय पर दिनांक 24 एवं 25 मार्च 2024 को दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी का आयोजन किया जा रहा है।

मुझे विश्वास है कि वर्तमान परिवेश में संगोष्ठी का विषय अत्यंत ही समसामयिक एवं महत्वपूर्ण है। 'वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल' विषय पर शिक्षाविदों का गहन विचार-विमर्श एवं मनन शिक्षा को रोजगार परक एवं आत्म निर्भर बनाने के लिए सशक्त आधार प्रदान करेगा साथ ही महाविद्यालय के विभिन्न विद्वत्तजनों का सानिध्य प्राप्त होगा, जिससे उनकी अभिव्यक्ति एवं रचनात्मक प्रतिभा में सुधार के साथ ही साथ उनका ज्ञान संवर्द्धन भी होगा जो सशक्त भारत के निर्माण में सहायक सिद्ध होगा। दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी में चिन्तन-मनन से प्राप्त निष्कर्ष छात्र-छात्राओं, शिक्षाविदों एवं नीति-निर्माताओं हेतु मील का पत्थर साबित होंगे, ऐसी मेरी आशा है।

संगोष्ठी के सफल आयोजन हेतु प्राचार्य एवं महाविद्यालय परिवार को मेरी हार्दिक शुभकामनाएँ।

डॉ. (बी.एल. शर्मा)

प्राचार्य,

दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय,  
बिसौली, बदायूँ।



**डॉ० दिनेश कुमार,**  
अपर सचिव



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मो० : +91 98971 36094  
ई-मेल : [upshec@gmail.com](mailto:upshec@gmail.com)  
दिनांक : 19.02.2024

### सन्देश

मुझे यह जानकर अत्यन्त हर्ष हो रहा है कि दमयन्ती राज आनन्द राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, बदायूँ द्वारा " वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल " (Global Partnership : Indias's Collaboration Initiatives for Economic and Social Growth) विषय पर दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी का आयोजन किया जा रहा है, जिसमें बहुत से शिक्षाविद् सम्मिलित होंगे। महाविद्यालय द्वारा संगोष्ठी का शोध-सार भी प्रकाशित किया जायेगा।

मुझे आशा ही नहीं पूर्ण विश्वास है कि अन्तर्राष्ट्रीय संगोष्ठी के शोध-सार के प्रकाशन से शोधार्थियों, छात्र-छात्राओं एवं नीति नियन्ताओं को विषय से सम्बन्धी वृहद जानकारी प्राप्त होगी। संगोष्ठी की सफलता एवं शोध-सार के प्रकाशन हेतु मेरी हार्दिक शुभकामनाएं।

**(डॉ० दिनेश कुमार)**  
अपर सचिव





प्रो० (डॉ०) प्रमोद कुमार वार्ष्णय  
प्राचार्य

प्राचार्य

दमयन्ती राज आनन्द राजकीय  
स्नातकोत्तर महाविद्यालय बिसौली (बदायूँ)

### प्राचार्य की कलम से

वैश्विक साझेदारी : आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल विषय पर आयोजित दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी आधुनिक परिप्रेक्ष्य में जबकि भारत विश्व की तीसरी सबसे बड़ी अर्थव्यवस्था बनने की ओर अग्रसर है, एक अत्यन्त ही प्रासंगिक एवं भारतीय अर्थव्यवस्था से जुड़ा विश्व स्तरीय समीचीन विषय है। सतत विकास लक्ष्यों में भारत की भूमिका, भारत में बहुपक्षीय सहयोग द्वारा समावेशी विकास, भारत और वैश्विक सम्बन्धों में 2030 एजेंडा, अनुसंधान और नवाचार के साथ विकास के लिए साझेदारी आदि विषय देश और विदेश की राजनीति एवं भारत के आजादी के अमृत काल में दशा और दिशा तय करने में महत्वपूर्ण भूमिका का निर्वहन करेंगे।

अतः इस विषय पर अन्तर्राष्ट्रीय संगोष्ठी का आयोजन निश्चित रूप से भारतीय अर्थव्यवस्था के लिए वरदान सिद्ध होगा।

मुझे विश्वास है कि दो दिवसीय अन्तर्राष्ट्रीय संगोष्ठी में सहभागिता करने वाले विद्वत जनों सामाजिक चिंतकों, देश व विदेश के कोने-कोने से आये प्राध्यापकों, शोधार्थियों नीति नियताओं, छात्र-छात्राओं को एक ऐसा मंच प्रदान करेगा जहां विचारों के मंथन से भारतीय अर्थव्यवस्था के विकास से सम्बन्धित नये-नये रास्ते निकलेंगे। भारतीय अर्थतन्त्र को समझने वाले मनस्वी अपने आर्थिक चिंतन की कसौटी पर आर्थिक और सामाजिक विकास हेतु भारत की सहयोगात्मक पहल के लाभ-हानि पर दृष्टिपात करेंगे और कुछ ठोस सुझाव देकर नीति-निर्माताओं के समक्ष विकास के नये-नये रास्ते प्रस्तुत करेंगे।

अंत में, मैं इस अन्तर्राष्ट्रीय संगोष्ठी की सफलता की कामना करते हुए देश-विदेश, विभिन्न राज्यों से पधारे आगन्तुक एवं अतिथियों, शोधार्थियों, विद्वत जनों तथा इसके आयोजन सचिव डॉ० मदन मोहन वार्ष्णय एवं उनकी टीम को साधुवाद देता हूँ तथा आशा करता हूँ कि इसकी गूँज दूर तक जायेगी।

प्रो० (डॉ०) प्रमोद कुमार वार्ष्णय

## Acknowledgement



It has been a herculean task to invite, collect and edit the various researches Papers and articles related to the main theme **“Global Partnership: India’s Collaborative Initiatives for Economic and Social Growth.”** For our Peer Reviewed & Referred International Journal. As this first Edition is multidisciplinary; various sub themes were also decided to cover all the ocean of knowledge around us. These themes were - The Role of India in Shaping Sustainable Development Goals, Unity in Diversity: India in Multilateral Collaboration, Inclusive Growth through Greater Collaboration, Global partnership on Artificial Intelligence, Innovative Together: Technology and Growth partnership in India, 2030 Road Map for India- Rest of world Relations, Digital Transformation–Navigating The New Frontier, Partnership for Action on Green Economy, India’s Historical Role in Global Economy, Emerging Economic Power- Assessing India’s impact on world stage, Bilateral Engagements and collaborations between on skill development. Partnership for Growth with Research and Innovation.

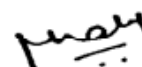
We have taken up this task to get published these research papers and articles, in a Referred and Peer Reviewed International Research Journal. We are highly thankful to Dr. Shiv Ram Sharma, DZARC publications Pune (Maharashtra)-411037 who gave his consent to publish these research papers as a special edition on **“Global Partnership: India’s Collaborative for Economic & Social Growth”** in his Reputed Referred & Peer – Reviewed **International Research Journal of Social Review Development**. We highly thank & appreciate the work of DZARC Publications Pune (Maharashtra).

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During this course, despite all the possible efforts, some errors must have crept inside, please ignore.

Thanks everybody.



Dr. Madan Mohan Varshney  
Editor





## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## The role of India in shaping sustainable development goals

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### Abstract

The term sustainable development which began to gain wide acceptance in the late 1980's, after its appearance in Our Common Future, also known as the Brundtland Report. The Brundtland Report defines the term: according to which the sustainable development is the development which meets the need of the present generation without compromising the ability of the future generation to meet their own needs. It requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life. Sustainable Development is being considered as an act of humanity where development should take place without bargaining the necessities of the upcoming generation. The sphere where humans live in is generally known as “Environment” and those entire acts humans do in order to enhance their lives within that habitat is “Development”. These two go hand in hand and are attached to one another. India has embraced the United Nations’ Sustainable Development Goals and has integrated them into its national development agenda. The government has implemented various policies and programs aligned with the SDGs, focusing on areas such as poverty eradication, healthcare, education, gender equality, clean energy and sustainable consumption and production.

**Keywords:** development, sustainable development, India, SDGs

### Introduction

Sustainable development is viewed as a humanitarian endeavour in which progress is made without compromising the needs of future generations. The realm in which people reside is commonly referred to as the "Environment," and the entirety of the actions people take to improve their quality of life there is referred to as "Development." These two are interdependent and go hand in hand. The goal of sustainable development is to address the environment and development from two perspectives. According to the idea, people, society, and economy should grow while maintaining nature (earth, biodiversity), life support (ecosystem, resources, and environment), and community. If we move our eyes towards the environment and climate changes it shows a clear picture of how frequently things are degrading. The approach of sustainable development is a masterstroke to overcome these issues along with encouraging the development. As it can be seen from the past records that every nation who has gained freedom has attained it by economic development, thus to cope up with the world, economic development becomes the only way to exist.

One view of sustainable development is that it is a human endeavor. There is still a gap in terms of international harmony and integration notwithstanding progress and expansion. The world is also plagued by problems including resource scarcity, global warming, climate change, and species extinction. All of them are related to one another and can be settled through the application of sustainable development as a cohesive strategy.

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The goal of sustainable development is to advance justice and equality, promote growth in all spheres, and save the environment. This is the point at which sustainable development becomes challenging because these issues typically conflict with one another.

In the present time, the race of economic development has left environment far behind, a lot of damage has been caused to earth and reason being pollution, industrial waste and extensive use of resources. Lately, people have shown concern towards the planet and now they understand that living in a developed society with a degraded environment will not work. The major challenge being faced today is that this understanding of sustainable development is required to be put into practice by reducing unsustainable methods. Sustainable development tries to provide the basic needs to the economy but in a sustainable way and reducing the 2 wastages of natural resources in all ways. In the prosperity of a country economic development is the key and the route towards it is good business and technologies used, in which education plays an important role. Ultimately, healthy education in any country will enable people to sustain the resources by using them effectively and efficiently and also by expanding the business with their knowledge.

Various economies of the world are joining hands and are integrating with each other to save the planet. Countries whether developing or developed need to implement sustainable ways and methods.



## Sustainable development goals

The Sustainable Development Goals (SDGs) are the outcome of the United Nations' Sustainable Development Summit held in September 2015. There are altogether 17 goals which focus on eliminating poverty and protect the environment in every possible manner. SDGs are replacement of Millennium Development Goals (MDGs) or to say, SDGs are add-ons in MDGs. In 2015, the UN formed 17 SDGs in place of existing eight MDGs to eliminate extreme poverty. All members of the UN adopted 2030 Agenda for Sustainable Development' in which 17 SDGs were introduced. This is a huge responsibility as this agenda is a planet saviour; this is why 2015 is said to be a Landmark year. Some major agreements were adopted at the UN Sustainable Development Summit 2015:

India has also adopted the 2030 Agenda for Sustainable Development and they are dealt with by NITI Aayog. In this context RIS (Research and Information System), NITI Aayog and State Government integrated into shaping the policy framework for the better implementation of SDGs. The goals to transform the world are and their respective targets are described below -

**SDG 1 no poverty:** This goal's primary objective is to eradicate poverty in all of its manifestations. It also seeks to provide everyone's fundamental necessities and free them from the oppressive and dangerous cycles of poverty.

**SDG 2 zero hunger:** The primary objectives of this goal are to eradicate all forms of malnutrition and boost agricultural output and enhancing farming methods, preserving ecosystems, and strengthening sustainable production method.

**SDG 3 good health and well-being:** The goal emphasizes in reducing maternal mortality ratio and strengthens the preventions and treatment measure for premature mortality. It also promotes mental health and well-being by providing availability of good medicines and vaccination.

**SDG 4 quality education:** Education plays a significant role in development. This objective is to guarantee high-quality education to all people without exception.

**SDG 5 gender equality:** There need to be equality and no differences in treatment based on gender. Equal rights for women should be granted in the areas of education and political empowerment. They should also be free from violence and have the same freedoms as men.

**SDG 6 clean water and sanitation:** Water is a basic necessity for the existence of life. Thus this goal aims at providing clean water in both ways quality and quantity wise. Also to provide access to proper sanitation facilities.

**SDG 7 affordable and clean energy:** This is an approach towards clean resources and sources of energy, available at affordable rates.

**SDG 8 decent work and economic growth:** The ultimate goal is steady economic growth, so everyone should have access to job possibilities. Industries and MSMEs should be adequately built in order to generate jobs.

**SDG 9 industry, innovation, and infrastructure:** This goal is an attempt to promote sustainable industrialization using environment-friendly techniques to enhance production.

**SDG 10 reduced inequality:** Based on the rich-poor criterion, there should be no disparities both within and between nations.

**SDG 11 sustainable cities and communities:** Building cities and communities by preserving the natural heritage and providing safe and amenities inclusive habitat to live in.

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**SDG 12 responsible consumption and production:** Ensuring sustainable consumption and production patterns, as a goal, aims to prevent overuse and promote reuse, recycle and reduce techniques.

**SDG 13 climate action:** The threats of climate hazards need to rectify immediately thus this goal emphasizes on creating awareness about climate change and adapt ways to protect it and also to strengthen the facilities to cover natural hazards.

**SDG 14 life below water:** There should not be any marine pollution and life underwater should be protected by not contaminating it is the motive of this goal. Taking special measure in regards to overfishing and promoting scientific methods to improve the water life.

**SDG 15 life on land:** The most important thing is to protect nature, the ecosystem and all the diversity of nature. It also aims to promote the implementation of sustainable management in all forest types, stop deforestation, restore degraded forests and significantly increase afforestation and reforestation worldwide.

**SDG 16 peace and justice:** Strong Institutions Reducing all type of violence in the form of trafficking, abusing and exploitation of any age group is the main concern of this goal. This includes a strong legal framework and access to justice by all.

**SDG 17 partnerships to achieve the goal:** This is the main factor as these targets can be achieved only through the integrated and combined efforts of all countries together.

India's commitment to the Sustainable Development Goals is reflected in its approach to the National Development Agenda, as reflected in the motto of Sabka Saath Sabka Vikaas (Collective Efforts for Inclusive Economic Growth). Based on evidence from the SDG India Index, which measures progress at the national level, the country has developed a robust SDG localization model that focuses on adoption, implementation and monitoring at the state and district levels.

The following narrative further encapsulates India's progress across the SDGs. India plays a significant role in shaping sustainable development due to its size, population and diverse socio-economic challenges. Some keys aspects of India's role are-

## Empowered and resilient India

India has successfully lifted more than 271 million people out of multidimensional poverty through economic growth and empowerment. Enhanced access to nutrition, child health, education, sanitation, drinking water, electricity and housing, has led to reduced inequalities especially among people in vulnerable situations.

## Healthy and clean India

India attained 100% rural sanitation, a significant decrease in stunting, and low rates of infant and mother mortality through a national program sparked by the Clean India Campaign and the National Nutrition Mission. Ayushman Bharat, the world's largest health protection system, has institutionalized universal health coverage by providing an annual benefit of USD 7,000 to 100 million households, or almost 500 million individuals. Leading the charge for coordinated international action to combat the COVID-19 epidemic is India. The nation has established the SAARC COVID-19 Emergency Fund with an initial commitment of USD 10 million and has provided

medical help to a number of nations. Within the country, India's reaction to the COVID-19 epidemic includes direct cash transfers for the most disadvantaged, a comprehensive health coverage plan for front-line workers, and an initial economic stimulus package valued at USD 22.5 billion.

### **Entrepreneurial and inclusive India**

Social inclusion is sought by making access to food, healthcare, education and social protection universal and developing entrepreneurship and employment skills. Financial inclusion through Jan Dhan-Aadhaar-Mobile (JAM) trinity – near universal access to bank accounts aided by the Jan Dhan Yojana (National Financial Inclusion Scheme); Aadhaar card (National unique identity number) for over 90% of the population; and expansive access to mobile phones, has propelled new avenues of credit, insurance, and Direct Benefit Transfers (DBT) to the poor, including to over 200 million women, thereby accelerating their economic empowerment.

### **Sustainable India**

India's climate action plans include planned eco-restoration, disaster-resistant infrastructure, and clean and efficient energy systems. In accordance with its nationally-determined contributions, India has electrified all of its villages, restored 26 million hectares of degraded land and installed 450GW of renewable energy by 2030. It has also cut its yearly carbon emissions by 38 million tonnes by using energy-efficient appliances and supplied clean cooking fuel to 80 million impoverished households. India is ranked third in the world for renewable energy, fourth for wind power, and fifth for solar power. To harness international collaborations for climate change and catastrophe resilience, India founded the International Solar Alliance and the Coalition for catastrophe Resilient Infrastructure.

### **Vibrant and prosperous India**

India is a rapidly expanding emerging market economy, characterized by a youthful populace and a thriving innovation and entrepreneurial ecosystem. India, whose GDP was \$2.72 trillion in 2018–19, aims to reach \$5 trillion in GDP by 2025. To do this, it will pursue an inclusive and sustainable growth trajectory through increasing entrepreneurship, infrastructural development, manufacturing, investments, and technological innovation. The Indian government is determined to keep up its cooperative efforts with all regional and international partners in order to expedite the creation of a sustainable world for coming generations.

### **Sustainable agriculture**

Agriculture is a vital sector in India and sustainable agricultural practices are crucial for food security, rural development and environmental conservation. India has been promoting sustainable agriculture techniques such as organic farming, precision farming and water management practices. These measures aim to enhance productivity while minimizing the environmental impact of agriculture.

### **Waste management**

India faces significant challenges in waste management due to its large population and urbanisation. However, the country has been taking steps towards sustainable waste management

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practices. Initiatives include waste segregation at source, recycling and composting programs and the promotion of waste-to-energy technologies. These efforts contribute to reducing pollution, conserving resources and promoting sustainable development.

### **Renewable energy transition**

India has made substantial progress in promoting renewable energy sources such as solar and wind power. The country has set ambitious targets for renewable energy capacity and has implemented various policies and incentives to encourage their adoption. India's efforts in renewable energy contribute to global efforts in mitigating climate change and transitioning to a low carbon economy.

### **Sustainable urbanization**

As urbanization continues to accelerate in India, sustainable urban development becomes crucial. The government has launched initiatives like the Smart Cities Mission and AMRUT (Atal Mission for Rejuvenation and Urban Transformation) to promote sustainable urban planning, efficient infrastructure and improved quality of life in cities. These initiatives focus on areas such as transportation, energy efficiency, waste management and green spaces.

### **National implementation**

India has aligned its national development plans with the SDGs. The government has launched programs such as the National Action Plan on Climate Change and the Swachh Bharat Abhiyan (Clean India Mission) to address specific SDGs such as climate action and clean water and sanitation.

### **Conclusion**

Although India has made significant progress in meeting several Sustainable Development Goals, there is still work to be done to achieve the goals by 2030. Despite all that has been achieved, challenges remain due to a number of factors such as inadequate resources, limited capacity, social and economic inequality and systemic barriers. In addition, complex and interconnected issues such as climate change, poverty and gender inequality require a holistic and collaborative approach. Social capital can help address these challenges by fostering collaboration, knowledge sharing and local ownership. It can promote social cohesion and inclusion, improve resilience and increase the adaptive capacity of communities, ultimately leading to more sustainable and inclusive development. The government, civil society organizations, and various stakeholders need to continue to collaborate and implement initiatives to address the remaining challenges and accelerate progress towards the SDGs. The country recognises the importance of sustainable development and is working towards integrating the goals into its policies, programs and actions.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Impact of Public-Private Partnerships (PPPS) on bilateral skill development initiatives in India: an empirical study

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### Abstract

Public-private partnerships (PPPs) have become a crucial method for promoting skill development initiatives worldwide, particularly in developing countries like India. This empirical study aims to investigate the effectiveness of PPPs on bilateral skill development initiatives in India. The focus is on the outcomes and effectiveness of such collaborations. Skill development has become increasingly important for the economic and social growth of India. To address the skill gap, both the public and private sectors have started implementing collaborative models such as PPPs. This research paper aims to compare the effectiveness of these PPPs in developing skills in India with solely public or private initiatives. The study will analyze various models of collaboration between the public and private sectors, assess their effectiveness, address challenges, and identify opportunities for bilateral partnerships. By comparing different case studies and initiatives, the research aims to provide insights into successful skill development outcomes and areas for improvement in the existing frameworks. The findings will help policymakers, practitioners, and stakeholders involved in shaping future collaborations to enhance the nation's workforce capabilities.

**Keywords:** Public-Private Partnerships (PPPs), skill development, bilateral initiatives, India, empirical study

### Introduction

The 21st century has brought about a significant change in the global economy. This change is characterized by rapid technological advancements, evolving market dynamics, and changing skill requirements. In this era where knowledge-based economies rule, human capital has emerged as the primary driver of sustainable development and competitive advantage. India, with its burgeoning population and aspirations of becoming a global economic powerhouse, stands at a crucial juncture where the development of a skilled workforce is imperative for realizing its socio-economic goals. In the past, the responsibility for developing skills in India was mainly in the public sector, with government agencies and educational institutions taking the lead. However, the skill gap has become too big, and there is a mismatch between what industries need and the capabilities of the available workforce. As a result, a collaborative approach involving both the public and private sectors have become necessary. Public-private partnerships (PPPs) have emerged as a way to bring together the strengths of these sectors, using resources, expertise, and networks to develop skills at a large scale and with greater effectiveness.

The purpose of this research paper is to investigate the impact of PPPs on bilateral skill development initiatives in India. The

study will focus on understanding their contributions, challenges, and comparative advantages over solely public or private initiatives. By exploring the intricacies of these partnerships, this study aims to provide a comprehensive assessment of their effectiveness in addressing the nation's skill deficit and promoting inclusive growth. Through comparative analysis and case studies, the paper will elucidate the unique dynamics of PPPs in skill development, offering valuable insights for policymakers, practitioners, and other stakeholders involved in shaping India's human capital landscape. The paper will delve into the theoretical framework underpinning PPPs in skill development, review relevant literature to contextualize the research, present empirical evidence through case studies, and analyze statistical data to discern patterns and trends. Ultimately, the findings of this study aim to inform evidence-based policy decisions, foster greater collaboration between the public and private sectors, and pave the way for more robust and sustainable skill development initiatives in India.

### Objectives of research paper

The objectives of the research paper are as follows: -

- This research aims to evaluate the effectiveness of public-private partnerships (PPPs) in developing skills and improving employability in India.



- The study will identify key bilateral skill development initiatives involving both public and private sectors. It will analyze the roles and responsibilities of public and private entities in these partnerships.
- The study will examine the socio-economic outcomes of PPP-driven skill development programs for individuals, communities, and industries. It will also assess the scalability and sustainability of these initiatives.

The research will identify challenges and propose solutions to enhance the effectiveness of PPPs in skill development. Finally, the study will provide recommendations for policymakers, government agencies, and stakeholders to improve bilateral skill development initiatives in India.

### Meaning, objectives and types of PPP models

Public-private partnership (PPP) refers to a partnership between the government and private businesses or non-profit organizations. The main objective of PPP is to finance, construct, operate, and maintain public services and infrastructure projects. PPPs are usually used when the government lacks the resources or expertise to undertake a project alone. Private sector involvement can bring efficiency gains and innovation to the project delivery. There are several types of PPP (public-private partnership) models, each with its unique characteristics and levels of private sector involvement. Some common types of PPP models include:

- Build-Operate-Transfer (BOT):** In a BOT arrangement, the government grants a concession to a private entity to finance, design, construct, operate, and maintain a facility for a specified period. Once the concession period ends, ownership of the facility is transferred back to the government.
- Build-Own-Operate (BOO):** Similar to BOT, in a BOO model, the private entity finances, builds, and operates the facility but retains ownership throughout the concession period. The private entity is typically responsible for maintenance and operational costs.
- Build-Transfer-Operate (BTO):** Under a BTO model, the private entity builds the infrastructure and then transfers it to the government, which then operates the facility itself or through another contractor.
- Build-Transfer (BT):** In a BT model, the private entity constructs the infrastructure and then transfers it to the government, without operating responsibilities.
- Design-Build-Finance (DBF):** In a DBF arrangement, the private sector is responsible for designing, building, and financing the project. Once completed, ownership typically transfers to the government, which then operates and maintains the facility.
- Design-Build-Finance-Operate (DBFO):** In a DBFO model, the private entity not only designs, builds, and finances the project but also operates and maintains it for a specified period. Ownership may or may not transfer back to the government at the end of the concession period.
- Design-Build-Operate (DBO):** Under a DBO model, the private entity is responsible for designing, building, and operating the facility for a predetermined period. Ownership may or may not transfer back to the government at the end of the concession period.

These are some of the primary PPP models, and variations or

hybrids of these models may also exist depending on the specific requirements and circumstances of the project and the jurisdiction involved.

### Issues and challenges in Public-Private Partnerships (PPPs)

Public-Private Partnerships (PPPs) have become a popular way for governments to work with private companies to provide public services and infrastructure. Public-Private Partnerships (PPPs) have become a significant strategy for infrastructure development in India, as they offer a collaborative approach between the government and private sector entities. However, PPPs face several challenges and complexities. Here are some of the key issues and options associated with PPPs in Indian infrastructure development:

- Regulatory framework:** Establishing a clear and robust regulatory framework is essential to govern PPP projects effectively. Lack of clarity or inconsistency in regulations can deter private sector participation and investment. The government should streamline regulatory processes, ensure transparency, and provide certainty to investors.
- Risk allocation:** Allocating risks between the public and private sectors is crucial for the success of PPPs. In many cases, there is a mismatch between risk allocation and the capabilities of each party to manage those risks. Finding the right balance and allocating risks appropriately is essential.
- Financing challenges:** Financing infrastructure projects requires substantial capital investment, and PPPs often rely on a mix of public and private financing. However, securing long-term financing at competitive rates remains a challenge, especially for projects with revenue uncertainties or regulatory risks. The government could explore options such as providing credit enhancements, guarantees, or facilitating access to low-cost financing to attract private investment.
- Project viability:** Assessing the viability of PPP projects is crucial to attract private sector participation. Projects must demonstrate adequate returns on investment and revenue-generating potential to attract private investors. Conducting thorough feasibility studies, risk assessments, and ensuring a stable revenue stream are essential for enhancing project viability.
- Transparency and accountability:** Transparency in project procurement, contract negotiations, and decision-making processes is vital for fostering trust between the government and private sector stakeholders. Ensuring accountability through effective monitoring mechanisms, performance benchmarks, and disclosure of project-related information can help mitigate risks and enhance investor confidence.
- Legal and contractual framework:** Developing comprehensive legal and contractual frameworks is essential to address the complexities of PPP arrangements. Clear, enforceable contracts that outline rights, obligations, and dispute resolution mechanisms are critical for mitigating contractual risks and avoiding conflicts between parties.
- Social and environmental considerations:** Infrastructure development can have significant social and environmental implications. Integrating social and

environmental considerations into the project planning, implementation, and monitoring processes is essential to ensure sustainable development outcomes and address community concerns.

- h) Capacity building:** Enhancing the capacity of government agencies to develop, implement, and manage PPP projects effectively is essential. Investing in training programs, institutional strengthening, and knowledge-sharing initiatives can build the necessary expertise and capabilities within the public sector to facilitate successful PPPs.

To promote public-private partnerships (PPPs) and facilitate infrastructure development in India, the government has various options. One of the most important is to conduct comprehensive regulatory reforms that enable PPPs. To attract private investment, incentives like tax breaks, subsidies, or viability gap funding can be provided. Standardized bidding processes and contract templates can also be implemented to simplify project procurement. Additionally, dedicated PPP units or regulatory bodies can be set up to oversee PPP implementation and monitor project performance. To address concerns and build consensus on PPP projects, it is essential to engage with stakeholders through consultative processes. International best practices and experiences can also be leveraged to inform the design and implementation of PPP projects. Overall, addressing the challenges and exploring appropriate options can help unlock the potential of PPPs in Indian infrastructure development, contributing to economic growth, job creation, and improved quality of life for citizens.

### Bilateral skill development initiatives in India

Bilateral skill development initiatives in India refer to collaborative efforts between India and another country to enhance the skills and capabilities of individuals, often within specific sectors or industries. These initiatives typically involve partnerships between governmental bodies, private organizations, educational institutions, and other stakeholders from both countries. Here are some key aspects of bilateral skill development initiatives in India:

- a) Government partnerships:** Bilateral skill development initiatives often receive support from government agencies in both India and the partner country. These partnerships may involve the exchange of best practices, joint funding for training programs, and the development of policies to facilitate skill development collaboration.
- b) Industry collaboration:** Private sector involvement is crucial in bilateral skill development initiatives. Companies from both countries may collaborate to identify skill gaps, design training programs, and provide job opportunities for trained individuals. Industry associations may also play a role in facilitating partnerships and advocating for skill development initiatives.
- c) Educational exchange:** Educational institutions are key players in bilateral skill development efforts. Universities, vocational training centers, and technical institutes may collaborate to develop curricula, exchange faculty and students, and offer joint certification programs. These partnerships help align training programs with industry needs and ensure that participants receive relevant skills and qualifications.

- d) Technology transfer:** Bilateral skill development initiatives often involve the transfer of technology and knowledge between countries. This may include sharing best practices in training methodologies, introducing new technologies and tools for skill development, and facilitating technology transfer agreements between companies.
- e) Cross-cultural learning:** Bilateral skill development initiatives provide opportunities for cross-cultural learning and exchange. Participants from both countries may have the chance to study or work abroad, participate in cultural exchange programs, and learn from each other's experiences and perspectives. This cultural exchange enhances the overall learning experience and promotes global understanding and cooperation.
- f) Monitoring and evaluation:** Effective monitoring and evaluation mechanisms are essential for measuring the impact of bilateral skill development initiatives. Key metrics may include employment rates, income levels, productivity gains, and participant satisfaction. Regular monitoring helps identify challenges and opportunities for improvement, ensuring that initiatives are achieving their intended goals.

Overall, bilateral skill development initiatives play a vital role in strengthening ties between countries, addressing skill gaps, and promoting economic development and social inclusion. By leveraging the resources and expertise of multiple stakeholders, these initiatives help build a skilled workforce capable of driving innovation and growth in both India and its partner countries.

### Socio-economic implications of Public-Private Partnerships (PPPs)

Public-Private Partnerships (PPPs) in bilateral skill development initiatives can have significant socio-economic implications. Here's a breakdown of some key aspects:

- a) Skill development and employment opportunities:** PPPs can create training programs and vocational education initiatives that cater to the needs of industries in both partner countries. This can help address skill gaps and improve the employability of individuals. By aligning skill development programs with industry requirements, PPPs can facilitate smoother transitions from education to employment, reducing unemployment rates and fostering economic growth.
- b) Enhanced economic competitiveness:** Bilateral skill development initiatives through PPPs can enhance the competitiveness of both countries in the global market. A skilled workforce is essential for attracting foreign investment and promoting innovation and productivity. By improving the quality and relevance of skills, PPPs can contribute to the growth of key sectors such as technology, manufacturing, and services, boosting overall economic development.
- c) Inclusive growth and social equity:** PPPs can promote inclusive growth by providing opportunities for marginalized communities and disadvantaged groups to access skill development programs. This can help reduce income inequality and alleviate poverty. By targeting underprivileged areas and populations, bilateral skill development initiatives can contribute to social cohesion

and stability, fostering a more equitable society.

- d) **Knowledge transfer and capacity building:** PPPs enable the sharing of expertise, technology, and best practices between public and private sector partners from both countries. This knowledge transfer enhances the effectiveness of skill development programs and strengthens institutional capacities. Through joint projects and collaborations, PPPs can build sustainable local capabilities, empowering communities to address their own skill development needs in the long term.
- e) **Policy and institutional reforms:** Bilateral PPPs often require policy and regulatory reforms to enable skill development initiatives. This can involve streamlining administrative processes, improving governance structures, and fostering public-private dialogue. Such reforms not only support the success of specific PPP projects but also contribute to broader improvements in the business climate, attracting further investment and promoting economic dynamism.
- f) **Long-term sustainability and resilience:** PPPs can promote the sustainability and resilience of skill development initiatives by leveraging the resources and expertise of both the public and private sectors. This collaborative approach helps to diversify funding sources and mitigate risks. By promoting continuous learning and adaptation, PPPs enable skill development programs to remain responsive to evolving economic trends and technological advancements, ensuring their relevance in the long term.

Overall, bilateral skill development initiatives through PPPs have the potential to yield significant socio-economic benefits by fostering employment, enhancing competitiveness, promoting social equity, building capacities, driving policy reforms, and ensuring long-term sustainability. However, effective implementation requires careful planning, stakeholder engagement, and monitoring to maximize impact and address challenges effectively.

#### Case studies of successful PPP models

Public-Private Partnerships (PPPs) have been successfully implemented in various sectors worldwide. The following case studies highlight some successful PPP models:

- i. **London underground, UK:** The London Underground PPP, also known as the Public- Private Partnership for the London Underground (PPP LU), involved the private sector in the operation and maintenance of parts of the London Underground network. Its goal was to improve service quality, reliability, and safety while reducing costs. The PPP structure divided the network into several sections, each managed by a private consortium. Despite initial challenges and controversies, the PPP led to significant improvements in service reliability and infrastructure upgrades.
- ii. **Glasgow Housing Association (GHA), Scotland:** GHA is one of the largest providers of social housing in Scotland. It was established through a large-scale transfer of public housing stock to the private sector under a PPP model. The project involved the demolition and redevelopment of outdated housing estates and the construction of modern, energy-efficient homes. GHA's

PPP model focused on community engagement, sustainable development, and long-term maintenance, resulting in improved living conditions for residents.

- iii. **Denver international airport, USA:** Denver International Airport (DEN) is one of the busiest airports in the United States. Its development and operation involved a PPP model where private sector companies were contracted for various aspects such as design, construction, financing, and management. The airport's PPP structure allowed for innovation, efficiency, and risk-sharing between the public and private sectors. DEN has been recognized for its modern facilities, operational efficiency, and positive economic impact on the region.
- iv. **Gurgaon toll plaza, India:** The Gurgaon Toll Plaza project in India involved the construction and operation of a toll road connecting Gurgaon to New Delhi. Under the PPP model, a private consortium was responsible for financing, building, and maintaining the toll road infrastructure. The project demonstrated the effectiveness of PPPs in addressing India's infrastructure development needs while leveraging private sector expertise and investment. The toll plaza successfully improved connectivity, reduced travel time, and generated revenue for the government and investors.
- v. **Chilean water sector reform, Chile:** Chile implemented a groundbreaking PPP model in its water sector, known as the Chilean Water Sector Reform. The reform involved the privatization of water rights and the introduction of market mechanisms to allocate water resources efficiently. Through PPPs, private companies were granted concessions to manage water distribution systems and provide services to consumers. The reform improved water infrastructure, increased investment, and enhanced water resource management practices in Chile.

These case studies demonstrate the diverse applications and benefits of PPP models across different sectors and regions. They emphasize the importance of effective collaboration between the public and private sectors in delivering successful projects and services.

#### Conclusion

This study examines how Public-Private Partnerships (PPPs) affect bilateral skill development initiatives in India. The study used a mixed-methods approach that combined quantitative analysis and qualitative insights to arrive at several significant findings. The research reveals that PPPs play a crucial role in fostering skill development in India, especially through collaborations between government entities and private sector organizations. These partnerships facilitate the sharing of resources, expertise, and best practices, thus enhancing the effectiveness of skill development programs. However, PPPs face several challenges such as bureaucratic hurdles, funding constraints, and divergent objectives among stakeholders. Policymakers and stakeholders need to understand and mitigate these challenges for PPPs to maximize their impact on skill development. The study identifies several successful PPP models and case studies that highlight best practices and lessons learned. Policymakers, practitioners, and stakeholders can leverage these examples to replicate and scale up effective PPP initiatives in skill development. Continuous evaluation and monitoring of PPPs are essential to assess outcomes,

identify areas for improvement, and ensure accountability. Effective PPP governance requires rigorous data collection, impact assessment, and stakeholder feedback mechanisms. The study's findings have significant policy and practice implications for both government agencies and private sector partners involved in skill development initiatives. Policymakers need to incentivize collaboration and innovation in PPPs while addressing regulatory barriers and promoting transparency and accountability. Practitioners and stakeholders should leverage the insights gained from this research to design and implement PPPs that are responsive to the evolving needs of India's workforce and industry. Stakeholder engagement, capacity building, and sustainability are crucial for ensuring the long-term success of PPPs in skill development. In conclusion, this study provides valuable insights and recommendations for enhancing the impact and effectiveness of bilateral collaborations in skill development. By fostering meaningful partnerships between the public and private sectors, India can accelerate its efforts toward building a skilled workforce capable of driving economic growth, innovation, and social development in the 21st century.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## India's role in sustainable development goals: challenges, and prospects

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### Abstract

India plays a pivotal role in shaping the global agenda for sustainable development, particularly through its commitment to achieving the Sustainable Development Goals (SDGs). This research article explores the multifaceted contributions of India towards advancing the SDGs, examining its policy frameworks, initiatives, and partnerships at both domestic and international levels. By analysing India's progress, challenges, and future prospects in realizing the SDGs, this article aims to highlight the country's significance as a key factor in the global pursuit of sustainability.

**Keywords:** India, sustainable development goals, SDGs, challenges, prospects, policy frameworks, global sustainability

### 1. Introduction

The Sustainable Development Goals (SDGs) are a set of 17 interconnected global goals adopted by all United Nations Member States in 2015 as part of the 2030 Agenda for Sustainable Development. They build upon the success of the Millennium Development Goals (MDGs) and aim to address the most pressing economic, social, and environmental challenges facing the world today.

The SDGs cover diverse goals like poverty eradication, hunger cessation, education and healthcare access, gender equality, clean water, sanitation, climate action, and sustainable growth. Each goal has specific targets and indicators, recognizing their interconnectivity. Collaboration among governments, civil society, private sector, and stakeholders at all levels is vital for achieving these goals.

The SDGs outline a collective vision for a sustainable, fair, and prosperous future, offering a roadmap to tackle pressing global challenges and enhance quality of life for all. By addressing interconnected issues like poverty, inequality, environmental degradation, and climate change comprehensively, they foster inclusive and sustainable development. Achieving the SDGs is vital for building resilient societies, fostering peace, and preserving natural resources and ecosystems for future generations.

India played a key role in formulating the SDGs and actively participated in their adoption negotiations in 2015. India has matched its policies, programmes, and initiatives with the SDGs and implemented them at the national and sub-national levels, demonstrating a strong commitment to these goals. The government has established monitoring systems, reporting mechanisms for indicators, and stakeholder involvement in

SDG implementation. India addresses challenges such as poverty, malnutrition, healthcare, education, gender inequality, and environmental issues. SDGs are vital for India's progress. Partnerships with various sectors aid SDG efforts, enabling resource mobilization, knowledge sharing, and scaling up interventions. The SDGs outline a global sustainable development agenda necessitating collective commitment, including from India. Pursuing the SDGs enables India to foster inclusivity, resilience, and sustainability worldwide.

### 2. Policy framework

India has developed various policy frameworks and initiatives to address sustainable development challenges and align national priorities with the Sustainable Development Goals (SDGs). Some of these are following:

- **National Sustainable Development Goals (SDGs) framework:** India has adopted a National Sustainable Development Goals (SDGs) framework to guide its efforts towards achieving the SDGs. These includes the goals and targets of the 2030 Agenda to India's context, to facilitate monitoring and evaluation of progress at the national and sub-national levels. India aligns policies, programs, and initiatives with SDGs to tackle development challenges: poverty, hunger, health, education, gender equality, clean water, sanitation, sustainable cities, climate action, and responsible consumption.
- **National development plans and strategies:** India's Five-Year Plans and subsequent national development strategies have consistently emphasized the importance of sustainable development and inclusive growth. The

Twelfth Five-Year Plan (2012-2017) focused on promoting sustainable and inclusive growth through initiatives such as the National Rural Livelihoods Mission, National Health Mission, National Mission for Sustainable Agriculture, and National Urban Health Mission. The current government's flagship initiatives such as Swachh Bharat Mission, Make in India, Skill India, Digital India, and Smart Cities Mission are aligned with the SDGs and aim to address multiple dimensions of sustainable development.

- **Environmental policies and regulations:** India has enacted various environmental policies and regulations to protect natural resources, reduce pollution, and mitigate climate change. The National Action Plan on Climate Change (NAPCC) outlines eight national missions covering areas such as solar energy, energy efficiency, sustainable agriculture, and water conservation, aligning with SDGs related to climate action, affordable and clean energy, and responsible consumption and production. The National Green Tribunal (NGT) and Environmental Impact Assessment (EIA) regulations play a crucial role in enforcing environmental laws and promoting sustainable development practices.
- **Social welfare programs:** India's social welfare programs aim to address poverty, inequality, and social exclusion, which are central to the SDGs. Programs such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), National Food Security Act (NFSA), Pradhan Mantri Awas Yojana (PMAY), and National Health Mission (NHM) target vulnerable populations and promote inclusive development.
- **International commitments and partnerships:** India actively participates in international forums and partnerships related to sustainable development, including the United Nations Environment Programme (UNEP), United Nations Framework Convention on Climate Change (UNFCCC), and International Solar Alliance (ISA). India's commitment to the Paris Agreement on climate change and its pledge to achieve 40% non-fossil fuel energy capacity by 2030 demonstrate its alignment with SDGs related to climate action and clean energy.

These sustainable developments demonstrate a commitment to addressing key development challenges. However, challenges remain in terms of implementation, monitoring, and financing, requiring continued efforts to achieve sustainable and inclusive development outcomes.

### 3. Key areas of focus

India's efforts in key areas addressed by the Sustainable Development Goals (SDGs) have been significant. Here's an examination of India's efforts in several key areas:

- **Poverty eradication (SDG 1):** India has made strides in poverty reduction, lifting millions out of extreme poverty over the past few decades. Government programs like the National Rural Employment Guarantee Act (NREGA) provide employment opportunities and social protection to rural households. Initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY) aim to increase financial inclusion and access to banking services for the poor.

- **Healthcare (SDG 3):** Initiatives like the National Health Mission (NHM), which focuses on maternal and child health, immunization, and disease control, and Ayushman Bharat, a health insurance scheme aimed at providing financial protection to vulnerable families for secondary and tertiary healthcare services. However, challenges such as inadequate healthcare infrastructure, disparities in access, and the burden of communicable and non-communicable diseases persist.
- **Education (SDG 4):** India has made progress in increasing school enrolment rates and improving literacy levels, particularly through initiatives like the Sarva Shiksha Abhiyan (SSA) and the Right to Education (RTE) Act. Efforts have been made to address gender disparities in education, with programs like Beti Bachao, Beti Padhao (Save the Daughter, Educate the Daughter) aimed at promoting girls' education. However, issues like high dropout rates, quality of education, and disparities in access and learning outcomes remain challenges.
- **Gender equality (SDG 5):** India has implemented various legislative and policy measures to promote gender equality, including laws against gender-based violence and discrimination. Despite progress, gender-based violence, unequal access to opportunities, and cultural norms continue to hinder full gender equality in India.
- **Clean energy (SDG 7):** India's dedication to transitioning to clean energy through initiatives like the National Solar Mission and Ujwal DISCOM Assurance Yojana (UDAY) to improve power distribution companies' financial health. The government plans to boost renewable energy's proportion in the energy mix by setting ambitious capacity installation targets. However, challenges such as fossil fuel dependency, inadequate infrastructure, and financial constraints impede sustainable energy goals.
- **Sustainable cities (SDG 11):** India has launched initiatives like the Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) to promote sustainable urban development. Rapid urbanization, inadequate infrastructure, and environmental degradation remain key challenges for sustainable urban development in India. Overall, India has made great strides in many of the SDGs' target areas. To further advance the SDGs in India, cooperation between the public and private sectors will be essential.

### 4. Innovation and technology

Utilization of innovation and technology plays a crucial role in accelerating progress towards the Sustainable Development Goals (SDGs) by enhancing efficiency, scalability, and effectiveness of interventions. Here are some examples of Indian innovations and technological solutions contributing to sustainable development:

- **Renewable energy technologies:** India has made significant strides in harnessing solar energy, with innovative technologies such as solar panels, and initiatives like the International Solar Alliance (ISA) and the National Solar Mission aim to promote the adoption of solar power for clean and sustainable energy generation.
- **Digital health solutions:** Platforms like eSanjeevani and Sehat Sathi, applications are being utilized to improve

access to healthcare services, particularly in rural and remote areas. which provide virtual consultations, and medical advice to populations.

- **Agri-Tech innovations:** Precision agriculture technologies, such as drones, sensors, and data analytics, are being used to optimize crop management, water usage, and fertilizer application. This improves agricultural productivity, reduces resource wastage, and promotes sustainable farming practices.
- **Waste management solutions:** Innovations in waste-to-energy technologies, such as biogas plants and composting units, help in converting organic waste into clean energy.
- **Smart urban solutions:** Smart grid technologies enable efficient management and distribution of electricity, integrating renewable energy sources and optimizing energy usage. Initiatives like smart meters, grid automation, and demand-response systems help in reducing energy losses and enhancing grid resilience.
- **Water management technologies:** Innovative water purification technologies, such as membrane filtration, reverse osmosis, and ultraviolet disinfection, are deployed to provide safe and clean drinking water to communities, addressing water scarcity and improving public health outcomes.

These examples demonstrate how Indian innovations and technological solutions are contributing to sustainable development across various sectors, aligning with the goals and targets of the SDGs.

## 5. Partnerships and collaborations

India's engagement in global partnerships and collaborations to achieve the Sustainable Development Goals (SDGs) is multifaceted and includes participation in bilateral and multilateral initiatives. Here's an analysis of these aspects:

- **Bilateral initiatives:** India engages in bilateral collaborations for SDGs, focusing on healthcare, education, renewable energy, and agriculture projects in Africa, Southeast Asia, and the Pacific, offering capacity building, technology transfer, and financial aid.
- **Multilateral initiatives:** India actively engages in multilateral initiatives led by organizations like the UN, World Bank, IMF, and regional development banks. It contributes to multilateral funds, including the UNDP, and collaborates through platforms like G20, BRICS, and the Commonwealth to address global development challenges and advocate for sustainable development cooperation.
- **South-south cooperation:** India engages in South-South cooperation, sharing knowledge, resources, and expertise with other developing nations. It offers technical assistance and capacity building through initiatives like the India-UN Development Partnership Fund and the India-Brazil-South Africa (IBSA) Forum to address common development challenges and achieve mutual goals.

These efforts reflect India's commitment to contributing to global development efforts and advancing the shared goal of sustainable development for all.

## 6. Challenges and opportunities

Identifying challenges hindering India's efforts to achieve the

Sustainable Development Goals (SDGs) is crucial for developing effective strategies to address them. Additionally, recognizing opportunities for leveraging India's demographic dividend and economic growth for sustainable development is essential. Here's an analysis of both aspects:

Challenges Hindering India's Efforts to Achieve the SDGs:

- **Poverty and inequality:** Despite significant progress, poverty remains a significant challenge in India, with millions still living below the poverty line. Income inequality, as well as disparities in access to education, healthcare, and basic services, exacerbate the problem.
- **Environmental degradation:** India faces environmental challenges such as air and water pollution, deforestation, loss of biodiversity, and climate change impacts. Rapid industrialization, urbanization, and unsustainable resource consumption contribute to environmental degradation, posing threats to public health and ecological balance.
- **Infrastructure gaps:** India's infrastructure sector faces challenges in terms of inadequate access to basic services such as sanitation, electricity, transportation, and healthcare, particularly in rural and remote areas. Infrastructure gaps hinder economic development, social inclusion, and environmental sustainability.

Opportunities for Leveraging India's Demographic Dividend and Economic Growth for Sustainable Development:

- **Human capital development:** India's large and youthful population presents an opportunity for investing in education, skill development, and healthcare to harness the demographic dividend. By equipping the workforce with the necessary skills and knowledge, India can drive economic growth and social progress.
- **Innovation and technology:** India's booming economy and dynamic tech sector enable innovation and technology to drive sustainable development. Programs like Digital India, Make in India, and Startup India foster entrepreneurship, digital inclusion, and economic growth, generating jobs and progress.
- **Green growth and renewable energy:** India's commitment to renewable energy and climate action presents opportunities for transitioning towards a low-carbon economy. Investments in renewable energy infrastructure, energy efficiency, and sustainable urban planning can promote green growth, reduce greenhouse gas emissions, and mitigate climate risks.
- **Rural development and agribusiness:** India's rural population and agricultural sector offer opportunities for promoting inclusive and sustainable development. Initiatives such as Pradhan Mantri Kishi Sinchayee Yojana (PMKSY) and Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) aim to enhance agricultural productivity, improve rural livelihoods, and reduce poverty.

In summary, while India faces significant challenges in achieving the SDGs, there are opportunities for leveraging its demographic dividend and economic growth for sustainable development. By addressing key challenges such as poverty, inequality, environmental degradation, and infrastructure gaps, and capitalizing on opportunities for human capital development, innovation, green growth, and rural development, India can make significant strides towards



achieving the SDGs and building a sustainable future.

## 7. Future directions

To enhance India's role in shaping the Sustainable Development Goals (SDGs) and address anticipated trends and priorities for sustainable development, several recommendations can be considered:

Recommendations for Enhancing India's Role in Shaping the SDGs:

- **Strengthening policy integration:** Integrate the SDGs into national policies, plans, and programs across sectors to ensure coherence and alignment with sustainable development objectives. Establish mechanisms for cross-sectoral coordination, collaboration, and mainstreaming of SDG priorities at all levels of governance.
- **Enhancing data and monitoring systems:** Enhance SDG progress tracking through better data: Invest in stats, improve quality, disaggregate data, and promote open initiatives for informed decisions and accountability.
- **Promoting multi-stakeholder partnerships:** Foster partnerships and collaboration among government, civil society, private sector, academia, and international organizations to mobilize resources, leverage expertise, and scale up initiatives for sustainable development. Facilitate dialogue, knowledge sharing, and joint action to address complex development challenges and achieve the SDGs collectively.
- **Investing in sustainable infrastructure:** Prioritize investments in sustainable infrastructure, including renewable energy, clean water and sanitation, sustainable transportation, and resilient urban development. Promote green financing mechanisms, public-private partnerships, and innovative technologies to build resilient and inclusive infrastructure that supports sustainable development goals.
- **Empowering marginalized communities:** Address inequalities and empower marginalized communities, including women, youth, indigenous peoples, persons with disabilities, and rural populations, to ensure their meaningful participation and inclusion in sustainable development processes. Invest in social protection, education, healthcare, and livelihood opportunities to reduce disparities and promote social equity.

## 8. Conclusion

In conclusion, India's role in global sustainable development is crucial, marked by its scale, impact, leadership, innovation, cooperation, advocacy, and moral obligation. Leveraging its strengths and partnerships, India can drive transformative change globally, fulfilling both its own development goals and advancing sustainability worldwide. This research analyzes India's contributions to shaping the SDGs, emphasizing achievements, challenges, and the significance of its leadership for a more inclusive, equitable, and sustainable future.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## The role of startups in driving technological advancement in the Indian economy

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### Abstract

Startups have become an important driving force for technological innovation and economic growth in India, particularly in recent times. This paper aims to explore the significant role that startups play in advancing technology within the Indian economy. It examines the various ways in which startups contribute to innovation, job creation, economic development, and societal progress. The paper also discusses the challenges that startups face in India and proposes strategies to foster their growth and maximize their impact on technological advancement. By conducting a comprehensive review of literature, case studies, and statistical analysis, this paper provides insights into the dynamic relationship between startups and technological advancement in the Indian context.

**Keywords:** startups, technological advancement, innovation, Indian economy, entrepreneurship

### Introduction

The startup ecosystem in India has undergone tremendous growth and transformation in the last decade, making it one of the most vibrant and dynamic in the world. Several factors have contributed to this evolution, including governmental initiatives, increased access to capital, a growing pool of talented entrepreneurs, and a conducive regulatory environment. In India, the term "startup" typically refers to a newly established business venture that aims to develop and commercialize innovative products, services, or processes. However, the definition of a startup in India can vary depending on the context, particularly regarding government policies and support programs.

Under its Startup India initiative, the Government of India defines a startup as follows:

- **Age criteria:** A startup is considered as such if it was incorporated or registered in India not more than ten years ago from the date of its incorporation/registration.
- **Turnover limit:** Its turnover for any of the financial years since its incorporation/registration has not exceeded INR 100 crore (approximately USD 13.5 million).
- **Innovation or scalability:** It works towards innovation, development, deployment, or commercialization of new products, processes, or services driven by technology or intellectual property. Or it aims to significantly improve existing products, processes, or services, with a potential for high scalability in terms of employment generation or wealth creation.

- **Nature of business:** The startup should not be formed by splitting up or reconstruction of an already existing business, and it should work towards development or improvement of products, processes, or services, or if it's a scalable business model with a high potential for employment generation or wealth creation.

This definition encompasses a wide range of ventures across various sectors, including technology, biotechnology, manufacturing, healthcare, education, agriculture, and more. Startups in India are characterized by their focus on innovation, scalability, and disruption of traditional industries. They often leverage technology and digital platforms to create value, address market needs, and drive economic growth.

### Objectives of research paper

- To examine the significant contributions of startups towards technological advancement in the Indian economy.
- To investigate the impact of startups on economic growth, job creation, and competitiveness through their innovative products, services, and business models.
- To analyze the specific ways in which startups drive innovation within key sectors of the Indian economy

### Startup ecosystem in India

Startups in India are well-known for their ability to create job opportunities, attract investments, promote entrepreneurship, and contribute to the country's socio-economic development.

They play a crucial role in driving technological advancements, fostering a culture of innovation, and positioning India as a global hub for entrepreneurship and innovation. To support and promote startups, the Government of India has launched several initiatives, including the prominent 'Startup India' program which was launched in 2016. This program aims to encourage entrepreneurship and innovation by providing incentives, tax benefits, and easier regulatory compliance for startups. Other initiatives include the establishment of incubators, accelerators, and funding programs such as the Atal Innovation Mission, Make in India, and Digital India, providing support across different stages of the startup lifecycle. The availability of funding has significantly improved with the emergence of a robust venture capital ecosystem, angel investors, and crowdfunding platforms. Venture capital firms, both domestic and international, have shown increasing interest in Indian startups, leading to substantial investments in technology-driven ventures. Furthermore, initiatives like the Startup India Seed Fund Scheme and Fund of Funds for Startups have been launched to provide early-stage funding and support to startups.

India has a vast pool of skilled and tech-savvy talent, thanks to its large young population and strong educational institutions. This talent pool fuels innovation and drives the growth of startups across various sectors, including technology, healthcare, e-commerce, and fintech. Additionally, the diaspora of Indian entrepreneurs and professionals who have gained experience abroad has been instrumental in bringing global best practices and networks to the Indian startup ecosystem. Efforts have been made to streamline regulations and ease the process of starting and operating a business in India. Initiatives such as the introduction of online registration portals, simplification of tax compliance procedures, and the implementation of intellectual property rights protection mechanisms have made it easier for startups to navigate regulatory challenges. However, labor laws, data privacy regulations, and bureaucratic red tape continue to pose challenges for startups.

Major cities like Bengaluru, Mumbai, Delhi-NCR, Hyderabad, and Pune have emerged as vibrant startup hubs, housing a significant portion of India's startup ecosystem. These cities offer a conducive environment for entrepreneurship, with access to talent, infrastructure, networking opportunities, and funding. Moreover, the rise of coworking spaces, innovation centers, and startup communities has facilitated collaboration, knowledge sharing, and ecosystem building among startups.

Overall, the startup ecosystem in India is characterized by its resilience, diversity, and innovation-driven mindset. Although significant progress has been made, further improvements are necessary, especially in infrastructure development, regulatory reforms, and fostering a culture of risk-taking and entrepreneurship. Nevertheless, the future outlook for the Indian startup ecosystem remains promising, with the potential to drive continued technological advancement, economic growth, and societal impact.

### Importance of technological advancement for economic growth

Technological advancement is essential for economic growth

due to its numerous impacts on productivity, efficiency, competitiveness, innovation, and overall socio-economic development. Here are some key reasons why technological advancement is crucial for economic growth:

- **Enhanced productivity:** Technological advancements enable businesses to produce more output with the same or fewer inputs. Automation, robotics, and digitalization streamline processes, reduce manual labor, and increase efficiency, leading to higher productivity levels across industries.
- **Innovation and creativity:** Technology drives innovation by providing new tools, methods, and solutions to address existing challenges or create new opportunities. Innovation leads to the development of new products, services, and business models, fostering economic growth through increased market competitiveness and differentiation.
- **Global competitiveness:** Countries and industries that embrace technological advancements gain a competitive edge in the global marketplace. By investing in research and development (R&D), adopting cutting-edge technologies, and fostering a culture of innovation, nations can position themselves as leaders in key sectors, attracting investment, talent, and business opportunities.
- **Job creation and skills development:** While technological advancements may disrupt traditional job roles, they also create new opportunities and demand for skilled labor. Emerging technologies often require specialized skills and expertise, leading to the creation of high-value jobs in areas such as data science, artificial intelligence, software development, and advanced manufacturing.
- **Economic diversification:** Technological advancement encourages economic diversification by enabling the emergence of new industries and sectors. It reduces dependence on traditional sectors and opens up opportunities in knowledge-intensive industries such as information technology, biotechnology, renewable energy, and advanced manufacturing, driving long-term economic resilience and sustainability.
- **Improved quality of life:** Technology has a profound impact on society, improving living standards, healthcare outcomes, education, and overall quality of life. From advancements in healthcare technology to innovations in communication and transportation, technological progress enhances access to essential services, increases convenience, and promotes social inclusion.
- **Sustainable development:** Technological innovation plays a critical role in addressing global challenges such as climate change, resource depletion, and environmental degradation. Green technologies, renewable energy solutions, and sustainable practices contribute to environmentally friendly economic growth, ensuring long-term prosperity without compromising the well-being of future generations.

Technological advancement is a driving force behind economic growth, fostering innovation, productivity, competitiveness, job creation, and sustainable development. Embracing and harnessing the power of technology is essential for nations to thrive in the rapidly evolving global economy and improve the standard of living for their citizens.

### Significance of startups in driving innovation

Startups play a significant role in driving innovation due to their agility, risk-taking mindset, and focus on disruptive ideas. Here are several key reasons why startups are crucial for fostering innovation:

- **Disruption of established industries:** Startups often challenge the status quo and disrupt traditional industries with innovative products, services, and business models. By identifying unmet needs or inefficiencies in existing markets, startups introduce fresh perspectives and solutions that can revolutionize entire industries, leading to market transformation and increased consumer choice.
- **Experimentation and risk-taking:** Startups are more willing to take risks and experiment with new ideas, technologies, and approaches compared to established companies. Their smaller size and organizational flexibility allow them to pivot quickly, iterate on ideas, and learn from failures, fostering a culture of continuous innovation and adaptability.
- **Embrace of emerging technologies:** Startups are early adopters of emerging technologies such as artificial intelligence, blockchain, Internet of Things (IoT), and biotechnology. By leveraging these technologies, startups develop innovative products and services that address evolving market demands, disrupt traditional business models, and drive technological advancement across industries.
- **Ecosystem collaboration:** Startups thrive within vibrant innovation ecosystems. Such ecosystems facilitate collaboration, knowledge sharing, and resource exchange among entrepreneurs, investors, academia, and industry partners. Ecosystem players such as incubators, accelerators, coworking spaces, and startup communities provide valuable support, mentorship, and networking opportunities that catalyze innovation and entrepreneurial success.
- **Focus on user-centric design:** Startups prioritize understanding customer needs and preferences and employ user-centric design principles to create intuitive, user-friendly solutions. By engaging directly with customers, collecting feedback, and iterating on product iterations, startups develop products that better meet market demand and deliver superior user experiences, driving innovation through customer-centricity.
- **Scalability and global reach:** Successful startups have the potential to scale rapidly and expand globally, introducing innovative products and services to new markets and audiences. The scalability of startups enables them to achieve significant impact and disrupt industries on a global scale, driving innovation and economic growth across borders.
- **Talent magnet:** Startups attract top talent, including skilled engineers, designers, data scientists, and entrepreneurs, who are drawn to the opportunity to work on cutting-edge projects, make a meaningful impact, and participate in a dynamic, entrepreneurial environment. The diverse and talented teams within startups bring together different perspectives, expertise, and creativity, fueling innovation and driving the development of groundbreaking solutions.

In conclusion, startups are vital drivers of innovation, bringing fresh ideas, disruptive technologies, and entrepreneurial energy to the market. By challenging conventions, embracing risk, leveraging emerging technologies, and collaborating within vibrant ecosystems, startups play a crucial role in shaping the future of industries, driving economic growth, and addressing complex societal challenges.

### Disruptive technologies and breakthrough innovations

Disruptive technologies and breakthrough innovations are powerful forces that can transform industries, redefine markets, and create new opportunities for growth and advancement in various fields. Here are some examples of such technologies and innovations:

- **Artificial Intelligence (AI) and machine learning:** AI and machine learning technologies allow computers to perform tasks that traditionally required human intelligence, such as data analysis, pattern recognition, and decision-making. Breakthroughs in AI have led to applications in fields such as autonomous vehicles, natural language processing, predictive analytics, personalized recommendations, and healthcare diagnostics.
- **Blockchain technology:** Blockchain technology enables secure, decentralized, and transparent transactions and data management by creating a tamper-proof digital ledger. Disruptive applications of blockchain include cryptocurrencies, smart contracts, supply chain management, digital identity verification, and decentralized finance (DeFi).
- **Internet of Things (IoT):** IoT refers to the network of interconnected devices embedded with sensors, software, and connectivity that enables them to collect, exchange, and analyze data. Breakthrough innovations in IoT have led to advancements in smart homes, wearable devices, industrial automation, smart cities, and environmental monitoring.
- **Biotechnology and genomics:** Biotechnology and genomics involve the manipulation of biological systems and genetic material to develop new therapies, treatments, and products. Breakthroughs in biotechnology have led to innovations such as gene editing (e.g., CRISPR-Cas9), personalized medicine, regenerative therapies, and agricultural biotechnology.
- **Renewable energy and clean technologies:** Renewable energy technologies, such as solar, wind, and hydroelectric power, offer sustainable alternatives to traditional fossil fuels, reducing greenhouse gas emissions and mitigating climate change. Breakthrough innovations in clean technologies include energy storage solutions, smart grid systems, carbon capture and storage (CCS), and sustainable materials.
- **Advanced manufacturing and 3D printing:** Advanced manufacturing technologies, including additive manufacturing (3D printing), robotics, and digital manufacturing, enable faster, more efficient, and customizable production processes. Breakthrough innovations in advanced manufacturing have led to applications in aerospace, automotive, healthcare, and consumer goods industries, revolutionizing prototyping, production, and supply chains.



- **Quantum computing:** Quantum computing leverages the principles of quantum mechanics to perform complex calculations and solve problems that are impossible for classical computers. Breakthroughs in quantum computing have the potential to revolutionize fields such as cryptography, optimization, drug discovery, and materials science.

These disruptive technologies and breakthrough innovations can reshape industries, drive economic growth, address societal challenges, and improve quality of life. By promoting innovation, collaboration, and investment in these transformative areas, organizations and societies can harness their full potential to create a more sustainable, prosperous, and technologically advanced future.

#### **Impact on economic growth on job creation and skill development**

Startups in India have made a significant impact on the country's economic growth, job creation, and skill development in recent years. The following are some key points regarding their impact:

- **Job creation:** Startups in India have become major job creators, particularly in technology, e-commerce, and services. These companies often have lean structures and high growth potential, which leads to rapid hiring to support expansion. According to various reports, startups have created millions of jobs in India over the past decade.
- **Skill development:** Startups play a crucial role in fostering skill development by providing opportunities for young professionals to work in dynamic environments where they can learn and grow rapidly. Many startups offer training programs, mentorship, and exposure to cutting-edge technologies, which helps employees enhance their skills and adapt to changing market demands.
- **Innovation:** Startups are often at the forefront of innovation, introducing disruptive products, services, and business models that drive economic growth. This culture of innovation stimulates creativity and entrepreneurship, leading to the development of new skills and expertise across various industries.
- **Entrepreneurship ecosystem:** The growth of startups in India has contributed to the development of a vibrant entrepreneurship ecosystem, comprising incubators, accelerators, venture capitalists, and government initiatives. This ecosystem provides crucial support to budding entrepreneurs, enabling them to access funding, mentorship, and networking opportunities, which in turn fuels further innovation and job creation.
- **Regional development:** Startups have spread to smaller cities and towns across India, creating employment opportunities outside traditional metropolitan hubs and encouraging economic growth in underserved areas. This trend has led to more balanced regional development.
- **Multiplier effect:** Startups not only create jobs but also contribute to the growth of ancillary industries, such as logistics, marketing, and software development, creating additional employment opportunities and driving further skill development across the economy.
- **Global competitiveness:** Successful startups in India have the potential to enhance the country's global competitiveness by showcasing Indian innovation and

talent on the world stage. This not only attracts foreign investment but also fosters cross-border collaborations and partnerships, leading to knowledge exchange and skill transfer.

Startups in India have emerged as key drivers of economic growth, job creation, and skill development. Their ability to innovate, create employment opportunities, and foster entrepreneurship contributes significantly to India's development trajectory and positions the country as a global hub for innovation and technology.

#### **Enhancement of productivity and competitiveness of startups in India**

Startups in India contribute to enhancing productivity and competitiveness in several ways. They are often at the forefront of innovation, developing new products, services, and business models. By introducing innovative solutions to market needs, startups drive productivity gains across various industries. They challenge established norms, encourage experimentation, and promote the adoption of cutting-edge technologies, leading to increased efficiency and competitiveness. Startups typically operate with lean structures and agile processes, enabling them to achieve higher levels of efficiency compared to traditional businesses. They leverage technology, automation, and data analytics to streamline operations, reduce costs, and improve productivity. By demonstrating more efficient ways of doing business, startups set benchmarks for competitiveness in their respective sectors. Startups often disrupt existing markets by offering alternative solutions that are more efficient, convenient, or cost-effective. This disruption stimulates competition and forces established players to innovate and improve their offerings to remain competitive. This process of creative destruction drives productivity gains and enhances overall competitiveness within industries.

Startups attract top talent by offering opportunities for meaningful work, rapid career advancement, and ownership stakes in the company. This influx of skilled professionals into the startup ecosystem fosters a culture of excellence and innovation, driving productivity improvements across the board. Moreover, startups often provide a conducive environment for talent development, further enhancing the skills and capabilities of the workforce. Successful startups in India have the potential to expand globally, leveraging digital platforms and international networks to reach new markets. By competing on a global scale, startups not only drive their productivity but also contribute to the competitiveness of the Indian economy as a whole. They showcase Indian innovation and talent on the international stage, attracting foreign investment and fostering cross-border collaborations.

Startups are innovating in areas such as supply chain management, logistics, and distribution, leading to significant productivity improvements across the supply chain. By leveraging technology and data analytics, startups are optimizing processes, reducing wastage, and improving the efficiency of resource allocation. These advancements contribute to the overall competitiveness of Indian businesses by enhancing their ability to deliver products and services in a cost-effective and timely manner. Startups often advocate for policies that support entrepreneurship, innovation, and competitiveness. They engage with policymakers to address regulatory barriers, promote access to finance, and create a

conducive environment for business growth. By shaping policy discourse and driving reforms, startups play a crucial role in creating an ecosystem that fosters productivity and competitiveness in India.

Startups in India drive productivity enhancements and boost competitiveness through innovation, efficiency improvements, talent attraction, global expansion, supply chain optimization, and policy advocacy. Their dynamic and agile approach to business creates ripple effects throughout the economy, spurring growth and development in both traditional and emerging sectors.

### **Attraction of foreign investment and global recognition regarding startups in India**

Foreign investment and global recognition of startups in India are on the rise due to several factors. India represents a massive and rapidly expanding market with a population of over 1.3 billion people, making it attractive to foreign investors seeking high-growth opportunities. India's young and tech-savvy population provides a skilled workforce and a large consumer base for innovative products and services. The country has become a hotbed for emerging technologies such as artificial intelligence, machine learning, blockchain, and fintech, attracting global investors looking to capitalize on India's expertise and innovation in these areas.

The Indian government has introduced several initiatives to promote entrepreneurship, innovation, and foreign investment in startups, fostering a conducive environment for investment. India has made significant strides in improving its ease of doing business rankings, implementing reforms to streamline regulatory processes, reduce bureaucracy, and enhance investor confidence. Successful exits through acquisitions and IPOs have validated the maturity and growth potential of Indian startups, attracting global attention and investment.

Indian startups are increasingly forming strategic partnerships and collaborations with multinational corporations, foreign investors, and international organizations to access capital, expertise, and market opportunities. These collaborations enhance the visibility and credibility of Indian startups on the global stage, facilitating foreign investment and partnerships.

Overall, the attraction of foreign investment and global recognition regarding startups in India is driven by the country's large market potential, emerging technologies, supportive government policies, improving business environment, successful startup ecosystem, and strategic collaborations. As India continues to position itself as a leading destination for innovation and entrepreneurship, foreign investors are expected to play a significant role in fueling the growth and success of Indian startups in the years to come.

### **Conclusion**

The research paper titled "Role of Startups in Driving Technological Advancement in the Indian Economy" sheds light on the significant role played by startups in driving innovation, economic growth, and shaping the technological landscape of India. Startups in India leverage emerging technologies and disruptive business models to address market needs and drive progress across various sectors. They contribute significantly to economic growth by generating

employment, fostering entrepreneurship, and attracting investment. However, startups face challenges, including regulatory hurdles and funding constraints. Successful startups adopt strategies to navigate challenges and capitalize on opportunities, like leveraging government support programs and embracing emerging technologies. The future outlook for startups in driving technological advancement in the Indian economy remains promising, with ample opportunities for growth, innovation, and impact. Startups can continue to lead India towards a future characterized by inclusive, sustainable, and technology-driven prosperity. However, sustained efforts from policymakers, investors, academia, and industry stakeholders are essential to support the startup ecosystem, ensuring its resilience, dynamism, and long-term success.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## India's historical role in global economy

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### Abstract

India, with its rich historical legacy, has played a pivotal role in the global economy across different regions. From the ancient trade routes of the Silk Road to the contemporary era of economic liberalization, India's economic contributions have been diverse and impactful. This paper explores India's historical engagement with the global economy, tracing its evolution through key periods. The medieval era witnessed the flourishing of trade along the Silk Road and the Indian Ocean, with Indian spices, textiles, and knowledge contributing to global exchanges. During the colonial period, India's economic landscape underwent transformative changes, marked by British exploitation and the emergence of cash crops. The struggles for independence laid the groundwork for post-independence economic policies, reflecting India's commitment to self-reliance and economic development. The economic liberalization of 1991 marked a significant turning point, opening India to the global economy. The information technology boom in the late 20th century positioned India as a global IT hub, influencing international trade dynamics.

**Keywords:** liberalization, emergence, transformative, contemporary

### Introduction

India has had a rich historical role in the global economy, with periods of economic prosperity and influence dating back centuries. Here are key aspects of India's historical role in the global economy with some references for further exploration:

### Ancient trade and commerce

India was a major center of trade along the Silk Road and Spice Route, facilitating exchanges between Europe, the Middle East, and East Asia.

#### 1. Silk road

India was a prominent player in the Silk Road trade routes that connected the East and West.

Indian textiles, spices, and precious stones were highly sought after along these routes.

#### 2. Spice trade

India was a major hub for the spice trade, with traders from the Middle East and Europe seeking Indian spices such as pepper, cinnamon, and cardamom.

The spice trade played a crucial role in establishing maritime trade routes.

#### 3. Maritime trade

Indian traders engaged in maritime commerce, connecting with Southeast Asia, China, and the Mediterranean.

Ports like Bharuch, Kalyan, and Arikamedu were important centers of maritime trade.

#### 4. Roman and Greek trade

Ancient Rome and Greece had extensive trade relations with India, importing Indian spices, textiles, and gemstones.

#### 5. Buddhist and Hindu trade routes

Buddhist and Hindu merchants contributed to the spread of Indian goods and culture, establishing trade routes to Southeast Asia, China, and beyond.

#### 6. Monsoon winds and navigation

The use of monsoon winds facilitated maritime trade between India and regions like Arabia and East Africa.

Advanced navigation techniques allowed traders to navigate the Indian Ocean.

#### 7. Indus valley civilization

The ancient Indus Valley Civilization (around 3300–1300 BCE) engaged in trade with Mesopotamia, showcasing early economic activities.

### Mughal empire

The Mughal Empire (16th to 19th centuries) was known for its economic prosperity, with India contributing significantly to global trade in textiles, spices, and handicrafts.

**a) Economic prosperity**

The Mughal Empire, particularly during the reigns of Akbar, Jahangir, and Shah Jahan, experienced economic prosperity. The empire was known for its rich resources, including agricultural wealth, minerals, and skilled craftsmanship.

**b) Trade and commerce**

The Mughal Empire was strategically located along the Silk Road trade routes, connecting East Asia to Europe.

Major cities like Agra, Delhi, and Lahore became vibrant centers of trade and commerce, attracting merchants from different parts of the world.

**c) Agricultural innovation**

Akbar implemented policies to improve agricultural productivity, including the introduction of the "Zabt" system, which fixed land revenue based on crop assessment.

These agricultural reforms contributed to increased production and economic growth.

**d) Art and craftsmanship**

The Mughals were patrons of the arts, and their support for craftsmanship, including textiles, ceramics, and jewelry, contributed to the flourishing of artisanal industries.

The export of Mughal artistic products had an impact on global trade.

**e) Textile industry**

The Mughal Empire was renowned for its high-quality textiles, particularly in the production of intricate fabrics like muslin and brocades.

These textiles were highly sought after in international trade, contributing to the empire's economic influence.

**f) Global trade networks**

Mughal rulers actively engaged in diplomatic and economic relations with various regions, including Central Asia, the Middle East, and Europe.

Trade networks extended to Ottoman Turkey and Safavid Persia, facilitating the exchange of goods and ideas.

**g) Influence on European trade**

Mughal India was a crucial player in the global trade networks, attracting European powers, including the Portuguese, Dutch, and later the British, who sought to establish trading relationships with the empire.

**Colonial era**

British colonial rule (18th to mid-20th century) had a profound impact on India's economy, transforming it into a supplier of raw materials for the British Empire.

**a) Economic exploitation**

The British East India Company, established in the early 17th century, played a pivotal role in India's economic exploitation. Initially focused on trade, the company gradually became involved in territorial and administrative control.

The extraction of resources, including raw materials and agricultural products, for the benefit of the British Empire had a significant impact on India's economy.

**b) Mercantilist policies**

British mercantilist policies aimed to extract wealth from the colonies to benefit the home country. India became a source of raw materials and a market for British manufactured goods.

The economic relationship was characterized by a trade imbalance, with India exporting raw materials and importing finished goods.

**c) Agricultural changes**

The introduction of cash crops like indigo, opium, and cotton for export disrupted traditional agricultural practices, leading to economic challenges for Indian farmers.

The cultivation of cash crops was driven by the demand for raw materials in the British textile industry.

**d) Railways and infrastructure**

The British invested in infrastructure development, including the construction of railways, telegraph lines, and ports.

While these projects were ostensibly aimed at facilitating trade, they primarily served British economic interests and administrative control.

**e) Deindustrialization**

The British policies led to the decline of traditional Indian industries, such as textiles, which faced stiff competition from British manufactured goods.

India transformed from a manufacturing hub to a supplier of raw materials.

**f) Financial drain**

The economic policies of the British resulted in a significant financial drain from India to Britain. The imposition of heavy taxes, trade restrictions, and the exploitation of resources contributed to this drain.

**g) Impact on global trade**

India's role in global trade changed during the colonial era, with the country becoming a supplier of raw materials to the British Empire.

The colonial economic structure was part of a larger global system shaped by European colonial powers.

**h) Emergence of plantation economy**

The establishment of plantations for cash crops, such as tea and coffee, contributed to a shift in the Indian economy and its integration into global markets.

**Post-independence economic policies**

After independence in 1947, India adopted socialist economic policies, focusing on self-sufficiency and import substitution.

**a) Nehruvian era (1947-1964)**

- **Economic philosophy:** India's first Prime Minister, Jawaharlal Nehru, favored a socialist approach to economic development, emphasizing state intervention and planning.

- **Industrialization:** The focus was on rapid industrialization through the establishment of public sector enterprises, known as the "mixed economy" model.



- **Import substitution:** Policies were oriented towards import substitution industrialization (ISI), aiming to reduce dependence on foreign goods.

#### b) Indira Gandhi era (1966-1984)

- **Nationalization:** The government, under Prime Minister Indira Gandhi, nationalized major banks and industries, expanding the public sector's role in the economy.
- **Green revolution:** Agricultural policies were introduced to achieve food self-sufficiency, leading to the Green Revolution.
- **Economic planning:** A series of Five-Year Plans were implemented to guide economic development.

#### c) Liberalization and economic reforms (1991 onward)

- **Balance of payments crisis:** India faced a severe economic crisis in 1991, leading to a balance of payments crisis and necessitating economic reforms.
- **Liberalization:** The government, led by Prime Minister Narasimha Rao and Finance Minister Manmohan Singh, initiated economic liberalization measures, including trade and investment reforms.
- **Globalization:** India embraced globalization, liberalizing trade, opening up to foreign direct investment (FDI), and dismantling the License Raj.
- **Privatization:** The privatization of state-owned enterprises and industries gained momentum, promoting efficiency and competition.
- **Technology and services:** The IT and services sector experienced significant growth, contributing to India's emergence as a global technology hub.

#### Continued reforms and policy adjustments (2000s onward)

- **Infrastructure development:** Emphasis on infrastructure development, including the construction of highways, ports, and airports, to facilitate economic growth.
- **Social programs:** Concurrent focus on social programs, poverty alleviation, and rural development to address socio-economic disparities.
- **Goods and Services Tax (GST):** Implementation of the GST in 2017 aimed at simplifying and unifying the indirect tax system.
- **Recent developments**
  - **Make in India:** An initiative launched to promote manufacturing and attract foreign investment.
  - **Digital India:** Emphasis on digitization, technology adoption, and e-governance to drive economic growth.
  - **Atmanirbhar Bharat (Self-reliant India):** A recent initiative focusing on economic self-sufficiency and reducing dependency on imports in key sectors.
  - **Global economic integration:** India has increasingly integrated into the global economy through trade agreements, participation in international organizations, and collaborations in areas like technology and research.

The information technology, pharmaceutical, and services sectors have become significant contributors to global trade.

#### Economic reforms (1991 Onward)

India implemented economic liberalization in 1991, opening up its economy to globalization, trade, and foreign investment.

#### Background and crisis (1991)

- **Balance of payments crisis:** A severe external payments crisis in 1991 led to dwindling foreign exchange reserves, necessitating urgent economic reforms.
- **External debt:** High levels of external debt and trade imbalances were key contributors to the crisis.
- **Liberalization**
  - **Trade liberalization:** Reduction of trade barriers, lowering of tariffs, and the gradual opening of the economy to international trade.
  - **Foreign exchange liberalization:** Relaxation of foreign exchange controls, leading to a more market-oriented exchange rate system.
- **Globalization**
  - **Foreign Direct Investment (FDI):** Policies were liberalized to attract foreign direct investment across various sectors.
  - **Integration into global markets:** Greater integration into global markets through increased exports and imports.
- **Privatization**
  - **Public sector reform:** Initiation of privatization programs to reduce the role of the public sector in key industries.
  - **Disinvestment:** Sale of shares in state-owned enterprises to private investors.
- **Industrial policy reforms**
  - **Deregulation:** Reduced industrial licensing and fewer restrictions on capacity expansion for industries.
  - **Encouragement of competition:** Measures to promote competition and efficiency in various sectors.
- **Financial sector reforms**
  - **Liberalization of interest rates:** Transition to a market-determined interest rate regime.
  - **Banking sector reforms:** Introduction of prudential norms, measures to strengthen the banking system, and the entry of private and foreign banks.
- **Fiscal reforms**
  - **Tax reforms:** Rationalization and simplification of the tax structure, including the introduction of the Goods and Services Tax (GST) in 2017.
  - **Reduction in subsidies:** Phasing out of various subsidies to improve fiscal discipline.

#### Technology and services sector growth

- Information technology (IT):** The IT and software services sector experienced exponential growth, becoming a global leader.
- Services sector:** Growth in services, including outsourcing, telecommunications, and finance, contributing significantly to the economy.
- Impact on global economy-**
  - **Increased foreign investment:** The liberalization of FDI policies attracted foreign investments, making India an increasingly attractive destination for global businesses.

- **Trade integration:** Greater openness to international trade led to increased exports and imports, contributing to India's participation in the global supply chain.
- **Economic growth:** India's economic reforms fueled higher economic growth rates, attracting global attention and investments.

### Information technology and services

India's IT sector has played a crucial role in the global economy, providing outsourcing services and contributing significantly to the technology industry.

#### a) Global IT services hub

India has become a major outsourcing destination for IT services, including software development, maintenance, and support.

Leading Indian IT companies, such as Tata Consultancy Services (TCS), Infosys, and Wipro, are globally recognized for their expertise and services.

#### b) Software development and innovation

Indian software developers and engineers contribute to global software development and innovation.

Indian startups are gaining recognition for their contributions to emerging technologies like artificial intelligence, blockchain, and cybersecurity.

#### c) Outsourcing and offshoring

India has been a preferred destination for global companies looking to outsource IT services due to its skilled workforce, English proficiency, and cost-effectiveness.

Business Process Outsourcing (BPO) services, including customer support, data entry, and finance, have also contributed to India's prominence in the global outsourcing market.

#### d) Technology talent pool

India boasts a large and skilled pool of IT professionals, including software engineers, data scientists, and IT consultants.

Indian IT professionals are employed globally in various technology roles.

#### e) Government initiatives

The Indian government has implemented initiatives to promote the IT sector, including policies to encourage foreign investment, tax incentives, and infrastructure development. Initiatives like "Digital India" aim to accelerate the adoption of digital technologies across the country.

#### f) Startups and entrepreneurship

India has a thriving startup ecosystem in the technology sector, with numerous startups focusing on areas like fintech, healthtech, e-commerce, and emerging technologies.

Government-supported initiatives, such as "Startup India," aim to foster entrepreneurship and innovation.

#### g) Mobile technology and internet adoption

The widespread adoption of mobile technology and increasing internet penetration have led to the growth of mobile app development, e-commerce, and digital services.

Mobile technology has facilitated financial inclusion, education, and healthcare services.

#### h) E-commerce and digital payments

India has witnessed significant growth in e-commerce platforms, such as Flipkart, Amazon, and others, transforming the retail landscape.

Digital payment systems and mobile wallets have gained popularity, contributing to a cashless economy.

#### i) Research and Development (R&D)

Indian IT companies are investing in research and development to stay competitive and innovative.

Collaborations with global research institutions and partnerships with multinational corporations contribute to advancements in technology.

#### j) Global collaborations and partnerships

Indian IT companies collaborate with global corporations for joint ventures, technology partnerships, and co-development projects.

Indian professionals are often part of international teams working on cutting-edge technologies.

#### k) Impact on the global economy

India's IT industry has a significant impact on the global economy by providing cost-effective and high-quality services to businesses worldwide.

It has facilitated digital transformation across various industries, enhancing efficiency and competitiveness.

### Bilateral and multilateral trade agreements

India's participation in trade agreements, such as BRICS and WTO, has influenced its economic relationships globally.

