



# The Indian Economic Journal

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# The Indian Economic Journal

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The Journal, an organ of the Indian Economic Association aims at promoting scientific studies in Economic Theory, Indian Economic Policies, Energy and Water Resources, Human Resource Development, Monetary Economics, International Trade and Finance, Industrial Economics, Poverty and Unemployment and related topics of current interest.



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## **Editor's Message**

The Indian Economic Journal (IEJ) is an important organ of the Indian Economic Association, provides support and services to professionals and researchers both in India and abroad. The Indian Economic Association is the largest and oldest body of teachers, researchers, academicians as well as policy makers drawn from the background of Economics and its affiliated disciplines, exhibited outstanding record of achievements over a century. Formed in 1917, the Indian Economic Association has been a scholarly, non-political, and non-profit oriented professional association open to all persons as per the eligibility criteria laid by the Constitution. It seeks through Conferences, Courses, publications and seminars to enable contact and dissemination of information among scholars to increase their understanding of economics. Both IEJ and IEA work in tandem motivating members to contribute articles in Annual Conferences and publish in special issues of the IEJ by maintaining relevance of the journal.

The Indian Economic Journal was founded by Prof. C.N. Vakil and Prof. R. Balakrishna in 1953 and it became the internationally acclaimed journals in Economics because of the hard work put in by successive editors in the management process of the over the years. The IEJ is at present included in the 'Abstract Services' of American Economic Association through their Journal of Economic Literature. I take this opportunity to acknowledge the contributions of Prof. Sukhdev Thorat in transforming Conference Volumes of IEA into special issues of Indian Economic Journal and Dr. Anil Kumar Thakur, Chief Convener of IEA for taking efforts to sustain the quality and ratings of IEJ along with the Managing Editor of IEA, Prof. Sudhanshu Bhushan.

The overarching theme of the 103rd Annual conference is "Accelerating Economic Growth, Balanced Regional Development and Sustainable Urbanization in the aftermath of COVID-19". The sub themes are: 1. Accelerating Economic Growth: Trends and Way Forward 2. Sustainable Urbanization; 3. Banking and Financial Sector for New India; 4. Balanced Regional Development; and 5. Human Resource Development in The Context of New Technological Revolution. The articles in the volumes of the special issue of IEJ are the selected papers from each sub-theme.

I would like to thank the contributions of various authors by submitting papers for the 103rd Annual Conference and apologies for keeping them waiting for long due to the Covid-19 Pandemic and the subsequent postponement of the Annual Conference to be held in 2020. There may be lapses on my part on attending and commenting on queries routinely raised by authors for a year or more. I again seek your pardon for any lapse.

I also express my gratitude to Prof. Satyapriya Hiralal Indurwade, Prof. Kanhaiya Ahuja, Dr. Sandhya Rani Das, Prof. G M Bhatt and Dr. Anup Kumar for their help in reviewing the papers. I also thank all the authors, reviewers and the editorial supports, especially the services extended by Dr.P. Anbalagan, Dr. N. Suresh Babu, Dr. M. Dillip Anand, Dr. Kumari Manisha and Dr. A. Thaha Sahad in bringing out all volumes of the special issues of IEJ in scheduled time. Despite taking utmost care in compiling the volumes, if appears there any inadvertent lapses, I take the full responsibility and apologise.

Last but not the least, my sincere thanks to Er. A. Aashik Ahamed, TAMCOS Ltd, Chennai and his team for their nice execution and printing of the work in time.

**B.P. Chandramohan**

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## A Study On Willingness To Pay For Green Electricity In Chennai City

N. Suresh Babu

### Abstract

Increasing electricity consumption is an important component for technical, social and economic development of all countries. The existing rate of growth of energy supply in India will not be adequate to meet the growing demand for electricity. Meeting the rising demand for electricity and limiting the environmental impact are the two important issues faced in developing countries. It is known that non-renewable energy sources have adverse environment and health impact. Hence, the use of green electricity has drawn the attention of policy makers across the globe and particularly in India. Green energy sources play a vital role in our day to life activity because it is needs in almost all type of human activities, such as domestic, industrial production, agriculture and other activities. Green electricity often comes from renewable energy resources. There is a great need of renewable energy sources in Indian power sector to meet future energy demand with consideration of the sustainable development and pollution free environment. The main objective of the study is to identify the barriers in using green electricity by the sample households in Chennai City and to analyse the willingness to pay for green electricity in Chennai city in Tamil Nadu. The results indicated that income level and lack of awareness are significant barriers in the usage of green energy products and 56 per cent of the respondents are willing to pay more for the use of green electricity above the present cost of electricity. This study observed a significant association between occupation, concern for climate change and willingness to pay for green energy. The findings and field work suggest that awareness needs to be created among the households about the importance of using green electricity and Steps should be taken to reduce the cost of producing clean energy and it should be affordable to all sections of the society.