#### Bilateral trade agreements

##### • India-United states trade agreement

Bilateral trade relations between India and the United States involve ongoing discussions to address trade imbalances, tariff issues, and promote greater market access for goods and services.

##### • India-China comprehensive economic dialogue

India and China engage in bilateral trade agreements to strengthen economic ties, address trade barriers, and explore areas of mutual cooperation in trade and investment.

##### • India-Australia comprehensive economic cooperation agreement

India and Australia have ongoing discussions for a comprehensive economic cooperation agreement, focusing on areas like trade in goods and services, investment, and economic cooperation.

##### • India-Russia bilateral trade agreement

India and Russia have historically maintained strong economic and strategic ties, with bilateral trade agreements covering areas such as defense, energy, and technology.

##### • India-Japan economic partnership agreement

Bilateral trade agreements between India and Japan aim to enhance economic cooperation, reduce trade barriers, and promote investments in various sectors.

## Multilateral trade agreements

### 1. World Trade Organization (WTO)

India is a member of the WTO and actively participates in multilateral trade negotiations. WTO agreements cover various aspects, including trade in goods (GATT), services (GATS), and intellectual property rights (TRIPS).

### 2. ASEAN-India Free Trade Area (AIFTA):

India has a free trade agreement with the Association of Southeast Asian Nations (ASEAN), known as AIFTA. It aims to promote economic integration and reduce trade barriers among member countries.

### 3. Regional Comprehensive Economic Partnership (RCEP)

India was part of the negotiations for RCEP, a regional trade agreement involving Asia-Pacific nations. However, India withdrew from the agreement in 2019, citing concerns over its impact on domestic industries.

### 4. South Asian Free Trade Area (SAFTA)

SAFTA is a regional trade agreement among South Asian countries, including India. It aims to reduce tariffs and trade barriers to promote economic integration within the region.

### 5. Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

While not currently a member, India has expressed interest in joining CPTPP, a trade agreement involving Pacific Rim countries. Membership could provide increased access to markets in the Asia-Pacific region.

### 6. India-European Union free trade agreement

Ongoing negotiations between India and the European Union aim to establish a comprehensive free trade agreement covering various aspects of trade, including goods and services.

## Impact on the global economy

### a) Market access and trade growth

Bilateral and multilateral trade agreements facilitate market access, promoting trade growth and creating opportunities for businesses across borders.

### b) Economic integration

Participation in these agreements contributes to regional and global economic integration, fostering collaboration and interdependence among countries.

### c) Reduced trade barriers

Trade agreements often aim to reduce tariffs, non-tariff barriers, and trade restrictions, creating a more open and conducive environment for global commerce.

### d) Strengthening diplomatic ties

Beyond economic considerations, trade agreements play a role in strengthening diplomatic relations and promoting goodwill among nations.

### e) Supply chain dynamics

Participation in trade agreements influences global supply chain dynamics, with countries strategically positioning

themselves to optimize production and distribution networks.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Impact of banks' lending on their sustainability: Indian evidence

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### Abstract

The objective of the paper is to examine the effect of lending function on sustainability of Indian banks in long run. Two variables, namely, return on equity (ROE) and return on assets (ROA) are used to measure long term profitability and sustainability. The paper is based on secondary data, collected from RBI publications, websites, and Bloomberg database. Indian banks are considered for study. OLS linear regression model is used. The paper reveals that lending growth is positively related to long term sustainability. There is significant relation between (i) ROA and ROE and (ii) ROA and deposit growth. Deposit and loan growth have not significant effect on ROE and ROA. In long run, the sustainability of banks is significantly affected by lending function.

**Keywords:** lending, profitability, sustainability, banks, India

### 1. Introduction

A country's economy rests on the financial backbone known as banks. The Indian financial system has a huge network of banks. If economy is considered as a human body, banks are the blood flowing in the body. The financial system of India constitutes of a wide network of a large number of banks. The banking sector plays a pivotal role in blossoming of a country's economy. With the help of various financial services, banks provide impetus to economic development of a country. Banks facilitate the smooth flow of funds by collecting it from the lenders and issuing it to the borrowers. A developing country like India requires a vast network of banks and financial intermediaries who can efficiently procure savings from the public and allocate those funds as credit for productive purposes in an efficient manner, thus, bolstering the economy's growth.

Commercial Banks also help in credit creation by advancing loans from deposits obtained from public. In order to allow the banks to make the best use of available funds and advance credit to those who need funds, RBI introduced a monetary tool, named as Credit-Deposit (C-D) ratio. The credit-to-deposit (CD) ratio is the ratio of loans advanced by the banks from their assets viz. the deposits received. CD ratio signifies how efficiently the commercial banks are allocating the received deposits. After keeping the mandatory portion out of the deposits as Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR) with the RBI, the banks can assign the remaining funds to various sectors as credit. If the ratio is higher it means more loan is being issued from the deposits, thus increasing the income for the banks. But it also creates an additional pressure on existing resources and the liquidity of

the banks diminishes. But Incremental Credit – Deposit Ratio (ICDR) is of more concern to RBI. ICDR measures the absolute growth in advancement of credit as a ratio of absolute growth in the amount of deposits generated. If ICDR becomes more than 100 percent, it is felt as a concern by RBI because it means that the banks are finding it difficult to get more deposits in order to advance more loans and this can suppress the financial stability of the banking sector.

### 2. Literature review

Verma & Kumar (2007) <sup>[7]</sup> compared the C-D ratio performance of scheduled commercial banks of Rajasthan, Maharashtra, and Gujarat. The results revealed that the C-D ratio of Maharashtra has been well as compared to a lower C-D ratio observed in other states such as Rajasthan and Gujarat. Kumar & Verma (2008) <sup>[3]</sup> studied the efficiency of various groups of banks at advancing loans taking the base as the ownership of the banks. The results showed that the private bank and foreign bank groups displayed better C-D ratio, and the study pointed out a need for immediate attention towards the public sector banks of India. Sangmi and Nair (2010) <sup>[6]</sup> used the CAMEL Parameters to compare the earnings capacity, asset quality, liquidity and others. The findings showed that both the banks under study, Jammu & Kashmir Bank and Punjab National Bank have chosen judicious policies regarding financial management and these banks have performed significantly with respect to asset quality. Kaur (2012) <sup>[2]</sup> compared the performance of public sector and private sector banks from 2009-2011. The study showed that when compared over the period of study with respect to parameters like total assets, net worth, advances, growth in C-D ratio etc., public



sector banks performed better than private sector banks. Narwal and Pathneja (2015) <sup>[4]</sup> studied the different factors determining the profitability and productivity of the functioning of banks in India. They also compared the profitability and productivity of public sector and private sector banks of India. The results showed no significant difference compared to the profitability of public and private sector banks, but the comparison on the basis of productivity resulted in favour of private sector banks. Aggarwal (2016) <sup>[1]</sup> asserted that the parameters like Credit Deposit Ratio, Investment Deposit Ratio and other variables can help in determining the profitability of Public Sector Banks in India. PSBs have negative Credit Deposit Ratio. So, there arises a need to explain the use of their deposits. Nataraja *et al.* (2018) <sup>[5]</sup> evaluated the performance of major three private sector banks, listed on both the NSE and BSE. The results showed that the financial performance of the selected private banks in India is significantly affected by the bank size, credit risk, operational efficiency asset management and debt ratio.

### 3. Objective and hypotheses

The primary function of banks is to accept deposits and provide loans. The objective of study is to examine the effect of growth in deposits and loans on profitability of Indian public-sector banks (PSBs) in long run. Two variables, namely, return on

equity (ROE) and return on assets (ROA) are used to measure profitability.

### 3.1 Hypotheses

H1: There is no significant effect of growth in deposits on ROE in long run.

H2: There is no significant effect of growth in deposits on ROA in long run.

H3: There is no significant effect of growth in loans on ROE in long run.

H4: There is no significant effect of growth in loans on ROA in long run.

### 4. Research methodology

The sample of public sector and private banks is chosen. The study covers period from 2010 to 2023. It is grounded on secondary data, collected from RBI publications, websites, and Thomson Reuters Eikon database. Simple linear regression model is used to achieve the objective.

### 5. Data collection and analysis

**ROE:** It measures the return available to equity-shareholders. Table 1 shows that Indian bank has the highest mean ROE followed by Canara Bank. The least mean ROE is observed in Central Bank of India (7.5%).

**Table 1:** ROE of PSBs (%)

PSBs	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
SBI	22.14	18.22	15.85	15.96	17.27	16.40	15.09	12.83
PNB	24.32	19.94	16.58	15.56	18.26	22.33	23.19	22.14
BOB	20.32	13.66	12.96	13.29	15.30	19.32	21.90	23.62
Canara	29.34	23.24	19.62	16.59	16.64	17.53	21.73	22.78
CBI	47.19	20.07	12.25	19.91	12.84	10.52	18.25	13.14
Allahabad	33.87	27.43	23.17	18.19	19.92	13.84	18.90	18.35
BOI	26.91	7.16	14.90	19.86	23.47	25.38	12.72	15.85
Indian Bank	30.68	16.90	22.36	25.97	24.16	20.79	20.47	19.64
UCO	28.96	17.86	8.68	12.34	14.75	16.20	22.08	14.36
Union bank of India	25.19	21.46	16.52	17.34	22.13	21.46	21.65	17.83

PSBs	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean
SBI	16.18	15.49	10.41	11.01	7.15	0.12	-2.04	12.81
PNB	19.40	15.56	9.97	8.48	-8.80	2.79	-28.24	12.10
BOB	20.85	16.99	14.06	9.80	-11.99	4.24	-4.21	12.67
Canara	15.38	12.32	9.50	9.14	-8.03	4.05	-11.04	13.25
CBI	4.74	7.34	-8.57	4.15	-7.71	-13.40	-28.22	7.50
Allahabad	19.15	10.88	10.06	5.20	-5.15	-1.86	-33.64	11.89
BOI	13.96	12.29	10.81	6.36	-18.84	-4.39	-16.94	9.97
Indian Bank	17.44	14.50	9.25	7.22	4.77	8.57	7.25	16.66
UCO	15.60	8.44	15.83	9.57	-22.33	-14.64	-32.02	7.71
Union bank of India	12.79	13.17	9.23	9.07	6.32	2.43	-21.13	13.03

**ROA:** It measures the efficiency of management in using assets to generate revenue. Table 2 shows that Indian bank has the

highest mean ROA followed by Bank of Baroda. The least mean ROA is observed in Central Bank of India (0.17%).

**Table 2:** ROA of PSBs (%)

PSBs	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
SBI	1.10	0.95	0.85	0.88	1.00	0.96	0.87	0.72
PNB	1.26	1.19	1.11	1.04	1.20	1.37	1.40	1.31
BOB	1.20	0.83	0.85	0.86	0.94	1.15	1.24	1.37
Canara	1.52	1.27	1.10	0.99	1.01	0.94	1.16	1.28
CBI	1.04	0.52	0.37	0.60	0.50	0.42	0.64	0.65
Allahabad	1.55	1.39	1.42	1.23	1.32	0.87	1.12	1.05

BOI	1.23	0.36	0.68	0.89	1.22	1.48	0.69	0.79
Indian Bank	1.42	0.88	1.18	1.57	1.66	1.61	1.68	1.55
UCO	1.11	0.70	0.34	0.46	0.50	0.55	0.81	0.60
Union bank of India	1.30	1.10	0.84	0.88	1.22	1.21	1.17	0.96

PSBs	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean
SBI	0.91	0.92	0.64	0.69	0.44	-0.01	-0.12	0.72
PNB	1.16	1.02	0.66	0.55	-0.54	0.12	-1.66	0.75
BOB	1.28	1.02	0.80	0.54	-0.71	0.25	-0.26	0.76
Canara	0.90	0.74	0.56	0.54	-0.48	0.21	-0.67	0.74
CBI	0.25	0.41	-0.45	0.21	-0.36	-0.76	-1.54	0.17
Allahabad	1.11	0.62	0.56	0.29	-0.31	-0.12	-1.86	0.68
BOI	0.72	0.65	0.53	0.29	-1.02	-0.26	-0.97	0.49
Indian Bank	1.33	1.04	0.66	0.53	0.36	0.67	0.54	1.11
UCO	0.64	0.33	0.69	0.47	-1.14	-0.78	-1.98	0.22
Union bank of India	0.70	0.74	0.50	0.48	0.34	0.13	-1.10	0.70

**Deposit growth:** It measures the growth in liabilities of the banks. Table 3 shows that Bank of Baroda has the highest mean deposit growth followed by Union bank of India. The least mean deposit growth is observed in Central Bank of India (12.70%).

**Table 3:** Deposit growth of PSBs (%)

PSBs	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
SBI	11.10	16.20	7.50	17.00	22.00	30.30	10.30	12.50
PNB	16.00	17.20	16.00	16.90	19.30	26.20	19.40	25.80
BOB	9.80	14.30	15.20	33.40	21.20	26.60	25.10	26.70
Canara	19.80	12.20	20.60	21.90	8.00	21.50	25.60	25.00
CBI	9.20	8.60	9.40	24.50	33.30	19.00	23.50	10.60
Allahabad	23.40	29.50	19.00	22.90	20.30	18.60	24.80	24.40
BOI	10.90	10.30	19.20	27.60	25.50	26.40	21.20	30.00
Indian Bank	12.60	14.30	17.20	15.40	29.60	18.90	21.60	19.90
UCO	25.20	26.10	10.30	18.90	23.20	25.40	22.10	18.70
Union bank of India	13.00	22.30	19.80	15.00	21.90	33.50	22.60	19.00

PSBs	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean
SBI	12.70	15.00	13.00	11.60	9.80	15.30	4.70	13.93
PNB	21.60	3.80	15.60	11.70	10.70	10.40	3.00	15.57
BOB	26.00	22.90	20.20	8.60	-6.90	5.20	-1.60	16.45
Canara	11.50	8.80	18.30	12.60	1.30	3.20	6.00	14.42
CBI	9.40	15.30	6.20	6.50	4.20	11.50	-0.70	12.70
Allahabad	21.00	12.00	6.80	1.30	3.70	0.60	5.80	15.61
BOI	6.60	19.90	24.90	11.70	-3.50	5.20	-3.60	15.49
Indian Bank	14.20	17.60	14.30	4.30	5.40	2.40	14.10	14.79
UCO	6.00	12.60	15.10	7.40	-3.40	-2.80	-9.70	13.01
Union bank of India	10.10	18.40	12.90	6.70	8.40	9.60	8.80	16.13

**Loan growth:** It measures the growth in assets of the banks. Table 4 shows that Indian bank has the highest mean loan growth followed by PNB. The least mean loan growth is observed in Canara Bank (1.02%).

**Table 4:** Loan growth of PSBs (%)

PSBs	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
SBI	16.80	28.90	30.50	30.10	23.80	24.40	15.90	15.70
PNB	17.30	27.60	23.40	29.80	24.20	30.30	20.60	29.60
BOB	0.70	24.90	38.20	39.20	26.90	34.10	22.10	30.60
Canara	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CBI	-1.40	19.20	36.90	37.90	40.70	17.10	23.20	23.10
Allahabad	22.30	37.80	37.80	41.70	20.40	18.30	21.80	30.80
BOI	7.60	22.10	16.40	30.30	33.90	26.00	17.90	26.40
Indian Bank	15.20	30.00	22.50	29.60	37.20	29.00	20.90	21.10
UCO	29.50	34.10	35.20	25.70	17.20	24.90	19.90	20.10
Union bank of India	13.40	38.70	33.10	16.90	19.00	30.00	23.60	26.50

PSBs	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Mean
SBI	15.60	19.60	13.20	7.30	10.50	1.40	3.30	17.13
PNB	21.60	-1.20	12.40	-47.10	132.90	-4.20	4.00	21.41
BOB	25.80	14.20	3.80	4.20	-10.60	4.30	15.40	18.25
Canara	0.00	0.00	0.00	0.00	-1.60	5.30	11.60	1.02
CBI	13.80	16.40	3.40	6.40	-4.30	-22.40	12.10	14.81
Allahabad	18.70	16.50	6.50	6.10	0.00	-2.10	1.10	18.51
BOI	16.90	16.40	28.20	8.50	-10.70	1.90	-6.80	15.67
Indian Bank	20.00	17.00	-61.40	202.00	3.50	-1.00	22.80	27.23
UCO	16.60	11.00	16.60	-7.70	-15.30	2.40	-10.20	14.67
Union bank of India	17.80	17.00	5.80	10.30	5.30	8.40	2.20	17.87

## 5.1 Data analysis

Correlation measures the relationship between two variables. Table 5 shows that deposit and loan growth is positively related to ROA and ROE. At a significance level of 5%, there is

significant relation between ROA and ROE (p-value  $0.000 < 0.05$ ) and ROA and deposit growth (p-value  $0.033 < 0.05$ ).

**Table 5:** Correlation matrix

		ROA	ROE	Loan GR	Deposit GR
ROA	Pearson Correlation	1	.987**	.373	.602*
	Sig. (1-tailed)		.000	.144	.033
	N	10	10	10	10
ROE	Pearson Correlation	.987**	1	.315	.538
	Sig. (1-tailed)	.000		.187	.054
	N	10	10	10	10
Loan_GR	Pearson Correlation	.373	.315	1	.283
	Sig. (1-tailed)	.144	.187		.214
	N	10	10	10	10
Deposit_GR	Pearson Correlation	.602*	.538	.283	1
	Sig. (1-tailed)	.033	.054	.214	
	N	10	10	10	10

\*Correlation is significant at the 0.05 level (1-tailed), \*\*Correlation is significant at the 0.01 level (1-tailed)

## 6. Results

**Results for H1 in Table 6:**  $ROE = -5.322 + 1.153 \text{ Deposit growth}$

The results show that if there is a change of one unit in deposit growth, it causes a change of 1.153 unit in ROE. So, deposit

growth is positively related to ROE. The p-value of t-statistic (1.806) for beta coefficient is 0.109 which is greater than significance level of 5%. Null hypothesis is accepted, indicating that deposit growth has not significant effect on ROE.

**Table 6:** Regression coefficients (ROE as dependent Variable)

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-5.322	9.490		-.561	.590	-27.206	16.562
Deposit_GR	1.153	.639	.538	1.806	.109	-.319	2.626

**Results for H2 in Table 7:**  $ROA = -1.295 + 0.130 \text{ Deposit growth}$

The results show that if there is a change of one unit in deposit growth, it causes a change of 0.130 unit in ROA. So, deposit growth is positively related to ROA. The p-value of t-statistic

(2.135) for beta coefficient is 0.065 which is greater than significance level of 5%. Null hypothesis is accepted, indicating that deposit growth has not significant effect on ROA.

**Table 7:** Regression coefficients (ROA as dependent Variable)

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-1.295	.907		-1.428	.191	-3.385	.796
DEPOSIT_GR	.130	.061	.602	2.135	.065	-.010	.271

**Results for H3 in Table 8:**  $ROE = 9.585 + 0.131 \text{ Loan growth}$   
The results show that if there is a change of one unit in loan growth, it causes a change of 0.131 unit in ROE. So, loan growth is positively related to ROE. The p-value of t-statistic

(0.940) for beta coefficient is 0.375 which is greater than significance level of 5%. Null hypothesis is accepted, indicating that loan growth has not significant effect on ROE.

**Table 8:** Regression coefficients (ROE as dependent Variable)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	9.585	2.473		3.877	.005	3.884	15.287
LOAN_GR	.131	.139	.315	.940	.375	-.190	.451

**Results for H4 in Table 9:**  $ROA = 0.374 + 0.016$  Loan growth  
The results show that if there is a change of one unit in loan growth, it causes a change of 0.016 unit in ROA. So, loan growth is positively related to ROA. The p-value of t-statistic

(1.138) for beta coefficient is 0.288 which is greater than significance level of 5%. Null hypothesis is accepted, indicating that loan growth has not significant effect on ROA.

**Table 9:** Regression coefficients (ROA as dependent variable)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.374	.244		1.536	.163	-.188	.937
LOAN_GR	.016	.014	.373	1.138	.288	-.016	.047

## 7. Conclusion

The study examines the effect of growth in deposits and loans on profitability (ROA and ROE) of Indian public-sector banks (PSBs) in long run. Correlation table shows that deposit and loan growth is positively related to ROE and ROA. There is significant relation between (i) ROA and ROE and (ii) ROA and deposit growth. Regression results show that if there is a change of one unit in deposit growth, it causes a respective change of 1.153 and 0.130 unit in ROE and ROA. If there is a change of one unit in loan growth, it causes a respective change of 0.131 and 0.016 unit in ROE and ROA. All null hypotheses are accepted showing that deposit and loan growth have not significant effect on ROE and ROA. In long run, the profitability of banks is not significantly affected by deposit and loan growth. The results are consistent with Sharifi and Akhter (2016) who concluded that there is no significant impact of credit deposit ratio on ROE and ROA.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Role of government health expenditure in achieving India's sustainable development goals

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### Abstract

To achieve the Sustainable Development Goals, the Government of India has taken several steps to improve health services. Public spending plays a key role in achieving the goals of good health and well-being. While India's national health expenditure is 2.1% of GDP in FY23 and 2.2% in FY22, against 1.6% in FY21 as per the economic survey 2022-22. Various financial reforms were undertaken to improve the fiscal capacity of states. However, India's spending on health was not adequate or sustainable. However, the healthcare expenditure in India has neither been sufficient nor sustainable. The paper highlights public healthcare expenditure and challenges to revenue generation and mobilization by the States. There has been a huge decline in the revenue-generating ability of the states from 1998-99 to 2020-21 which has reduced the fiscal autonomy of the states by making them dependent for 47% of their resources on the Centre. This declining fiscal autonomy of the states and increasing dependence on the centre for resources affect the public expenditure on healthcare which primarily is the subject matter of the state list. Thus, the paper suggests the need and ways for sustainable healthcare financing in India.

**Keywords:** SDG, health and wellbeing, public expenditure, healthcare financing

### Introduction

Humans are at the centre of the Rio Declaration on Environment and Development and Agenda 21 issues pertaining to sustainable development. One of the most important metrics for assessing life quality is health. Without the population's proper health, the dream of sustainable development cannot be realized since the goals of sustainable development cannot be met until the population's health can be maintained. Proper expenditure and sufficient fund are required to work efficiently. Insufficient health status results from unfair and subpar health service delivery in the state, which also contributes to the inadequate development of human capital. This will result in decreased productivity, which will increase poverty and slow down the country's economic growth. If the country does not grow, less money will be spent on social services, especially health care, which will result in subpar state health infrastructure. Therefore, a key component of sustainable development is health. As per Human Development Index (HDI) 2023, India ranked only at 132th place out of 191 countries in terms of health, wealth and education. To accelerate the process of structural transformation, revitalization of healthcare facilities is necessary, and this necessitates more health spending. Without a question, the government of India has improved the country's health situation. However, in terms of health outcomes, India still appears to be falling short of the Millennium Development Goals (MDGs) goal values. According to National Health

accounts states that morbidity and Associated mortality for both infectious and non-infectious diseases is still relatively high, despite a seemingly decreased total number of cases and deaths. Additionally, MMR stays high above the surface. In an instance like this, public spending plays a crucial role for India.

### Literature review

Multidimensional development is addressed in UN Agenda 2030, numerous obstacles prevent the agenda's implementation. One of them is the SDG budgeting challenge, wherein decision-makers must determine how to distribute funds among various government initiatives in order to meet a set of predetermined goals can be accomplished in a specific amount of time (Bhadra, Kausik K and Bhadra, Jayeeta (2012) <sup>[5]</sup>. International agencies like the World Bank and IMF have further confirmed that sustainable financing is essential to accomplishing the Sustainable Development Goals (SDGs) and that development finance will result in the achievement of SDGs (Ghuman, B. S. And Mehta, Akshat. (2009) <sup>[8]</sup>. The author emphasizes that mobilizing domestic resources to achieve public spending on health and education, as well as having limited fiscal resources, are key factors contributing to South Asia's dismal performance in attaining the 2030 Agenda (Asadullah, Savoia, & Sen, 2020) <sup>[3]</sup>. India ranks lowest among the BRICS countries (including Indonesia) in terms of per capita public health spending, indicating that a lack of resources for public health is a major contributing factor to the

country's poor health statistics. (Mitra, 2014) <sup>[11]</sup>. Since the 2030 Agenda places a high priority on health and wellbeing, it is crucial to finance healthcare services and ensure their long-term viability. Public health expenditure promotes sustainable health, emergency preparedness, and investments in health capital to guarantee a more effective use of resources (Sathanalakshmi & Malthi, 2017) <sup>[14]</sup>. Even though the Indian government has repeatedly acknowledged that healthcare spending is low, India's great diversity makes it important to comprehend the pattern of subnational funding and financing on many healthcare variables. According to the data, the state government bears about 60% of the overall health care costs. However, spending is still reliant on the Center for revenue (Rao & Choudhury, 2008). A report by the OECD on the fiscal sustainability of health systems has discussed a challenge that most federal nations face while financing health care. The report highlights that in most of the OECD countries, the second level of the government or sub-national government has been entrusted with the responsibility to spend on public health where the health expenditure is 30%. However, India had a different experience when it came to spending on healthcare. The per capita expenditure on health increased however the expenditure on health as a percentage of GDP decreased from year 2000-01 to 2014-15. The literature review has very well established the proportional relationship between public expenditure and achieving sustainable development goals however, mere financing of the goal is not sufficient as there are various issues in financing the goals sustainably. Furthermore, every country's domestic fiscal policy is the reason for revenue generation and mobilization. The existing literature review covers the impact of public expenditure on healthcare however, ways for sustainable healthcare financing are understudied.

### Public health expenditure and sustainable development

Health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation (WHO 2010). Total healthcare expenditure in India was 4% of GDP in 2012 despite India being one of the most privatized healthcare systems in the world. The low levels of spending will have an adverse impact on the creation of a preventative health infrastructure.

Compared to other nations of the world public expenditure of India on health is very low as shown in the following figure.

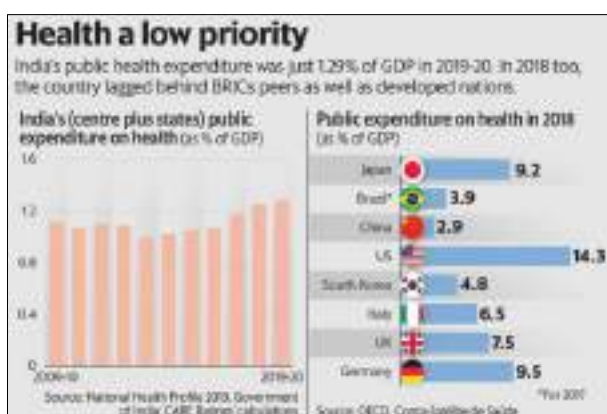


Fig 1

### India's per capita health expenditure

The issue of Health is the most significant challenge in all developing countries like India. India is one of the member of BRICS countries together with Brazil, Russia China and South Africa, which has the potential for being a positive force in world affairs. In terms of health expenditure, India's per capita health expenditure is less than the other BRICS nations as shown in following figure. Among BRICS, Brazil has incurred highest expenditure on health. The main reason of slow progress in health sector in India is the poor access to primary and preventive health care services.



Fig 2

### Public expenditure in health by states and UTs

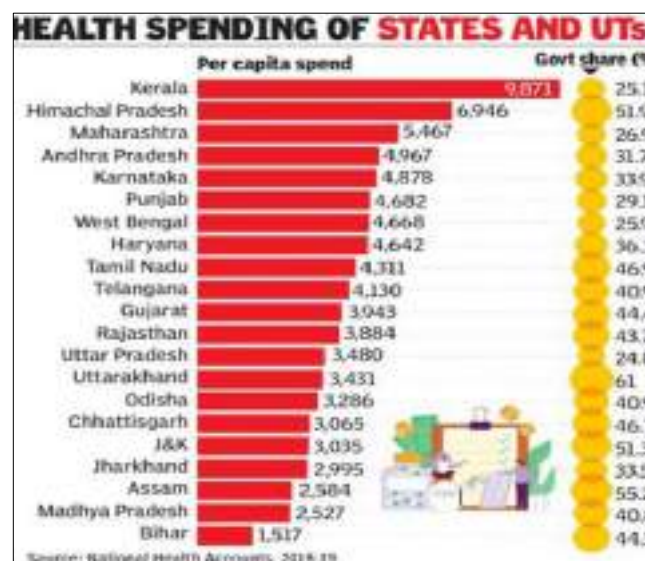


Fig 3

It can be inferred from figure that in Bihar incurred least expenditure in health sector. But every year its expenditure on health goes on rising. Kerala which has the highest HDI rank have second highest expenditure and growth rate. Thus, it can be inferred that more expenditure on health will improves the quality of life of people and hence they will have high HDI rank. Thus, every state has to incur on health to improve their status/ rank in HDI. The Indian health system faces a major challenge of inequalities in health outcomes in different states. However, the public expenditure (Union and State) combined as a percentage of the total GDP of the country is very low. A huge decline in public spending on health in the last 20 years with a slight increase in expenditure that can be observed after 2019, which can be attributed to the COVID-19 pandemic.

Instead of looking at healthcare spending in isolation, it is important to look at healthcare spending as a total expenditure. The percentage of expenditure to total expenditure incurred on healthcare services highlights the priority given to improving healthcare services in India. Though health spending has increased over the years but is substantially low when compared to other social services. It is clear the low priority given to the health sector as compared to all other social sectors. Furthermore, the challenge to the Indian Healthcare sector is not only less expenditure but also interstate spending disparity in healthcare. The uneven distribution of resources between the states is an important cause of uneven health status.

### Result and discussion

The government in India has played an important role in helping the states prioritize health and increase expenditure on healthcare services. National Health Mission has played a complementary role in enhancing state budgets on Health. The increased devolution by the 14th Finance Commission recommendation has increased the fiscal space for prioritizing health expenditure. The Central transfers to states have also enhanced with efficiency in transfers. However, such transfers will not automatically increase health spending and need a system in place. Fiscal space is essential to improve the outcomes in the healthcare sector but prudence in spending is more essential. The states still suffer from fiscal autonomy to achieve their local needs and thereby achieve the national and international agenda. The healthcare sector as a whole requires political and governmental attention. Evidence suggests that the countries with lower GDP as compared to India spend more on public healthcare services. This demonstrates a clear political de-prioritization of health, relative to other social sectors. Therefore, a greater share of the total GDP is required to be invested in healthcare services. An increase in public expenditure on health care with in turn lead to more affordability of the healthcare services. Another challenge that the state government faced was a lack of revenue and utilization autonomy due to the involvement and influence of the central government. Lessons can be taken from other jurisdictions and examples of imposing sector-specific taxes like clean energy fund, and education cess. Similar sector-specific cesses can be charged or a similar super fund for health can be made which can consist of contributions from the private sector and health cess levied by the state and utilized accordingly to cater to local needs and national agenda. Another way to boost the revenue can be the issuance of Health bonds by the state governments, which can be used to implement the state schemes on healthcare. This will create an additional fiscal space for the states which can be mobilised to prioritize healthcare. Moreover, fiscal autonomy to states can be granted while implementing centrally sponsored schemes by making flexible guidelines to suit the state requirements. It is argued that merely increasing the financing for healthcare will not be sustainable until efficiency in spending is achieved.

### Conclusion

Good Health and wellbeing of the citizens is a major driver of economic development of the country. In a developing country, the government plays a key role in keeping their people healthy by providing them with affordable and accessible healthcare

services. Public expenditure on healthcare plays an important part in making government policies effective. The study shows that the healthcare spending in India is far below compared to other countries to achieve the sustainable development goals agenda of 2030. Therefore, the need of the time is to prioritize healthcare services and increase public expenditure on the same. This thorough work has studied the impact of fiscal federalism on public expenditure on healthcare. It can be concluded that the fiscal reforms have led to budget constraints for the states and therefore, there is a huge decline in the autonomy of the states which ultimately impacts healthcare spending, health being a subject matter of the state. Sustainably financing healthcare is important therefore merely increasing the budget for healthcare services won't be sufficient but expenditure must be increased on the right factors This can be achieved only when the states are given financial autonomy and flexibility to spend on the factors that require more attention in their states which will ultimately help in achieving the national agenda.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## The impact of e-finance and digital transformation on global partnership

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### Abstract

This paper examines how E-finance and digital transformation can impact on global partnership in India. The aim of research is to investigate the prospects & constraints of e-finance services & what will be the required steps to be taken to enhance global partnership. A comprehensive analysis of financial technology, digital platforms & changing economic environment, aim to reveal the dynamic ways in which these elements influence & reshape international cooperation. The G20 summit 2023, in Delhi also focused on technology transformation green development, digital public infrastructure & progress on SDGs. The objective of this research is to offer significant insights into the ways in which finance & digital transformation facilitate the development of successful international collaborations by analyzing existing sources of information.

**Keywords:** e-finance, digital transformation, UPI, digital literacy, prospects and constraints

### Introduction

Electronic finance refers to the provision of financial services & market via apps using e-communication, e-tools & internet. On the other hand, it refers to financial innovation using internet & IT that benefits consumers & the financial institutions. [Mohammad Rafee, 2020].

The purpose of the research is to investigate the relationship between the adoption, exchange & present scenario of e-finance in India. Over the past years, the India has witnessed an immense social and economic growth. Today, India has witnessed an unprecedented surge in digital payment transactions. User- Friendly digital payment methods such as BHIM- UPI, IMPS, NETC (National electronic toll collection) have experience substantial growth simultaneously, old payment modes such as debit cards, credit cards, NEFT & RTGS has experienced rapid expansion.

The various schemes were launched by the government to initiate digital transformation such as Digital India (July 1, 2015), Pradhan Mantri Jan-dhan yojana (August, 2014), JAM Trinity- adhaar and mobile (2014), Pradhan Mantri gramini digital saksharta abhiyan (Feb, 2017), DigiDhan Mission (2017). The Digital India programme was launched with the vision of transforming India into a digitally empowered society. It has considerably reduced the distance between government & citizen. The Government of India is committed to making the nation a global leader in digital payment systems

& is working tirelessly towards this goal. The objective is to establish India as one of the world's most advanced & efficient payment market. India is attempting to cultivate new digital ecosystems that can tackle diverse economic & social issues in a range of fields. India might become a global centre for digital innovation & production & create a vibrant digital economy with potential economic worth of upto \$1 trillion by 2025.

### Objectives of the study

- To examine how e-finance has changed in relation to international collaborations.
- To analyze the impact of digital transformation on financial processes in global partnership.

### Literature review

#### 1. World bank global fintech survey (2021)

The followings are reporting main highlights:

- 76% of the world's population now has an account, including 71% of those living in developing nations.
- The gender disparity in account ownership in developing nations has decreased from 9% points, where it was for many years, to 6% points.
- Receiving digital payments, such as salary, transfer from the government or domestic remittances, encourage the usage of additional financial services including money-storage, money- saving & money-lending.

- Digital merchant payments of adults
  - China- 80%
  - Developing countries- 40%
  - Others – 20%

## 2. Energizing finance understanding the landscape report (2020) (5th edition) by sustainable energy for all

In the study SDG Goal 7 (affordable and clean energy) is highlighted. The report's four primary points are as follows:-

- The anticipated investment needed to ensure universal access to energy by 2030 is USD 41million.
- Investment of 4.5 billion dollars annually on electrification & clean cooking.
- 80% of people globally lack access to energy.

## 3. National payment corporation of India (2020)

- NPCI & payment ecosystem launched the “UPI Chalega” campaign to highlight UPI as simple, secure & immediate method of payment (2020).
- In Hyderabad, NPCI constructed a smart data centre that could have important services for the digital India efforts.
- NETC FASTag (2014) to collect toll tax electronically with RFID (Radio Frequency Identification) technology enabled card.
- To promote Financial inclusive Paytm teams up with SBI card & NOIC to provide the next generation of co-brand of RuPay credit cards.

## 4. Lakshika Sammani Chandradevi (2020)

The extent to which consumers have adapted to using digital financial services was the major subject of the study. The researcher used a questionnaire to gather the data, and he used the responses from 125 respondents to draw conclusions. He also separated the respondents into groups based on their gender and age after selecting the sample at random. After analysing his findings, he discovered that 70% of consumers use digital platforms on a daily or weekly basis, and he came to the conclusion that utilising digital platforms has become a need for customer's way of life. The drawback of his study was the general lack of public knowledge.

### Research methodology

This article utilizes secondary data from reliable sources, including financial databases, academic journals; economic survey reports, government websites & global collaboration trends, digital transformation projects & the adoption of e-finance are the subjects of the information gathering.

### Present scenario of e-finance in India

The latest technological revolution is currently experiencing an impact on financial service both consumer & B2B needs globally. The current state of e-finance & transformation in India is highlighted by the points below:

1. The “UPI chalega” campaign was started in 2020 by NPCI & the payment ecosystem to promote UPI as simple & secure immediate payments.

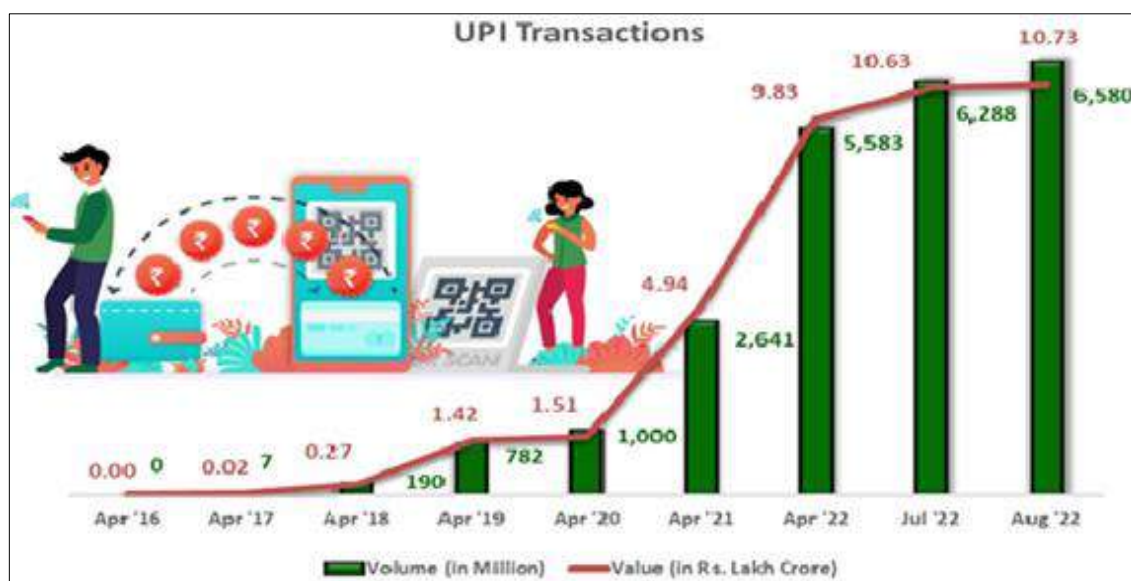


Fig 1

2. In Dec 2022, UPI's transaction volume reached 7400 cr. digital payments of ₹ 126 lakh crore in 2022.
3. In 2022, India ranked first globally for real time payments, with 89.5 billion transactions.

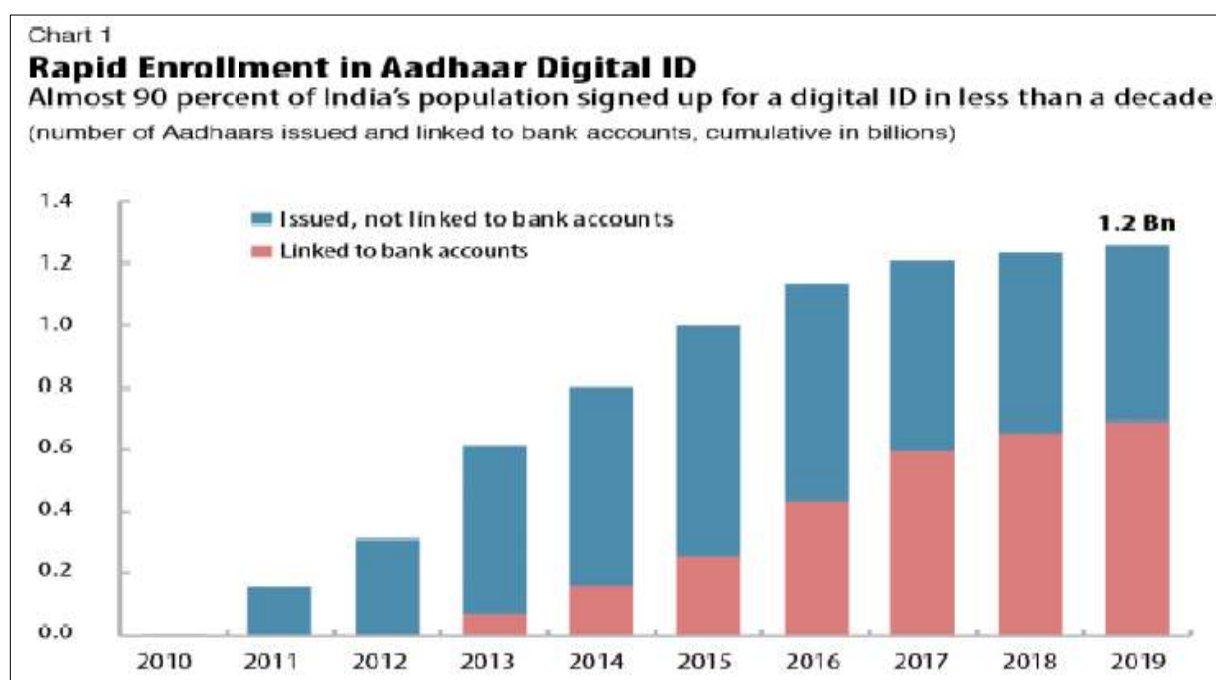


Source- <https://www.theclearinghouse.org>

Fig 2

4. In newly established private banks, digital channels account for about 80% of all consumer transactions.
5. The NITI Aayog led India chain intends to put in place a comprehensive blockchain infrastructure that makes use of

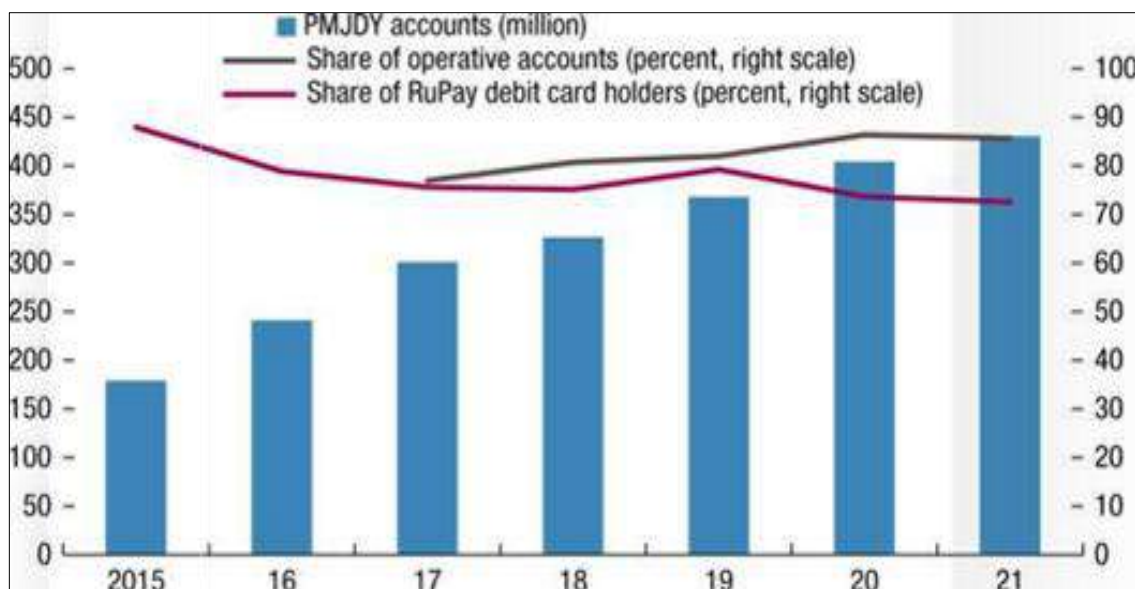
aadhar & “electronic know your customer” in order to decrease fraud, expedite contact enforcement and improve transaction transparency.



Source: Unique identification authority of India

Fig 3

6. By 2025, e-finance usage could increase by 3.7 trillion annually.
7. Around 490 million new bank accounts are opened in India with the assistance of the PMJDY.



Source: India's financial system: building the foundation for strong and sustainable growth; IMF book; June

Fig 4

- Digital finance is expected to generate \$950 billion in GDP & 21 million new employments in India by 2025.

#### Prospects of e-finance & digital transformation

- Digital transformation in finance sector enhanced customer experience going digital can track, attract & engage customers personalized products & services.
- Operational productivity & process agility automation improved productivity & process agility by removing errors caused by humans. It increases operating efficiency & increase precision in repetitive tasks.
- The digital revolution has accelerated due to the COVID-19 pandemic. Digital connectivity will be especially more important in the processes that generate financial service & to replace in-person contact between customers suppliers.
- India's financial system may undergo changes more quickly than in other nations because of the country's history of frugal innovation & the country's quick adoption of digital gadgets.
- Even after the first shocks of demonetization & the COVID-19 lockdown subsided, UPI usage remained high. Users benefit from no transaction fees, easy payments through scanning QR codes.
- Newer companies in online finance, such as Amazon, BHIM & Google pay are more secure, regulated & handle transactions directly with customers.

#### Constraints of e-finance & digital transformation

- The primary concerns in digital finance are fraud & security. With the expansion of online transactions, there is a greater chance of fraud, identify theft & cyber risks.
- Among the main concerns with e-finance is accessibility & inclusivity. Access to financial services is lacking for billion of people globally. A lack of financial understanding & restricted access to technology may be the cause of this startling finding.
- Global partnership used to describe the laws, regulation &

policies that regulate bodied to control electronic financial transactions & activities. Different nations have different regulatory systems, which affects how widely e-finance is adopted.

- New technology may not be adopted as easily by a society that is antiquated or resistive. Diverse regional differences in workplace cultures might affect how quickly & successfully digital transformation projects are implemented.
- Uneven adoption rates of e-finance platforms & technologies might result from disparities in digital literacy. This could lead to a digital divide in financial capabilities as countries with greater digital literacy might take advantage of technology before others.

#### Steps to be taken

The following crucial actions should be taken in order to advance India's e- finance & digital transformation globally:

- Digital literacy programs:** To create a more equitable & accessible global e- finance ecosystem, it is essential to mitigate the differences in digital literacy through education & training programs.
- Regulatory framework:** Provide a transparent & supportive regulatory environment that promotes innovation while guaranteeing safety & consumer protection.
- Cyber security measures:** Set cyber security measures as a top priority & make them stronger to safeguard sensitive data, transactions & digital assets.
- Global collaboration:** Establish global partnership to exchange expertise, work together on projects that will benefit both parties & learn from best practices.
- Infrastructure development:** Make significant investment in sustainable digital infrastructure, such as fast internet access to guarantee general connectivity.
- Interoperability standard:** To enable smooth cross border transactions and cooperation, established & abide by international interoperability standards.



## Conclusion

The effects of digital transformation & e-finance on international relationship were examined in this study. The results demonstrated the crucial role these technology developments play in promoting cooperation, optimizing financial procedures and improving connection worldwide. Global collaboration is changing quickly as a result of companies & financial institutions' continued adoption of digital tools & innovation. It is imperative to recognize the constraints of the research, though it's possible that not every aspect of the changing e-finance landscape was covered by the research. Furthermore, it can be difficult to fully comprehend the impact of technology due to its fast evolution.

The lack of primary data in the study is one of the limitations, as the study solely relies on existing secondary sources. This constraint may impact the ability to draw firsthand conclusions from empirical evidence. Despite these limitations & gaps the overall trajectory points towards a positive future. The global partnership is constantly changing because of e-finance & digital innovation, which promote more cooperation, efficiency & flexibility. There is tremendous opportunity for greater study & useful application as there is a great deal of room for additional study & useful applications.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## MGNREGA- a pathway to sustainable development

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### Abstract

Sustainable development is a very important concept of the defining ideas of society. Sustainable development is a process to fulfill the needs of current generation without compromising with the fulfillment of these needs of future generation. Its a concept to complete present time requirement without compromising with the future requirement. There are a number of Government program running in achieving sustainability of Economy, Agriculture Forest, Income, Health, Gender Equality and many more. MGNREGA is a flagship program to achieve these goals. MGNREGA is not a program but an act against unemployment. It acts as a growth engine for sustainable development of agriculture economy and empowerment of rural poor including women. This paper highlights the role of rural development scheme MGNREGA in achieving the sustainable development goals. The paper show that MGNREGA is doing well in employing rural people and in the eradication of rural poverty. In addition to this, the scheme has contributed rural people and in the elimination of rural poverty. In addition to this, the scheme has contributed towards gender equality.

**Keywords:** sustainable development, MGNREGA, gender equality, empowerment

### Introduction

India is the largest democracy and the most populated country in the world. Most of the population of the country lives in rural areas and depends on agriculture and other allied activities. There are a number of problems in rural areas in India. India's rural population has been facing poverty, unemployment, illiteracy and other problems. After independence, the Government of India has considered rural development as one of its priorities and so launched many policies and programs for developing rural areas. Economic growth is essential to all kinds of development. So, the central and state governments have adopted several schemes to provide wage employment to the poor in rural India.

Sustainable development is an emerging issue of discussion in the whole world. The development can not only depend on economic development as there are other aspects such as social, political and environmental. So, there is a requirement for simultaneous development of all these components there by resulting into the development of a new concept of sustainable development.

According to Brundtland's Report, "Sustainable development is a development and well-off that meets the needs of the present without compromising the ability of future generation to meet their own needs"<sup>[1]</sup>. The sustainable development goals emerged in the year 2012 from the concept of Millennium Development Goals with the main motive to eradicate poverty in the whole world. Further, Sustainable Development Goals cover the issues which affect every aspect of human life. There were interconnected in the Millennium Development Goals

such as no poverty, good health zero hunger, and well being, quality education, clean water and sanitation, and gender equality.

In a country like India, where rural area is directly dependent on climate, the scheme like MGNREGA can help in the regeneration of natural resources and achieve sustainable development. MGNREGA was implemented on February 2, 2006, in 200 (most backward) districts of India. In second phase in 2007-08, the additional 130 districts were covered. Then in the third phase of its implementation in 2008, the act was implemented in whole of India. MGNREGA Act guarantees 100days of employment in a financial year to every rural household whose adult members are willing to perform unskilled manual work. The objectives of the MGNREGA program are to ensure social protection and livelihood security to rural poor <sup>[2]</sup>.

MGNREGA is the most significant poverty alleviation policy implemented for the upliftment and betterment of economically and socially disadvantaged people. It has been working to achieve sustainable development goals, and the scheme's aims align with them. It has been playing a significant role in achieving sustainable development goals.

MGNREGA helped to reduce poverty and the goal of sustainable development can be fulfilled by focusing on different variables of the scheme. The scheme helped to raise the employment and income which facilitated agricultural investment and reduction in migration <sup>[3]</sup>. Through NREGS earnings of women workers had increased and NREGS had also provided more control over their earnings which makes

them economically independent <sup>[4]</sup>. The activities under MGNREGA were found to have reduced the vulnerability of agricultural production, water resources and livelihoods to uncertain rainfall, water scarcity and poor soil fertility <sup>[5]</sup>. MGNREGA work was considered as a high social status symbol by women). The work done under MGNREGA was mostly belongs to land development on private lands, waterworks on common lands, afforestation and horticulture work category. The assets created under the scheme were of good quality and well maintained by the local government or by the users themselves <sup>[6]</sup>. The construction of basic infrastructure facilities under MGNREGS such as road connectivity can be led to rural areas for development.

### MGNREGA and sustainable development

MGNREGA is covering many of the goals of sustainable development. It includes the following:

#### ■ MGNREGA and no poverty

MGNREGA targets rural poverty as it covers the rural poor only. According to the census of India 2011, majority of the population (almost 70 per cent) lives in rural areas of India so, there is need to pay attention on rural poor and this work is done by MGNREGA through the provision of employment opportunities to the population <sup>[10]</sup>.

#### ■ MGNREGA and economic growth

MGNREGA provides the opportunity to the beneficiaries to demand employment and also ensure guaranteed employment to the applicants. The scheme has different features such as the provision of work within the radius of 5km of village, no contractor is allowed at the worksite, different work facilities such as shade, drinking water, rest, crèche facility compensation for delayed payment, provision of unemployment allowance which leads to the decent work environment and economic growth <sup>[11, 12]</sup>.

#### ■ MGNREGA and gender equality

MGNREGA provides equal work opportunities for men and

women both. In the scheme, there should be at least 33 per cent women workers out of total workers, equal wages for both men and women, the share of women mates should be 50 per cent at all the worksites. Therefore, all these provisions promote gender equality.

#### ■ MGNREGA and infrastructure

It helps to develop the infrastructure in rural areas which is advantageous for agriculturists also and for the whole community. The assets such as ponds, wells, tanks, playgrounds, roads etc. All this led to the development of rural infrastructure.

#### ■ MGNREGA and economic inequalities

MGNREGA aims at reducing the rural-urban divide. As urban areas are more developed than rural areas with more work opportunities, developed infrastructure, more facilities in every aspect. MGNREGA helps rural people to stand on par with urban people and boosts up economic equality by providing rural employment and infrastructure.

#### ■ MGNREGA and life on land

There are different works permissible under the scheme to make life on land comfortable, healthy and clean such as:

- Water conservation and water harvesting
- Drought proofing includes (afforestation and tree plantation)
- Irrigation canals including micro and minor irrigation work
- Provision of irrigation facility to land owned by households belonging to scheduled caste and scheduled tribes
- Renovation of traditional water bodies including desilting of tanks
- Land development
- Flood control and protection work including drainage in water logged areas
- Rural connectivity to all weather access <sup>[13]</sup>

### Performance of MGNREGA in India

Table 1

Year	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total employment Provided (Person days) (in crores)	211.42	210.8	218.67	166.28	220.76	224.51	222.27	256.19	254.66	389.09
Person- days provided to women (Percentage)	56.68	57.93	58.07	54.88	55.26	56.16	53.47	54.59	54.78	53.19
Person- days provided to SCs (Percentage)	20.73	21.20	21.99	22.4	22.29	21.32	21.5	20.77	20.38	19.87
Person- days provided to STs (Percentage)	22.56	20.87	19.94	16.97	17.8	17.62	17.61	17.42	18.41	17.95
Person-days provided to differently abled persons	-	-	-	-	-	-	-	461880	462917	606149
Average wage rate per day per person	-	-	-	143.92	154.08	161.65	169.45	179.13	182.09	200.71
Total expenditure (in crores)	36436.50	38495.49	36553.55	36,025.04	44,002.59	58,062.92	63,662.56	69,618.59	68,261.93	111,719.55
Percentage of expenditure on agriculture and allied works	-	-	-	52.81	62.85	66	66.74	66.12	67.54	65.01

Source: www.mgnrega.nic.in

The above table shows that the performance of MGNREGA in India from 2011-12 to 2020-21. It is well known fact that employment is the basis for deletion of poverty and hunger from the society as well as from India. It also helps in bring peace in society as people get busy with their work and there

will be less criminal activities. The data indicates that total employment provided under the MGNREGA scheme was 211.42 crores in the year 2011-12 that has increased to 389.09 crores in the year 2020-21. Inclusion of women in every sphere of life may be social, economic, political is very important. To

empower women in the different areas, MGNREGA is contributing a lot as the share of women in total employment was 56.88 per cent in the year 2011-12 that increased to 58.07 per cent in the year 2013-14 and it has reached 53.19 per cent in the year 2020-21. As MGNREGA focuses on the removal of inequalities and wants to strengthen the marginalized section of society that is why it is important to check the share of SCs and STs in employment provided under the MGNREGA. This table depicts the share of SCs was 20.73 per cent in the year 2011-12 and it has declined to 19.87 per cent in the year 2020-21. Simultaneously, the share of STs has also decreased from 22.56 to 17.95 from the year 2011-12 to 2020-21. Further, the person-days generated to differently abled persons were 461880 in 2018-19 that increased to 606149. Wage rate defines the income generation capacity of the beneficiary. Under the scheme, the average wage rate per day per person was 143.92 in the year 2014-15 that has increased to 200.71 in the year 2020-21. The table further shows that the total expenditure under the MGNREGA scheme in India was Rs. 36436.50 crores in the year 2011-12 that reached to Rs. 111719.55 crores in the year 2020-21. The agriculture sector is the major contributing sector of GDP of the Indian economy. This sector requires much attention. MGNREGA contribution to the agriculture sector is increasing as the share of agriculture and allied sector under the total expenditure has increased from 52.81 per cent in the year 2014-15 to 65.01 in the year 2020-21. The National Rural Employment Guarantee Act (NREGA) is the first program that gets changed into an act, which guarantees 100 days of wage employment in a year to every household whose adult members volunteer to do unskilled, manual work (NREGA, 2005). The basic objectives of MGNREGA 2005 are to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in every financial year to every household. [www.nrega.nic. in] This work guarantee can also serve other objectives generating productive assets, protecting the environment, rural empowerment of women, reducing rural-urban migration and fostering social equity <sup>[7]</sup>. Thus the objectives of the program include:

- Ensuring social protection for the most vulnerable people living in rural India through providing employment opportunities.
- Ensuring livelihood security for the poor through creation of durable assets, improved water security, soil conservation and higher land productivity.
- Strengthening drought-proofing and flood management in rural India.
- Aiding in the empowerment of marginalized communities, especially women, Scheduled Castes (SCs) and Scheduled Tribes (STs), through the process of a rights- based legislation.
- Strengthening decentralized, participatory planning through convergence of various anti-poverty and livelihoods initiatives.
- Effecting greater transparency and accountability in governance.

## Conclusion

Thus, we can see that Sustainable development does not focus solely on economic issues rather it includes the three general policy areas namely economy, environment and society. Sustainable Development maintains a balance between the various human needs like the desire to have upgraded lifestyles and feeling of well-being on one hand, and preserves natural resources and ecosystems on another hand <sup>[8]</sup>. Thus, Sustainable Development is a concierge of the divergent factors needed for the existence of the present and future generations. It is generally accepted that sustainable development cannot be achieved without a substantial reduction in the number of people who are poor. If we leave poverty to prevail in Indian societies, then the dream of sustainable development can never be achieved. Sustainable development in India can be attained only if problem of poverty is resolved first. Thus, MGNREGA is right-based approach to poverty reduction and has showed how human rights being supported by an inclusive legal framework and realized in a sustainable way. Convergence is employed as leverage and can be employed as a strategic approach to reduce poverty and promote sustainable development <sup>[9]</sup>. The employment provided under the scheme of MGNREGA can be better used for the fundamentals of achieving development. India since inception of MGNREGA has made significant progress in reducing poverty, hunger and food nutrition which is the basic step of achieving sustainable development. It is suggested that being a part of society it is our responsibility to promote sustainable development by making use of alternate resources rather than making our wants unlimited. Moreover, the government should also take steps to bring together various institutes like private, public NGO's and educational institutes for this mission and must consider MGNREGA as a junction for implementing various policies for achieving sustainability <sup>[14-16]</sup>. The government should not go for making further new policies on sustainable development as they remain idle rather than the government should make proper efforts in implementing the already existing policies. It is we who have to decide whether development means affluence or whether development means peace, prosperity and happiness and it is MGNREGA which can be a better strategy for attaining development if implanted suitably.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Global partnership: India's collaboration initiatives for economic & social growth

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### Abstract

India's commitment to global collaboration is integral to its pursuit of economic and social development. Through robust diplomatic efforts, India has forged strategic alliances and partnerships with nations worldwide. These collaborations are underpinned by well-defined policy frameworks that align with India's development goals. The country's diplomatic engagement is marked by active participation in international forums, treaties, and multilateral agreements, reflecting its commitment to global cooperation.

Key partnerships span diverse sectors, encompassing economic, technological, and social dimensions. Diplomatically, India has strengthened ties with both traditional allies and emerging powers, fostering a network of relationships that contribute to global stability and progress. The country's policy frameworks, such as the "Act East" and "Neighborhood First" policies, underscore its commitment to inclusive development and cooperation with neighboring countries. Economically, India has pursued collaborative initiatives through trade agreements, investment partnerships, and joint ventures, fostering economic growth and stability. Socially, India engages in partnerships to address challenges related to healthcare, education, and poverty alleviation, showcasing a commitment to shared global development goals.

In summary, India's commitment to global collaboration is evident through its diplomatic endeavors, well-defined policy frameworks, and strategic partnerships. These efforts not only contribute to the nation's own development but also play a significant role in fostering international cooperation for mutual economic and social progress.

**Keywords:** bilateral agreements, trade partnerships, investment alliances, development cooperation, innovation networks and public-private partnerships

### Introduction

#### Historical perspective

India's historical evolution of global partnerships has witnessed pivotal moments and shifts in approach, significantly influencing its growth trajectory.

#### 1. Post-independence era (1947-1960s)

- India's early years post-independence was characterized by a focus on non-alignment in the Cold War, emphasizing autonomy in foreign policy.
- Economic collaborations were limited, with an emphasis on self-reliance through initiatives like the First Five-Year Plan.
- Social collaborations were nascent, primarily addressing domestic development challenges.

#### 2. Cold war dynamics (1960s-1980s)

- During the Cold War, India navigated a delicate balance between the U.S. and the Soviet Union, securing economic and military aid from both.
- Economic collaborations expanded with foreign aid, but

the focus remained on self-sufficiency and import substitution.

- Limited social collaborations were evident in healthcare and education.

#### 3. Economic liberalization (1990s)

- Economic reforms in the 1990s marked a significant shift, opening up India to global markets and encouraging foreign direct investment.
- The "Look East" policy emerged, signaling a strategic pivot towards stronger economic collaborations with East Asian nations.

#### 4. 21st century globalization (2000s onwards)

- India embraced globalization, fostering economic collaborations through trade agreements, especially with the U.S. and the European Union.
- Bilateral and multilateral engagements increased, reflecting a more proactive diplomatic approach.
- Social collaborations expanded, focusing on issues like public health, education, and sustainable development.

## 5. Contemporary diplomacy and partnerships

- The 21st century saw India engaging in strategic partnerships with countries like the U.S., Japan, and Australia, reflecting a nuanced approach to geopolitical dynamics.
- Economic collaborations evolved with a focus on technology and innovation partnerships, contributing to India's emergence as a global IT hub.
- Social collaborations extended to global health initiatives, climate change, and poverty alleviation, showcasing a commitment to shared global challenges.

### Influence on growth trajectory

- Economic collaborations played a pivotal role in India's transition from a closed economy to a global player, contributing to GDP growth and technological advancements.
- Social collaborations addressed key development challenges, enhancing human capital and societal well-being.
- Shifts in diplomatic strategies and partnerships influenced India's geopolitical standing, contributing to its role as a key player in international forums.

In conclusion, the historical evolution of India's global partnerships reflects a dynamic and adaptive approach, shaping its economic and social growth trajectory over the decades.

## Economic collaboration

### 1. Trade agreements

- **ASEAN (Association of Southeast Asian Nations):** India has entered into a Free Trade Agreement (FTA) with ASEAN countries, aiming to boost economic ties. This collaboration has facilitated increased trade in goods and services.
- **Indo-US trade relations:** Bilateral trade agreements with the United States have expanded, contributing to a diverse economic collaboration. However, trade imbalances have been a challenge.
- **Regional Comprehensive Economic Partnership (RCEP):** Although India initially participated in negotiations, it withdrew from RCEP. This decision reflected concerns about potential adverse effects on certain sectors, including agriculture and manufacturing.

### 2. Investment partnerships

- **Foreign Direct Investment (FDI):** India has actively sought foreign investment, implementing reforms to ease the process. Strategic partnerships with countries like Japan, the U.S., and European nations have resulted in increased FDI across sectors.
- **Bilateral Investment Treaties (BITs):** India has signed BITs with various countries to promote and protect investments. These agreements provide a framework for resolving investment disputes.
- **Make in India initiative:** Launched to encourage manufacturing and attract foreign investment, this initiative has led to increased collaboration with countries investing in India's industrial sectors.

### 3. Joint ventures

- **Defense sector:** Joint ventures with countries like Russia

and Israel have bolstered India's defense capabilities, fostering technology transfer and indigenous production.

- **Automobile industry:** Collaborations with global automobile manufacturers have resulted in joint ventures, contributing to the growth of India's automotive sector.
- **Renewable energy:** Partnerships with countries investing in renewable energy projects have supported India's efforts to enhance its sustainable energy capacity.

### Impact on economic indicators

- **GDP growth:** Economic collaboration initiatives have positively impacted India's GDP growth by promoting trade and attracting foreign investments, leading to increased economic activity.
- **Trade balance:** Trade agreements have influenced India's trade balance, with varying effects. While agreements like ASEAN have contributed to a more balanced trade, challenges persist in certain bilateral relations, impacting trade imbalances.
- **Foreign direct investment:** Initiatives to attract foreign investment have resulted in increased FDI, contributing to economic development, job creation, and technology transfer.
- **Sector-specific impact:** Joint ventures in sectors like defense, automobiles, and renewable energy have enhanced capabilities, driven innovation, and created employment opportunities.

In conclusion, India's economic collaboration initiatives have had a multifaceted impact on economic indicators, contributing to overall growth. While positive outcomes are evident, challenges in trade balances and the need for careful consideration in certain agreements highlight the complexity of managing economic collaborations.

## Social collaboration

### Healthcare initiatives

- **Partnership with WHO:** India collaborates with the World Health Organization (WHO) on various public health initiatives. Joint efforts include disease control programs, vaccination campaigns, and health infrastructure development.
- **Global fund to fight AIDS, tuberculosis, and malaria:** India's partnership with the Global Fund addresses major health challenges. Programs focus on combating infectious diseases, improving healthcare access, and strengthening health systems.
- **Polio eradication campaign:** India successfully collaborated with international organizations, including UNICEF and the Rotary Foundation, to eradicate polio through extensive vaccination campaigns and surveillance.

### Education programs

- **United Nations Educational, Scientific and Cultural Organization (UNESCO):** India collaborates with UNESCO on various education programs, emphasizing inclusive and quality education. Efforts include curriculum development, teacher training, and educational research.
- **Global Partnership for Education (GPE):** India actively participates in the GPE, working towards improving education systems, enhancing learning outcomes, and ensuring access to quality education for all.

- **Development initiatives:** Collaborations with countries like Germany and Japan focus on skill development programs, addressing the need for a skilled workforce and aligning education with industry requirements.

#### Poverty alleviation programs

- **United Nations Development Programme (UNDP):** India collaborates with the UNDP on poverty alleviation programs, emphasizing sustainable development. Initiatives include livelihood enhancement, rural development, and empowerment of marginalized communities.
- **Microfinance partnerships:** Collaborations with microfinance institutions and NGOs aim to uplift economically disadvantaged communities. Microfinance initiatives provide financial inclusion and support entrepreneurship at the grassroots level.
- **National Rural Employment Guarantee Act (NREGA):** While primarily a domestic initiative, India's commitment to poverty alleviation is reflected in programs like NREGA, ensuring a minimum level of employment and income for rural households.

#### Outcomes

**Healthcare:** Successful outcomes include the eradication of polio, improved maternal and child health indicators, and increased access to essential healthcare services in both rural and urban areas.

**Education:** Collaborative efforts have contributed to increased enrollment, reduced dropout rates, and improvements in educational infrastructure. However, challenges remain in achieving equitable access and ensuring quality education for all.

**Poverty alleviation:** Progress has been made in reducing poverty rates, enhancing livelihoods, and empowering marginalized communities. Collaborative programs contribute to sustainable development and social inclusion.

#### Future prospects

##### Economic development

- **Technology and innovation partnerships:** Future collaborations in technology and innovation, especially in areas like artificial intelligence, renewable energy, and biotechnology, could propel India's economic growth and enhance its global competitiveness.
- **Trade diversification:** Exploring new trade partnerships and diversifying export markets could reduce dependence on specific regions, fostering a more resilient and globally integrated economy.
- **Green initiatives:** Collaborating on sustainable and green technologies can position India as a leader in addressing environmental challenges while promoting economic development.

##### Social development

- **Global health security:** Strengthening collaborations in global health security can enhance India's preparedness for pandemics and other health crises. Partnerships in research, vaccine development, and healthcare infrastructure could contribute to global health resilience.

- **Education technology (EdTech):** Increased collaboration in EdTech, including online education platforms and digital learning solutions, could address gaps in education access and quality, particularly in remote and underserved areas.
- **Gender equality programs:** Collaborations focusing on gender equality and women's empowerment can contribute to social development. Initiatives addressing gender-based violence, education for girls, and economic opportunities for women are crucial areas.

#### Sustainable Development Goals (SDGs)

- **Multilateral partnerships:** Strengthening collaborations with international organizations to achieve the UN's Sustainable Development Goals (SDGs) can guide India's efforts in poverty alleviation, environmental sustainability, and social inclusion.
- **Infrastructure development:** Collaborations in infrastructure projects, including smart cities, sustainable transportation, and renewable energy, can contribute to both economic and social development.
- **Global climate initiatives:** Increased collaboration in climate change mitigation and adaptation efforts, including participation in international agreements and partnerships for renewable energy projects, can align with global sustainability goals.

#### Digital and financial inclusion

- **Fintech collaborations:** Partnerships in financial technology can enhance financial inclusion, supporting initiatives like digital payments, access to credit, and promoting a cashless economy.
- **Digital governance:** Collaborations in e-governance and digital governance systems can improve administrative efficiency, transparency, and citizen services, contributing to overall societal development.
- **Cybersecurity collaboration:** As digital ecosystems expand, increased collaboration in cybersecurity is vital to protect critical infrastructure, businesses, and individuals from cyber threats.

#### Global crisis response

##### Humanitarian collaborations

Strengthening partnerships for effective response to humanitarian crises, including natural disasters and conflicts, reflects a global responsibility and contributes to social resilience.

##### Global health partnerships

Ongoing collaborations in global health, especially in vaccine distribution, disease surveillance, and healthcare infrastructure, will be critical for global health security.

In conclusion, the potential for future global partnerships holds immense significance for India's economic and social development. Embracing emerging trends, addressing sustainable development goals, and fostering collaborations in technology, health, education, and sustainability will be instrumental in shaping a positive trajectory for India on the global stage.



## Conclusion

In conclusion, the research underscores the pivotal role of global partnerships in India's pursuit of sustainable economic and social growth. Examining the historical evolution of collaborations revealed India's adaptive approach, navigating shifts in diplomatic strategies and engagement models. The analysis of economic collaboration initiatives, including trade agreements, investment partnerships, and joint ventures, highlighted their tangible impact on key economic indicators such as GDP growth, trade balance, and foreign direct investment.

Moreover, the exploration of collaborative efforts in addressing social challenges-spanning healthcare, education, and poverty alleviation-underscored the significance of international cooperation in achieving positive outcomes. Key partnerships and programs with global organizations and countries have contributed to advancements in public health, education access, poverty reduction, and social inclusion.

Looking ahead, the future prospects emphasize the need for continued and expanded global partnerships. Collaborations in technology, sustainable development, and addressing emerging challenges, such as climate change and global health security, will play a crucial role in shaping India's economic and social landscape. The research highlights the importance of a nuanced approach, focusing on areas like digital inclusion, gender equality, and participation in global initiatives like the Sustainable Development Goals.

In essence, as India continues its journey towards sustainable development, fostering and strengthening global partnerships remains not only a strategic imperative but a key enabler for addressing complex challenges. The collaborative spirit showcased in economic and social realms positions India to leverage international synergies, contributing not only to its own progress but also to the broader global agenda of shared prosperity and well-being.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Role of Pradhan Mantri Jan Dhan Yojna in emerging Indian economic power

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### Abstract

Even after 76 years of independence, a sizable portion of the Indian population is still unbanked, which is a cause for grave concern given the explosive growth of the banking industry in India, both horizontally and vertically. The notion of financial inclusion has been promoted by the Indian government and the Reserve Bank of India in recent years, however the suffering of these financially vulnerable individuals has not shown any discernible impact. In August 2014, Prime Minister Narendra Modi announced a new initiative for lower-income and weaker-section people in his Independence Day speech. This initiative, known as the National Mission on Financial Inclusion (NMFI), aims to alleviate the long-standing financial suffering. The Prime Minister praised the Banks in particular for managing to open a record 1.5 crore new accounts on the first day of the Pradhan Mantri Jan Dhan Yojana on August 28, 2014. This endeavour will undoubtedly significantly contribute to poverty reduction and economic growth, as well as to the mitigation of systemic risk and preservation of financial stability. This essay centres on the significance of financial inclusion and the changes that the Pradhan Mantri Jan Dhan Yojana (PMJDY) would bring about for all parties involved in our nation.

**Keywords:** financial inclusion, weaker section, banking habits, financial services

### Introduction

Money is a basis of our all-financial activities. If we understand the need of money then we must also aware about the need of financial inclusion. Kirkpatrick (2000) says that financial inclusion is an important factor in human development. He further stressed that financial development is considered to be an important factor in the economic growth of the country.

Financial Inclusion, is the way of delivery of economic offerings together and credit with banking offerings and credit he scores at low-cost fee to the huge section of agencies deprived and less-profit agencies, who have a tendency to be excluding. Financial Inclusion takes into consideration the participation of inclined organisations, including weaker sections of the society and low earnings, based on totally on the extent of their attainability.

### History of financial inclusion in India

The concept of financial inclusion introduced by Mr KC Chakraborty, chairman of Indian Bank in 2005. All the households in Mangalam village were provided with banking

facilities for the first time. Relaxation of KYC norms encouraged many Households to get access to banking services. As financial inclusion initiative RBI introduced many schemes like expansion of bank branches, POSBs, sector wise lending, establishment of RRB's, SHG's etc.

Despite of these initiatives, RBI did not reach the expected level of inclusion. Thus, to ensure the greater financial Inclusion it took support from various SHG's and NGO's and requested them to act as intermediaries through use of “Business Facilitator and Business Correspondent Model”.

### Pradhan Mantri Jan Dhan Yojna

Hon'ble, Prime Minister Shri Narendra Modi in his Independence Day Programme speech on 15th August 2014 announced a comprehensive program of Financial Inclusion. Out of which a large number of people were targeted who are currently deprived of primary financial services. Pradhan Mantri Jan Dhan Yojna (PMJDY) is a national mission for financial inclusion to make sure get reach to financial services, namely Banking saving and deposit account. Remittance

Credit, Insurance, Pension in a feasible manner.

This financial inclusion programme run by Department of Financial Services, Ministry of Finance. On the inauguration day 1.5 crore bank accounts were opened under this campaign. The achievements made under PMJDY recognized by the Guinness World Records. Guinness World Records Certificate says "The maximum financial institution accounts opened in 1 week as part of financial inclusion marketing campaign is 18,0996,130 and was achieved by Banks in India from 23 to 29 August 2014."

However as earlier there was also a financial inclusive programme named Swabhiman Yojna which main focal point is laid solely a village however in PMJDY focus on each an rural as well as on urban. However, Swabhiman Scheme's rate of success is very low in comparison to the PMJDY because of less interest of government and lot of formalities to open a bank account which is very easy under PMJDY. Undoubtedly Financial Inclusion plays a vital role in an economy and PMJDY is another tool in this link.

### Review of literature

1. Parth Sarthi Senapati (2018) in their Research Paper: An investigation on budgetary incorporation through PMJDY in Guntur District, he discovered about the current status and the understanding of the people about PMJDY plans and the factors influencing access to money related items. By giving attention to people via money related advise helps him evacuating the trouble seemed in getting too formal budgetary sources.
2. Charan Singh and Gopal Naik (2018), concentrated on the importance of financial consideration after PMJDY by investing Financial Inclusion after PMJDY. A Gubbi Taluk Case Study, Tumkur PMJDY made extraordinary breakthroughs towards almost a 100% households inclusion. The inquiry is trying to seem to be into PMJDYs fulfillment in 6 Gubbi Gram Panchayat. The investigation finds that women, small and peripheral ranchers and rustic folks no usual instruction have opened new records. Rising service centres have adequately run a significant want to promote economic administration of the provincial population.
3. Ranade (2017), tried to point to fintech's capacity and its effect on monetary services. He addressed the position of facts control and its destiny use in conjunction with the infrastructure of Jan-Dhan-Aadhar, Mobile Phones (JAM), that can give a large boost to financial inclusion. The researcher additionally recommended warning approximately the privacy and records possession could be created at some state in the process.
4. Meera *et al* (2017), even as reading monetary include through PMJDY studied that a big quantity of bills has been opened below this scheme. They additionally studied that the high goal of this scheme is to enhance financial inclusion and there may be no confusion that the development of the scheme will have interact to the resting people who don't have bank account.
5. Pillai (2016), considered that PMJDY is an important

pillar in financial inclusion for the Indian economic development. He further said that PMJDY giving its 100% for the abolition of poverty in form of easy monetary services. They also studies that there is more need of exploring its characteristic is particular communities yet.

### An overview of financial inclusion in public sector banks

The policy maker in India have been focusing on financial inclusion of rural and semi-rural areas primarily for three most processing needs.

- **Creating a platform for banking habit:** The lower income category which is also known as weaker section has been constant shadow of financial duress mainly because of the absence of savings. Presence of banking services and products al'm at providing a critical tool to inculcate the habit to save capital formation in the country is also expected to be boosted once financial inclusion measure materialise, as people move away from traditional modes of parking their savings in land, buildings etc.
- **Establishing official credit channels:** So far, the unbanked population of the country are interdependent on informal channels credit like family, friends and moneylender. Availability of adequate and transparent credit from formal banking channels shall allow the entrepreneurial spirit of the masses to increase the output and prosperity.
- **Plug Gaps and leaks in government grants and welfare program:** Even a sizeable amount of money intended for the lowest of the poor does not really get to them. Much of this money is thought to leak and not reach the intended parties as it makes its way through the complex web of government bureaucracy. Government therefore, is pushing for direct cash transfers to beneficiaries through their bank accounts rather than subsidizing products and making cash payments. This laudable effort is expected to reduce government's subsidy bill and provide relief only to the real beneficiaries.

However, illiteracy and the low-income savings and lack of bank branches in rural areas continue to be a roadblocks to financial inclusion in many states and there is inadequate legal and financial structure.

### Conclusion

Financial inclusion through PMJDY is one of the best initiatives ever attempted to end poverty. Any scheme must undergo frequent checks and ongoing reviews in order to succeed. Achieving successful implementation would curb corruption in addition to decreasing poverty. In fact, the NDA government's audacious initial move assisted many in entering the mainstream economy and lessened financial untouchability.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## E-commerce as a new trend in Indian economy (the need of the modern era)

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### Abstract

E-commerce has created a new environment in business transactions using Internet. Electronic commerce generally refers to all forms of transactions relating to commercial activities, involving both organizations and individuals that are based upon the processing and transmission of digitized data, text sound and visual images. Electronic commerce can be seen as the engine of the new economy without e-commerce the necessary technology and culture would not exist to fuel it. E-commerce has attracted many businesses because of its ability to make them more efficient. It eliminates the hassle of manually monitoring the request and orders of customers over the telephone, thereby freeing employees to engage in other tasks.

**Keywords:** e-commerce, internet, digital information, business transactions

### Introduction

Electronic commerce commonly known as e-commerce is a type of industry where the buying and selling of product or service is conducted over electric systems such as the Internet and other computer networks.

E-commerce is the use of electronic communication and digital information processing technology in business transactions to create transform and redefine relationships for value creation between or among organizations, and between organizations and individuals.

E-commerce has created a new environment in business transactions using Internet. It deals with providing information to the consumers regarding products of their internet. It provides a platform of advertisement of products, allows negotiations, order for raw materials, settlement of financial transactions etc.

### Types of e-commerce

The several types of e-commerce models in use today are classified based on the nature of the interaction with players are

1. Business to Consumer (B2C)
2. Business to Business (B2B)
3. Consumer to Consumer (C2C)
4. Consumer to Business (C2B)
5. Business to Employee (B2E)
6. Business to Government (B2G)

### Business to Consumer (B2C)

Business to consumer businesses sell directly a diverse group of products and services to customers. B2C e-commerce between companies and companies involves customers gathering information purchasing physical goods and for information goods, receiving products over an electronic network.

B2C e-commerce reduces transactions costs by increasing consumer access to information and allowing consumers to find the most competitive price for a product or services.

### Business to Business (B2B)

- Business to Business e-commerce holds electronic transactions among and between businesses.
- Business to business environment, purchase, orders, invoices, status, shipping logistics and business contracts handled directly through the network result in increased speed, reduced errors and cost savings.
- Application Service providers development hosting and management of packaged software from a central facility.

### Consumer to Consumer (C2C)

Consumer to Consumer transactions is becoming more to more common. Business involved in C2C e-commerce plays the role of intermediaries, helping individual consumer to sell or rent their assets by publishing their information on the website and

facilitating transactions. Individuals sell a wide variety of service product on the web or through auction sites such as ebay.com through classified ads or by advertising.

### Consumer to Business (C2B)

Consumer to Business is the electronic commerce business models in which consumers can offer product and service to companies, and the companies pay the consumers. C2B modal that is the opposite of B2C used by portals that allow an individual person to publish an offer addressed to multiple sellers. Seller may view offers and take responsibility for them.

### Business to Employee (B2E)

Use of electronic means of communication to communicate with employees e.g. the Internet, remote working. One of the mains goals of business to employee is to improve employee is to improve employee satisfaction and retention. When employee is disengaged or unhappy with their work environment, it can lead to lower morals and higher turnover rates, which can be costly and disruptive to a company operation.

### Business to Government (B2G)

Business to Government (B2G) is sale and marketing of goods and service to federal state or local agencies. For example, a government agency might purchase office supplies or equipment from a business, or contact with a business to provide service such as consulting or it support.

### Advantages of e-commerce

The advantages of e-commerce can be enumerated in following categories.

#### Advantages to customers

- a) **Reduces prices:** Costs of product are reducing since stages along the value chain are decreased. For example, intermediaries can be eliminated by the company directly selling to the consumer instead of distrusting through a retail store.
- b) **Global marketplace:** Consumers can shop anywhere in the world. Currently according to the World Trade Organization there are no custom duties put on products bought and traded globally electronically. This also provides wide selection on product and service to consumers.
- c) **24-Hours access:** Online business never sleep as opposed to brick and mortar businesses. E commerce allows people to carry out businesses without the barriers of time or distance. One can log on to the internet at any point of time, be it day or night and purchase or sell anytime one desire at a single click of the mouse.
- d) **More choices:** Electronic commerce provides consumers with more choices. For example, before making any purchase, customers can study about all the major brands and features of any item. It also provides consumers with less expensive products and service by allowing them to shop in many places and conduct quick comparisons.

- e) **Quicker delivery:** E- commerce allows quick delivery of products and services especially with digitizes products.
- f) **Information:** Consumers can receive relevant and detailed information in seconds, rather than in days or weeks.