**Key words:** *Green electricity, Renewable energy, Non-renewable energy, Micro irrigation Willingness to pay*

Increasing electricity consumption is an important component for technical, social and economic development of all countries. The existing rate of growth of energy supply in India will not be adequate to meet the growing demand for electricity. Meeting the rising demand for electricity and limiting the environmental impact are the two important issues faced in developing countries. It is known that non-renewable energy sources have adverse environment and health impact. Hence, the use of green electricity has drawn the attention of policy makers across the globe and particularly in India. Green energy sources play a vital role in our day to life activity because it is needs in almost all type of human activities, such as domestic, industrial production, agriculture and other activities. Green electricity means electricity produced from resources such as solar, wind, geothermal, biomass, and low-impact hydro facilities. It often comes from renewable energy resources. There is a great need of renewable energy sources in Indian power sector to meet future energy demand with consideration of the sustainable development and pollution free environment. The main objective of the study is to identify the barriers in using green electricity by the sample households in Chennai City and to analyse the willingness to pay for green electricity in Chennai city in Tamil Nadu.

## 2. Methodology

The data required for the present study has been collected from both primary and secondary sources. The objectives of the study have been analysed with the help of primary data collected through schedules administered to the respondents. This process has begun with the random selection of sample respondents in Chennai corporation and the schedule-based interviews have been administered to obtain the required information with regard to background details of sample respondent's household economy, working and living conditions and green electricity consumption.

The multi-stage stratified random sampling and proportionate random sampling method is adopted for the present study. At the second stage, corporation divisions have been selected as a sample unit. At the third stage, streets from all the corporation divisions, which was listed in the website of [www.chennaicorporation.gov.in](http://www.chennaicorporation.gov.in) have been selected using systematic random sampling method. Finally, from the list of streets 10 per cent of sample respondents sample households have been selected. The sampling procedure resulted in the selection of 100 respondents. The study was conducted in December 2020

### 3. Results and Discussion

The frequency distribution of average monthly electricity bill of the households is shown in Table 1.

**Table 1. Frequency Distribution of Average Monthly Electricity Bill of the Sample Households**

Electricity Bill (in Rs.)	Frequency	Percent
Below 500	28	28
501-1000	40	40
1001-1500	8	8
1501-2000	11	11
Above 2000	13	13
Total	100	100

**Source:** Field Survey.

It is revealed that monthly average electricity bill of 40 per cent of sample households is between Rs.501 and Rs.1000. It is below Rs.500 for 28 per cent of the respondents followed by 11 per cent pay between Rs.1501 and Rs.2000. Sample households who pay between Rs.1001 and Rs.1501 account for 11 per cent.

### Star Rate of Electrical Appliances

Energy efficient electrical appliances used by the sample households is analysed with the help of their star rates. The frequency distribution of star rare of the electrical appliances used by the sample households is shown in Table 2.

**Table 2. Frequency Distribution of Star Rate of Electrical Appliances**

Star Rate	Electrical Appliances			
	Air-conditioners	Water Heaters	Refrigerators	Washing Machines
Not Using	14	45	0	15
1-2	3	3	6	7
3-4	14	31	29	26
5-6	69	21	65	52
Total	100	146	100	100

**Source:** Field Survey.

It is revealed that out of total respondents 14 per cent are not using air conditioners. It is to be noted that 69 per cent of households are using 5 Star air conditioners which consume less electricity. Respondents who use between 3- 4- Star rate AC accounts for 14 per cent. It is understood that 45 per cent of respondents are not using water heaters in their households. Respondents who use 3-4star heater accounts for 31 per cent followed by 21 per cent use 5-star rated heater. It is observed during the survey that 65 per cent of the respondents are using 5 star refrigerators in their households followed by 29 per cent use 3-4 star refrigerators and the remaining 6 per cent use less than 1-2 star refrigerators. Out of the total respondents a little more than half of the respondents use 5 star rated washing machine in their households followed by 26 per cent use 3-4 star washing machines and 15 per cent of respondents are not using washing machines.



The frequency distribution of number of bulbs used by the sample households is given in Table 3.

**Table 3. Frequency Distribution Number of Bulbs used by Sample Households**

No.of Bulbs	Total Bulbs Used	No.of CFL Used	No.of LED Used
Not using	-	49	49
1-3	64	38	38
4-6	30	9	8
7-9	4	3	4
10 and above	2	1	1
Total	100	100	100

**Source:** Field Survey.

The number of bulbs used by respondents in their households varies from 1 to 10 and above. The majority of the respondents use 1-3 bulbs. They account for 64 per cent. Three-tenth of sample households use 4-6 bulbs. It is observed that about half of respondents are not having the habit of using CFL bulb and LED bulbs and 38 per cent use 1-3 CFL bulbs and LED bulbs

### Green Electricity

#### Source of Green Energy

The source of green energy used by respondents is shown in Table 4.