#### Advantages to business

1. **Increased potential market share:** The Internet enables businesses to have access to international markets thereby increasing their market share. Companies can also achieve greater economies of scale.
2. **Low-cost advertising:** Advertising on the internet costs less than advertising on print or television depending on the details and extent of the advertisement. A company can still spend a lot on advertising on the Internet if the company hires an external party to create their advertisements but advertising on the internet itself is less costly since there is less cost associated with it in terms of printing and limited television spots.
3. **Low barriers to entries:** Anyone can start up a company on the Internet. Startup costs are lower for companies since there is less need of money for capital.
4. **Strategic benefit:** The strategic benefit of making a business e-commerce enabled is that it helps reduce the delivery time., labor cost and the cost incurred in the following areas:
  - Document preparation
  - Error detection and correction
  - Reconciliation
  - Mail preparation
  - Telephone calling
  - Data entry
  - Overtime
  - Supervision expenses

#### Disadvantages of e-commerce

The disadvantages of e commerce can be divided into two categories:

#### Technical limitations

- **Lack of security:** There is a lack of system security, reliability standards, and some communication protocols.
- **Low bandwidth:** There is insufficient telecommunication bandwidth.
- **Needed more application tools:** It is difficult to integrate the internet and electronic commerce software with some existing applications and database. Vendors may need special web servers and other infrastructures in addition to the network's servers.
- **Incompatibility:** Some electronic commerce software might not fit with some hardware, or may be incompatible with some operating systems or other components.

#### Non-technical limitations

- **Cost and justification:** The cost of Developing electronic commerce in – house can be very high, and mistake due to lack of experience may result in delays. There are many

opportunities for outstanding, but where and how to do it is not a simple issue.

- **Security and privacy:** These issues are especially important in the B2C area, especially security issues that are perceived to be more serious than they really are when appropriate encryption is used. Privacy measures are constantly improved. Yet the customers perceive these issues as very important, and the electronic commerce industry has a very long and difficult task of convincing customers that online transactions and privacy are, in fact, very secure.
- **Lack of trust and user resistance:** Customers do not trust an unknown faceless seller. Paperless transactions, and electronics money. So, switching from physical to virtual stores may be difficult.
- **Customers relations problems:** An e- business cannot survives over the long term without loyal customers.

## Conclusion

E-commerce plays a vital role now a days. The number of people who are using ecommerce websites has widely increased. The introduction of smart phones has further accelerated the usage of ecommerce websites for purchasing. E commerce offers its customers a huge number of merits starting from wide comparability of the products time saving, and quick delivery of products and offers discount to the customers. Internet and smart Phones has really changed the way we make purchase.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Gender equality and sustainable development

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### Abstract

Encouraging gender equality and creating sustainable routes are pressing issues. This paper examines the reasons of their simultaneous attention as well as potential solutions. It starts by demonstrating the moral, ethical, and pragmatic justifications for gender equality's necessity for sustainable development. Gender equality and sustainable development demand a deep conceptual grasp of each other's relationships. It starts by outlining the moral, ethical, and pragmatic justifications for gender equality's essential role in sustainable development. The prevalent development patterns around a number of concerns, such as labor and industrial production, population and reproduction, food and agriculture, or water, sanitation, and energy, have shown to be unsustainable and gender uneven. A thorough conceptual grasp of both ideas and how they relate to one another is necessary to integrate gender equality with sustainable development. A German forester originally used the term "sustainability" in an environmental context to describe long-term forest management practices. In the midst of later phases of imperial and colonial expansion and consolidation in the 19th and 20th centuries, environmental policies continued to be shaped by this early emphasis on protecting commercially significant natural resources. During this time, a lot of actions, regulations, and interventions were solely focused on generating financial gain for colonial States and European powers. These frequently concentrated on the quick extraction of natural resources in the majority of Asia, Latin America, and Africa. Such laws and practices typically had disastrous social repercussions because they were linked to the appropriation of land and local people's means of subsistence as well as to cruel and dehumanizing labor practices. More generally, critical examination of colonial and neocolonial environmental policies and interventions reveals that safeguarding the environment under the pretext of preserving pristine nature will inevitably have detrimental effects on local lives and affect men and women differently. The colonial era also shows how conflicts between the "economy" and the "environment" first surfaced, as well as how important trade-offs had to be made between environmental preservation, generating a living, and commercial interests. A large number of these sustainable, alternate routes revolve around women. They frequently lead social movements that oppose unsustainable practices. A large number of these sustainable, alternate routes revolve around women. They frequently lead social movements that oppose unsustainable practices. And making demands for substitutes. Their expertise, initiative, and self-determination are vital in discovering, illustrating, and constructing more environmentally, economically, and socially viable paths forward, be it in managing regional ecosystems, adjusting to climate change, growing and gaining access to food, or guaranteeing sustainable, suitable water, sanitation, and energy services. This paper aims to explore a prevalent approach to analysis utilizes ecofeminism concepts, that hold great promise for the development of policies and actions that promote a progressive politics of sustainability and gender equality.

**Keywords:** sustainability, gender equality, environmental, ecological integrity, unsustainability, green economy

### Introduction

There has never been a more urgent need to address the twin issues of advancing gender equality and creating routes for sustainable development. Development that guarantees social justice, gender equality, ecological integrity, and human well-being both now and in the future is known as sustainable development. Integrating gender equality with sustainable development requires profound conceptual understanding of both concepts and their interlinkages. The dominant patterns of distribution, consumption, and production are moving in a very unsustainable way. In a world where people are now a major force behind the processes of the earth system, we are witnessing overuse of natural resources, the extinction of important habitats and biodiversity, and pollution of the land,

oceans, and atmosphere. As humankind approaches or surpasses so-called planetary boundaries, scientific understandings are elucidating the enormous social, environmental, and economic problems posed by dangers like climate change and loss of key ecosystem services. Already, interactions between humans and the environment are causing hitherto unseen shocks. And strains-felt in droughts, floods, and the destruction of livelihoods and urban and rural landscapes-while a "nexus" of food, energy, environmental, and financial crises has affected a great number of people and places.

These unsustainable behaviors pose serious risks to future generations and exacerbate poverty and inequality, particularly for the third of the world's population that depends directly on



natural resources for their well-being. Additionally, they frequently make gender inequality worse. These unsustainable behaviors pose serious risks to future generations and exacerbate poverty and inequality, particularly for the third of the world's population that depends directly on natural resources for their well-being. Additionally, they frequently make gender inequality worse.

Today, there are many examples of policies and interventions that conflict with or damage women's rights and gender equality in the name of sustainability or green economic aims. Around the world, there are more and more instances of alternate routes that lead to gender equality and sustainability. Some have their roots in the routines by which men and women access, manage, and use woods, soils, and urban environments in ways that support their well-being and means of subsistence. Others can be seen in agro-ecology, urban transitions, solidarity economies, and movements and collectivities-many of which are headed by women-that create alternative food and resource sovereignty. Some of these propose ways to improve the existing capitalist relations, while others point the way toward more significant green changes. Creating more equitable gender relations that uphold women's human rights, dignity, and capacities in the face of variations in class, color, sexual orientation, age, ability, and circumstance is first and foremost a moral and ethical necessity. It is also a fundamental component of an ethical global order. Secondly, it is imperative to address the prevalent trend where women are disproportionately affected by environmental, climatic, and economic shocks and pressures, which undermines their essential roles in supporting their families and communities. This will help prevent women from becoming victims. The third-and possibly most important-need is to strengthen women's agency. Gender equality may help increase the production and efficiency of resources, promote the conservation and sustainable use of ecosystems, and create more low-carbon, sustainable food, and energy, water, and health systems. Women can and have played a key role in paving the road for green transformation and sustainability. It's important to note, nevertheless, that this cannot imply instrumentalizing women as the new "sustainability saviors" or adding "environment" to the caring responsibilities of women. It entails acknowledging and respecting their expertise, rights, capacities, and physical integrity as well as making sure that positions are aligned with authority over resources and the ability to make decisions.

Therefore, it is essential to link gender equality with sustainable development for a number of reasons. Gender inequality and unsustainability have closely related root causes and underlying drives. Both stem from the political-economic relationships that enable specific forms of market-driven, neo-liberal growth in late capitalism. At the expense of government control, redistribution, reproduction, and care, these include severe privatization, financialization, and capital concentration; production focused on short-term profits; unrestricted material consumption; and unprecedented levels of militarism. These political-economic relationships prey on and perpetuate gender inequality by taking use of women's labor, unpaid caregiving, and frequently even their bodies. They are eroding people's rights and dignity and, in many cases, causing social reproduction problems.

The need to shift economies and society toward more

sustainable routes is currently receiving increased attention and discussion on a global scale, whether to prevent crisis and disaster or to promote prosperity through "green economies." Nancy Folbre argues that market economies are sustained not by the 'invisible hand of the market' alone but also by the 'invisible heart of care' <sup>[1]</sup>. But a sense of the politics at play is frequently absent from these discussions. The difficulty is frequently understood in managerial and technological terms as an issue of correctly implementing legislation, pricing, and technologies. This ignores the possibility that we will need to restructure social, economic, and political structures more drastically in order to change unsustainable tendencies. On the other hand, "sustainability" is frequently used as though it were an unambiguous concept. However, there are a lot of conflicts and trade-offs. For example, there are conflicts over funding for various forms of low-carbon energy and whether to prioritize food, biofuels, or trees for carbon storage in order to reduce global warming or support local livelihoods. The way in which these conflicts are resolved has a significant impact on who wins and loses-between local, national, and international interests as well as inside social groups. This essay demonstrates how many current examples of policy and intervention support the goals of sustainability or the "green economy" in ways that conflict with or jeopardize women's rights and gender equality.

A lot of the popular market-driven routes are likewise unsustainable from a social and environmental standpoint. In fact, gender inequality, pollution, and over-exploitation of the environment are all supported by mainstream neo-liberal paradigms. The way dominant theories of gender rely on a division between productive and reproductive labor-the latter includes unpaid and volunteer labor for care, subsistence, and reproduction, with a large portion of it performed by women-is a key gender dynamic. Although labor that is productive is valued, capitalist pressures frequently drive down salaries. The expansion of numerous industries and commercial agriculture sectors has coincided with the rise in female labor force participation <sup>[3]</sup>. Even though economic globalization has given women from all socioeconomic backgrounds more work options, many of these have been offered inside existing labor markets that perpetuate patterns of discrimination and segregation. Poorer women thus work in low-end retail, domestic service, assembly lines, and labor-intensive agriculture-all of which are perceived as continuations of their conventional gender roles. These jobs are typically characterized by low pay, unstable employment, and unfavorable working conditions. A lot of them are unofficial. They may continue to be invisible in the economic system and perpetuate the idea that women are the secondary breadwinners in their family <sup>[3]</sup>. More importantly, the very nature of capitalism markets and production depends on the continuous utilization of unpaid labour, primarily performed by women, to tend to the needs of the young, the ill, and the elderly. Women as caregivers are often essentialized by the nature of the effort that goes into providing care and the fact that it is underpaid. In addition to placing a strain and stress on women, these socially imposed roles also restrict their options, capacities, and chances for engaging in paid work outside the home, which has a detrimental impact on their position, rights, and dignity. In capitalist economic models, care work is routinely disregarded, undervalued, or "externalized," while being crucial to the

reproduction of the labor force as well as larger communities and cultures. Therefore, gender inequality is promoted by and a component of this dominant development model. But this paradigm runs the risk of becoming socially unsustainable since it overuses human "capital" and undermines the principles of social security and caring. In fact, there is mounting evidence of a social reproduction crisis that is developing as individuals and communities battle to give young children with the proper care they need to raise the next generation.

The discussion of gender and climate change has mostly been on adaptation and vulnerabilities at the local level, whereas large-scale, technological, and growth-related mitigation programs have been hesitant to incorporate social and gender justice components. Discussions around climate financing have likewise been largely gender-neutral <sup>[4]</sup>. This illustrates how gender is generally not included into national and international legislation. Feminist visions are frequently very critical of prevailing paradigms and discourses, as the history of feminist engagement with international debates and institutions demonstrates, and it is simpler for policy makers to concentrate on simplified imagery rather than take on more radical problems. However, they are the ones that are required to genuinely address the global climate change concerns and to reevaluate the prevalent pathways surrounding production and consumption. Realizing all human rights-such as the rights to food, water, sanitation, and livelihoods-as well as the rights to security and integrity of the body are ultimately necessary for gender equality. Frequently, rights alone are insufficient to bring about their realization; additional conditions include power and voice, acknowledgment and respect, and challenges to prevailing institutions and ways of knowing. This is where we witness the crucial role that women's mobilization and collective action play in dispelling myths, holding states responsible for the fulfillment of rights, and offering alternatives.

In the writings of feminist researchers, in women's cooperatives and movements, in urban and rural areas where men and women create and maintain their livelihoods, and in bureaucracies and international organizations. We must locate these advocates and make room in theory and policy for their viewpoints and methods. These present compelling arguments against the logic of 'homo economicus' as well as against the prevalent consumption and production patterns that support unsustainability and structural inequality. They provide options that have the ability to bring about socially and gender-equitable green developments. Additionally, there is a chance to actualize them through a developing progressive politics of gender and environmental alliance-building that combines official and informal practices, states, conscious enterprises, and movements. The most scathing criticisms of prevailing ideologies and lifestyles have always come from feminists, usually from the periphery. It's time to get past those boundaries and advance alternative lifestyles.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## वैश्विक साझेदारी: आर्थिक और सामाजिक विकास के लिए भारत की सहयोगात्मक पहल

डॉ. प्रवेश कुमार<sup>1</sup> और श्रीमति कुसुम<sup>2</sup>

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### सारांश

विविधता में एकता: जैसा कि हम जानते हैं कि भारत विविधता में एकता के लिए विश्व पटल पर जाना जाता है। भारत शब्द और भावना दोनों में बहुवचन है। विविधता में एकता का अर्थ है कि विभिन्न जातियों और समुदायों के लोगों की संस्कृतियों, धर्मों और भाषाओं का एक भव्य मिश्रण जिसने कई विदेशी आक्रमणों के बावजूद अपनी एकता और एकजुटता को बरकरार रखा है। तीव्र आर्थिक और सामाजिक असमानताओं के बावजूद एकता और अखंडता कायम रखी गई है। यह वह मिश्रण है जिसने भारत को संस्कृति की एक अनूठी मिशाल बना दिया है। इस प्रकार, भारत एक एकीकृत सांस्कृतिक संपूर्ण ढांचे के भीतर बहुसांस्कृतिक स्थितियों का प्रतिनिधित्व करता है।

‘एकता’ शब्द का अर्थ एकीकरण है, जो ‘हम-पन’ के सार पर जोर देता है। विविधता में एकता का मूल अर्थ है ‘एकरूपता के बिना एकता’ और ‘विखंडन के बिना विविधता’।

बहुपक्षीय सहयोग से तात्पर्य है कि कई देशों या देशों के समूहों के बीच एक कानूनी समझौता है, जो उदारीकृत दरों पर सदस्य देशों के बीच विभिन्न वस्तुओं, मूलभूत आवश्यकताओं और सेवाओं के आदान-प्रदान को बढ़ाने के लिए एक साथ एक मंच पर नियमानुसार आपसी सहयोग करना होता है।

हाल के पिछले कुछ वर्षों से भारत लगातार एक वैश्विक शक्ति के रूप में उभर रहा है, और जी-20 की भगीदारी में इसका नेतृत्व विश्व मंच पर इसके बढ़ते प्रभाव का साक्ष्य प्रमाण है। भारत दुनिया का प्रथम सबसे अधिक आबादी वाला देश है, जो एक विशाल और गतिशील श्रम शक्ति प्रदान करता है। इसके आर्थिक विकास, नवाचार और उद्यमिता को बढ़ावा दिया है, जिससे भारत वैश्विक स्तर पर निवेशकों के लिए एक आकर्षक गंतव्य बन गया है।

भारत अपने मित्र राष्ट्रों और अन्य सहयोगी राष्ट्रों के साथ आर्थिक, सामाजिक, राजनैतिक, तकनीकी, वैज्ञानिक, स्वस्थ सेवाओं आदि के आदान-प्रदान के लिए हमेशा तत्पर है। जी-20 सम्मेलन की अध्यक्षता इसका जीवन्त उदाहरण है।

**मूलशब्द:** एक जुटता, आर्थिक सहयोग, प्राकृतिक एवं सांस्कृतिक सहयोग, स्वस्थ सुरक्षा व रक्षा सहयोग।

### परिचय

विविधता में एकता को बिना किसी भेदभाव के भाईचारे की भावना के रूप में परिभाषित किया गया है। “अनेकता में एकता” शब्द का तात्पर्य बहुत सारी विविधता होने के बाद भी एकता या एकजुटता की भावना से है। इसकी भावना लोगों को एक साथ जोड़ती है और यह बन्धन मानवता का मार्ग दिखाता है। यह विविधता धर्म, रंग, जाति, पंथ, सांस्कृतिक प्रथाओं आदि के रूप में हो सकती है।

भारत विश्व की सबसे प्राचीनतम सभ्यता है। 5000 वर्षों की इस लंबी यात्रा में हम पर अलग-अलग धर्मों और संस्कृतियों से सम्बन्ध रखने वाले कई शासकों ने शासन किया। इसके अतिरिक्त बहुत सारे लोग दूसरे देशों से आए और भारत ने उन्हें खुले दिल से स्वीकार किया इस आदान-प्रदान के कारण भी सामाजिक जीवन के विभिन्न स्तरों में विविधता को जन्म दिया जिसे भारतीय संस्कृति ने सद्भाव से स्वीकार किया।

विविधता में एकता की भावना को समझने के लिए हम अपने इतिहास से एक सुनहरा उदाहरण प्रस्तुत कर इसे समझ सकते हैं— जब

भारतीय विभिन्न शासकों के शासन के पश्चात् अंग्रेजों की लम्बी गुलामी से छुटकारा पाने के लिए सम्पूर्ण भारतवर्ष के सभी समाज और समुदायों के लोग भिन्न-2 गुटों और समूहों में बँट गये इन सभी समूहों का उद्देश्य अंग्रेजों की दास्ता से भारत माता को स्वतन्त्र कराना था। विभिन्न धर्मों, जातियों और क्षेत्रों के लोगों का स्वतन्त्रता पाना ही एक उद्देश्य था समकालीन भारतीयों की यही भावना विविधता में एकता की विचारधारा को इंगित करती है।

विविधता को तब ही समझा जा सकता है जब प्रथाएँ, आपसी सद्भाव, मानवता, संस्कृति और प्राकृतिक वातावरण के परस्पर व्यक्तियों में सम्मान का गुण हो। भारत की विविधता दुनिया में अद्वितीय है। सबसे बड़ी आबादी वाला देश होने के साथ यहाँ कई भाषाएँ संस्कृतियों, धर्मों, कई सामाजिक विशेषताएँ और भौगोलिक अन्तर होने के बावजूद एकता के एक अटूट सूत्र से बन्धे हैं। सभी विविधताओं में है एकता यही तो है हमारे भारत की विशेषता। भारत अपनी इस विविधता के खजाने को प्राचीन काल से बनाये हुए हैं।

## प्रारम्भिक प्रयास

भारतीय संविधान को लिखने से पहले समकालीन अन्य देशों के संविधानों का गहन अध्ययन किया गया और अपने देश के आन्तरिक ढांचे को ध्यान में रखते हुए वृहत और अद्वितीय संविधान की रचना हुई। इसमें भारतीय समाज के सभी वर्गों, उपवर्गों और वंचितों की विविधता को एकता की भावना में संजोया गया है। भारतीय संविधान की प्रस्तावना में ही भारत की आत्मा के दर्शन होते हैं। आजादी के पश्चात् देश के हालात बहुत अस्त-व्यस्त थे विकास की धारा से परे था। लोगों के जन-जीवन को सुधारने के लिए समकालीन सरकारों ने समाजिक, राजनैतिक, आर्थिक और भौगोलिक विकास की ओर विशेष ध्यान दिया और अन्तर्राष्ट्रीय सम्बन्धों को बढ़ाने और निभाने का प्रयास शुरू किया। समय के साथ-साथ भारत अन्तर्राष्ट्रीय स्तर पर विकास की धारा से जुड़ता गया। विभिन्न सरकारें देश हित में भिन्न-भिन्न देशों के साथ अन्तर्राष्ट्रीय समझौतों को स्वीकार करके देश की विकासधारा को सुदृढ़ करती रही हैं।

## नवीन पहल

वर्तमान समय में भारत विश्व में एक अपना विशेष स्थान रखता है। वर्ष 2014 के बाद से भारत के अन्य नए देशों के साथ सम्बन्ध और समझौते मजबूत हुए हैं। जिससे भारत अन्तर्राष्ट्रीय स्तर पर विकास की मुख्य धारा में तीव्र गति से आगे बढ़ रहा है। डिजिटलीकरण और बुनियादी ढांचे जैसे प्रमुख क्षेत्रों में आर्थिक सुधारों के कारण भारत वैश्विक विकास में 16 प्रतिशत से अधिक योगदान कर रहा है। सरकार के पिछले नौ वर्षों के कार्यकाल में त्वरित संरचनात्मक सुधारों के कारण भारतीय अर्थव्यवस्था प्रभावशाली ढंग से बढ़ी है कोविड-19 महामारी और उसके बाद की वैश्विक राजनीतिक चुनौतियों के बावजूद वर्तमान सरकार के दूरदर्शी फैसलों और विवेकपूर्ण कार्यवाई ने भारत की आर्थिक स्थिरता को मजबूत किया है। दुनिया भर में अनिश्चितताओं के बावजूद भारतीय अर्थव्यवस्था में तेजी से सुधार हुआ है तथा अन्तर्राष्ट्रीय मुद्रा कोष ने भारत के आर्थिक विकास को सराहा है।

## राष्ट्रीय विकास धाराएं

भारत के आर्थिक बुनियादी सिद्धान्तों की मजबूती के साथ-साथ मानव विकास में उल्लेखनीय प्रगति हुई है। नीति आयोग के अनुसार पिछले नौ वर्षों में लगभग 25 करोड़ भारतीय गरीबी से बाहर आ गए हैं और गरीबी दर में गिरावट आई है, जो 2013-14 में 29.17 प्रतिशत से घटकर 2022-23 में 11.28 प्रतिशत रह गई है। स्मार्ट सिटी मिशन के अन्तर्गत बढ़ती शहरी आबादी के लिए भौतिक, संस्थागत, सामाजिक और आर्थिक बुनियादी ढांचे का व्यापक विकास करना है और स्थानीय विकास को सक्षम करने और प्रौद्योगिकी की मदद से नागरिकों के लिए बेहतर परिणामों के माध्यम से जीवन की गुणवत्ता में सुधार करने तथा आर्थिक विकास को गति देने हेतु भारत सरकार द्वारा एक अभिनव और नई पहल है। इसके अन्तर्गत 100 शहरों को शामिल किया गया है इनकी कुल संख्या एक समान मापदंड के आधार पर राज्यों के बीच वितरित किया गया है। इसके अन्तर्गत निम्नलिखित बुनियादी सुविधाओं के तत्वों को सुनिश्चित किया जायेगा जैसे—

- पर्याप्त जलापूर्ति
- निश्चित विधुत आपूर्ति
- ठोस अपशिष्ट प्रबंधन सहित स्वच्छता
- कुशल शहरी गतिशीलता और सार्वजनिक परिवहन
- किफायती आवास, विशेष रूप से गरीबों के लिए
- सुदृढ़ आई टी कनेक्टिविटी और डिजिटलीकरण
- सुशासन विशेष रूप से ई-गवर्नेंस और नागरिक भागीदारी

## टिकाऊ पर्यावरण

- नागरिकों की सुरक्षा और संरक्षण, विशेष रूप से महिलाओं, बच्चों एवं बुजुर्गों की सुरक्षा, स्वास्थ्य और शिक्षा।

वर्तमान सरकार अपने नागरिकों के चहुँमुखी विकास की विचारधारा पर कार्य कर रही है विभिन्न योजनाओं और सेवाओं के माध्यम से जनकल्याण के मार्ग पर तीव्र गति से प्रयासरत है। स्वास्थ्य, शिक्षा, वित्तीय एवं आर्थिक, कृषि, व्यावसाय, रोजगार और मूलभूत आवश्यकताओं की राष्ट्रीय स्तर पर पूर्ति करना सरकार का प्रथम उद्देश्य है।

सरकार अन्तर्राष्ट्रीय स्तर पर भी इसी विचारधारा के साथ मित्र राष्ट्रों और सहयोगी राष्ट्र समूहों के परस्पर खड़ी है।

जी-20 (20 देशों का समूह) की सदस्यता भारत के आर्थिक विकास के लिए मील का पत्थर साबित हुई है। भारत दिसम्बर 2022 में जी-20 की अध्यक्षता ग्रहण की है जिसके द्वारा वर्ष 2023 में देश के पचास शहरों में 200 बैठकें हुईं। विदेशी प्रतिनिधियों और मेहमानों को भारत के शहरों की समृद्ध सांस्कृतिक विरासत की झलक देखने को मिली जिससे दुनिया को भारत की “विविधता में एकता” के दर्शन हुए और साथ ही “वसुधैव कुटुंबकम्” जिसका अर्थ है कि पूरी दुनिया एक परिवार है कि विचार धारा के साक्षात् दर्शन भी हुए हैं। इसके आयोजन से दुनिया को यह सन्देश मिला है कि दुनिया एक परिवार है और आपसी समझ और सहयोग से जलवायु परिवर्तन, महामारी, खाद्य और ऊर्जा असुरक्षा और आतंकवाद जैसी अन्तर्राष्ट्रीय समस्याओं से लड़ने और सुलभ समाधान में सहायता मिलेगी।

## अन्तर्राष्ट्रीय स्तर पर भारत के सम्बन्ध

यह एक शक्तिशाली संदेश है जिससे हमारे भीतर एक चिंगारी प्रज्वलित करने और वैश्विक ज्ञान और शक्ति पैदा करने की क्षमता है क्योंकि हम वैश्विक और राष्ट्रीय दोनों स्तरों पर कई चुनौतियों का सामना कर रहे हैं इसलिए मानवता के सामूहिक प्रयास की आवश्यकता है राष्ट्रों और लोगों के बीच एकता की कमी राष्ट्रीय एवं अन्तर्राष्ट्रीय सम्बन्धों को मजबूत करने में आने वाली सबसे बड़ी एवं महत्वपूर्ण बाधाओं में से एक है। अहंकार अक्सर मानवता पर हावी हो जाता है। जिसके परिणाम स्वरूप, संघर्ष, युद्ध और अन्य प्रकार की हिंसाओं का जन्म होता है। जिनसे देश और मानवता का नाश होता है। इससे सवाल यह उठता है कि हम वैश्विक स्तर पर खुद को एक परिवार के रूप में क्यों नहीं देख सकते?

संयुक्त राष्ट्र के संस्थापक सदस्यों के रूप में भारत संयुक्त राष्ट्र के उद्देश्यों और सिद्धान्तों का दृढ़ता से समर्थन करता है। चार्टर के लक्ष्यों को लागू करने और संयुक्त राष्ट्र के विशेष कार्यक्रमों और एजेंसियों का विकासात्मक सहयोग में महत्वपूर्ण योगदान है। इस नई बहुध्रुवीय दुनिया में, भारत स्पष्ट रूप से एक प्रमुख खिलाड़ी के रूप में उभरा है। हालांकि इस बात पर अलग-अलग परिदृश्य हैं कि क्या भारत विकास दर के मामले में चीन से आगे निकल जाएगा? लेकिन इसमें कोई सन्देह नहीं है कि भारत इस सदी की शक्तियों में से एक होगा।

वर्तमान में हो रहे आर्थिक पतन से मानवता के विनाशकारी परिणामों से बचने के लिए दुनिया के अन्य देश आपसी सद्भाव और मित्रता की ओर अग्रसर हो रहे हैं जिससे मूल भूत आवश्यकताओं की मदों का आदान-प्रदान होगा और मानव जीवन समृद्धि की ओर अग्रसर होगा। फरवरी 2022 में ब्राजील, रूस, भारत, चीन और दक्षिण अफ्रीका (ब्रिक्स) और संघाई सहयोग संगठन (SCO) शिखर सम्मेलन में एक संयुक्त व्याख्यान में नई बहुध्रुवीय व्यवस्था के उदय की घोषणा की गई है। इसी सम्बन्ध में बहुध्रुवीय दुनिया में प्रमुख और मध्य शक्तियाँ भी अपने अलग दृष्टिकोण पर विचार कर रही हैं। रूस और यूक्रेन के बीच युद्ध परिणामों ने दुनिया के अन्य देशों के आपसी सम्बन्धों



और सहयोग के सम्बन्ध में दृष्टिकोण में बदलाव हुआ है। भारत बहुध्रुवीय विश्व के लिए अन्यो के समक्ष सबसे अधिक प्रतिबद्ध प्रतीत होता है और खुद को विकासशील दुनिया के एक मजबूत नेता के रूप में चित्रित किया है। इससे भी महत्वपूर्ण बात यह है कि भारत एक बहुध्रुवीय विश्व को आकार देने का प्रयास करता है जो महान शक्ति की राजनीति को खारिज करता है और आज की विविधता को दर्शाता है और समावेशी सहयोग पर निर्भर करता है।

हम वैश्विक स्तर पर एक परिवार के रूप में अनुसंधान और विकास के लिए स्थायी औद्योगिक बुनियादी ढांचे के माध्यम से स्वास्थ्य और कल्याण के क्षेत्र में सभी के सामने आने वाली चुनौतियों को दूर करने के लिए उन्नत तकनीक, बेहतरीन, रचनात्मक और कम लागत वाले जीवन उपयोगी संसाधन और समाधानों के मिश्रित भोजन की विशिष्ट कला के ज्ञान को साझा करके अपने सहयोगी देशों के लिए मानव जीवन के कल्याण में सहायता पहुँचायी हैं।

इसके अतिरिक्त हाल के वर्षों में हमने कम लागत वाली और कुशल नवीकरणीय ऊर्जा प्रौद्योगिकियों, नवीन जल संचयन तकनीकों को विकसित करने या ग्रीन फार्मा से स्वास्थ्य समाधान खोजने तक। हमने अपनी उपलब्धियों को सहयोगी राष्ट्रों के साथ साझा किया है। वित्तीय वर्ष 2019-20 में अन्तर्राष्ट्रीय विकास सहयोग के लिए भारत की प्रतिबद्धता 1.32 विलियन अमेरिकी डॉलर रही, जो पिछले तीन वर्षों की तुलना में उल्लेखनीय वृद्धि है। हालाँकि यह आवंटन भारत के कुल बजट के 1 प्रतिशत से भी कम है, फिर भी यह उच्च आय वाले देशों जैसे ऑस्ट्रेलिया (2.8 बिलियन अमेरिकी डॉलर, सकल घरेलू उत्पाद का 0.22 प्रतिशत), दक्षिण कोरिया (2.5 विलियन अमेरिकी डॉलर सकल घरेलू उत्पाद का 0.15 प्रतिशत) की तुलना में भारत का एक महत्वपूर्ण योगदान है और ऑस्ट्रेलिया (1.2 अरब अमेरिकी डॉलर, सकल घरेलू उत्पाद का 0.27 प्रतिशत) भारत की 2 अरब अमेरिकी डॉलर की क्रेडिट लाइनों पर विचार करते हुए। भारत ने वित्तीय वर्ष 2015-16 में अमेरिकी डॉलर की प्रतिबद्धताओं के साथ अपना अब तक का सबसे अधिक विदेशी सहायता बजट देने का बादा किया है।

वर्तमान में भारत के विकास सहयोग उद्देश्य मुख्यतः दक्षिण-दक्षिण सहयोग (South-South Cooperation SSC) ढांचे पर आधारित है जो कृषि विकास, मानवाधिकार, शहरीकरण, स्वास्थ्य और जलवायु परिवर्तन जैसे क्षेत्रों पर सहयोग करने के लिए वैश्विक दक्षिण में विकासशील देशों के बीच एक तकनीकी सहयोग का सम्पूर्ण प्रयास किया जा रहा है। इस समूह के लोगों और देशों के बीच एक जुटता की अभिव्यक्ति के रूप में देखा जाता है भारत अपने सहयोगी राष्ट्रों के प्रति वैश्विक स्तर पर सहयोग के लिए परस्पर तटस्थ है।

विदेश मंत्रालय जी-20, ब्रिक्स, एससीओ से विभिन्न बहुपक्षीय मंचों के तहत अपनी ताकत का प्रदर्शन कर रहा है। उनके हितों की रक्षा करने और भारतीयों के लिए व्यापार के अवसरों को खोजने के लिए वैश्विक स्तर पर प्रयास जारी है।

पिछले वर्ष-2023 में भारत गणराज्य ने जी-20 सम्मेलन की अध्यक्षता का दायित्व बाखूवी निभाया। जी-20 सदस्यों में जी-8 देश भी शामिल हैं, अर्थात् संयुक्त राज्य अमेरिका, जापान, जर्मनी, ब्रिटेन, फ्रांस, इटली, कनाडा और रूस तथा 11 उभरते और विकासशील देश, अर्थात् अर्जेंटीना, ऑस्ट्रेलिया, ब्राजील, चीन, भारत, इंडोनेशिया, मैक्सिको, सऊदी अरब, दक्षिण कोरिया, दक्षिण अफ्रीका और तुर्की तथा यूरोपियन यूनियन। यहाँ मुख्य बात यह है कि जी-20 के सदस्य देश विश्व का सकल घरेलू उत्पाद का 80 प्रतिशत से अधिक, वैश्विक व्यापार का 75 प्रतिशत और विश्व की सम्पूर्ण जनसंख्या का 60 प्रतिशत हिस्सा रखते हैं। विदेश मन्त्रालय 2016 से जी-20 डिजिटल इकोनॉमी वर्किंग ग्रुप के लिए विभिन्न कार्य समूह और मन्त्रिस्तरीय बैठकों में भारत के सहयोगी रुख को प्रस्तुत कर रहा है। जिससे भारत अपने सहयोगी सदस्य राष्ट्रों का सार्वभौमिक विकास और मूल

भूत आवश्यकताओं की पूर्ति में सहयोग करता है जिससे भारत का परचम वैश्विक स्तर पर लहरा रहा है।

### भांघाई सहयोग संगठन

एक अंतरसरकारी संगठन है और इसमें आठ सदस्य देश (चीन, भारत, कजाकिस्तान, किर्गिस्तान, रूस, पाकिस्तान, ताजिकिस्तान और उज्बेकिस्तान) शामिल हैं। इस संगठन का मूल उद्देश्य सदस्य देशों के बीच विश्वास के स्तर और पड़ोसी व्यवहार को उन्नति की ओर बढ़ाना है और तकनीकी, सांस्कृतिक, आर्थिक और राजनीतिक स्तरों पर कुशल व्यवहार व सहयोग बढ़ाने के साथ-साथ परिवहन, पर्यावरण संरक्षण, शिक्षा, ऊर्जा और पर्यटन जैसे अन्य क्षेत्रों में आपसी सहयोग को बढ़ावा देकर अपनी-अपनी अर्थव्यवस्था को मजबूत करना है। भारत का इतिहास गवाह है हमेशा से हम सप्रेम सभी से सहयोगात्मक भेंट करते आये हैं सम्पूर्ण विश्व के देशों, राज्यों और मानव जाति को मानव हित के प्रति जागरूक होकर अहंकार त्याग कर जनकल्याणकारी रीति-नीति को अपना कर जीवन व्यतीत करना ही सबसे सरल और उचित मार्ग है जो शान्ति और एकता को जन्म देगा।

वैश्विक एकता प्राप्त करने में मुख्य बाधाओं में से एक अहंकार है। हम अक्सर अपने निजी हितों को मानवता के हितों से ऊपर रखते हैं, जिससे आपसी सहयोग और समझ की कमी हो जाती है हमें यह पहचानने की जरूरत है कि हमारा अहंकार हमारे अस्तित्व का थोड़ा सा हिस्सा है हमें उससे परे देखने की आवश्यकता है। हमें व्यापक जनहित में भलाई पर ध्यान केंद्रित करना चाहिए और एक स्थायी दुनिया बनाने की दिशा में कार्य करना चाहिए जहां सभी को सयम अपने जीवन यापन के सयम समान प्राप्त हो सकें।

### विविधता में एकता

बहुपक्षीय सहयोग में भारत पर विचार व्यक्त करने के बाद हम यह निष्कर्ष निकाल सकते हैं कि भारत विभिन्न धर्मों और प्रथाओं वाला एक विशाल देश है। कहावत है कि पग-पग पर बदले पानी एक कोस पर वाणी। पूरे देश में क्षेत्रानुसार पोशाक और शारीरिक बनावट भी बदली जाती है। इन सभी विविधताओं के बावजूद, सुन्दरता इस तथ्य में निहित है कि विविधता में एकता निहित है। मत भेद हो सकते हैं लेकिन सभी का ध्यान अपने देश के विकास पर केंद्रित है। पूरा देश ईद, दिपावली और 30 अन्य प्रमुख त्यौहारों पर सब एक साथ छुट्टियाँ मनाते हैं। इन त्यौहारों के दौरान हिन्दू और मुस्लिम उपहार और मिठाईयों का आदान-प्रदान करते हैं। यह भारत में विविधता को एकता में दर्शाते हैं।

इसी विचार धारा के साथ हमारा भारतवर्ष अपने सहयोगी राष्ट्रों के साथ किये गये अनुबन्धों को विनम्र हृदय से जनकल्याण के लिए उनके साथ परस्पर अडिग खड़ा है।

पुरानी कहा है कि एक जुट होकर खड़े रहते हैं, विभाजित होने पर हम गिर जाते हैं इसलिए एक देश एक रूप में, हमें एक जुट रहने की कोशिश करनी चाहिए ताकि हम दूसरों के हमले के प्रति कम संवेदनशील हो जाएं।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सार्वजनिक उपक्रमों का निजीकरण में परिवर्तन, भारतीय अर्थव्यवस्था के लिए उचित या अनुचित—एक विश्लेषण

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### सारांश

वर्तमान समय में प्रत्येक देश के लिए सबसे महत्वपूर्ण आर्थिक विकास है। भारत में सार्वजनिक क्षेत्रों के निजीकरण तथा उनके कारणों एवं प्रभावों की सकारात्मक एवं नकारात्मक प्रभावों की समीक्षा करता है। हो गया भारत एक विकासशील देश है, जहाँ मिश्रित अर्थव्यवस्था पायी जाती है। स्वतन्त्रता से पहले भारतीय अर्थव्यवस्था में सार्वजनिक क्षेत्रों की भूमिका कम थी। 1951 में पहली पंचवर्षीय योजना के प्रारम्भ में मात्र पाँच सार्वजनिक क्षेत्र के उपक्रम थे जिनका कुल निवेश 29 करोड़ रुपये था जोकि भारतीय अर्थव्यवस्था में सार्वजनिक क्षेत्रों के द्वारा सामाजिक-आर्थिक कल्याण के लक्ष्यों को प्राप्त करना देश के तेज आर्थिक विकास और औद्योगिकीकरण के लिए जरूरी आधारभूत ढांचा पैदा करने, रोजगार के अवसरों एवं आर्थिक कल्याण और संतुलित क्षेत्रीय विकास में भी महत्वपूर्ण भूमिका रही है। परन्तु सार्वजनिक क्षेत्रों का स्वामित्व निजी क्षेत्रों को हस्तान्तरित करने के पीछे सार्वजनिक क्षेत्रों के उपक्रमों का लगातार घाटे में जाना, क्षमता के उपयोग का स्तरहीन होना कर्मचारियों की भरमार, बढ़ता हुआ राजकोषीय घाटा, बढ़ता भ्रष्टाचार, नौकरशाही भाई-भतीजावाद फिजूलखर्ची को रोकने एवं नियन्त्रण करने के लिए आवश्यक था। निजीकरण की उचित प्रक्रिया देश की आर्थिक प्रगति के लिए महत्वपूर्ण है जहाँ उसके फायदे हैं वहीं गंभीर नुकसान भी है यहाँ तक कहा गया है कि निजी कंपनियां बड़े व्यापारिक सौदों को निपटाने के लिए सरकारी कार्यालयों को मोटी रिश्वत देती हैं।

**मूलशब्द:** सार्वजनिक क्षेत्र, निजीकरण, विनिवेश नीति, निजीकरण के पश्चात प्रदर्शन, आर्थिक कल्याण एवं विकास, दक्षता एवं कुशलता, राजकोषीय घाटा, मिश्रित अर्थव्यवस्था, वैधानिक संगठन, लाभ अधिकतमकरण, प्रतिस्पर्धा जवाबदेही।

### परिचय

प्रस्तुत शोध पत्र भारतीय सार्वजनिक क्षेत्रों के स्वामित्व का हस्तान्तरण निजी हाथों में, निजीकरण की आवश्यकता एवं इसके सकारात्मक और नकारात्मक प्रभावों का मूल्यांकन करता है। भारत जैसे विकासशील देश के आर्थिक विकास के लिए सार्वजनिक और निजी दोनों ही क्षेत्र अति आवश्यक है। भारत में निजीकरण की शुरुआत तत्कालीन प्रधानमंत्री नरसिम्हो राव एवं प्रसिद्ध अर्थशास्त्री डॉ० मनमोहन सिंह द्वारा सन 1991 में नई आर्थिक नीति को अपनाकर देश में निजीकरण की नींव रखी। इसी नीति के तहत सार्वजनिक क्षेत्र के लिए आरक्षित उपक्रमों की संख्या को 17 से घटाकर 8, फिर 6 और अब 3 कर दिया गया है। सार्वजनिक क्षेत्र भारतीय अर्थव्यवस्था का वह अंश है जिनका संचालन राज्य के स्वामित्व वाले उपक्रमों द्वारा किया जा रहा है। लेकिन सार्वजनिक उपक्रमों का निजीकरण वर्तमान समय की माँग है और देश के औद्योगिक विकास के लिए अत्यन्त आवश्यक भी है। भारत में सार्वजनिक क्षेत्रों की अक्षमता और उत्पादकता में कमी बढ़ता राजस्व घाटा निरन्तर घाटे में या बीमार उद्योगों का जीर्णोद्धार एवं लागतों में कमी करने के लिए निजीकरण की जरूरत पड़ी। निजीकरण शब्द का बहुत व्यापक अर्थ है—निजीकरण एक ऐसी व्यवस्था है जिसके द्वारा सार्वजनिक क्षेत्र के उपक्रम, औद्योगिक संस्थान और इकाईयों का स्वामित्व का हस्तान्तरण निजी क्षेत्र में स्थानान्तरित कर दिया जाता है। भारत में निजीकरण का इतिहास उतार चढ़ाव वाला रहा है, यह असुविधा और संदेह की

प्रतिक्रियाओं को दर्शाता है। विनिवेश पर 1993 की रिपोर्ट में सी० रंगराजन समिति ने आक्रमक सिफारिश की, जिसमें कई सार्वजनिक क्षेत्र के उपक्रमों में हिस्सेदारी की 100 प्रतिशत बिक्री भी शामिल थी। 1991 से अब तक विभिन्न क्षेत्रों में समय दर समय निजीकरण किया गया वर्ष 1997 में भारत सरकार ने सार्वजनिक क्षेत्र की 11 कंपनियों को लाभ की स्थिति में थी उन्हें नवरत्न का दर्जा दिया।

### सार्वजनिक क्षेत्र क्या हैं

सार्वजनिक क्षेत्र के उपक्रम एक वाणिज्यिक इकाई या एक कंपनी से सम्बन्धित है जिन पर पूर्ण या आंशिक रूप से स्थानीय, राज्य या देश की सरकार का स्वामित्व होता है और सरकार द्वारा ही उनका प्रबन्ध किया जाता है। उपक्रम शब्द को प्राचीन माना जाता है अगर स्पष्ट रूप से कहा जाए तो एक पी०सी०यू० एक सरकार है।

### सार्वजनिक क्षेत्रों की वर्तमान स्थिति

वर्तमान में कुछ बड़े सार्वजनिक उपक्रमों जैसे— बीएसएनएल, एमटीएनएल और एयर इण्डिया में घाटे की स्थिति लगातार बढ़ रही है, इन उपक्रमों का घाटा इनके राजस्व प्राप्ति से अधिक है। भारत में सार्वजनिक क्षेत्रों के उपक्रमों को तीन भागों भागों में वर्गीकरण किया है—केन्द्रीय सार्वजनिक क्षेत्र उद्यम, सार्वजनिक क्षेत्र के बैंक, राज्य स्तरीय सार्वजनिक उद्यम। जनवरी 2023 तक 12 महारत्न, 13 नवरत्न

एवं 62 मिनीरत्न कंपनियां हैं।सार्वजनिक क्षेत्र की कुछ सामान्य श्रेणियां निम्नवत प्रकार हैं—

### महारत्न कंपनी

महारत्न योजना मई 2010 में शुरू की गई थी।महारत्न कंपनी के लिए पहले वह नवरत्न कंपनी हो और सेबी के अन्तर्गत न्यूनतम सार्वजनिक हिस्सेदारी के साथ भारतीय शेयर बाजार में सूचीबद्ध होनी

चाहिए। औसत वार्षिक व्यवसाय 25,000 करोड़ से अधिक और पिछले तीन वर्षों की अवधि में औसत वार्षिक निवल मूल्य 15,000 करोड़ रुपये से अधिक एवं पिछले तीन वर्षों का औसत वार्षिक शुद्ध लाभ 5,000 करोड़ रुपये से अधिक होने के साथ-साथ कंपनियों की व्यापार के क्षेत्र में इंटरनेशनल बाजार में महत्वपूर्ण उपस्थिति होनी चाहिए।



Fig 1

### नवरत्न कंपनी

नवरत्न कंपनी का मूलरूप 1997 में भारत सरकार द्वारा लाया गया।किसी भी कंपनी को नवरत्न का दर्जा प्राप्त करने के लिए उसे मिनीरत्न का दर्जा प्राप्त होना चाहिए। नवरत्न कंपनियां भी बड़े उद्यम हैं लेकिन महारत्न कंपनियों की तुलना की अपेक्षा में छोटी हैं। का अधिकार क्षेत्र अधिक स्वायत्तता दी गयी जिससे देश की कंपनियों को वैश्विक स्तर पर प्राप्त हो सके।

### मिनीरत्न

मिनीरत्न योजना की शुरुआत वर्ष 1997 में सार्वजनिक क्षेत्र को अधिक कुशल एवं प्रतिस्पर्धी बनाने और लाभ कमाने वाले सार्वजनिक

क्षेत्र के उद्यमों को अधिक स्वायत्तता तथा शक्तियों का प्रत्यायोजन प्रदान करने के नीतिगत उद्देश्य के अनुसरण में की गई थी। यह सार्वजनिक क्षेत्र की तीसरी श्रेणी है, जो आकार में छोटी है जिसकी वित्तीय और परिचालन शक्तियाँ महारत्न एवं नवरत्न की अपेक्षा कम होती हैं।मिनीरत्न की दो श्रेणियां हैं—श्रेणी-1 एवं श्रेणी-2।मिनीरत्न श्रेणी 1 में कंपनी ने पिछले तीन वर्षों से लगातार लाभ प्राप्त किया हो तथा तीन साल में एक बार कम से कम 30 करोड़ रुपये का शुद्ध लाभ अर्जित किया हो।मिनीरत्न श्रेणी 2 में सीपीएसई द्वारा पिछले तीन वर्षों से लगातार लाभ अर्जित किया हो और उसकी निवल संपत्ति सकारात्मक हो।



Fig 2

### सार्वजनिक उपक्रमों का निजीकरण या विनिवेश करने की आवश्यकता क्यों पड़ी

सरकार को निजीकरण प्रक्रिया शुरू करने के पीछे आजादी के बाद देश की अर्थव्यवस्था बहाल थी और देश की प्रति व्यक्ति आय तथा नेशनल इनकम को बढ़ाना था।जिसके द्वारा लोगों के जीवन स्तर में सुधार, बेरोजगारी दर में कमी और देश की आर्थिक क्रियाओं का विकास किया जा सके।निजीकरण का एक और महत्वपूर्ण कारण सार्वजनिक क्षेत्रों की कंपनियों का खराब प्रदर्शन, सार्वजनिक क्षेत्र की कंपनियों का घाटे में चलना आवश्यकता से अधिक कर्मचारियों, कार्य

के प्रति निरंकुशता और राजनैतिक हस्तक्षेप निर्णय लेने की धीमी प्रक्रिया से परियोजनाओं के निर्धारित लक्ष्यों को समय पर पूर्ण न कर पाना। इन विभिन्न समस्याओं के समाधान के लिए 1991 में सरकार द्वारा उदारीकरण, निजीकरण एवं वैश्वीकरण की नीतियों को अपनाया गया था। निजीकरण के संदर्भ में पूर्व प्रधानमंत्री पी0 वी नरसिम्हा राव ने कहा था।अगर हमें भारत के शरीर को कपड़ों से ढकना, तो सार्वजनिक क्षेत्र के अलावा निजी क्षेत्र की मदद की भी जरूरत है। हमें विकसित देशों के साथ प्रतिस्पर्धा करनी है तो भारतीय अर्थव्यवस्था को मुद्रा स्फीति से उबारने के लिए निजीकरण ही



सर्वोत्तम समाधान है। तिरुवल्लुवर का कथन है—एक राजा वह है जो अपने राज्य की आय संजोता है, संचय करता है, रक्षा करता है तथा विधिवत व्यय करता है। एक सिक्के के दो पहलू होते हैं इसी प्रकार निजीकरण के भी अपने दुष्प्रभाव हैं। उन दुष्प्रभावों को देखकर हम देश के आर्थिक विकास के लिए।

### निजीकरण

निजीकरण से आशय उस स्थिति से है जब सरकार सार्वजनिक क्षेत्रों का प्रबन्धन, नियन्त्रण एवं स्वामित्व निजी क्षेत्रों को स्थानान्तरित कर देती है और सरकार स्वयं उसके स्वामित्व से भार मुक्त हो जाती है, यह अक्सर अनुबन्ध के माध्यम से किया जाता है। सार्वजनिक क्षेत्रों को निजी क्षेत्र में परिवर्तित करने के दो तरीके हैं, जैसे—

- **स्वामित्व का हस्तान्तरण**—सार्वजनिक उपक्रमों का स्वामित्व प्रबन्धन और नियन्त्रण का हस्तान्तरण पूर्ण रूप से अथवा 50 प्रतिशत से अधिक भाग निजी क्षेत्र को हस्तान्तरित करने से है।
- **विनिवेश**—विनिवेश से तात्पर्य सरकार द्वारा की जाने वाली सम्पत्तियों के विक्रय से है। सरकार सार्वजनिक क्षेत्रों के कुछ हिस्सों को बेचकर विनिवेश के रूप में निजीकरण कर देती है इस प्रकार सार्वजनिक क्षेत्र में निजी क्षेत्र की भी भागीदारी रहती है लेकिन सरकार स्वामित्व अपने पास रखती है। एशिया की सबसे बड़ी ब्रेड निर्माता कंपनी मॉडर्न फूड्स निजीकरण होने वाली पहली केन्द्र सरकार के स्वामित्व वाली कंपनी बन गयी थी।



Fig 3

### निजीकरण के उद्देश्य

भारतीय अर्थव्यवस्था में निजीकरण के निम्न उद्देश्य हैं—

- निजीकरण द्वारा आर्थिक विकास के लिए संसाधनों को एकत्रित करना एवं उनका कुशलतम प्रयोग करना।
- निजी क्षेत्र की प्रबन्धकीय कार्यकुशलता एवं दक्षता का प्रयोग करना।
- निजीकरण का मुख्य उद्देश्य बाह्य ऋणों में कमी करना।
- नए-नए औद्योगिक उपक्रमों की स्थापना कर आयात प्रतिस्थापन प्रक्रिया को सबल बनाना।
- निजीकरण द्वारा उत्पादन प्रक्रिया में वृद्धि करना और परिचालन क्षमता को बढ़ाना।
- निजी क्षेत्र की उत्पादन क्रियाओं को आवश्यकता अनुसार एवं प्राथमिकता के अनुरूप सार्वजनिक क्षेत्र के साथ समन्वित करना।
- निजीकरण द्वारा तकनीकी का प्रसार करना और अर्थव्यवस्था को आधुनिकीकरण में परिवर्तित करना।
- उपक्रमों एवं औद्योगिकीकरण में विवेकीकरण के लिए आर्थिक अनुसन्धान एवं विकासात्मक कार्यक्रमों का संचालन करना।
- निजीकरण द्वारा राजकोषीय घाटे को कम करना और गैर विकास व्ययों की रोकथाम करना।
- निजीकरण द्वारा पूँजी की वृद्धि की तुलना में उत्पादन में कम वृद्धि पर रोक करना।

### विनिवेश

विनिवेश से तात्पर्य सरकार द्वारा की जाने वाली सम्पत्तियों के विक्रय से है। सरकारी सम्पत्तियों में सामान्यतया केन्द्र और राज्यों के सार्वजनिक क्षेत्र के उपक्रम तथा अचल सम्पत्तियों को सम्मिलित किया जाता है। विनिवेश में कोई स्वामित्व हस्तान्तरित नहीं किया जाता बल्कि इसका उद्देश्य संगठन के प्रदर्शन में वृद्धि करना होता है। प्रतिवर्ष सरकार सार्वजनिक उपक्रमों में निवेश के लिए लक्ष्य निर्धारित करती है। सन् 1991-92 में विनिवेश द्वारा 2500 करोड़ रुपये जुटाने का लक्ष्य प्रस्तावित किया। सरकार उस लक्ष्य से 3040 करोड़ रुपये अधिक जुटाने में सफल रही। सन् 2017-18 में लक्ष्य लगभग 1,00,000 करोड़ रुपये के विनिवेश का था लेकिन उसकी उपलब्धि लगभग 1,00,057 करोड़ की रही। वर्ष 2014 के बाद से सरकार ने विनिवेश लक्ष्यों को दो बार जुटा पाई है जिसमें वर्ष 2017-18 में सरकार ने 72500 करोड़ के मुकाबले 1,00,000 करोड़ और 2018-19 में 80000 करोड़ के मुकाबले 94700 करोड़ विनिवेश लक्ष्य की प्राप्ति की है। विनिवेश एक ऐसी तकनीक है जो सरकारी खजाने पर राजकोषीय बोझ को कम करने और विशेष आवश्यकताओं को पूरा करने के लिए वित्त जुटाने के लिए किया जाता है। साधारण विनिवेश के विपरीत रणनीतिक विक्री या विनिवेश से तात्पर्य एक प्रकार के निजीकरण के पर्याय रूपी है। विनिवेश प्रक्रिया का संचालन निवेश और सार्वजनिक सम्पत्ति प्रबन्धन विभाग वच्.ड, कमचंतजउमदज वी प्दअमेजउमदज दक च्न्इसपब मोजे डंदहमउमदजद्ध के द्वारा किया जाता है जोकि वित्त मंत्रालय के अधीन आता है।

### विनिवेश विधि

**अल्पांश विनिवेश** — इस विधि में सरकार कम्पनी में बहुमत रखती है, प्रायः 51 प्रतिशत से अधिक अंश अपने पास रखती है, ताकि प्रबन्धन नियन्त्रण सुनिश्चित हो सके।

**बहुमत विनिवेश** — सरकार अधिग्रहण करने वाली इकाई का नियन्त्रण देती इसके अतिरिक्त कुछ हिस्सेदारी को बरकरार रखती है।

**पूर्ण निजीकरण** — कम्पनी का 100 प्रतिशत नियन्त्रण खरीददार को सौंप दिया जाता है।

### विनिवेश की आवश्यकता एवं उद्देश्य

- विनिवेश के द्वारा सरकार को राजकोषीय घाटे को कम करने में महत्वपूर्ण भूमिका निभाई है।
- विनिवेश ने आर्थिक संसाधनों को जुटाकर बड़े स्तर पर बुनियादी ढाँचे के विकास को मजबूत बनाया है।
- सरकार के कर्ज को विनिवेश द्वारा कम किया गया जोकि केन्द्र के राजस्व का लगभग 40 प्रतिशत सार्वजनिक ऋण और ब्याज का भुगतान करने में जाता।
- विनिवेश प्रक्रिया के द्वारा सरकार ने शिक्षा, स्वास्थ्य स्वच्छ भारत से सम्बन्धित कई सामाजिक जागरूकता कार्यक्रमों का संचालन किया गया।
- विनिवेश के माध्यम से भारतीय अर्थव्यवस्था में निवेश में वृद्धि हुई है और देश के उत्पादन स्तर में भी वृद्धि हुई है।
- विनिवेश नीति द्वारा सार्वजनिक उपक्रम जो लगातार नकारात्मक प्रतिफल प्राप्त हो रहा ऐसे उपक्रमों को विनिवेश द्वारा निजी क्षेत्रों को हस्तान्तरित किये गए।
- सरकार द्वारा वर्ष 2021-22 का विनिवेश लक्ष्य 1,75,000 करोड़ रुपये रखा है।

### विनिवेश नीति के उद्देश्य

- सरकारी बीमार कम्पनी और दिवालिया हो रहे सार्वजनिक उपक्रमों पर आर्थिक बोझ का कम करना।
- विनिवेश ने निजी स्वामित्व और सरकारी सम्पत्तियों की हिस्सेदारी को प्रोत्साहित करना।
- विनिवेश द्वारा शोध एवं विकास, कार्यबल का युक्तिकरण और

पुनः प्रशिक्षण पर जोर देना।

- विनिवेश द्वारा बाजार प्रोत्साहन, प्रतिस्पर्धात्मक प्रतियोगिता और नए उपक्रमों की प्रोत्साहित करना।

### साहित्य समीक्षा

- सोहनत्रे एवं विनोद मिश्रा 1991**— सार्वजनिक क्षेत्रों में विनिवेश नीति एक प्रतिकूल कदम पर अपने लेख में कहा था कि भारतीय अर्थव्यवस्था की कमजोरी को दूर करने के लिए आर्थिक रणनीति बनाई गयी लेकिन सार्वजनिक उपक्रमों की बेहतरी विनिवेश के पैसे का उपयोग देश के बुनियादी ढाँचे के विकास में करना।
- शंकर एवं मिश्रा 1994** — अपने लेख सार्वजनिक उपक्रमों का विनिवेश में वर्णन किया है कि जब देश संकट में था तब आर्थिक आपदाएं और बाहरी आर्थिक समुदाय द्वारा दिवालियापन के खतरों का सामना करते हुए भारतीय सरकार ने विनिवेश का समर्थन किया। सार्वजनिक क्षेत्रों की अक्षमता लगातार बढ़ता घाटा और अपने लक्ष्यों को प्राप्त करने में विफल रहें।
- अनुराग 2007** — सार्वजनिक क्षेत्र की इकाईयों का विनिवेश पर अपने शोध में विनिवेश के प्रति भारतीय परिपेक्ष्य की जाँच की और कहा 1990 के दशक में सुधार प्रक्रिया होने के बाद विनिवेश पूरी तरह से गलत हो गया। शोध में पाया गया कि 1991 से 2001 के दशक के लिए विनिवेश उत्साहवर्धक नहीं रहा क्योंकि निर्धारित लक्ष्य के मुकाबले आय प्राप्त न हो पायी थी।

- आशीश श्रीवास्तव 2014** — अपने लेख भारत में विनिवेश; एक प्रायोगिक अध्ययन में पाया गया विनिवेश देश के लिए अच्छा है जोकि देश की अर्थव्यवस्था सरकार को राजस्व प्रदान करती है। उनका सुझाव है कि सरकार को समय समय पर नीतियों की समीक्षा करनी चाहिए एवं लक्ष्य तय करने के बाद विनिवेश उसके मुताबिक और विनिवेश प्रक्रिया को पारदर्शी होनी चाहिए।

### अध्ययन के उद्देश्य

वर्तमान अध्ययन निम्नलिखित उद्देश्यों को प्राप्त करने के लिए आयोजित किया गया है—

- सार्वजनिक उपक्रमों को अपनी दक्षता में सुधार के लिए निर्णय लेने की स्वतंत्रता दी जा रही है।
- निजी क्षेत्र को अर्थव्यवस्था के विस्तार में सक्रिय रूप से भाग लेने के लिए के प्रोत्साहित किया जाता है।
- सरकार पर वित्तीय बोझ, असफल और अप्रभावी सार्वजनिक उपक्रमों से हिस्सेदारी वापिस लेना।

### अनुसंधान किया विधि

प्रस्तुत अध्ययन वर्णानात्मक है जो कि द्वितीय आंकड़ों पर आधारित है अध्ययन के लिए आवश्यक द्वितीयक समंक प्रकाशित प्रतिवेदनों से एकत्रित किया गया है। दीपम, पत्रिकाएं, समाचार पत्र, वेब साइटों आदि स्रोतों के माध्यम से लिया गया है शोध में पी.एस.यू. से सार्वजनिक क्षेत्रों का निजीकरण बढ़ते राजकोषीय घाटे का कारण बड़े पैमाने पर बुनियादी ढाँचे के विकास का वित्त पोषण करना है।

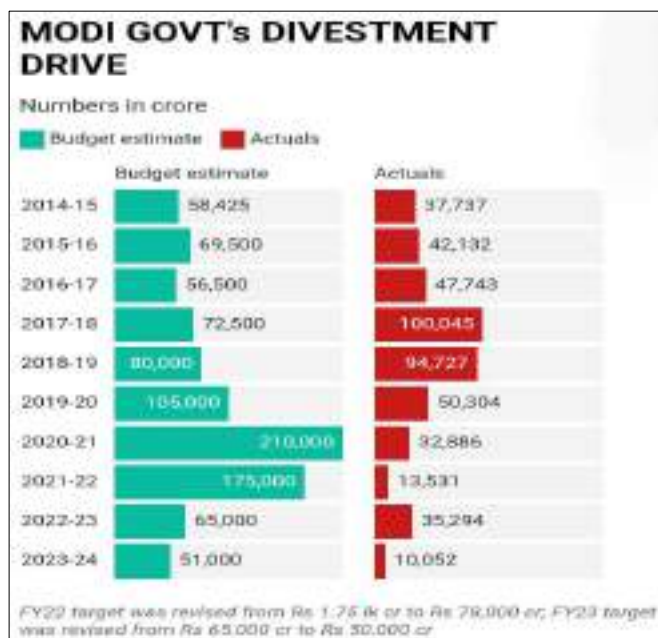


Fig 4

### सार्वजनिक क्षेत्रों का निजीकरण एवं विनिवेश

सार्वजनिक क्षेत्र में विनिवेश का मतलब होता है सरकारी उद्यमों या सेवाओं में निवेश करना या उन्हें निजी स्वामित्व में लेना। यह एक आर्थिक प्रक्रिया है जिसमें सरकारी संस्थानों या सेवाओं को निजी सेक्टर के लिए खुला किया जाता है या उन्हें निजी निवेशकों के लिए उपलब्ध किया जाता है। इससे सार्वजनिक क्षेत्र में नए निजी उद्यम बनते हैं और सरकारी निवेशकों को अधिक स्वतंत्रता मिलती है।

कुछ प्रमुख क्षेत्रों में सार्वजनिक क्षेत्र का विनिवेश शामिल हो सकता है—

- परिवहन, सरकारी हवाईअड्डे, रेलवे, और सड़क परिवहन सेवाएं

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- निजी स्वामित्व में ली जा सकती हैं या नए निजी परिवहन सेवाओं के लिए निवेश किया जा सकता है।
- ऊर्जा, बिजली उत्पादन, ऊर्जा यातायात, और ऊर्जा संग्रहण क्षेत्रों में सरकारी निवेश को निजी स्वामित्व में बदला जा सकता है।
- उद्यमिता और उद्योग, सरकारी उद्योगों और संगठनों को निजी स्वामित्व में बदला जा सकता है या नए निजी उद्यमों के लिए निवेश किया जा सकता है।
- बैंकिंग और वित्तीय सेवाएं, सरकारी बैंकों को निजी स्वामित्व में बदलने या नए निजी बैंकों की शुरुआत के माध्यम से सार्वजनिक वित्तीय सेवाओं में निवेश किया जा सकता है।

- शिक्षा और स्वास्थ्य, सरकारी शिक्षा और स्वास्थ्य सेवाएं निजी स्वामित्व में ली जा सकती हैं या नए निजी विद्यालय और अस्पतालों की शुरुआत के लिए निवेश किया जा सकता है।
- सार्वजनिक क्षेत्र में विनिवेश का मुख्य उद्देश्य सार्वजनिक सेवाओं में सुधार और स्वावलंबन को बढ़ावा देना है, जिससे सेवाएं अधिक अद्यतित, कुशल, और दक्ष बन सकती हैं।

### सार्वजनिक क्षेत्रों का निजीकरण में विनिवेश

- सार्वजनिक क्षेत्रों का निजीकरण एक प्रक्रिया है जिसमें सरकारी उद्यम या सेवाएं निजी स्वामित्व में ली जाती हैं या निजी सेक्टर के निवेशकों के लिए खुली जाती हैं। इसका मतलब होता है कि सरकारी संस्थान या सेवाएं निजी निवेशकों के द्वारा संचालित की जाती हैं और सरकार इसमें अपना सीधा या अप्रत्यक्ष निर्देश नहीं करती है।
- सार्वजनिक क्षेत्रों के निजीकरण में विनिवेश का महत्वपूर्ण योगदान है, क्योंकि निजी निवेशक संस्थानिक कुशलता, अधिकतम उत्पादकता, के साथ संचालित करने की क्षमता रख सकते हैं।
- इसके माध्यम से सरकार स्वामित्व में रहने वाले उद्यमों को बढ़ावा देती है और आर्थिक स्थिति में सुधार करने का प्रयास करती है।

### सार्वजनिक क्षेत्रों के निजीकरण में विनिवेश के कुछ उदाहरण निम्नलिखित हो सकते हैं—

- निजी विमुक्त गैस प्रयोगशाला, सरकार द्वारा संचालित गैस प्रयोगशाला जो पहले सार्वजनिक सेक्टर में थी, उसे निजी स्वामित्व में लिया गया है।
- निजी बैंकों का संचालन, सरकारी बैंकों को निजी स्वामित्व में बदला जा सकता है या नए निजी बैंकों को शुरुआत के लिए निवेश किया जा सकता है।
- निजी विमानन कंपनियां जोकि सार्वजनिक सेक्टर में संचालित होने वाली विमानन कंपनियां निजी स्वामित्व में ली जा सकती हैं या नए निजी विमानन कंपनियों के लिए निवेश किया जा सकता है।

### निष्कर्ष

परिणामतः सार्वजनिक क्षेत्र उपक्रम जिसे सार्वजनिक क्षेत्र इकाई भी कहा जाता है अनिवार्य रूप से केन्द्र, क्षेत्रीय या राज्य सरकार के अधीन उद्यमों के लिए स्थापित किया जाता है। वित्तीय वर्ष 2021 में इकॉनामिक टाइम्स में छपे लेख के अनुसार सरकार के मुताबिक 255 परिचालन इकाईयों में से 177 सार्वजनिक क्षेत्र के उपक्रमों का मुनाफा बढ़ा 31 मार्च 2021 वित्त वर्ष में कुल 24,26,045 करोड़ का कारोबार हुआ जबकि घाटे में चल रहे सार्वजनिक क्षेत्रों का कुल घाटा 29.86 प्रतिशत कम हुआ। सार्वजनिक क्षेत्र ने न केवल जी.डी.पी. में सहायता की है वृद्धि और विकास एवं आर्थिक कल्याण और आय असमानता से निपटने में सहायता की है। सार्वजनिक क्षेत्रों के उपक्रमों को निजीकरण में परिवर्तित करने के पीछे आर्थिक मंदी, अर्थव्यवस्था का पुर्नगठन सरकारी उद्योगों की अक्षमता एवं बीमार इकाइयों का जीर्णोद्धार मुख्य कारण रहे। भारत वास्तव में निजीकरण करने में उल्लेखनीय रूप से धीमा रहा। सार्वजनिक क्षेत्र के उपक्रमों के प्रबन्धकों पर निजीकरण की जिम्मेदारी डालकर भ्रष्टाचार को खत्म करने के लिए एक नई योजना का प्रस्ताव किया गया। 1991-99 तक विनिवेश का लक्ष्य 34,300 करोड़ के लक्ष्य में से 16,809 करोड़ का ही लक्ष्य प्राप्त कर पाये जबकि 1999-2004 तक 58,500 करोड़ के लक्ष्य में से 24,619 करोड़ रुपये ही जुटा पाई जबकि 2004-14 तक 1,93,000 करोड़ रुपये के लक्ष्य में से 1,14,045 करोड़ रुपये ही जुटा पाये और 2014-2020 तक 4,26,925 करोड़ रुपये में से 3,05,357 करोड़ रुपये की जुटा पाये। सरकार ने अब तक 2022-23 के विनिवेश लक्ष्य 31,106 करोड़ रुपये में से 20,500 करोड़ रुपये ही

जुटा पायी भारत में विनिवेश से सम्बन्धित निम्न समस्याएँ हैं जैसे राजनीतिक विरोध, मूल्यांकन का मुद्दा, श्रमिकों का मुद्दा, कानूनी चुनौतियां आदि। भ्रष्टाचार का सम्बन्ध निजी या सार्वजनिक क्षेत्र से नहीं है ये व्यक्ति के नजरिये से है। भारतीय अर्थव्यवस्था पर निजीकरण ने सकारात्मक और नकारात्मक दोनों तरीके से प्रभाव डाला है। हमें इसे सर्वोत्तम तरीके से लागू करने की विधि खोजने की आवश्यकता है।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## महिलाओं के सशक्तिकरण में राष्ट्रीय स्वयं सेवक संघ का योगदान

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### सारांश

भारत में महिला सशक्तिकरण के लिये राष्ट्रीय स्वयं सेवक संघ तथा उसके आनुषांगिक संगठनों द्वारा अनेक प्रकल्प तथा गतिविधियाँ सतत रूप से चलाई जा रही हैं। हालाँकि संघ के खिलाफ समाज में एक भ्रांति फैलायी गयी कि संघ महिला विरोधी है, परन्तु वास्तविकता इससे एक दम से भिन्न है। संघ ने अपनी स्थापना के समय से ही महिला सशक्तिकरण हेतु काफी प्रयास किया है। राष्ट्रीय स्वयं सेवक संघ स्त्रीवाद की यूरोपीय अवधारणा का विरोध करता है जिसमें स्त्री और पुरुष को एक दूसरे के प्रतिद्वन्दी के रूप में प्रस्तुत करने का प्रयास किया जाता है, जबकि संघ और उसके आनुषांगिक संगठन भारत की सांस्कृतिक विरासत एवं हिन्दुत्व की महान परम्पराओं को संयोजित करते हुये स्त्री और पुरुष को एक दूसरे के प्रतिद्वन्दी नहीं बल्कि पूरक के रूप में देखते हैं।

**मूलशब्द:** राष्ट्रीय स्वयं सेवक संघ, आनुषांगिक संगठन, राष्ट्र सेविका समिति, अखिल भारतीय विद्यार्थी परिषद, महिला सशक्तिकरण, स्त्रीवाद, महिलाओं का प्रतिनिधित्व आदि।

### परिचय

राष्ट्रीय स्वयं सेवक संघ पर यह आरोप लगता है कि संघ पुरुष प्रधान संगठन है और संघ की शाखाओं में महिलाओं का प्रवेश वर्जित है। परन्तु जब हम संघ के विचारों पर गहराई से अध्ययन करते हैं तो यह पाते हैं कि संघ सदैव महिलाओं के सशक्तिकरण का पक्षधर रहा है। संघ मानता है कि महिला सशक्तिकरण के लिये एक व्यापक सोच की आवश्यकता है। इसमें सभी जातियाँ, संप्रदायाँ, भाषाओं, क्षेत्रों, विभिन्न आर्थिक स्थितियाँ तथा शैक्षिक पृष्ठभूमि की महिलाओं के विषय में सोचना पड़ेगा। केवल यह कहने मात्र से काम नहीं बनेगा। कि सब समान हैं। यह समानता दिखनी भी चाहिए और व्यवहार में भी उतरनी चाहिए। संघ की पद्धति इसी प्रकार की है।” यहाँ संघ प्रमुख मोहन भागवत का 11 नवम्बर 2016 को राष्ट्र सेविका समिति के कार्यकर्ता प्रेरणा शिविर में किया गया उद्गार उल्लेखनीय हैं – “एक बात पर सबकी सहमति है कि भारत को परम वैभव सम्पन्न बनाना है तो भारत की मातृशक्ति (महिलाओं की शक्ति) का जागरण सशक्तिकरण और पुरुषों के बराबर समाज में उनका योगदान हो ऐसी स्थिति उत्पन्न करना पहली आवश्यकता है। इस बात से सभी सहमत हैं कि अगर ऐसा सशक्तिकरण होता है और मातृशक्ति को उनकी वास्तविकता भूमिका में खड़ा करना है तो अपने देश को सनातन मूल्यों के आधार पर ही करना पड़ेगा। क्योंकि इन सब विषयों में बाकी दुनियाँ का जो अनुभव है वह हमारी तुलना में बहुत थोड़ा है।”

जब भारतीय संदर्भ में स्त्रियों की स्थिति को आयातित स्त्रीवाद के माध्यम से समझने का प्रयास किया जाता है। तो यह बुरी तरह विफल हो गया, हालाँकि इसके माध्यम से कुछ विचारणीय प्रश्न उठाये गये, जिनके आलोक में कुछ ऐसे कानून भी बने, जिन से महिलाओं को मदद मिल सकी, किन्तु उसकी मुख्य न्यूनता इसका

गलत दृष्टिकोण तथा भारतीय मातृत्व की श्रेष्ठ अवधारणा को महत्वहीन बताया जाना था। उन्होंने महिला सशक्तिकरण को ‘यौन राजनीति’ तथा संबंधों को मात्र अधिकारों तक सीमित काने की सोच के आलोक में परिभाषित करने का प्रयास किया।

संघ के अनुसार भारत में महिला सशक्तिकरण की अवधारणा पश्चिमी स्त्रीवादी विचार से नितांत भिन्न है। संघ का मानना है कि भारतीय मार्ग एकात्मता का है जहाँ पर स्त्री और पुरुष साथ मिल कर उन सभी सामाजिक कुरितियों एवं बुराईयों के निवारण की कोशिश करते हैं, जो महिलाओं के विकास मार्ग में अवरोध है और उसे बाधित करते हैं। भारत में परदा प्रथा विदेशी आक्रमणों के प्रभाव के कारण आयी जिसे दूर किया जाना चाहिए। महिलाओं में शिक्षा का स्तर बढ़कर उन्हें आर्थिक रूप से स्वावलंबी और सशक्त बनाना सम्पूर्ण समाज की जिम्मेदारी है। महिलाओं के लिये बनाये जाने वाले कानून एवं उनके सशक्तिकरण की नीतियों का राष्ट्रीय स्वयं सेवक संघ खुलकर समर्थन करता है परन्तु उसका मानना है कि इसके लिये समाज की मानसिकता में परिवर्तन लाना अनिवार्य है जिससे समाज तथा प्रत्येक परिवार में स्त्रियों की स्थिति में गुणात्मक परिवर्तन लाया जा सकता है। इस सब को ध्यान में रखते हुये राष्ट्रीय स्वयं सेवक संघ ने स्त्रियों के लिये शिक्षा, लोकतांत्रिक सहभागिता, स्त्री सशक्तिकरण तथा महिलाओं के प्रति हिंसा, दहेज प्रथा आदि जैसी समस्याओं को दूर करने हेतु समाज को जागृत करने के लिये परिवारों से संपर्क कर उन्हें जागरूक बनाने तथा महिलाओं एवं बालिकाओं के प्रति संवेदनशील बनाने के लिये कार्य कर रहा है।

राष्ट्रीय स्वयं सेवक संघ ने अपने प्रारम्भिक काल में ही यह अनुभव कर लिया था कि महिलाओं के बीच जागरूकता का प्रसार किये बिना समाज को मजबूत एवं सशक्त नहीं बनाया जा सकता। राष्ट्र सेविका समिति की संस्थापिका श्रीमती लक्ष्मीबाई केलकर ने कई



अवसरों पर कहा— 'महिला परिवार और राष्ट्र के लिये प्रेरक शक्ति के रूप में कार्य करती हैं, जब तक इस शक्ति को जागृत नहीं किया जाता, समाज प्रगति नहीं कर सकता।'

संघ की स्थापना के लगभग एक दशक बाद केवल महिलाओं के लिये उसी के जैसा एक संगठन स्थापित किया गया जिसका नाम था 'राष्ट्र सेविका समिति'। इसकी संस्थापिका श्रीमती लक्ष्मीबाई केलकर थी जो मात्र 27 वर्ष की आयु में विधवा हो गयी थी उन्होंने पूरा जीवन इस संगठन के माध्यम से महिलाओं के उत्थान में समर्पित कर दिया। राष्ट्र सेविका समिति की स्थापना और उसके मार्ग दर्शन में संघ के संस्थापक डॉ० हेडगेवार की महत्वपूर्ण भूमिका थी। वर्तमान में सेविका समिति का प्रसार संघ की अपेक्षाओं के अनुरूप पूरे भारत में है। जिस प्रकार संघ में प्रचारक होते हैं। उसी प्रकार समिति में प्रचारिकाएँ होती हैं। समिति की कार्य पद्धति एवं लक्ष्य संघ के समान ही है। सेविका समिति का कार्य बहुत व्यापक है और कोई भी इसकी अनदेखी नहीं कर सकता। देश के लगभग प्रत्येक भाग में इसका व्यापक विस्तार है। प्रत्येक प्रांत में प्रचारिकाएँ हैं तथा पूरे भारत वर्ष में सेविका समिति की 4900 शाखाएँ हैं। सेविका समिति 15 शैक्षणिक परियोजनाएँ तथा 385 सेवा प्रकल्प चला रही हैं। वैश्विक स्तर पर संसार के बाइस देशों में सेविका समिति का कार्य चलता है।

संघ की प्रेरणा से महिलाओं की कई संस्थाओं का निर्माण किया गया है यथा—पूणे की भारतीय स्त्री शक्ति जागरण तथा नागपुर की मन्त्री थी। आगे चलकर इन दोनों को मिलाकर एक सार्वजनिक मंच के रूप में अखिल भारतीय महिला संगठन का निर्माण किया गया जिसका नाम 'स्त्रीशक्ति' रखा गया। इसकी कई शाखाएँ भी हैं जो विभिन्न गतिविधियों के लिये प्रतिबद्ध है।

राष्ट्रीय स्वयं सेवक संघ के आनुषांगिक संगठनों में कार्यरत महिलाओं के लिए पिछले 25—30 वर्षों से विशेष ध्यान दिया जा रहा है। संघ के आनुषांगिक संगठनों के बीच महिलाओं के पारस्परिक समन्वय तथा उनमें नेतृत्व कौशल विकसित करने का प्रबल समर्थक रहा है। महिला समन्वय की व्यवस्था देखने के लिये गीताताई को महिला समन्वय का अखिल भारतीय प्रमुख नियुक्त किया गया। उनका प्रमुख कार्य संघ के आनुषांगिक संगठनों में महिलाओं की सहभागिता बढ़ाने की दृष्टि से उनमें क्रिया विधि संबंधी क्षमता को सुनिश्चित करना था। महिला समन्वय में गीता ताई के साथ महिला कार्यकर्ताओं की एक पूरी टीम सक्रिय रूप में काम करती है। इनमें से उल्लेखनीय हैं, अखिल भारतीय विद्यार्थी परिषद की ममता यादव, भारतीय मजदूर संघ की गीता गोखले, विश्व हिन्दु परिषद से श्रीमती मीनाक्षी तथा बनवासी कल्याण आश्रम से रंजना खरे। 1990 से जब नागपुर में महिला समन्वय का कार्य प्रारंभ किया गया और 1993 में इसका अखिल भारतीय प्रसार हो गया, उस समय से गीता ताई ही इसका नेतृत्व कर रही है।

पूणे स्थित शोध आधारित 'दृष्टि' नामक एक महिला अध्ययन संगठन को भी संघ द्वारा महिलाओं की ओर से प्रारंभ परियोजनाओं की सहायता के लिये वर्ष 2000 में प्रारंभ किया गया। वर्तमान में इसकी प्रमुख अंजलि देश पांडे हैं।

महिलाओं के सशक्तिकरण हेतु प्रयास राष्ट्रीय स्वयं सेवक संघ के बहुत से आनुषांगिक संगठनों में देखा जा सकता है। अधिवक्ताओं का संगठन अधिवक्ता परिषद महिलाओं के सांविधिक अधिकारों के प्रसार के लिये प्रांत तथा राष्ट्रीय स्तरों पर सम्मेलन आयोजित करता है। इसमें पुरुष तथा महिलाएं दोनों भाग लेते हैं। क्रीड़ा भारती महिला एथलीट्स व खिलाड़ियों हेतु सुविधाओं के निर्माण के लिये अभियान चलाने की दिशा में अपना ध्यान केन्द्रित किया है। अखिल भारतीय इतिहास संकलन योजना, भारतीय स्त्रियों के इतिहास को प्रस्तुत करने का कार्य कर रही है तथा महिला इतिहासकारों के सम्मेलन आयोजित करती है। 2017 में भारतीय मजदूर संघ ने दिल्ली में एक व्यापक मार्च आयोजित किया जिसमें लगभग दो लाख लोगों ने भाग

लिया। इनमें से एक लाख के लगभग महिलाएँ थीं। विज्ञान भारती ने महिला वैज्ञानिकों का एक सम्मेलन 'शक्ति' प्रारम्भ किया है। बनवासी कल्याण आश्रम तथा संस्कार भारती में तो कई महिला पूर्णकालिक भी हैं।

अखिल भारतीय विद्यार्थी परिषद द्वारा राष्ट्र और समाज हित के लिये चलाये जाने वाले आन्दोलनों में बड़ी संख्या में युवतियों की सहभागिता रहती है। अखिल भारतीय विद्यार्थी परिषद के माध्यम से कई छात्रायें सक्रिय कार्यकर्ता बनी तथा उन्होंने प्रदेश मंत्री राष्ट्रीय मंत्री जैसी प्रदेश व राष्ट्रीय स्तरीय सचिवों की जिम्मेदारियों का भी निर्वहन किया। इसके प्रमुख उदाहरण भी हैं, गीताताई गंडे विद्यार्थी जीवन में एबीवीपी की कार्यकर्ता थी बाद में ग्लैक्सो कंपनी से त्यागपत्र देकर विद्यार्थी परिषद की पूर्ण कालिक सदस्य बन गई। आपात काल विरोधी आन्दोलन में भी उन्होंने सक्रिय रूप से भाग लिया तथा मानवाधिकार एवं महिलाओं के अधिकारों के लिये काम करने वाले अनेक संगठनों के साथ काम किया। 75 वर्ष की आयु में भी गीताताई विभिन्न राज्यों में प्रवास पर रहते हुये छात्राओं के व्यक्तित्व का विकास करती हैं, उनसे बातचीत कर रहीं हैं तथा उनमें नेतृत्व के गुण विकसित करने के दिशा में कार्य कर रही हैं। संघ में भी उनका एक सम्मानित स्थान है।

तमिलनाडु में सुमित वेंकटेश जो कि एक कॉटन मिल तथा अन्य सम्बद्ध इकाइयों चलाती है, ने कौशल विकास के क्षेत्र में कई वर्षों तक काम किया है। सुमथीश्री निवास तमिलनाडु की एक सशक्त भाजपा नेता के रूप में व्यापक रूप से पहचानी जाती हैं। आशा लकड़ा गुमला के एक जनजाति परिवार से आने वाली पहली पीढ़ी की शिक्षित महिला हैं। अखिल भारतीय विद्यार्थी परिषद का व्यक्तित्व विकास कार्य इतना प्रभावशाली रहा कि वे एक कुशलवक्ता बनीं तथा आगे चलकर अखिल भारतीय विद्यार्थी परिषद की राष्ट्रीय मंत्री भी बनीं।