**Table 4. Source of Green Energy used by Sample Households**

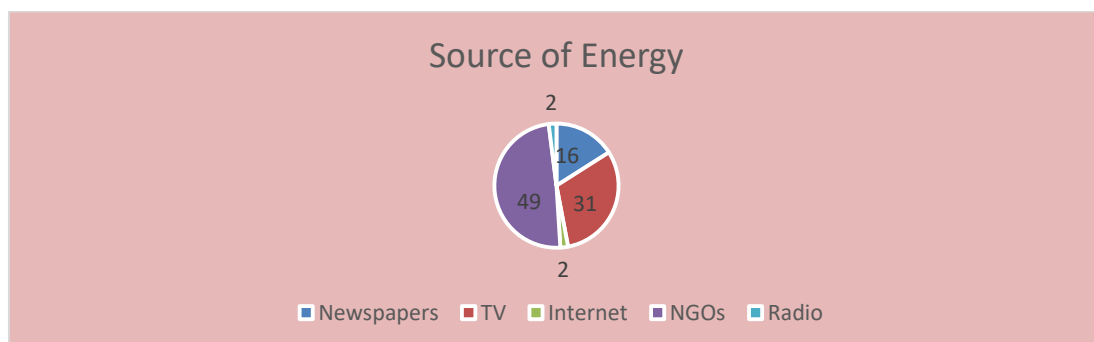
Response	Frequency	Percent
Not using	58	58
Solar	31	31
Wind	7	7
Bio-fuel	2	2
Others	2	2
Total	100	100

**Source:** Field Survey

It was found that 58 per cent of the households are not using green electricity. Out of total respondents, 31 per cent use solar energy. Households which use wind energy accounts for 7 per cent. Bio-fuels was used by 2 per cent households.

The respondents were asked about how they come to know about green energy. These particulars are given in Figure 1.

**Figure 1. Source of Coming to Know about Green Energy**



**Source:** Field Survey

It is revealed that out of total respondents, the majority of respondents come to know about green energy through NGOs. They account for 49 per cent. Television was the source to know about green electricity was stated by 31 per cent followed by newspapers constitute 16 per cent.

### Environmental Protection

The respondents were asked about the impact of green energy on environmental protection. The opinion of the respondents is shown in Table 5.

**Table 5. Green Energy and Environmental Protection**

Response	Frequency	Percent
Yes	68	68
No	16	16
Not Sure	16	16
Total	100	100

Source: Field survey

During the survey, 68per cent of the respondents stated that green energy will protect environment whereas 16 per cent of the respondents expressed that it will not protect environment.

The respondents were asked about why people are not keen in using green energy. The opinion of the respondents is shown in Table 6.

**Table 6. Perception of Respondents of not using Green Energy**

Response	Frequency	Percent
Lack of awareness	26	26
High cost	57	57
Difficulty in use	6	6
Lack of Installation facilities	10	10
Others	1	1
Total	100	100

Source: Field Survey

Lack of awareness was the reason for not using green electricity was cited by 26 per cent. More than half (57) of the respondents expressed that high cost of green energy was the reason for not using green electricity. Lack of installation facilities was the reason cited by 10 per cent of respondents followed by 6 per cent expressed difficulty in use was the reason for not using green electricity.

The perception of the respondents about energy savings through green electricity. These details are displayed in Table 7.

**Table 7. Perception of the Respondents about Energy Savings through Green Energy**

Response	Frequency	Percent
Yes	74	74
No	16	16
Not Sure	10	10
Total	100	100

Source: Field survey

The majority of the respondents stated that it is possible to save energy through use of green electricity. They account for 74 per cent; 16 per cent opined that green electricity will not help to save energy. One-tenth of respondents did not give their opinion.

The opinion of the sample respondents about green energy is given in Table 8.

**Table 8. Perception of the Respondents about Energy Savings**

Response	Yes	No	Not Sure
Concerned about climate change	91	6	3
Energy saving is important	87	10	3
Practice energy saving techniques	13	71	16

**Source:** Field survey

The majority of the respondents (91 per cent) opined that they are much concerned about climate change. Saving energy through use of green electricity was important was stated by 87 per cent respondents. It is to be noted that only 13 per cent of the respondents practice energy saving techniques in their household.

The respondents were asked about why people are keen in using green energy. The opinion of the respondents is shown in Table 9.

**Table 9. Perception of Respondents about Concerns regarding Household Energy Usage**

Response	Frequency	Percent
Environmental Pollution	23	23
Depletion of Non-renewable energy resources	8	8
Future Generations	23	23
Natural Disasters	30	30
Sources of Energy	13	13
Others	3	3
Total	100	100

**Source:** Field Survey

During the survey it was observed that 23 per cent of the respondents are much concerned about environmental pollution. Not use of green electricity will lead to natural disasters was stated by one-third of respondents. Respondents who concerned about depletion of natural resources account for 8 per cent; It is to be noted that 23 per cent of the respondents are much concerned about future generation.

Perception of the respondents about installing energy sources in their households are shown in Table 10.

**Table 10. Perception of Respondents about Installing Energy Sources**

Source	Frequency	Percent
Solar	62	62
Wind	21	21
Hydro	10	10
Bio-fuel	5	5
Geothermal	2	2
Total	100	100

**Source:** Field Survey

During the survey it was found that the majority of the respondents want to install solar energy source in their households if given a choice. They account for 62 per cent. Wind energy was the choice for 21 per cent of the respondents followed by hydroelectric power which accounts for 10 per cent.

The respondents were asked about whether use of green electricity will save electricity bills. The particulars are depicted in Table 11.

**Table 11. Perception of Respondents about Saving Electricity through Green Electricity**

Response	Frequency	Percent
High	23	23
Moderate	63	63
Low	14	14
Total	100	100

**Source:** Field Survey

It is reported by 23 per cent of the respondents that use of green energy will save electricity bill. Opinion of the 63 per cent of respondents is moderate with regard to this statement and opinion of the 14 per cent respondents is low

The perception of the respondents about the influence of government subsidy in using green electricity is displayed in Table 12.

**Table 12. Perception of the Respondents about Government Subsidy to use Green Energy**

Response	Frequency	Percent
Yes	10	10
No	75	75
Not Sure	10	10
Total	100	100

**Source:** Field survey

During the survey three fourth of respondents expressed that government subsidy will not influence the use of green energy by the households. The respondents who stated that it will influence account for 10 per cent.

The opinion of the respondents about the willingness to pay more for the use of green electricity is portrayed in Table 13.

**Table 13. Willingness to Pay for Green Energy**

Response	Frequency	Percent
Yes	56	56
No	39	39
Not Sure	5	5
Total	100	100

**Source:** Field survey

During the survey, 56 per cent of the respondents stated that they are willing to pay for more the use of green energy whereas 39 per cent of the respondents are not willing to pay and the remaining 5 per cent did not express their opinion.

The opinion of the sample respondents about green energy is given in Table 14.

**Table 14. Perception of the Respondents about Green Energy Sources**

Response	Strongly Agree	Agree	Indifference	Disagree	Strongly Disagree
Prefer use of more green energy	40	56	3	1	-
Expenditure control technique	34	48	14	4	-
Energy act would create more employment	29	57	6	8	-

**Source:** Field survey

During the survey it was found that two-fifth of respondents strongly agreed with the statement that they prefer use of more green energy and 56 per cent agreed with this statement. More than four-fifth of respondents opine that the use of green energy as an expenditure control technique. The respondents who think green energy would create more employment opportunities account for 86 per cent. Respondents were asked about the factors that will influence use of green energy. These particulars are shown in Table 15.

**Table 15. Perception of the Respondents about Influence of use of Green Electricity**

Response	Strongly Agree	Agree	Indifference	Disagree	Strongly Disagree
Membership in Environmental Organisation	15	56	17	12	-
Prepared to pay extra	26	51	11	10	2

**Source:** Field survey

Membership in environmental organization will influence use of green energy was stated by 71 per cent of the respondents. More than one-fourth (26 per cent) strongly agreed to pay extra for use of green electricity and 51 per cent agreed to pay extra.

### Testing of Hypotheses

#### **Hypothesis -1**

#### **Null Hypothesis (H<sub>0</sub>):**

There is no association between concern for climate change and willingness to pay for green energy.

#### **Alternative Hypothesis (H<sub>1</sub>):**

There is association between concern for climate change and willingness to pay for green energy.

**Table 16. Chi-Square Tests Results**

Chi-Square Tests			
Particular	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.321 <sup>a</sup>	4	.000
Likelihood Ratio	13.103	4	..011
Linear-by-Linear Association	11.265	1	.001
N of Valid Cases	100		

**Note:** a. 7 cells (77.8%) have expected count less than 5. The minimum expected count is .15..

**Source:** Computed from primary data.

It is inferred from the table that the calculated Pearson Chi-Square value of 27.321 is statistically significant at 1 percent level and thus, the null hypothesis is rejected. This underscores the fact that

there is association between concern for climate change and willingness to pay for green energy.

**Hypothesis -2**

**Null Hypothesis (H0):**

There is no association between occupation and willingness to pay for green energy

**Alternative Hypothesis (H1):**

There is association between occupation and willingness to pay for green energy

**Table 17. Chi-Square Tests Results**

Chi-Square Tests			
Particular	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.910 <sup>a</sup>	8	.000
Likelihood Ratio	34.513	8	..000
Linear-by-Linear Association	4.344	1	.037
N of Valid Cases	100		

**Note:** 9 cells (60.0%) have expected count less than 5. The minimum expected count is .35.

Source: Computed from primary data.