नागपुर में मीरा कडवे अपराधिक से लेकर पारिवारिक मामलों में उलझी महिलाओं का न्यायिक मार्गदर्शन करती हैं। इस कार्य के कारण इन्हें कई बार पुलिस थानों में भी जाना पड़ता है। स्मिता कोल्हे अपना क्लीनिक चलाने वाली एक आयुर्वेदिक डॉक्टर थीं। उन्होंने लम्बे समय तक अखिल भारतीय विद्यार्थी परिषद में भी काम किया। रवि कोल्हे से विवाह के बाद उन्होंने अपना क्लीनिक बंद कर महाराष्ट्र के अमरावती जिले में मेलघाट के वन क्षेत्र में जनजातिय लोगों के लिये कार्य प्रारंभ किया और उनकी इस सेवा के लिये इस दंपती को वर्ष 2019 में 'पदम श्री' से सम्मानित किया गया।

संघ पर महिला विरोधी होने का आरोप वही लोग लगाते हैं जो संघ को नहीं जानते हैं। राष्ट्रीय स्वयं सेवक संघ कोई महिला विरोधी संगठन नहीं है और वह सिर्फ इसलिए कि महिलाएँ संघ की शाखाओं में नहीं जाती हैं। यह आरोप भी गलत है कि महिलाओं संघ में बिल्कुल नहीं हैं और उन्हें संघ के कार्यों में भाग लेने की अनुमति नहीं है। जबकि वास्तविकता इससे अलग है अन्य सभी राजनीतिक और सामाजिक संगठनों की तुलना में संघ के आनुषांगिक संगठनों में महिलाओं की संख्या कहीं कम नहीं बल्कि अधिक ही होगी। संघ के वरिष्ठ पदाधिकारी प्रहलाद राव अभयंकर कहते हैं— 'शाखा में महिला सदस्य नहीं होती हैं, संघ में हैं। हमारे लिये ध्यान देने योग्य बात है कि कम्यूनिष्ट पार्टी जैसे स्वयंभू और तथा कथित सबसे प्रगतिशील संगठन की तुलना में संघ संबधित संगठनों में बहुत पहले से महिलाएँ शीर्षस्थ पदों पर आसीन रही हैं। सी पी एम के पोलित ब्यूरो को इसकी प्रथम महिला सदस्य श्रीमती वृंदाकरात इसकी स्थापना के दशकों बाद प्राप्त हुयी। यह महिला पार्टी के महासचिव की धर्म पत्नी हैं। मैंने इस विचित्र विरोधाभास का उल्लेख किसी का उपहास उड़ाने के लिये नहीं किया अपितु इस तथ्य को रेखांकित करने के लिये किया कि राष्ट्र के सामाजिक और राजनैतिक जीवन में महिलाओं को विलंब से मिली शुरुआत के कारण यह एक

सामाजिक सच्चाई है।

संघ विचारक देवेन्द्र स्वरूप के अनुसार— “संघ में महिलाओं के साथ काम करने या प्रवेश को लेकर शुरू से ही हिचक रही। हालांकि 1936 में ही राष्ट्र सेविका समिति का गठन हो गया था, लेकिन संघ में ज्यादातर लोगों को लगता था कि नारी-पुरुष संबंधों को लेकर गड़बड़ हो सकती है। अगर साथ-साथ काम किये तो परिणाम सुखद नहीं होंगे।” वस्तुतः राष्ट्रीय स्वयं सेवक संघ महिला सशक्तिकरण के लिये तो तत्पर है वह महिलाओं का प्रतिनिधित्व भी बढ़ाना चाहता है परन्तु इसके लिये सीधे संघ में महिलाओं के प्रवेश से बचता रहा है। अन्य आनुषांगिक संगठनों के माध्यम से महिलाओं का प्रतिनिधित्व संघ बढ़ा रहा है।

संघम् शरणम् गच्छामि के लेखक विजय त्रिवेदी के अनुसार “राष्ट्र सेविका समिति में एक अरसे तक रही, एक महिला वरिष्ठ सदस्य ने मुझसे कहा कि संघ में महिलाओं की स्थिति ठीक हिन्दू परिवारों जैसी है, जिसे कहा तो लक्ष्मी जाता है लेकिन खाना वह घर में सबसे बाद में खाती है। उस की राय या इच्छा निर्णायक नहीं मानी जाती। यह बदलाव जब तक संघ में नहीं होगा, हिस्सेदारी की संख्या बताने से काम नहीं चलेगा। उनका मानना है कि आमतौर पर संघ को महिला विरोधी न भी कहें लेकिन महिला निर्णायक भूमिका में नहीं होती। संघ के 100 साल पूरे होने तक यह हालत बदले तो संघ की तस्वीर और इमेज दोनों बदल जायेगी।”

### निष्कर्ष

हालांकि राष्ट्रीय स्वयं सेवक संघ में महिलाओं का प्रतिनिधित्व सीमित है जिसका प्रमुख कारण संघ की शाखाओं में महिलाओं को प्रवेश नहीं दिया जाना है परन्तु राष्ट्र सेविका समिति के माध्यम से समाज, राजनीति और प्रशासन में महिलाओं का प्रतिनिधित्व बढ़ाने का प्रयास जारी है। ऐसा नहीं कि संघ में महिलाये नहीं है, आज महिलाये संघ के बहुत से विभागों जैसे सेवा विभाग, संपर्क विभाग और प्रचार विभाग में काम कर रही हैं। संघ के सम्बद्ध संगठनों में महिलाओं की भागीदारी भरपूर है तथा पिछले कुछ वर्षों से उनकी ओर विशेष ध्यान भी दिया जा रहा है। संघ के राष्ट्रीय संपर्क प्रमुख अनिरुद्ध देशपाण्डे कहते हैं कि “कोई भी बदलाव एक दिन में नहीं होता। महिलाओं को लेकर भी थोड़े-थोड़े बदलाव होगा। इवोल्यूशन हो रहा है। इवॉल्ट होने में थोड़ा समय लगता है।”

### संदर्भ

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सतत विकास लक्ष्यों को आकार देने में भारत की भूमिका

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### सारांश

भारत में सतत विकास का लक्ष्य समृद्धि और समाज की सामर्थ्यवादी विकास को प्रोत्साहित करना होता है। यह विकास न केवल आर्थिक विकास को संकल्पित करता है, बल्कि साथ ही सामाजिक, राजनीतिक, और सांस्कृतिक विकास को भी समाहित करता है। भारत सरकार ने अनेक योजनाओं को शुरू किया है जो समृद्धि, समावेशी विकास, और सामाजिक समावेश को बढ़ावा देने का लक्ष्य रखते हैं। इनमें से कुछ मुख्य योजनाएं जैसे मेक इन इंडिया, बेंटी बचाओ बेंटी पढ़ाओ, स्वच्छ भारत अभियान, आयुष्मान भारत, और डिजिटल इंडिया हैं, जो विभिन्न क्षेत्रों में विकास को संभालने के लिए कार्य कर रही हैं। विकास का अर्थ यह नहीं है कि केवल आर्थिक स्तर पर गति हो, बल्कि इसका ध्यान सामाजिक न्याय, जल, वन, और पर्यावरण के प्रति जिम्मेदारी, शिक्षा, स्वास्थ्य, और अन्य महत्वपूर्ण क्षेत्रों में विकास को भी मिलना चाहिए। इस प्रकार, सतत विकास का लक्ष्य है एक समृद्ध, समावेशी, और समृद्ध भारत की सामर्थ्यवादी निर्माण को प्रोत्साहित करना।

**मूलशब्द:** सतत विकास, लक्ष्य, भारत

### परिचय

#### सतत विकास लक्ष्यों को आकार देने में भारत की भूमिका

भारत एक विशाल और विविध देश है जो अपनी ऐतिहासिक, सांस्कृतिक, और आर्थिक धरोहर के साथ समृद्ध है। यहां के लोगों ने दुनिया को अपने योगदान, अद्वितीय विचारधारा, और तकनीकी उत्कृष्टता से प्रभावित किया है। भारत की भूमि ने शांति और प्रगति की एक अद्वितीय परंपरा को जन्म दिया है और आज भी विकास की प्रेरणा के रूप में अग्रणी है। सतत विकास लक्ष्यों को आकार देने में भारत की भूमिका अत्यंत महत्वपूर्ण है। भारत ने अपनी स्वतंत्रता के बाद से ही विकास के क्षेत्र में अद्वितीय प्रगति दर्ज की है, और इसका निरंतर अभियान अब भी जारी है।

- भारत ने अपने आर्थिक संकल्प को सुदृढ़ किया है। लोगों के जीवन में सुधार करने के लिए, भारत ने उच्च दर की आर्थिक विकास और वृद्धि के लिए योजनाएं शुरू की हैं। अर्थव्यवस्था को विकसित करने के लिए उद्यमिता, निवेश, और उद्योगों को प्रोत्साहित किया जा रहा है।
- भारत ने शिक्षा क्षेत्र में महत्वपूर्ण प्रगति की है। शिक्षा के माध्यम से समाज को सशक्त और उत्कृष्ट बनाने के लिए, भारत ने बच्चों के लिए मुफ्त और गुणवत्ता की शिक्षा को बढ़ावा दिया है। यह उन्हें न केवल अधिक ज्ञान के साथ लैस करता है, बल्कि उन्हें नैतिक मूल्यों और सामाजिक जिम्मेदारियों के प्रति भी जागरूक बनाता है।
- भारत ने आरोग्य सेवाओं के क्षेत्र में भी विकास की प्रेरणा दी है। राष्ट्रीय स्वास्थ्य योजनाओं के माध्यम से, भारत ने आर्थिक रूप से कमजोर और सामाजिक रूप से पिछड़े वर्गों की स्वास्थ्य सेवाओं की पहुंच में सुधार किया है।
- भारत ने पर्यावरण के प्रति जिम्मेदारी को ध्यान में रखते हुए अनुकूलन विकास के माध्यम से विकास किया है। उन्होंने स्वच्छता, जल संरक्षण, और पर्यावरणीय संरक्षण को महत्वपूर्ण

परिप्रेक्ष्य में रखा है और सुनिश्चित किया है कि विकास की प्रक्रिया में पर्यावरण को हानि न हो।

अंततः, भारत ने सामाजिक और आर्थिक समानता को बढ़ावा देने के लिए उपाय किए हैं। उन्होंने महिलाओं, अल्पसंख्यक समुदायों, और अन्य पिछड़े वर्गों को उनके हक की सुनिश्चित करने के लिए कई योजनाएं शुरू की हैं। भारत की भूमिका विश्व में अग्रणी है जब बात सतत विकास के लक्ष्यों को आकार देने की आती है। भारत के प्रयासों ने आगे बढ़ने के लिए प्रेरित किया है और उसने दुनिया को दिखाया है कि विकास और प्रगति का मार्ग केवल सुगम नहीं, बल्कि उत्तेजक और उत्साहवर्धक भी हो सकता है। इस प्रकार, भारत की भूमिका न केवल उसके अंदर ही सीमित है, बल्कि यह एक विश्व स्तरीय मानक भी है।

#### सतत विकास के लक्ष्यों का इतिहास

सतत विकास के लक्ष्यों का इतिहास लंबा और समृद्ध है। यहां कुछ महत्वपूर्ण प्रसंग हैं :

- **यू.एन. की स्थापना:** सतत विकास के लक्ष्य का विचार पहली बार संयुक्त राष्ट्र गठित किया गया, जब गैर-सरकारी संगठनों, सरकारों, और अन्य संगठनों ने अपने संयुक्त शासन में विकास के लिए साझा लक्ष्यों की आवश्यकता को महसूस किया।
- **मिलेनियम विकास लक्ष्य:** सन 2000 में, संयुक्त राष्ट्र ने मिलेनियम विकास लक्ष्य की घोषणा की, जिनमें गरीबी, शिक्षा, स्वास्थ्य, और जेंडर समानता जैसे कई क्षेत्रों में प्रगति के लिए लक्ष्य निर्धारित किए गए।
- **स्थायी विकास लक्ष्य:** 2015 में, मिलेनियम विकास लक्ष्यों की समाप्ति के बाद, संयुक्त राष्ट्र ने स्थायी विकास लक्ष्यों (एसडीजी) की घोषणा की, जिनमें 17 लक्ष्य और 169 संदर्भांकित उद्देश्य शामिल हैं।

- **संयुक्त राष्ट्र समिति:** संयुक्त राष्ट्र के अंतरराष्ट्रीय समिति (एसडीजी) विकास के लिए एक महत्वपूर्ण वातावरण प्रदान करता है, जो सदस्य देशों को विकास लक्ष्यों के संग्रहण, अभियोजन, और प्रगति की निगरानी में सहायता प्रदान करता है।
- **प्रभाव:** सतत विकास के लक्ष्यों का विस्तार करने का प्रयास हर स्तर पर हो रहा है, लेकिन विकास की राह में कई चुनौतियाँ हैं, जैसे कि वित्तीय संसाधनों की कमी, संवेदनशीलता, और विभाजन।

सतत विकास के लक्ष्यों का इतिहास उनकी महत्वपूर्ण यात्रा का प्रतिबिम्ब है, जो एक समृद्ध और संतुलित समाज की ओर बढ़ते हैं।

### सतत विकास लक्ष्यों की सूची

सतत विकास के लक्ष्य विविधता के साथ 17 विभिन्न लक्ष्यों में विभाजित हैं, जिन्हें स्थायी विकास लक्ष्य के रूप में जाना जाता है। ये लक्ष्य संयुक्त राष्ट्र के सदस्य देशों द्वारा 2015 में स्वीकृत किए गए थे। निम्नलिखित हैं वे 17 लक्ष्य :

- **गरीबी का समापन:** सभी रूपों से गरीबी को समाप्त करना।
- **अनिवार्य शिक्षा:** सभी के लिए गुणवत्ता परक और समान शिक्षा प्रदान करना।
- **स्वास्थ्य सुविधाएं:** सभी के लिए स्वास्थ्य और वेतन की सुविधा प्रदान करना।
- **जेंडर समानता:** लड़कियों और महिलाओं के लिए समानता को प्रोत्साहित करना।
- **जलवायु परिवर्तन:** जलवायु परिवर्तन और इसके प्रभावों का सामना करना।
- **शुद्ध जल और स्वच्छता:** शुद्ध पानी और स्वच्छता के लिए पहुंच बढ़ाना।
- **ऊर्जा सुरक्षा:** सस्ती और शुद्ध ऊर्जा के प्रदान को सुनिश्चित करना।
- **आर्थिक उत्थान:** समृद्धि और आर्थिक उत्थान को सुनिश्चित करना।
- **उद्यमिता और औद्योगिक इनोवेशन:** उद्यमिता को बढ़ावा देना और औद्योगिक इनोवेशन को समर्थ बनाना।
- **कम असमानता:** समानता के लिए विभिन्न सेक्टरों में असमानता को कम करना।
- **सही शहरीकरण:** बदलावपूर्ण, समृद्ध और शहरीकृत समुदायों को बनाना।
- **सही जलवायु कार्यवाही:** सही जलवायु कार्यवाही लेना।
- **समर्थ संसाधन प्रबंधन:** समर्थ संसाधन प्रबंधन की दिशा में गतिशीलता।
- **शांति और न्याय:** शांति, न्याय और मजबूत संस्थाएं बढ़ाना।
- **संजीवनी समुदाय:** जीवित, जागरूक और संवेदनशील समुदाय बनाना।
- **पारदर्शिता और अच्छा शासन:** पारदर्शिता, संवेदनशीलता, और अच्छे शासन को बढ़ावा देना।
- **क्षुधा का अंत:** भूखमरी के अंत को सुनिश्चित करना और आहार सुरक्षा को बढ़ाना।

ये लक्ष्य सभी देशों के लिए महत्वपूर्ण हैं और सभी विकास नीतियों और कार्यक्रमों में इन्हें शामिल किया जाना चाहिए।

### सतत विकास लक्ष्यों में चुनौतियाँ

संयुक्त राष्ट्र प्रमुख विकास चुनौतियों का समाधान करने के उद्देश्य से विभिन्न पहलों और साझेदारियों के माध्यम से भारत में सतत विकास लक्ष्यों का समर्थन करता है। यहाँ कुछ तरीके दिए गए हैं जिनसे संयुक्त राष्ट्र भारत में इनका समर्थन कर रहा है :

- **नीति सलाह और क्षमता निर्माण :** संयुक्त राष्ट्र एसडीजी के साथ राष्ट्रीय विकास प्राथमिकताओं को संरेखित करने पर भारत सरकार को नीतिगत सलाह प्रदान करता है। यह प्रभावी एसडीजी कार्यान्वयन के लिए संस्थानों और प्रणालियों को

मजबूत करने के लिए क्षमता निर्माण प्रयासों का भी समर्थन करता है।

- **तकनीकी सहायता और ज्ञान साझा करना:** यूएनडीपी, यूनिसेफ, यूएन महिला और अन्य जैसी अपनी विशेष एजेंसियों और कार्यक्रमों के माध्यम से, संयुक्त राष्ट्र भारत को गरीबी उन्मूलन, स्वास्थ्य, शिक्षा, लैंगिक समानता, जलवायु कार्यवाही और सतत शहरी विकास जैसे क्षेत्रों में तकनीकी सहायता प्रदान करता है। इस सहायता में भारत को अपने एसडीजी लक्ष्यों को प्राप्त करने में मदद करने के लिए सर्वोत्तम प्रथाओं, विशेषज्ञता और ज्ञान को साझा करना शामिल है।
- **डेटा और निगरानी समर्थन:** संयुक्त राष्ट्र एसडीजी पर प्रगति को ट्रैक करने के लिए डेटा संग्रह, विश्लेषण और निगरानी तंत्र में सुधार करने में भारत की सहायता करता है। इसमें साक्ष्य-आधारित नीति निर्माण के लिए डेटा उत्पादन और क्षमता निर्माण में राष्ट्रीय सांख्यिकीय एजेंसियों का समर्थन करना शामिल है।
- **साझेदारी और सहयोग:** संयुक्त राष्ट्र एसडीजी कार्यान्वयन के लिए बहु-हितधारक साझेदारी को बढ़ावा देने के लिए भारत सरकार, नागरिक समाज संगठनों, शिक्षाविदों, निजी क्षेत्र की संस्थाओं और अन्य हितधारकों के साथ सहयोग करता है। ये साझेदारियाँ एसडीजी को प्राप्त करने की दिशा में संसाधन जुटाने, नवाचार और सामूहिक कार्रवाई की सुविधा प्रदान करती हैं।
- **वकालत और जागरूकता:** संयुक्त राष्ट्र एसडीजी की सार्वजनिक समझ को बढ़ावा देने और उनके कार्यान्वयन के लिए समर्थन जुटाने के लिए वकालत अभियान और जागरूकता बढ़ाने वाली गतिविधियों का आयोजन करता है। इसमें एसडीजी के महत्व को बढ़ाने और जमीनी स्तर पर भागीदारी को प्रोत्साहित करने के लिए मीडिया, युवा समूहों और सामुदायिक संगठनों के साथ जुड़ना शामिल है।
- **नवाचार और प्रौद्योगिकी को बढ़ावा देना:** संयुक्त राष्ट्र उन पहलों का समर्थन करता है जो भारत में सतत विकास के लिए नवाचार और प्रौद्योगिकी का उपयोग करती हैं। इसमें डिजिटल समाधान, नवीकरणीय ऊर्जा प्रौद्योगिकियों और अन्य नवाचारों को बढ़ावा देना शामिल है जो एसडीजी उपलब्धि में योगदान करते हैं।

भारत में एसडीजी के लिए संयुक्त राष्ट्र का समर्थन बहुआयामी है, जिसमें नीतिगत सलाह, तकनीकी सहायता, साझेदारी, वकालत और नवाचार शामिल हैं, जिसका उद्देश्य अधिक टिकाऊ और न्यायसंगत भविष्य की दिशा में प्रगति में तेजी लाना है।

### सतत विकास के लिए नीतिगत पहल

सतत विकास के लिए कुछ महत्वपूर्ण नीतिगत पहल शामिल हो सकते हैं :

- **शिक्षा और प्रशिक्षण को प्रोत्साहन:** शिक्षा और प्रशिक्षण के माध्यम से जनसामान्य को शिक्षित बनाने के लिए नीतियों को विकसित करना महत्वपूर्ण है।
- **विज्ञान, प्रौद्योगिकी, और अभियांत्रिकी (एसटीई) को बढ़ावा देना:** तकनीकी और वैज्ञानिक उद्यमों के लिए नीतियों का समर्थन करना विकास को बढ़ावा देने में महत्वपूर्ण है।
- **रोजगार के अवसरों को बढ़ावा देना:** नौकरियों के अवसरों को बढ़ाने के लिए उद्योगों को बढ़ावा देना और उन्हें व्यापारिक मार्गदर्शन प्रदान करना महत्वपूर्ण है।
- **समुचित आर्थिक नीतियाँ:** समुचित आर्थिक नीतियों के माध्यम से वित्तीय स्थिरता और समृद्धि को प्रोत्साहित किया जा सकता है।
- **सामाजिक न्याय और समानता को प्रोत्साहित करना:** समाज में समानता और न्याय को प्रोत्साहित करने के लिए नीतियों को बनाए रखना महत्वपूर्ण है।



- **पर्यावरण संरक्षण:** वातावरणीय संरक्षण को प्राथमिकता देना विकास के लिए अनिवार्य है। विकास नीतियों में पर्यावरण की सुरक्षा को ध्यान में रखना चाहिए।
- ये नीतिगत पहलें सतत और समृद्ध विकास की दिशा में महत्वपूर्ण हो सकती हैं।

### सतत विकास के लक्ष्यों का स्थानीयकरण एवं पंचायतों की भूमिका

सतत विकास के लक्ष्यों का स्थानीयकरण एवं पंचायतों की भूमिका विशेष महत्वपूर्ण है क्योंकि यह उन्हें सीधे लोगों के संग्रहण के स्तर पर लाने में मदद करता है और उनके विकास में सक्रिय भागीदारी को प्रोत्साहित करता है। निम्नलिखित तरीके से स्थानीय स्तर पर विकास के लक्ष्यों का संशोधन और कार्यान्वयन होता है :

- **विकास की जरूरतों का समीक्षण:** पंचायतों ने स्थानीय स्तर पर विकास की जरूरतों का समीक्षण करने का महत्वपूर्ण योगदान दिया है। वे अपने क्षेत्र में की जाने वाली समस्याओं को पहचानते हैं और उनके समाधान के लिए कार्रवाई करते हैं।
- **स्थानीय संसाधनों का उपयोग:** पंचायतों के माध्यम से स्थानीय संसाधनों का सदुपयोग किया जाता है। वे स्थानीय जल, भूमि, और मानव संसाधनों को सहज रूप से विकसित करते हैं और उनका उपयोग स्थानीय विकास के लिए करते हैं।
- **सामुदायिक सहभागिता:** पंचायतों की भूमिका में सामुदायिक सहभागिता का महत्वपूर्ण स्थान है। वे स्थानीय स्तर पर लोगों को जोड़ते हैं, उनकी राय और सुझावों को सुनते हैं, और समाधानों के लिए सहयोग करते हैं।
- **कार्यक्रमों का अनुगमन और मूल्यांकन:** पंचायतों ने विकास कार्यक्रमों का संचालन, अनुगमन, और मूल्यांकन करने का महत्वपूर्ण योगदान दिया है। वे यह सुनिश्चित करते हैं कि कार्यक्रमों का लाभ सीधे और समान रूप से समुदाय के सदस्यों तक पहुंचता है।
- **नैतिकता और संवेदनशीलता:** पंचायतों की भूमिका में नैतिकता और संवेदनशीलता का महत्वपूर्ण स्थान है। वे समुदाय के हित में काम करते हैं और संरक्षण के मामले में नेतृत्व करते हैं।
- **विशेषज्ञ संगठनों के साथ काम करना:** पंचायतों को विशेषज्ञ संगठनों के साथ सहयोग करने का अवसर मिलता है। इसके माध्यम से वे विकास कार्यक्रमों को विशेषज्ञता और संदर्भ के साथ संचालित कर सकते हैं।
- **साक्षात्कार और प्रोत्साहन:** पंचायतों की भूमिका में साक्षात्कार और प्रोत्साहन का महत्व है। वे उत्साहित करते हैं और सामाजिक और आर्थिक सुधार के लिए नए और नवाचारी विचारों का समर्थन करते हैं।
- **संविदा और अधिकार:** पंचायतों की भूमिका में संविदा और अधिकार का महत्वपूर्ण स्थान है। वे लोगों को उनके अधिकारों के बारे में शिक्षित करते हैं और उन्हें सक्रिय भागीदारी के लिए प्रोत्साहित करते हैं।

स्थानीय स्तर पर पंचायतों का योगदान सतत विकास के लक्ष्यों को प्राप्त करने में महत्वपूर्ण है, और यह लोगों को सशक्त बनाता है और उनके विकास में सहायक होता है।

### G20 के सतत विकास लक्ष्यों की ओर तेजी से बढ़ते कदम

G20 विश्व की अर्थव्यवस्था में महत्वपूर्ण स्थान धारण करने वाला एक समूह है, जो 19 देशों और यूरोपीय संघ को समाहित करता है। यह समूह ग्लोबल आर्थिक मामलों, वित्तीय स्थिति, विपणन नीति, और अन्य विकास के मुद्दों पर सहयोग करने के लिए बनाया गया है। G20 के सतत विकास लक्ष्यों का संवाहक रूप से उनके कदमों का संक्षेप निम्नलिखित है :

- **आर्थिक विकास और विकासशीलता:** G20 देशों ने आर्थिक विकास और विकासशीलता को प्राथमिकता दी है। उनके उद्देश्यों में अधिक रोजगार, उत्पादकता की वृद्धि, और वित्तीय स्थिरता को सुनिश्चित करना शामिल है।

- **संकलित और समावेशी विकास:** G20 देशों ने विकास के लिए संकलित और समावेशी दृष्टिकोण को प्रोत्साहित किया है। इसमें गरीबी की अल्पीकरण, विकासशील उत्पादन का बढ़ावा, और सामाजिक समावेशशीलता शामिल है।
- **पर्यावरण संरक्षण और समुदाय कल्याण:** G20 देशों ने पर्यावरण संरक्षण और समुदाय कल्याण के मामलों पर विशेष ध्यान दिया है। इसमें जलवायु परिवर्तन के साथ लड़ाई, वन्यजीव संरक्षण, और स्वच्छता कार्यक्रम शामिल हैं।
- **साक्षरता और शिक्षा:** G20 देशों ने साक्षरता और शिक्षा को महत्वपूर्ण मुद्दा माना है। उनके लक्ष्य में साक्षरता दरों की बढ़ोतरी, उच्च शिक्षा की उपलब्धता, और उत्कृष्ट शिक्षा संस्थानों का विकास शामिल है।
- **विश्व स्वास्थ्य और मेडिकल इंफ्रास्ट्रक्चर:** G20 देशों ने विश्व स्वास्थ्य को प्राथमिकता दी है, जैसे कि मेडिकल इंफ्रास्ट्रक्चर का विकास, नई और प्रभावी बीमा योजनाएं, और जीवनकारी उत्पादों की उपलब्धता।
- **डिजिटल युग और तकनीकी उन्नति:** G20 देशों ने डिजिटल युग और तकनीकी उन्नति को बढ़ावा देने का संकल्प लिया है। इसमें डिजिटल अवसरों के उपयोग को बढ़ावा, साइबर सुरक्षा के प्रति जागरूकता, और तकनीकी शिक्षा शामिल है।
- **व्यापार और व्यापार सुधार:** G20 देशों ने व्यापार और व्यापार सुधार के लिए उत्साहित किया है। इसमें व्यापारिक बाधाओं को कम करना, अंतर्राष्ट्रीय व्यापार के नियमों का सुधार, और उद्यमिता को प्रोत्साहित करना शामिल है।
- **सांगठनिक सहयोग और संगठनों का निर्माण:** G20 देशों ने सांगठनिक सहयोग और संगठनों के माध्यम से विकास के लिए एकजुटता को बढ़ावा दिया है। इसमें आधुनिक संगठनों के विकास, साझा अनुसंधान प्रोग्राम, और गतिविधियों के संगठन शामिल हैं।
- **साक्षरता को बढ़ावा और सामाजिक सुरक्षा:** G20 ने आधुनिक दुनिया में साक्षरता को बढ़ावा और सामाजिक सुरक्षा की दिशा में कदम उठाए हैं। इसमें शिक्षा पहुंच के संवाहक प्रोग्राम, आर्थिक सहायता, और समाज कल्याण कार्यक्रम शामिल हैं।
- **अन्तर्राष्ट्रीय सहयोग और विश्व शांति:** G20 देशों ने अन्तर्राष्ट्रीय सहयोग और विश्व शांति के लिए महत्वपूर्ण योजनाएं बनाई हैं। इसमें विश्व सुरक्षा, साझा रक्षा प्रोग्राम, और अंतर्राष्ट्रीय योजनाएं शामिल हैं।

ये सतत विकास लक्ष्य G20 के सदस्य देशों के सहयोग और उनके आर्थिक, सामाजिक, और राजनीतिक प्रतिबद्धताओं का परिणाम हैं। इन लक्ष्यों के लिए साझा संघर्ष और साझा दृढ़ता के साथ, G20 देशों ने विश्व के सामाजिक और आर्थिक विकास में महत्वपूर्ण योगदान दिया है।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सतत विकास लक्ष्यों में भारत की भूमिका

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### सारांश

सतत विकास से हमारा अभिप्राय ऐसे विकास से है, जो हमारी भावी पीढ़ियों की अपनी ज़रूरतें पूरी करने की योग्यता को प्रभावित किये बिना वर्तमान समय की आवश्यकताएँ पूरी करे। सतत विकास लक्ष्यों का उद्देश्य सबके लिये समान, न्यायसंगत, सुरक्षित, शांतिपूर्ण, समृद्ध और रहने योग्य विश्व का निर्माण करना और विकास के तीनों पहलुओं, अर्थात् सामाजिक समावेश, आर्थिक विकास और पर्यावरण संरक्षण को व्यापक रूप से समाविष्ट करना है। सहस्राब्दि विकास लक्ष्य के बाद (जो 2000 से 2015 तक के लिये निर्धारित किये गए थे) विकसित इन नए लक्ष्यों का उद्देश्य विकास के अधूरे कार्य को पूरा करना और ऐसे विश्व की संकल्पना को मूर्त रूप देना है, जिसमें चुनौतियाँ कम और आशाएँ अधिक हों। सभी के लिये स्वच्छता और पानी के सतत प्रबंधन की उपलब्धता सुनिश्चित करना। सस्ती, विश्वसनीय, टिकाऊ और आधुनिक ऊर्जा तक पहुँच सुनिश्चित करना। सभी के लिये निरंतर समावेशी और सतत आर्थिक विकास, पूर्ण और उत्पादक रोज़गार तथा बेहतर कार्य को बढ़ावा देना। लचीले बुनियादी ढाँचे, समावेशी और सतत औद्योगीकरण को बढ़ावा।

**मूलशब्द:** समाज की आवश्यकता, समाज विकास के लक्ष्य, समाज में निहित कार्यों की समीक्षा आदि।

### परिचय

सतत विकास एक दूरदर्शी योजना है जो आर्थिक विकास को माँ सामाजिक न्याय संगतता और पर्यावरण संरक्षण के समावेशन से विकास का आह्वान करती है तथा विकास के लिए जो भविष्य की पीढ़ियों आवश्यकताओं को ध्यान में रख दें, वर्तमान की आवश्यकताओं को पूरा करने पर जोर देती है।

सतत विकास लक्ष्यों को वैश्विक लक्ष्यों के रूप में भी जाना जाता है। बिल का उद्देश्य वर्ष 2030 तक दुनिया भर में गरीबी को समाप्त कर सभी नागरिकों को एक सामान सुरक्षित और उत्कृष्ट जीवन देना है। सतत विकास, आर्थिक विकास, पर्यावरण संरक्षण और सामाजिक कल्याण के बीच संतुलन खोजने का प्रयास करता है। 2015 में संयुक्त राष्ट्र महासभा के शिखर सम्मेलन में 193 सदस्य देशों ने इसे अपनाया और बताया कि वैश्विक स्तर पर सतत विकास प्राप्त करने के लिए लक्ष्य कैसे एकीकृत और अभिभाजन है संयुक्त राष्ट्र ने 17 विश्व विकास लक्ष्य बनाए, जिन्हें सतत विकास लक्ष्य एसडीजी कहा जाता है। इनका संक्षिप्त विवरण निम्न है।

#### 1. निर्धनता नहीं

गरीबी के सभी रूपों की पूरे विश्व में समाप्ति।

#### 2. शून्य भूख

भूख की समाप्ति, खाद्य सुरक्षा और बेहतर पोषण और बिकाऊ कृषि को बढ़ावा।

#### 3. अच्छा स्वास्थ्य और खुशहाली

सभी आयु के लोगों में स्वास्थ्य, सुरक्षा और सवस्थ जीवन को बढ़ावा।

#### 4. गुणवत्ता की शिक्षा

समावेशी और न्यायसंगत गुणवत्तायुक्त शिक्षा सुनिश्चित करने के साथ ही लोगों को सीखने का अवसर देना।

#### 5. लैंगिक समानता

लैंगिक समानता प्राप्त करने के साथ ही महिलाओं और लड़कियों को सशक्त करना।

#### 6. स्वच्छ जल एवं स्वच्छता

सभी के लिए स्वच्छता और पानी के सतत प्रबंधन की उपलब्धता सुनिश्चित करना।

#### 7. सस्ती और स्वच्छ ऊर्जा

सस्ती, विश्वसनीय, टिकाऊ और आधुनिक ऊर्जा सब तक पहुंचाना सुनिश्चित करना।

#### 8. अच्छा काम और आर्थिक विकास

सभी के लिए निरंतर समावेशी और सतत आर्थिक विकास, पूर्ण और उत्पादक रोज़गार तथा बेहतर काम को बढ़ावा देना।

#### 9. उद्योग नवाचार और बुनियादी ढांचा

लचीले बुनियादी ढांचे, समावेशी और सतत औद्योगीकरण को बढ़ावा।

#### 10. असमानताओं में कमी

देशों के बीच और भीतर असमानता को कम करना।

#### 11. टिकाऊ शहर और समुदाय

सुरक्षित, लचीले और टिकाऊ शहर को और मानव बस्तियों का

निर्माण।

## 12. जिम्मेदार उपभोग और उत्पादन

स्थायी खपत और उत्पादन पैटर्न को सुनिश्चित करना।

## 13. जलवायु कार्रवाई

जलवायु परिवर्तन और उसके प्रभावों से निपटने के लिए तत्काल कर कार्रवाई करना।

## 14. पानी के नीचे जीवन

स्थायी सतत विकास के लिये महासागरों, समुद्रों और समुद्री संसाधनों का संरक्षण और उपयोग।

## 15. जमीन पर जीवन

सतत उपयोग को बढ़ावा देने वाले परिस्थितिकीय प्रणालीयों, सुरक्षित जंगलों, भूमि शरण और जैव विविधता के बढ़ते नुकसान को रोकने का प्रयास करना।

## 16. शांति न्याय और मजबूत संस्थाएँ

सतत विकास के लिए शांतिपूर्ण और समावेशी समितियों को बढ़ावा देने के साथ ही साथ सभी स्तरों पर इन्हें प्रभावित, जवाबदेह पूर्ण बनाना ताकि सभी के लिये न्याय सुनिश्चित हो सके।

## 17. लक्ष्यों के लिए साझेदारी

सतत विकास के लिए वैश्विक भागीदारी को पुनर्जीवित करने के अतिरिक्त कार्य का आयोजन वयन के साधनों को मजबूत बनाना।

## भारत में सतत विकास लक्ष्य

सतत विकास लक्ष्यों को लागू करने में भारत का रिकॉर्ड -

- कुशल श्रमिकों को रोजगार उपलब्ध कराने और उनके जीवन स्तर में सुधार के लिए महात्मा गाँधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम लागू किया जा रहा है।
- सब्सिडी युक्त खाद्यान्न उपलब्ध कराने के लिए राष्ट्रीय खाद्य सुरक्षा अधिनियम लागू किया जा रहा है।
- लक्ष्य अपने प्रमुख कार्यक्रम स्वच्छ भारत अभियान के तहत भारत को खुले में शौच से मुक्त बनाना है।
- सौर ऊर्जा, पवन ऊर्जा और ऊर्जा दक्षता के ऐसे अन्य नवीकरणीय स्रोतों का दोहन करने और जीवाश्म ईंधन पर निर्भरता को कम करने के लिए 2022 तक नवीकरणीय ऊर्जा उत्पादन लक्ष्य 175 गीगावाट निर्धारित किया गया है।
- बुनियादी ढांचे के पहलुओं में सुधार के लिए अटल कायाकल्प और शहरी परिवर्तन मिशन (अमृत) और हेरिटेज सिटी डेवलपमेंट एंड ऑगमेंटेशन योजना (हृदय) आ योजनाएं शुरू की गई हैं।
- भारत ने पेरिस समझौते को मंजूरी देकर जलवायु परिवर्तन से निपटने की अपनी मंशा जाहिर कर दी है।

## संकेतकों की समीक्षा

2020 में संयुक्त राष्ट्र सांख्यिकी आयोग के 51वें सत्र में संकेतक ढांचे की व्यापक समीक्षा की गई। 2025 में इसकी फिर से समीक्षा की जाएगी, सांख्यिकी आयोग के 51वें सत्र में (3-6 मार्च 2020 तक न्यूयॉर्क शहर में आयोजित) आयोग के विचार के लिए वैश्विक संकेतक ढांचे में कुल 36 बदलाव प्रस्तावित किए गए थे। कुछ संकेतकों को प्रतिस्थापित, संशोधित या हटा दिया गया। 15 अक्टूबर 2018 और 17 अप्रैल 2020 के बीच, संकेतकों में अन्य बदलाव किए गए। फिर भी उनका मापन कठिनाइयों से भरा हुआ है।

## सतत विकास लक्ष्य के उद्देश्य—

### 1. कोई गरीबी नहीं

एसडीजी 1 का उद्देश्य है: "हर जगह गरीबी को उसके सभी रूपों में समाप्त करना।" एसडीजी 1 को प्राप्त करने से 2030 तक विश्व स्तर

पर अत्यधिक गरीबी समाप्त हो जाएगी। इसका एक संकेतक गरीबी रेखा से नीचे रहने वाली आबादी का अनुपात है। डेटा का विश्लेषण लिंग, आयु, रोजगार की स्थिति और भौगोलिक स्थिति (शहरी/ग्रामीण) के आधार पर किया जाता है।

### 2. शून्य मूल्य (कोई मूल्य नहीं)

एसडीजी 2 का उद्देश्य है: "मूल्यमरी समाप्त करना, खाद्य सुरक्षा और बेहतर पोषण प्राप्त करना और टिकाऊ कृषि को बढ़ावा देना।" इस लक्ष्य के संकेतक उदाहरण के लिए अल्पपोषण की व्यापकता, गंभीर खाद्य असुरक्षा की व्यापकता और पांच साल से कम उम्र के बच्चों में बौनेपन की व्यापकता हैं।

### 3. अच्छा स्वास्थ्य और खुशहाली संपादन करना

एसडीजी 3 का उद्देश्य है: "स्वस्थ जीवन सुनिश्चित करना और सभी उम्र के लोगों के कल्याण को बढ़ावा देना।" यहां महत्वपूर्ण संकेतक जीवन प्रत्याशा के साथ-साथ बाल और मातृ मृत्यु दर भी हैं। अन्य संकेतक उदाहरण के लिए सड़क यातायात की चोटों से होने वाली मौतें, वर्तमान तंबाकू के उपयोग की व्यापकता और आत्महत्या मृत्यु दर हैं।

### 4. गुणवत्तापूर्ण शिक्षा संपादन करना

एसडीजी 4 का उद्देश्य है: "समावेशी और समान गुणवत्ता वाली शिक्षा सुनिश्चित करना और सभी के लिए आजीवन सीखने के अवसरों को बढ़ावा देना।"

### 5. लैंगिक समानता संपादन करना

एसडीजी 5 का उद्देश्य है: "लैंगिक समानता हासिल करना और सभी महिलाओं और लड़कियों को सशक्त बनाना।" संकेतकों में, उदाहरण के लिए, उपयुक्त कानूनी ढांचे का होना और राष्ट्रीय संसद या स्थानीय विचार-विमर्श निकायों में महिलाओं का प्रतिनिधित्व शामिल है। जबरन विवाह और महिला जननांग विकृति/काटने (एफजीएम/सी) के आंकड़े भी एक अन्य संकेतक में शामिल हैं।

### 6. स्वच्छ जल और स्वच्छता संपादन करना

एसडीजी 6 का उद्देश्य है: "सभी के लिए पानी और स्वच्छता की उपलब्धता और स्थायी प्रबंधन सुनिश्चित करना।" और यूनिसेफ का संयुक्त निगरानी कार्यक्रम (जेएमपी) इस लक्ष्य के पहले दो लक्ष्यों को प्राप्त करने के लिए प्रगति की निगरानी के लिए जिम्मेदार है। इस लक्ष्य के लिए महत्वपूर्ण संकेतक जनसंख्या का वह प्रतिशत है जो सुरक्षित रूप से प्रबंधित पेयजल का उपयोग करता है, और सुरक्षित रूप से प्रबंधित स्वच्छता तक पहुंच रखता है। जेएमपी ने 2017 में बताया कि 4.5 अरब लोगों के पास सुरक्षित रूप से स्वच्छता का प्रबंधन नहीं है। एक अन्य संकेतक घरेलू और औद्योगिक अपशिष्ट जल के अनुपात को देखता है जिसे सुरक्षित रूप से उपचारित किया जाता है।

### 7. सस्ती और स्वच्छ ऊर्जा संपादन करना

एसडीजी 7 का उद्देश्य "सभी के लिए सस्ती, विश्वसनीय, टिकाऊ और आधुनिक ऊर्जा तक पहुंच सुनिश्चित करना है।" इस लक्ष्य के लिए संकेतकों में से एक बिजली तक पहुंच वाली आबादी का प्रतिशत है (बिजली तक पहुंच बढ़ाने में प्रगति कई देशों में हुई है, विशेष रूप से भारत, बांग्लादेश और केन्या में)। अन्य संकेतक नवीकरणीय ऊर्जा हिस्सेदारी और ऊर्जा दक्षता को देखते हैं।

### 8. अच्छा काम और आर्थिक विकास

एसडीजी 8 का उद्देश्य है: "निरंतर, समावेशी और टिकाऊ आर्थिक विकास, पूर्ण और उत्पादक रोजगार और सभी के लिए सभ्य काम को बढ़ावा देना।" वास्तविक सकल घरेलू उत्पाद की दर शामिल है।

इसके अतिरिक्त उदाहरण युवा बेरोजगारी और व्यावसायिक चोटों की दर या पुरुषों की तुलना में श्रम बल में लगी महिलाओं की संख्या हैं।

### 9. उद्योग, नवाचार और बुनियादी ढाँचा संपादन करना

एसडीजी 9 का उद्देश्य है: "लचीले बुनियादी ढाँचे का निर्माण करना, समावेशी और टिकाऊ औद्योगीकरण को बढ़ावा देना और नवाचार को बढ़ावा देना।" इस लक्ष्य के संकेतकों में उदाहरण के लिए, उन लोगों का अनुपात शामिल है जो विनिर्माण गतिविधियों में कार्यरत हैं, मोबाइल नेटवर्क द्वारा कवर किए गए क्षेत्रों में रह रहे हैं, या जिनके पास इंटरनेट तक पहुंच है। जलवायु परिवर्तन से जुड़ा एक संकेतक "वर्धित मूल्य की प्रति इकाई CO<sub>2</sub> उत्सर्जन" है।

### 10. असमानता कम करके संपादन करना

एसडीजी 10 का उद्देश्य है: "देशों के भीतर और उनके बीच आय असमानता को कम करना।" इस एसडीजी के लिए महत्वपूर्ण संकेतक हैं: आय असमानताएं, लिंग और विकलांगता के पहलू, साथ ही लोगों के प्रवास और गतिशीलता के लिए नीतियां।

### 11. टिकाऊ शहर और समुदाय संपादन करना

एसडीजी 11 का उद्देश्य है: "शहरों और मानव बस्तियों को समावेशी, सुरक्षित, लचीला और टिकाऊ बनाना।" इस लक्ष्य के लिए महत्वपूर्ण संकेतक शहरी मलिन बस्तियों में रहने वाले लोगों की संख्या, सार्वजनिक परिवहन तक सुविधाजनक पहुंच वाली शहरी आबादी का अनुपात और प्रति व्यक्ति निर्मित क्षेत्र की सीमा हैं।

### 12. जिम्मेदार उपभोग और उत्पादन संपादन करना

एसडीजी 12 का उद्देश्य है: "स्थायी उपभोग और उत्पादन पैटर्न सुनिश्चित करना।" संकेतकों में से एक स्थायी उपभोग और उत्पादन पैटर्न को बढ़ावा देने के लिए राष्ट्रीय नीति उपकरणों की संख्या है। दूसरा वैश्विक जीवाश्म ईंधन सब्सिडी है। घरेलू पुनर्चक्रण में वृद्धि और वैश्विक प्लास्टिक अपशिष्ट व्यापार पर कम निर्भरता अन्य कार्य हैं जो लक्ष्य को पूरा करने में मदद कर सकते हैं।

### 13. जलवायु कार्रवाई संपादन करना

एसडीजी 13 का उद्देश्य है: "उत्सर्जन को विनियमित करने और नवीकरणीय ऊर्जा में विकास को बढ़ावा देकर जलवायु परिवर्तन और इसके प्रभावों से निपटने के लिए तत्काल कार्रवाई करना।" 2021 से 2023 की शुरुआत में, जलवायु परिवर्तन पर अंतर सरकारी पैनल (आईपीसीसी) ने अपनी छठी मूल्यांकन रिपोर्ट प्रकाशित की, जो जलवायु परिवर्तन से संबंधित वैज्ञानिक, तकनीकी और सामाजिक-आर्थिक जानकारी का आकलन करती है।

### 14. पानी के नीचे जीवन संपादन करना

एसडीजी 14 का उद्देश्य है: "स्थायी विकास के लिए महासागरों, समुद्रों और समुद्री संसाधनों का संरक्षण और सतत उपयोग।" महासागरों, समुद्री पर्यावरण और छोटे पैमाने के मछुआरों की सुरक्षा के मौजूदा प्रयास संसाधनों की सुरक्षा की आवश्यकता को पूरा नहीं कर रहे हैं। समुद्र के तापमान में वृद्धि और ऑक्सीजन की हानि समुद्र के अम्लीकरण के साथ-साथ समुद्री पर्यावरण पर जलवायु परिवर्तन के दबाव की घातक तिकड़ी का गठन करती है।

### 15. भूमि पर जीवन संपादन करना

एसडीजी 15 का उद्देश्य है: "स्थलीय पारिस्थितिकी प्रणालियों की रक्षा करना, पुनर्स्थापित करना और स्थायी उपयोग को बढ़ावा देना, जंगलों का स्थायी प्रबंधन करना, मरुस्थलीकरण से निपटना, और भूमि क्षरण को रोकना और उलटना और जैव विविधता के नुकसान को रोकना।" शेष वन क्षेत्र का अनुपात, मरुस्थलीकरण और प्रजातियों के विलुप्त होने का जोखिम इस लक्ष्य के उदाहरण संकेतक हैं।

### 16. शांति, न्याय और मजबूत संस्थाएँ संपादन करना

एसडीजी 16 का उद्देश्य है: "स्थायी विकास के लिए शांतिपूर्ण और समावेशी समाजों को बढ़ावा देना, सभी के लिए न्याय तक पहुंच प्रदान करना और सभी स्तरों पर प्रभावी, जवाबदेह और समावेशी संस्थानों का निर्माण करना।" जन्म पंजीकरण की दर और रिश्तखोरी की व्यापकता इस लक्ष्य में शामिल संकेतकों के दो उदाहरण हैं।

### 17. लक्ष्यों के लिए साझेदारी संपादन करना

एसडीजी 17 का उद्देश्य है: "कार्यान्वयन के साधनों को मजबूत करना और सतत विकास के लिए वैश्विक साझेदारी को पुनर्जीवित करना।" बढ़ते अंतर्राष्ट्रीय सहयोग को पिछले 16 लक्ष्यों में से प्रत्येक को प्राप्त करने के लिए महत्वपूर्ण माना जाता है। ज्ञान के आदान-प्रदान, विशेषज्ञता, प्रौद्योगिकी और वित्तीय संसाधनों की सुविधा के लिए बहु-हितधारक साझेदारी विकसित करना एसडीजी की समग्र सफलता के लिए महत्वपूर्ण माना जाता है। लक्ष्य में उत्तर-दक्षिण और दक्षिण-दक्षिण सहयोग में सुधार शामिल है। सार्वजनिक-निजी भागीदारी जिसमें नागरिक समाज शामिल हैं, का विशेष रूप से उल्लेख किया गया है।

### निष्कर्ष

सतत विकास लक्ष्यों का मुख्य उद्देश्य विश्व में गरीबी को पूर्णतः समाप्त करना है तथा सभी समाजों में सामाजिक न्याय व पूर्ण समानता स्थापित करना है। गंभीरता से इन लक्ष्यों का प्राप्ति हेतु कम करना पड़ेगा।

एजेंडा 2030 में सब लक्ष्यों को प्राप्त करना है तो इस तरह की नीति बनानी पड़ेगी जो सभी क्षेत्रों में क्रियान्वित नीतियों से सामाजिक स्थिति को सुधारेगी। साथ ही प्रशासनिक एवं छोटे स्तर पर इन नीतियों के क्रियान्वयन हेतु सामंजस्य तथा भागीदारी पर ध्यान देना होगा। यदि हम सतत विकास लक्ष्यों को वर्ष 2015 तक प्राप्त नहीं कर सके तो इसका मुख्य कारण यह है कि सब नीतियों का क्रियान्वयन सही प्रकार से नहीं था।

यदि हम सतत विकास लक्ष्यों 2030 तक प्राप्त कर लेते हैं तो ही सही अर्थों में भारत एक विकसित तथा समृद्ध राष्ट्र बन सकता है।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Sociological dimensions of sustainable development

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### Abstract

This Research paper focused on how sustainable development from a sociological perspective involves examining how social factors and structures influence and are influenced by sustainable practices. It includes issues such as social equity, community involvement, and the distribution of resources. Sociological dimensions explore how sustainable development can address and be shaped by social inequalities, cultural values, and the role of communities in decision-making processes. The sociological dimension adds at least two sets of elements to sustainable development. In the first place, it provides a number of concepts that help explaining social actions, human relations, the complex forms of sociological organisation, institutionalized arrangements and culture, motivations, incentive and values that shape man's attitude towards his fellow creature and natural resources. In the second place, it provides social methods for the prompt coordination of social actions and acts as a barrier against harmful behaviour stimulating association, alternative social arrangements and social capital development. It also considers the impact of globalization on social structures and the need for inclusive and participatory approaches to achieve long-term sustainability goals. Sustainable development involves meeting the necessities of the current generation without compromising the capacity of the coming generation to satisfy their own needs. The score of the index of all 17 goals has to be increased by finding a balanced solution to the socio-economic and environmental aspects of sustainable development through inclusion and integration. In the presented research paper, all aspects of sustainable development have been analysed. Which can help in ensuring sustainable and balanced growth prospects.

**Keywords:** sustainable development, SDGS, millennium development goals, MDGS, social, economic, institutional & environmental dimensions, quality of life

### Introduction

Sustainable development is a process that seeks to meet present needs to ensure prosperity, while ensuring the security of future wealth, thereby improving environmental, social and economic conditions. Its main objective is to protect the future from poverty and secure a prosperous future for the land, taking into account social justice, economic conditions, and economic balance. Its main goal was to preserve the quality of the environment. At present, the sustainable development also embraces the quality of life both from the economical and the social perspective. Prosperity, social justice, and partnership are considered important in the sociological aspect of sustainable development. It pays attention to inclusion in the social structure, social dimensions of prosperity, and sustainability. Efforts are made to support sustainable development through a vision of social justice, partnership, and prosperity to empower individuals and communities. Economic sustainability in sustainable development means that the development process should be such that balance between society, environment, and economy is maintained. It reflects the ability to maximize profits as well as maintain prosperity for future generations.

The sustainable development is the totality of socio-economic

development forms and methods not only on the short or medium term, but also on the long term. The basis of these methods is the balance between the socio-economic systems and the elements of the natural capital. Sustainable development as a concept has materialized during decades, within the framework of thorough international scientific debates, and has assumed political potential through globalisation. Sustainable development was probably coined by Barbara Ward -Lady Jackson, founder of the International Institute for Environment and Development, in the early 1970s. Sustainable development is broadly about the equality of people, their economic and social well-being, and their relationships with each other, in a context where eco-society imbalances may threaten economic and social sustainability.

The legacy of the concept of sustainable development is attributed to the report of the World Commission on Environment and Development entitled *Our Common Future* for the title 'Our Common Future', which described it as a development Defines that “it is necessary to meet the needs of the present without compromising the abilities of future generations”. Thus, it also attempts to fulfil the imperative of fairness within human generations and intergenerational fairness. Sustainable development is development that meets

the welfare needs of present and future generations. It is concerned with development over the long term, focusing on sustainability issues and particularly structural changes that result from qualitatively different characteristics of states or the behaviour of the system under consideration.

The global and local impacts of environmental degradation, it is no surprise that sustainable development has become a 'favourite term' in development planning and resource management. However, the interpretation of this concept is still unclear. According to the Brundtland Report, the idea of sustainable development reaches far beyond environmental protection, as it implies a process of change, including the exploitation of resources, the direction of investment, the orientation of technological development and institutional change in the future as well. They are also made logical with the needs of the present. It is not a fixed state of harmony, but a balanced and adaptive process of change.

The "balance between economic growths" for sustainability includes all quantitative and qualitative changes in the economy that contribute positively to well-being, and ecological sustainability includes all quantitative and qualitative environmental strategies that work to improve the quality of ecosystems and ultimately have a positive impact on well-being. Both economic and environmental systems require a certain minimum starting point to survive.

"In short, sustainable development is a process of change in which the exploitation of resources, the direction of investment, the orientation of technological development, and institutional change, are all in harmony with the current and future capacity to meet human needs and aspirations. Let's increase both".

The Brundtland Commission's definition of "meeting the needs of present generations without compromising the needs of future generations" is strongly endorsed by the World Development Report (1992).

The sustainable development rejects the traditional approach, which considers economic development as a necessity but environmental protection as a luxury. Partha Das Gupta and Karl-Goran Maler, 1990 write that "Environmental resources are of little importance to poor countries they play an important role in the process of economic development such Resources are luxuries, and they become more prominent in the public consciousness only when incomes are high. Environmental resources are simply the preoccupation of rich countries. They are a distraction by economists from issues that concern poorer is not sensitive to the real needs of the poor in the countries."

Ashish Kothari (1993) states that "the definition of sustainable development as currently defined does not adequately address the sustainability of intra-generational inter-species inequity, and hence happiness, equality, is not acceptable from the perspective of the larger humanitarian goals of justice and peace."

Griggs (2013) has redefined sustainable development as—"Sustainable development is development that meets current development needs while preserving the Earth's life-support systems on which the well-being of present and future generations depends".

The slogan of the then Government of India, 'Sabha Saath Sabha Vivaas' also underlines the same principle of SDG. The 17 goals of the SDGs are woven around five pillars (the initials

'P') made up of 5 P's - People, Prosperity, Planet, Peace and Partnership (Peace & Partnership).

### **Nature of sustainable development**

When considering what we leave and inherit for our children and grandchildren, we must think about the full range of physical and human capital and natural resources that will determine their well-being. Adopting the principle of sustainable development will require a fundamental change in thinking. Data used for decision-making should constrain the true costs of resource depletion and pollution as they impact future generations rather than the short-term benefits of depleting income-producing resources now. Data should take into account future needs alongside current needs, not discount them, leading to decisions that favor short-term impacts.

Ciriacy-Wantrup, 1952 emphasized the use of safe minimum standards for conservation by avoiding overexploitation of important areas of the environment by limiting human activities, which would allow it to halt or reverse environmental degradation. Make it unconstitutional. Thus, the idea of sustainable development requires careful consideration of local threshold levels for both economic and environmental systems. For example, deforestation may be necessary for agricultural development in a regional economy such as Brazil, but it may prove fatal and detrimental to global ecological sustainability when a country experiences rapid population growth or rapid urbanization, then Gross National Product or GNP growth may hide major development problems.

### **Pillars of sustainable development**

#### **Social dimension**

The social dimensions of sustainable development include "zero hunger", "good health and well-being", Ensuring a strong, healthy and just society with emphasis on "Zero Hunger, Good Health and Well-being, Quality Education, Population Control, and Gender Equality" Is.

#### **Economic dimension**

The economic dimensions of sustainable development include "no poverty", "sustainable economy", "employment opportunities", especially for women, decent work and economic growth", "management of natural resources", "responsible consumption and production" (The economic well-being of the public is included with an emphasis on No Poverty, Sustainable Economy", Employment Opportunities, Decent Work and Economic Growth, Managing Natural Resources, and Responsible Consumption and Production).

#### **Environmental dimension**

The environmental dimensions of sustainable development include "Clean Water and Sanitation", "Affordable and Clean Energy", "Reducing Emissions from Industry, Transport and Energy" along with promoting a green environment. Reducing Emissions from Industry, Transport and Energy) (reducing emissions of greenhouse gases that contribute to global warming and air pollution). "Encouraging the use of renewable sources" (such as solar or sun, wind and hydro energy), 'Climate Action and Preservation of Natural Resources' while respecting and protecting life forms in natural habitats (life under water and life on earth) Is included.

### **Institutional dimension**

The institutional dimensions of sustainable development include "Industry, Innovation and Infrastructure", "Strong Financial Resources", "Peace, Justice and Strong Institutions", "Sustainable Cities and Communities", "Partnerships/Partnerships for the Sustainable Development Goals (SDGs) and International Cooperation" (Industry, Innovation and Infrastructure, Sound Financial Resources, Peace, Justice and Strong Institutions, Sustainable Cities and Communities, Partnerships for the Sustainable Development Goals and International Cooperation).

### **UN SDGs (Sustainable development goals)**

The United Nations created a set of 17 separate but interrelated goals to guide global development between 2015 and 2030. Each objective contains target actions – there are 169 targets in total, with a total of 232 sub-indicators. The SDGs, also known as the Global Goals, call for action by all UN member states by 2015 to end poverty, protect the planet, and ensure that people enjoy peace and prosperity by 2030. Can.

The 17 Sustainable Development Goals (SDGs) are:

- No poverty,
- Zero hunger,
- Good health and well-being,
- Best education,
- Gender equality,
- Clean water and sanitation,
- Cheap and clean energy,
- Decent work and economic development,
- Industry, innovation and infrastructure,
- Reducing inequality,
- Sustainable cities and communities,
- Production of responsible consumption,
- Climate action,
- Life under water,
- Life on land,
- Peace, justice and strong institutions, and
- Partnership for the goal.

The UN resolution was adopted by the General Assembly on 6 July 2017. The proposal identifies specific tasks for each goal with indicators that are to be used to measure progress towards each task. Achieving the SDGs requires partnerships between governments, the private sector, civil society and citizens to ensure we leave a better planet for future generations.

The SDGs address many closely related issues, such as gender equality, education and culture all underpin the SDGs. To achieve sustainable development, the 3 sectors need to come together. The economic, social, political and environmental spheres are all critically important and interdependent. Progress will require multidisciplinary and transdisciplinary research in all three areas. This is proven the hard way, when major governments fail to support it. According to the United Nations the community has goals to reach far back. However, data or information should be adjusted for vulnerable groups such as children, the elderly and persons with disabilities, indigenous people, migrants and internally displaced persons. The COVID-19 pandemic had serious impacts and implications on all 17 goals in 2020.

### **SDGs in Indian's perspective**

India as a nation is the youngest country in the world and is at

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the cusp of change on the back of its inherent entrepreneurship. This requires youth to remain engaged in early education and leadership to be successful in building and sustaining long-term momentum and helping the two countries achieve these ambitious goals over the remaining ten years of the SDGs. From. According to a report, India needs US\$2.64 trillion investment for SDGs by 2030, which provides an investment opportunity of more than US\$1.12 trillion to the private sector by 2030. The study also identifies opportunities for the private sector to contribute to three infrastructure funding targets between today and 2030; Which includes Goal 6 (own water and sanitation), Goal 7 (affordable and clean energy) and Goal 9 (industry, innovation and infrastructure). 7 percent of the country's population still does not have electricity. 24 percent of people still do not have access to clean water and sanitation, and nearly US\$20 billion in investments will be needed to close this gap by 2030. To improve Goal 9 (industry, innovation and infrastructure) by 2030, the private sector can invest in transport and digital sectors; this will require an investment of approximately USD 226.5 billion. Overall, USD 176.9 billion will be required to take forward transport infrastructure and the remaining amount is for the digital sector which is only 45 per cent of the current reach. Today, due to the Corona epidemic, there are many problems like lockdown, social distancing and working from home.

Under the circumstances, there is an urgent need to increase the reach of digital sector in remote areas. In the SDG Index for 2019-20 by NITI Aayog, India has been given an overall score of 60 points, an increase of three points over the score of 2018. Kerala tops the list with a score of 70, while Bihar (50) is at the bottom. In this race, races from Himachal Pradesh and Siddhikam are competing. The slight improvement in the overall score for India is due to its improvement in the areas of clean water and sanitation, affordable and clean energy, and innovation. With respect to Goal 6 – clean water and sanitation – India's overall score is 88. However, India has shown modest improvement on other SDG indexes mainly on zero hunger (Goal 2) and gender equality (Goal 5). India's overall score on Goal 2 is 35, with Goa (76) scoring the best and Jharkhand (22) Score lowest. India is facing high levels of malnutrition and hunger – it is ranked 102nd in the World Hunger Index – this must be addressed as soon as possible. India's overall score on Target 5 is 42 and among the states, Himachal Pradesh (52) leads and Telangana (26) is at the bottom. Factors like low sex ratio, poor political representation and unequal pay have contributed to this. Goal 10 on 'Reducing Inequality' aims to ensure that the bottom 40% of the country's economically weaker sections have an income above the national average by 2030. The World Bank report states that India's high population and unequal distribution of water are responsible for keeping the Gini index (0.35) at a low level. Currently, however, it is estimated to be closer to 0.50, which is now the highest value of the day. Prime Minister's Jan-Nan Yojana is a comprehensive strategy of inclusion, financial empowerment and social security in the context of Goal 10.

### **Conclusion**

Sustainable development is supported with economic, technological and ecological arguments, but its social component is at least as important as they are failing to admit the chief role of the "social actors" has a negative impact on

many programmes aimed at sustainable development. Sustainable social development implies avoiding major problems as the discrepancies between the rich and the poor; a society that is divided after this criterion cannot be stable on the long run; Forbidding a language or cultural community, an ethnic community or a nation to oppress other communities etc. Sustainability must be “built” socially and its three aspects—economy, environment and society— must be approached simultaneously. The social management tools and cultural mechanisms that can be used to encourage social dynamism and coordinate actions towards development programmes. Sustainable development involves meeting the necessities of the current generations without compromising the capacity of the coming generations to satisfy their own needs. Sustainable development principles are time-driven and may lead to successful results of current environmental provisions, while serving the interests of human society.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## India-Pakistan bilateral agreements: some potential benefit

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### Abstract

The paper serves as a precursor to the extensive examination of economic potentials inherent in the intricate relationship between India and Pakistan. It places particular emphasis on conducting a thorough and meticulous analysis of India's economic landscape, spanning across its primary, secondary, and service sectors, with a specific focus on nurturing trade linkages with Pakistan. Through this analysis, the paper aims to shed light on the multifaceted dimensions of economic collaboration between the two neighbouring nations. One of the central themes underscored in this is the historical ties that bind India and Pakistan. These ties, rooted in shared heritage and intertwined destinies, serve as a cornerstone for understanding the nuances of their economic interactions. Additionally, the abstract highlights the significance of cultural commonalities between the two nations. This shared cultural tapestry, characterized by traditions, values, and customs, forms the backdrop against which economic cooperation can flourish. Moreover, the paper delves into the role of entertainment as a catalyst for economic collaboration. The vibrant entertainment industries of both India and Pakistan, enriched by their cultural heritage, present avenues for creative partnerships and commercial ventures. By recognizing the intrinsic link between entertainment and economic growth, the abstract underscores the potential for synergy in this domain. Religious influences are also acknowledged as integral factors shaping the economic landscape of India and Pakistan. The diverse religious beliefs and practices prevalent in both countries exert a profound impact on consumer behavior, market dynamics, and business practices. Understanding and navigating these religious influences are essential for fostering meaningful economic cooperation between India and Pakistan.

**Keywords:** primary sector, secondary sector, service sector, historical relation, common culture and tradition, entertainment aspect, religious inclination

### Introduction

The whole world is projecting India as the next super economic power in the coming decades. India is to become top third economy after U.S. and China. To realise such a dream, India's growth rate must be at least 8.1. Consistently for many coming years. India's policy makers have to search every inch of its economic structure to realise its dream.

Every country makes many types of bilateral agreements. With many countries to tap the economic benefits. India is no exception and we have signed many agreements with many countries, e.g. in defence products we have agreements with Israel, for petrochemicals with gulf countries, for software with U.S.

In this paper I have highlighted some potential benefits, if we could have bilateral agreements with Pakistan. The economic agreements with Pakistan will be more beneficial than similar agreements with other countries due to the following major reasons-

1. There will be very minimum cost of transport because

there is no long distance.

2. Due to common culture, it will be much easier to expand the market of various goods. There will be no need for developing new products or modifying the existing products.
3. Many sectors and industries are complimentary to each other in both the countries. This will further reduce the cost.

### Analysis of potential benefits

Now we can take the various sectors which can be harnessed for economic benefits of both the countries by having bilateral agreements.

#### 1. Primary sector

In Agriculture complimentary relation exist between two countries in many crops. E.g. Pakistan is having Rice production, vegetables, Tobacco but India having excess capacity in the form of Rice plants, cold storage and

tobacco processing industries.

- In animal husbandry, dairy sector fishing India having excess infrastructure which can be given to Pakistani products processing.
- In petrochemical sector, India having the second largest capacity of refining after China. This capacity can be used for Pakistan's energy needs.

## 2. Secondary sector

Many industries are having complimentary links with respect to India and Pakistan e.g. sugar, cotton, petrochemical, pesticides, fertilizers, automobiles.

- Infrastructure projects can be executed very easily by combined efforts of the two countries such as power projects, River Navigation, water transport, roads and railways. All rivers of Punjab and Sindhu valley have tremendous scope of economic prosperity for both the countries.

## 3. Service sector

Service sector is also having huge potential since we have common- history, language, traditions, culture and religion.

- In service sector we can tap the potential of tourism industry especially the religious tourism. All the important places of pilgrimages of Hinduism, Islam, Sikhism, Buddhism and Jainism are found in both the countries.
- so many historical sites from Indus valley to the tomb of Jahangir are located in Pakistan to be visited by so many Indians.
- New emerging services like software, entertainment, education, medical services have complimentary links.
- Indian huge saving potential can be used by investing in Pakistan and having higher returns. Similarly Indian stock market can provide platform to Pakistan companies.

## Advantages

If India make bilateral agreements with Pakistan, it will be providing following advantages-

- Readily available market for both the countries for various products ranging from bread to satellite launch.
- India Pakistan will become the joint block to face the other global issues.
- India Pakistan bilateral agreements will lessen the political conflicts between the two countries as the economic pressure groups in both the countries will influence their leadership in this direction.

## Conclusion

India and Pakistan having history of bitter relationship since 1947. We have gone through three wars and still there is security threat. But since we are projecting our country to be the global leader of the future, we have to resolve our issues with our immediate neighbour. Since India Pakistan relationships are very complex but we can initiate to resolve these complexities step by step. It has been the crude reality that all politics is based on economic factors. So, by exploring the economic benefits with Pakistan, we can finally have

political solutions.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Cyber-crime: a threat to national security

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### Abstract

The evolution of technology, particularly the advent of the internet, has brought about a new era of crime known as cybercrime. This paper explores the various forms of cybercrime, including hacking, virus dissemination, identity theft, phishing, and more. Cybercrime poses a significant threat to national security, as it can disrupt essential services, compromise sensitive information, and facilitate terrorist activities. Despite efforts to combat cybercrime, its perpetrators often remain elusive due to the complexities of cyberspace. This paper emphasizes the importance of raising awareness, strengthening legislation, and enhancing cybersecurity measures to safeguard against cyber threats. Failure to address cybercrime could have dire consequences for global security and economic stability.

**Keywords:** cybercrime, national security, hacking, virus dissemination, identity theft, phishing, cybersecurity, terrorism, legislation, internet privacy

### Introduction

When Blaise Pascal built the first non-electronic computer in 1642, little did he know that centuries later the descendants of this innovation would change the way we live and rewrite legal lexicons. These electronic behemoths became a substitute for human brains. In 1969, the birth of the internet multiplied the power of this wonder machine, and the world was never the same again. New crimes appeared, old crimes disappeared, and what counts as a crime varied across societies.

Cybercrime combines the term "crime" with the root "cyber" from the word "cybernetic," derived from the Greek word "kubernan," which means to lead or govern. The cyber environment includes all forms of digital activities, regardless of whether they are conducted through networks and without borders. This extends the previous term "computer crime" to encompass crimes committed using the internet, all digital crimes, and crimes involving telecommunications networks.

### Definition of cyber crime

Cybercrime, also known as computer-oriented crime, involves criminal activities that utilize computers and networks. It encompasses a broad spectrum of illicit activities where computers or computer networks serve as either the instrument, target, or site of criminal operations. These delineations are not rigidly exclusive, as many activities can straddle multiple categories. Examples of cybercrime include identity theft, internet fraud, copyright infringement via file sharing, hacking,

dissemination of computer viruses, perpetration of denial-of-service attacks, and spamming.

According to Search Security, cybercrime is defined as "any unlawful activity that primarily relies on a computer for its execution." The U.S. Department of Justice extends this definition to encompass any illegal activity that utilizes a computer for the storage of incriminating evidence.

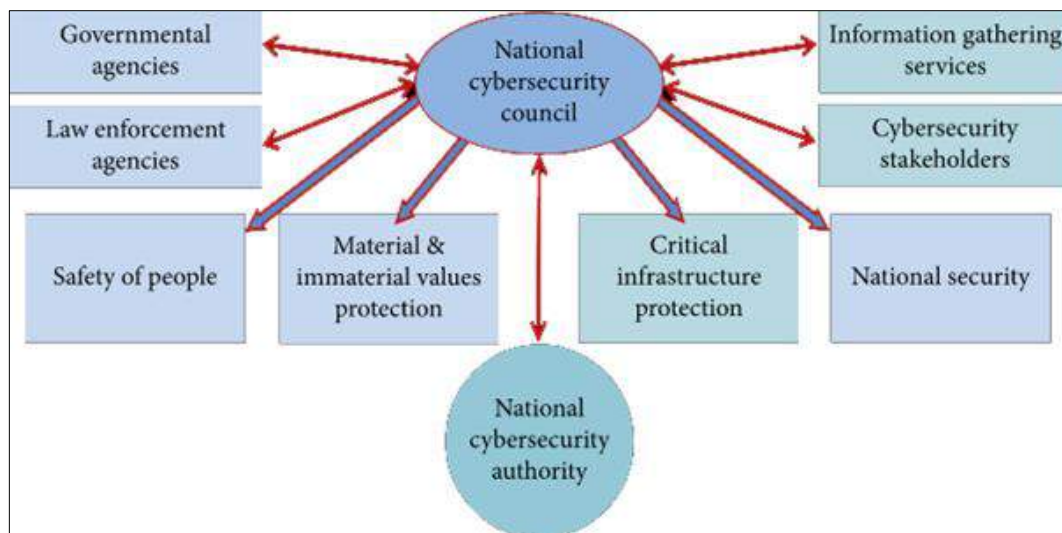
### Types of cyber crime

#### 1. Hacking

Hacking constitutes an endeavor to exploit a computer system or penetrate a private network housed within a computer. In essence, it entails unauthorized access to or manipulation of computer network security systems for nefarious intents. Put plainly, hacking denotes an act carried out by an intruder who gains entry into your computer system without your explicit authorization.

#### 2. Virus dissemination

Viruses are software programs that attach themselves to or infect systems or files, often spreading to other computers on a network. They disrupt computer operations and compromise stored data by either modifying or deleting it entirely. In contrast, "worms" do not require a host to propagate; they replicate autonomously until they consume all accessible memory within the system.



Source: Google net

Fig 1

### 3. Identity theft and credit card fraud

Identity theft happens when an individual acquires your personal details, such as credit card information or Social Security number, with the intention of perpetrating fraud or engaging in other illicit activities. They assume your identity to gain access to resources like credit cards, bank accounts, and other privileges in your name. Moreover, the impostor might exploit your identity to commit additional offenses. "Credit card fraud" is a broad term encompassing crimes associated with identity theft, wherein the perpetrator employs your credit card to finance their transactions.

### 4. Logic bombs

A logic bomb, also known as "slag code." Is a malicious piece of code which is intentionally inserted into software to execute a malicious task when triggered by a specific event? It's not a virus, although it usually behaves in similar manner. Malicious Software such as viruses and worms often contain logic bombs which are triggered at a specific payload or at a predefined time. The payload of a logic bomb is unknown to the user of the software, and the task that it executes unwanted. Program codes that are scheduled to execute at a particular time are known as 'time-bombs'. The majority of logic bombs typically remain confined to the network where they were deployed, implying that they are predominantly an insider's undertaking. Consequently, they are often easier to devise and implement compared to viruses.

### 5. Phishing

Phishing refers to the deceptive practices employed by malicious individuals or groups aimed at scamming users. They achieve this by sending emails or creating web pages designed to deceive individuals into divulging their online banking, credit card, or other login credentials. These emails and web pages are crafted to mimic legitimate companies, thereby

gaining users' trust and coaxing them to enter personal information. Phishing is essentially a scam wherein email users are tricked into revealing personal or confidential information that scammers can exploit illicitly. It involves extracting confidential data such as credit card numbers and username-password combinations by posing as a legitimate entity. Phishing is typically executed through email spoofing.

### 6. Email bombing and spamming

Email bombing entails an abuser sending massive volumes of emails to a target address, leading to the victim's email account or mail servers crashing. These messages are typically nonsensical and excessively long to consume network resources. If multiple accounts of a mail server are targeted, it can result in a denial-of-service impact. Such bombardment of emails can be easily detected by spam filters. Email bombing is commonly executed using botnets (private internet-connected computers compromised by malware and under the attacker's control) as a Distributed Denial of Service attack.

### 7. Web jacking

Web jacking, derived from 'hijacking,' involves a hacker fraudulently seizing control of a website. The hacker may alter the site's content or redirect users to another fake page under their control. Once hijacked, the original website owner loses control, allowing the attacker to exploit the website for personal gain. Instances have been reported where attackers demanded ransom or posted obscene content on the site. In some cases, web jacking is used to create a clone of the website, with the victim presented a new link claiming the site has moved. Unlike typical phishing methods, hovering over the link may display the original URL, but upon clicking, the user is directed to the malicious server. The address bar might display a slightly altered URL, tricking users into believing it's a legitimate site.



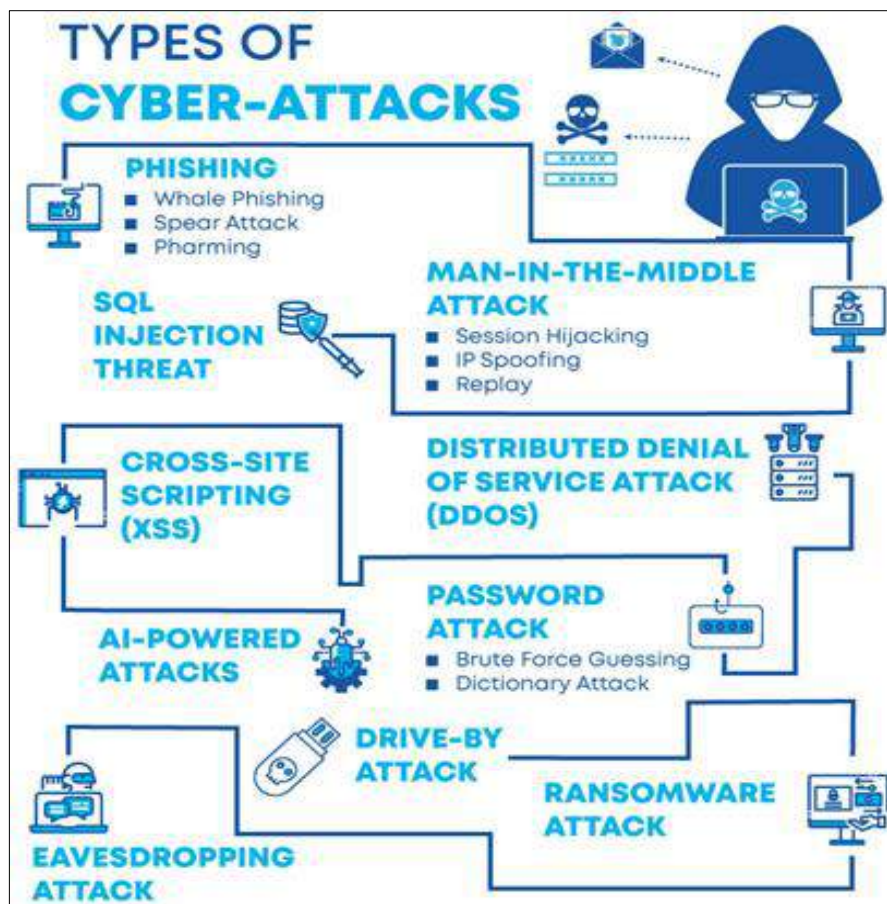


Fig 2

## 8. Cyber stalking

Cyberstalking is a new form of internet crime in our society, where a person is pursued or followed online. A cyber stalker doesn't physically follow their victim; they do it virtually by monitoring their online activity to harvest information about the target and harass them, often making threats using verbal intimidation. It's an invasion of one's online privacy. Cyberstalking uses the internet or any other electronic means and is different from offline stalking, but it is usually accompanied by it. Most victims of this crime are women stalked by men, and children stalked by adult predators and pedophiles. Cyber stalkers prey on inexperienced web users who are not well aware of netiquette and the rules of internet safety. A cyber stalker may be a stranger, but could just as easily be someone you know.

## 9. Data diddling

Data Diddling is unauthorized altering of data before or during entry into a computer system, and then changing it back after processing is done. Using this technique, the attacker may modify the expected output and it difficult to track. In other words, the original information to be entered is changed, either by a person typing in the data, a virus that's programmed to change the data, the programmer of the database or application, or anyone else involved in the process of creating, recording, encoding, examining, checking, converting or transmitting data.

## 10. Software piracy

Internet piracy is an integral part of our lives, to which knowingly or unknowingly, we all contribute. In this manner,

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the profits of the resource developers are being significantly reduced. It's not only about illegally using someone else's intellectual property but also about sharing it with friends, further diminishing the revenue they rightfully deserve. Software piracy involves the unauthorized use and distribution of computer software. Software developers invest significant effort into developing these programs, and piracy severely impacts their ability to generate sufficient revenue to sustain application development. This has repercussions for the global economy, as funds are diverted from other sectors, resulting in reduced investment in marketing and research.

## Effects of cyber crimes on national security

Cybercrime is a threat to national security which may be defined as 'The premeditated use of disruptive activities, or the threat thereof, in cyber space, with the intention to further social, ideological, religious, political or similar objectives, or to intimidate any person in furtherance of such objectives'. Cyber Crime is a global phenomenon and, therefore, the initiative to fight it should come from the same level. Today cyber and organized crime has become the order of the day round the globe and the need to put an end to this criminal act cannot be kept aside. Research has shown that people lose millions of dollars daily to cyber criminals and we cannot continue to live with this set of people because they are enemies of progress of the nation. All efforts to put this to an end have proved unsuccessful why? Because the people fighting the crime are criminals.

The human mind's capacity is truly vast and complex. While it may not be feasible to entirely eradicate cybercrime from the digital realm, it remains within our means to mitigate its impact

on national security. Throughout history, no legislation has proven completely successful in eradicating crime worldwide. However, what is achievable is raising awareness among individuals about their rights and responsibilities, including the duty to report crimes as a collective obligation to society. Furthermore, enhancing the enforcement of laws can significantly curb criminal activities. Therefore, there is a pressing need to amend the Information Technology Act to bolster its effectiveness in combating cybercrime.

Technology is a boon but it also has dangerous implications if left undetected. Cyberspace is one such area that needs to pull all security strings together before things go out of hand. There is huge potential for damage to national security through cyber-attacks.

## Conclusion

With the continuous advancement of technology, a concerning nexus between hackers and terrorists is emerging. It is foreseeable that terrorists themselves may soon possess formidable hacking skills, fundamentally altering the landscape of terrorism. Safeguarding national security in India necessitates the prevention of cybercrimes. Preserving the integrity of our information, documents, policies, and strategies is paramount for our safety and progress. Cybercrime demands urgent attention as it poses a significant threat. The potential consequences of technology overtaking an entire population are alarming. The pervasive threat of organized cybercrime looms over the entire world. It is imperative that action is taken promptly to address this issue before it spirals out of control.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Sustainable developmental goals: review of Indian perspective

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### Abstract

Environmental sustainability is the process of balancing the environmental resources, to use them and preserve to future generations to utilize. In international agreements to sustainable development goals were decided and from those India took a target of sustainable developmental goals to accomplish till 2030. Various sustainable developmental goals (SDGs) were aimed visually Clean Water and Sanitation, Affordable and Clean Energy, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water and Life on Land. To accomplish these goals various nationwide mission like swachh Bharat Abhiyaan, National Mission for Sustainable Agriculture, National Clean Air Program (NCAP) and many more were launched. Since the agreement there has been a continuous funding of these projects. In this article there is a brief compilation of challenges for goal attainment and efforts to combat the challenges.

**Keywords:** SDGs, climate, sustainability

### Introduction

Sustainability is the process of maintaining balance of all the available resources be it social, economic or environmental so that future generations do not face depletion. Environmental sustainability not only works for protection of environment but also to improve its efficiencies. In other words, environmental sustainability is all about ecological balance. Since the day it is formed, we have been carbonizing the planet, which has contributed to global climate change. As we realize the negative impacts of climate change, various governments, organizations, and individuals are implementing and promoting environmental sustainability.

Among all efforts “The Paris Agreement” is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings 196 nations together to combat climate change and adapt to its effects. Paris Accord on Climate Change necessitates the implementation of profound changes inside each nation. In the process governments, civil societies, commercial entities, and research institutions work in collaboration.