It is inferred from the table that the calculated Pearson Chi-Square value of 45.910 is statistically significant at 1 percent level and thus, the null hypothesis is rejected. This underscores the fact that there is association between occupation and willingness to pay for green energy

**4. Concluding Observations and Policy Lessons**

India aims to reach net zero emissions by 2070 and to meet 50 percent of its electricity requirements from renewable energy sources by 2030 is a hugely significant movement for the global fight against climate change. Renewable energy sources can be used to produce electricity with fewer environmental impacts. The empirical survey reveals that even though majority of the people are much concerned about climate change, there are hurdles on the path to use of clean energy in Chennai city. The results indicated that income level and lack of awareness are significant barriers in the usage of green energy products and 56 per cent of the respondents are willing to pay for more the use of green energy. This study observed a significant association between occupation, concern for climate change and willingness to pay for green energy. The findings and field work suggest that coherent policy frame work and strategy is needed at the Centre, State and local level to address the issue of environmental degradation due to consumption of energy. Government should take steps to reduce the cost of producing clean energy and it should be affordable to all sections of the society. Awareness needs to be created among the households about the importance of using energy efficiently and steps to be taken to shift use of non-renewable energy to renewable energy, In the beginning those who use more energy consumption should be ordered to use only renewable energy.

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## **Financial Security in Education Sector: Introducing Affordable Health Insurance System for Students at the University of Delhi**

**Deepti Taneja**

### **Vision of the paper:**

The vision of this research paper is to provide a comprehensive framework for integrating affordable health insurance programs into the fee structures of colleges under the University of Delhi. By doing so, it aims to enhance the financial and health security of students, ensuring they have access to essential medical services without the burden of significant out-of-pocket expenses. This initiative envisions a holistic approach where health insurance becomes an integral part of the educational ecosystem, promoting a healthier student body that can focus on academic and personal growth without the constant worry of medical costs. By meticulously analyzing existing government schemes, private insurance offerings, and student preferences, this research aims to develop practical recommendations that are both economically viable and widely accepted by the student community. The ultimate goal is to create a sustainable model that can be replicated across other universities in India, thereby setting a precedent for prioritizing student well-being in higher education policy and administration.

### **Introduction:**

University healthcare is a critical yet often neglected aspect of student well-being. In the competitive academic environment of Delhi University colleges, ensuring that students have access to quality medical services is essential. This research paper examines the feasibility of incorporating student health insurance policies directly into the fee structure of Delhi University colleges. By evaluating existing student health insurance options, budgetary implications, and potential benefits for both students and the university, this paper seeks to develop a comprehensive proposal for an integrated and accessible healthcare system within the University of Delhi system. Such integration has the potential to enhance student health outcomes, reduce administrative burdens, and promote a more holistic approach to student success.

### **Background and Rationale:**

In today's fast-paced & competitive academic world, student well-being often gets neglected. It's of paramount importance though, for academic success & life quality too. The University of Delhi, one of India's premier educational institutions, faces the challenge of ensuring that its students have access to essential healthcare services without incurring significant financial burdens. This is particularly important given the rising costs of medical care and the financial constraints faced by many students.

Health and financial security are closely intertwined. Unexpected medical bills derail a student's school path, cause stress, absenteeism & even dropouts.

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Unlike West, since health and medical insurances are not compulsory for individuals in our country, lots of students in India, even at the University of Delhi, lack proper health insurance, which leads to the burden of high medical bills that ultimately affects academics as well as mental health.

Despite the existence of several government health insurance schemes, such as Ayushman Bharat, and private insurance offerings, their reach and effectiveness among university students remain limited. The Ayushman Bharat scheme, launched in 2018, aims to provide universal health coverage and has significantly increased healthcare access for low-income families. However, its implementation among university students has been inconsistent, and awareness about the scheme is limited. Similarly, private insurance schemes, while offering comprehensive coverage, often come with high premiums and complex claim processes that deter student participation.

Recognizing these problems, this research paper aims to infuse affordable health insurance into the college fees at the University of Delhi. By analyzing existing student health insurance options, budgetary implications, and understanding student preferences, the paper seeks to develop a comprehensive proposal for an integrated and accessible healthcare system within the university.

The integration of health insurance into the college fee structure offers several potential benefits. It ensures that all students, regardless of their financial background, have access to necessary medical services. This can lead to improved health outcomes, reduced absenteeism, and enhanced academic performance. Furthermore, it can alleviate the financial burden on students and their families, fostering a more supportive and stress-free academic environment.

The ultimate goal is to build a model that other Indian universities can use too, showcasing that student well-being in higher education policy is of paramount importance. This comprehensive approach aligns with global best practices in student health insurance, drawing insights from successful models in countries like the USA and France. By doing this, the University of Delhi can lead the way for healthier & more financially secure students which will help the country's academic & social growth.

### **Objectives of the Study:**

- To explore the feasibility of incorporating affordable insurance premiums into the college fee structure.
- To analyze student preferences and willingness to pay for such insurance.
- To provide recommendations based on data-driven insights.
- To predict a revenue model based on certain assumptions.
- To analyze existing schemes in the concerned sector.

### **Review of existing insurance schemes:**

Existing Government Schemes: The Indian government has launched several health insurance schemes, such as Ayushman Bharat, PMSBY, etc., aimed at providing affordable healthcare. However, the reach and effectiveness of these schemes among university students remain limited. This section reviews the current state of these schemes, their benefits, and their limitations.



### *Ayushman Bharat Scheme:*

Launched in 2018, the Ayushman Bharat scheme is a government-backed initiative aimed at revolutionizing healthcare access in India. It's a two-pronged approach, addressing both preventive and curative aspects. The first pillar, Health and Wellness Centres (HWCs), focuses on strengthening primary healthcare by providing essential services at the community level. The second pillar, Pradhan Mantri Jan Arogya Yojana (PM-JAY), is the world's largest health insurance scheme, offering financial coverage of up to 5 lakh rupees per family per year for secondary and tertiary care hospitalization in both public and private empaneled hospitals. This ambitious program strives to bridge the gap in healthcare access, particularly for low-income families, and empower them to seek quality medical treatment without financial burden.

This scheme comes at a zero premium, but the eligible beneficiaries of this scheme only include highly marginalised section of the society, applicable only to SC/ST households, where no adult member between the ages of 16 and 59 earns more than Rs 2.5 lakh per year, where household is landless and primarily dependent on manual labor for income, with a disabled member and no able-bodied adult member, a household with only one room that has a kucha roof and kucha walls, etc. With such conditions, though it aims to cover around 50 crore beneficiaries in urban and rural India, such scheme's outreach cannot cover most of the students that take admissions in the University of Delhi Colleges. Further, even for the beneficiaries, while the scheme covers a wide range of treatments, certain specialized medical services and advanced treatments are not fully covered under this scheme.

### *Pradhan Mantri Suraksha Bima Yojna:*

Launched in 2015, the Pradhan Mantri Suraksha Bima Yojna (PMSBY) is a Government of India initiative aimed at providing affordable accidental death and disability insurance. This low-cost scheme (premium of Rs. 12 annually) leverages existing savings bank accounts for auto-debiting premiums, making it easily accessible to a wide population. Targeting individuals aged 18-70, PMSBY offers a safety net in case of accidental death (Rs. 2 lakh) or permanent disability (partial/full) caused by an accident (Rs. 1 lakh). With an annual premium of just Rs. 12, the scheme ensures broad accessibility and affordability, making it particularly beneficial for low-income groups and young adults, including college students. By simplifying the enrollment process through linkage with bank accounts, PMSBY has seen widespread adoption, thereby increasing insurance penetration in a country where such coverage is often limited.

Since its launch, PMSBY has seen substantial enrollment across various demographics, including college students, due to its low premium and ease of enrollment. The scheme has also contributed to heightened awareness about the importance of insurance among college students, who are often not the primary target audience for traditional insurance products. Further, by providing coverage for accidental death and disability, PMSBY has enhanced the financial security of insured college students and their families, offering them peace of mind in the face of potential accidents.

However, the biggest drawback of this scheme is that while PMSBY provides essential accident insurance, it does not cover other critical health issues that college students might face, such as illnesses

or mental health problems. Also, the claims process under PMSBY can be cumbersome and time-consuming, which may deter students from going in for this policy.

Thus, among the existing government launched schemes, because of eligibility and coverage issues, both PMJAY and PMSBY cannot be implemented for the students of the University of Delhi.

#### Public and Private Sector Insurance Companies' Schemes:

Some of the Public Sector General Insurance Companies in India are the Life Insurance Corporation of India (LIC), New India Assurance Company Limited (NIA), United India Insurance Company Limited (UIL), Oriental Insurance Company Limited (OICL) and National Insurance Company Limited (NICK). This paper studied the existing health insurance plans of all of these companies, including their group insurance policies, and found them to be better in some cases and equally competitive in some other cases when compared to private insurance companies similar, especially group health plans. LIC's Jeevan Arogya, for example, charges a premium of around Rs. 80 p.m. for a cover of around Rs. 3 lakhs per annum. This was the cheapest scheme under the public sector health insurance companies' schemes. Similarly, New India's Mediclaim policy charges a premium of Rs. 150 p.m., National Insurance's Arogya Sanjeevini plan charges a premium of Rs. 190 p.m. and so on. Similarly, various private companies too provide such policies at highly competitive rates. In fact, it was found that due to high competition in this sector, and much more flexibility that private insurance companies can assert, their rates, in terms of per month premium costs, were much cheaper than the public sector insurance companies.

#### Case study of Hansraj College:

This study conducted a survey among some of the campus colleges of the University of Delhi and found that Hansraj College already has an insurance scheme applicable for their students, wherein they charge the premium amount upfront with the fee amount. The following table shows the comparative calculus that was done by the College before arriving at the final decision on the insurance company provider.