India has invested in research and innovation to advance agricultural methods, promote eco-friendly transport, and improve water resource management. In addition, multiple public awareness programs and educational campaigns has been launched to promote environmental sustainability. These efforts not only help raise awareness about environmental issues but also inculcates responsible behaviour among people. Thus, implementation of the 2030 Plan for Sustainable

Development in 2015, about Sustainable Development Goals (SDGs), has equipped India with an efficient workplan to pursue environmental sustainability.

### Sustainable development goals

India has been enthusiastically involved in the chase of attaining the Green Sustainable Development Goals (SDGs) as established in the United Nations' 2030 plan for Sustainable Development. The practice towards attaining environmental sustainability in India consisted of a range of policy works, governmental programmes, and international obligations. This article is an effort to provide a brief insight of India's perspectives towards pursuing the Environmental Sustainable Development Goals (SDGs).

India has done many commitments at the global level by contracting many accords and conventions that concern to the promotion of environmental sustainability like “Convention on Biological Diversity” (CBD) and “United Nations Framework Convention on Climate Change” (UNFCCC). These commitments establish the foundation for India's involvement in sustainable development. India itself has established many action plans to effectively handle environmental concerns. The National Action Plan on Climate Change (NAPCC) formally began in the year 2008 and it served as a complete basis to present India's strategic approach towards both mitigating and adjusting to climate change.

### Environmental SDG status in India

India's has pledged to a target of achieving net-zero carbon emissions by year 2070 and this reflects its establishment of the urgency of tackling climate change. The United Nations created 17 world development goals called the Sustainable Development Goals. India has picked 7 SDGs to full attainment till 2030. Various sustainable developmental goals (SDGs) were aimed (SDG 6) visually Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Sustainable Cities and Communities (SDG 11), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), Life Below Water (SDG 14) and Life on Land (SDG 15). Multiple missions targeted towards the aim of SDGs.

In the journey of attaining Environmental SDGs multiple stakeholders, civil society organizations, government agencies, and the private sectors are involved. Here a compilation of India's progress towards environmental SDGs is presented with the discussion of various important factors affecting sustainability.

#### Attainment of SDG 6: "Clean Water and Sanitation"

Sustainable developmental goal 6 implies the need of clean water and good sanitation facilities. India has made significant improvement in providing access to clean water sources, specifically in rural areas. Government has introduced Jal Jeevan Mission to provide piped water supply to rural houses and aim to cover all by 2024. Initiatives of Swachh Bharat Abhiyan included the construction of toilets and the support of hygienic sanitation facilities. National campaign was launched to stop open defecation and millions of toilets were constructed for the purpose. Campaign also included hygiene related education via various educational systems.

Despite so many efforts and considerable progress, India still face challenges regarding quality of drinking water the sustainability of sanitation facilities and differences in access between rural and urban areas. High pollution content of water resources is posing difficulty for water quality maintenance. There are some geographical and infrastructural constraints that limit the access to clean sanitation.

#### Attainment of SDG 7: "Affordable and Clean Energy"

SDG 7 says that everyone should have access to clean energy at affordable means. For the purpose India needs to expand sources of renewable energy and has established challenging objectives to increase the capacity of renewable energy. The National Solar Mission (Jawaharlal Nehru National Solar Mission) was taken up to increase solar power production to lower the rate of energy. In coastal areas wind power projects are also being developed. "The Pradhan Mantri Sahaj Bijli Har Ghar Yojana" (Saubhagya) was planned to supply electricity to rural houses. Perform, Achieve, and Trade (PAT) scheme was aimed to persuade energy-efficient methods in industries. For carbon Emissions Reduction government has set measures to reduce emission for transportation and industry. Despite the visible progress still India faces challenges the need for regular investment in infrastructure and energy balancing.

#### Attainment of SDG 11: "Sustainable Cities and Communities"

Sustainable Development Goal 11 focuses on creating sustainable cities and communities cities should be safe, more

inclusive, resilient, and sustainable by 2030. India launched the Smart Cities Mission in 2015, which aimed to create 100 smart cities. The mission focused on promoting infrastructure, essential services, and sustainable urban development. The "Pradhan Mantri Awas Yojana" (PMAY) was an extensive programme to provide affordable accommodation for urban poor by 2022. Metro cities are expanding their metro networks bus rapid transit (BRT) system. Air quality maintenance is a challenge in many urban areas. measures like implementing precise emission standards for automobiles, promoting better fuels, and schemes to control dust pollution are being taken. Building resilience to natural disasters is a vital aspect of SDG 11. Disaster readiness, initial warning systems, and infrastructure that can resist natural calamities are undertaken. better rehabilitation for slum dwellers with the target of essential services and economic growth is also a concern. Despite these rapid urbanization, infrastructure deficit and related sustainability problem remain significant concern.

#### Attainment of SDG 12: "Responsible Consumption and Production"

Under Sustainable Development Goal (SDG) 12, India focuses on responsible consumption and production by 2030. Solar and wind energy currently contribute more than 50% of the total renewable capacity of the country. India is not only trying to improve resource efficiency but also to reduce need of energy, to increase recycling and reuse, and to lessen waste generation. The Swachh Bharat Abhiyan promotes waste segregation, recycling, and proper disposal. Waste management plant have been implemented in many cities. There has been a significant shift to renewable energy like solar and wind. Regulations have been implemented to ensure e Waste management and proper recycling and discarding of electronic products. Eco friendly packaging have been initialized to reduce environmental impacts. Consumer Awareness Initiatives have been in working like labelling products with appropriate information and promoting eco-friendly products.

#### Attainment of SDG 13: "Climate Action"

Sustainable Development Goal (SDG) 13 focuses on climate action. India has taken various steps to mitigate climate change and enhance its resilience (Table 1). India has set great targets for renewable energy arrangement and has invested in grid-connected and off-grid renewable energy programs like National Solar Mission is one of India's top programs to promote solar energy and reduce greenhouse gas effects. It includes various incentives and aids to promote the adoption of solar power. Under Green India Mission, Afforestation and plantation efforts are in practice to improve the resilience of ecosystems. The Perform, Achieve, and Trade (PAT) scheme and the Standards & Labeling program are focused on improving energy efficiency in productions and products, respectively. Initiatives like the National Mission for Sustainable Agriculture aim to improve adaptive capacity. Promoting electric vehicles (EVs) and investment in its infrastructure is a share of India's climate action plan. "The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles" (FAME) scheme is one such inventiveness. Efforts have been made to educate public and raise awareness about climate change and its importance. Various Educational programs and campaigns have been launched at all levels.



**Attainment of SDG 14: “Life Below Water”**

Sustainable Development Goal (SDG) 14 focuses on “Life Below Water” and aims to use and conserve marine resources for sustainable development and India as a coastal nation and significant marine ecosystem, has been trying to address the goal. India has established several protected areas, including national parks and sanctuaries, to conserve its rich marine biodiversity. The Gulf of Mannar, Marine National Park and Kutch Marine National Park are notable examples. Efforts are being made to protect and conserve marine biodiversity which includes endangered species like sea turtles, dugongs, and dolphins. Various conservation projects have been implemented around the coasts to protect habitats and routes. India has been working fisheries management practices, like implementing guidelines to prevent excessive fishing. India particularly has been involved in mangrove conservation efforts, realizing their significance in providing habitat for sea life and shielding coastal areas from erosions. India has taken up programs to reduce plastic use and improve its management to control plastic pollution in the oceans. Investments are made for Marine Research and Monitoring programs to recognize and moderate the impacts of climate change, and pollution on marine ecosystems.

India is a member to international agreements such as the “Convention on Biological Diversity” (CBD) and the “Convention on International Trade in Endangered Species of Wild Fauna and Flora” (CITES), which contribute to protecting marine life. Blue economy opportunities are being explored. The Namami Gange (Clean Ganga) Mission aims to revitalise the Ganges River and its tributaries to improve river’s ecosystems, which are ultimately connected to marine life in the Bay of Bengal.

**Attainment of SDG 15: “Life on Land”**

Sustainable Development Goal (SDG) 15 focuses on “Life on Land” and aims to protect, restore, and promote the ecological practice of terrestrial ecosystems, sustainably manage forests, mitigate land degradation, combat desertification, and reduce biodiversity loss. India has executed various programs and policies for forest management like the Joint Forest Management (JFM) program, in which local communities were involved in sustaining and preserving forests through a programme.

The Green India Mission is a part of the National Action Plan on Climate Change and aims to increase forest and tree cover. India has established a number of wildlife sanctuaries and national parks to protect and preserve biodiversity and provide natural habitats to wildlife species. Initiatives like Project Tiger and Project Elephant were specific species conservation projects. The National Biodiversity Authority (NBA) handles conservation and sustainability by implementing the Biological Diversity Act. National Mission for Sustainable Agriculture” (NMSA) and the Soil Health Card program have been addressed the problem of land degradation and desertification to a considerable extent. Community-based conservation models have been implemented, like community reserves and village forest committees. India has passed laws and policies to face land-related issues, such as the Forest (Conservation) Act and the Wildlife Protection Act, to control activities distressing

forests and wildlife. Promoting agroforestry that associate agriculture and tree planting helps improve land productivity, boost biodiversity, and moderate climate change.

**Indian initiatives and funding**

- The funding for the National Mission for Green India has increased this financial year, up 24.72 percent over the previous allocation of Rs 290 crores.
- The Electric Vehicle programme at the Ministry of Heavy Industries has been greatly improved. Money allocated to the programme known as FAME-India (Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicle in India), increased from INR 800 crores in 2016–17 to INR 2671 crores in 2024-25.
- To motivate the extensive adoption of electric vehicles, the GST on such vehicles has been declined from 12% to 5% and the GST on EV chargers and EV charging places has been reduced from 18% to 5%.
- An additional 27.65%, has been added to the National Afforestation Programme's funds from the previous year's in 2023. The “Ministry of Environment, Forest, and Climate Change” (MoEFCC) has a total permitted budget of Rs 573 crores has been allocated specifically for pollution control in financial year 2023-24.
- India has great goals for the forthcoming renewable energy, and the “Ministry of New and Renewable Energy” (MNRE) has been provided with a total of Rs 10222 crores to help get these goals accomplished.
- The Namami Ganga Mission aims to protect, preserve, and reinstate the Ganga River Basin. The Government approved the mission in 2015 for a five-year duration (2015-2020) with a budget of 20,000 crores of rupees. The Ganges River is the centre of the Namami Ganga Mission, which attempts to depollute and restore it. About Rs 22500 have been allocated for 2023-26 plan.
- India ranked third globally between 2010 and 2020 in terms of the average net increase in forest area each year. According to "India State of Forest Report 2020-21," the country's total forest cover in 2021 was increased by 3.14 percent from 2011.
- Indian Railways (IR) has set an objective of being the "net zero carbon emitter" and the world's major green railway by the year 2030 Using only renewable energy. Rooftop solar panels will be applied in Indian Railways to produce 500 MW of energy.
- In year 2022, the government of India funded Rs 1,500 crores to the Indian Renewable Energy Development Agency (IREDA), which offers funding for renewable energy projects.
- Rs 3,970 crores would be allocated towards the corridor programme, which is expected to cost Rs 12,031 crores. By 2030, the initiative will have helped increase renewable energy capacity by 450 GW.

**Conclusion**

It’s important to note that India is facing unique challenges in pursuing sustainable developmental goals. Maintaining economic growth and development with carbon reduction targets is a complicated assignment in itself. Additionally, addressing the impacts of climate change, such as water shortage and increased vulnerability to severe weather

outcomes, is also critical. Challenges related to marine conservation continue, including prohibited fishing, habitat deprivation, pollution, and climate change influences. Challenges of illegal deforestation is also appointed of concern which may cause, habitat loss, offensive species, and arguments between protection efforts. In overall preview balancing concerns of biodiversity conservation and economic development remains to be complex.

India is making continuous and positive efforts towards attaining sustainable developmental goals. With the support of population, education about sustainability and proper motivation towards the goal may help us to achieve the goal.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## A study on the world's fastest-growing startup ecosystem: India

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### Abstract

In past years, the Indian startup ecosystem has performed well and started taking steps towards its own derived factors such as mass funding, training activities, and evolving technology. This has also resulted in the upbringing of a number of homegrown unicorns in India. As per one of the research in 2014 the number of startups under projection was 3,100 and it is been said according to Niti Ayog that this number is going to Touch 15,000 plus which will be working as a registered organization and there will be an lakhs of startups which will be in an acceleration stage. This is going to bring a revolution in India. This will also change the working style of the market. Making in the growth of successful number of Indian startups has become a point of interest. Our Prime Minister Narendra modi came up with a program called Startup India Standup India. Indian startup is the one which is Contributing 15-20 percent of global GDP. This happens only when the number of startups grows in mass. To create awareness and to build an entrepreneurial environment there are many mentoring organizations have been started. This study concludes that starting a startup in India is easier and has the maximum chance of success and startups can contribute more to GDP of India.

**Keywords:** startups, unicorns, ecosystem, startup India, mentoring organizations

### Introduction

Startup is an entrepreneurial venture which is newly emerged and also a rapidly growing business that aims to meet a market need by offering an innovative product, process, and service. A startup is usually a company which involved in design and implementation of the out of box process and development. As per the co-founder of Infosys, a startup is an organization in which within the first three years of its existence the organization is leading with more than 50 employees and with a revenue of INR 5cr. Indian Institutes of Technology (IIT) which ranks the world's fourth largest producer of billion-dollar startups, as per the report given by the UK-based accounting company Sage. As per the study IIT accounts for 12 billion-dollar startups including Flipkart, Snapdeal, Shop Clues, Zomato and Ola. “Startup India” brings excitement and possibilities for the future. India has acknowledged the reality of modern business and its complexity. The central government of India has tried to solve the problem faced by the young startup business whose risk-taking ability is amazing. Technology has also played an important role in the growth of startup. To create awareness and to build an entrepreneurial environment, a lot of authority should be creating infrastructure for mentoring startups. Government, Corporations, educational institutions, and others should also join hands to build a better ecosystem for young people. The commerce ministry is planning to build an online platform for information sharing within various incubators/accelerators, angel investors, VC funds, and government departments. Startups usually do not make success easily. A startup goes with many failures and

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makes effort to learn from every failure. This leads them to discover what works and what does not work in the process of searching for a growth of business model. By observing the impact of the American and Chinese startup ecosystems on economic growth and employment the government of India also began to actively take part for making innovation and started forming policies. Around the year 2014, The central ministries launch schemes and policies with the motive of promoting startups with by providing financial and mentoring support. Several incentives were taken for setting up incubators that conduct workshops and provide physical infrastructure.

Today 21 of the 28 state governments are pursuing to start the policies for the development of startups. States like Kerala, Maharashtra, and Telangana are most helpful in providing to startups. Currently, India has the third largest startup ecosystem in the world. Bangalore ranks behind only two city that is London and Silicon Valley. The private sector has also been supporting the growth by investing in budding startups. Several relaxations in government regulation, tax breaks, and also the creation of new assets were taken place. Private Equity/Venture Capital investment in India has been growing since 2013, and investment has been doubled between 2017 to 2023. By recognizing the importance of startups private sector involvement in incubation has also grown with half of the active incubators in the country.

The private sector, Government, and Industry has created more practical support for startups after 2015. This brings a clear message that policy support for startups, and entrepreneurship is a kind of little love in the community. Growth of Startups in

India means Growth of the Economy, GDP, Standard of living, and many more.

### Objectives of the study

- To study about the startups in India.
- To understand the scope and the growth of startups in India.
- To understand the role of Investment Agencies in the development of startups in India.
- To identify the problem faced by the budding startups in India.

### Literature review

Startup India has planned to make an initial capital of 10K crore over four years from the government. This initial capital is capable of attracting tenfold investment by 2025. This guarantee for startup is another booster. In front of domestic and international entrepreneurs startup plans has been

unfolding on 16 January, 2016. Businesses based on the Internet is food to fashion, health to education, and travel to payment platforms have started taking certain steps recently. Easy documentation is a dream for smart entrepreneurs. Most of the developed countries have taken steps to make startup operation easy. The prime minister has put and 19-point agenda for taking forward a startup culture. The action plans including Tax sops, ease of doing business, etc, have been taken (2023 LinkedIn report).

### Research methodology

- Tools: Qualitative & Quantitative data.
- Sample size: 145 Respondent.
- Sampling method: Random Sampling.
- Respondent profile: Young and educated males and female.
- Sampling place: Jaipur, India.

### Data analysis

Table 1

Funding by angel investors/seed fund	Venture capital	Public market
Budding startups rely on Angle Investor and Seed Funding.	VC are used to scale the business model of the entrepreneur.	Late-stage startups can feel the need to expand more aggressively or actively innovate the product.
They are the ones who invest in the entrepreneur with an idea	They are the ones who invest in large amounts.	Private equity funds are also with the public market.
Do not invest in a business that is working only on profit motive but not on problem-solving.	They focus on building a large force.	Also providing the amount of liquidity.

The data was analyzed by 145 respondent who are in Jaipur, India. We collect data from Primary and Secondary sources based on the data published by Your Story, Planning Commission, etc. There were many top investing venture partners on was top of the investor list going by the total number of deals made, followed by Sequoia Capital, Blume Venture, Kalaari Capital, etc.

### Challenges faced by startup

Basis	Yes	No
Money	66	32
Finding the right talent	98	0
Lack of planning	61	37
Time management	77	14
Dealing with competitors	98	0

### Startup financial life cycle

#### ➤ Total startup 10,000 (approx)

Startups 4300/5700	% Share in market 43%/57%	New startup annually 800/N.A.
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### Questions asked for research

- Is there any challenges faced by you for starting your startup?
- Has your family supported you in doing so?
- Did you face a problem with funding?
- Is government policy helpful for your startup?

### Response to questions

Basis	Yes	No
Challenges faced	98	0
Family support	28	70
Funding problem	66	32
Help from government policy	67	31

### Sector concentration

- Technology based startups
  - E-commerce: 32%
  - B2B: 23%
  - Consumer interest: 14%
  - Mobile app: 10%
  - Others: 21%
- Non technology-based startups
  - Engineering: 17%
  - Construction: 13%
  - Agri product: 11%
  - Textile: 8%
  - Printing and packaging: 8%
  - Transport and logistics: 6%
  - Outsourcing and support: 5%
  - Others: 32%

### Stages of startup life cycle

- **Pre startup stage:** - Discovery and identifying product and service ideas for a big enough targeted market. The



service or product identified is finding for the first Clint ready to pay.

- **Startup:** - The entrepreneur begins to define their business model to increase customer base constantly. They are pursuing to the growth of business aggressively while increasing its capacity.
- **Growth:** - Maximizing benefits and facing problems.

### Current state of startups in India

- As per the study India is the largest startup hub.

### Startups in India in comparison with other countries

Table 2

	India	China	Israel	Singapore	Japan	US
Total number of startups	10,000	10,000	4,750	NA	NA	83,000
Tech- based startup	4,300	3,400	4,000	NA	NA	48,500
Non-tech- based startup	5,700	6,600	750	NA	NA	34,500
Set up a new business (in days)	30-60	30	13	2	10	4
Corporate tax rate	34%	25%	29%	17% (100% Tax rate exempted for startup)	34%	39%
Bank lending rate	10.3%	5.6%	3.9%	5.4%	1.2%	3.3%

### Scope of growth

- A. Make in India:** A big initiative taken by the Indian government i.e., “MAKE IN INDIA” to promote the manufacturing sector in India. This step is taken to attract foreign investment and encourage domestic companies. There were many steps taken by the government of India they are as follows: -
- Increased the limit of FDI for most of the sector.
  - Protection of intellectual property rights.
- B. Stand-UP India:** A campaign “STAND-UP INDIA” is for the help of startups with bank funding. This encourages entrepreneurship among the young Indians. On 6 JANUARY, 2016 the union cabinet provided approval to standup India's campaign which aim at promoting entrepreneurs in India.
- C. Digital India:** This initiative is done by the Indian Government to bring an assurance that government services are made available to every citizen through an online platform. This has also brought huge number of opportunities for startups.

### Negative point in Indian startups

- Most of the Indian Startups are coping foreign startups.
- They also don't have a proper growth plan.
- Instead of producing results by making present policy they are expecting more from the government.
- Lack of research.
- Lack of proper mentoring.

### Conclusion

The success of the Startup India campaign has made faster and easier registration for companies. It is also important to add provisions with the closure of dead companies within 90 days. This research paper found that responses support the idea of funding for incubation centers. The promise of providing an initial capital of 10,000 CR in four years is enough to attract more investment by 2025. An incentive in the method of tax holiday for 3 years is a benefit worth considering.

- The average age of the founder is 28.
- 16% of the total founders are women.
- Total number of Tech founder are expected to increase from 4,300 in 2015 to 31000 in 2025.
- Technology startups have moved from 480 in 2010 to 800 in 2015. This is expected to increase 3000 by 2025.
- 50% growth in the share of female entrepreLXneur in last 12 months.
- Private Equity and Venture Capital has doubled in the last 12 months.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## An empirical study on implementation of sustainable development goals in India

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### Abstract

The Implementation of sustainable development is important in order to ensure the long-term ability to live of our social and economic environmental systems. These abstract aims to lay out an outline of the key cogitation and plan of action for productively implementing sustainable development executions. Firstly, it requires the distributions of economics growth with social progress this can be realized through the assumption of an integral approach that takes into account the correlated between these pillars. Secondly effective executions require the active complicity and collaboration of multiple stakeholders this can be achieved through the setting up of partnership and the assistance of multiple stakeholders' discourse and joint action. Thirdly, the execution of sustainable development practices essential requirement and detailed assessment and tracking system. Monitoring devices should be transparent, participatory and inclusive providing for the active betrothal of all stakeholders. Lastly, requisite financial resources and technological ability are vital for victorious execution transformation financing mechanism and stimulants can help mobilize the mandatory resources while technology transfer and capacity building inventiveness can prop up the assumption of sustainable operations the abstract aims to prominence the momentousness of these key deliberation in order to foster effective and sustainable development practices.

**Keywords:** Sustainable Development Goals (SDGs), implementation, policy, governance, poverty eradication, sustainable agriculture, healthcare, gender equality, employment, infrastructure development, digital empowerment

### Introduction

India had a significant influence in creating the SDGs. Therefore, even before the SDGs were legally formalised, India had made a commitment to fulfilling them. In his own words, "These goals reflect our evolving understanding of the social, economic, and environmental linkages that define our lives," Prime Minister Narendra Modi the SDGs are closely followed by India's national programmes and development motto, "Sabka Saath Sabka Vikas". The emphasis on "Eradicating poverty and promoting prosperity in a changing world" is something that India values. The SDGs tackle the underlying causes of poverty and are a complex tool to assist countries in pursuing a common development agenda.

The nation's war on poverty has shifted its primary focus from infrastructure development, economic growth, and industrialization to social inclusion and the empowerment of the impoverished. To meet the needs of a diverse population and address these priorities, a number of significant projects have been put into place.

Data are gathered and reported on specified parameters in a variety of industries by India's statistical system and institutes. The present process involves creating national SDG indicators that more accurately reflect India's requirements and circumstances. As the national SDG indicators are developed,

the statistical system is designed to assess accomplishments at the sub-national level as well. This VNR primarily reports on the advancements made in reaching the Goals, even as it covers the many aspects of the SDGs. As the HLPF's primary focus for this year, these goals have been decided upon. The way that the SDGs are designed allows for the possibility that achieving one global target will also advance another. It is true that some SDGs are useful tools for achieving other SDGs.

### Research methodology

The researcher utilized secondary sources to collect information related to sustainable development. The information was gathered from several sources, including government publications, official websites, and related articles. It was then carefully considered, examined, and thoroughly analysed for this Research Paper.

### Review of literature

**1. NITI Aayog:** The 17 Goals and 169 goals have been meticulously mapped by NITI Aayog to leading government initiatives, centrally sponsored programmes, and nodal central ministries. To help with increased awareness, shared knowledge, and quicker SDG implementation, the mapping exercise's results were

shared with the Central Ministries and posted on the NITI Aayog website. It has also been customary to have regular discussions on ideas for accomplishing the SDGs with the Chief Secretaries of the sub national administrations.

2. **Panchayati Raj Institutions (PRIs):** India has a long history of having powerful local governments, known as urban local bodies (ULBs) in urban areas and PRIs in rural areas. Following a significant financial devolution granted to the PRIs by the 14th Finance Commission, level in organising and carrying out development projects in their respective regions. Both the actual planning process and the capacity building of the PRIs are guided by the national development strategy, which covers the SDG framework.
3. **Pradhan Mantri Jan-Dhan Yojana (2014):** With deposits of INR 639 billion (about USD 9.9 billion), 280 million new accounts have been created under this campaign thus far. Through the effort, several social security schemes in the country have been more successful by reducing leakages and easing the delivery of government benefits directly into beneficiaries' accounts.

### Policy and enabling environment

In February 2017, the South Asian Speakers' Summit was held in India, with a focus on poverty reduction, gender equality, climate change, and resource mobilisation for the SDGs. This event served to reinforce the country's commitment to the national development strategy and the SDGs. In an effort to give members of parliament insight on SDGs, the Speakers'

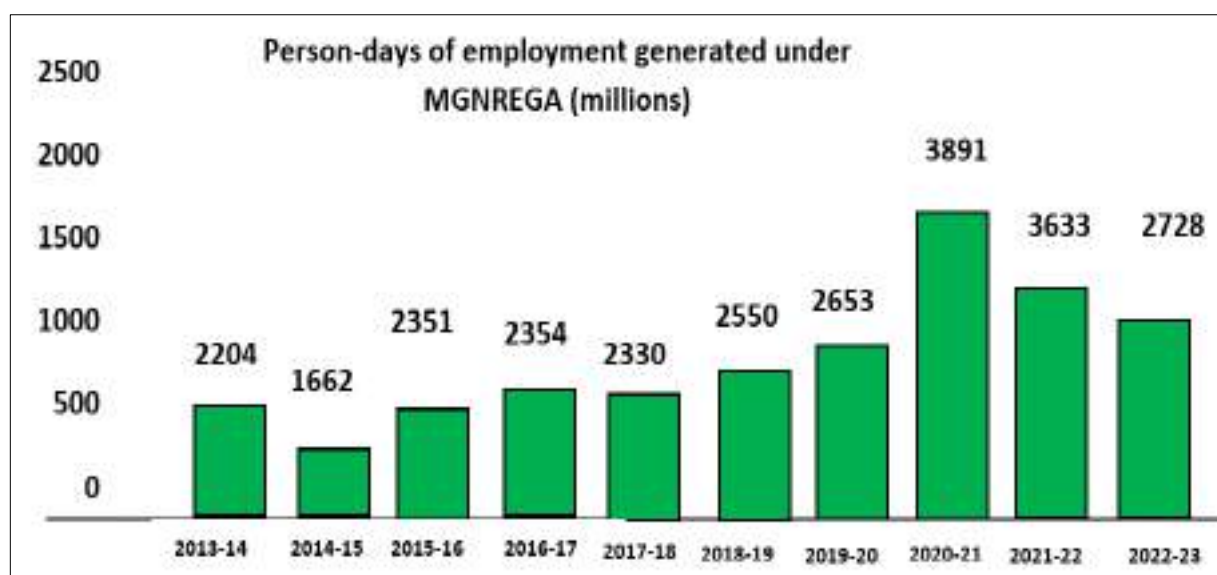
Research Initiative was started. As part of its ongoing efforts to develop official and informal nationwide communication channels, NITI Aayog is also honouring its commitment to timely achievement of the SDGs. Civil society organisations that have been tackling SDG-related issues at all levels of government, both individually and in coalitions, to provide input and provide feedback. Among their initiatives are as under:

- Assisting states in incorporating, creating informational, educational, and communication resources about the SDGs; Holding workshops to develop capacity; Raising awareness;
- Undertaking research and documentation on the SDGs and their relation to the rights and entitlements of various disadvantaged society.
- Drawing attention to issues of climate justice and sustainable energy management in order to spur appropriate policy at the state and federal levels.

### Progress towards specific goals

#### Anti-poverty program

A key initiative to combat poverty has concentrated on creating jobs by means of public works projects that support the growth of productive assets, agricultural infrastructure, and prospects for livelihood based on entrepreneurship. The programme produced more than 2 billion person-days of work in the previous year. As they accounted for 56% and 39% of the person-days of labour produced.



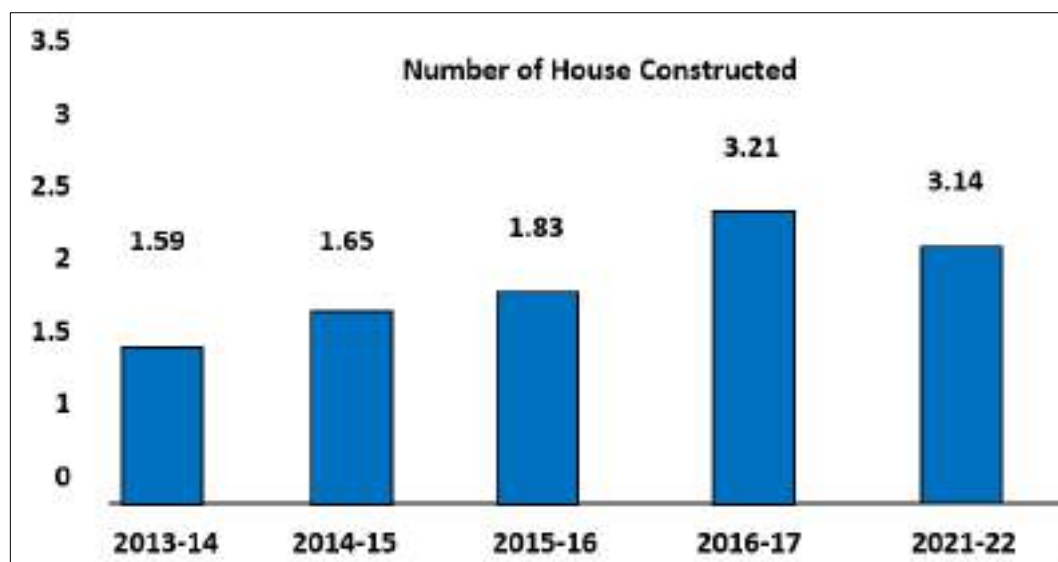
Source: MGNREGA

Fig 1

### Ensuring access to basic services

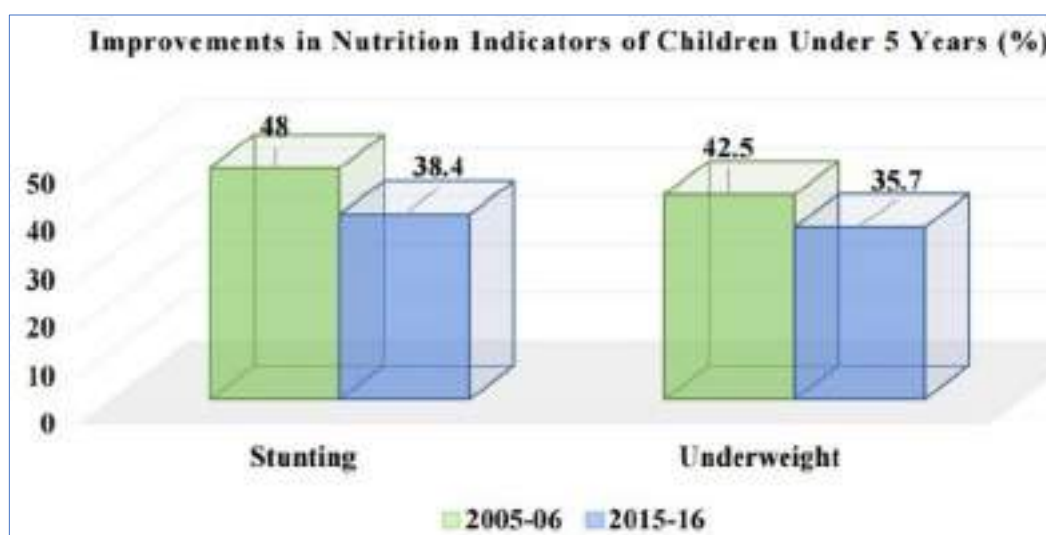
A key component of the goal to eradicate poverty is facilitating access to inexpensive healthcare and high-quality basic education. Numerous initiatives aimed at achieving universal access to primary healthcare are being carried out under the auspices of the National Health Mission. Additionally, to encourage institutional births among women from distant

locations, Janani Suraksha Yojana (JSY) offers conditional cash transfers. Closing the human resource gaps for healthcare at all service delivery levels is a key focus. In a same vein, the National Education Mission prioritizes enhancing student learning results, eliminating gender-based disparities, and granting universal access to education. A has been formed by the Right to Education Act.



Source: Integrated Child Development Service

Fig 2



Source: India Disaster Knowledge Network

Fig 3

### Access to nutritious food

With the provision of inexpensive access to grains, India's food security program, one of the biggest in the world, benefits over 800 million citizens. In consideration of empirical findings that suggests women are more concerned about food security. Reactivity, accountability, and transparency in food governance have all greatly improved. There are already around 232 million digitally accessed ration cards that grant access to food and other necessities. Moreover, monetary transfers for the purpose of encouraging dietary diversity are now possible because 77% of the ration cards are connected to the unique identifying number.

### Sustainable and adaptive agriculture

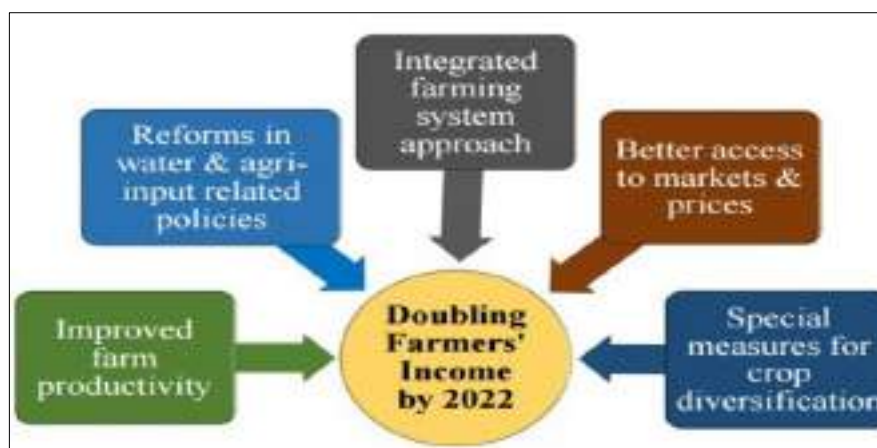
Reducing the effects of climate change and maintaining

agricultural productivity are the goals of the National Mission on Sustainable Agriculture. In accordance with the NMSA, farmers are given Soil Health Cards, which enable them to enhance soil fertility and crop yield by offering crop-specific nutrient management advice. The number of Cards issued to date exceeds 62 million. For the past ten years, the amount of land used for organic farming has expanded by nearly 17 times.

### Agricultural productivity and farmers' income

Approximately 80 percent of Indian farmers are small and marginal farmers. Rain-fed agriculture is practiced by almost 90% of them. Thus, increasing farmers' income through the implementation of various strategies is essential.





Source: Niti Aayog

Fig 4

India's land leasing Acts are being revised by a number of states in accordance with a Model Act created by NITI Aayog. The goal of the Model Act is to safeguard the tenant while also

making sure that the landowner is not at danger of losing possession of her property to the renter.

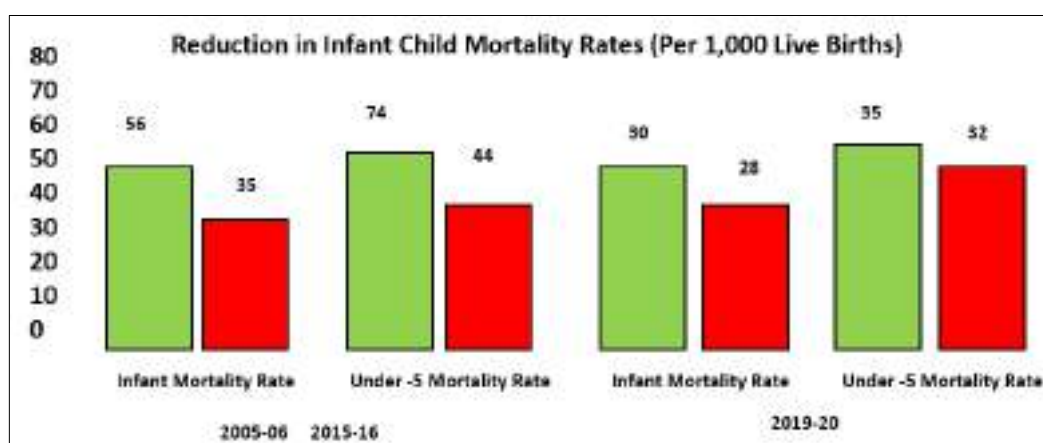
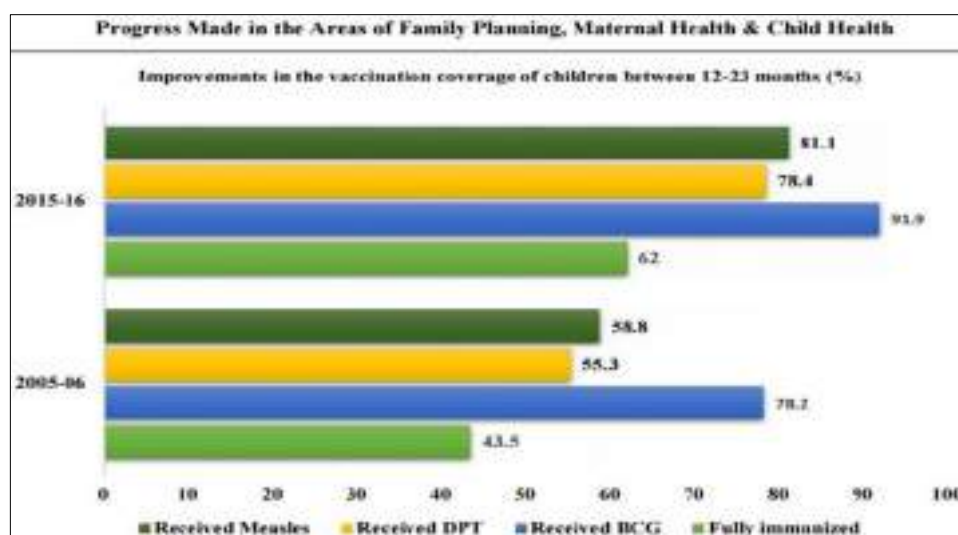


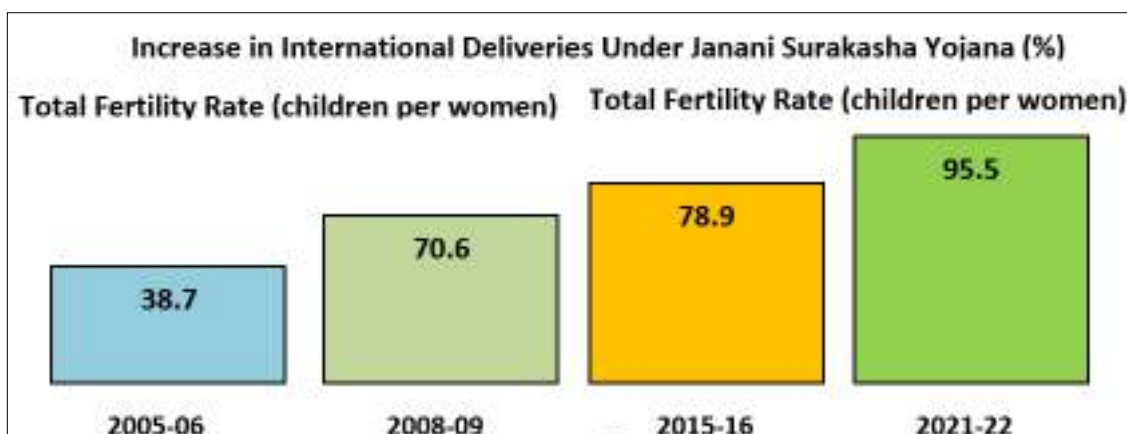
Fig 5

### Improving the health status of women and children

Five years ahead of schedule, India has created the "India New-born Action Plan," a path for reaching the goals set forth in the worldwide "Every New-born Action Plan" by 2030. Additional prominent programs are JSY, ICDS, and Rashtriya Bal Swasthya Karyakram, which is a child health.

There are several programs in this field that use technology to improve women's and children's health indicators. To help Auxiliary Nurse Midwives electronically record and update data for, the Ministry of Health & Family Welfare created ANMOL a tablet-based application.





Source: Increase in International Deliveries under Janani Suraksha Yojana

Fig 6

### Deliveries under Janani Suraksha Yojana

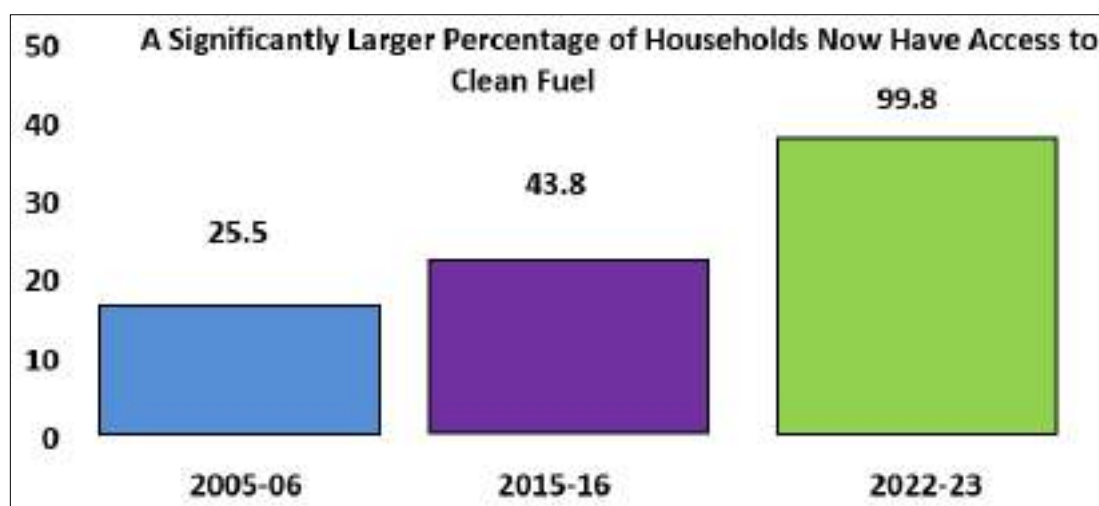
#### Ensuring access to basic health facilities for all

State governments can improve district and sub-district infrastructure facilities with flexible financing from the National Health Mission. With a budget of (about USD 4 billion) for 2017–18, the Mission is one of the biggest government-sponsored initiatives in India. In addition, families below the poverty line who have lost their principal wage earner can receive financial support under the government's National Health Protection Scheme. These households will receive a health insurance policy of INR 100,000 (about USD 1,563). The government is adding 5,000 postgraduate seats annually to ensure that there are enough medical professionals with the necessary training available. Furthermore, efforts are being made to change the legal environment surrounding medical education.

### Addressing discrimination against women

The Indian government has addressed the issue of female feticide and sex-selective abortion by enacting several laws and charity programs. Furthermore, in order to safeguard and educate girls as well as to spark a shift in mindset, the government has started the Beti Bachao Beti Padhao (Save the Girl Child, Educate the Girl Child) campaign.

Other forms of prejudice are also faced by women. One study on the effects of clean cook stoves on livelihoods in South Asia and gender found that, on average, Indian women spend 374 hours year gathering firewood. Instead, this time may be used for useful labour or study. The government introduced the Pradhan Mantri Ujjwala Yojana to address this issue by offering connections to Liquefied Petroleum Gas, a clean cooking fuel.



Source: Pradhan Mantri Ujjwala Yojana

Fig 7

### Increasing access to employment

As low as 23.7% in 2015–16 and 37.0% in 2023, the female labour force participation rate in India is reported in a study issued by the Labour Bureau. The government has introduced various initiatives to tackle this issue, a few of which are outlined below. There exist other policies alongside the programs and schemes of the Central and State governments. With the recent passage of the Maternity Benefit Bill by the Indian Parliament, pregnant working women will now be [www.dzarc.com/social](http://www.dzarc.com/social)

eligible for 26 weeks of paid leave. Women's empowerment and the provision of legal and constitutional protections are the fundamental goals of these initiatives.

### Building resilient infrastructure

For the construction of infrastructure, the government has budgeted aside INR 25 trillion (about USD 390 billion) during a three-year period (2016–19). Additionally, there are attempts to gather more resources. For example, the building of 2,700

km of highways will be financed by the toll-operate-transfer strategy of monetizing 75 publicly funded highway projects valued at INR 356 billion (USD 5.6 billion). India climbed 19 spots to rank 35 out of 160 nations in the World Bank's Logistics Performance Index in 2016.

### Strengthening the manufacturing sector

The goal of the National Manufacturing Policy is to work with sub national governments to create jobs in this industry that will last. In addition to creating 100 million employments, the policy has increased the goal output from 16% of GDP to 25% by 2025. Along the Delhi-Mumbai Industrial Corridor, eight NIMZs have been approved, and three more are in the process of being established in Andhra Pradesh, Telangana and Odisha. The goal of these Zones is to create integrated industrial townships that offer cutting edge technology, energy-efficient architecture, and facilities for skill development to support the manufacturing industry. Appropriate incentives are used to encourage clean technologies.

### The digital divide and ICT

There are numerous programs in place to facilitate society's digital empowerment. Over 90% of the population of the nation is currently covered by Aadhaar, for example. Furthermore, DBT has revolutionized the way in which most government programs provide services, with a total payment to 329 million beneficiaries of INR 1.6 trillion (about USD 25 billion). Additionally, the country's 2,47,864 villages or clusters thereof

are to be connected to high-speed internet via the Bharat internet Network Ltd. Initiative.

The population using the internet is likewise growing quickly. In India right now, there are 432 million internet users. DigiLocker, an additional noteworthy endeavour, offers access to 1.7 billion digital papers (such as diplomas from schools and drivers licenses).

### Science, Technology & Innovation

India is one of the world's top five space exploration nations and one of the top research-producing nations overall. Regarding the quantity of published scientific articles and filed patents, it is rated ninth and twelfth in the world, respectively. Notable advancements have been made in e-governance and information communication technology applications in the last several years. These include of Geographic Information Systems-based decision support tools, DBT, and Aadhaar.

With the goal of revolutionizing the nation's innovation and entrepreneurial scene, the government has launched the Atal Innovation Mission. The nation's schools are getting more than 500 Tinkering Laboratories installed. By giving them the freedom to try new things and implement their ideas, these labs hope to support students' entire growth. For the purpose of monitoring and identifying innovative developments in the nation, the India Innovation Index Framework has also been introduced. In order to strengthen the inclusivity of the innovation ecosystem.



Source: installed electricity generation capacity

Fig 8

### Data, monitoring and accountability

Within the nation's general administrative structure, the Indian Statistical System operates.

Statistics on subjects that are included in the national, state, or concurrent lists of the Constitution are to be gathered by central and state ministries. Overall coordination of statistics throughout the nation, including standard-setting and assuring timely and high-quality statistics, falls within the purview of MoSPI.

### Legal framework for data collection

Under the legislative provisions of numerous Acts and Rules, primary statistical data is gathered. Furthermore, in order to conduct surveys throughout India, MoSPI published Survey

[www.dzarc.com/social](http://www.dzarc.com/social)

Guidelines in 2011. In order to guarantee uniformity in the quality of the surveys, government entities are required to adhere to these principles while conducting countrywide surveys. The UN Statistical Commission's 2014 adoption of the "Fundamental Principles of Official Statistics" was announced by the Indian government in May 2016. The Survey Guidelines announced by MoSPI may be taken into consideration after being verified by a government ministry. To give updates, uncover gaps in data and statistical approaches, and start conversations, MoSPI periodically arranges conferences with data producers and users.

### Monitoring framework for SDGs

Several of the SDGs call for the development and

implementation of the appropriate legal and policy frameworks rather than the provision of public services by the government. Owing to the interdependence of the objectives, the government is also thinking about forming a high-level committee to supervise the national SDG monitoring system. This committee will be led by India's Chief Statistician. need to close the gaps and find fresh sources to fulfil the expanding demands for data is also emphasized. For example, it has been decided to conduct quarterly Labour Force surveys for urban India and provide employment/unemployment numbers.

### Conclusion

In developing the Sustainable Development Goals (SDGs), India has been a key contributor. Because of this, the SDGs reflect the nations own national development goals. Therefore, even before the SDGs were completely developed, India was committed to reaching them. India is grateful that the High-Level Political Forum (HLPF) 2017 will be focusing on "Eradicating poverty and promoting prosperity in a changing world," as one of the nations that has agreed to participate in the Voluntary National Reviews (VNRs).

Concurrently, advanced stages of work are being done on a 7-year strategy paper and a 15-year vision. The sub-national governments are actively involved in the preparation of these texts, which reflects the nation's long-standing federal heritage. The prime minister chairs the NITI Aayog, which is responsible for providing overall coordination and leadership. The organisation has meticulously mapped all 169 targets and 17 goals to centrally sponsored programmes, nodal ministries, and significant government activities.

A number of government initiatives would directly help to forward the SDG objectives. Through the use of PMJDY, Aadhaar, a biometric identity system, and mobile phones, the government has provided 329 million recipients with Direct Benefit Transfers totalling INR 1.6 trillion. One as a result, government programmes efficiency has increased dramatically. Subgroups crucial issues like digital payments, even though the central government has sponsored programmes to create jobs.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Digital revolution: India's transformation into a global digital powerhouse

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### Abstract

The digitalization of humans and their activities has taken the world by storm. With how fast the pace has been set, any country or state lagging behind will be swept off its feet by this raging storm of fast-paced online activities.

India has proven itself to be the largest democracy in the world that is digitally connected with over 900 million internet users. We can see this change by how India has become the leading country in making digital payments as digital transactions have shown incredible growth in the past years. This could be afforded due to the large spread of smartphones and easy on pockets mobile data plans. Major sectors that have seen incredible growth due to these and many other amenities in the past years are E-commerce, mobile payments, net banking, online health services, ease of online tourism and businesses.

Speaking of India specifically, it's digital transformation has been as sudden and resultant as a thunderbolt. Better connectivity and ability to adopt technology has led to increase in access to digital activities run by the government and even beyond that, which in turn has led to a majority of citizens feeling inclusive. Many pilot steps like digital India programme, Pradhan Mantri Digital Saksharta Abhiyan and unified payments interface commonly known as UPI have a tremendous role in converting India into a nation that is digitally empowered and now, a major country in digital economy.

Initiatives such as common service centres (CSCs) bring forth services like E- governance, banking, healthcare and most importantly education to people in rural areas who were not able to afford these before.

**Keywords:** e-commerce, digital banking, mobile payments, online healthcare, UPI, PMGD SA, CSCs, e-governance, G20 presidency

### Introduction

#### Digital India programme

Which was launched in 2015. It aimed at transforming India into a nation that is digitally powered an economy supported with knowledge. Main objectives of this programme include improving the digital infrastructure and providing services digitally. Due to this programme throughout the country Internet subscriptions have increased by 150% in both rural and urban areas. Digi locker, a major name, was also launched under this programme. Through this user can share and gain access to documents in a digital form. Next would-be Pradhan Mantri Digital Saksharta Abhiyan. This programme was launched in 2017 and is aimed at promoting digital literacy overall India including the rural parts. This programme has taken it upon itself to make sure that the entire population of India is digitally literate till date it has trained many candidates with more than six crores registered students. The objective of PMGDISHA is to empower the citizens digitally whereby they can operate digital devices on their own and help them gain access to information on education, healthcare and livelihood generation. It also aims to educate and enable citizens to use

digital payment systems like E-wallets, USSD, BHIM, etc.

In India, digital technology's positive effect could be seen through the very efficient COVID-19 vaccination programme that started in the country. The national digital health mission and national digital health blueprint have held keen roles in strengthening health care delivery. Through telemedicine or AI enabled medical devices or E medical records, digitalization or digital technology is intricately being woven into Indian health systems. New programmes like Ayushman Bharat Digital Mission have speeded up the digitalization of Indian health systems. Thus, the healthcare system of India is becoming proactive with the use of technology an is now citizen centric too.

Another major transformation due to the digital revolution that is taking the world by storm can be seen in tourism and travel. The internet has played an extremely important role in changing the way how people explore, plan and experience travel. Online bookings and especially virtual tours and travel content creation have totally changed the game with Internet becoming a tool travellers will not let go off.

Major impact of digitalism or digitalisation of payments have

transformed businesses by simplifying the payment process and thus increasing productivity. Nowadays, businesses are able to save both time and money while also concentrating on their core competencies. This could only happen due to various online payment options that allowed them to voyage into the sea of larger markets and thus attract and interact with new and potential customers.

### Digitalisation of payments

Digitalisation of payments is a colossal transformation that is apparent even to closed eyes. Proactive applications that ease transactions and people friendly E banking through bank applications have completely changed India's ways and means of handling money and transactions. This has lead way to a new cashless economy. In recent years, India has seen an exponential growth in online transaction, being apparent through QR code placed at the entrance of business places ranging from humongous to miniscule shopping establishments. This has been made possible due to easy to use digital payment systems like BHIM-UPI (Bharat Interface for Money-Unified Payment Interface), Prepaid payment means, National Electronic Toll Collection (NETC) and Aadhar enabled Payment Systems. These options have eased the transactions between people among themselves as well as between people and shopkeepers and merchants. On this note, it is a matter of immense pride for us, that India leads the world in digital payments due to UPI evolving as a game changing product. With this India has been leading the other nations in digital payments followed by Brazil, China, Thailand and South Korea. The huge growth is apparent from the graph that shows the online payment and digital transactions in India are more than the next for leading countries COMBINED!

### Mobile payments

Mobile payments in India have experienced substantial growth, primarily driven by the government's push towards a digital economy and the widespread adoption of smartphones.

Key aspects of mobile payments in India include:

- **Unified Payments Interface (UPI):** UPI has played a pivotal role in transforming mobile payments in India. It allows users to link multiple bank accounts to a single mobile application, enabling seamless fund transfers between individuals and businesses.
- **Digital wallets:** Services like Paytm, PhonePe, and Google Pay have gained popularity, offering users the convenience of storing money digitally, making transactions, and even enabling bill payments and online shopping.
- **Mobile banking apps:** Traditional banks have developed robust mobile banking applications, allowing customers to perform various financial transactions, check balances, and manage their accounts on-the-go. QR Code Payments: The use of QR codes for payments has become widespread, allowing merchants to accept payments by displaying a QR code that customers can scan using their mobile payment apps.
- **Government initiatives:** Initiatives like demonetization and the Pradhan Mantri Jan Dhan Yojana have played a role in promoting mobile payments and financial inclusion. The combination of regulatory support, technological innovation, and changing consumer

behavior has positioned India as a significant player in the global mobile payments landscape.

### E-commerce

India's e-commerce sector has witnessed significant growth, driven by factors such as increased internet penetration, rising smartphone usage, and changing consumer preferences.

- A key player like Flipkart, Amazon, and various others have contributed to the expansion of online retail. The market has seen a surge in categories like electronics, fashion, and groceries.
- E-commerce platforms have also played a role in fostering small and medium-sized enterprises through their marketplaces.
- Government initiatives, such as Digital India, and advancements in digital payment systems have further facilitated the growth of e-commerce in India. The sector continues to evolve, with innovations like voice commerce and increased focus on the rural market.

### Digital banking

India has seen a rapid evolution in digital banking with the increasing adoption of technology in the financial sector. Various aspects contribute to this transformation:

- **Digital payment systems:** The growth of digital wallets, UPI (Unified Payments Interface), and mobile banking has facilitated seamless digital transactions. Platforms like Paytm, Google Pay, and PhonePe have become widely used for day-to-day payments.
- **Online banking:** Traditional banks have embraced online platforms, allowing customers to perform various banking activities such as fund transfers, bill payments, and account management through internet banking.
- **Government initiatives:** Initiatives like Jan Dhan Yojana and Aadhaar integration have played a role in promoting financial inclusion and enabling more individuals to access digital banking services.
- **Rise of FinTech:** The emergence of FinTech companies has introduced innovative solutions, including digital lending, robo-advisors, and personal finance management apps, contributing to the diversification of digital banking services.
- **Mobile apps:** Banking institutions offer user-friendly mobile applications, providing customers with convenient access to their accounts, investment portfolios, and various financial services. India's digital banking landscape continues to evolve, driven by technological advancements, regulatory support, and the changing preferences of consumers seeking more accessible and efficient financial services.

### UPI payments

- UPI payments now amount to 90 percent of retail digital payments in the country.
- Traditional payment methods like NEFT (National Electronic fund and transfer) and RTGS (real time gross settlement system) have also increased owing to easy banking from home.
- With great access as such comes some risk too. Our country has been all up for protecting the citizens against

such risks. India has passed the Digital Protection Bill to make sure that the digital world remains safe and secure. The bill aims to keep personal data safe and away from misuse, allowing flow of global investment in technology. This makes digital payment a key sector in India's journey finish the ambitious Target of USD five trillion economy. However, McKinsey highlighted that that Digital India initiative is expected to boost the economy to USD 1 Trillion by 2025 up from USD 200 Billion in 2018, which still will be a splendid feat.

- The bill brings in a new phase where protection of personal data precedes any further step and recognises the need to safeguard it as such from misinterpretation and misuse.

### E-governance

E-governance has played a pivotal role in India's digital transformation, fostering efficiency, transparency, and accessibility in various government services. Here are some key aspects of the role of e-governance:

- **Digital service delivery:** E-governance has enabled the delivery of government services through digital platforms, making it more convenient for citizens. Online portals and applications facilitate services ranging from applying for documents to accessing welfare schemes.
- **Transparency and accountability:** Digital platforms have increased transparency in government processes. Citizens can track the status of their applications, access information, and hold authorities accountable. This transparency contributes to building trust between the government and its citizens.
- **Reduction of bureaucratic hurdles:** E-governance has streamlined bureaucratic processes by reducing paperwork and manual interventions. This not only speeds up service delivery but also minimizes the scope for corruption and inefficiencies in the system.
- **Citizen participation:** Digital platforms have facilitated citizen engagement in decision-making processes. Through online forums, feedback mechanisms, and participatory platforms, citizens can contribute to policy discussions and provide valuable inputs, enhancing democratic practices.
- **Data-driven decision making:** E-governance systems generate vast amounts of data that can be analyzed to make informed policy decisions. Data-driven governance enhances efficiency, allows for predictive analysis, and helps in allocating resources more effectively.
- **Financial inclusion:** E-governance has played a role in promoting financial inclusion by digitizing financial transactions related to government services. Direct benefit transfers and digital payments through government portals contribute to a more inclusive financial ecosystem.
- **Accessibility:** E-governance makes government services more accessible, especially in remote areas. Digital platforms bridge the geographical divide, ensuring that citizens across the country can avail themselves of government services without the need for physical presence.

In summary, e-governance has been a catalyst for India's digital evolution by bringing about efficiency, transparency, citizen participation, and accessibility in the delivery of government services. It has transformed the traditional governance model,

making it more responsive to the needs of the citizens in the digital era.

India's digital transformation has affected and shown its impact in every sphere of society. Means for digital access and routes for provision of services, ensuring inclusivity for all had paved way for affordable technology that is transforming the ways of life.

This transformation was also put forth for the world at the G 20 summit where India called for a framework and digital infrastructure for public domain that will ensure access to all countries equally, staying true to the overall theme of "One Earth, One Family, One Future" during the G20 Summit hosted by India of which data development is an integral part.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Metal oxide-based chemo-resistive nanostructured gas sensors for environment and human safety: a review

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### Abstract

Industrialization and its progress are very important for the economy and to move towards prosperity, stimulating innovation and creating jobs. Nonetheless, industrialization has negative impacts, if not done judiciously, such as pollution, increased greenhouse gas emissions and global warming. Therefore, amenity-with-security is of fundamental significance in a new and dynamic lifestyle. A gas sensor is one of the crucial devices for monitoring and subsequently preserving the clean atmosphere among a number of other safety technologies. In-depth assessments of gas sensors and their necessity in the environment (air) pollution are provided in the current review. With a special emphasis on metal oxide semiconductor (MOS)-based gas sensors, the study of gas sensors and the factors relating to sensing mechanisms. It not only describes the basic concepts and brief history of gas sensors,

**Keywords:** nanomaterial, sensitivity, gas sensor, Metal Oxide Semiconductor (MOS) etc

### Introduction

Nanotechnology is defined as any technology on a nanoscale (less than 100 nm) that has applications in recent and modern advances. In general, nanotechnology is concerned with the development of materials, electronics, or other structures having at least one dimension ranging from 01 - 100 nanometer. In other words, it is the shaping and reshaping of structures, devices, and systems at the Nano scale for design, characterization, production, and application.

In the second half of the twenty-first century, nanotechnology has emerged as a significant field alongside Information technology, cellular and molecular biology, and semiconductor technology. The study of nanotechnology within the realm of science and technology has brought forth innovative ideas and advancements in various areas, including materials and manufacturing, nanoelectronics, the medical industry etc. Many believe that nanotechnology has the potential to initiate the following industrial revolution. Nanometer-scale characteristics are mostly composed of its elemental elements.

### Nanomaterials

Nanomaterials are exceedingly tiny, with a minimum of one dimension of 100 nanometer or less. Such substances are sometimes nanoscale in one dimension, two dimensions & three dimensions. Common nanomaterials include fullerenes, nanotubes, dendrimers, and quantum dots.

Nanomaterials are used in nanotechnology and possess unique physical and chemical characteristics from ordinary chemicals (for example, silver Nano, etc).

Zero-dimensional, one-dimensional, two-dimensional & three-dimensional nanostructures are categories for materials with nanostructures.



**Fig 1:** Nanomaterial classification in.(a) 0 D, (b) 1 D, (c) 2 D and (d) 3 D

### Properties of nanomaterials

Size, morphology & nanoparticle content can be altered to alter nanomaterials' properties. Grain structure has a considerable influence on the various material qualities such as electrical, mechanical, optical, thermal, catalytic, and so on. When the particle size decreases from bulk to nano, the characteristics alter. Depending on the production method, nanostructured materials can take the shape of thin films, quantum wells, quantum dots, powder, and so on. All nanomaterials are made



up of grains, which are invisible to the naked human eye. A nanocrystalline substance has grains with sizes ranging from 1 to 100nm.

### Physical properties

The crystal structure of nanoparticles is the same as that of bulk particles, but with differing lattice properties. The melting point of nanoparticles varies with their size. The surface-to-volume ratio phenomena influences nanoparticle reactivity and solubility. They can be employed in technologies such as adhesion, lubrication, and stabilization.

### Optical properties

When a substance is on the nanoscale, it has a different wavelength at which light absorption begins than when it is in its bulk form. As a result, the size and type of material have a large impact on light absorption. Because nanoparticles are particles that are smaller than the wavelength of visible light, light scattering over them is anticipated to be minimal.

### Electronic properties

Quantum confinement occurs when a particle's size is decreased to a nanoscale level by reducing dimensions on one or more sides. The energy bands are subsequently converted into discrete energy levels, which increases or widens the band gap and so increases band gap energy.

### Mechanical properties

Crystalline materials' hardness normally increases when crystal size decreases & hence their mechanical toughness is strong. At nanoscale, ceramic & metallic substances can display this behaviour.

### Thermal properties

Because the nanoscale influences the atoms on the surface of the particles, the melting point of the nanoparticles drops when compared to the identical materials on a larger scale. This is because of the fact that atom motion occurs when temperatures are lower in nanoscale.

### Chemical properties

When The particle size has been decreased to nanoscale, surface area to volume ratio increases, and so does chemical reactivity. This occurs because the majority of chemical changes occur on the surface. Surfactants may be present in the environment alter the surface and interfacial characteristics.

### Need of gas sensors

Detecting hazardous gases in the air is critical for protecting the safety of humans, plants, and animals, as these gases can cause health problems and interfere with industrial or medical procedures. Gas detection equipment, which are generally used for worker safety and plant protection, are critical in detecting dangerous gas concentrations, sounding alarms, and taking countermeasures to avoid hazardous situations. Gas detection systems can be portable or fixed installations, with system dependability and sensor quality being critical considerations in assuring an area's safety. Fixed placed sensors must tolerate severe temperatures, humidity, outside elements, electromagnetic disturbances, and vibrations while retaining accurate measurements in a variety of environmental

situations. There is a clear overlap between gas detection technology and process instrumentation.

### Gas sensors

A gas sensor is a device that detects the presence of gas monitors gas concentration with which It makes contact with. The breakdown voltage of gas i.e. defected by gas sensors are distinctive for a given gas; thus, the breakdown voltage of the gas is measured by the gas sensor to identify it. Gas concentration is determined by the device's current discharge. These are transducers that Gas molecules are detected & an electrical signal proportional to their concentration is generated.

Industrious revolution contributed significantly to raising the living standards of the next generation. For the welfare of society, industrialization necessitates specific gas detection and monitoring. Emissions of these polluting gases into the environment endanger community health. Result i.e. In order to take the appropriate actions to manage the pollution, it is necessary to evaluate the level of pollution in the atmosphere. Monitoring of both useful and flammable/hazardous gases is in high demand. Various gas sensors have been created to monitor various gases & Many of them are available commercially. gas detectors are extremely valuable within a variety of disciplines, including business, medicine, science, and the environment, where gas can be both hazardous and beneficial. A sensor is built around a sensitive substance. The sensitive material in traditional Taguchi sensors is porous sintered ceramic body.

### Materials for sensing

The semiconductor metal oxides, including both n-Type and p-Type oxides, utilised as sensing components for gas sensors. Metal oxides are among the most prevalent, inclusive, and most certainly largest classes of materials due to their extensive structural, physical & chemical properties and functions. Metal Oxides [MO] such as SnO<sub>2</sub>, TiO<sub>2</sub> & Others are frequently employed in electronics as sensing layers; however, In real-world gas sensors, ternary and more complicated oxides are also utilized.

Metal oxide semiconductor (MOS) gas sensors are commonly used to identify a variety of hazardous gases, including Ammonia, Nitrogen Dioxide, Hydrogen, Carbon monoxide & volatile organic compounds, to protect the environment as well as human health. Oxides of metals Gas sensors are classified into the two types listed below:

- Transition metal oxides (Fe<sub>2</sub>O<sub>3</sub>, NiO, Cr<sub>2</sub>O<sub>3</sub>, and so on).
- Non-transition metal oxides, namely, Pre-transition metal oxides (Al<sub>2</sub>O<sub>3</sub>, for example) and post-transition metal oxides (ZnO, SnO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, e.g.).

Because of their ability to react with various gas molecules, metal oxides are particularly appealing materials for chemical processing. Many gases can be detected by MOS gas sensors. Metal oxide sensors' key advantage is their lengthy service life. There are three primary parts to metal oxide sensors.: measuring devices, electrodes and heating elements.

In this context, the preparation of nanoscale oxide materials seems to be more effective in improving their performance and opening new hopes for their applications in chemical products. By reducing the size of the data to the nanoscale, the ability to recognize data can be greatly improved. In recent years, ZnO nanomaterials have been investigated for the discovery of ZnO

due to their electrical strength and thermal stability. However, achieving the high performance and selectivity of ZnO is still a challenge.

Ammonia detection in the environment is a critical issue with ramifications for the environment, clinical practice, the automobile and chemical field. Ammonia sensors have been reviewed, although they no longer employ nanostructures. Thus, ammonia sensitivities in thin films of Zinc Oxide and Zinc Oxide doped with special metals were found to range from 4 to 95 for 1 to 30ppm of  $\text{NH}_3$  at temperatures ranging from 30-300°C. Zinc oxide is a key functional material with near-ultraviolet emission, semi conductivity, magnetic characteristics, and piezoelectricity. As a result, Zinc oxide is one of the wide band-gap MO of tremendous interest for a variety of purposes. When at room temperature, zinc oxide exhibits a large band gap of 3.37 eV and a considerable stimulated binding energy of 60 meV.

Analysis of medium gas composition encounters difficulties when using common electrochemical sensors that are entirely reliant on liquid electrolytes, resulting in unexpected failures, for example, as a result of electrolyte drying or when ammonia concentration is high. In such instances, gas sensors based entirely on metallic oxides should be used, notwithstanding their low selectivity and high strength intake. To enhance the efficiency of sensors using metallic-oxide, the heating strategy gas-sensing layer by rapid temperature modulation is presented.

### Gas sensor mechanism

These sensors' gas-detecting process involves assimilation of ambient Oxygen on the oxide surface pulls electrons away from the semiconducting material, changing the carrier density and conductivity in the process. Figure depicts a schematic of band bending, demonstrating how, upon contact with oxidizing or reducing gases, the amount of adsorbed oxygen & hence varying conductivity. Calculating the concentration of a gas uses the change in conductivity.

Gas sensors are being employed more frequently in daily life and industrial operations. Because of their exceptional physical & chemical characteristics, minimum cost & straightforward manufacturing processes, metal oxide semiconductor gas sensing materials are preferred. Researchers, however, have not taken into account the gas sensing mechanisms of metal oxide semiconductors, which has led to omissions and mistakes in the interpretation of gas sensing mechanisms in many studies. This review groups, describes, and divides into two categories a number of popular metal oxide semiconductor gas sensing techniques. These mechanisms' range and connection are made clear. Additionally, to emphasize the significance of the gas sensing properties of MOS, this paper chooses four techniques for improving them. It also assesses the gas sensing processes.

### Gas sensor characteristics and sensor development

#### Sensitivity

Sensitivity is a feature of a sensor that shows a change in the gas-detecting material's chemical or physical characteristics when exposed to gas. Resistance variation or any other metric that changes in response to a slight concentration change are used to measure it. The sensitivity of film is largely dependent

on its thickness, operating temperature, pressure, presence of another gas, and so on.

$$\text{Sensitivity} = \frac{\text{Resistance to Change}}{\text{change in concentration}}$$

The level of sensitivity should be as high as feasible.

#### Selectivity

A gas sensor's capacity to distinguish a specific gas from a mixture of gases referred to as selectivity. It is essential in the identification of gases. Its primary application is in industry.

#### Stability

Stability is a measure of repeatability over time under the same circumstances, this implies that the sensor need to deliver the same outcome for a specific stimulation after a lengthy period of time.

#### Response time

This is the device's operating speed. It is the period of time that passes before the characteristic parameter reaches a specific percentage of its maximum value for a particular gas concentration. A sensor with a short response time is preferable.

#### Recovery time

The amount of time until the sensor resistance reaches 70% of its saturated value after the sensor has been exposed to gas. A good sensor should recover quickly so that it can be put to use again.

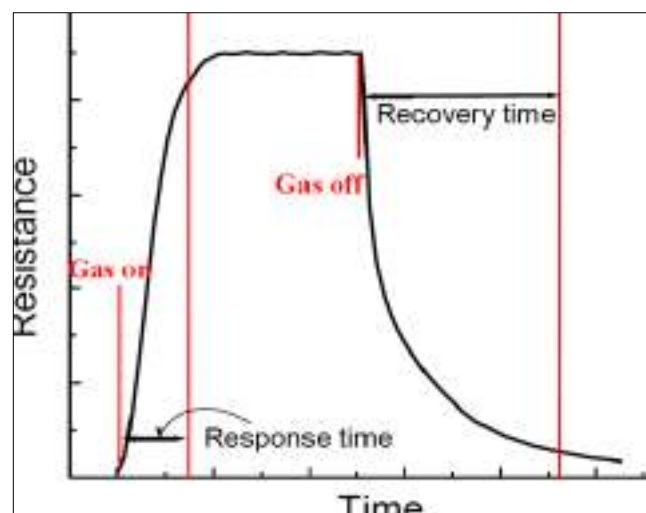


Fig 1: Resistance vs. time response and recovery analysis

The presence of various gases for e.g. toxic, flammable and combustible gases could be identified using sensor devices. These devices were consumed by abundant industries such as power stations, transportation, chemicals, food and beverage and metals. Sensors are based on tested technology, new procedures of production are empowering lesser, lower power, and more choosy sensors. In addition to actual size and length scales, the surface and bulk properties and differences between those properties play a noteworthy role in gas sensing applications shown in table-1.

**Table 1:** Discussion of different types of sensor parameters with different materials

Parameters	Sensor							
	Class 1		Class 2		Class 3		Class 4	
	CNT	MOS	Polymer Chemiresistor	Chem FET	Piezo electric (SAW)	SPR	Chromatography	Emission Spectroscopy
Selectivity	+	+	+	+	-	--	++	++
Sensitivity	+	+	+	+	+	+	+	+
Power saving	+	-	-	+	+	++	+	+
Low cost	+	+	+	+	+	--	--	--
Noise efficiency	+	-	--	+	+	+	+	+
Size miniaturization	+++	++	++	+	+	+	-	-
High response time	++	+	+	+	+	+	--	+

CNT- Carbon Nano tube, MOS-Metal Oxide Semiconductor, Chem FET- Field Effect Transistor with a solid electrolyte as the gate material, SAW-Surface Acoustic Wave, SPR-Surface Plasma Resonance

**Note:** The negative (-) sign indicates a disadvantage and the positive (+) one indicates an advantage for the sensor at the corresponding parameter.

### Research plans & methodology

Metal oxide nanomaterials with a large surface area have great interest of scientists due to their uses in electronics i.e. nanoelectronics. The nanomaterial has antibacterial, antifungal, antioxidant, and cancer-fighting properties. These materials can be made using a variety of processes, including chemical vapour condensation, arc discharge, hydrogen plasma-metal interaction, and laser pyrolysis in the vapour phase. There are also other methods employed, including solid-state ball milling, liquid-state microbiological processes, micro-emulsions, and sol- gel synthesis.

The synthesis process has a notable effect on the attributes and possible applications of nanoparticles. MO nanoparticles have numerous characteristics, and their potential applications appear to be numerous and diverse.

### Conclusions and future perspectives

We summarize the research progress of gas sensors metal oxides, and their composites as sensitive materials. The gas sensing mechanism, main factors affecting sensing performance, and the Applications of various gas sensors are presented and discussed in detail. It can be concluded that the metal oxide-based nanostructure gas sensor can efficiently identify and detect toxic and harmful gases. Compared with pure metal oxide semiconductors, composite materials have higher carrier rates, larger high mechanical strength, and large specific surface area, and the synergistic effect of the two components can further enhance the gas sensing performance. Composite metal oxide materials during the composite process of the material, but also give more active sites for the gas sensing process, thereby further improving the gas sensing performance. In addition, the composite materials can effectively reduce the working temperature.

Nanomaterial-based gas sensors have made great progress in the past few decades, the operating temperature of metal oxides is too high, and the selectivity of 2D materials is still unsatisfactory. In the future, effective strategies such as building composite structures are highly needed to improve the selectivity, reduce the operating temperature, and improve the sensitivity and other properties. In addition, the research on the combination of metal oxides with 2D materials is still at an early stage, and its sensing mechanisms of the composite-based gas sensors should be further studied. Only when the mechanism and process are clear, the preparation and assembly of nanomaterial-based gas sensors can be achieved

purposefully. In addition, researchers must develop new design strategies to further optimize metal oxide nanomaterials with 2D nanomaterials to make them more suitable for gas sensing. Finally, it is expected that facile assembly and fabrication processes will be developed to enable batch fabrication of gas sensors with high stability, selectivity, sensitivity, reproducibility, and quick response in the future.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Regional integration in Bay of Bengal region in post-covid-19 period

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### Abstract

The Bay of Bengal region, encompassing seven nations, faces significant challenges and opportunities for regional integration in the post-COVID-19 period. This paper explores the economic trends, impact of the pandemic, and regional cooperation initiatives within the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Analyzing GDP growth, trade dynamics, and future trade scenarios using a Gravity model, the study anticipates both challenges and prospects for regional economic recovery. Amidst the pandemic, Bay of Bengal countries have suffered immense economic losses, prompting intensified efforts towards regional cooperation. The paper delineates strategies for addressing post-pandemic challenges, emphasizing the importance of public health collaboration, trade facilitation, and economic growth restoration. It underscores the role of BIMSTEC in fostering regional integration and recommends measures to enhance cooperation for a resilient and prosperous Bay of Bengal region.

**Keywords:** Bay of Bengal, regional integration, post-COVID-19, BIMSTEC, economic growth, trade facilitation, public health, regional cooperation

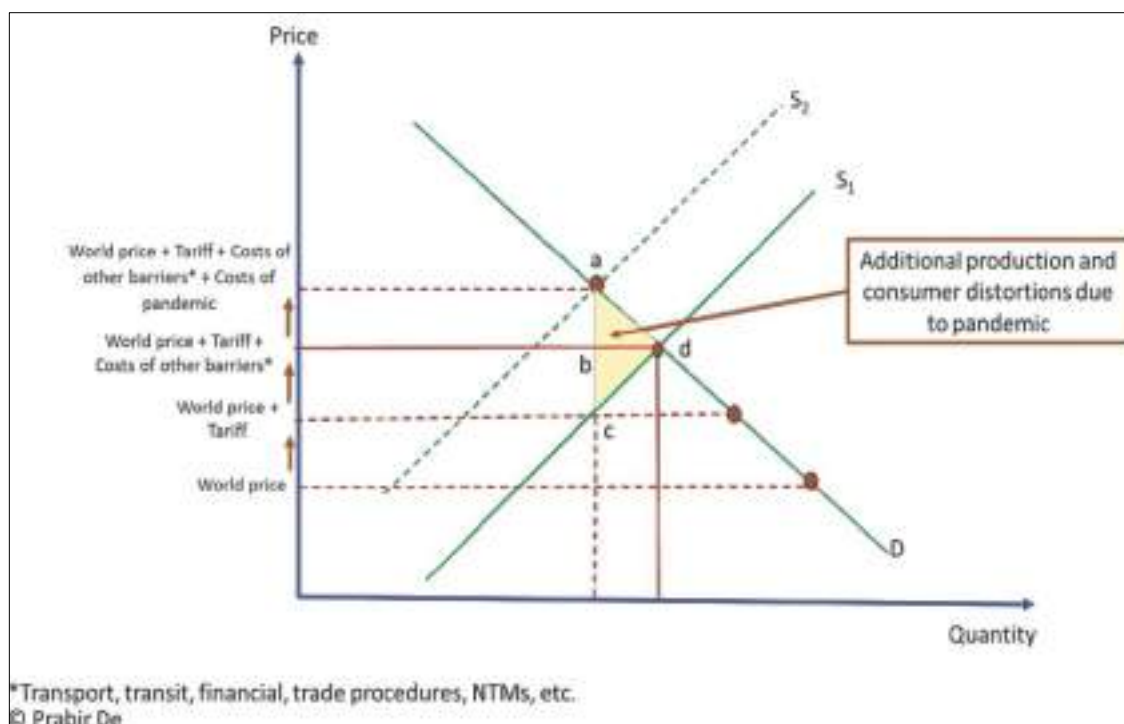
### 1. Introduction

The region encompassing the Bay of Bengal currently accommodates approximately 1.6 billion individuals, constituting roughly 23 percent of the global population. This area hosts a combined economy valued at 3 trillion dollars, contributing around 4 percent to the global GDP and 3.7 percent to global trade. The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) comprises seven nations: Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand. BIMSTEC stands out as a unique regional cooperation endeavor within the Bay of Bengal area due to its geographical contiguity and access to the ocean. Notably, it not only holds direct access to the Bay of Bengal but also shares a rich history and cultural heritage among its member states.

Bay of Bengal countries are at different stages of development having different income levels. It has three developing countries (India, Sri Lanka and Thailand) and four least developed countries (LDCs) (Bangladesh, Bhutan, Nepal and Myanmar). On one hand, the region has two landlocked LDCs (Bhutan and Nepal). While, on the other, it has five littoral countries. Three Bay of Bengal countries, namely, Bangladesh, Myanmar and Nepal, are likely to gain developing country status a few years from now (perhaps as early as in 2026).

Among seven member countries, five members of BIMSTEC are also members of SAARC, two are members of ASEAN and six are part of SASEC 2 <sup>[1]</sup>. BIMSTEC appears as a connector to multiple regional initiatives. For example, due to cross regional FTA between some of the member countries, BIMSTEC has become an effective alternative for the Bay of Bengal countries to connect with the world. Notwithstanding its cross regional structure, BIMSTEC has high economic potential, given the region's economic dynamism, huge market and rich natural resources.

All seven Bay of Bengal countries have been affected heavily by the ongoing coronavirus (COVID-19) pandemic. Illustrated in Figure 1, the COVID-19 driven pandemic forces the price of the traded goods to go up with a markup over and above the market price, thereby causing additional economic welfare losses. The triangle  $acd$  in figure 1 is the loss of welfare attributed to the shift of market equilibrium from  $d$  to the less efficient market equilibrium  $a$  due to increase in price as a result of rise on non-tariff barrier (bcd) and additional cost imposed due to pandemic (abd). The elimination of the extra expenses associated with the ongoing epidemic, along with improved trade facilitation and connectivity, would have a positive economic impact on the Bay of Bengal region by increasing trade volumes and ultimately improving economic wellbeing.



Source: Google Net

Fig 1: Illustration of economic distortions due to coronavirus pandemic

The management of the coronavirus pandemic underscores the potential for enhanced regional cooperation among the nations bordering the Bay of Bengal. Such cooperation could mitigate the costs associated with pandemic-induced barriers and foster regional integration. This integration might help overcome obstacles that hinder trade flows, movement of people, and capital across Bay of Bengal countries, especially in light of the common challenge posed by the coronavirus pandemic. As the World Health Organization rightly emphasizes, "With a fast-moving pandemic, no one is safe unless everyone is safe."

In light of these considerations, this paper briefly explores the major challenges confronting the Bay of Bengal countries in recent times and outlines a path forward for the post-COVID-19 period. The subsequent sections are structured as follows: Section 2 examines economic growth trends in the region, crucial for regional economic integration, and assesses the potential economic losses attributable to the COVID-19 pandemic. Section 3 delves into the impact of the coronavirus pandemic in the Bay of Bengal region, followed by an analysis of progress and achievements in regional cooperation within the context of the pandemic in Section 4. Section 5 outlines the opportunities and regional responses to address the ongoing pandemic. Finally, the paper concludes with Section 6.

## 2. Rising Bay Bengal and the corona virus pandemic

The past decade (2010-2019) witnessed significant growth in the Bay of Bengal region. As depicted in Table 1, smaller economies in the region outpaced larger ones during this period, signaling regional prosperity and inclusivity. Notably, Bangladesh achieved an impressive annual growth rate exceeding 10 percent, resulting in its GDP expanding over fivefold from US\$53.37 billion in 2000 to US\$302.57 billion in 2019. Nepal followed suit with notable growth. This remarkable economic expansion coincided with increased openness to trade, robust global growth, and strong regional partnerships in the Bay of Bengal area.

Another notable aspect of the Bay of Bengal region is the presence of two relatively large middle-income economies, India and Thailand, which provide significant market access to other Bay of Bengal countries, thereby bolstering regional demand and supply. India, as a burgeoning economic power, and Thailand, as the second-largest economy in ASEAN, play pivotal roles in this regard. Additionally, a shared sense of common public goods, such as natural resources, security, education, cuisine, and music, is evident among the countries in the region.

Table 1: GDP growth of BIMSTEC countries

	GDP (2000-2009)		GDP (2010-2019)	
	Size, 2000 (US\$ billion)	Growth* (2000-2009), (%)	Size, 2019 (US\$ billion)	Growth* (2010-2019), (%)
Bangladesh	53.37	6.74	302.57	10.13
Bhutan	0.42	11.26	2.53	5.04
India	468.39	11.10	2868.93	5.52
Myanmar	8.91	15.28	76.09	4.38
Nepal	5.49	8.87	30.64	6.71
Sri Lanka	16.33	9.92	84.01	4.01
Thailand	126.39	8.34	543.55	4.77

Note: CAGR GDP taken at current price

Source: Google Net

**Table 2:** Intra-BIMSTEC trade matrix, 2019

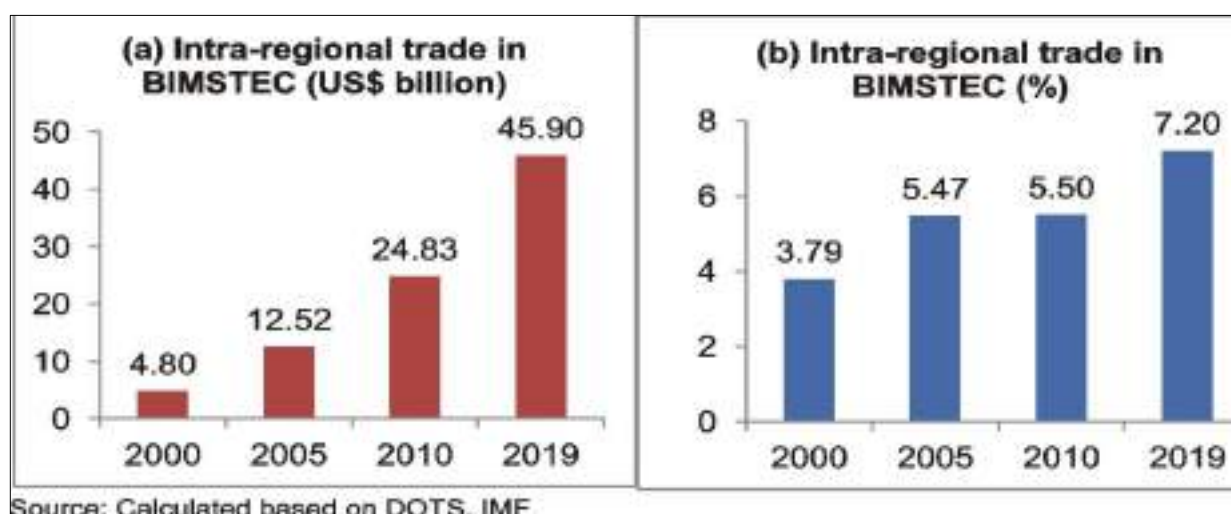
	Bangladesh	Bhutan	India	Myanmar	Nepal	Sri Lanka	Thailand	Intra-BIMSTEC	Share in World (%)
<b>Bangladesh</b>		0.00	0.98	0.03	0.05	0.03	0.03	1.12	3.11 (1.66)
<b>Bhutan</b>	0.00		0.50	0.00	0.00	0.00	0.00	0.51	97.59 (84.94)
<b>India</b>	8.13	0.69		0.96	7.10	4.23	4.33	25.45	7.83 (5.11)
<b>Myanmar</b>	0.07	0.00	0.64		0.00	0.03	3.26	3.99	22.03 (16.10)
<b>Nepal</b>	0.01	0.00	0.66	0.00		0.00	0.00	0.68	68.85 (42.84)
<b>Sri Lanka</b>	0.13	0.00	0.79	0.03	0.03		0.04	1.02	8.73 (2.81)
<b>Thailand</b>	0.98	0.00	7.32	4.35	0.10	0.38		13.14	5.35 (2.11)

Notes: \_ IntraBIMSTEC Trade Matrix is in terms of export \_ Number in parentheses show corresponding data for the year 2000

Source: Google Net

The entire Bay of Bengal region is grappling with the profound impacts of the coronavirus pandemic. The dual effects of the pandemic and ensuing global and national lockdowns have wreaked havoc on Bay of Bengal countries, pushing regional economies, with the exceptions of Bangladesh, Bhutan, and Nepal, into economic recession in 2020 (IMF, 2020). Projections indicate that the Bay of Bengal region is poised to experience approximately a 9.11 percent GDP loss (equivalent to 3.5537 billion in current price terms or 7.67 percent in PPP terms, amounting to 952.80 billion) during 2020-2022, potentially marking the highest economic downturn since the Great Depression of the 1930s. Smaller economies heavily reliant on the region for their economic sustenance are particularly vulnerable to such crises. Let us delve into this vulnerability further, particularly in terms of trade.

The upward trend in intra-regional trade serves as another indicator of growing regional integration in the Bay of Bengal region, which surged to 7.20 percent in 2019 from 5.50 percent in 2010 (Figure 2). The region's dependence on intra-regional trade has increased significantly. Bhutan and Nepal exhibit heavy reliance on the Bay of Bengal region for their trade (see Table 2). For instance, nearly 98 percent of Bhutan's global exports were directed to the Bay of Bengal in 2019, a notable increase from 85 percent in 2000. Similarly, around 69 percent of Nepal's global exports were directed to the Bay of Bengal region, up from 43 percent in 2000. India, the largest economy in the Bay of Bengal region, exported goods worth \$25.45 billion to the region in 2019, followed by Thailand (\$13 billion) and Myanmar (\$4 billion). However, intra-regional trade during the COVID-19 pandemic period has witnessed a slowdown, with trade volume declining.

**Fig 2:** Trends in intra-regional trade in BIMSTEC

## 2.1 Likely trade scenario in post-COVID-19 period

We have conducted an analysis of future trade scenarios in the Bay of Bengal region using a Gravity model. Appendix 1

provides a detailed overview of the model, methodology, and the estimated results, which have demonstrated robustness and statistical significance. Table 3 and Figure 3 outline India's

anticipated exports to and imports from Bay of Bengal countries for the years 2021 and 2025. Several key findings are noteworthy.

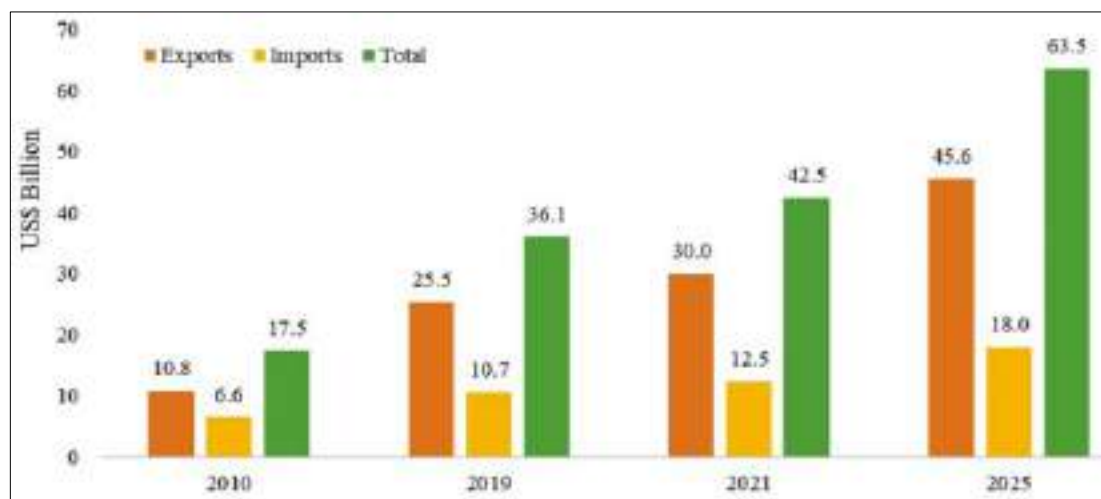
Firstly, it is projected that India's exports to Bay of Bengal countries may experience a slowdown in 2021 compared to previous years. India's total exports to the Bay of Bengal region are expected to surpass US\$30 billion by 2021 (compared to US\$25.5 billion in 2019) and reach US\$45 billion by 2025. Conversely, exports from the remaining Bay of Bengal

countries to India are estimated to grow at a slower pace. In 2019, these countries exported only US\$10.7 billion worth of goods to India. According to our trade forecast, this figure is anticipated to reach only US\$12.5 billion in 2021 and US\$18 billion in 2025. Hence, this trend suggests that India's imports from the Bay of Bengal region may experience a more pronounced deceleration compared to India's exports during the period from 2021 to 2025.

**Table 3:** Trade forecast based on Gravity model India's exports to and imports from BIMSTEC countries for 2021 and 2025

	India's exports to BIMSTEC				BIMSTEC's exports to India			
	2010*	2019*	2021	2025	2010*	2019*	2021	2025
	(US\$ billion)							
Bangladesh	3.02	8.13	9.76	16.12	0.36	1.23	1.48	2.44
Myanmar	0.27	0.96	1.09	1.78	1.12	0.51	0.57	0.93
Sri Lanka	3.31	4.23	4.80	7.30	0.52	0.99	1.13	1.72
Thailand	2.14	4.33	5.06	6.98	3.95	7.04	8.22	11.35
Bhutan	0.16	0.69	0.81	1.12	0.19	0.25	0.29	0.40
Nepal	1.91	7.10	8.52	12.26	0.51	0.65	0.78	1.12
<b>BIMSTEC</b>	<b>10.82</b>	<b>25.45</b>	<b>30.05</b>	<b>45.56</b>	<b>6.64</b>	<b>10.67</b>	<b>12.47</b>	<b>17.95</b>

**Note:** The forecast for the year 2021 is based on the IMF forecasted GDP growth rate. For the year 2025, we assume the growth rate of GDP for India would be at 7 per cent and for other BIMSTEC countries it would vary between 4 to 6 per cent based on average of last five years of GDP. \*Actual export



**Source:** Google Net, **Note:** The forecast for the year 2021 is based on the IMF forecasted GDP growth rate. For the year 2025, we assume the growth rate of GDP for India would be at 7 per cent and for other BIMSTEC countries it would vary between 4 to 6 per cent based on average of last five years of GDP. Data for 2010 and 2019 are actual export

**Fig 3:** Trade forecast based on Gravity model India's export to and imports from BIMSTEC for 2021 and 2025

Secondly, it is anticipated that India's top three export partners in the Bay of Bengal region will likely be Bangladesh, Nepal, and Thailand in 2021, and Bangladesh, Nepal, and Sri Lanka in 2025. However, concerning India's top three import partners among Bay of Bengal countries, Thailand, Bangladesh, and Sri Lanka are expected to maintain their positions. Unlike India's export partners, the forecasts suggest no significant changes among India's top three import partners.

Thirdly, exports from smaller and landlocked countries such as Bhutan, Myanmar, and Nepal to India are projected to grow at a faster rate in the post-COVID-19 years. This suggests a potential emergence of increased market access in India for these nations.

In summary, the COVID-19 pandemic has introduced significant uncertainties and disrupted normal economic activities and life in the Bay of Bengal region. Assuming



successful containment of the outbreak through widespread COVID-19 vaccine distribution and stronger global economic growth, the Bay of Bengal may experience a rapid growth rebound in the second half of 2021 or early 2022. However, the contraction of advanced economies and the continued spread of the virus and other disasters could lead to an uncertain economic recovery. Moreover, an economic recession could inflict long-term damage on the regional economy, particularly in terms of output and productivity growth. In such a scenario, implementing a comprehensive strategy that addresses the impact of the current crisis and focuses on growth-supportive reforms may help Bay of Bengal countries return to a sustained growth path, revitalize regional trade, and strengthen regional integration <sup>[2]</sup>.

### 3. Dealing with coronavirus pandemic in Bay of Bengal region

Coronavirus pandemic has had a devastating impact on the Bengal of Bengal countries – health or otherwise. Illustrated in Table 4, BIMSTEC countries have witnessed 13 per cent of world's total COVID-19 cases and about 8 per cent of world total death as on 10 January 2021. India, Bangladesh and Nepal are the top three most-affected countries in terms of number of COVID-19 cases and deaths, followed by Myanmar, Sri Lanka

and Thailand. The least affected countries in the Bay of Bengal are Bhutan and Thailand in terms of total deaths. It seems these two countries have successfully escaped the brunt of the pandemic.

While all of these countries went into stick lockdown since as early as March 2020 as a measure to safeguard them from the pandemic, peaks of devastation were however reached only after the lift of lockdown. As on 10 January 2021, the total number of coronavirus cases in the Bay of Bengal region has surpassed the 11 million mark, while the deaths have increased to over 1,64,000 (Table 5). India accounted for the world's second highest number of cases and deaths at 1,04,73,696 and 1,51,265 respectively. Bangladesh came in second place with 5,23,302 infections and 7,803 deaths. Nonetheless, the recovery rate is quite high in the Bay of Bengal region. As on 10 January 2021, over 10 million people have recovered from the COVID-19, representing about 17 per cent of cases of the global recovery. Success of such recovery is due mainly to the tests conducted through the RT-PCR across the region, more particularly in India (131,027 per million people) and rapid treatment of COVID-19 patients. Nevertheless, the economic costs of the pandemic have already been huge and are still expanding.

**Table 4: Covid -19 Cases in the Bay of Bengal region\***

Country	Total cases	Total deaths	Total recovered	Tot cases/ 1M pop	Deaths/ 1M pop	Tests/ 1M pop
India	1,04,73,696	1,51,265	1,01,00,053	7,550	109	1,31,027
Bangladesh	5,23,302	7,803	4,67,718	3,161	47	20,364
Nepal	2,65,268	1,927	2,58,968	9,019	66	67,577
Myanmar	1,31,186	2,858	1,14,609	2,403	52	36,925
Sri Lanka	48,665	232	42,091	2,268	11	64,761
Thailand	10,547	67	6,566	151	1	17,425
Bhutan	825	1	469	1,063	1	4,29,651
Bay of Bengal (BoB)	1,14,53,489	1,64,153	1,09,90,474	3,659	41	1,09,676
World	9,08,79,233	19,46,619	6,49,74,697	11,659	250	
BoB share in world (%)	12.60	8.43	16.92	..	..	..

\*As on 10 January 2021 Source: Calculated by author based on data downloaded from the WHO.

With the current declining trend in terms of new cases and deaths, BIMSTEC countries are now looking towards the COVID-19 vaccines which are being rolled out, mainly by India in the region. India, which is globally known for supplying affordable drugs, is all set to roll out the COVID-19 vaccines which are being rolled out, mainly by India in the region. India which is globally known for supplying affordable drugs, is all set to roll out the COVID-19 vaccines. Seven Indian pharmaceutical companies race to develop vaccines for the coronavirus (Table 6). Vaccines in India will be easier to administer and transport across the region. On three counts, namely, availability, accessibility and affordability, India's vaccine suit much better to the Bay of Bengal countries (Table 5 (a)). Thus, it is quite logical that Bay of Bengal countries may depend on India for the COVID-19 vaccine. India has successfully supplied over 5 million doses of COVID-19 vaccines to most of the BIMSTEC countries excluding [www.dzarc.com/social](http://www.dzarc.com/social)

Thailand as donation (Table 5(b)). India has also ensured more supply of the vaccines in the neighborhood.

India has indigenously developed the COVAXIN by Bharat Biotech. Another vaccine, namely Covishield, developed by the Oxford University, is manufactured by the Serum Institute of India. Both have been approved for emergency use in India. The advantage of Indian vaccines in affordability as well as safety. Thailand, on the other hand, has signed a deal with UK-based AstraZeneca to supply COVID-19 vaccine. Bangkok-based Siam Bioscience Signed a letter of intent with AstraZeneca to supply 200 million doses <sup>[3]</sup>. Thailand has also placed order to China's Sinovac to supply COVID-19 vaccines. Bangladesh's Beximco Pharmaceuticals Ltd. (BPL) has signed a deal with the serum Institute of India to get COVID-19 vaccine. Besides approaching India, some Bay of Bengal countries have also signed contract with the WHO'S COVAX facility for the vaccine (e.g. Sri Lanka, Bangladesh).

**Table 5(a):** COVID-19 vaccines offered to Bay of Bengal countries

Country	Vaccine makers	Availability*	Affordability**	Accessibility***
India	Bharat Biotech, Serum Institute, Zydus Cadila, Panacea Biotech, Indian Immunologicals, Mynvax, Biological E	High	High	High
China	Sinovac Biotech, Sinophar, CanSino, CNBG, ZFLongkema	Medium	High	Low

**Notes:** \*In terms of capability and number of manufacturers in the country. \*\*In terms of price (as cheap as US\$ 5 to 15)

\*\*\*Capital-to-Capital distance. **Source:** Author's own based on several secondary sources

**Table 5(b):** Supply of COVID-19 vaccines by India\*

Country	Doses
Bhutan	150,000
Bangladesh	2,000,000
Myanmar	1,500,000
Nepal	1,000,000
Sri Lanka	500,000
Thailand	Not yet
<b>Total</b>	<b>51,50,000</b>

**Note:** \*First lot supplied as on 28 January 2021 and all are donations, **Source:** Author's own based on MEA and other secondary sources

The current challenges for the Bay of Bengal countries are, therefore, mainly threefold: first, secure/arrange the vaccines at an affordable rate; second, supply the vaccines with the required technology and sophistication; and third, assure safe and secure implementation of the vaccines and manage the post-vaccination complications or emergencies <sup>[4]</sup>. BIMSTEC Secretariat, for example, has a strong role to play in managing the coronavirus pandemic including distribution of COVID-19 vaccines and following up the progress and emergency. The need for a stronger regional body is, thus, felt important not only for securing smooth coordination but also overcoming the barriers while supplying the vaccine across the region. BIMSTEC Foreign Ministers have rightly agreed to leverage regional cooperation through BIMSTEC process in order in order to combat the adverse effects of the pandemic <sup>[5]</sup>.

#### 4. The COVID-19 pandemic and regional cooperation in Bay of Bengal region: A primer

Despite its inception in 1997, BIMSTEC has historically maintained a relatively low profile as a regional bloc, with

several factors contributing to its perceived underachievement (De, 2018; Basu and Ghosh, 2020; ORF, 2020). However, there has been a noticeable resurgence in momentum within the BIMSTEC process, largely driven by political directives received during the BRICS-BIMSTEC Outreach Summit held in Goa in 2016. The 4th BIMSTEC Summit, convened in Kathmandu in 2018, recommended three key measures: strengthening the BIMSTEC Secretariat, activating BIMSTEC institutions, and establishing a BIMSTEC Development Fund. Subsequent substantial progress has been made in implementing initiatives aimed at revitalizing BIMSTEC integration efforts.

More recently, regional cooperation in the Bay of Bengal has gained further momentum amidst the current pandemic. Bay of Bengal countries have pledged to collectively combat the coronavirus pandemic. These developments, along with supporting initiatives in recent years and months, significantly contribute to the integration process within BIMSTEC, bolstering its overall effectiveness and relevance.



**Box 1: Activities of BIMSTEC in 2020**

India organized the BIMSTEC's Conference on Combating Drug Trafficking in February 2020 in physical mode.

The 21st Session of the BIMSTEC Senior Officials' Meeting (SOM), comprising Foreign Secretaries of the BIMSTEC Member States, was virtually held on 2 September 2020 hosted by Colombo. The Foreign Secretaries/Senior Officials' from the BIMSTEC Member States attended the Meeting.

BIMSTEC countries organized the 2nd BIMSTEC Expert Group Meeting on Poverty Alleviation, held virtually on 12 November 2020. The EGM reviewed the progress achieved and discussed the new measures to further Agenda 2030 as envisioned by the leaders of BIMSTEC.

A Webinar on Harmonization of Curricula for Mutual Recognition of Traditional Medicine Degrees of BIMSTEC Countries was held virtually on 3 November 2020, hosted by the Ministry of Ayush of the Government of India. Delegates from all BIMSTEC Member States attended the Webinar to understand the system and process in the respective Member States in order to explore the strategies of establishing a harmonized system for mutual recognition of the traditional medicine degrees offered.

The Third Meeting of the BIMSTEC Transport Connectivity Working Group (BTCWG) was held virtually on 8 December 2020, hosted by India. The Meeting finalized the BIMSTEC Master Plan for Transport Connectivity that was developed with the technical assistance of the Asian Development Bank (ADB). The Master Plan is a ten-year strategy and action plan that will guide the development of transport connectivity as well as its synergies with other areas of connectivity.

The Second Meeting of the BIMSTEC Network of Tour Operators was held virtually in Colombo, Sri Lanka on 8-9 December 2020. The Meeting deliberated on the progress and status of the recommendations of the First Meeting of the BIMSTEC Network of Tour Operators and Plan of Action on Tourism Development for BIMSTEC Region.

The fifth BNPTT (BIMSTEC Network of Policy Think-Tanks) was organized by India virtually on 21-22 December 2020.

Source: Based on BIMSTEC Secretariat

Firstly, BIMSTEC has established a permanent secretariat in Dhaka, led by a Secretary General, who oversees a professional team driving the regional cooperation program.

Secondly, BIMSTEC member countries have finalized negotiations on the BIMSTEC Charter and the rationalization of sectors and sub-sectors, which is expected to be presented to leaders during the upcoming 5th BIMSTEC summit.

Thirdly, member countries are committed to accelerating cooperation to address the challenges posed by COVID-19, both within the region and beyond. Some countries have

established the COVID-19 Special Fund under SAARC and have collaborated on joint efforts to coordinate regional programs.

Fourthly, BIMSTEC has completed the Master Plan for BIMSTEC Connectivity, which is anticipated to receive endorsement from BIMSTEC leaders at the forthcoming 5th BIMSTEC Summit.

Fifthly, during the 21st Session of the BIMSTEC Senior Officials Meeting (SOM) held on September 2, 2020, BIMSTEC Foreign Secretaries finalized several important

legal instruments, including the BIMSTEC Convention on Mutual Legal Assistance in Criminal Matters, Memorandum of Association on the Establishment of BIMSTEC Technology Transfer Facility (TTF) in Colombo, Sri Lanka, BIMSTEC Charter, and Memorandum of Understanding (MoU) on Mutual Cooperation between Diplomatic Academies/Training Institutions of BIMSTEC Member States. These legal instruments are expected to be signed at the 5th BIMSTEC Summit.

Sixthly, BIMSTEC countries are currently negotiating the BIMSTEC Coastal Shipping Agreement and the BIMSTEC Motor Vehicle Agreement.

Seventhly, during the 21st Session of the BIMSTEC Senior Officials' Meeting (SOM) held on September 2, 2020, BIMSTEC Foreign Secretaries also approved the Memorandum of Understanding (MoU) between the BIMSTEC Secretariat and the Asian Development Bank to enlist greater project support in the region.

Recent months have witnessed increasing awareness of the opportunities presented through stronger regional cooperation in BIMSTEC (refer to Box 1 for some significant developments). The responses to the Coronavirus pandemic suggest a broader scope for regional cooperation among countries in the Bay of Bengal region <sup>[6]</sup>.

## 5. Post-COVID-19 challenges and regional cooperation contours

The COVID-19 pandemic has presented three major challenges that must be addressed: first, the need for stronger regional cooperation in the public health sector and related services; second, the necessity for enhanced trade facilitation to bolster supply chain resilience; and third, the imperative to restore economic growth. Exhibit 1 outlines some priorities and opportunities for the region. The key message is that measures to mitigate COVID-19-related challenges must lead to a reduction in the costs of the pandemic in the region. The responses to the pandemic suggest a greater scope for regional cooperation among the countries in the Bay of Bengal region, particularly in reference to Sustainable Development Goals (SDGs) (De, 2021a, 2021b; Basu Ray Chaudhury, 2021).

## 5.1 Public health

National public health strategies in the Bay of Bengal countries have primarily focused on containing the COVID-19 infection. The region is witnessing a unified response to the COVID-19 pandemic. Beyond managing the coronavirus itself, Bay of Bengal countries are now actively engaged in securing vaccines and protecting supply chains. With the exception of India, the remaining BIMSTEC countries lack the capability to manufacture sophisticated vaccines and related medical formulations. India could naturally become the vaccine hub for the entire Bay of Bengal region and beyond. Bay of Bengal countries should renew their focus on public health management and epidemiological research and training. Collective action in public health will pave the way for effectively controlling the virus within and beyond borders. What can be done jointly and regionally?

First and foremost, countries need to reach a consensus on a protocol for health security coordination and cooperation mechanisms in the Bay of Bengal region.

Secondly, countries must strengthen and empower the BIMSTEC Secretariat to develop a regional plan and strategy for public health management, followed by timely endorsements from member countries.

Thirdly, the Bay of Bengal countries could establish a BIMSTEC Facility to Fight Pandemics (BFFP) and a BIMSTEC COVID-19 Fund (BCF) under the supervision of the BIMSTEC Secretariat. The operation of the BFFP and BCF can be discussed and agreed upon through mutual consultation. The BFFP is a shared facility aimed at enhancing the region's capacity to combat pandemics. The Fund may encourage research projects focusing on diagnostics, vaccines, and therapeutics not only for the COVID-19 virus but also for similar or other viral contaminations. Thailand, as the current chair of Public Health in BIMSTEC, may lead the discussion. Additionally, a Bay of Bengal-wide Research and Development (R&D) Blueprint could be initiated. The Blueprint should aim to improve inter-country coordination, develop new protocols and standard operating procedures (SOPs), among other objectives.

**Exhibit 1: Priorities and opportunities in the Bay of Bengal region**

Priorities	Opportunities
<ul style="list-style-type: none"> <li>• Check the economic loss of the region, bring back growth and ensure resilient recovery</li> <li>• Promote trade, investment, tourism, etc.</li> <li>• Complete the ongoing negotiations (e.g. BIMSTEC coastal shipping agreement)</li> <li>• Encourage cooperation in Industry 4.0, public health, disaster management, climate change, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Connectivity-driven integration: BIMSTEC Master Plan of Connectivity, BIMSTEC coastal shipping agreement, BIMSTEC trade facilitation agreement, BIMSTEC MVA, etc.</li> <li>• People-centric development partnership, value chains, comprehensive economic partnership, areas of cooperation - health, renewable energy, e-commerce, etc.</li> <li>• Logistics and supply chain management</li> <li>• Digital economy</li> <li>• Energy cooperation</li> <li>• New technology: S&amp;T cooperation</li> </ul>



Fourthly, a network of BIMSTEC Epidemiologists and Scientists could be established to promote the exchange of scholars, research findings, and innovation. Additionally, it could organize regional-level seminars and workshops, thereby strengthening the regional knowledge pool and resources.

ASEAN offers valuable lessons to the Bay of Bengal region. For instance, as noted in Djalante et al. (2020), ASEAN's policy approach to combatting epidemics has been grounded in its unique and pragmatic networks, such as the ASEAN Plus Three (APT) (including China, Japan, and South Korea), for regional disease surveillance mechanisms. ASEAN has developed protocols for communication and information sharing on emerging infectious diseases, encouraging member states to report all cases of diseases categorized as Public Health Emergencies of International Concern (PHEIC). Past programs include cooperation in Disaster Safety of Health Facilities and the ASEAN+3 Field Epidemiology Training Network, as well as the ASEAN Regional Public Health Laboratories Network (RPHLN) through the Global Health Security Agenda platform. However, it is unclear how such networks contribute to effective policymaking during the COVID-19 pandemic. Appendix 3 presents a list of ASEAN's responses to COVID-19. The ASEAN experience suggests that Bay of Bengal countries may consider establishing a senior officers' level interaction mechanism for public health development in response to COVID-19.

## 5.2 Enhanced trade facilitation and regional connectivity

Logistics support plays a pivotal role in the success of immunization services across the region, particularly in the context of COVID-19 preparedness. High-quality logistics are essential for ensuring faster and adequate supply of high-quality vaccines and immunization-related materials across borders. Key areas of logistics support include vaccine management and monitoring, cold chain management, and immunization safety, among others. In particular, multimodal connectivity, combining air and land transportation, is crucial for the supply of COVID-19 vaccines from India to the remaining Bay of Bengal countries. Trade facilitation measures such as simplification of customs procedures, zero duty on medical products and services, and mutual recognition of standards are important for building and strengthening the supply chain in the region. Furthermore, in the post-COVID-19 period, Bay of Bengal countries should expedite the conclusion of the pending BIMSTEC Free Trade Agreement (FTA) and Customs Cooperation Agreement to ensure increased trade within the region. Enhanced trade facilitation coupled with supply chain resilience can ensure an effective supply of vaccines on time and at a low cost across the region. Regional connectivity lies at the heart of BIMSTEC cooperation. The BIMSTEC Secretariat and the Asian Development Bank (ADB) have developed the BIMSTEC Transport Connectivity Master Plan, which presents a transportation vision for seamless connectivity around the Bay of Bengal region and beyond. It has identified 261 projects for the construction, expansion, and modernization of existing transport infrastructure involving an estimated cost of US\$120 billion. Connectivity is crucial for the Bay of Bengal region's development (Yhome, 2017). Achievements in coastal shipping between India and Bangladesh are remarkable. The completion of the BIMSTEC coastal shipping agreement will

facilitate seamless movement of cargo and passenger vessels in the Bay of Bengal. Abolition (partial or full) of cabotage among BIMSTEC countries will play a catalytic role in promoting trade and connectivity. The Trilateral Highway is nearing completion and will connect the BIMSTEC countries overland. Bangladesh's completion of the Padma Bridge will facilitate trade and transportation. Bhutan and Nepal are already well connected with BIMSTEC but require capacity augmentation. Border infrastructure and connectivity require drastic reforms and development. The early completion of the BIMSTEC Motor Vehicle Agreement (MVA) will add momentum to BIMSTEC economic connectivity. Rail and digital connectivity have immense potential to enhance trade in the region and beyond. BIMSTEC countries may negotiate a BIMSTEC Railway Agreement, and a regional air transportation agreement in cargo and passenger services will promote faster mobility of goods and services. Maritime connectivity in BIMSTEC is another area requiring attention. A regional network of ports in the Bay of Bengal is essential for sharing vital information, undertaking training and capacity building, and dealing with common challenges, particularly in the post-COVID-19 period. An exchange of energy presents a golden opportunity in the post-COVID-19 period. The quality of electricity is critical for the supply of vaccines and medicines. The BIMSTEC Secretariat is planning to complete a BIMSTEC Grid Interconnection Master Plan Study to establish a regional electricity grid to facilitate energy trade. Bay of Bengal countries also require development partners like Japan, who can provide investment, technology, and infrastructure support.

## 6. Conclusion

The Bay of Bengal countries view BIMSTEC as a developmental tool, and its effectiveness needs to be reassessed in the post-COVID-19 period. The preceding discussion highlights that regional integration can lead to substantial economic gains in the Bay of Bengal region, particularly in the post-COVID-19 era. In other words, regional integration in the Bay of Bengal can serve as a building block for global integration. However, the benefits of regionalism are contingent upon the integration spirit of the Bay of Bengal countries. This article proposes the next phase of integration for the Bay of Bengal region at a time when the coronavirus-driven pandemic is perceived as a common threat to the entire region.

Countries in this region have been significantly affected by the ongoing coronavirus pandemic. This article argues that regional cooperation could help reduce the costs of pandemic-driven barriers. The responses to the coronavirus pandemic also indicate a greater scope for regional cooperation among the countries in the Bay of Bengal region. Regional integration may assist the Bay of Bengal countries in overcoming divisions that hinder the flow of trade in goods and services, people, and ideas, particularly when all members are confronting a common challenge to combat the coronavirus pandemic.

Sri Lanka, the current Chair of BIMSTEC, is scheduled to host the 5th BIMSTEC Summit as well as the 17th BIMSTEC Ministerial Meeting in early 2021. With the holding of the 5th BIMSTEC Summit, the chairmanship of the organization will transition from Sri Lanka to Thailand. These meetings are expected to further bolster regional cooperation and integration

in the Bay of Bengal region. The recommendations of this paper may aid in overcoming common challenges and rebuilding the region as the center of gravity in the Indo-Pacific.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Exploring the global partnership on artificial intelligence in the insurance sector: opportunities, challenges, and implications

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### Abstract

Artificial Intelligence (AI) has emerged as a transformative force in the insurance sector, revolutionizing various aspects of the industry, including risk assessment, underwriting, claims processing, and customer engagement. As insurers seek to harness the full potential of AI, global partnerships have become increasingly essential for driving innovation, fostering collaboration, and navigating complex challenges in an interconnected world. This abstract explores the significance of global partnerships on AI in the insurance sector, highlighting key initiatives, benefits, challenges, and future implications.

The insurance industry is undergoing rapid digital transformation, driven by advancements in AI technologies such as machine learning, natural language processing, and predictive analytics. These technologies offer insurers unprecedented opportunities to improve operational efficiency, mitigate risks, and deliver customers more personalized and engaging experiences. However, realizing the full benefits of AI requires collaboration and cooperation across borders, industries, and stakeholders.

Global partnerships on AI in the insurance sector encompass various collaborations between insurers, technology companies, research institutions, regulators, and other stakeholders. These partnerships enable insurers to access diverse expertise, resources, and technologies worldwide, accelerating innovation and enhancing their competitive advantage in the marketplace. By collaborating with global partners, insurers can leverage specialized knowledge and capabilities in AI, data science, cybersecurity, and regulatory compliance, enabling them to develop and deploy cutting-edge AI solutions that address evolving market trends and customer needs.

One of the key benefits of global partnerships on AI in the insurance sector is the facilitation of data sharing and collaboration. By pooling data resources and expertise, insurers can enhance their predictive analytics capabilities, improve risk assessment accuracy, and develop more personalized insurance products and services. Additionally, global partnerships enable insurers to expand their market reach and enhance customer engagement by leveraging local expertise and insights from international partners. Collaborating with technology companies, startups, and digital platforms in emerging markets provides insurers with opportunities to tailor AI-driven solutions to meet diverse customer segments' unique needs and preferences.

Despite the numerous benefits, global partnerships on AI in the insurance sector also present challenges that must be addressed effectively. These challenges include data privacy and security concerns, cultural and regulatory differences, intellectual property rights and ownership issues, talent shortages, and alignment of goals and objectives. Addressing these challenges requires proactive engagement, clear communication, and robust governance frameworks to ensure that partnerships are mutually beneficial and sustainable in the long term.

**Keywords:** Artificial Intelligence (AI), insurance, customer, fraud detection, risk management

### Introduction

Complex risk assessment, manual processes, and standardized products have traditionally characterized the insurance sector. However, AI technologies have brought about significant changes, enabling insurers to streamline operations, enhance risk management, and personalize customer experiences. Concurrently, the Global Partnership on Artificial Intelligence (GPAI) has emerged as a pivotal initiative, bringing together governments, industry stakeholders, and academia to address the opportunities and challenges posed by AI. This paper explores the intersection of AI and the insurance sector within

GPAI, analyzing this collaboration's implications, opportunities, and challenges.

### Understanding AI in the insurance sector Overview of AI applications in insurance

AI technologies, including machine learning, natural language processing (NLP), and predictive analytics, have found numerous applications within the insurance sector. AI is transforming traditional insurance practices from underwriting and claims processing to customer service and fraud detection.

### Benefits of AI adoption

AI is increasingly recognised as a game-changer, offering transformative opportunities to insurers across various functions. Here's why AI the insurance industry, is of paramount importance in the insurance sector:

- a) **Enhanced risk assessment:** AI-powered predictive analytics enables insurers to assess risks more accurately by analyzing vast amounts of data, including customer demographics, behavioral patterns, and historical claims data. This leads to more precise underwriting decisions and better pricing of insurance policies, ultimately reducing losses and improving profitability.
- b) **Streamlined claims processing:** AI-driven automation and machine learning algorithms streamline claims processing workflows, reducing manual tasks, improving efficiency, and enhancing customer experiences. Claims can be processed faster, more accurately, and with fewer errors, leading to quicker resolution and higher customer satisfaction.
- c) **Improved customer engagement:** AI-powered chatbots, virtual assistants, and personalized recommendation engines enable insurers to engage with customers more effectively and deliver tailored services and offerings. By understanding customer needs and preferences, insurers can provide proactive support, offer relevant product recommendations, and enhance overall satisfaction and loyalty.
- d) **Fraud detection and prevention:** AI algorithms can analyze patterns and anomalies in data to identify potentially fraudulent claims, enabling insurers to detect and prevent fraudulent activities more effectively. This helps reduce financial losses, mitigate risks, and maintain the integrity of insurance operations.
- e) **Personalized insurance products:** AI enables insurers to develop personalized insurance products and pricing models based on customer data, such as driving behaviour, health metrics, and lifestyle choices. For example, usage-based insurance (UBI) and telematics adjust premiums based on customer behaviour, promoting safer practices and reducing insurance costs.
- f) **Operational efficiency and cost reduction:** AI-driven automation streamlines repetitive tasks, optimize resource allocation, and reduces operational costs for insurers. Insurers can improve efficiency, scale operations, and drive profitability by automating underwriting, claims processing, and customer service functions.
- g) **Risk management and decision support:** AI-powered analytics and predictive modelling tools help insurers identify emerging risks, assess their impact, and make data-driven decisions. By analysing market trends, customer behaviour, and macroeconomic factors, insurers can anticipate changes, optimise strategies, and stay ahead of the competition.
- h) **Compliance and regulatory requirements:** AI can assist insurers in complying with regulatory requirements and standards, such as GDPR, IFRS 17, and Solvency II. By automating compliance processes, ensuring data privacy, and enhancing transparency, insurers can mitigate regulatory risks and maintain trust with regulators and customers.

### The rise of AI in insurance

AI has emerged as a transformative force across various sectors in recent years, and the insurance industry is no exception. With its ability to analyze vast amounts of data, streamline processes, and enhance customer experiences, AI is reshaping how insurers operate, assess risk, and deliver services. This paper explores the significant ways AI is revolutionizing the insurance landscape

- a) **Risk assessment and underwriting:** Traditionally, insurers have relied on historical data and actuarial tables to assess risk and determine premiums. However, AI algorithms can analyze data sources in real-time, including social media activity, IoT devices, and satellite imagery, to gain deeper insights into risk factors. By leveraging machine learning models, insurers can predict and price risks more accurately, leading to more personalized policies tailored to individual customers.
- b) **Claims processing:** One of the most time-consuming aspects of insurance is claims processing. AI-powered systems can automate this process, from initial claims intake to fraud detection and claims settlement. NLP algorithms can extract relevant information from claims forms and documents, while computer vision can analyze images to assess damage in auto or property claims. This speeds up the claims process and reduces the likelihood of errors and fraudulent claims.
- c) **Customer service and engagement:** AI-driven chatbots and virtual assistants are transforming customer service in the insurance industry. These virtual agents can handle routine inquiries, provide policy information, and even assist with claims filing 24/7. Moreover, AI enables insurers to offer personalized recommendations and proactive support based on customer data and behaviour patterns. Insurers can enhance customer satisfaction and loyalty by delivering more responsive and tailored experiences.
- d) **Risk prevention and mitigation:** Beyond assessing and managing risks, AI also plays a crucial role in preventing and mitigating losses. For instance, insurers use predictive analytics to identify potential hazards and recommend preventive measures for policyholders. In health insurance, wearable devices and health monitoring apps powered by AI can promote healthier lifestyles and reduce the likelihood of costly medical claims. Similarly, IoT (Internet of Things) sensors can detect early signs of damage or maintenance issues in property insurance, allowing insurers to intervene before major losses occur.
- e) **Product innovation:** AI drives innovation in product development, enabling insurers to create new offerings that better meet evolving customer needs. For example, usage-based insurance (UBI) leverages vehicles' telematics data to adjust premiums based on actual driving behaviour, promoting safer driving habits and more accurate risk assessment. Additionally, AI-powered platforms facilitate the emergence of on-demand insurance models, where customers can purchase coverage for specific events or durations, such as travel insurance for a single trip or rental insurance for a short-term stay.



## Challenges and considerations

Despite the potential benefits, the integration of AI in insurance poses significant challenges, including ethical considerations, data privacy concerns, regulatory compliance, and the need for transparent and interpretable AI algorithms.

- a) **Data privacy and security:** One of the primary challenges of AI adoption in insurance is ensuring the privacy and security of customer data. Insurers must navigate complex regulatory frameworks and implement robust data protection measures to safeguard sensitive information from unauthorized access or misuse.
- b) **Ethical considerations:** Algorithms using artificial intelligence may unintentionally reinforce prejudices found in past data, resulting in unjust treatment or prejudice towards particular target populations. Insurers must address these ethical considerations by implementing transparency and accountability mechanisms to ensure that AI systems operate fairly and equitably.
- c) **Transparency and explainability:** AI models frequently function as "black boxes," which makes it difficult to understand how they arrive at decisions. Insurers must strive for transparency and explainability in AI systems to build trust with regulators, customers, and other stakeholders, enabling them to understand how decisions are made and mitigate potential risks effectively.
- d) **Talent gap and skills shortage:** The rapid adoption of AI in insurance has created a demand for skilled professionals with expertise in data science, machine learning, and AI technologies. Insurers need help recruiting and retaining top talent, exacerbating the industry's talent gap and skills shortage.
- e) **Regulatory compliance:** Regulatory compliance poses a significant challenge for insurers implementing AI technologies. As regulatory frameworks evolve to address the use of AI in insurance, insurers must ensure that their AI systems comply with applicable laws and regulations, including those related to data privacy, consumer protection, and fairness.

## The emergence of global partnerships on artificial intelligence

### Introduction to GPAI

Established in 2020, GPAI aims to facilitate international collaboration on AI research, development, and governance. It brings together governments, industry leaders, and academic institutions to address AI's societal and ethical implications.

### Objectives of GPAI

GPAI's primary objectives include promoting responsible AI innovation, addressing ethical concerns, and fostering international cooperation to ensure AI technologies' safe and inclusive development.

### Structure and initiatives

GPAI operates through various working groups and initiatives focused on AI governance, data sharing, AI for the social good, and other relevant areas. These initiatives have implications for the insurance sector, influencing regulatory frameworks, ethical guidelines, and industry standards.

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## Opportunities for collaboration in the insurance sector

- **Data sharing and interoperability:** Collaborative efforts facilitated by GPAI can enable insurers to access diverse datasets, improving the accuracy of AI models and enhancing risk prediction capabilities. Data-sharing initiatives can also promote interoperability and standardization, facilitating information exchange across borders.
- **Cross-border regulatory alignment:** GPAI initiatives to harmonize regulatory frameworks can streamline cross-border insurance operations, reducing compliance burdens and promoting innovation. Regulatory alignment can also enhance consumer protection and trust in AI-driven insurance products and services.
- **Innovation and research partnerships:** Collaborative research initiatives supported by GPAI can drive innovation in AI applications tailored to the insurance industry. GPAI can catalyze the development of new products, services, and business models by fostering partnerships between insurers, academia, and technology companies.

## Challenges and ethical considerations

- **Bias and fairness in AI algorithms:** Ensuring fairness and mitigating bias in AI algorithms is crucial to maintaining trust and equity in insurance practices. GPAI can play a role in developing guidelines and standards for responsible AI development, promoting transparency and accountability in algorithmic decision-making.
- **Data privacy and security:** Collaborative data-sharing initiatives must prioritize data privacy and security to comply with regulatory requirements and safeguard sensitive customer information. GPAI can contribute to developing privacy-preserving AI techniques and best practices for data governance in the insurance sector.
- **Transparency and accountability:** GPAI efforts should emphasize transparency and accountability in AI systems deployed within the insurance sector, enabling stakeholders to understand and audit algorithmic decision-making processes. By promoting transparency, GPAI can enhance consumer trust and facilitate regulatory oversight of AI-driven insurance practices.

## Implications for insurers, policyholders, and regulators

AI revolutionizes traditional practices, enabling insurers to streamline operations, enhance decision-making, and deliver superior customer experiences. Global partnerships in AI are essential for catalyzing innovation and addressing complex challenges on a global scale.

- **Enhanced Customer Experience:** Collaborative AI initiatives supported by GPAI can lead to more personalised insurance products and services, improving customer satisfaction and retention. By leveraging AI technologies, insurers can better understand customer needs, tailor products to individual preferences, and provide proactive risk management solutions.
- **Regulatory Implications:** GPAI's influence on AI governance frameworks and regulatory standards can shape the regulatory landscape for insurers operating in multiple jurisdictions. By promoting regulatory convergence and best practices, GPAI can facilitate market

access, reduce compliance costs, and enhance regulatory certainty for insurers.

- **Economic and Societal Impact:** The widespread adoption of responsible AI practices facilitated by GPAI can have far-reaching economic and societal implications. By promoting innovation, inclusivity, and ethical AI development, GPAI can drive economic growth, job creation, and social welfare in the insurance sector and beyond.

Some of the examples of existing partnerships on global collaboration are-

- **AXA and IBM Watson:** One prominent example of a partnership in AI for insurance is the collaboration between AXA, a leading global insurer, and IBM Watson, IBM's AI platform. AXA utilises IBM Watson's cognitive computing capabilities to enhance customer service, improve underwriting accuracy, and develop innovative insurance products. By leveraging AI-driven insights, AXA can better assess risks, personalize policies, and deliver tailored customer recommendations, enhancing overall satisfaction and loyalty.
- **Allianz and Microsoft:** Another notable partnership in AI for insurance is the collaboration between Allianz, one of the world's largest insurance companies, and Microsoft, a leading technology company. Allianz leverages Microsoft's Azure cloud platform and AI services to accelerate digital transformation initiatives and develop cutting-edge risk management and claims processing solutions. By harnessing AI-powered analytics and machine learning algorithms, Allianz can optimize underwriting processes, detect fraudulent claims, and improve operational efficiency, ultimately delivering greater value to customers and stakeholders.
- **Swiss Re and Google Cloud:** Swiss Re, a leading reinsurance company, has partnered with Google Cloud to harness AI and data analytics for risk assessment and underwriting. By leveraging Google Cloud's AI and machine learning tools, Swiss Re can analyze vast data to understand emerging risks, model complex scenarios better, and develop more accurate pricing models. The collaboration enables Swiss Re to enhance its risk management capabilities, improve decision-making processes, and ultimately strengthen its competitive position in the global insurance market.

By pooling resources, expertise, and technology capabilities, insurers and technology companies can accelerate innovation, unlock new growth opportunities, and address complex challenges more effectively. Furthermore, these partnerships facilitate knowledge sharing, talent exchange, and best practice dissemination, fostering a culture of collaboration and learning within the industry.

### Key regulatory frameworks and industry standards

Some of the key regulations are as below-

- **GDPR (General Data Protection Regulation):** The GDPR, enacted by the European Union, sets forth comprehensive data protection rules and principles aimed at safeguarding the rights and privacy of individuals. Compliance with GDPR requirements is essential for insurers and technology providers seeking to operate in the

European market, ensuring that AI applications adhere to strict data protection standards.

- **IFRS 17 (International Financial Reporting Standard 17):** IFRS 17, developed by the International Accounting Standards Board (IASB), establishes accounting standards for insurance contracts, including provisions related to the valuation and recognition of insurance liabilities. While not specific to AI, IFRS 17 has implications for insurers leveraging AI technologies in risk assessment, underwriting, and claims processing, as it requires transparency and consistency in financial reporting.
- **ISO/IEC standards for AI:** The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) have developed a series of standards for AI, covering various aspects such as ethics, governance, and technical specifications. These standards provide guidance and best practices for AI development and deployment, promoting responsible and trustworthy AI applications in insurance and other sectors.

### Impact of regulations and standards on global partnership in AI for insurance

As AI adoption in the insurance industry accelerates, regulators focus on ensuring AI technologies' ethical and responsible use. Regulatory compliance frameworks, such as the GDPR and the European Union's AI Act, aim to safeguard consumer rights, privacy, and fairness in AI-driven decision-making. Insurers must ensure their AI systems adhere to regulatory requirements and ethical principles, including transparency, accountability, and non-discrimination. Moreover, insurers should implement robust governance frameworks and ethical guidelines to ensure that AI technologies are used responsibly and ethically across all stages of the insurance lifecycle.

- **Creating a level playing field:** International regulations and standards help create a level playing field for insurers and technology providers, fostering fair competition and collaboration in AI for insurance. By establishing common norms and requirements, regulators can reduce market fragmentation and promote greater interoperability and compatibility among AI systems.
- **Building trust and confidence:** Compliance with international regulations and standards builds trust and confidence among stakeholders, including customers, investors, and regulators. Insurers and technology providers that adhere to established norms and best practices demonstrate their commitment to ethical and responsible AI adoption, enhancing their reputation and credibility in the global marketplace.
- **Stimulating innovation and investment:** Clear and predictable regulatory frameworks encourage innovation and investment in AI for insurance, as insurers and technology providers have greater certainty about compliance requirements and market opportunities. By fostering a supportive regulatory environment, policymakers can spur technological advancements and drive sustainable growth in the insurance industry.

## Future of AI in insurance

In this article, we explore emerging trends in AI that are poised to reshape the insurance sector, driving innovation and transformation in the years to come.

- **Predictive analytics and machine learning:** Predictive analytics and machine learning are revolutionizing risk assessment and underwriting in the insurance industry. By analysing vast amounts of data, including customer demographics, behavioral patterns, and historical claims data, insurers can develop more accurate predictive models to assess risks and set premiums. Machine learning algorithms can identify complex patterns and correlations in data, enabling insurers to understand customer needs and preferences better and tailor products and services accordingly.
- **Digital assistants and chatbots:** Digital assistants and chatbots are transforming customer service and engagement in the insurance sector. AI-powered virtual agents can handle routine inquiries, provide policy information, and assist with claims processing, offering round-the-clock support to policyholders. Natural language processing (NLP) algorithms enable digital assistants to understand and respond to customer queries in real time, improving response times and overall satisfaction.
- **Blockchain technology:** Blockchain technology is gaining traction in the insurance industry, offering opportunities to streamline processes, enhance security, and improve transparency. By leveraging blockchain-based smart contracts, insurers can automate claims processing and settlement, reducing administrative costs and minimizing the risk of fraud.
- **Personalized insurance:** Personalized insurance is emerging as a key trend in the insurance sector, driven by advances in AI and data analytics. Insurers leverage AI algorithms to analyze customer data, such as driving behaviour, health metrics, and lifestyle choices, to develop tailored insurance products and pricing models. For example, usage-based insurance (UBI) adjusts premiums based on actual customer behaviour, promoting safer driving habits and reducing insurance costs. Similarly, AI-powered health monitoring devices and apps enable insurers to offer personalized health insurance plans that incentivize healthier lifestyles and preventive care.
- **Cyber insurance and risk mitigation:** With the increasing frequency and severity of cyber threats, cyber insurance is essential for businesses to mitigate financial losses and reputational damage. AI technologies are crucial in cyber risk assessment, threat detection, and incident response. Machine learning algorithms can analyse network traffic, identify anomalies, and detect potential security breaches in real-time, enabling insurers to proactively assess and mitigate cyber risks. Moreover, AI-powered predictive analytics can assess the likelihood and severity of cyber-attacks, helping insurers develop more accurate pricing models and risk management strategies for cyber insurance policies.

opportunities for insurers to drive innovation, enhance operational efficiency, and improve customer experiences.

The GPAI represents a significant international collaboration and innovation opportunity in the insurance sector. By fostering responsible AI development and addressing ethical, regulatory, and societal challenges, GPAI can unlock the full potential of AI technologies to benefit insurers, policyholders, and regulators globally. However, realising this potential requires ongoing collaboration, transparency, and a shared commitment to ethical AI principles. As GPAI continues to evolve, its impact on the insurance industry is poised to shape the future of insurance practices and customer interactions on a global scale.

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## Conclusion

Global partnerships hold immense potential in advancing AI in the insurance sector, offering numerous benefits and



## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सतत विकास लक्ष्य एवं भारत

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### सारांश

संसाधनों का कुशलता पूर्वक उपयोग जिससे कि वर्तमान पीढ़ियों के साथ-साथ भावी मानव पीढ़ियों को भी प्राकृतिक संसाधन पर्याप्त रूप से उपलब्ध हो सके, अर्थात् अपने आवश्यकताओं से समझौता किये बिना आने वाली पीढ़ी की आवश्यकताओं को पूरा करने हेतु विकास ही सतत विकास है। सतत विकास के केन्द्र में समाजिक न्याय एवं समावेशन तथा पर्यावरण संरक्षण है। इस विकास के माध्यम से आर्थिक विकास, समाजिक कल्याण तथा पर्यावरण संरक्षण के बीच संतुलन स्थापित करने का प्रयास किया गया है। वर्ष 2000 में संयुक्त राष्ट्र महासभा द्वारा सहस्राब्दी विकास लक्ष्यों अपनाया गया तथा 2015 तक इन लक्ष्यों को हासिल करने की इच्छा व्यक्त गई थी। इसका उद्देश्य मानवता की बुनियादी जरूरतों— भोजन, वस्त्र, आवास, रोजगार, की बुनियादी जरूरतों को पूरा करना तथा गरीबों के जरूरतों पर ध्यान देना। इसमें मुख्यतः, प्राथमिक शिक्षा, जेंडर समानता, मातृत्व में सुधार, बाल मृत्यु दर में सुधार, तथा पर्यावरणीय विकास आदि बिन्दु शामिल हैं। चूंकि वर्ष 2015 तक की अवधि समाप्त हो चुका था और अभी भी वैश्विक समस्याएं विद्यमान थी। इसलिए संयुक्त राष्ट्र संघ द्वारा वर्ष 2016 से 2030 तक के लिए 17 नए बिंदुओं के अंतर्गत संधारणीय विकास लक्ष्यों को स्वीकार किया गया है, जिसका उद्देश्य सतत तथा समावेशी विकास को प्राप्त करना है। भारत तथा वैश्विक स्तर पर सतत विकास के लक्ष्यों की प्राप्ति के लिए विभिन्न कल्याणकारी योजनाओं एवं पर्यावरणीय नीतियों तथा अधिनियमों के माध्यम से प्रयास किया जा रहा है। बावजूद इसके इन प्रयासों में अधिक तीव्रता तथा गंभीरता की जरूरत है।

**मूलशब्द:** यू.एन.ओ., भौतिकतावादी, नवीकरणीय संसाधन सहस्राब्दी विकास, सतत विकास, समावेशी विकास, जेंडर समानता

### परिचय

वर्तमान में पूरे विश्व में मुख्य रूप से दो बातों पर बल दिया जा रहा है प्रथम – मनुष्य और प्रकृति के टूटे हुए संबंधों को फिर से जोड़ना और दूसरा – मनुष्यों के सामाजिक और राजनीतिक जीवन को नए रूपों में किस प्रकार ढाला जाए। यह विचार ‘सतत विकास’ अनवरत विकास या अक्षय विकास की संकल्पना के रूप में व्यक्त होता है। सतत विकास की संकल्पना ‘विश्व पर्यावरण एवं विकास आयोग’ (World Commission on Environment and Development, 1987) की देन है, जिसके अध्यक्ष ग्रेट ब्रिटलैंड थे। इनके नाम पर इस आयोग के प्रतिवेदन को ‘ब्रिटलैंड रिपोर्ट’ कहते हैं। यह रिपोर्ट ‘ऑवर कॉमन फ्यूचर’ (हम सबका एक ही भविष्य) शीर्षक से प्रकाशित हुई थी, जिसमें यह संकेत किया गया था कि संसार में प्राकृतिक संसाधनों का अक्षय भंडार नहीं है, तथा यह मांग की गई थी कि “वर्तमान पीढ़ी को अपनी आवश्यकताएं इस ढंग से पूरी करनी चाहिए कि भावी पीढ़ियां अपनी आवश्यकताएं पूरी करने में असमर्थ न हो जाएं।” ब्रिटलैंड रिपोर्ट के अंतर्गत वर्तमान एवं भविष्य की आवश्यकताओं पर बल देते हुए यह स्वीकार किया गया था कि विशाल मानवता की बुनियादी जरूरतें पूरी करने के लिए विश्व स्तर पर निर्धनता का निराकरण जरूरी होगा। सतत विकास की संकल्पना के अन्तर्गत ऐसी रणनीतियों का पता लगाने की मांग की गई थी जो आर्थिक और सामाजिक विकास को बढ़ावा तो दे परन्तु पर्यावरण के द्वारा, अतिदोहन या प्रदूषण का कारण न बने। इसके लिए यह आवश्यक

है कि मनुष्य अपने उपभोग में कटौती करे और अपनी आवश्यकता से अधिक उत्पादन का प्रयत्न करे। इसलिए महात्मा गांधी का शरीर-श्रम (Bread Labour) का सिद्धान्त सर्वथा प्रासंगिक है, जिसमें बताया गया है कि प्रत्येक मनुष्य को अपने शरीर से इतना श्रम अवश्य करना चाहिए जिससे वह अपनी दैनिक आवश्यकता की वस्तुओं का उत्पादन स्वयं कर सके।

सतत विकास का तात्पर्य है— ऐसा विकास जो हमेशा चलता रहे, गतिमान रहे। यह विकास अनन्त होता है। कोई भी विकास तभी निरंतर हो सकता है जब प्राकृतिक संसाधनों को कोई नुकसान न हो। इस प्रकार इसमें प्रति व्यक्ति वास्तविक आय में वृद्धि, शिक्षा, स्वास्थ्य, एवं जीवन की गुणवत्ता में सुधार के साथ (आर्थिक विकास) ही प्राकृतिक संसाधनों की गुणवत्ता में सुधार के माध्यम से (पर्यावरण संरक्षण) लोगों के जीवन की गुणवत्ता में सतत सुधार पर बल दिया जाता है। आर्थिक वृद्धि के अन्तर्गत वस्तुओं और सेवाओं की मात्रात्मक वृद्धि को मापा जाता है ताकि इससे लोगों का जीवन स्तर उठाया जा सके। जबकि समावेशी विकास में वस्तुओं व सेवाओं तक सभी लोगों की पहुंच सुनिश्चित करने की कोशिश की जाती है। सतत विकास में समावेशी विकास अर्थात् – सबका साथ, सबका विकास के साथ पर्यावरण संरक्षण को भी शामिल किया जाता है।

सतत विकास एक व्यापक अवधारणा है। कोई विकास सतत है या नहीं, यह जानने के लिए इसके मापदण्ड निर्धारित करना तथा उस पर विकास को मापना जरूरी है। सतत विकास को मापने हेतु प्रकृति



की सामर्थ्य क्षमता (Carrying Capacity) पर ध्यान देना होता है। पृथ्वी की सामर्थ्य क्षमता प्रकृति की सहनशक्ति को व्यक्त करना है। अर्थात् पृथ्वी मानव की निरंतरता को बनाए रखने में कितनी सक्षम है, साथ ही विकास के दौरान उत्पन्न हुए मानवीय प्रदूषक तत्वों को कितनी आसानी से यह नियंत्रण कर पाती है। गांधी जी ने कहा था कि “प्रकृति आवश्यकताओं की पूर्ति करने में सक्षम है, परन्तु लालच नहीं (There is enough for need, not for greed)” वर्तमान समय में विकास आवश्यकता व लालच के बीच फंसा गया है। देशों ने लालच के वशीभूत होकर पर्यावरण संरक्षण को दरकिनार कर दिए हैं।

वर्ष 2015 में संयुक्त राष्ट्र महासभा की बैठक में 2030 सतत् विकास हेतु एजेंडा के तहत सदस्य देशों द्वारा 17 विकास लक्ष्य अर्थात् एस डी जी (Sustainable Development Goals - SDGs) तथा 169 प्रयोजनों को स्वीकार किये गए।

जो निम्नवत है—

1. गरीबी के सभी रूपों की पूरे विश्व से समाप्ति।
2. भूख की समाप्ति, खाद्य सुरक्षा और बेहतर पोषण और टिकाऊ कृषि को बढ़ावा।
3. सभी आयु के लोगों में स्वास्थ्य, सुरक्षा और स्वस्थ जीवन को बढ़ावा।
4. समावेशी और न्यायसंगत गुणवत्तायुक्त शिक्षा सुनिश्चित करने के साथ ही सभी को सीखने का अवसर देना।
5. लैंगिक समानता प्राप्त करने के साथ ही महिलाओं और लड़कियों को सशक्त करना।
6. सभी के लिए स्वच्छता और पानी के सतत् प्रबंधन की उपलब्धता सुनिश्चित करना।
7. सस्ती, विश्वसनीय, टिकाऊ और आधुनिक ऊर्जा तक पहुंच सुनिश्चित करना।
8. सभी के लिए निरंतर समावेशी और सतत् आर्थिक विकास, पूर्ण और उत्पादक रोजगार तथा बेहतर कार्य को बढ़ावा देना।
9. लचीले बुनियादी ढांचे, समावेशी और सतत् औद्योगिकरण को बढ़ावा देना।
10. देशों के बीच और भीतर असमानता को कम करना।
11. सुरक्षित, लचीले और टिकाऊ शहर और मानव वस्तियों का निर्माण।
12. स्थायी खपत और उत्पादन पैटर्न को सुनिश्चित करना।
13. जलवायु परिवर्तन और उसके प्रभावों से निपटने के लिए तत्काल कार्यवाही करना।
14. स्थायी सतत् विकास के लिए महासागरों, समुद्रों और समुद्री संसाधनों का संरक्षण और उपयोग।
15. सतत् उपयोग को बढ़ावा देने वाले स्थलीय पारिस्थितिकीय प्रणालियों, सुरक्षित जंगलों, भूमि क्षरण और जैव-विविधता के बढ़ते नुकसान को रोकने का प्रयास करना।
16. सतत् विकास के लिए शांतिपूर्ण और समावेशी समितियों को बढ़ावा देने के साथ सभी स्तरों पर इन्हें प्रभावी, जवाबदेह पूर्ण बनाना ताकि सभी के लिए न्याय सुनिश्चित हो सके।
17. सतत् विकास के लिए वैश्विक भागीदारी को पुनर्जीवित करने के अतिरिक्त कार्यान्वयन के साधनों को मजबूत बनाना।

यू एन डी पी की निगरानी व संरक्षण में SDGs 2030 तक प्रभावी रहेंगे जो विश्व के 193 सदस्य देशों में इन लक्ष्यों की प्राप्ति पर नजर रखेगी। यू एन डी पी का प्रमुख लक्ष्य इन देशों में गरीबी को खत्म करना, लोकतांत्रिक शासन व्यवस्था को प्रोत्साहन, पर्यावरण परिवर्तन और आपदा प्रबंधन पर कार्य तथा आर्थिक समानता प्राप्त करने हेतु

प्रयास करना है, जिसमें सरकारी, निजी क्षेत्र, नागरिक समाज तथा सभी लोगों को आपसी सहयोग से कार्य कर रही है।

## सतत विकास एवं भारत

भारत सतत विकास लक्ष्यों की प्राप्ति हेतु निरंतर प्रयासरत है, जिनमें से कुछ निम्नवत है—

भारत को विषयगत नेटवर्क कार्यक्रम (TPN) के अन्तर्गत कृषि वनन और मृदा संरक्षण पर एशियाई क्षेत्र कार्यवाही कार्यक्रम के लिए राष्ट्र संघ कंवेनन टू कांवेन डेजर्टिफिकेशन (UNCCD) द्वारा मेजबान देश पदनामित किया गया है। UNCCD 1997 में अस्तित्व में आया था, जिसके सदस्य देशों का यह दायित्व है कि वे रेगिस्तानीकरण और सूखे से सम्बंधित समस्त मुद्दों को हल करने के लिए एक कार्य-योजना बनाए।

सतत विकास लक्ष्यों की प्रगति को मापने तथा राज्यों एवं केन्द्र शासित प्रदेशों के मध्य इन्हें अर्जित करने हेतु स्वस्थ प्रतिस्पर्धा उत्पन्न करने के उद्देश्य से नीति आयोग द्वारा राष्ट्रीय स्तर पर 'इण्डिया इण्डेक्स' तैयार की जा रही है।

भारत ने 2002 में जैविक विविधता अधिनियम तैयार किया और 2004 में नियमावली को अधिसूचित किया ताकि जैवविविधता कंवेनन के प्रावधानों को लागू किया जा सके। इस अधिनियम का कार्यान्वयन हेतु तीन स्तरीय संस्थागत ढांचा तैयार किया गया जिसमें – राष्ट्रीय जैव विविधता प्राधिकरण (NBA), राज्य जैव विविधता बोर्ड (SBB), जैव विविधता प्रबंधन समितियां (BMCs) सम्मिलित होंगे।

भारत ने 10 जून 1992 को जलवायु परिवर्तन पर राष्ट्र संघ फ्रेमवर्क कंवेनन (यू एन एफ सीसीसी) पर भी हस्ताक्षर किये और एक नवम्बर 1993 को इसकी पुष्टि की। यू एन एफ सी सी सी के अन्तर्गत भारत जैसे विकासशील देशों की वाध्यकारी ग्रीन हाउस गैस (GHG) संबंधी प्रतिबद्धताएं नहीं हैं, पर अलग दायित्व और संबंधित क्षमता है। जैसा कि कोपेनहेगेन सम्मेलन में सहमति हुई थी कि – भारत ने कृषि क्षेत्र को छोड़कर वर्ष 2005 के स्तर की तुलना में 2020 में GHGs की उत्सर्जन घटाना को कम करने के लिए अपनी स्वैच्छिक शमन कार्यवाहियों के बारे में यू एन एफ सीसीसी सचिवालय को सूचित करना था।

30 जून 2008 को जारी राष्ट्रीय जलवायु परिवर्तन कार्य योजना (एन ए पी सी सी) में जलवायु परिवर्तन की चुनौती से निपटने की भारत की रणनीति की रूपरेखा प्रस्तुत की गई थी।

जैविक प्रदूषकों (पी ओपीज) पर स्टॉकहोम कंवेनन 2001 में अपनाया गया था जिसका लक्ष्य पीओपीज से मानव स्वास्थ्य और पर्यावरण की रक्षा करना है, इसको 2006 में भारत ने लागू किया।

इसके अतिरिक्त भारत ने 2006 में राष्ट्रीय पर्यावरण नीति (एन इ पी) अपनाई जो सतत विकास की भावना पर आधारित है।

भारतीय वन अधिनियम 1927 को वनों, वन उत्पादों, इमारती लकड़ीयों और अन्य वन उत्पादों से संबंधित कानून को प्रभावी बनाया गया था।

भारत सरकार ने ऊर्जा संरक्षण अधिनियम 2001 के प्रावधानों के अंतर्गत एक मार्च 2002 को ऊर्जा सक्षमता व्यूरो (बीईई) का गठन किया।

## 2015 के बाद के विकास एजेंडा पर भारत का दृष्टिकोण

भारत ने सतत विकास की चुनौतियों एवं मुद्दों की पहचान करने एवं उन्हें हल करने हेतु ढांचा तैयार किया है। 2015 के बाद विकास एजेंडा का मुख्य केन्द्र निर्धनता का उन्मूलन रखा, जिसे सबसे बड़ी

भूमण्डलीय चुनौती के रूप में रियो G20 में चिन्हित किया गया था। विकास एजेंडा संवृद्धि केन्द्रित होना चाहिए जो विकासशील देशों में ठोस आर्थिक संवृद्धि को प्रोत्साहन और सहायता प्रदान करे जो रोजगार परक हो। यह महत्वपूर्ण है कि 2015 के बाद के ढांचे को विकसित व विकासशील दोनों देशों पर लागू किया जाना चाहिए ताकि उत्तरदायित्वों और दायित्वों का अधिक समतापूर्ण समूह निर्मित हो सके। विकसित देशों में उपभोग के दोनों को उपयुक्त बनाना चाहिए। एक कृषि प्रधान देश होने के नाते भारत बढ़ते हुए जलवायु परिवर्तन के मुद्दों को लेकर चिंतित हैं क्योंकि इससे देश की कृषि अर्थव्यवस्था प्रभावित हो रही है। कृषि का सीधा संबंध उस पर निर्भर करोड़ों लोगों की आजीविकाओं से है और भारत को कृषि को विनियमित करने के लिए राष्ट्रीय नीति में व्यवधान के प्रयास का विरोध करना आवश्यक हो जाता है। ऊर्जा तक पहुंच विकास को सक्षम बनाती है। रियो G20 में टिकाऊ आधुनिक ऊर्जा सेवाओं तक सार्वभौम पहुंच को सहायता देने हेतु प्रतिबद्धता थी। जेडर सशक्तीकरण, जेडर समानता और जेडर का मुख्य धाराकरण भूमण्डलीय विकास एजेंडे के लिए महत्वपूर्ण है। शिक्षा, विशेषकर प्राथमिक और माध्यमिक स्तरों पर शिक्षा तक सबकी पहुंच विकासशील देशों की मुख्य प्राथमिकता है। सुरक्षित पेय जल और बुनियादी स्वच्छता तक पहुंच में वृद्धि करना आवश्यक है। खाद्य सुरक्षा बड़ी जनसंख्या वाले देशों हेतु महत्वपूर्ण समस्या बनी हुई है।

त्रिक्स राष्ट्र के रूप में भारत की भागीदारी तथा उभरती हुई वैश्विक महाशक्ति के रूप में भारत की जिम्मेदारी और बढ़ जाती है। सतत विकास की चुनौतियों के रूप में निर्धनता, बुनियादी सेवाओं, ऊर्जा-भोजन, जल की असुरक्षाएं, तीव्र शहरीकरण और औद्योगीकरण, पारिस्थितिक दबाव और जैव-विविधता की क्षति, जलवायु परिवर्तन प्रभावों, प्राकृतिक विपदाओं और जोखिमों से असुरक्षा इत्यादि कारक बाधक बनी हुई है।

भारत एवं विश्व के प्रत्येक राष्ट्र के सम्मुख यह समस्या बनी हुई है कि राष्ट्रीय एवं उपराष्ट्रीय नीतियों एवं कार्यक्रमों में आर्थिक, सामाजिक और पर्यावरणीय संबंधी मुद्दों को किस प्रकार एकीकृत या सामंजस्य बैठाया जाए। अतः वर्तमान में यह आवश्यक है कि विकास एजेंडा के लक्ष्य एवं उद्देश्य सार्वभौम होना चाहिए। वे ऐसे हो कि हमारे समाज के सभी तबकों पर लागू सके और टिकाऊपन की दिशा में तीव्र बदलाव हो सके। व्यवस्थित बदलाव दोनों स्तरों पर यानी विकास परिणामों की दृष्टि से और साधनों (जोखिमों की पहचान, मूल कारणों को हल करना, समावेशी एवं टिकाऊ विकास) की दृष्टि से होना चाहिए। इसका सम्बन्ध वर्तमान ढांचों (भौतिक और आर्थिक अवसंरचना), संस्कृति (मूल्यों, मानदंडों, प्रारूपों का सामूहिक समूह) और व्यवहारों से है।

मानव जीवन की स्वस्थ निरन्तरता के लिए पृथ्वी का स्वस्थ होना जरूरी है। जब पृथ्वी ही रोगी हो जायेगी तो मानव जीवन समाप्त हो जाएगा। अतः आवश्यकता है कि हम ऐसे विकास मॉडल को अपनाएं जिससे आय बढ़े, संसाधनों की क्षमता बढ़े तथा अपशिष्ट न्यूनतम हो। विकास के हर पहलू में पर्यावरण संरक्षण को शामिल करें। यदि आज हम विकास की उचित नीतियाँ नहीं बना पाए तो भावी पीढ़ी तक मानव जीवन को एक निश्चित निर्वाह के स्तर पर बनाए रखने के लिए आवश्यक परिस्थितिकी कायम नहीं रह सकेगी। अतः वैश्विक स्तर पर देशों को आपसी सहयोग करते हुए सतत विकास की प्राप्ति हेतु प्रयत्न करना आवश्यक है। साथ ही ऐसे कार्यतंत्र विकसित करना भी जरूरी है जो विभिन्न भूमण्डलीय समझौतों के अन्तर्गत अपनी-अपनी प्रतिबद्धताओं की दिशा में

अलग-अलग राष्ट्रों के अनुपालन की मॉनीटरिंग को सुगम बना सके।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सतत् विकास में भारत की भूमिका

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### सारांश

भारत की भूमिका सतत विकास में महत्वपूर्ण है। भौतिकतावादी समाज में मनुष्य का स्वरूप विकसित हो रहा है, जिससे प्राकृतिक संसाधनों का सही उपयोग न केवल वर्तमान पीढ़ियों के लिए बल्कि भविष्य के लिए भी सुनिश्चित हो। इसके लिए अवधारणाओं की आवश्यकता है जो मानवता की आवश्यकताओं को पूरा करती हों और विकास की सीमाओं को समझाती हों। इस अध्ययन में, हम ब्रंटलैंड रिपोर्ट के दो मुख्य अवधारणाओं को विशेष ध्यान देते हैं – मानवता की बुनियादी जरूरतों की पूर्ति और विकास की सीमाएं।

**मूलशब्द:** सतत विकास, भारत, प्राकृतिक संसाधन, भौतिकतावादी, विकास की सीमाएं, मानवता की आवश्यकताएं, वर्तमान, भविष्य, ब्रंटलैंड रिपोर्ट, मानव समाज।

### परिचय

भौतिकतावादी के इस अंधाधुन युग में मनुष्य अपने प्रकृति, सभ्यता, समाज यहाँ तक कि स्वयं अपने आप से विलग होता जा रहा है। मनुष्य अपने स्वयं के प्राकृतिक आनंद को भौतिकतावादी सूखों पर न्यौछावर कर दिया है। विकास की जिस परिभाषा का आरंभ मानव जीवन की आधारभूत आवश्यकताओं की पूर्ति से शुरूआत हुआ था। उसके वर्तमान स्वरूप पर नजर डाले तो पाते हैं कि मानव जीवन गौण तथा विकास का विभत्स भौतिकतावादी स्वरूप प्राथमिक हो गया है। चल अचल संपत्ति के अथाह संग्रह में मनुष्य ने प्रकृति के संसाधनों का इस तरह दोहन शुरू किया कि आने वाले पीढ़ियों के लिए प्राकृतिक संसाधन अपर्याप्त या समाप्त हो जायेगा। सतत् विकास की अवधारणा भविष्योन्मुखी न्यायसंगत और समावेशी विकास को अपने में समाहित किये हुए विकास का ऐसा प्रतिरूप है जिसमें प्राकृतिक संसाधनों का प्रयोग इस तरह किया जाए कि वर्तमान पीढ़ियों के साथ-साथ भविष्य के मानव समाज के लिए संसाधन उपलब्ध हो सकें। पर्यावरण तथा विकास पर विश्व आयोग (1983) के अंतर्गत ब्रंटलैंड कमिशन द्वारा जारी रिपोर्ट (1987) के अनुसार अपने आवश्यकताओं से समझौता किये बिना आने वाली पीढ़ी की आवश्यकताओं को पूरा करने हेतु विकास ही सतत् विकास है। ब्रंटलैंड रिपोर्ट में सतत् विकास के दो मुख्य अवधारणाओं पर प्रकाश डाला गया है।

(1) मानवता की बुनियादी जरूरतों— भोजन, वस्त्र, आवास, रोजगार, की बुनियादी जरूरतों को पूरा करना तथा गरीबों के जरूरतों पर ध्यान देना।

(2) विकास की सीमाएं— विकास की कोई सीमा नहीं है। अपितु प्रौद्योगिकी और विकास के उस प्रतिरूप को अपनाना जिसमें वर्तमान के साथ-साथ भविष्य को भी सुरक्षित किया जा सकें। सुरक्षित भविष्य के मददेनजर यू.एन.ओ ने वैश्विक स्तर पर मानव जीवन के स्तर को सुधारने के लिए सहस्राब्दी विकास लक्ष्यों को 2015 तक हासिल करने की इच्छा व्यक्त की थी। जिसमें गरीबी और भूखमरी को मिटाना, प्राथमिक शिक्षा, जेंडर समानता, मातृत्व में सुधार तथा बाल मृत्यु दर में सुधार, तथा पर्यावरणीय विकास आदि बिन्दु

शामिल है। इस प्रकार संयुक्त राष्ट्र के लक्ष्य अपने उद्देश्यों में समावेशी विकास को समाहित किये हुए था। चूंकि वर्ष 2015 तक की अवधि समाप्त हो चुका था और अभी भी वैश्विक समस्याएं विद्यमान थी। इसलिए संयुक्त राष्ट्र संघ ने वर्ष 2030 तक के लिए संधारणीय विकास लक्ष्य को 17 बिंदुओं के अंतर्गत रखा है जो निम्न हैं—

- गरीबी के सभी रूपों का पूरे विश्व में समाप्ति।
- भूख की समाप्ति, खाद्य सुरक्षा और बेहतर पोषण और टिकाऊ कृषि।
- सभी आयु के लोगों में स्वास्थ्य, सुरक्षा और स्वस्थ जीवन को बढ़ावा देना।
- समावेशी और न्यायसंगत गुणवत्तायुक्त शिक्षा सुनिश्चित करने के साथ ही सभी को सीखने का अवसर देना।
- लैंगिक समानता प्राप्त करने के साथ ही महिलाओं और लड़कियों को सशक्त करना।
- सभी के लिए स्वच्छता और पानी के सतत् प्रबंधन की उपलब्धता सुनिश्चित करना।
- सस्ती, विश्वसनीय, टिकाऊ और आधुनिक ऊर्जा तक पहुंच सुनिश्चित करना।
- सभी के लिए निरंतर समावेशी और सतत् आर्थिक विकास, पूर्ण और उत्पादक।
- रोजगार तथा बेहतर कार्य को बढ़ावा देना।
- सतत् औद्योगिकरण को बढ़ावा देना।
- देशों के बीच और भीतर असमानता को कम करना।
- सुरक्षित, लचीले और टिकाऊ शहर और मानव वस्तियों का निर्माण।
- स्थायी खपत और उत्पादन पैटर्न को सुनिश्चित करना।
- जलवायु परिवर्तन और उसके प्रभावों से निपटने के लिए तत्काल कार्यवाही करना।
- स्थायी सतत् विकास के लिए महासागरों, समुद्रों और समुद्री संसाधनों का संरक्षण और उपयोग।
- सतत् उपयोग को बढ़ावा देने वाले स्थलीय पारिस्थितिकीय प्रणालियों, सुरक्षित जंगलों, भूमि क्षरण और जैव-जैवविविधता के

बढ़ते नुकसान को रोकने का प्रयास करना।

- सतत् विकास के लिए शांतिपूर्ण और समावेशी समितियों को बढ़ावा देने के साथ सभी स्तरों पर इन्हें प्रभावी, जवाबदेह पूर्ण बनाना ताकि सभी के लिए न्याय सुनिश्चित हो सके।
- सतत् विकास के लिए वैश्विक भागीदारी को पुनर्जीवित करने के अतिरिक्त कार्यान्वयन के साधनों को मजबूत बनाना।

**सतत् विकास के घटक** – सतत् विकास के मुख्यतः तीन घटक हैं।

**1— सामाजिक**— जीवन गुणवत्ता को बढ़ाना तथा विसमताओं की समाप्ति तथा समानता तथा विविधता की स्वीकृति।

**2— आर्थिक**— पर्यावरणीय उद्योग तथा नवीकरणीय संसाधनों को बढ़ावा देना।

**3— पर्यावरणीय**— जीव जंतु तथा वनों की सुरक्षा एवं संवर्धन।

उपर्युक्त तीनों घटक सतत् विकास के स्तंभ माने जाते हैं और इन स्तंभों को मजबूत करने के लिए एजेंडा— 21 एक प्रमुख दस्तावेज हैं जो सतत विकास के लक्ष्यों को मजबूती प्रदान करता है।

सतत् विकास के स्तंभों को मजबूत करने के लिए प्रमुखता चार क्षेत्रों को चिन्हित किया गया है। जो निम्न है। –

**1— सामाजिक और आर्थिक आयाम**— इसमें गरीबी से लड़ना तथा शहरी नियोजन को बढ़ावा देना आदि।

**2— संसाधनों का संरक्षण एवं प्रबंधन**— स्थलीय तथा महासागरीय जीव-जंतु की रक्षा तथा वनों की कटाई की रोकथाम।

**3— प्रमुख समूह महिला विकलांग बच्चों के सशक्तिकरण** स्थानीय सरकारों और गैर सरकारी संगठनों जैसे प्रमुख समूह की भूमिका को मजबूत करना।

**4— कार्यान्वयन के साधन**— पर्यावरणीय तकनीक का विकास आदि।

इस प्रकार देखे तो पाएंगे कि सतत् विकास एक व्यापक दीर्घकालिक रणनीति है जिसमें वैश्विक, सामाजिक, आर्थिक, पर्यावरणीय, सांस्कृतिक, आयामों, को सुरक्षित एवं संवर्धित किया जा सकता है। तथा समावेशी विकास को भी स्थापित किया जा सकता है।

### सतत् विकास में भारत की भूमिका

सतत् विकास की अवधारणा भारतीय परिदृश्य में कोई नई बात नहीं है। सतत् विकास की आधारभूत सिद्धान्त यथा प्रकृति संरक्षण, वन्य जीव आदि का संरक्षण, हमारी संस्कृति में रही है। याज्ञवल्क्य स्मृति में पेड़ों को काटने पर दण्ड का प्रावधान था। चन्द्रगुप्त मौर्य ने वैदिक ऋचाओं में पीपल, तुलसी, रुद्राक्ष, कदम्ब, आदि को पवित्र उनकी पूजा किया जाता था। अहिंसा परमोधर्म: हमारी मूल में रही हैं। स्वतंत्रता प्राप्ति के पश्चात् हमारे संविधान के विभिन्न प्रावधानों में यथा— अनुच्छेद 48क, 51क(छ), अनुच्छेद 14, अनुच्छेद 15, अनुच्छेद 16, अनुच्छेद 21 आदि, में समावेशी विकास को अपनाया गया है। विभिन्न वन संरक्षण अधिनियम, जीव-जन्तु संरक्षण अधिनियम, भूखमरी, बेरोजगारी, आदि को कम करने के लिए भारत सरकार द्वारा प्रयास शुरू हो गए थे।

कृषि, वन और मृदा संरक्षण पर एशियाई क्षेत्र कार्यवही कार्यक्रम के लिए राष्ट्र संघ कंवेशन टू कांटेड डेजर्टिफिकेशन द्वारा मेजबान देश पदनामित किया गया है। इसके सदस्य देशों का यह दायित्व है कि वे रेगिस्तानीकरण और सूखे से सम्बंधित समस्त मुद्दों को हल करने के लिए एक कार्य-योजना बनाए।

सतत् विकास लक्ष्यों की प्रगति को मापने तथा राज्यों एवं केन्द्र शासित प्रदेशों के मध्य इन्हें अर्जित के करने के उद्देश्य से नीति आयोग द्वारा राष्ट्रीय स्तर पर 'इण्डिया इण्डेक्स' तैयार किया गया है। जीव-जन्तु संरक्षण के लिए भारत ने 2002 में जैविक विविधता अधिनियम तैयार किया और 2004 में नियमावली को अधिसूचित किया

ताकि जैवविविधता कंवेशन के प्रावधानों को लागू किया जा सके।

इस अधिनियम के कार्यान्वयन हेतु तीन स्तरीय संस्थागत प्रारूप तैयार किया गया। जिसमें – जैव राष्ट्रीय विविधता प्राधिकरण (एन बी ए), राज्य जैव विविधता बोर्ड, जैव विविधता प्रबंधन समितियाँ, सम्मिलित होंगे। भारत ने 10 जून 1992 को जलवायु परिवर्तन पर संयुक्त संघ राष्ट्रीय फ्रेमवर्क कंवेशन (यू एन एफ सीसीसी) पर भी हस्ताक्षर किये और एक नवम्बर 1993 को इसकी पुष्टि भी किया है। इसके अतिरिक्त भारत ने 2006 में राष्ट्रीय पर्यावरण नीति (एन इ पी) को स्वीकार किया है जो कि सतत् विकास की भावना पर आधारित है।