Insured Name	Hansraj College Delhi		
Product	GPA		
Policy Period	From Premium Paid Date		
Coverage	Coverage (Iffco Tokio)	Chola Ms	Oriental
Sum Insured - Flat 1 Lakh	Yes	✓	✓
Coverage is worldwide and 24 hour basis	Yes	✓	✓
Accidental Death (AD) covered 100% of the sum assured	Yes	✓	✓
Permanent Total Disability (PTD) covered up to 100% of the sum assured	Yes	✓	✓
Permanent Partial Disability (PPD)- 100% of the sum assured	Yes	✓	✓
Medical Expenses Reimbursement - 10% of SI or 40% of admissible claim amount or actuals whichever is lower	Yes	✓	✓
Terrorism covered	Yes	Not Covered	Not Covered
Funeral Expenses	INR 5000/-	Not Covered	Not Covered
Repatriation of Mortal Remains	Covered Upto 3% of Principal Sum or Rs. 6,000/- whichever is less	Not Covered	Not Covered
Ambulance Service	Covered upto INR 1000 or actual whichever is lower	Not Covered	Not Covered
Total Employees	7,188	7,188	7,188
Total Sum Insured	71,88,00,000	71,88,00,000	71,88,00,000
	0.3	0.3	0.34
Net Premium	2,15,640.00	2,15,640.00	2,44,392.00
GST	38,815	38,815	43,991
Total Premium	2,54,455	2,54,455	2,88,383
Total Amount needs to be Paid	2,54,455	2,54,455	2,88,383

Source: Hansraj College, Accounts Section

As can be seen, the College has been providing health and accidental insurance of Rs. 1 lakh cover to its students (7188 in this case: first year admissions in the year 2022-23) with a lump sum premium of Rs. 30 per student charged upfront with the fee paid. This way, a comprehensive health and accidental plan has been provided to the students at a minimal cost, taking advantage of the principle of Economies of Scale.

This study thus attempts to study the feasibility and design one such policy for students across all the colleges of the University. This would aim to provide extensive health insurance coverage, including hospitalization, pre and post-hospitalization expenses and accidental cover, ensuring college students are financially protected against medical emergencies. This policy would thus provide financial protection for college students, reducing out-of-pocket expenses and alleviating the financial burden of unexpected medical costs, besides encouraging preventive healthcare and regular health check-ups, promoting a culture of health consciousness among college students.

**Global Perspective:**

While analyzing the existing insurance policies and models within the country, it is imperative to have a basic understanding of how the other countries’ universities function in this domain. The case of the universities of the USA and France have been taken for the purpose of analysis of this study.

In the United States of America, the government does not require students to have health insurance, but nearly all universities do. The students’ healthcare plans there fall under the domain of what are known as SHIPs, the Student Health Insurance Plans, which is a state health insurance assistance program. For those with limited income and resources, a public health insurance program known as Medicaid is also run.

Characteristic	Total								
	Number	Any health insurance						Uninsured <sup>4</sup>	
		Percent	Margin of error <sup>1</sup> (±)	Private health insurance <sup>2</sup>		Public health insurance <sup>3</sup>		Percent	Margin of error <sup>1</sup> (±)
			Percent	Margin of error <sup>1</sup> (±)	Percent	Margin of error <sup>1</sup> (±)			
<b>2021 Total</b> .....	<b>328,100</b>	<b>91.7</b>	<b>0.2</b>	<b>66.0</b>	<b>0.3</b>	<b>35.7</b>	<b>0.3</b>	<b>8.3</b>	<b>0.2</b>
<b>Race<sup>5</sup> and Hispanic Origin</b>									
White.....	248,800	91.8	0.2	67.8	0.4	35.0	0.3	8.2	0.2
White, not Hispanic.....	194,200	94.8	0.2	73.2	0.4	34.6	0.3	5.2	0.2
Black.....	43,960	91.0	0.6	55.1	1.2	42.7	1.0	9.0	0.6
Asian.....	20,680	93.8	0.7	72.4	1.4	27.4	1.3	6.2	0.7
Hispanic (any race).....	62,520	81.7	0.6	48.8	0.9	37.0	0.8	18.3	0.6
<b>Age</b>									
Under 65 years.....	271,900	90.2	0.3	69.5	0.4	23.7	0.3	9.8	0.3
Under 19 years <sup>6</sup> .....	77,030	95.0	0.3	61.9	0.6	36.4	0.6	5.0	0.3
19 to 64 years.....	194,900	88.4	0.3	72.5	0.4	18.7	0.3	11.6	0.3
19 to 25 years <sup>7</sup> .....	29,050	85.1	0.6	68.2	0.8	19.2	0.7	14.9	0.6
26 to 34 years.....	40,310	86.5	0.6	70.6	0.8	18.8	0.6	13.5	0.6
35 to 44 years.....	43,190	88.1	0.6	73.6	0.7	17.5	0.6	11.9	0.6
45 to 64 years.....	82,310	90.6	0.4	74.5	0.5	19.1	0.5	9.4	0.4
65 years and older.....	56,190	98.8	0.1	48.7	0.8	93.5	0.3	1.2	0.1

Source: U.S. Census Bureau, Current Population Survey and Annual Social and Economic Supplements (CPS ASEC)

SHIPs provide affordable health insurance specifically tailored for college students and ensure access to comprehensive healthcare services including preventive care, mental health services, and emergency care.