भारतीय वन अधिनियम 1927 में वनों, वन उत्पादों, इमारती लकड़ीयों और अन्य वन उत्पादों से संबंधित कानून को प्रभावी बनाया गया है। भारत सरकार ने ऊर्जा संरक्षण अधिनियम 2001 के प्रावधानों के अंतर्गत 2002 में ऊर्जा सक्षमता ब्यूरो का गठन किया है।

संधारणीय विकास लक्ष्यों की प्राप्ति तथा मूल्यांकन के लिए भारत विश्व का एक ऐसा पहला देश है जिसने संधारणीय विकास लक्ष्यों के लिए इंडेक्स बनाया है जिसे एसडीजी इंडिया एंड डैशबोर्ड इंडेक्स कहते हैं। भारत ने साल 2020–21 में संधारणीय विकास लक्ष्यों की प्राप्ति में और अधिक प्रगति करने की दिशा में और अधिक प्रगति किया है। नीति आयोग ने एसडीजी इंडिया एंड डैशबोर्ड पर भारत का समग्र स्कोर 2018–19 में 57 से बढ़ कर 2019–20 में 60 हो गया है।

एसडीजी इंडिया एंड डैशबोर्ड इंडेक्स के अनुसार केरल राज्य लक्ष्यों की प्राप्ति में प्रथम स्थान पर है। भारत सम्पूर्ण समाज के सिद्धान्त का उपयोग करता है। जिसमें एसडीजी के कार्यान्वयन और मूल्यांकन के लिए केन्द्र सरकार के साथ सभी राज्य सरकारें, एनजीओ, नागरिक समाज आदि प्रयासरत हैं।

एसडीजी के पहले लक्ष्य गरीबी उन्मूलन में भारत के प्रयास की बात करे तो पाते हैं कि ग्रामीण मिशन, मनरेगा, कौशल विकास योजना, आजीविका मिशन आदि के माध्यम से बदलाव किया जा रहा है। जिसके माध्यम से मानव क्षमताओं में वृद्धि, गुणवत्ता पूर्ण बुनियादी सेवाओं की स्थापना की प्राप्ति हो सके। साल 2023 तक किसानों की आय दुगुनी करने का प्रयास किया गया।

एसडीजी के दूसरे लक्ष्य भूखमरी को समाप्त करने के लिए खाद्यान्न वितरण, नई एग्रीकल्चर नीति, खाद्यन्न सुरक्षा अधिनियम, आदि का प्रावधान किया गया है। भारत एसडीजी के सभी लक्ष्यों के लिए विभिन्न योजनाओं के माध्यम से तत्परता दिखा रहा है। जेंडर सशक्तीकरण, जेंडर समानता भूमण्डलीय विकास एजेंडे के लिए महत्वपूर्ण है। शिक्षा में मुख्यतः प्राथमिक और माध्यमिक स्तरों तक शिक्षा की सबकी पहुंच सुनिश्चित करने के लिए सरकार प्रयासरत है।

### निष्कर्ष

भारत ने देश की जलवायु प्राथमिकताओं पर कार्यवाई को आगे बढ़ाया है। जिसमें बाजार तंत्र में पारदर्शिता, और लोकतंत्र भी शामिल है। भारत ने विकासशील देशों के लिए पर्याप्त समय सीमा के साथ न्यायसंगत परिवर्तन की मांग की ताकि हरित अर्थव्यवस्था के लाभ सभी के साथ साझा किए जा सकें। “ग्लासगो जलवायु करार” अनुकूलन, शमन, वित्त, प्रौद्योगिकी हस्तांतरण, क्षमता निर्माण, पर जोर देता है। यह विकसित देशों से 2025 तक 100 बिलियन अमरीकी डॉलर के जुटाव लक्ष्य को पूरी तरह से पूर्ण करने का आग्रह करता है और अपनी प्रतिज्ञाओं के कार्यान्वयन में पारदर्शिता के महत्व पर जोर देता है। बावजूद इसके सतत विकास लक्ष्यों की प्राप्ति में और ज्यादा तीव्रता लाना होगा।

भारत एवं विश्व के प्रत्येक देश के सम्मुख यह समस्या बनी हुई है कि सतत विकास की नीतियों एवं कार्यक्रमों में आर्थिक, सामाजिक और पर्यावरणीय नीतियों एवं देशहित संबंधी मुद्दों को किस प्रकार एकीकृत या सामंजस्य बैठाया जाए। अतः वर्तमान में यह आवश्यक है कि विकास एजेंडा के लक्ष्य एवं उद्देश्य सार्वभौम तथा समावेशी होना चाहिए।



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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## वैश्विक अर्थव्यवस्था में भारत की ऐतिहासिक भूमिका : एक विश्लेषण

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### सारांश

वैश्विक अर्थव्यवस्था का वर्तमान स्वरूप में आना एक लम्बी ऐतिहासिक प्रक्रिया के माध्यम से संपन्न हुआ है। यद्यपि आधुनिक वैश्विक अर्थव्यवस्थाओं के परस्पर जुड़ाव की मात्रा एवं प्रकृति को इतिहास में खोजना सम्भव नहीं है तथापि विभिन्न देशों के व्यापारिक, सांस्कृतिक एवं राजनितिक सम्बन्धों को जानना दुष्कर नहीं है। प्रस्तुत शोध पत्र भारत के शेष विश्व के साथ आर्थिक सम्बन्धों पर केन्द्रित है सांस्कृतिक पक्ष को इसलिए सम्मिलित नहीं किया गया है क्योंकि इतने विस्तृत कालखंड के लिए व्यापारिक, सांस्कृतिक एवं राजनैतिक सम्बन्धों को सहेजकर शोध पत्र को निर्धारित शब्दों में प्रस्तुत करना सम्भव नहीं है।

**मूलशब्द:** वैश्विक अर्थव्यवस्था, आर्थिक सम्बन्ध, व्यापार, विश्व इतिहास, व्यापारिक सम्बन्धों का इतिहास, सामाजिक इतिहास, विविधता।

### परिचय

प्राचीन भारत के शेष विश्व के साथ आर्थिक सम्बन्धों को मुख्यतः व्यापार व वाणिज्य के साथ प्रस्तुत किया गया है। चूँकि पुराने समय में आर्थिक संबंधों का स्वरूप इतना विविध एवं बहुआयामी नहीं होता था। यदि यह कहा जाये कि प्राचीन वैश्विक अर्थव्यवस्थाओं के आपसी जुड़ाव का मुख्य तत्व व्यापार था तो अतिशयोक्ति नहीं होगी। अन्य देशों के साथ भारतीय व्यापार एवं अर्थव्यवस्था के अध्ययन को मोटे तौर पर निम्न काल खण्डों में बांटा जा सकता है।

1. तुर्कों के आगमन से पूर्व
2. सल्तनत और मुगल काल
3. ईस्ट इण्डिया कंपनी और ब्रिटिश शासन के अधीन
4. 1947 से 1991 तक
5. 1991 से फरवरी 2024

अर्थव्यवस्थाओं का स्वरूप विभिन्न कालखण्डों में भिन्न-भिन्न रहा है। पृथ्वी पर पहले-पहल मानव ने कृषि, पशुपालन व स्थायी ग्राम्य जीवन की आधारशिला नवपाषाण काल में रखी। आत्मनिर्भर एवं निर्वाह अर्थव्यवस्था प्राचीन वैश्विक अर्थव्यवस्थाओं का एक मुख्य अभिलक्षण था। प्रथम चरण के दौरान वैश्विक अर्थव्यवस्थाओं का स्वरूप कमोवेश कृषि आधारित था। सीमित भौगोलिक ज्ञान, सीमित संचार माध्यमों एवं अल्प विनिर्माण गतिविधियों के बावजूद भी भारतीय उपमहाद्वीप ने पश्चिम में अरब देशों व मिस्र व पूर्व में चीन, जावा, सुमात्रा आदि देशों से व्यापारिक सम्बन्ध स्थापित किये। यह कहना अतिशयोक्ति न होगी कि इस चरण में भारत के वैश्विक अर्थव्यवस्था में योगदान को मुख्यतः व्यापार से रेखांकित किया जाय। इस चरण में भारत ने जो योगदान दिया उसका प्रमाण ई०पू० 2350 में सिंधु सभ्यता के मेसोपोटामिया के साथ व्यापारिक सम्बन्ध है। हड़प्पा सभ्यता के व्यापारिक सम्बन्ध अफगानिस्तान, ईरान, मेसोपोटामिया, मध्य एशिया, बहरीन, द्वीप, मिस्र, क्रीट से घनिष्ठ थे। इन व्यापारिक संबंधों की पुष्टि पुरातात्विक एवं लिखित सामग्री से होती है। उदाहरण के लिए लोथल से फारस की मोहर, उर की खुदाई में हड़प्पा मूल का

श्रृंगारदान, मोहनजोदड़ो से प्राप्त एक मुहर जिस पर सुमेरियन नावों के चित्र हैं। इन पुरातात्विक सामग्रियों की पुष्टि अखिलेखीय साक्ष्यों से भी होती है जैसे सारगोन युग (ई०पू०23वीं सदी) के सुमेरियन लेख में “मेनुहा” शब्द का उल्लेख है जिसकी पहचान सिंधु प्रदेश से की गयी है। पूर्व वैदिक काल एवं वैदिक काल में व्यापार में गिरावट दर्ज की गयी क्योंकि वैदिक समाज पशुपालन एवं कृषि आधारित ग्राम्य समाज था जिसकी पुष्टि वैदिक ऋचाओं से होती है जिनमें अधिकांशतया पशुधन एवं अच्छे कृषि उत्पादन की प्रार्थना की गयी है।

सिंधु सभ्यता के पतन के पश्चात भारत में आर्थिक क्रियाकलापों व व्यापार वाणिज्य की प्रगति द्वितीय नगरीकरण या महाजनपद काल के समय देखने को मिलती है इस समय व्यापार वाणिज्य कितना विकसित था इसका प्रमाण उस समय श्रेणी, निगम आदि व्यापारिक संगठनों की उपस्थिति है। ध्यातव्य है के इसी समय भारत में सर्वप्रथम धातु के सिक्कों (चाँदी के आहत सिक्के) की शुरुआत हुई जिसने मौद्रिक अर्थव्यवस्था के उदय में महत्वपूर्ण भूमिका निभायी। ई०पू०छठी शताब्दी में ही भारत की समृद्धि से प्रभावित होकर अखामिनी शासक डेरियस प्रथम या दारा प्रथम ने सिंध व पंजाब को विजित किया एवं पंजाब एवं सिंध को अपने साम्राज्य का 20वां प्रांत बनाया और इस प्रदेश से दारा को अपने संपूर्ण राजस्व का तीसरा भाग प्राप्त होता था जो कि भारत की समृद्धि का परिचायक है डॉ०आर एस शर्मा के अनुसार दारा की इस विजय के कारण ही यूनानियों को भारत की संपदा के विषय में जानकारी मिली और जिसे प्राप्त करने के लोभवश ही कालांतर में सिकंदर महान ने आक्रमण किया इसी दौरान दारा के एक सेनापति स्काईलेक्स ने भारत से पश्चिमी देशों तक एक समुद्री मार्ग की खोज की जिससे भारत एवं पश्चिमी एशिया व दक्षिण यूरोप के बीच समुद्री व्यापार के रास्ते खुले। इसी प्रकार मौर्यों के अधीन भी वैदेशिक व्यापार उन्नत दशा में था इस समय भारत का विदेशी व्यापार सीरिया मिस्र तथा अन्य पाश्चात्य देशों से था यूनानी रोमन लेखक एरियन हमें बताता है कि भारतीय

व्यापारी यूनान के साथ मुक्ता का व्यापार करते थे अर्थशास्त्र में विदेशी सार्थवाहों, चीनी मूल कौशेय तथा नेपाल के कम्बल का उल्लेख है साथ ही आर्थिक क्रियाकलापों को नियंत्रित करने वाले अनेक अधिकारियों (अध्यक्षों) का उल्लेख है, जो कि उन्नत व्यापार का सूचक है। ई०पू० द्वितीय शताब्दी में पश्चिमोत्तर भारत को इंडो ग्रीक, कुषाण एवं शकों ने विजित किया जिससे भारत के पश्चिमी एवं मध्य एशिया से घनिष्ठ संबंध स्थापित हो गए। मौर्यों द्वारा विकसित आंतरिक व्यापार मार्गों को आधार बनाकर कुषाणों ने भारतीय व्यापार व वाणिज्य को गति प्रदान की। इस समय के सबसे महत्वपूर्ण स्थल व्यापारिक मार्ग (शेशम मार्ग) कुषाणों के राज्य से गुजरता था और एशिया को फारस, अरब देश, भूमध्य सागर एवं यूनान के साथ जोड़ता था। इस प्रकार कुषाण काल में भारत ने वैश्विक व्यापार में महत्वपूर्ण भूमिका निभाई। ई०पू० प्रथम सदी के उत्तरार्ध में रोमन साम्राज्य के सर्व शक्तिशाली साम्राज्य के रूप में उदय से भारतीय व्यापार की अत्यंत प्रगति हुई भारत में बनी विलासिता की सामग्री का बड़ा उपभोक्ता बाजार पूर्वी रोमन साम्राज्य हुआ करता था पहली सदी के एक अज्ञात नाविक द्वारा लिखित पेरी प्लस ऑफ द एरिथ्रियन सी में रोमन साम्राज्य को निर्यात किए जाने वाले सामानों का विवरण दिया गया है। विदित है कि रोमन साम्राज्य द्वारा उत्पन्न मांग जब भारत के मसाले से पूर्ण नहीं हुई तो भारतीय व्यापारियों ने दक्षिण पूर्व एशिया से संपर्क बढ़ाये और मध्यस्थ की भूमिका में रोमन साम्राज्य को मसाले की आपूर्ति की। भारत का रोम के साथ व्यापार संतुलन भारत के पक्ष में था जिसका प्रमाण प्लिनी द्वारा भारत को किए जाने वाले भारी भुगतान (सोना और चांदी) पर दुःख प्रकट किया जाना है। एक समकालीन बौद्ध ग्रन्थ महावस्तु में 36 विभिन्न प्रकार के शिल्पों का उल्लेख है। मिलिंदपन्हो नामक बौद्ध ग्रंथ में 75 व्यवसायों का उल्लेख है जो की अलग-अलग संगठित थे इन संगठनों को श्रेणी कहा जाता था तथा श्रेणी के सभी सदस्यों को श्रेणी के बनाये नियम मानने पड़ते थे कहने का तात्पर्य यह है कि यह सब प्रमाण बड़ती विनिर्माण गतिविधियों व उन्नत व्यापार व वाणिज्य की ओर इशारा करते हैं। गौर करने योग्य है कि जिस कार्य विभाजन और विशिष्टीकरण का प्रतिपादन प्रसिद्ध अर्थशास्त्री एडम स्मिथ ने अपनी पुस्तक वेल्थ ऑफ नेशन (1776) में किया वह कार्य विभाजन एवं विशिष्टीकरण ई० पू० 600 से भारत में अस्तित्वमान व्यापारिक श्रेणियों एवं निगमों में देखा जा सकता है।

प्रथम शताब्दी ईसा पूर्व में स्थापित कुषाण साम्राज्य की भौगोलिक स्थिति इतनी महत्वपूर्ण थी कि वैश्विक व्यापार को नियंत्रित करने वाले सिल्क मार्ग की तीनों शाखाओं पर कुषाणों का नियंत्रण था जो समकालीन अंतर्राष्ट्रीय व्यापार का स्नायु तंत्र हुआ करता था इस दौरान भारत ने तीन समकालीन महान साम्राज्य—चीन साम्राज्य, फारसी साम्राज्य एवं रोमन साम्राज्य की अर्थव्यवस्थाओं में व्यापार के माध्यम से अत्यंत महत्वपूर्ण भूमिका निभाई विदित है कि ई० पू० और इसकी आरंभिक शताब्दियों में रोम से भारी मात्रा में आने वाले स्वर्ण का उपयोग भारत में मुद्रा ढालने के काम आता था जिस वजह से मौद्रिक अर्थव्यवस्था के विस्तार में महत्वपूर्ण भूमिका अदा की। दक्षिण भारत के संगम कालीन राजवंशों चोल, चेर एवं पांड्य ने भी विदेशी व्यापार में महत्वपूर्ण योगदान दिया संगम काल में विशेष समृद्धि का कारण विदेशी व्यापार था चोल साम्राज्य का पुहार, चेर साम्राज्य का बंदर व पांड्य साम्राज्य का शालियूर बंदरगाह विशिष्ट रूप से विदेशी व्यापार के लिए प्रसिद्ध थे संगम साहित्य एवं पुरातात्विक सामग्री से यह स्पष्ट होता है कि रोम और यूनान के साथ दक्षिण भारत का व्यापार अत्यंत उन्नत था तथा पश्चिमी देशों को काली मिर्च, हाथीदांत, मोती, मलमल, रेशमी कपड़े व अन्य मसलों का निर्यात किया जाता था भारतीय महीन सूती कपड़ा इस समय विश्व में प्रसिद्ध था अगस्तस तथा टिबेरियस की मोहर वाले और नीरो (54–68 ई०) के सोने और चांदी के सिक्के तमिल प्रदेश के

अनेक स्थलों से प्राप्त हुए हैं तमिल राज्यों ने न सिर्फ पश्चिम में अपितु पूर्व में मलाया द्वीप समूह और चीन के साथ घनिष्ठ व्यापारिक संबंध स्थापित किये।

प्राचीन भारत के शक्तिशाली गुप्त साम्राज्य के अधीन व्यापार वाणिज्य की स्थिति अच्छी रही किंतु पूर्व के कुषाण काल से तुलना की जाए तो यह दौर विदेशी व्यापार में गिरावट का था जिसकी वजह गुप्त काल में बढ़ता सामंतीकरण एवं 364 ई० पू० में रोमन साम्राज्य का दो भागों में बट जाना था ध्यातव्य है कि फारसी और रोमन साम्राज्य की शत्रुता की वजह से स्थल मार्ग से व्यापार करना भारतीयों के लिए कठिन हो गया चूंकि फारसी साम्राज्य भारत एवं रोम का मध्यवर्ती था फिर भी भारतीयों ने इस कमी को पूरा करने हेतु इथोपिया से संबंध विकसित किया और रोमन सम्राट जस्टिनियन ने इथोपिया के राजा हैल्लेस्थायास से समझौता किया ताकि भारत और रोमन साम्राज्य के बीच व्यापार में बाधा ना पड़े। पूर्व में श्रीलंका, भारत और चीन के व्यापार में मध्यस्थ की भूमिका निभाता था। गुप्तकालीन ग्रंथ अमरकोश में विभिन्न प्रकार के शिल्पों का उल्लेख है तथा पूर्व की भांति श्रेणी व्यवस्था गुप्त काल में भी जारी रही गुप्त काल से लेकर सल्तनत काल के बीच के समय में उत्तर भारत के विदेशी व्यापार में गिरावट महसूस होती है किंतु दक्षिण भारत के राष्ट्रकुट, चालुक्य एवं पल्लव राजाओं ने इस कालखंड में चीन, दक्षिणी पूर्व एशिया व पश्चिम एशिया के साथ अभूतपूर्व विदेशी संबंध विकसित किए एवं व्यापार वाणिज्य को गति प्रदान की। चोल शासक राजराज, राजेंद्र प्रथम एवं कुलोत्तुंग ने चीन में अपने व्यापारिक दूत मंडल भेजे इन प्रयासों से चीन से इतनी मात्रा में सोना भारत आने लगा कि चीन को दक्षिण भारत के साथ होने वाले व्यापार पर प्रतिबंध लगाना पड़ा जैसा कि रोमन साम्राज्य ने ई० सदी के आरंभ में किया था इस प्रतिबंध का उल्लेख चीनी लेखक चाऊ-जू-कुआ के विवरण से स्पष्ट होता है।

सातवीं शताब्दी से दसवीं शताब्दी तक का काल भारत तथा अरब देशों के बीच व्यापार का स्वर्ण युग था विदित हो कि भारतीय शासकों ने सदैव विदेशी व्यापारियों के प्रति सम्मानजनक व्यवहार किया दक्षिणी भारत के शासकों ने मुसलमान व्यापारियों को बड़े-बड़े शहरों में भूमि प्रदान की ताकि वह वहां बस जाएं और अपने लिए मकान धार्मिक स्थान व कब्रिस्तान आदि बना सकें अल इदरीसी के 12वीं सदी के वर्णन से ज्ञात होता है कि भारत में चोरों को मृत्युदंड दिया जाता था जो कि व्यापारियों को आश्वस्त करने और निर्भीक होकर व्यापार संचालित करने में मदद करता था। समकालीन राजपूत राजाओं के भी अरब देशों से व्यापारिक संबंध विकसित अवस्था में थे क्योंकि अरबी घोड़े की मांग सदैव राजपूत राजाओं को बनी रहती थी क्योंकि अरबी घोड़े उस समय सर्वोत्तम माने जाते थे क्योंकि उनकी तीव्र गतिशीलता न सिर्फ युद्ध बल्कि स्थल मार्ग से द्रुतगति से दूरी तय करने के लिए आवश्यक थी।

तुर्कों द्वारा दिल्ली सल्तनत की स्थापना से पूरे उत्तरी भारत में एक सशक्त शासन व्यवस्था का उदय हुआ एवं व्यापार व वाणिज्य की प्रगति हुई जो कि गुप्तोत्तर काल के राजनीतिक विखंडीकरण के बाद की सबसे महत्वपूर्ण घटना थी तुर्कों के आगमन से कृषि के साथ-साथ अनेक उद्योगों धंधों का विकास हुआ दिल्ली सल्तनत में सुल्तानों एवं अमीर वर्ग की आवश्यकताओं की वस्तुओं का उत्पादन राज्य के नियंत्रणाधीन स्थापित कारखानों में होने लगा। इन आर्थिक गतिविधियों से शहरीकरण व विदेशी व्यापार में तीव्र वृद्धि हुई। दिल्ली के सुल्तानों ने कृषि उत्पादन को बढ़ावा देने के लिए अनेक प्रयास किए जैसे कि अलाउद्दीन ने राजस्व सुधार, गयासुद्दीन तुगलक ने कृषि सुधार तथा फिरोज शाह तुगलक के द्वारा नहरों का बनवाया जाना, 1200 बागों का लगवाना एवं राज्य नियंत्रित कारखानों में दासों को नियोजित करना आदि। सुल्तानों के इन प्रयासों से कृषि उत्पादन

में वृद्धि हुई एवं वस्तु निर्माण की गतिविधियों को बढ़ावा मिला तथा आंतरिक एवं विदेशी व्यापार की प्रगति हुई।

इब्नबतूता बताता है कि मोहम्मद तुगलक के काल में व्यापारिक गतिविधियाँ अत्यंत समृद्ध थी लोदी शासक तो स्वयं व्यापारी थे और उन्होंने व्यापार में स्वयं रुचि ली। इस प्रकार हम देखते हैं कि संपूर्ण सल्तनत काल में आंतरिक और विदेशी व्यापार अति समृद्ध रहा तथा चीन, मध्य एशिया, रूस, मिस्र, तुर्की, पूर्वी अफ्रीका, अरब देश, फारस, मलाया, लंका, हिन्द चीन, वर्मा, जापान प्रमुख व्यापारिक साझेदार थे। आयातित वस्तुओं में घोड़े, दास-दासियाँ, विशेष प्रकार के वस्त्र, मेवे, तथा फल इत्यादि थे जबकि निर्यातित सामान में लोहा व लोहे की बनी तलवारें (हिंदवी तलवारें), सूती वस्त्र, शक्कर, नील, जड़ी बूटियाँ, मसाले, फल, जानवर, हाथी, केशर, कस्तूरी, तांबा आदि थे। सुल्तानों ने न सिर्फ मार्गों को सुरक्षित किया अपितु अलाउद्दीन जैसे शासकों ने तो व्यापारियों को अग्रिम प्रदान किया ताकि वह भारत में बाहर से माल खरीद कर ला सकें। समकालीन लेखक बार्थेमा ने विभिन्न देशों से प्रतिवर्ष खंभात आने वाले 300 विदेशी जहाजों का उल्लेख किया है। ज्ञात हो के 16वीं शताब्दी में पुर्तगालियों के आगमन पूर्व हिन्द महासागर के व्यापार पर भारतीय व्यापारियों का प्रभुत्व कायम रहा। जैनी, मारवाड़ी, वोहरा, मुल्तानी व खुरासानी व्यापारी भारत व अन्य देशों के बीच प्रमुख भूमिका निभाते थे। समकालीन विजय नगर व बहमनी साम्राज्यों ने भी विदेशी व्यापार में महत्वपूर्ण योगदान दिया। इटली के यात्री निकोलो कॉंटी, अरबी सौदागर अब्दुल रज्जाक, चीनी यात्री माहूआन, वास्कोडिगामा, वार्बोसा, पायस, नुनिज़ एवं निकितिन ने इन राज्यों के समृद्ध व्यापार के अनेक वृत्तांत लिख छोड़े हैं। मध्यकाल में दक्षिण भारत के कोरोमंडल तट के त्रिपक्षीय व्यापार व मालाबार की काली मिर्च के व्यापार का अत्यधिक महत्व था। इस त्रिपक्षीय व्यापार में भारतीय व्यापारी पूर्व के द्वीप समूहों से कपड़े के बदले मसाले का आयात करते थे एवं फिर इनका निर्यात यूरोपीय देशों को किया जाता था।

16वीं सदी में मुगल शासन की स्थापना एवं भारत में यूरोपियन कंपनियों के आगमन से व्यापार व वाणिज्य में और अधिक वृद्धि हुई यह वृद्धि न सिर्फ माल के परिमाण अपितु नए-नए क्षेत्रों में भारतीय सामान के प्रवेश के रूप में हुई। डच, अंग्रेज, फ्रांसीसी, ऑस्ट्रियाई, जर्मन, डेनिस व्यापारियों ने भारतीय माल को यूरोप के प्रत्येक कोने में पहुंचाने का काम किया दूसरी ओर इस काल में तीन शक्तिशाली एशियाई साम्राज्यों—मुगल, शफवी और उस्मानी के उदय तथा चीन के मिंग साम्राज्य की उपस्थिति भी अंतर्राष्ट्रीय व्यापार व वाणिज्य के अनुकूल थी इस समय संपूर्ण एशिया में शांति स्थापित हुई, कानून व्यवस्था अच्छी हुई जो अंतर्गत व्यापार, वाणिज्य, शहरीकरण व मौद्रिकरण के अनुकूल थी संयुक्त आधार पर निर्मित एवं संचालित यूरोपीय कंपनियों की विक्रय एवं वितरण व्यवस्था विश्वव्यापी थी। अब भारतीय माल अमेरिका के बाजारों में भी पहुंचने लगा प्रसिद्ध विद्वान फर्ना ब्रोदेले के अनुसार एक विश्व व्यापी अर्थव्यवस्था के उदय का श्रेय यूरोपीय कंपनियों को दिया जाना चाहिए जिन्होंने यूरोप और एशिया की अर्थव्यवस्थाओं और अमेरिका की चांदी में नजदीकी तालमेल स्थापित किया। विदित है कि समकालीन यूरोपीय राज्यों द्वारा अनुसरित वाणिज्यवादी व्यापारिक नीति के बावजूद यूरोपीय कंपनियां जो सोना चांदी विश्व के अन्य देशों के साथ व्यापार के माध्यम से अर्जित करती थी, उसके अधिकांश भाग को भारत में लाने को विवश थी जोकि अंततः मुगल टकसालों में पिघल कर मुगल सिक्कों में बदल जाता था क्योंकि यूरोपीय कंपनियां भारतीय माल के बदले भुगतान चांदी और सोने के रूप में करती थी इस स्थिति में बदलाव तब आया जब इन कंपनियों में से सफल एक कंपनी (ईस्ट इंडिया कंपनी) ने भारत पर राजनीतिक नियंत्रण स्थापित कर लिया एवं भारतीय मुनाफे से ही माल खरीदना शुरू कर दिया और यहीं से आरंभ होता है धन निकास। मुगल काल में आयात सीमित था और

निर्यात की जाने वाली वस्तुओं में नील, सूती वस्त्र, विनिर्मित वस्तुएं आदि थी गौर करने योग्य है कि मुगल काल में भारत का सकल घरेलू उत्पाद वैश्विक अर्थव्यवस्था के सकल उत्पाद का 24.4 प्रतिशत था जबकि संपूर्ण यूरोप का हिस्सा 23.30 प्रतिशत था। जो की मुगल काल की समृद्ध आर्थिक स्थिति को दर्शाता है मुगल काल में व्यापार वाणिज्य की स्थिति का वर्णन वर्नियर और ट्रेवर्नियर के विवरणों में मिलता है, जो बताते हैं कि व्यापार में न सिर्फ व्यापारी अपितु शाही परिवार के सदस्य भी संलग्न थे और उनके पास अपने जहाज होते थे जहांगीर, नूरजहां, शहजादा खुर्रम शहजादे दारा और औरंगजेब के अपने निजी जहाज थे इस समय भारतीय व्यापार वाणिज्य दक्षिण पूर्व एशिया पश्चिम एशिया यूरोप अफ्रीका और अमेरिका के साथ था मुगल काल में यूरोपीय कंपनियों के आगमन से ईस्ट इंडिया कंपनी के भारत पर राजनीतिक नियंत्रण स्थापित करने तक तो भारतीय अर्थव्यवस्था को विस्तार मिला किंतु ईस्ट इंडिया कंपनी के शासन के अधीन और बाद में ब्रिटिश शासन के अधीन भारतीय अर्थव्यवस्था एक बुरे दौर से गुजरी। कंपनी और ब्रिटिश औपनिवेशिक आर्थिक नीतियों ने भारत में गरीबी, ग्रामीणीकरण, कृषि के वाणिज्यीकरण, दस्तकारी उद्योगों के विनाश का कार्य किया यद्यपि यह स्थिति उपनिवेश के आर्थिक हितों के खिलाफ थी किंतु ब्रिटेन और बाकी विश्व के लिए अच्छी थी क्योंकि भारत के कच्चे माल के बलबूते ही ब्रिटेन ने औद्योगिक क्रांति को सफल बना सका। दूसरी ओर भारत ने ब्रिटेन में निर्मित उत्पादों को खपाने के लिए भारतीय बाजार उपलब्ध हो गया जो औद्योगिक क्रांति को सफल बनाने में परीक्षा एवं महत्वपूर्ण कारक रहा। बहरहाल जिस भारतीय अर्थव्यवस्था का आकार पहली सदी में सकल वैश्विक उत्पादन के 32.9 प्रतिशत के बराबर था मुगल काल में 24.40 प्रतिशत के बराबर था आजादी के बाद मात्र 3.8 प्रतिशत रह गया आंकड़े प्रसिद्ध कैब्रिज आर्थिक इतिहासकार एंगस मेडीसन के हैं।

आजादी के बाद भारत की अर्थव्यवस्था पूरी तरह जर्जर अवस्था में थी और उसके समक्ष गरीबी, निरक्षरता, पूंजी का अभाव, मूलभूत उद्योगों की अनुपस्थिति, भुखमरी जैसी समस्या थी किंतु हमारे राजनीतिक नेतृत्व ने भारत के तत्कालीन उद्योगपतियों के साथ मिलकर एक मिश्रित अर्थव्यवस्था एवं समाजवादी रुझान वाली आर्थिक नीति तैयार की तथा भारत के विकास की नींव रखी। अपनी तमाम सफलताओं असफलताओं के बीच भारतीय अर्थव्यवस्था की वृद्धि दर साल 1991 तक निम्न ही बनी रही जिसे अक्सर उपेक्षा भाव से हिंदू वृद्धि दर से सम्बोधित किया जाने लगा। भारतीय अर्थव्यवस्था में वास्तविक सुधार 1991 में अपनाए गए सुधारों के बाद संभव हुआ, जब भारत को अंतरराष्ट्रीय मौद्रिक संगठन के दबाव में अपनी पुरानी समाजवादी मिश्रित अर्थव्यवस्था की जगह अधिक खुली आर्थिक नीति अपनानी पड़ी और अपने बाजारों को विदेशी आयातों एवं पूंजी निवेश के लिए खोलना पड़ा।

उदारीकरण, निजीकरण और वैश्वीकरण जैसे सुधारों के पश्चात भारतीय अर्थव्यवस्था ने पीछे मुड़कर नहीं देखा और उतरोत्तर प्रगति की ओर अग्रसर है भारतीय अर्थव्यवस्था की वृद्धि दर सुधारों के पश्चात 6.24 प्रतिशत वार्षिक रही है जो की 1951 से 91 के दौरान 4.34 प्रतिशत वार्षिक हुआ करती थी भारतीय नागरिकों के लिए यह जानना बेहद सुखद होगा कि पिछले 10 वर्षों अर्थात् 2013 से 23 के दौरान भारत की चक्रवृद्धि सकल घरेलू उत्पाद वार्षिक दर 7.5% रही है और भारत विश्व की सबसे तेजी से वृद्धि करने वाली अर्थव्यवस्था रहा है हमारे देश ने अपने गुलामी के धब्बों को मिटाते हुए न सिर्फ अपनी आर्थिक स्थिति को सुधारा है अपितु वैश्विक अर्थव्यवस्था में महत्वपूर्ण रोल अदा किया है। आज भारत विश्व की सबसे बड़ी अर्थव्यवस्थाओं में पांचवें क्रम पर है पांचवी बड़ी अर्थव्यवस्था होने से भी सुखद बात यह है कि भारत ने ब्रिटेन को प्रतिस्थापित कर यह उपलब्धि हासिल की है, जिसकी 200 वर्ष की अधीनता में भारतीय



अर्थव्यवस्था तहस-नहस हो गयी थी। 2027 तक भारत की अर्थव्यवस्था का आकार 5 ट्रिलियन डॉलर बनने एवं 2030 तक विश्व की तीसरी सबसे बड़ी अर्थव्यवस्था बनने का अनुमान अंतरराष्ट्रीय मौद्रिक संगठन द्वारा व्यक्त किया गया है। क्रय शक्ति क्षमता के आधार पर भारतीय अर्थव्यवस्था तीसरे स्थान पर है और विश्व का छठवा सबसे बड़ा उपभोक्ता बाजार है। विश्व आर्थिक मंच लंदन के आंकड़ों के अनुसार पिछले 10 वर्षों में वैश्विक अर्थव्यवस्था में 35% की वृद्धि हुई है जिसमें भारत का योगदान 9.5% का है आईएमएफ के एशिया प्रशांत विभाग के निदेशक के. श्रीनिवासन के अनुसार वर्तमान में, वैश्विक विकास में भारत का योगदान 16% है जो अगले 5 वर्षों में 18 प्रतिशत हो जाएगा। अपने दुनिया के सबसे बड़े कार्यबल, बड़े उपभोक्ता बाजार, मजबूत आर्थिक वृद्धि दर के बूते आज भारत विश्व की आर्थिक महाशक्ति बनने की ओर अग्रसर है। 2023 के बजट अनुमानों में भारत की वृद्धि दर 7.3 प्रतिशत रहने का अनुमान व्यक्त किया गया है जबकि इसी अवधि के लिए चीन की अनुमानित वृद्धि दर 5.2 प्रतिशत रहने की संभावना व्यक्त की गयी है। अर्थशास्त्रियों का मानना है कि भारत की यह वृद्धि दर आगे भी बनी रहेगी जबकि विश्व की अन्य अर्थव्यवस्थाओं में वृद्धि दर की प्रवृत्ति सम अथवा नकारात्मक रहने की है गौर करने योग्य है कि भारत का क्षेत्रफल कुल वैश्विक क्षेत्रफल का 2.4 प्रतिशत एवं जनसंख्या 17.6 प्रतिशत है तथा इतनी बड़ी आबादी की आवश्यकताओं की पूर्ति करते हुए वैश्विक विकास में इतनी बड़ी भागीदारी निभाना निश्चित ही श्लाघ्य है। भारतीय सरकार ने आजादी के अमृत काल में 2047 तक भारत को विकसित करने का लक्ष्य रखा है।

ऐतिहासिक रूप से भारतीय अर्थव्यवस्था पहले से दसवीं शताब्दी तक विश्व की सबसे बड़ी अर्थव्यवस्था रही है संपूर्ण ऐतिहासिक कालखंड में भारत ने वैश्विक अर्थव्यवस्था में महत्वपूर्ण भूमिका निभाई है यद्यपि उपनिवेशवादी कालखंड में भारत की अर्थव्यवस्था में गिरावट आई तथापि वैश्विक अर्थव्यवस्था में इनका इसका रोल महत्वपूर्ण रहा बस परिवर्तन यह था कि जहां भारत पहले निर्मित वस्तुओं का निर्यात करता था ब्रिटिश काल में कच्चे माल का निर्यातक बन गया और इसी कच्चे माल के बल पर न सिर्फ ब्रिटेन अपनी औद्योगिक क्रांति को सफल बना सका अपितु शेष विश्व के साथ व्यापार कर वैश्विक ताकत बन सका। भारत न सिर्फ वैश्विक आर्थिक संस्थानों विश्व बैंक, आईएमएफ, विश्व व्यापार संगठन, G-20 एवं क्षेत्रीय विकास समूहों ब्रिक्स, इबसा, सार्क, एससीओ आदि का सदस्य है अपितु विश्व के अधिकांश देशों के साथ विकास के लिए द्विपक्षीय स्तर पर संलग्न है भारत सदैव विश्व की शांति, समृद्धि एवं विकास का समर्थन प्रत्येक मंच पर करता है और विश्व के कमजोर, अल्पविकसित, उपनिवेशवाद के शिकार रहे देशों के हितों का प्रतिनिधित्व प्रत्येक मंच पर करता है हिंद महासागर में अपनी महत्वपूर्ण भौगोलिक अवस्थिति के बावजूद भारत खुलेसागर की नीति का समर्थन करता है और हिंद महासागर में व्यापारिक जहाजों को सुरक्षा पूर्ण वातावरण प्रदान कर वैश्विक व्यापार में सकारात्मक भूमिका निभा रहा है जो कि भारत की विश्व अर्थव्यवस्था के विकास की प्रतिबद्धता और वसुधैव कुटुम्बकम् की सांस्कृतिक विरासत को आगे बढ़ाने की तीव्र इच्छा का द्योतक है। भारत की वृद्धि दर, अर्थव्यवस्था की वर्तमान प्रकृति, बड़े उपभोक्ता बाजार, जनसांख्यिकीय लाभांश वर्तमान सरकार की आत्मनिर्भर व विकसित भारत के संकल्प व नीतियाँ, द्विपक्षीय व बहुपक्षीय संलग्नता व कुशल विदेश नीति के दृष्टिगत यह विश्वास किया जा सकता है कि भारत वैश्विक अर्थव्यवस्था में महत्वपूर्ण योगदान देता रहेगा जिस प्रकार अतीत में दिया है। तथा अपने पुराने आर्थिक व सांस्कृतिक गौरव को पुनः प्राप्त कर वैश्विक व्यवस्था में शीर्ष क्रम हासिल करेगा।

## संदर्भ

प्राचीन भारत का इतिहास तथा संस्कृति – (के ०सी श्रीवास्तव)।  
प्राचीन भारत का इतिहास – (डी०एन० झा व के ०एम० श्रीमाली)।  
मध्यकालीन भारत भाग 1 – (एच०सी० वर्मा)।  
मध्यकालीन भारत (1526–1761) – (सतीश चन्द्र)।  
आधुनिक भारत का इतिहास – (वी० एल० ग्रोवर, अलका मेहता)।  
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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## सतत विकास लक्ष्यों को आकार देने में भारत की भूमिका

विनोद कुमार यादव

शोध छात्र, राजनीति विज्ञान, दमयंती राज आनंद पोस्ट ग्रेजुएट कॉलेज, बिसौली, उत्तर प्रदेश, भारत

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### सारांश

सतत विकास से तात्पर्य ऐसे विकास से है जो भावी पीढ़ियों की जरूरतों को ध्यान में रखते हुए वर्तमान की आवश्यकताएं पूरी करें। सतत विकास के तहत ऐसे वैश्विक समाज का निर्माण पर बल देता है, जिससे सबके लिए समान न्यायसंगत, सुरक्षित, शांति पूर्ण, समृद्ध वातावरण प्राप्त हो सके। आज भारत के साथ-2 वैश्विक संदर्भों में सतत विकास हर देश की जरूरत बन चुका है। औद्योगीकरण के बाद वैश्विक पटल पर तमाम तरह की चुनौतियां आ खड़ी हुई हैं। इन चुनौतियों को आज का वैश्विक समाज नजरन्दाज नहीं कर सकता। इन्हीं पहलुओं को ध्यान में रखते हुए 90 के दशक में दुनिया के सभी देश के साथ-2 वैश्विक संस्थाएँ सतत विकास के संदर्भ में मंथन, चर्चा व भावी नीतियां तैयार करने पर जोर दे रही हैं। जिससे की वैश्विक संतुलन कायम रहे।

**मूलशब्द:** सतत विकास, प्रकृति, पंचवर्षीय योजनाएं, आर्थिक संबृद्धि लैंगिक समानता, जलवायु परिवर्तन, समावेशी विकास

### परिचय

#### अध्ययन के उद्देश्य

प्रस्तुत शोध पत्र में “सतत विकास” को आकार देने वाले उद्देश्यों के सन्दर्भ में आने वाली समस्याओं को स्पष्ट करना तथा उन्हें प्राप्त करने के लिए किये गये प्रयासों पर प्रकाश डालना है।

#### सतत विकास के लक्ष्य

संयुक्त राष्ट्र के एजेंडा 2030 में कुल 17 लक्ष्यों का निर्धारण किया गया जो इस प्रकार हैं—

- गरीबी के सभी रूपों की पूरे विश्व से समाप्ति।
- भूख समाप्ति, खाद्य सुरक्षा और बेहतर पोषण और टिकाऊ कृषि को बढ़ावा।
- सभी उम्र के लोगों को स्वास्थ्य सुरक्षा और जीवन को बढ़ावा देना।
- समावेशी शिक्षा प्रणाली।
- लैंगिक समानता के साथ महिला सशक्तिकरण।
- सभी के लिए स्वच्छ पानी की उपलब्धता।
- सस्ती, विश्वसनीय, टिकाऊ ऊर्जा को बढ़ावा देना।
- सभी के लिए समावेशी आर्थिक विकास व रोजगार उपलब्ध कराना।
- सतत बुनियादी ढाँचा व औद्योगिक विकास।
- सुरक्षित शहरी अद्योसंरचना का विकास।
- खपत व उत्पादन का समावेशीकरण।
- जलवायु परिवर्तन और उसके प्रभावों से निपटने के लिए कार्यवाई।
- स्थायी सतत विकास के लिए महासागरों, समुद्री संसाधनों का संरक्षण।
- जैव विविधता का समावेशी उपयोग व संरक्षण।

- सतत विकास के शब्दार्थ में शांतिपूर्ण और समावेशी समितियों को बढ़ावा देना।
- वैश्विक भागीदारी को बढ़ावा देना।
- गुणवत्तापूर्ण शिक्षा

#### सतत विकास एवं भारत

वैश्विक संदर्भ में भारत आज महत्वपूर्ण भूमिका में है। विश्व के सभी बड़े मंचों के माध्यम से भारत वैश्विक समस्याओं के प्रति संवेदनशील सार्थक प्रयास पर जोर देता है। ग्लोबल वार्मिंग, खाद्यान्न संकट, स्वास्थ्य, शिक्षा, निर्धनता, पर्यावरण, वन्यजीव संकट, प्रदूषण, ऊर्जा आपूर्ति आदि चुनौतियां विश्व के सामने मौजूद हैं। भारत हर सार्थक पहल पर अपनी भागीदारी सुनिश्चित करता आया है।

भारत आज विश्व का सबसे बड़ा आबादी वाला देश है। देश की जरूरतों को पूरा करते हुए सतत विकास की प्रक्रिया में आगे की ओर बढ़ना है। भारत शुरू से ही सतत विकास के मूलभूत सिद्धांतों को अपनी विकास नीतियों शामिल करता आ रहा है। हमारी सरकार द्वारा अनेक नीतियां कार्यक्रम सतत विकास लक्ष्यों के अनुरूप हैं। जिनमें मेक इन इंडिया, स्वच्छ भारत अभियान, बेंटी बचाओ-बेंटी पढ़ाओ, राष्ट्रीय ग्रामीण पेयजल कार्यक्रम, राष्ट्रीय स्वास्थ्य मिशन, आयुष मिशन, आवास योजना, डिजिटल इंडिया प्रोग्राम, कृषि संबंधी कई योजनाएं, गरीबी निर्धनता से जुड़े कई कार्यक्रम, पर्यावरण संरक्षण की दिशा में कई कार्यक्रम, नवीकरणीय उर्जा के क्षेत्र प्राप्त द्वारा विश्वसनीय पहल व कार्यक्रम को बढ़ावा दिया जा रहा है।

सतत विकास लक्ष्यों के साथ विकास प्रक्रिया को आगे बढ़ाने के संदर्भ में भारत द्वारा हर मोर्चे पर निगरानी रखते हुए आगे बढ़ने का प्रयास कर रहा है। केन्द्र सरकार ने सतत विकास लक्ष्यों के कार्यान्वयन पर निगरानी रखने तथा इसके समन्वयन की जिम्मेदारी नीति आयोग को सौंपी है। सांख्यिकी कार्यान्वयन मंत्रालय राष्ट्रीय संकेतांक तैयार करता है। सांख्यिकी और कार्यान्वयन मंत्रालय द्वारा

संयुक्त राष्ट्र आर्थिक और सामाजिक परिषद द्वारा प्रस्तावित संकेतकों की वैश्विक सूची से उन संकेतकों की पहचान करना, जो हमारे राष्ट्रीय संकेतक ढांचे के लिए अपनाए जा सकते हैं, वास्तव में एक मील का पत्थर है।

हमारे संघीय ढांचे में सतत विकास लक्ष्यों की संपूर्ण सफलता में राज्यों की भूमिका बहुत महत्वपूर्ण है। राज्यों में विभिन्न राज्य स्तरीय विकास योजनाएं कार्यान्वित की जा रही हैं। इन योजनाओं के सतत विकास लक्ष्यों के साथ तालमेल होना चाहिए। केन्द्र राज्य सरकारों को सतत विकास लक्ष्यों के कार्यान्वयन में आने वाली विभिन्न चुनौतियों का मुकाबला करने के लिए मिलकर काम करने की आवश्यकता है।

सतत विकास लक्ष्यों के कार्यान्वयन को सुविधाजनक बनाने के लिए भारतीय संसद विभिन्न हित धारकों के साथ गहन विचार विमर्श कर रही है। जैसे अध्यक्षीय शोध कदम, जो हाल ही में स्थापित किया गया एक मंच है। सतत विकास लक्ष्यों से संबंधित विभिन्न मुद्दों पर हमारे सांसदों द्वारा क्षेत्र के विशेषज्ञों के साथ विचार विमर्श को सुविधाजनक बनाता है। इसके अलावा नीति आयोग ने अन्य संगठनों के सहयोग से विशेष सतत विकास लक्ष्यों पर राष्ट्रीय और क्षेत्रीय स्तर पर परामर्श श्रृंखलाएं आयोजित की हैं ताकि विशेषज्ञों, विद्वानों, संस्थाओं सिविल सोसाइटियों, अंतराष्ट्रीय संगठनों और केन्द्रीय मंत्रालय सहित राज्यों और अन्य हितधारकों के साथ गहन विचार विमर्श किया जा सके।

### जलवायु परिवर्तन लक्ष्यों की प्राप्ति में भारत की प्रगति

भारत ने वर्ष 2020 से पहले के अपने स्वैच्छिक लक्ष्य को हासिल कर लिया है। संयुक्त राष्ट्र प्रेमवर्क कन्वेंशन ऑन क्लाइमेट चेंज (UNFCCC) के तहत कोई बाध्यकारी दायित्व नहीं होने के बावजूद उत्सर्जन तीव्रता को कम करने के अपने लक्ष्य की घोषणा की है। पेरिस समझौते के अनुसार भारत वर्ष 2015 में UNFCCC में अपना राष्ट्रीय स्तर पर निर्धारित योगदान प्रस्तुत किया, जिसमें वर्ष 2021-2030 की आबादी के लिए आठ लक्ष्यों की रूपरेखा को शामिल किया गया है ये हैं :

- अपने सकल घरेलू उत्पाद की उत्सर्जन तीव्रता को वर्ष 2005 के स्तर से वर्ष 2030 तक 35 प्रतिशत तक कम करना।
- वर्ष 2030 तक गैर जीवाष्म ईंधन आधारित ऊर्जा संसाधनों से लगभग 40 प्रतिशत संचयी विद्युत शक्ति स्थापित क्षमता प्राप्त करने के लिए हरित जलवायु कोष सहित प्रौद्योगिक के हस्तांतरण और कम लागत वाली अंतराष्ट्रीय वित्तीय सहायता प्राप्त करना।
- वर्ष 2030 तक अतिरिक्त वन और वृक्षों के आवरण के माध्यम से 2.5 से 3 बिलियन बव<sub>2</sub> के बराबर अतिरिक्त सिंक का निर्माण करना।
- अन्य लक्ष्य स्थायी जीवन शैली से संबंधित है; जलवायु के अनुकूल विकास पथ; जलवायु परिवर्तन अनुकूलन; जलवायु वित्त; प्रौद्योगिकी और क्षमता निर्माण।
- जलवायु परिवर्तन का मुकाबला करने के लिए भारत के हलिया पहल (और इस तरह सतत विकास लक्ष्य को प्राप्त करना) वर्ष 2070 तक नेट जीरो, हरित ऊर्जा संक्रमण आदि।

### जलवायु परिवर्तन पर राष्ट्रीय कार्ययोजना (NAPE)

- उपर्युक्त लक्ष्यों के अलावा, भारत सरकार जलवायु परिवर्तन पर राष्ट्रीय कार्ययोजना को भी लागू कर रही है जो शमन और अनुकूलन सहित सभी जलवायु कार्यों के लिए एक व्यापक नीतिगत ढाँचा प्रदान करती है।

- इसमें सौर ऊर्जा के विशिष्ट क्षेत्रों में आठ मुख्य मिशन शामिल हैं—ऊर्जा दक्षता तर्क, स्थायी आवास, जल, हिमालयी पारिस्थितिकी तंत्र, हरित भारत, स्थायी कृषि और जलवायु परिवर्तन के लिए रणनीतिक ज्ञान।

### सतत विकास के सन्दर्भ में चुनौतियां

बढ़ती आबादी तीन औद्योगीकरण, शहरीकरण के साथ — मानव शांत विधियों विभिन्न पहलुओं के आयामों में परिवर्तन हुआ है। समाज व देश की जरूरतों को पूरा करने के लिए प्राकृतिक संसाधनों का बेतहाशा दोहन, नदी, झील, वन, प्राकृतिक वरण में परिवर्तन के फलस्वरूप सतत विकास के समक्ष कई तरह की चुनौतियां विद्यमान हैं, जो इस प्रकार हैं।

- भारत जैसे बड़ी जनसंख्या वाले राष्ट्र के समक्ष निर्धनता, शिक्षा, स्वास्थ्य आज भी बड़ी चुनौती के रूप में विद्यमान है। कार्यशील वर्ग को रोजगार उपलब्ध हो सके इसके लिए जरूरी कदम उठाना एक चुनौती पूर्ण कदम है।
- आर्थिक संवृद्धि भी उल्लेखनीय दरों के बावजूद आधी से अधिक आबादी भूख और सुरक्षित पेयजल तथा बिजली के अभाव से पीड़ित है। इन समस्याओं को हल करने के लिए एक मिली जुली पद्धति अपनानी होगी जिसमें भोजन, जल और ऊर्जा के बीच अंतः संबंध बनाना होगा।
- तीव्र शहरीकरण सौर औद्योगीकरण के कारण सार्वजनिक अवसंरचना पर दबाव पड़ता है। इसमें बुनियादी स्वास्थ्य और स्वच्छता सेवाएं भी शामिल हैं।

### निष्कर्ष

उपरोक्त संदर्भों में सतत विकास आज हर देश की जरूरत है। जो कि साझे बिन्दुओं पर अंतराष्ट्रीय सहयोग द्वारा ही हासिल किया जा सकता है। भारत द्वारा विकास की विभिन्न नीतियों में संयुक्त राष्ट्र संघ द्वारा निर्धारित मानकों के अनुरूप आगे बढ़ने का प्रयास करता है। जलवायु परिवर्तन, कृषि, ऊर्जा स्वास्थ्य आदि सभी क्षेत्रों में अंतराष्ट्रीय मंचों के साथ तालमेल बढ़ाने का काम कर रहा है।

भारत द्वारा सतत विकास के हर पहलु पर दीर्घकालीन नीतियों व कार्यक्रमों को शामिल करते हुए विकास की ओर बढ़ने का प्रयास कर रहा है। इस संदर्भ में भारत अल्पविकसित व गरीब देशों को विभिन्न सुविधाएं तकनीकी सहायता उपलब्ध कराने का प्रयास करता है। भारत द्वारा इस बात पर अपनी मजबूत भूमिका अदा करता है कि वैश्विक मंचों पर छोटे व गरीब विकासशील देश की आवाज को सही दिशा मिला सके। इस दिशा में भारत कई वैश्विक मंचों व क्षेत्रीय संगठनों के माध्यम से समावेशी वैश्विक समाज के निर्माण पर जोर देता रहा है।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## कृत्रिम बुद्धिमत्ता एवं मौलिक अधिकार

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### सारांश

वर्ष 2022 में, जनरेटिव प्री-ट्रेनिंग ट्रांसफार्मर (GPT) एप्लीकेशन ने कृत्रिम बुद्धिमत्ता को मुख्य धारा में लाकर आई (AI) को एक नया मापदण्ड प्रदान किया है। यह लेख ए आई और मौलिक अधिकार के संबंध में विचार करता है। आज के समय में, ए आई का उपयोग स्वास्थ्य, व्यापार, शिक्षा, न्यायपालिका, और साइबर सुरक्षा जैसे क्षेत्रों में हो रहा है। हालांकि, इसके साथ ही कृत्रिम बुद्धिमत्ता के उपयोग से मानव समाज में कई चुनौतियाँ उत्पन्न हो रही हैं। इस लेख में, हमने इस संदर्भ में विचार किया है कि कृत्रिम बुद्धिमत्ता के बढ़ते उपयोग के साथ-साथ मौलिक अधिकारों की सुरक्षा को कैसे सुनिश्चित किया जा सकता है।

**मूलशब्द:** कृत्रिम बुद्धिमत्ता, ए आई, जनरेटिव प्री-ट्रेनिंग ट्रांसफार्मर, गोपनीयता, मौलिक अधिकार, न्यायपालिका, साइबर सुरक्षा, व्यापार, शिक्षा, स्वास्थ्य, डेटा संरक्षण, बेरोजगारी, व्यक्तिगत जीवन

### परिचय

वर्ष 2022 में जनरेटिव प्री-ट्रेनिंग ट्रांसफार्मर (GPT) एप्लीकेशन के द्वारा कृत्रिम बुद्धिमत्ता ए आई को मुख्य धारा में लाया गया। ए आई का आशय कंप्यूटर या कंप्यूटर द्वारा नियंत्रित रोबोट के ऐसे कार्य करने की क्षमता से है जो आमतौर पर मनुष्य द्वारा किए जाते हैं क्योंकि ऐसे कार्यों को करने के लिए मानवबुद्धि और विवेक की आवश्यकता होती है हालांकि अभी ऐसी कोई ए आई प्रणाली नहीं है जो एक सामान्य मानव द्वारा किए जा सकने वाले कार्य को कर सके कृत्रिम बुद्धिमत्ता की आदर्श विशेषता इसकी युक्ति संगत कार्यवाही करने की क्षमता है जिसमें एक विशिष्ट लक्ष्य प्राप्त किया जा सकता है।

आज शायद ही ऐसा कोई क्षेत्र है जहां ए आई प्रौद्योगिकी का प्रयोग ना हो रहा हो स्वास्थ्य, व्यापार, शिक्षा, न्यायपालिका, साइबर सुरक्षा सभी ऐसे क्षेत्र हैं जहां ए आई का प्रयोग किया जा रहा है। आज मनुष्य के 90% कार्य ए आई के माध्यम से किया जा सकते हैं। ए आई द्वारा मनुष्य के जीवन के प्रत्येक पहलू में प्रवेश किया गया है। यहां तक की उसके मौलिक अधिकारों में भी कृत्रिम बुद्धिमत्ता का निरंतर बदता प्रयोग मानव जीवन पर भी प्रभाव डाल रहा है प्रमुख रूप से उस के मौलिक अधिकारों पर। यद्यपि इसमें संदेह नहीं कि ए आई से हमें प्रत्येक क्षेत्र में लाभ प्राप्त हो रहा है परन्तु मौलिक अधिकारों के सामने ये एक चुनौती है। कृत्रिम बुद्धिमत्ता के गॉडफादर कहे, जाने वाले जेफ्री हिटन ने भी इसके नुकसान के विषय में लोगों को जागरूक किया है।

कृत्रिम बुद्धिमत्ता ए आई के कारण लोगों में अपनेपन की भावना समाज से खत्म होती जा रही है लोग अपनी से ज्यादा मशीनों के साथ समय गुजारते हैं। मशीनों के अधिक उपयोग से लोग बीमार

और आलसी हो रहे हैं। मानव संसाधन की जगह कृत्रिम बुद्धिमत्ता ने ले ली है जिस के कारण बेरोजगारी की समस्या बढ़ी है। कृत्रिम बुद्धिमत्ता के कारण मनुष्य के एकान्तता के अधिकार का हनन हुआ है। सर्विलांस, डाटा संग्रह के द्वारा व्यक्ति के निजता के अधिकार को चुनौती दी है। आज व्यक्ति अपने निजता के अधिकार का दावा नहीं कर सकता। वह हर समय एक निगरानी में है। यद्यपि गोपनीयता और डेटा संरक्षण अधिनियम 2014 (पीडीपी अधिनियम) अस्तित्व में है परन्तु ए आई इस कानून को चुनौती देता है। ए आई के बढ़ते उपयोग के लिए गोपनीयता सुरक्षा की यथास्थिति पर फिर से विचार करने की आवश्यकता है। ए आई सिस्टम द्वारा एकत्रित किये जाने पर डेटा सेट किसी के दैनिक जीवन के बारे में व्यक्तिगत या संवेदनशील विवरण प्रकट कर सकते हैं। ए आई समानता के अधिकार को भी प्रभावित करता है तथा भेदभाव को बढ़ाता है। ए आई एल्गोरिथम थ्योरी के द्वारा काम करता है जो पारदर्शी नहीं है। उदहारण के लिए घर खरीदने के लिए ऋण चाहने वाले अलग जाति और धर्म के लोगों से उधारदाताओं द्वारा उपयोग किए जाने वाले ए आई टूल के कारण लाखों लोगों से अधिक शुल्क लिया गया है और कई कंपनियां नौकरी चाहने वालों का साक्षात्कार और स्क्रीनिंग करने के लिए ए आई दृ संचालित टूल का प्रयोग करती है जो कई विकलांग लोगो और अन्य संरक्षित समूहों के विरुद्ध भेदभाव को बताता है। भेदभावपूर्ण प्रथाओं को खत्म करने के बजाय ए आई ने उसे और अधिक बढ़ाया है।

ए आई हमारे अभिव्यक्ति की स्वतंत्रता के अधिकार का भी हनन करता है। हमारी स्वतंत्र रूप से सोचने की क्षमता को नुकसान पहुंचाता है। विभिन्न प्रकार की वेबसाइटों पर इतना डाटा उपलब्ध है कि व्यक्ति को ये पता ही नहीं चल पाता कि कौन सा डाटा प्रमाणिक है। वह

इस अप्रमाणित डाटा का प्रयोग करता है और अपनी सोच को प्रदर्शित नहीं करता।

यद्यपि ए आई उन्नत प्रौद्योगिकी की है जिसके द्वारा हम समाज में नागरिक जीवन को उन्नत शिखर पर पहुंचा सकते हैं परंतु इसका अत्यधिक प्रयोग मानवाधिकारों के लिए खतरा बनता जा रहा है ए आई एल्गोरिथम और फेस रिकॉग्निशन सिस्टम समानता के बुनियादी मानकों को सुनिश्चित करने में बार-बार विफल रहे हैं खासकर काले लोगों के प्रति भेदभावपूर्ण प्रवृत्ति दिखाकर। 2015 में गूगल फोटो जिसे एक उन्नत पहचान सॉफ्टवेयर माना जाता है दो काले लोगों की तस्वीर को गोरिल्ला तस्वीर के रूप में वर्गीकृत कर दिया। हांगकांग, चीन, डेनमार्क और भारत सहित विभिन्न राज्यों कि आपराधिक न्याय प्रणालियों में चेहरे- पहचान तकनीक को अपनाया जा रहा है। परन्तु इस तकनीक के उपकरणों के अमूल्यांकन पूर्वाग्रह ने काले लोगों को उच्च जोखिम वाले अपराधियों के रूप में देखे जाने के बड़े जोखिम में डाल दिया है जो समान व्यवहार और सुरक्षा के अधिकार का उल्लंघन करता है।

ए आई को बेरोजगारी के स्रोत के रूप में भी देखा जा रहा है। प्रौद्योगिकी में तेजी से हो रही वृद्धि का जिक्र करते हुए रॉबर्ट स्कैनडेल्सकी ने अपनी पुस्तक "वर्क इन द फ्यूचर" में लिखा है कि जल्द ही या बाद में हमारे पास नौकरियां खत्म हो जाएंगी ए आई के कारण अमेरिका में 47: अमेरिकी नौकरियों को भविष्य में स्वचालन का खतरा है कोविड-19 महामारी ने पहले ही लाखों नौकरियों को प्रभावित किया है और ए आई क्रांति की एक नई लहर स्थिति को और खराब कर सकती है। विभिन्न क्षेत्रों में ए आई को लागू करने का परिणाम यह होगा कि गरीब और गरीब हो जाएंगे और अमीर और अमीर हो जाएंगे। अतः हमारे सामाजिक और आर्थिक अधिकारों के लिए ए आई एक चुनौती है।

युद्ध में सशस्त्र ड्रोनों के बढ़ते उपयोग विशेष रूप से पाकिस्तान और अफगानिस्तान में अमेरिका द्वारा की गई कार्यवाही की निंदा 2010 की संयुक्त राष्ट्र रिपोर्ट में की गई क्योंकि इसमें अंतर्राष्ट्रीय मानवावादी कानून का उल्लंघन हुआ ड्रोन हमलों में मरने वाले 10 में से लगभग नौ लोग लक्षित लक्ष्य नहीं थे। स्वायत्त प्रौद्योगिकी और ए आई के तेजी से विकास के परिणाम स्वरूप "हत्यारे रोबोट" जैसे पूरी तरह से स्वायत्त हथियार भी सामने आए हैं, जो कई नैतिक कानूनी और सुरक्षा संबंधी चिंताओं को बढ़ाते हैं। ये हथियार त्रुटिरहित नहीं हैं। जांचरी कालेनबर्म का लेख लड़ाकों और गैर लड़कों के बीच भेदभाव करने में इन हथियारों की क्षमता पर प्रकाश डालता है।

### निष्कर्ष

वर्तमान में ए आई के निरंतर विस्तार से मानवाधिकारों पर खतरा मंडरा रहा है क्योंकि प्रौद्योगिकी हमारे दिन-प्रतिदिन के जीवन और समाज का केंद्र बन गई है। कठोर कानून सुरक्षा की कमी के कारण कम्पनियाँ शोषण के लिए समाज प्रदान करती हैं। कम विनियमन और उत्तरदायी के साथ ये कंपनियां नागरिक जीवन में प्रवेश करती हैं और मानवाधिकारों का तेजी से उल्लंघन करती हैं। भेदभाव को बढ़ावा देने से लेकर ए आई समान सुरक्षा, आर्थिक अधिकार, बुनियादी स्वतंत्रता के लिए खतरा है। इसके लिए समाज में उचित कानूनी मानकों की आवश्यकता है। ए आई निर्णय लेने की प्रतिक्रियाओं में पारदर्शिता में वृद्धि, तकनीकी दिग्गजों के लिए बेहतर जवाबदेही और समाज में नई प्रौद्योगिकियों के कार्यान्वयन के लिए एक मजबूत समाज की आवश्यकता है। साथ ही "ए आई साक्षरता" को भी प्रोत्साहित किया जाना चाहिए। जिससे समाज इसके बढ़ते प्रयोग के लाभ और

हानि को समझ सके। कहते हैं कि किसी भी चीज का अत्यधिक प्रयोग खराब सिद्ध होता है ए आई के संबंध में भी यह कहावत सही साबित होती है। यदि ए आई का प्रयोग सीमित रूप से किया जाए तो यह समाज को विकास की एक नई दिशा दे सकता है।

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Enhancing social welfare: evaluating the influence of motor vehicle emissions on mulberry leaves, food sustainability, and conservation efficacy for mulberry silkworm, *Bombyx mori* Linn

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### Abstract

This current study is conducted to determine potential impact of feeding motor vehicle-related major pollutants, such as Sulphur dioxide, Nitrogen oxides, Carbon monoxide, Volatile organic compounds, & green gases polluted mulberry leaves, to silkworms, *Bombyx mori* L. The study used silkworm hybrids, CSR2 × CSR4, SH6 × NB4D2, DUN22 × DUN6 & CSR double hybrid, with relation road pollutants from National Highways throughout India. Numerous pollutants from the roads are produced, and these pollutants end up on the leaves of mulberries. The silkworm is a monophagous bug that only consumes leaves from mulberries. By raising silkworm larvae on air-contaminated mulberry leaves, in addition to quantity, the impact on silkworm nutritional indices, food digestion processes & conversion efficiency were evaluated. By feeding silkworm larvae on air-contaminated mulberry leaves, impact on nutritional indices of the silkworms, food digestion processes, and the effectiveness of conversion were evaluated. In addition, the quantity of pollutant sediments on the mulberry leaves was quantified. When fed extremely polluted mulberry leaves, as opposed to different stages of larvae fed lowly contaminated mulberry leaves, the silkworm larvae's assimilation, food consumption & conversion efficiency significantly decreased in both IVth & Vth instar larvae. However, because larvae use the upper limited amount of feed in Vth instar, effect was more enunciate. Because of decreased conversion efficiency, silkworm larvae's average larval weight & average larval weight gain were both lower, as was cocoon production rate. When given extremely polluted mulberry leaves, all of the CSR2 × CSR4, SH6 × NB4D2, DUN22 × DUN6 & CSR double hybrids showed a noticeable effect; nevertheless, the CSR double hybrid was the least pretentious and the CSR2 × CSR4 hybrid was the most pompous.

**Keywords:** larvae, nutritional indices, fume pollutants, hybrid, mulberry, silkworm

### Introduction

India has the distinction of being the world's second-largest silk producer, after China. The primary sources of air pollution include noise, various forms of ionizing radiation, gases, and suspended particulates. The gases include nitrogen (NO, NO<sub>2</sub>, N<sub>2</sub>O<sub>4</sub>, NH<sub>4</sub><sup>+</sup>, NH<sub>3</sub>, O<sub>3</sub>, SO<sub>2</sub>, C<sub>6</sub>H<sub>6</sub> vapours, volatile phenols, Hg, Cl<sub>2</sub>, and polycyclic aromatic hydrocarbons) and carbon in both reduced and oxidized forms (CO<sub>2</sub>, CO, CH<sub>4</sub>). The harmful effects of PAHs and heavy metals including Pb, Ni, Cd, and as have an adverse influence on mulberry trees. They may have harmful consequences directly or indirectly by altering the pH of the soil and causing hazardous metal salts, such as aluminium, to dissolve. The mechanical effect of the particulate materials is negative. They enclose leaf blade, decreasing light penetration & obstructing stomata opening. These obstacles have a significant impact on photosynthesis, which experiences a substantial drop in rate. For thousands of years, people have been producing silk through the science and

art of sericulture <sup>[1]</sup>. An agro based sector that has enormous employment potential in both rural and urban areas is sericulture. There are further commercial silkworm species, but *Bombyx mori* is mostly used, extensively researched, trained & has most advanced raising methods <sup>[2]</sup>. Since it has been tamed for such a long time, the Bombycidae silkworm insect, which belongs to the phylum Arthropoda, is the sole extant species in its family <sup>[3]</sup>. *Bombyx mori* L., mulberry silkworm, is a single-chambered silkworm which primarily consumes leaves of mulberries (*Morus* spp.) for its larvae's growth & development. Weight, pupation, silk production & reproductive properties of silkworm larvae & pupae are directly influenced by the features and quantity of mulberry leaves. The organization of converting ingesta and digesta into the body, cocoon, and shell of the cocoon varies depending on the variety of silkworm, influenced by factors such as the environment, mulberry breeds, and seasons <sup>[4]</sup>. The percentage of food that silkworms eat, assimilate, and are able to digest depends critically on the

nutritional qualities of mulberry leaves <sup>[5]</sup>. The proper growth and silk production in silkworms depend on the quality and quantity of ingesta and digesta they consume <sup>[6]</sup>. Qualities & quantity of mulberry leaves are becoming more and more limited by environmental contamination, and feeding contaminated mulberry leaves affects development of silkworms as well as their ability to cocoon & produce silk <sup>[7]</sup>. Mulberry trees primarily found in an erratic shape along road edges, river bunds, farm/garden boundaries, canals, fences, etc. support sericulture at Dewari Kachan, Myur block DC Sonbhadra, India. Sonbhadra's soils are primarily semi-arid to humid, making them vulnerable to erosion by air pollutants during clear, sunny, windy days when a lot of pollutants are produced. The issue of excessive air pollution created by automobiles moving constantly along the highways in the Sonbhadra district is exacerbated by this. State highway SH5A, which links Ranchi, state's summer capital, with rest of India, is congested with millions of cars each year & growing each year from residents & tourists of Sonbhadra. These cars include heavy and light commercial vehicles, as well as patrolling & convoy wagons of Indian army & Central Reserve Police Force. Mulberry leaves are a popular choice for measuring atmospheric air pollution, particularly particle matter in metropolitan areas, due to their well-known ability to draw in air pollutants and granular debris <sup>[8]</sup>. Kashmir has been noted for its healthy climate, which is ideal for growing silkworms. In addition to the several damaging elements of both biotic and abiotic dawn, one additional issue restricting the characteristics of Sonbhadra's mulberry leaf production is the dust produced by vehicles on the valley's highways. In sericulture, it is a given that the air-polluted leaves will be fed to silkworms, particularly in India where silkworm farmers harvest leaves from mulberry trees, which are primarily found next to roadways. When *B. mori* eventually eats these air-polluted mulberry leaves, it would face challenging conditions for growth and development, which could affect its productivity and leave it susceptible to a number of diseases. Mulberry leaves that have been contaminated by road air may also have an impact on the food that the silkworms consume, which could have a major impact on larval silkworms' development & growth. While numerous educational research have been conducted regarding impact of vehicle air pollution on horticultural & agricultural crops, there are relatively few studies pertaining to silkworms & mulberries <sup>[9]</sup>. In this context, an effort was undertaken to assess the influence of air pollutants from mulberry leaf roads on the growth, metabolic conversion, and digestive processes of the *Bombyx mori* species of silkworms.

### Materials and methods

The Sericulture Silk raising station, located at SH5A Sonbhadra Robertsganj, India, is where the current inquiry was conducted. Based on their proximity to the SH5A, two schemes of small mulberry farms with Goshorami variety were chosen for purpose of measuring air pollutants and providing food for the silkworms. These sites were designated as site "A," which is located within 30 meters & site "B," which is located beyond 150 meters. In this study, the quantity of air pollutants accumulated on mulberry leaves was assessed by measuring the dust deposition on ten randomly selected mature leaves. The air-polluted dust was subsequently washed off, and the

freshly deposited dust was measured every 24 hours for seven consecutive days. Following standard rearing procedures, *Bombyx* Silkworm hybrids including CSR2 × CSR4, SH6 × NB4D2, DUN22 × DUN6 & CSR double hybrids, were raised on mulberry leaves contaminated with air pollutants; to understand how road air pollution affects the silkworm's digestive system & organization during conversion. Two disease-free laying (DFL) larvae from each breed were placed in rearing trays. One set of trays contained neonates from each breed & provided them with mulberry leaves with highest level of dust contamination, while another set of trays contained neonates from each breed & offered them mulberry leaves with lowest level of air contamination. This setup allowed for preparation of up to eight rearing trays. After the third molt, the larvae in each tray were divided into three replicates, with one hundred larvae remaining in each tray. This process enabled preparation of up to twenty-four rearing trays, while remaining larvae were kept as prepared stock. 12 trays were divided into two clusters, one with twelve trays fed with mulberry leaves that were extremely dust-infected and the other with twelve trays fed with leaves that were only slightly polluted. The first three instars of the larvae were raised at 26±1 °C & 80±5% relative humidity, whereas the fourth and fifth instars of the larvae were kept at 26±1 °C & 80±5% RH. The feed application trials were conducted during the fourth and fifth instars, as this is when silkworm larvae exhibit the highest food consumption rates. The experimental batches were fed the carefully weighed freshly obtained mulberry leaves three times a day. A few representative mulberry leaves from each meal were used as dummies to establish the dry weight of the food that was consumed. Every day in every replication of every treatment, the larvae in a healthy state were counted. When discovered, the uneven, sick, and dead larvae had been eliminated and replaced with fresh batches kept apart. After drying in the oven at a consistent temperature of 80° C, weight of leftover soil & leaves was monitored daily on a dry weight premise; weight increase of larvae was instead recorded on a fresh weight premise <sup>[12]</sup>. Using the gravimetric technique, each individual's nutritional framework—which includes ingested as well as digested food, growth rate, reference ratio, conversion efficiency, consumption index (CI), estimated digestibility (ED) & coefficient of metabolism (COM) was listed <sup>[13]</sup>. To assess the influence of contaminated mulberry leaves on the growth and development of the silkworm larvae, the average larval weight and average larval weight gain were also recorded. Numerous nitrogenic frameworks were enumerated using the following calculation <sup>[13]</sup>.

### Ingested food (g)

Dry weight of total intake (g) of mulberry leaves by larvae of silkworm during fourth & fifth Instars up to stage of spinning & ripening.

Ingested food (IF) = given leaves dry weight –leftover leaves Dry weight

### Digested food (g)

Total digested dry food from intake of dry weight of mulberry leaves by larva of silkworm during fourth & fifth stage until they are ready for spinning & ripening.



Food digested = Dry weight of food ingested – Dry weight of faeces

### Consumption index

The rate of food intake was calculated as the mean weight of larvae during the feeding period.

$$\text{Consumption index (CI)} = \frac{\text{Ingested food}}{\text{Mean fresh larval weight in the 4<sup>th</sup> or 5<sup>th</sup> instar} \times \text{larval duration (Days)}}$$

### Reference ratio (g)

An indirect expression of absorption and assimilation of food. Denotes the ingesta required per unit excreta produced.

$$\text{Reference ratio (RR)} = \frac{\text{Dry weight of food ingested}}{\text{Dry weight of excreta}}$$

### Growth rate

Growth rate mention to larval gain biomass & specify organization of conversion of nutrition into biomass of Larvae.

$$\text{Growth rate (GR)} = \frac{\text{Fresh weight gained by worms}}{\text{Duration of feeding (days)} \times \text{Mean dry weight of the worms during feeding period}}$$

### Approximate digestibility (%)

This demonstrates the direct effectiveness of mulberry leaf assimilation and relies on the speed at which food moves through the silkworm's intestine.

$$\text{A. D.} = \frac{\text{Weight of food ingested} - \text{weight of faeces}}{\text{Weight of food ingested}} \times 100$$

### Ingested food conversion efficiency (%)

Related to percentage that represents the effectiveness of converting food into biomass or body matter at various phases.

$$\text{IFCE} = \frac{\text{Fresh weight which larvae gained}}{\text{Ingested food's Dry Weight}} \times 100$$

### Coefficient of metabolism (COM)

A metric of overall metabolic activity related to the silkworm larvae's productivity in converting food into larval biomass.

$$\text{COM} = \frac{\text{Digested food's weight digested} - \text{Increase in larva weight}}{\text{Digested food's weight digested}}$$

$$\text{Average larval weight (ALWt)} = \frac{\text{Total larval weight}}{\text{Total number of larvae}}$$

$$\text{Average larval weight gain (ALWg)} = \frac{[\text{Total larval weight in Previous instar}] - [\text{Total larval weight in present instar}]}{\text{Total number of larvae}}$$

The data were statistically analyzed using software such as MSTAT or the Disc operating system.

### Results

Observations related to road dust particles being thrown onto

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mulberry leaves reveal that there is a variation in the amount of dust thrown onto the leaves in relation to distance from national highway SH-5A (Table 1). As distance from the road increases, the amount of dust particles that are thrown onto the mulberry leaves decreases accordingly. The amount of air-contaminated road dust particles that were found at Site A, which is 30 meters away from the highway, was found to be much higher than at Site B. With increasing duration of exposure, the concentration of dust particles on leaves from both sites increases; however, the deposition of dust particles on leaves from site A is significantly greater than that of site B. Leaves from site A were labelled as severe dust-contaminated leaves (EDP) for the subsequent study, whereas leaves from site B were identified as low dust-contaminated leaves (LDP).

**Table 1:** Air pollutant deposition on Mulberry leaves at two test sites in CSR & TI

Sites	Amount of air pollutant deposited on mulberry leaves							
	Duration (in day)							Average ± S.D
	1	2	3	4	5	6	7	
Site A	1.66	2.04	2.40	2.55	2.90	3.20	3.50	2.60 ±0.66
Site B	0.80	0.99	1.08	1.30	1.40	1.61	1.72	1.17 ±0.35

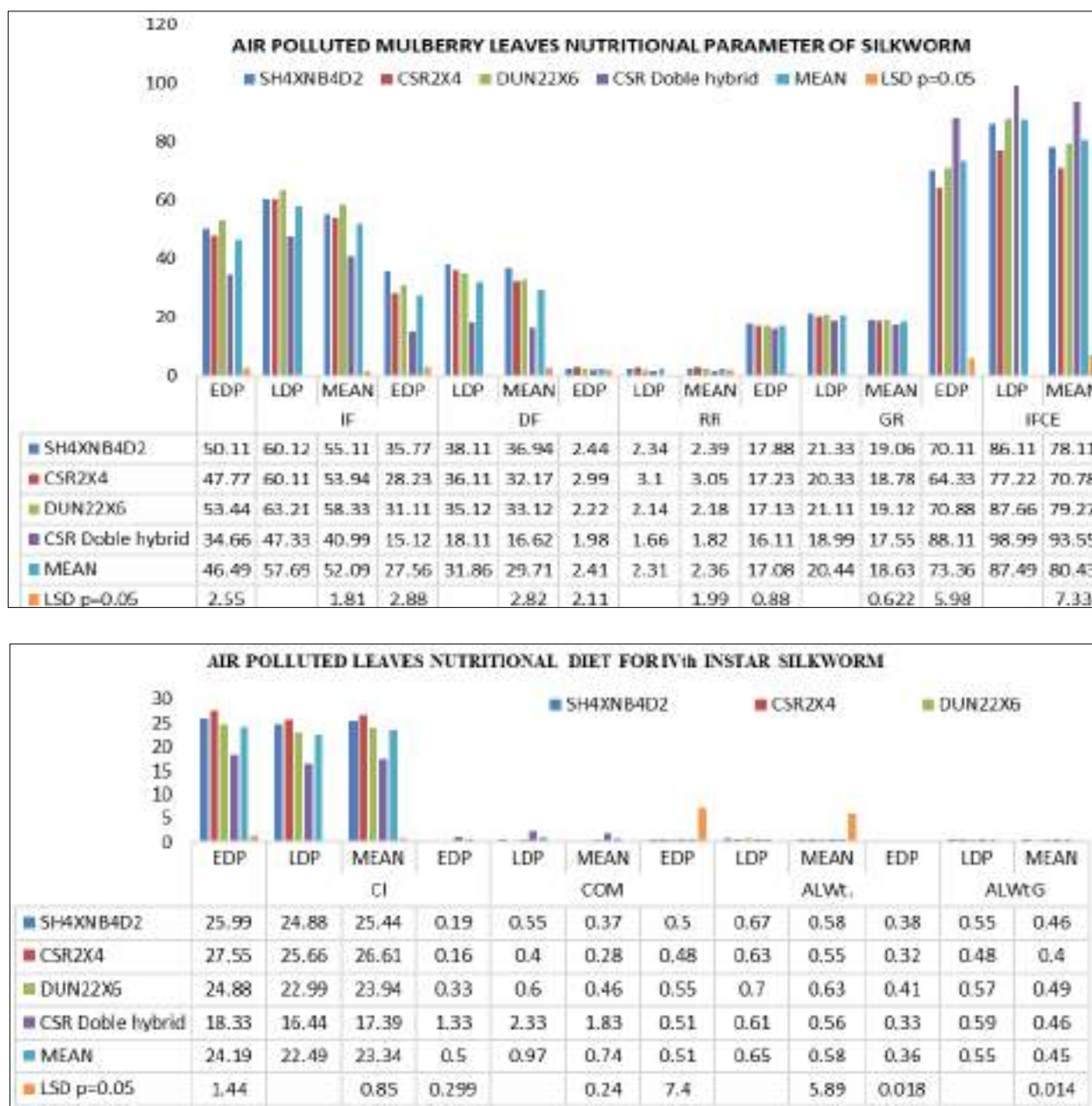
Figure 1 and 2 illustrate how the mulberry leaves contaminated by road dust particles affect silkworm, *Bombyx mori* L., in terms of food intake, digestion & conversion organization throughout both the fourth and fifth instars. The way the silkworm larvae consumed their food was significantly impacted by the mulberry leaves polluted with dust. When compared to the larvae fed LDP mulberry leaves, those fed EDP leaves during both their fourth and fifth instars exhibited the lowest levels of meal digestion. Specifically, in the fifth instar, CSR double hybrid larvae fed EDP leaves had the lowest amount of digested food in the fourth instar, while SH6×NB4D2 larvae fed LDP leaves showed the highest amount. Regarding the amount of digested food in the fifth instar, CSR2 × 4 larvae fed EDP leaves had the least, while CSR double hybrid larvae fed LDP leaves had the most. The notable uniqueness observed in the food after digestion could potentially stem from the silkworm's lack of interest in the less nutritious mulberry leaves tainted with dust. The decreased amount of food that has been digested makes room for additional nutritional components that are impacted by the mulberry leaves' high dust content.

The food that is consumed is directly influenced by the food that the silkworm larvae have absorbed. When it comes to the assimilation of food, the larvae fed EDP mulberry leaves in their fourth instar range in weight from 14.67 to 30.67 g, whereas those fed LDP leaves range in weight from 17.87 to 35.57 g. The larvae from crosses SH6 × NB4D2 and CSR2 × 4, when fed with low-dust (LDP) mulberry leaves, exhibited the highest food absorption levels during the fourth instar, whereas those from the CSR double hybrid, when fed with extra-dust pollution (EDP) leaves, showed the lowest. In the fifth instar, larvae fed EDP mulberry leaves ranged in digested weight from 89.58 to 137.42 g, while those fed LDP leaves ranged from 116.55 to 173.38 g. Notably, during this stage, SH6 × NB4D2 larvae fed with LDP leaves displayed the highest food assimilation levels, whereas CSR double hybrid larvae fed with EDP leaves exhibited the lowest assimilation. Furthermore, when larvae were provided with maximum

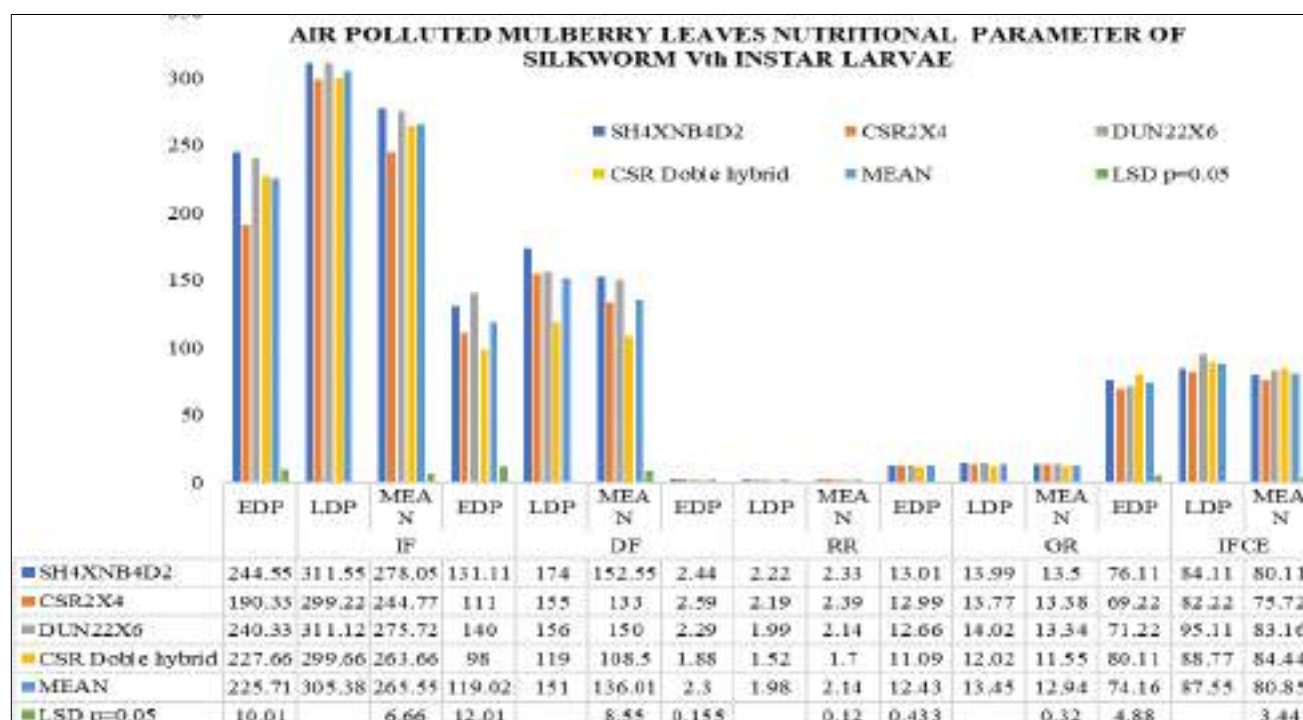
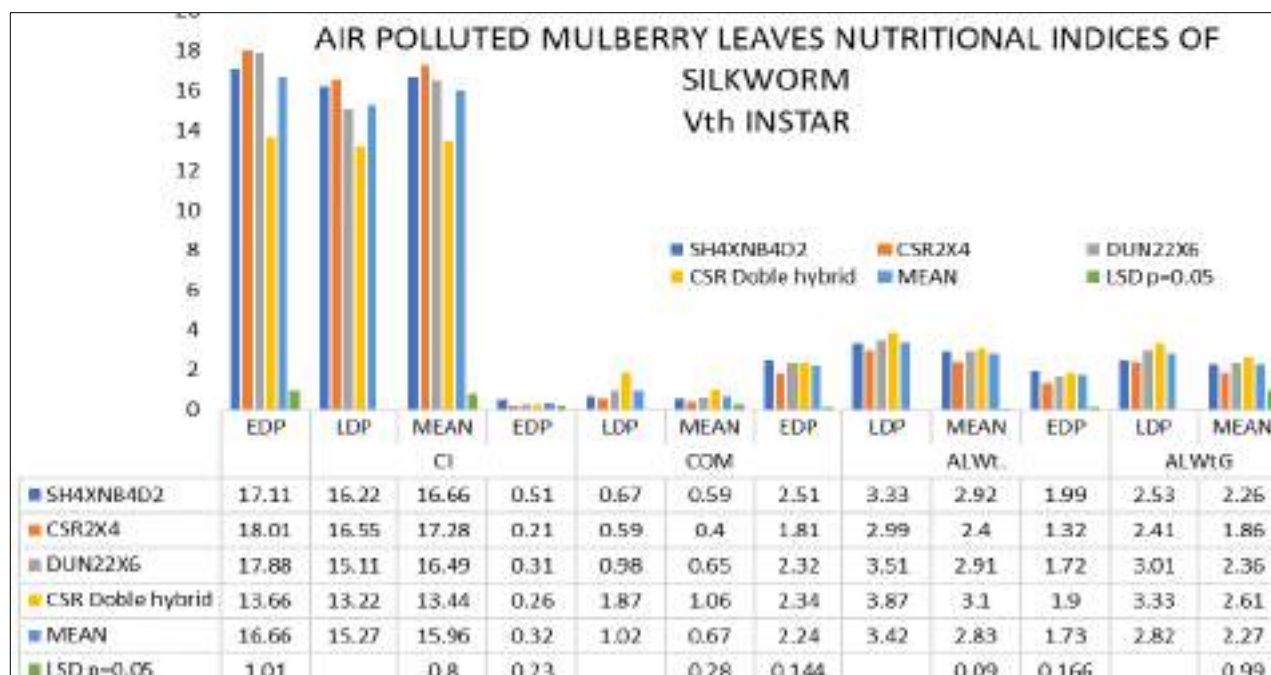
amounts of mulberry leaves contaminated with dust, their food assimilation decreased. Comparing larvae fed LDP and EDP mulberry leaves, a consistently higher growth rate was observed in the latter group during both the fourth and fifth instars.

In the fourth instar, larvae of DUN 22 × 6 showed the highest reference percentage value (2.38 g) when fed with EDP leaves, while those of CSR double hybrid displayed the lowest (1.54 g) when fed with LDP leaves. Similarly, in the fifth instar, larvae of CSR × 4 exhibited the highest reference proportion value (2.45 g) when fed with EDP leaves, whereas CSR double

hybrid larvae displayed the lowest (1.47 g) when fed with LDP leaves. Notably, comparing larval groups fed LDP and EDP mulberry leaves, the latter exhibited faster growth rates. For instance, SH6×NB4D2 larvae (20.38) showed a significantly higher growth rate in the fourth instar when fed LDP leaves, whereas CSR double hybrid larvae (15.16) exhibited the lowest growth rate when fed EDP leaves. Conversely, in the fifth instar, DUN 22 × 6 larvae (13.87) displayed the highest growth rate when fed LDP leaves, while CSR double hybrid larvae (10.04) showed the lowest growth rate when fed EDP leaves.



**Fig 1:** Effect of air Polluted Mulberry Leaves on the Nutritional Parameters of Silkworm Larvae in the IV<sup>th</sup> instar stage



**Fig 2:** Effect of air Polluted Mulberry Leaves on the Nutritional Parameters of Silkworm Larvae in the 5<sup>th</sup> Instar

One key physiological foundation that illustrates how the leaf transforms into the silkworm's body is the ability to digest food. The maximal ingested food change ability (IFCE) was seen in the silkworm groups fed low-dust mulberry leaves, as opposed to the larvae groups fed high-dust-contaminated mulberry leaves. This framework aligns with the previous one. In the fourth instar, CSR double hybrid larvae (116.53 g) fed with LDP leaves exhibited the highest instantaneous growth rate efficiency (IFCE), whereas DUN 22 × 6 larvae (63.37 g) fed with EDP leaves displayed the lowest IFCE. Larvae of DUN 22 × 6 (94.40) were found to have the largest IFCE in the fifth instar when they fed on LDP leaves, while the larvae of CSR2 × 4 (68.21) showed the lowest IFCE when they fed on EDP leaves. The rate of food ingested and the larvae's mean weight growth throughout the feeding phase are related by the

expended index. When compared to the larvae that were fed mulberry leaves with minimal dust contamination, Observed Expended Index was higher in silkworm groups that were fed highest amount of dust-contaminated leaves. In the fourth instar, CSR2 × 4 larvae (26.70) fed with EDP leaves demonstrated the highest Consumption Index, whereas CSR Double Hybrid larvae (15.76) fed with LDP leaves exhibited the lowest Consumption Index. CSR2 × 4 larvae (17.66) had highest Consumption Index in fifth instar when they fed on EDP leaves, while CSR Double Hybrid larvae (12.30) had lowest Consumption Index when they fed on LDP leaves. The coefficient of intake reflects the metabolic activity associated with the conversion of mulberry leaves into larval biomass. When fed low levels of dust-infected mulberry leaves, silkworm larvae showed an increased coefficient of



metabolism; when fed significantly contaminated mulberry leaves, silkworm larvae showed the lowest coefficient of ingestion. During the fourth and fifth instars, the CSR Double Hybrid larvae (2.03 and 1.76) showed the highest coefficient of ingestion while feeding on LDP leaves, whereas the CSR2  $\times$  4 larvae (0.12 and 0.15) showed the lowest coefficient of ingestion when feeding on EDP leaves.

The CSR Double Hybrid larvae displayed notably higher average larval weights. In both the fourth and fifth instars, DUN 22  $\times$  6, SH6 $\times$ NB4D2, and CSR2  $\times$  4 were provided with mulberry leaves contaminated with moderate levels of dust. Among these, CSR2  $\times$  4 larvae exhibited the lowest average larval weight during the fourth instar. Conversely, when fed with mulberry leaves severely polluted with dust, CSR Double Hybrid, SH6 $\times$ NB4D2, and DUN 22  $\times$  6 larvae displayed the lowest average larval weight in the fifth instar.

Furthermore, in the fifth instar, CSR Double Hybrid larvae exhibited the most significant average weight gain when fed with mulberry leaves contaminated with low levels of dust, followed by DUN 22  $\times$  6, SH6 $\times$ NB4D2, and CSR2  $\times$  4. Conversely, CSR2  $\times$  4 and CSR Double Hybrid larvae showed the least average weight gain, while SH6  $\times$  NB4D2 and DUN 22  $\times$  6 larvae consumed the highest amounts of dust-contaminated mulberry leaves during the fourth instar. During the fifth instar, CSR2  $\times$  4 larvae displayed poor average weight gain, followed by DUN 22  $\times$  6, CSR Double Hybrid, and SH6 $\times$ NB4D2 larvae that consumed the largest amounts of dust-contaminated mulberry leaves.

## Discussions

The volume of mulberry leaves (38.2%) influenced by climate (37.0%) is one of key elements that goes into producing silk and cocoons of superior quality <sup>[14]</sup>. Therefore, for the sericulture to produce high-quality silk, the mulberry trees used for rearing must be raised in a healthy environment. Dust is defined as solid matter that is made up of dirt, naturally occurring organic compounds, and man-made metallic components <sup>[15–16]</sup>. On both sides of the road, cars bring in a variety of pollutants and dust particles <sup>[17]</sup>. Particles of road dust act as a natural sink for both organic and inorganic substances, such as heavy metals and hydrocarbon-containing hazardous pollutants <sup>[18]</sup>. Along with heavy metals such as lead, chromium, cadmium, copper, nickel & zinc, road dust particles also include a variety of hazardous metals <sup>[16]</sup>. Concentrations of heavy metals in plants by sides of roadways have significantly increased due to a reckless rush of cars <sup>[19]</sup>. It has been skilfully produced that, because the host plants have a higher lead content than the authority 20, a variety of insect species that feed on roadside plants have accumulated an exceptionally high amount of lead. In Kashmir, there is a chance that mulberry leaves tainted by road dust will come from both late-age rearing carried out at farmer's level & commercially rearing centres run by government. The results of a recent study clearly show that mulberry plantations near heavily travelled National Highway 1A are subject to significant air pollution from things like vehicle exhaust, particulate matter, and dust from the road.

Research on education shows that feeding mulberry leaves polluted with dust has a significant impact on the silkworm's nutritional structure. The silkworms' lack of interest in the dust-contaminated mulberry leaves may be the cause of the decrease

in the amount of food that the larvae digested in both the fourth and the fifth instars. Reduced inclination of silkworm larvae towards contaminated mulberry leaves prepares other food sources for contamination by mulberry leaves polluted with dust. Amount of food that was assimilated reduced as a result of less food being consumed.

The reference proportion in the silkworm groups that were fed the largest amount of dust-contaminated mulberry leaves was discovered to be particularly large, indicating the silkworm larvae's declining capacity for absorption and digesting. The reference percentage indicates that the larvae consume more mulberry leaves in order to receive the nutrients that would be available from less mulberry leaves in the event that the leaves were dust-free. In addition, it was discovered that the mulberry leaves polluted the silkworm's digestive system, reducing its capacity to absorb more nutrients from leaf debris. Effect of polluted mulberry leaves on silkworm larvae's expended index serves as additional evidence of the mulberry leaves' nutritional deficiency. Because the larvae require a considerable amount of contaminated leaves to reduce larval biomass, more leaves must be provided for the larvae to eat, raising the cost of culture and lowering the amount that can be profitably produced. These findings are in line with existing research indicating that nutritional traits and quantity play a significant role in various biological processes, including rates of biochemical and physiological processes <sup>[21–22]</sup>. Ultimately, these traits can also impact larval characteristics or the quantity of cocoon crops in silkworms. This may reveal the effects of mulberry leaf contamination with road dust on the nutritional structure and biochemistry of the leaves, which provide vital nourishment for silkworms. The contamination of mulberry leaves had a consequential impact on these nutritional activities, causing a decline in the organization of silkworm larvae, thereby resulting in reduced average weight and weight gain. Given its influence on the functioning, development, and growth of silkworm larvae, which subsequently affects silk production, the effect of contaminated mulberry leaves on the organization of silkworms is paramount. Research indicates that tfinal indices to appraise the nutritional composition of a hybrid or variety of silkworm and to gauge quantity of feed utilized are the organization of change of ingesta and digesta <sup>[23–27]</sup>.

The analysis of how road dust affects mulberry leaf properties raises serious questions about the leaf's suitability for silkworm rearing. The silkworms' diet of heavily dust-contaminated mulberry leaves has a markedly negative impact on their growth, digestion, and conversion organization. The mulberry leaves' decreased appealing qualities and the challenging conditions the larvae encountered when eating could be the cause of the decrease in food digestion and the alteration in the silkworm's organizational structure. Given that the silkworm eats on the greatest amount of food during its fifth instar, the effects of the extremely dust-contaminated mulberry leaves were first observed in the fifth instar. This fifth instar, which culminates in the silkworms' productivity of the cocoons & determines success or failure of crop, might negatively affect silkworm's productivity due to its reduced growth & altered organization. These results support a study that found that dust-contaminated mulberry leaves induce silkworm mortality, raise the vulnerability of the worm to microbial diseases, and pollute the worm's larval, silk, and cocoon quality <sup>[28]</sup>.



The digestive process, organizational changes, and diminished larval growth observed when feeding silkworms EDP leaves illustrate the adverse impacts of dust particles, which are directly linked to the quantity of dust inhaled by the larvae along with the leaf material. The decreased growth of larvae consuming mulberry leaves contaminated with dust could indeed have repercussions on crop productivity and the profitability of the resulting products.

The same findings were acknowledged in a study of mulberry plants near NH-34 in West Bengal<sup>[9]</sup>. According to the study, there are mulberry varieties that are good for growing in contaminated areas and that can help with the challenges of raising silkworms in these harsh situations. Although some information exists about the harmful effects of air pollution components, such as polynuclear aromatic hydrocarbons<sup>[29]</sup>, fluorides<sup>[7, 30-33]</sup>, and sulfur<sup>[30]</sup>, little is known about the impact of road dust and its toxic constituents, such as lead, cadmium, etc., on mulberry and silkworms. Therefore, it is crucial to cultivate mulberry plantations away from roadways to better understand leaf characteristics. In regions like Kashmir, where mulberry cultivation often occurs alongside roads and serves as a primary source of leaves for sericulture, the automobile and tourism sectors are rapidly expanding. Consequently, mitigating the hazardous effects of dust pollution on mulberry and silkworm rearing is essential to rejuvenating the state's struggling sericulture industry over recent decades.

## Conclusion

A recent study conducted at CSR & TI, Pampore, Kashmir, India, in the spring of 2013 aimed to assess the impact of road dust-contaminated mulberry leaves on various nutritional indices of silkworm hybrids including SH6 × NB4D2, CSR2 × CSR4, DUN22 × DUN6, and CSR double hybrid. The findings revealed that dust-contaminated mulberry leaves led to a decline in the digestive process, alterations in larval organization, and reduced growth of silkworm larvae during both the fourth and fifth instars, with more significant effects observed in the latter stage. Furthermore, it resulted in mature larvae experiencing weight loss, potentially impacting silk production. Given that sericulture units heavily rely on mulberry cultivation alongside roads, the adverse effects of road dust-contaminated mulberry leaves on the nutritional intake and growth of silkworm larvae pose significant concerns. Consequently, addressing the potential hazards posed by tainted mulberry leaves on silkworm rearing is imperative. Developing a range of treatment and management techniques is necessary to mitigate these adverse effects and foster the growth of this vital industry. Only then can the sericulture sector realize its true potential.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## India's contribution to sustainable development: a comprehensive analysis

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### Abstract

Development that is sustainable is one which satisfies current demands without jeopardizing the prospects for future generations to fulfil their dreams. Concept of security can be defined in many unique ways, but at its core it is a way society has evolved to balance many specific and competing needs for recognition of the environment we face socially financial limits. A sustainable city is one that uses management and urban planning to improve its environmental impact. To define an Eco city, think of a green spaces, solar powered buildings, residential gardens, and more pedestrians. This is not always a dream for the future. Smart cities are going green. Urban ecosystems and higher environmental monitoring. There is a link between biodiversity and ecosystems. Ecosystems consist of many organisms that interact with each other and their environment. Biodiversity underpins, among other things, the good functioning of ecosystems, helping to determine the species that are likely to live around ecosystems, as well as the capabilities of these species and their interactions with other species. United Airlines International Airport uses the term “education for sustainable development” (ESD), which is defined as education that fosters changes in values, character, knowledge, skills, and resources in order to improve human well-being and ease of living. The purpose of sustainability education is to support and help current and future students meet their financial, social and environmental needs with balance and coordination.

**Keywords:** sustainable development, environment, biodiversity, ecosystem and education

### Introduction

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs.” There are numerous ways to define the idea of sustainable development, depending on its core. It is a development strategy that strives for sustainability; it is an attitude that runs counter to our knowledge of the social, cultural, and economic environments that our society faces. Development is frequently motivated by a particular need rather than giving the larger context or potential consequences more thought. Damage from this has already been demonstrated, ranging from the global financial crisis brought on by careless business to climate change brought on by our reliance on fossil fuel goods for storage. We're taking action now because the more time we pursue unsustainable growth, the more detrimental the effects will be. Environment Sustainable development involves a number of processes, one of which is living within environmental restrictions. Climate change is one of the effects of not doing this. However, sustainability is not just about the environment. It also involves

building a robust, wholesome, and compassionate society. This demonstrates ability of group to meet the many expectations of all its members, now and in the future, by promoting personal health, relationships and inclusion, and by promoting equality. This is not always the case; Sustainability is about finding better ways to work for the future and for now. We may have changed our jobs and our lives, but this does not mean we live less. Sustainable development can bring many benefits in the short and medium term, such as: Exercise and childbirth - switching to walking or short cycling will save you money and strengthen you compared to health and is usually short. And it's easy. How does this affect me? The way we create affects everyone. As in life, our choices have real consequences on people's lives. For example, poorly planned communities can reduce the quality of life of the people living in them. Sustainable development provides a way to create better options for addressing the problems that affect our lives. For example, we can increase public access to nutrition, health and recreation services by integrating health services into new social development plans. How can we do this? Everybody has

a part to play. Small actions can also be conveyed to the actual exchange. However, we believe that the government must take the lead to ensure security. SDC's activities help achieve this, and we do this by combining analysis, advice and institutional capacity building for sustainability.

Sustainability is the principle of the organization that wants to realize the dream of development of humanity while preparing herbal formula to provide people with the necessary medical products, green and ecosystem products. The most important requirement is a society where resources and environments suitable for human needs are offered without jeopardizing the integrity of the planet or the natural order. The goals of sustainable development are prosperity, environmental stability, and stability in economic development.

**Environmental Characteristics of Sustainable Towns.** Sustainable towns are places where urban management and planning have a greater environmental impact. An Eco city is characterized as having gardens, parks, and green spaces in addition to solar-powered buildings with a higher proportion of bicyclists and pedestrians than automobiles. This isn't a fantasy from the future. More sustainable urban ecosystems and greater environmental stewardship are the direction that smart cities are taking. The natural environment's ability to persist, remain diversified, and produce is known as environmental sustainability. Since the environment provides natural resources, the state of the air, water, and weather is also a given. Communities that want to be environmentally sustainable must create sports that fulfil people's needs while upholding an environmentally friendly way of life. This covers things like renewable energy, sustainable resources (such wood from forests harvested at a price that maintains biomass and biodiversity), and sustainable water use.

When all natural resources, or natural capital, are being used up more quickly than they can be restored. In order to be sustainable, humans must use natural resources as efficiently and as renewable as possible. There is a connection between the ideas of athletic talent and ongoing development. The failure of the environment to support human existence is the ultimate result of environmental deterioration, according to the law. Biodiversity and Environmental Products. There is a link between biodiversity and ecosystems. Ecosystems consist of different organisms that interact with each other and their environment. In addition, biodiversity forms the basis of the good functioning of ecosystems by determining the species that can live in the environment, their abilities and their interactions with other species. Fishing quotas, cooperative water management, and a decrease in waste and consumption are only a few of the adjustments that human civilization has to make, and permaculture helps with these. Not only is biodiversity essential for the regular survival of plants, animals, and other living things, but it also greatly enhances human well-being. **Human Management Inputs and Impacts.** Population and characteristic-based effects determine how society as a whole or a particular group affects the environment; this puts strain on resource-intensive, intricate processes. The extent of human advantage in comparison to ecosystems' carrying capacity, whether or not it is present, is

concerning. The structure of labour, family and personal nutritional needs, and economic activities like agriculture, manufacturing, and trade can all benefit from effective resource management. Crops and goods are also positively impacted by it. Human consumption is the primary factor contributing to man's immediate effect on the environment. Through mitigation, the production, use, and disposal cycle as a whole can be made environmentally friendly in addition to reducing this impact. The consumption of products and products can be determined and managed in everything from the consumption chain, starting from the result of personal life choices and consumption patterns, the demand for useful resources for certain products and services, the impact of work, integration. Transfer of the national economy to the world economic system. The main aid categories for human needs are food, energy, biomass and water. Sustainable Improvement Goals Sustainable Improvement in School Education. Sustainable Development (ESD) is a term used in the United States. Attitudes and attitudes towards people create security and justice. Education for Sustainability aims to support and help current and future generations achieve economic, social and environmental sustainability through the combination of equity and inclusion that meets their needs. Today's environmental problems and aims to introduce new ways of changing the biosphere, as well as involving people in solving society's problems involving them. Answer Education Encyclopaedia, this education is seen as an attempt to "change the knowledge of the existence of a moral relationship that considers the relationship between humans and the world medicine green" in order to provide future environmental services to community stakeholders. Knowledge and understanding of responsibility for sustainable development. UNESCO defines education for sustainable development as including important development issues into instruction and learning. Advice on issues like biodiversity, poverty alleviation, changing the climate, reducing the likelihood of disasters, and health could fall under this category. Education and training that encourages and enables newcomers to modify their behaviour and take actions for sustainable development should also be a part of it. Thus, ESD can improve abilities such as thinking rationally, considering important situations, and choosing to cooperate. Sustainable Development Planning Sustainable Development Goals (SDG 4 School Education) the 2030 Sustainable Development Table, created by the United Nations for peace now and in the future for the same People, the world and civilization, is a common map. The 17 Sustainable Development Goals (SDGs) that serve as an urgent call to action for all nations to advance and expand global collaboration are at the centre of it all. They understand that battling climate change, preserving our oceans and forests, and promoting economic growth must all be done in tandem with measures to end poverty and various other injustices as well as to enhance health and education. The Sustainable Development Dream (SDG) shows the activities we need. They apply this to all countries and agree to ensure that no one is left behind. 17 Sustainable Development Goals (SDGs) that will change our world.



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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Artificial intelligence in education and its effect on economic growth

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### Abstract

A multinational organization called the Global Partnership on Artificial Intelligence is made up of a variety of stakeholder groups, such as governments, businesses, trade associations, and specialists. The European Union, the United Kingdom, the United States, Austria, France, Canada, Germany, Italy, India, Japan, New Zealand, Mexico, South Korea, Singapore, & Slovenia are the founding members. Sweden, Belgium, Denmark, Israel, Czech Republic, & Ireland joined in 2021, following the countries of Brazil, the Netherlands, Poland, and Spain in 2020. The application of artificial intelligence (AI) & machine learning in critical industries including healthcare, banking, manufacturing, and transportation is a natural consequence of advancements in computer science & digital technology. The growing application of these technologies in various industries has raised concerns about potential effects on economic variables. Encoding various particle behaviours and tracking their minute variations over time offers physicists a wealth of AI modelling analysis and interpretability, enabling them to get deeper mathematical computation insights and more precisely encapsulate their observations.

**Keywords:** artificial intelligence, economic growth, innovation, human intelligence

### Introduction

GPAI was launched in June 2020 as a multi-stakeholder initiative on artificial intelligence (AI). All G-7 nations, including the EU, are GPAI members. India joined as a founding member in 2020. Machines with particular human intelligence traits, such as learning, perception, reasoning, problem-solving, linguistic interaction, & even creative output, are known as artificial intelligence (AI) systems. AI has been incorporated into the field of education throughout the last ten years. Schools are using it to organize student performance data more efficiently. For instance, the Nipun Assessment Test in Uttar Pradesh uses artificial intelligence (AI) to evaluate the abilities of 1.6 crore pupils in grades 1 through 8. First, proliferation of computers and chips have given way to vast quantities of cheap and affordable computation power. Computing millions of operations at once is now slow, and graphical processing units have opened up new frontiers in parallel processing. Second, data storage has become cheaper and more affordable - terabyte computers are now standard for every household. Further, the internet has allowed data to be collected and stored in useful manners for analysis. The application of this technology has been ubiquitous. Voice recognition in your phone, autonomous vehicles on the road, and advertisement recommendation abilities are now rooted in these AI technologies, and many more companies are joining forces to commercialize these artificial intelligent systems.

### AI in education

Given the significance of fostering children's AI talents, the CBSE has made AI a skill module for grades 6 through 8 and a skill topic for grades 9 through 12. Furthermore, a number of organisations are developing virtual assistants to help parents, instructors, and students learn and teach more effectively. These days, a wide range of application cases are witnessing several of these projects.

The following are some possible applications for generative AI:

- Using virtual assistants, parents can choose activities to help improve their child's reading and comprehension abilities. For instance, parents can have their children read aloud stories or have them narrated by the AI. This can be especially helpful for parents who wish to be active in their child's education but are illiterate.
- Rather than spending hours reading through various resources, teachers can follow the recommended guidelines for instruction with the aid of generative AI. By referring to a selection of carefully picked materials and expert insights, a virtual assistant built on generative AI can help a teacher organize innovative and interesting classroom activities and recommend strategies that might be effective in a classroom context.
- In addition to helping with text-to-speech, speech-to-text, and text-to-speech translations, generative artificial intelligence can also modify the tone and cultural context

of the translation. This will contribute to the inclusiveness of education for kids from diverse socio-cultural and linguistic backgrounds.

- Because this technology can adjust to each kid's individual needs, it can be very beneficial in early childhood education, where each child learns at a different pace and with different techniques, when used with the guidance of a caring adult (teacher, parent, or community member). Teaching fundamental language skills and fostering the development of literacy and numeracy foundations can benefit from it.

### **Artificial intelligence: opportunities and challenges**

The effects of artificial intelligence (AI) are being seen both locally and globally. The way people live, work, and communicate with one another is probably going to change as a result of artificial intelligence platforms like Chat GPT and Open AI, among others. It will have an effect on various industries in the US, the Asia-Pacific area, and other countries, ranging from corporate finance, retailing, entertainment, pharmaceuticals, and medical to commerce. Artificial intelligence (AI) has the potential to transform patient treatment and diagnostics in the pharmaceutical and medical industries. AI may make it easier and faster for medical professionals to recognize medical indicators. Hospital administrators, physicians, and nurses can enhance the medical care delivery system. Additionally, through the arrangement of medical records, AI could enhance hospital revenue-generating systems. It might speed up the processing of medical test findings, provide physicians and other healthcare professionals more autonomy and improve workflow, enhance patient-doctor relationships, and free up more time for doctors and nurses to spend with patients. Furthermore, multidimensional imaging can be used by doctors to direct and enhance surgical treatments. It might result in lower expenses, better results, and a more effective and productive healthcare delivery system. Faster data analysis and diagnosis can be provided by an AI tool like IBM Watson. AI machine learning algorithms can reduce medical costs along the medical value-added chain by processing massive amounts of data more quickly and enabling more precise and targeted therapy.

### **What is the relevance of physics to AI as a discipline?**

Since AI can benefit from so many physics applications, it doesn't take long to recognize the importance of this scientific field. The Higgs Boson Particle, sometimes known as the God Particle, was one of the most important discoveries in physics and was found utilizing an artificial intelligence neural network to help detect intricate patterns in particle collisions.

While AI specialists simply state image processing, physics scientists also use terminology like gravitational lensing for analysis of images utilizing neural networks to dig out classifications to finer degrees of precision. Geek speak is a constant problem in interdisciplinary fields since it frequently perplexes business executives who are unable to understand the meaning of the phrase.

Furthermore, a lot of well-known physicists claim to have been instrumental in the advancement of artificial intelligence, therefore there is rivalry friction in these fields as well excuse the pun.

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### **How AI will affect physics?**

I should note that there is no doubt that machine learning and artificial intelligence will become essential components of physics education and research before I delve into the consequences of those topics. Nevertheless, much like artificial intelligence plays a role in human culture, we have no idea how this new and quickly developing technology will ultimately impact physics, any more than our forebears knew when transistors and computers were being built in the early 1950s. What is certain is that, as technology advances, artificial intelligence will have a significant and constantly changing effect on physics.

### **AI and economic growth**

"The capability of a machine to imitate intelligent human behavior" or "an agent's ability to achieve goals in a wide range of environments" are two definitions of artificial intelligence (A.I.). These definitions instantly make me think about basic economic problems. What would happen, for instance, if artificial intelligence permitted an ever-growing number of jobs that were previously completed by human labor to be automated? The application of artificial intelligence (A.I.) in routine manufacturing processes could have an effect on income distribution and economic growth.

AI and Production Automation can be seen as the driving force behind economic advancement during the past 150 years. During the industrial revolution, many production processes were automated using steam and then electricity. Semiconductors, transistors, and relays carried on this pattern. Rather than a clear rupture, artificial intelligence might be the next stage of this process. From MRI equipment, computer-controlled car engines, and autopilots, self-driving automobiles and artificial intelligence radiological reports would be a logical development. Automation has mostly impacted routine or low-skilled jobs until recently, but it looks like A.I. may automate more non-routine, cognitive jobs carried out by highly qualified humans.

### **Factors which cause economic growth**

A rise in the amount or quality of one of the production elements, or in the effectiveness of their use, is what drives economic growth. As an illustration: increasing the labor force and raising its quality as a result of greater education. This could be the result of increased participation rates, migration, or birth rates. enhanced technology, which produces more. This indicates a more effective use of resources. Increased investment to support economic expansion. Purchases of additional machinery will raise output. finding new resources, like oil. Business incentives like tax rebates or subsidies.

### **Employment physics**

Workplace In 2015, almost two million individuals were employed by companies with a physics foundation. Eighty-six percent of these work for companies in the industrial, transportation, information and communications, or professional, scientific, and technical services sectors. Manufacturing & retail both have higher employment rates than other industries: in 2015, they employed about 2.5 million and 3 million people, respectively. Because physics-based firms are knowledge- and technology-intensive, their

productivity is higher than that of many other industries.

### Implications of AI innovation on economic growth

Increases in productivity should result from the process of learning via experience and repetition, opening up possibilities for economic progress. According to Arrow (1962), technical progress results from knowledge and experience being translated into new physical capital that enters the production process and raises "productive efficiency." Review of the literature A large portion of the literature now available on technology & economic growth relies on endogenous growth models. Technology is a "by-product of ordinary production," according to Arrow (1962), who refers to this process of knowledge acquisition as "learning-by-doing." This line of reasoning is followed in the literature on technology & growth, which assumes that technological advancement raises capital productivity. Adoption of technology reduces labor costs and raises capital intensity in the production process. If technology boosts output, it is then accepted; yet, not all nations can keep on top of the technological frontier because technology demands more capital. Differences in overall output and productivity are a consequence of the variations in technological levels throughout nations.

### Large effects of AI on economic growth

The advent of generative artificial intelligence (AI) in recent times prompts one to wonder if task automation is about to pick up speed, leading to labor cost reductions and increased productivity. Although there is a great deal of ambiguity around the potential of generative AI, its capacity to produce content that is indistinguishable from output made by humans and to lower barriers to communication between humans and computers represents a huge breakthrough with potentially enormous macroeconomic implications.

The job market may experience major disruption if generative AI lives up to its hype. We discover that around two-thirds of present employment are subject to some level of AI automation using data on occupational tasks in both the US and Europe. Additionally, we find that generative AI has the potential to replace up to one-fourth of existing work. Based on a global extrapolation of our projections, generative AI may result in the automation of 300 million full-time employment.

### The impact of AI on employment

As artificial intelligence (AI) develops, the cost of automation will gradually drop, replacing human labor with machine labor. Actually, the problem of robots replacing human work due to technological advancements is not new. Numerous economists have been studying this subject in-depth ever since industrialization began in the late 18th century, trying to determine if technical innovation increases or decreases employment. The evidence that is now available suggests that technological innovation may affect employment in two ways: negatively by inhibiting it, and positively by providing new jobs. Technological innovation reduces work opportunities by increasing labor productivity and replacing a portion of labor. Schumpeter, for instance, suggested that process innovation will have a saving effect that will lead to a decrease in demand for labor and an increase in unemployment, while technological creativity and efficiency improvements will temporarily increase demand for the primary factors utilized to produce

new products. On the other hand, through capitalization effects, technical growth also creates jobs. As a result, the cost of lost job opportunities resulting from capitalization has already been paid; additionally, the present value of profits increases and the efficient discount rate of future earnings decreases with quicker technological improvement. Businesses will increase the size of their industrial operations and create more jobs in order to optimize profits.

### Conclusion

In conclusion, there are certain parallels between machine learning and physics. Accurate observation is the main goal of both fields, and both develop models to forecast observations in the future. One phrase that physicists frequently use is co-variance, which basically emphasizes independent thinking by saying that physics should be independent of the type of rule applied or the type of observers involved.

Einstein stated this best in 1916 when he said: "The general laws of nature are to be expressed by equations which hold good for all systems of coordinates."

### Acknowledgement

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Role of AI in global partnership

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### Abstract

In the Global Partnership on Artificial Intelligence (GPAI), the role of AI is covered in the document that is presented. The goal of the multi-stakeholder GPAI initiative, which was introduced in June 2020, is to close the gap between AI theory and reality. It brings together professionals from a range of fields, including academia, government, business, science, and civil society in order to promote global collaboration on AI-related issues. The paper outlines the values and principles guiding the GPAI, the process for countries to join, and how experts can participate. Furthermore, it highlights the inauguration of the GPAI Summit in India by Prime Minister Narendra Modi, emphasizing India's commitment to AI innovation and responsible development. The Prime Minister discusses the significance of AI in India's development, its potential benefits, and challenges. He stresses the importance of making AI inclusive, transparent, and trusted, while also addressing ethical considerations and the need for global collaboration in AI governance.

**Keywords:** global partnership on artificial intelligence, GPAI, AI research, international cooperation, responsible AI development, AI innovation, AI inclusion, AI transparency, AI challenges

### Introduction

#### What is global partnership on artificial intelligence?

It began with fifteen members in June 2020. According to the description, the Global Partnership for artificial intelligence is the "fruition of an idea developed within the G7." This multi-stakeholder artificial intelligence (AI) project seeks to bridge "the gap between theory and practice on AI" by funding innovative research on AI-related goals as well as practical applications. The initiative brings together specialists from a variety of areas, including research, industry, civil society, governments, international bodies, and academia, on a single platform to facilitate international cooperation on artificial technology.

#### At Present, GPAI has twenty-five member states

The Republic of Korea (south Korea), Singapore, Slovenia, Spain, Sweden, The United Kingdom, The United States, Belgium, Australia, Brazil, Czech Republic, Canada, France, Denmark, India, Germany, Ireland, Japan, Israel, Mexico, Italy, the Netherlands, Poland, New Zealand, and Vietnam.

#### Our values

Above all, a common dedication to the principles outlined in the OECD Recommendation on Artificial Intelligence unites members and participants of GPAI. All GPAI initiatives aim to promote ethical AI development based on the following values: economic growth, inclusivity, diversity, human rights, and creativity.

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#### Principles for responsible stewardship of trustworthy AI

Sustainable development, inclusive growth, and well-being  
Fairness and human-centered principles  
Openness and comprehensibility  
strength, safety, and security,  
Responsibility.

#### National policies and international cooperation for trustworthy AI

- Making research and development investments in AI
- Establishing an AI-friendly digital ecosystem
- Creating a legal framework that supports AI
- Developing human potential and getting ready for changes to the job market
- Global collaboration for reliable AI

#### What is the process for countries to join GPAI?

All nations, particularly emerging and developing nations, are welcome to join GPAI. Those interested in applying should get in touch with the GPAI secretariat and send in an application that includes a letter of intent outlining their goals for joining and verification that they support the common ideals embodied in the OECD Recommendation on AI or, in the case of those who do not, the AI principles listed in Annex A of the GPAI Terms of Reference.

#### How can experts participate in GPAI?

Experts from a range of fields, including science, business, civil society, and regional or global organizations, are given opportunity to participate in GPAI. Experts are chosen on an

individual basis; they do not speak for their organization or nation. For a period of three years, experts may be nominated by GPAI members or may choose to engage in GPAI on their own.

PM inaugurates annual global Partnership on artificial intelligence (GPAI) Summit "In India, we are witnessing an AI innovation spirit".

Today at Bharat Mandapam in New Delhi, the Prime Minister, Shri Narendra, officially opened the Global Partnership on Artificial Intelligence (GPAI) Summit. The global AI expo was also toured by the prime minister. GPAI is a multistate holder initiative that has 29 member nations and aims to encourage innovative research and applied initiatives on AI-related objectives in order to close the gap between theory and practice in the field. In 2024, India will serve as GPAI's lead chair. Speaking to the assembly, the prime minister said he was happy that India will be hosting the GPAI Summit the next year, during a global discussion on artificial intelligence. Noting both the rising positive and bad aspects, the prime minister emphasized the duty placed on each nation and recalled meeting with a number of AI sector experts and having conversations about the GPAI Summit. He said that artificial intelligence (AI) has affected all nations, no matter how big or little, and advised exercising caution going forward. Prime Minister Modi emphasized that the conversation at the GPAI Summit will provide guidance and safeguard humanity's core values.

According to the prime minister, India is currently leading the world in AI talent and AI-related concepts. According to him, there is a strong AI spirit in India, as young people there are exploring and developing the limits of AI technology. The prime minister stated, referring to the displays in the AI exhibition at the summit that these young people are attempting to use technology to bring about societal change. The Prime Minister gave information about the recently released AI chatbot for agriculture, which will support farmers in a number of ways. The Prime Minister went into further detail regarding the use of AI to the Sustainable Development Goals and the healthcare industry.

The Prime Minister stated that "Sabkha Sath Sabkha Vikas" is India's development motto, emphasizing that the government has created its policies and initiatives with the idea of AI for all. According to him, the government is committed to using AI responsibly and ethically while also working to maximize its potential for inclusive growth and social development. The Prime Minister announced plans to start a national artificial intelligence program and the soon-to-be-launched AI Mission, which seeks to determine AI's computational capabilities. According to the Prime Minister, this will boost AI applications in the fields of education, healthcare, and agriculture as well as offer startups and innovators in India better services. He also recommended using educational training institutes to bring AI-related capabilities to tier 2 and tier 3 cities. The Prime Minister discussed the AIRAWAT program when discussing India's national AAI portal, which supports AI activities. He also announced that the shared platform will soon be available to all research labs, industries, and startups.

The PM emphasized that artificial intelligence (AI) is becoming the primary tool for shaping the new future. AI guarantees social justice and equality in addition to economic growth because it can connect individuals. In his statement,

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"the more inclusive the development journey of AI, the more inclusive will be the results," he underlined the importance of making AI more inclusive. He brought up the unequal access to technology over the past century, which has accentuated social inequality even more. The Prime Minister urged that democratic principles be upheld in technology to make it an inclusion multiplier in order to prevent this. "Direction of AI development will totally depend on human and democratic values. It is up to us to keep a place for emotions along with effectiveness",

The prime minister underlined that transformative, transparent, and trustworthy systems are necessary for any system to be sustainable. "We need to make AI more transparent, but there's no denying that it has the potential to be transformative." He stated that maintaining impartiality and transparency in the data being used will be a good place to start. According to him, it is crucial to guarantee that no nation would lag behind in the advancement of artificial intelligence. Only until associated ethical, economic, and societal issues are resolved will confidence in AI increase. Making reskilling and upskilling a part of the AI growth curve is one approach to do this, he suggested. Assuring the global south and protecting data will also allay a lot of worries. The Prime Minister emphasized the drawbacks of artificial intelligence by stating that while it may be the most powerful instrument for progress in the twenty-first century, it could also be the primary cause of its demise. Prime Minister Modi outlined the difficulties associated with deepfake, cyber security, data theft, and terrorist groups obtaining artificial intelligence tools, emphasizing the necessity for countermeasures. He clarified India's plan to establish a framework for responsible, human-centric artificial intelligence governance during the country's G20 leadership and stated that all member nations have reiterated their commitment to the "AI Principles" in the G20 New Delhi Declaration. He placed a strong emphasis on cooperation, similar to the agreements and protocols on a range of international issues, and on developing a framework for the moral application of AI, which includes the testing and creation of frontier or high-risk AI tools. The Prime Minister urged everyone on the planet to move forward without wasting any time at all, highlighting the need of conviction, commitment, coordination, and cooperation. "We have to complete the global framework within a given time limit. It is very important to do this to protect humanity",

He continued as a global movement, Nothing AI, the Prime Minister emphasized the importance of cooperation. In order to increase the credibility of AI, he proposed a few issues that have yet to be resolved, including data sets for training and testing AI tools and the amount of time that must pass testing before a product is released onto the market. Inquiring as to whether software watermarks could be used to identify any data or product as artificial intelligence (AI) generated speaking to government stakeholders, the prime minister encouraged them to investigate the data of different programs for evidence-based decision making and see whether the data could be utilized to train artificial intelligence (AI) technologies. He inquired as to whether an audit system that could classify AI tools into red, yellow, or green categories based on their capabilities existed "can we establish an institutional mechanism that ensures resilient employment? Can we bring standardization global AI

education curriculum? Can we set standards to prepare people for an AI-driven future?”, the Prime Minister continued.

The Prime Minister proposed employing AI to make digital services available in regional languages in order to improve digital inclusion, despite the fact that there are thousands of dialects and hundreds of languages spoken in India. Additionally, he proposed utilizing artificial intelligence (AI) to bring back the languages that are no longer in use, preserve the huge body of literature and knowledge in Sanskrit, and bring the missing volumes of Vedic mathematics back together. Concluding the address, the Prime Minister expressed confidence that the GPAI summit will prove to be an excellent opportunity for the exchange of ideas and a great learning experience for every delegate. “Over the next two days, you will delve into various aspects of AI. I hope that that the outcomes, when implemented, will definitely pave the way for building a responsible and sustainable future”, the Prime Minister concluded

Among those present on the occasion were Mr. Hiroshi Yoshida, the Japanese government's vice-minister for policy coordination in the Ministry of International Affairs and Communications; Shri Rajeev Chandrashekhar, the union minister of state for electronics, information, and technology; Secretary of the Ministry of Electronics and Information Technology, Shri S Krishan; and Minister of Outgoing Chair of GPAI.

### Artificial Intelligence (AI)

Artificial intelligence is predicated on human insights that can be made such that machines can easily perform activities, ranging from the simple to the genuinely difficult. The ability to learn, solve problems, reason, and perceive are the reasons behind produced insights.

This phrase can refer to any machine that increases efficiency and performs tasks that are associated with human cognition, such as analysis and decision-making.

AI includes tasks in facial recognition, robotics, control systems, scheduling, data mining, and many other areas.

### Advantages of Artificial Intelligence (AI)

- AI is significantly faster than humans in processing large volumes of data.
- AI is capable of working continuously without requiring breaks or relaxation.
- AI is capable of carrying out jobs that humans find too risky or challenging.

### Disadvantages of Artificial Intelligence (AI)

- AI is not as creative or intuitive as humans are.
- AI may not be able to adjust to novel or unexpected conditions because of its programming limitations.
- If AI is not properly trained and programmed, it could make mistakes.

### Human Intelligence (HI)

Human intelligence and behavior are products of past experiences and actions dictated by circumstances and surroundings. And it is entirely dependent on our capacity to alter our environment through the knowledge we have acquired.

It provides a variety of information types. It can offer information on topics pertaining to a specific skill set and area of expertise, such as another human subject or, in the case of locators and spies, diplomatic information they needed to access. After all is said and done, it can provide information about social relationships and interest groups.

### Advantages of Human Intelligence (HI)

- HI possesses emotional intelligence, intuition, and creativity that AI does not.
- HI can adjust to novel and unforeseen circumstances.
- HI can offer moral and ethical factors to weigh while making decisions.
- Human intelligence's (HI) drawbacks
- HI's mental and physical capacities are its limitations.
- HI is prone to biases and is liable to mistakes or bad choices.
- HI slows down processes since it needs to relax and take breaks.
- Comparing human intelligence (HI) and artificial intelligence (AI)
- Over time, both AI and HI can learn and get better.
- It is possible to use both HI and AI to solve difficult issues and make decisions.
- The ability to process and understand data from their environment is shared by HI and AI.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## Need of digital technology in teaching

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### Abstract

Society is becoming more dependent on technology every day. As technology becomes more prevalent in the classroom, teachers need to learn how to use it effectively and efficiently. Few appropriate ways to use technology in the classroom to maintain standards for the teachers are differentiating instruction, facilitating learning, enhancing communication, and facilitating instruction. Once these types of technology are mastered, student performance, creativity, and thirst for knowledge should begin to increase. Nowadays, in the era of smart mobile phones, the children who are using smartphones etc. from the age of 2-3 years, then it becomes necessary that teach them using their favourite means. It is well known that what we see with our eyes, its effect remains on our brain for a long time therefore, learning can be made more convenient by using animation. For this reason it has become very necessary to use technology. Technology has made education more accessible. Those who leave their studies in the middle due to any reason, with the help of digital technology, they can continue their studies further, and apart from this, they can learn many different activities. This paper is brief about the need for digital technologies in education.

**Keywords:** education, student, technology, learning, covid-19

### Introduction

Quality education is one of the fundamental components of the United Nations' 2030 Agenda for Sustainable Development. It aims to ensure inclusive and equitable quality education for all. Digital technologies have emerged as an essential tool to achieve this goal. These technologies have shown a powerful impact on the education system. The recent COVID-19 Pandemic has further institutionalised the applications of digital technologies in education. These digital technologies have made a paradigm shift and revolution in the entire education system. It is not only a knowledge provider but also a co-creator of information, a mentor and an evaluator. Technological improvements in education have made life easier for students. Instead of using contemporary pen and paper, students these days use various software and tools to create presentations and projects. When compared to a stack of notebooks, an iPad is relatively light and in comparison to a heavy book, an e-book is easy to surf through. These methods help in increasing interest in research. Information technology has emerged to disseminate shared knowledge and is a primary driving force behind education reforms. The introduction of new technology-assisted learning tools such as mobile devices, smartboards, MOOCs, tablets, laptops, simulations, dynamic visualisations, and virtual laboratories have altered education in schools and institutions. The Internet of Things (IoT) is

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proven to be one of the most cost-effective methods of educating young brains. It is also a robust mechanism for integrating a world-class learning experience for everybody [1-3].

An increasing number of teachers and students use social media as an essential element of the overall e-learning experience. It is an important site for exchange of information about important topics these days.

Teachers should use technology to enhance their productivity and professional practice. Educators use technology to facilitate a variety of effective assessment and evaluation strategies. Now, not only are students being educated in using computers and other technological tools, but it is almost a requirement for most teachers to be proficient in that area. In addition to having adequate knowledge in their subject area and knowledge in the teaching field, technology and computers have become an integral part of a teacher's job requirements. To maintain standard is important for the advancement of technology in schools. The more the teacher's know about computers and technology; the more they can pass on to their students.

In the last 20 years technology has become the focal point of teaching and learning. Technology has given teachers the opportunity to take learning beyond the classroom and has



begun to reshape their role in the learning process. Traditional classroom has some shortcomings like providing an immediate learning environment, faster evaluations, and more engagement while digital learning tools fulfils these shortcomings.

The globalization of education has already necessitated the application of digital technologies. Online platforms were available for conducting classes, sharing resources, evaluation and managing day-to-day activities of educational institutions. However, the use of these platforms was active. The Covid-19 pandemic has forced institutes to adopt online teaching mode to keep the education system afloat. The developed countries were well prepared to deal with this crisis. However, developing countries worked hard to meet this requirement. Digital technologies have emerged as the saviour of education in this critical time <sup>[5-8]</sup>.

Digital classrooms are defined as using electronic devices or platforms such as social media, multimedia and mobile phones to teach students. With digital technology in education, today's educational scenario has changed for the better or for the betterment. Digital learning is a learning strategy that uses technology to cover the entire curriculum and allows students to learn quicker and faster <sup>[9-11]</sup>.

## Conclusion

Digital technology in the classroom refers to the various software and gadgets that are meant to assist students with special access needs. One of the most effective ways to reduce the number of repetitive, time-consuming duties a teacher must perform is to use technology in the classroom. Educational technology applications can save a lot of time and energy by automating or partially automating day-to-day tasks such as attendance tracking and performance monitoring. Students are taught how to use technology responsibly and strategically, which can help them make decisions and develop self-discipline but this is the main challenge of using this technology. Technology in education can help students to prepare for lifelong learning. These technologies provide students with a virtual world and the freedom to access digital knowledge according to their learning styles. With the help of digital content production tools that optimize teaching and learning, students can study at their own pace. The digital classroom uses electronic devices and software to deliver instruction to students and incorporates technology into education. A traditional classroom is transformed into a digital classroom through computers and the Internet. Students can learn more efficiently and track their progress with the help of technology and sophisticated tools. In the days to come, these technologies will be successfully implemented in education to enhance the digital learning environment and performance of the students. There should be more studies regarding the health hazards effects of excessive use of digital technology. I believe that both digital technology as well as conventional pen and paper method both should use in classroom teaching.

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## Special Issue

# “(Global Partnership: India's Collaboration Initiatives for Economic and Social Growth)”

## वैश्वीकरण के युग में हिंदी की भूमिका

प्रोफेसर सपना भारती

संस्कृत विभाग, दमयंती राज आनंद राजकीय स्नातकोत्तर महाविद्यालय, बिसौली, बदायूँ, उत्तर प्रदेश, भारत

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### सारांश

वैश्वीकरण का अर्थ है विश्वव्यापी पारस्परिक जुड़ाव जो विचार पूंजी वस्तु और लोगों के प्रवाह से उत्पन्न होता है।

वैश्वीकरण एक बहुआयामी अवधारणा है। इसके आर्थिक, राजनीतिक और सामाजिक सांस्कृतिक रूप से रहन-सहन, वेश-भूषा, भाषा इत्यादि पर प्रभाव पड़ रहा है।

अंग्रेजी वर्चस्व के युग में जब दुनिया की कई भाषाएँ लुप्त हो रही हैं ऐसे में हिंदी ने अपने स्वरूप में परिवर्तन लाकर स्वयं को जीवंत किया है। आज हम हिंदी के कई रूप से अवगत हो रहे हैं जैसे-विज्ञापन की हिंदी, खेल-कूद की हिंदी, बोलचाल की हिंदी, फिल्मों की हिंदी, कार्यालयी हिंदी, संचार माध्यम की हिंदी, बाज़ार की हिंदी, मीडिया की हिंदी, तकनीक की हिंदी इत्यादि। अपने परम्परागत रूप से इतर हिंदी इन नए रूपों में खूब पुष्पित वृद्धि पा रही है। इसके अतिरिक्त हिंदी की विदेशी शैलियाँ भी विकसित हो रही हैं।

भारत की सांस्कृतिक पहचान हिंदी भाषा नए दौर में नए स्वरूप में जीवन हुई है। बाज़ार की भाषा बनी हिंदी भारत के कोने-कोने से लेकर विश्व के कोने-कोने तक प्रसारित हो रही है।

मीडिया, तकनीक, इन्टरनेट इत्यादि हर क्षेत्र में हिंदी धूम मचा रही है, लेकिन वैश्वीकरण ने इसके साथ-साथ हिंदी के सामने कई चुनौतियाँ भी कड़ी की हैं। वैश्वीकरण की चुनौतियों से निपटने के लिए आवश्यक है कि हिंदी को जनोन्मुखी, रोजगारपरक, सरल-सुगम बनाया जाए ताकि यह विश्व मंच पर ताकतवर भाषा के रूप में अपनी उपस्थिति दर्ज करा सके।

**मूलशब्द:** बहुआयामी अवधारणा, सांस्कृतिक पहचान, चुनौतियाँ, जनोन्मुखी, विश्व भाषा

### परिचय

#### वैश्वीकरण क्या है?

वैश्वीकरण का अर्थ एक ऐसी व्यवस्था से है जिसके द्वारा विश्व के सभी देशों की अर्थव्यवस्था का एकीकरण किया जाता है उसे वैश्वीकरण कहते हैं।

वैश्वीकरण व्यवस्था विश्वव्यापी है वर्तमान युग वैश्विक का है हम क्या खाते हैं क्या पहनते हैं, क्या सोचते हैं सभी पर वैश्वीकरण का प्रभाव दिखायी देता है हिंदी भाषा अंतर बाज़ार पर अत्यधिक दिखायी पड़ता है हिंदी सभी भाषाओं में अंतरराष्ट्रीय स्तर पर बोली जाने वाली भाषा है जैसे वर्तमान में 50 करोड़ से अधिक लोग हिंदी का प्रयोग बोलने और लिखने में करते हैं किसी भी भाषा के वैश्विक स्वरूप से परिचित होने के लिए यह पता लगाना बहुत ही आवश्यक कि विश्व स्तर पर कितने लोग उसे बोलने में प्रयोग करते हैं इस सन्दर्भ में यदि हिंदी भाषा की बात की जाए तो ज्ञात होगा कि 1931 की जनगणना के पश्चात भारत में लगभग 69% प्रतिशत हिस्से में हिंदी भाषा का प्रयोग किया जाता है।

हिन्द महासागर के मध्य में बसा हुआ देश मॉरिशस। मॉरिशस को लघु भारत भी कहा जाता है। मारीशस का इतिहास बताता है कि 'सत्यार्थ प्रकाश' के आगमन से वहाँ देवनागरी लिपि और खड़ी बोली का प्रचलन हुआ।

#### वैश्वीकरण का हिंदी पर प्रभाव

हिंदी भाषा के प्रचलित कवियों ने कहा कि भाषा तो बहते पानी के

समान है वैसे तो भाषा हमेशा परिवर्तनशील है परन्तु कुछ वर्षों से भाषा के क्षेत्र में परिवर्तन हुआ है हिंदी/संस्कृत भाषा को कोई नहीं जानता था क्योंकि वहाँ अत्यधिक क्षेत्रीय भाषा या अंग्रेजी भाषा का बोल चाल में प्रयोग किया जाता था पर जैसे जैसे भाषाओं का विस्तार हुआ तो देखने को मिला कि कुछ ही वर्षों में हिंदी को बोलने और सीखने वाली प्रतिशत 22% तक हो गया है 2011 की जनगणना के अनुसार देश की कुल आबादी में हिंदी को मातृभाषा के रूप में बोलने वाले 43-63 प्रतिशत से बढ़कर बोली जाने लगी जो कि 2001 में 41% थी।

भारत में जब आर्थिक वैश्वीकरण को स्वीकारा तभी से हिंदी का भाषा के रूप में प्रयोग करने वालों की संख्या में जबरदस्त वृद्धि हुई है हिंदी अपने राष्ट्रीय स्वरूप में हैदराबादी हिंदी दक्खिनी हिंदी, अरुणाचली हिंदी, सांस्कृतिक किलिष्ट हिंदी आदि में फैल गयी है। हिंदी की यदि वैश्विक स्वरूप की बात करें तो ज्ञात होता है कि वैश्वीकरण ने हिंदी को भारत की राजभाषा का स्थान दिया है क्योंकि हिंदी भाषा संस्कृत भाषा से उत्पन्न हुयी है जो पूर्ण रूप से सांस्कारिक भाषा है हिंदी भाषा सिर्फ भाषा नहीं अपितु एक व्यवहार है जो की भारतीय संस्कृति से भाषा के माध्यम से प्राप्त हुयी है हिंदी भाषा के स्वर-व्यंजनों से मिलकर ही भारत की अन्य भाषाओं का निर्माण हुआ है यह भाषा ही मानव के अन्तःकरण में विश्व कल्याण की भावना को जागृत करती है तभी तो विद्वानों ने हिंदी को राजभाषा का स्थान दिया।

## हिंदी भाषा के उद्भव एवं विकास और शब्द निर्माण

भाषा में हिंदी भाषा के उद्भव व विकास की चर्चा करें तो ज्ञात होता है कि भाषा का कोई सार्वकालिक स्वरूप नहीं है हिंदी भाषा की उत्पत्ति संस्कृत भाषा से हुयी है प्राचीन काल में भारत के कुछ हिस्सों में सिर्फ संस्कृत भाषा का उपयोग किया जाता था शनै-शनै संस्कृत भाषा से ही हिंदी भाषा उद्भव हुआ, हिंदी के अधिकतर शब्दों की व्युत्पत्ति, देववाणी, सुरवाणी, गीर्वाणभारती संस्कृत से हुई है परन्तु हिंदी भाषा ने फारसी, तुर्की अंग्रेजी, तुर्की आदि अनेकों भाषाओं को आत्मसात किया है कुछ भाषाओं के शब्दों का अनुवाद हिंदी भाषा ने दूसरी भाषाओं की तरह ही प्रयोग किया जैसे :- कर्म (KARM), YOGA (योग) गुरु (GURU) इत्यादि हिंदी भाषा में भी अन्य भाषाओं से शब्द आए जैसे – स्टेशन, स्टेशनरी, कंप्यूटर इत्यादि अंग्रेजी के शब्द हैं जिनका हिंदी के शब्द की भांति ही प्रयोग हो रहा है इसी प्रकार अरबी, फारसी के अनेक शब्द जैसे ईमानदारी, इमारत आदि तथा तुर्की भाषा में इंसान, दुनिया शीशा इत्यादि यह शब्द तुर्की भाषा के हैं लेकिन हिंदी शब्द कोष में इनका प्रयोग होता है जैसे पुर्तगाली भाषा में शब्द है – अलमारी, फालतू इत्यादि।

## हिंदी भाषा को वैश्विक स्तर पर पहुचाने में आने वाली कठिनाइयां

हिंदी भाषा को वैश्विक स्तर पर पहुचाने में अनेकों समस्याओं का सामना पड़ा जानकार व्यक्तियों को ज्ञात ही नहीं है कि शुद्ध हिंदी के शब्द कौन से होते हैं वह अधूरे ज्ञान से ही हिंदी के मिश्रित शब्दाक्षरों को ही हिंदी (अरबी, फारसी, तुर्की) बताते हैं। वह कहते हैं "अधजल गगरी छलकत जायें"।

अंतरराष्ट्रीय स्तर पर हिंदी के व्यापक प्रचार प्रसार के निर्मित अंतरराष्ट्रीय हिंदी विश्वविद्यालयों की स्थापना की गई तथा जितना हो सका उतना अनुदान भी दिया गया परन्तु जिस लक्ष्य प्राप्ति के लिए अनुदान दिया गया उस सफलता तक नहीं पहुँच सका। भारत विश्व व्यापार से जुदा पर उसका माध्यम केवल अंग्रेजी य हिंदी य अन्य भाषाओं की उपस्थिति विश्व व्यापार पर काफी कम थी।

जैसे विज्ञापन कंपनियों विज्ञापनों को अंग्रेजी में बनाते थे तथा हिंदी स्पष्ट अनुवाद नहीं कर पाते थे जिसके फल स्वरूप सरकारी कार्यालयों में हिंदी के नाम पर अनुवाद कृत्रिम तथा अस्पष्ट भाषा में तैयार होता था जो आम व्यक्ति के समझने में कठिनाई पैदा करता था तथा हिंदी और अंग्रेजी भाषा की अजीब सी वात्सल्य बन रही थी जबकि हिंदी साहित्य की तो बात ही कुछ और है हिंदी के विभिन्न रस (जैसे वरुण, रौद्र, वात्सली इत्यादि अलंकार और छंद आदि इन सभी में इतनी विविधता और रस, आनंद तथा सौन्दर्य है कि कुछ क्षण के लिए मनुष्य अलग ही दुनिया में रम सा जाता है परन्तु आज वर्तमान युग में साहित्य का एहसास काल्पनिक और अध्यात्मिक होकर यांत्रिक अधिक बन गया है। मनुष्य जब से यांत्रिक हुआ है जब से एक चलता फिरता रोबोट हो गया है उसके अन्दर की भावनाएं खत्म सी होती जा रही हैं उदाहरण के लिए पहले मनुष्य आपस में मिलता जुलता था तो मानवीय संवेदनाएं जैसे बातचीत, रिश्ते का एहसास स्पर्श, इत्यादि भावनाएं उत्पन्न हुया करती थी पर जैसे नई तकनीकी जैसे कंप्यूटर, मोबाइल इत्यादि आये तब से मानव यांत्रिक अधिक हो गया है परन्तु इन सब को देखते हुए हिंदी के द्वारा ही इन एहसासों को पुनः जीवित करना होगा। वर्तमान युग यांत्रिक युग है पर इसका लाभ हिंदी भाषा को भी हुआ है जैसे पहले कंप्यूटर पर तकनीकी कार्य केवल अंग्रेजी भाषा में ही होते थे परन्तु आज कंप्यूटर, मोबाइल फोन में भी हिंदी टाइपिंग, गूगल हिंदी आदि ऐसे ऐप्स आ गए हैं जो हिंदी भाषा को आज के युग की वर्तमान भाषा बनाते हैं आज मोबाइल पर सन्देश स्पीकर द्वारा बोल कर हिंदी

में सुगमता से भेजे जाते हैं और मोबाइल, कंप्यूटर पर हिंदी में भी सारे कार्य आसानी से होते हैं यह हिंदी का वैश्वीकरण की ओर एक सार्थक और सशक्त कदम है।

## निष्कर्ष

हिंदी आज विश्व भाषा बनने की दिशा में तेजी से आगे बढ़ रही है केवल भारत में ही नहीं अपितु विश्व मंच पर एक सशक्त भाषा बन कर प्रस्तुत हो रही है वैश्वीकरण स्तर से देखे तो चार दशकों में दक्षिण भारत में केवल हिंदी बोलने वालों की संख्या लगातार बढ़ रही है। प्रवासी हिंदी साहित्य, हिंदी साहित्य के लिए हमें प्रतिबद्ध रहना होगा आज जरूरत इस बात की है कि हम, साइंस, वाणिज्य तथा नए प्रौद्योगिकी के क्षेत्र में हिंदी अध्ययन सामग्री उपलब्ध कराने में तेजी लाएं इसके प्रयास करने होंगे और यह तभी सम्भव है जब हम अपने दायित्वों को समझेंगे आज समय की मांग है कि हम सब मिलकर हिंदी के विकास की यात्रा में शामिल हो आज वैश्वीकरण के दौर में जिसे हम बाजार वाद कह सकते वही संस्कृति, वही भाषा व्यवहार में आएगी जिसे बाजार उपलब्ध कराए जो भाषा व्यवहार में आयेगी जिसे बाजार उपलब्ध कराए जो नई-परिस्थितियों में भी स्वयं को जीवंत रख सके। कोई भी भाषा अपनी व्यापक उपयोगिता से ही शक्तिशाली बनती है हिंदी आज अधिक प्रभावशाली भाषा के रूप में हमारे सामने है आज हिंदी जनभाषा के साथ-साथ राजभाषा भी है विश्वभाषा बनने की ओर अग्रसर है हिंदी अपने विकास के सोपानों पर चढ़ रही है। अभी तक हिंदी को विश्व स्तर पर प्रचारित दृ प्रसारित करने में मीडिया, बाजार और मनोरंजन ने विशेष भूमिका निभायी है, पर और आगे जाने हेतु सरकारी, गैर-सरकारी एवं व्यक्तिगत स्तर पर निम्नलिखित प्रयास आवश्यक हैं :-

- सरकारी मोह को त्याग कर सरल, स्वाभाविक, व्यावहारिक हिंदी को प्रोत्साहित किया जाए। हिंदी को आम जनता से जोड़ा जाए। उसे जनोन्मुखी बनाया जाए।
- हिंदी को रोजगारपरक बनाया जाए ताकि हिंदी ज्ञान, सत्ता और लाभ की भाषा बन सके।
- सबसे महत्वपूर्ण है कि हिंदी के प्रति मानसिकता में परिवर्तन लाया जाए। हिंदी कोई पिछड़ी, अवैज्ञानिक भाषा नहीं है, वरन यह एक समृद्ध और गतिशील भाषा है।
- हिंदी को विश्व भाषा बनने के लिए पहल करनी होगी। संयुक्त राष्ट्र संघ के आधिकारिक भाषाओं में हिंदी को शामिल करने के लिए हमें मजबूती से अपनी माँग रखनी होगी।
- हिंदी को प्रचारित दृप्रसारित करने के लिए दृढ़ इच्छाशक्ति, व्यापक योजना की आवश्यकता है।

शास्त्रों में कहा गया है कि जो देश अपनी भाषा को प्रधानता नहीं देता, वह देश हमेशा के लिए अन्धकार में डूब जाता है, और वहां स्वतंत्रता या ज्ञान का सूर्य प्रदीप्त नहीं होता।

कहा जाता है कि भाषा का प्रयोग ही उसकी जीवंतता को परिचायक है। अतः आज आवश्यक है कि हम हिंदी भाषा का आधिकारिक प्रयोग करें और इसे विश्व स्तर पर प्रचारित करें।

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*Special Issue***“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”****Sociological Dimensions of Sustainable Development****Dr. Sheetal**

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**Abstract**

This Research paper focused on how sustainable development from a sociological perspective involves examining how social factors and structures influence and are influenced by sustainable practices. It includes issues such as social equity, community involvement, and the distribution of resources. Sociological dimensions explore how sustainable development can address and be shaped by social inequalities, cultural values, and the role of communities in decision-making processes. As a rule, sustainable development is supported with economic, technological and ecological arguments but its social component is at least as important as they are. The sociological dimension add at least two sets of elements to sustainable development. In the first place, it provides a number of concepts that help explaining social actions, human relations, the complex forms of sociological organisation, institutionalized arrangements and culture, motivations, incentive and values that shape man’s attitude towards his fellow creature and natural resources. In the second place, it provides social methods for the prompt coordination of social actions and acts as a barrier against harmful behaviour stimulating association, alternative social arrangements and social capital development. It also considers the impact of globalization on social structures and the need for inclusive and participatory approaches to achieve long-term sustainability goals. sustainable development involves meeting the necessities of the current generation without compromising the capacity of the coming generation to satisfy their own needs. The score of the index of all 17 goals has to be increased by finding a balanced solution to the socio-economic and environmental aspects of sustainable development through inclusion and integration. In the presented research paper, all aspects of sustainable development have been analyzed. which can help in ensuring sustainable and balanced growth prospects.



### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **Green Economy Action: India’s Role in Global Partnerships for Sustainability**

**Dr. Daya Ram**

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#### **Abstract**

This paper delves into the strategic contributions of India towards fostering a green economy and its pivotal role in international collaborations aimed at achieving global sustainability. The paper kicks off by defining the concept of a green economy, emphasizing its critical importance as a catalyst for sustainable development and the necessity of global cooperation to address the environmental challenges that transcend national boundaries.

Central to our analysis is an in-depth examination of India’s green economy initiatives, where we scrutinize the nation’s progressive strides in the realms of renewable energy, sustainable agriculture, and the principles of a circular economy. This segment provides a thorough assessment of the policies and accomplishments that underscore India’s dedication to integrating environmental considerations into its developmental agenda. Through a meticulous evaluation, we shed light on how these initiatives not only contribute to environmental conservation but also bolster economic growth and social well-being.

Further exploration is dedicated to India’s active engagement in global sustainability efforts. The paper investigates India’s involvement in international agreements, its proactive stance in climate change mitigation and adaptation initiatives, and its alignment with the United Nations’ Sustainable Development Goals (SDGs). By dissecting specific case studies and success stories, the narrative illustrates the tangible impacts of India’s contributions, highlighting how these endeavours have fostered positive change in local communities and the broader environmental landscape.

Despite the commendable progress, India faces multifaceted challenges, ranging from socio-economic disparities to policy and implementation hurdles. The paper does not shy away from these challenges; instead, it offers a candid analysis, identifying opportunities for further improvement and innovation. The concluding section proposes a set of forward-thinking policy recommendations, emphasizing the indispensability of technological advancements, innovative solutions, and enhanced international cooperation. These recommendations are aimed at overcoming existing barriers and unlocking new opportunities for growth within the green economy framework.

In summary, the research paper presents a comprehensive narrative of India’s dynamic role in the global green economy and underscores the importance of its contributions to sustainable development. It advocates for sustained and collaborative efforts to navigate the complexities of future environmental challenges, emphasizing the need for a united global front to ensure a resilient and sustainable future for all. Through this scholarly work, we aim to contribute to the ongoing discourse on sustainability and inspire actionable insights for policymakers, practitioners, and the global community at large.

**Keywords:** Sustainable Development Goals, Global Sustainability, Green Economy, Environmental Landscape.



### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **Green Growth and Environmental Stewardship**

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#### **Abstract**

The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity, though some of them are designed to end poverty, hunger and discrimination against women too.

In line with Paris Agreement, India submitted its Nationally Determined Contributions (NDCs) to UNFCCC in 2015 outlining eight targets for the period 2021-2030, reinforcing its commitment to fight climate change. India has already prepared a National Action Plan on Climate Change (NAPCC) which encompasses eight core missions in specific areas of solar energy, enhanced energy efficiency, sustainable habitat, water, sustaining Himalayan ecosystems, Green India, sustainable agriculture, and strategic knowledge for climate change. 33 states and Union territories and have already firmed up action plans. Adaptation plans are being supported through National Adaptation Fund for Climate Change (NAFCC), through which 30 adaptation projects have been approved in 27 states and UTs./

“Demonstrating the on-track progress to attain Sustainable Development Goal (SDG) of halving poverty by 2030, more than 41 crore people exited poverty between 2005-06 and 2019-21 according to the UN Multi-dimensional Poverty Index,” said the UN survey. Poverty also includes lack of access to healthcare, sanitation, clean drinking water or electricity, and quality of education. As a country with largest population in the world, achievement of progress in SDGs in India will leave its imprint on the progress on attaining SDGs globally. India’s Climate Change initiatives are making strides already as represented by the Climate Change Performance Index 2023, where India cornered 8th position, with only four contenders - Denmark, Sweden, Chile and Morocco – above, and the Poor Performers being China (51), the US (52) and Iran (63 - lowest). The present work is taken up with the aim of thoroughly examining the promises made by India and the outcome.

**Key Words:** SDG, India, UN survey, Climate change.



### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **India’s Collaboration Initiatives For Economic And Social Growth**

**Prof. Manmeet Kaur<sup>1</sup>, Prof. Vandana Sharma<sup>2</sup>, Utkarsh Patel<sup>3</sup>**

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<sup>2</sup>Coordinator of IGNOU, Political Science Department, Bareilly College, Bareilly.

<sup>3</sup>Research Scholar, M.J.P.R.University, Bareilly.

#### **Abstract**

India’s remarkable economic rise on the world stage is undoubtedly intertwined with its domestic Strategic policies and decisions. However, significant challenges remain in areas like availability of funds, infrastructure development, skill development and social inequities. India, with its vast potential and demographic dividend, stands poised for economic and social progress. However, achieving its full potential requires going beyond domestic efforts and embracing global collaborations.

Today in this hyper-connected world, global collaborations are not merely beneficial, but essential and indispensable for India’s economic and social growth. This research paper delves into the intricate and indispensable role of these collaborations in fueling India’s economic and social growth. By analyzing key initiatives across various sectors - from trade agreements and infrastructure development to knowledge sharing, Foreign direct investment and climate action.

This paper sheds light on how these partnerships address internal economic bottlenecks, tackle critical social challenges, and enhance India’s global standing. By examining the dynamics of capital and technology transfer, market access expansion, and capacity building, the research emphasizes the mutually beneficial nature of these collaborations. India gains access to crucial resources and expertise, while its partners benefit from a burgeoning economy and a responsible leader on the world stage.

Further, the paper explores the importance of India’s collaborations initiatives for economic and social growth like BRICS, International Solar Alliance, Skills Development through G20 Partnerships and Spotlight Initiative for Women’s Empowerment and Gender Equality etc, the research also highlights the country’s growing influence and commitment to shaping global policy and promoting sustainable development.

The purpose of this paper is to establish that global collaborations are not a luxury, but a strategic imperative for India’s economic and social growth. By harnessing the collective expertise and resources of the international community, India can forge a sustainable and inclusive future for its people and contribute significantly to a more prosperous and equitable world.

**Keywords:** Trade agreements, Skill development, Infrastructure development, Global collaborations, Foreign direct investment, Knowledge sharing , BRICS .





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*Special Issue***“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”****Role of Agricultural Extension in Agricultural Production and Food Security.****Jyotsana Jaiswal**

Assistant professor Botany, K.P.M. Government Girls Degree College, Aurai, Bhadohi, Uttar Pradesh, India.

**Abstract**

India is one of the largest producer of agricultural commodities but still facing the problem of food security due to high population supporting 17.84% of the world’s population but only 2.4% of the world’s total land and limited resources. It may lead towards the food security issues in future that is why it is important to increase the growth of agricultural production exponentially as population is increasing. Present study deals with variety of extension approaches in India to provide information and facilitate information sharing used in farming communities and agricultural extension approach as it attempts to provide farmers with access to information that is relevant to their farm skills to adopt agricultural practices that protect soils, increase water absorption and raise productivity through higher yields and crop diversification by using advance technology in order to provide better farming. Study also deals with the challenges during the extension programmes in rural belt. Study will also help in increasing the export percentage and GDP of agriculture sector in total.

**Key Words:** Agriculture, Extension, Food security



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*Special Issue*

**“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

**Role of Carpet Industry in Economic Growth of India: A Case Study of Bhadohi District**

**Reena Singh**

Professor, Sociology, Rajkiya Mahila Mahavidyalaya, Aurai, Bhadohi.

**Abstract**

Carpet industry of India has a great potential in economic development of country. Millions of people depend on handmade carpet of handicrafts industry for their livelihood, so there is a good reason to preserve and encourage the handmade carpet industry, throughout the country. Indian handmade carpet sector of cottage industry is perhaps the only sector in rural India that is almost 100% export oriented and providing direct employment to the millions, generating opportunities to rural unemployed artisans. At present, carpet sector is contributing millions of dollars from export to the government exchequer. India’s heritage of handmade carpet weaving has been recognized worldwide for its elaborate design, delicate style, and attractive vibrant colours craftsmanship. The paper examines the changes in the carpet industry of Bhadohi district due to the effect of globalisation by highlighting the changes in the use of the technology at the three stages of the carpet production namely designing, dyeing and weaving.

**Key Words:** Carpet Industry, Globalization, Growth, Economy.



### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **Global Partnership: “India’s Collaboration Initiatives for Economic & Social Growth**

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#### **Abstract**

India’s collaborative efforts for economic and social growth has been immense. We can easily find that there have been quite a lot of efforts put in by the Indian government in the recent years for the purpose of economic growth and social growth of the region of South Asia as such and of India in collaboration with other countries in particular. Since the inception of Non-Alignment movement under our first prime minister Jawaharlal Nehru, India has been a solid block advocating economic growth and prosperity for entire countries of the developing world. India has participated while regularly in conferences and summits resulting in implementation of policies furthering this end from time to time. In the recent times some of the initiative that India has taken in collaboration with other countries and organisations are as follows- 1- Voice of Global South summit with place in January 2023 advocated the idea of “Together for Everyone’s growth with everyone’s trust”. The concluding session had “Together for One Future” as its theme and endorsed the conclusions of the G-20 summit. A continuous pathway for effective working of special interests of developing countries was discussed here. 2- Indian prime Minister attended East-ASEAN summit at Jakarta, where 12 point program was signed. It focus on multi modal connectivity and economic corridor to link South East Asia, India and West Asia with Europe. For the purpose of economic connectivity India-ASEAN fund was also announced for digital future. 3-Shanghai Cooperation Organisation summit also scheduled to be held in India took place virtually in July 2023, where India give five new pillars of support and focus points containing startups and innovation, traditional medicine, youth empowerment ,digital inclusiveness and common Buddhist heritage. Also India -UAE summit for comprehensive strategic partnership was held in Dubai. They took forward common vision letter for new common investment and engagement for innovation. Comprehensive Economic Partnership agreement in order to make trade reach 100 billion dollar was also signed. And the prominent one G20 summit which was held in September in Delhi with the theme *Vasudev kutumbkam*. It focus on tripling global renewable energy protection by 2030.

There are many other such initiatives and responsible steps which India is leading. Our country is playing a significant role in promoting social and economic development with the idea of cosmopolitanism. The purpose of this study is to find out other such steps which India has taken in such social and economic interest and will also try to explore the various methods which may be discovered especially in the Post-pandemic period.

**Keywords:** multi modal connectivity, economic partnership, innovation, digital inclusiveness, cosmopolitanism.



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### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **Role of AI in designing business strategies in present scenario.**

**Miss Shivani**

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#### **Abstract**

Artificial Intelligence (AI) is one of the fast-growing fields that is receiving increasing attention in the business world. It merges computer science with comprehensive datasets to facilitate problem-solving. In general, AI technologies offer the potential for enhanced performance across dimensions such as speed, flexibility, customization, scalability, innovation, and data driven decision-making.

AI is increasingly prominent in sectors, such as data analysis, predictive modelling, automation, natural language processing (NLP), computer vision, healthcare, finance, marketing, education, and agriculture. Its versatile capabilities are enhancing efficiency, improving customer experiences, optimizing processes, and driving innovation across industries. AI plays a pivotal role in shaping present and future business strategies by analysing data to find pattern and trends, predict future outcome and detect risks. Which leads to better decision making, more efficient operations and personalized customer experiences, ultimately giving businesses a competitive edge as observed in industry leaders like Netflix, google and amazon, etc. In this regard, the purpose of this research is to study is to understand how businesses are leveraging AI to grow and develop strategies that yield positive outcomes faster with an aim to overcome barriers to business growth and usher in a wave of new opportunities for development. Whereas the methodology that we use in this research is systematic literature review or primary data related to this research.

The result of the study confirmed that the AI contributes in the growth of business to achieve their goal by making strategies which including improved decision making, cost reduction, customer satisfaction, and innovate the new products. Moreover, AI-driven strategies enable organizations to adapt more effectively to changing market dynamics and gain a competitive edge.

**Keywords:** AI, Business Strategy, Efficiency, Customer Experience, Data-driven Decision-making.





### *Special Issue*

## **“(Global Partnership: India’s Collaboration Initiatives for Economic and Social Growth)”**

### **Gender Equality and Sustainable Development**

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#### **Abstract**

Encouraging gender equality and creating sustainable routes are pressing issues. This paper examines the reasons of their simultaneous attention as well as potential solutions. It starts by demonstrating the moral, ethical, and pragmatic justifications for gender equality’s necessity for sustainable development. Gender equality and sustainable development demand a deep conceptual grasp of each other’s relationships. It starts by outlining the moral, ethical, and pragmatic justifications for gender equality’s essential role in sustainable development. The prevalent development patterns around a number of concerns, such as labor and industrial production, population and reproduction, food and agriculture, or water, sanitation, and energy, have shown to be unsustainable and gender uneven. A thorough conceptual grasp of both ideas and how they relate to one another is necessary to integrate gender equality with sustainable development. A German forester originally used the term “sustainability” in an environmental context to describe long-term forest management practices. In the midst of later phases of imperial and colonial expansion and consolidation in the 19th and 20th centuries, environmental policies continued to be shaped by this early emphasis on protecting commercially significant natural resources. During this time, a lot of actions, regulations, and interventions were solely focused on generating financial gain for colonial States and European powers. These frequently concentrated on the quick extraction of natural resources in the majority of Asia, Latin America, and Africa. Such laws and practices typically had disastrous social repercussions because they were linked to the appropriation of land and local people’s means of subsistence as well as to cruel and dehumanizing labor practices. More generally, critical examination of colonial and neocolonial environmental policies and interventions reveals that safeguarding the environment under the pretext of preserving pristine nature will inevitably have detrimental effects on local lives and affect men and women differently. The colonial era also shows how conflicts between the “economy” and the “environment” first surfaced, as well as how important trade-offs had to be made between environmental preservation, generating a living, and commercial interests. A large number of these sustainable, alternate routes revolve around women. They frequently lead social movements that oppose unsustainable practices. A large number of these sustainable, alternate routes revolve around women. They frequently lead social movements that oppose unsustainable practices. And making demands for substitutes. Their expertise, initiative, and self-determination are vital in discovering, illustrating, and constructing more environmentally, economically, and socially viable paths forward, be it in managing regional ecosystems, adjusting to climate change, growing and gaining access to food, or guaranteeing sustainable, suitable water, sanitation, and energy services. This paper aims to explore a prevalent approach to analysis utilizes ecofeminism concepts, that hold great promise for the development of policies and actions that promote a progressive politics of sustainability and gender equality.