As can be seen from the above table, according to a 2021 American College Health Association (ACHA) report, only around 5% of students don't have health insurance. As many as three million students are covered by college, university, or other higher-ed institution student health insurance plans (SHIPs). However, the particulars of these student health insurance plans vary by institution, including costs, benefits offered, coverage areas, and how they work. A college or university-sponsored SHIP is the primary insurance source for almost 21% of students. Student plans are provided by 91% of public universities and 77% of private institutions. The average annual cost of a public university student health insurance plan is \$2,924, while a private school health plan averaged \$3,874 annually for undergraduates.

Medicaid, the public health insurance program, offers health coverage at zero cost to the beneficiaries with an aim to promote equity in health insurance among economically disadvantaged students. As of April 2021, approximately 35.5 million children are enrolled in Medicaid. A substantial portion of the enrolled population comprises children and young adults, including low-income students.

France, on the other hand, has made health insurance compulsory for all its citizens, including university and college students. Provided through La Sécurité Sociale (French Social Security), it aims to provide comprehensive health coverage to large populations, including vulnerable and low-income groups, ensuring equitable access to healthcare. The general French Social Security system is open to all students free of charge—once registered, students can request reimbursements of their medical costs, obtain a social security number and order their Carte Vitale health insurance card.

Further, in France, students also opt for complimentary health insurance policy known as “Mutuelle”, in order to allow them to be reimbursed their healthcare expenses without any limits. It is a private health insurance facility which comes at a cost of €20 - €150 per month and is complimentary to Sécurité Sociale. This complimentary Health Insurance (CHI) covers about 96% of the population, helping with co-payments and services poorly covered by Statutory Health Insurance (SHI). For students, CHI is essential for financial accessibility, especially for optical and dental care, which are less covered by SHI.

These case studies thus emphasize the critical role of comprehensive, accessible, and affordable health insurance schemes in enhancing student health and well-being. They also identify key areas for improvement, such as increasing awareness, streamlining implementation processes, and addressing equity issues to ensure that all students can benefit from these programs effectively.

## **Delhi University Students' Choices for a Health Insurance Policy: Findings of Primary Survey and Recommendations:**

An online survey was designed and data collected through random sampling of 726 respondents that comprised of students of University of Delhi. These were students of all stages and across the spectrum, i.e., undergraduates, postgraduates and Ph.D. students across the university's colleges, departments and centers.

An analysis of the survey revealed that more than 75% of the respondents considered the implementation of health insurance in their college fee structure as very important and desirable. On the question of acceptable premium amount, more than 35% of the respondents favor the premium payment to be upto Rs. 500 annually, while 31.4% of the respondents voted for the premium payment to fall in the range of Rs.500-Rs 1000. Though we expected the level of financial literacy to be low, but it turned out to be dismally low, with more than 70% of the respondents saying that they are not aware of any kind of health insurance schemes, but at the same time, they expressed interest to learn more about such policies and participate in such schemes. Major facilities to be made available under student health insurance policies voted for were outpatient care (73%), hospitalization coverage (67.6%) and mental health services (64.7%).

Recognizing the vital importance of student health and well-being, this research advocates for integrating a comprehensive health insurance scheme into the fee structure of the colleges, departments and centers at the University of Delhi. The proposed model leverages a public-private partnership to provide all students with affordable and extensive healthcare coverage. By combining governmental support with private sector efficiency, this initiative aims to reduce financial barriers to healthcare, encourage preventive care, and cultivate a healthier academic environment. The following sections outline the guidelines of the proposed model, including coverage, policy terms and sustainability strategies.

*Guidelines:* The proposed model for incorporating insurance coverage among the University Of Delhi students shall be based on the following guidelines:-

- Establish an integrated system for enrollment and premium collection, seamlessly incorporating it into the annual fee payment process. This system should be user-friendly and ensure that every interested student is automatically enrolled unless they opt out due to existing coverage. Additionally, create a comprehensive database to maintain accurate records of enrolled students and their insurance status.
- Launch strategic awareness campaigns to educate students about the insurance scheme. These campaigns should include workshops, informational brochures, and digital communications. Collaborate with student organizations to enhance reach and impact, ensuring students understand the benefits, coverage details, and how to utilize the insurance effectively.
- Implement a streamlined and digitized claim process managed by private insurers in partnership with university health centers. Develop an online portal for claim submissions and status tracking.

Ensure that the process is transparent, with clear instructions and minimal paperwork, to facilitate ease of use for students during medical emergencies.

- Establish a robust monitoring and evaluation framework to assess the scheme's performance. Conduct regular student satisfaction surveys, analyze health outcomes, and review financial sustainability. Use this feedback to make necessary adjustments and improvements to the scheme, ensuring it remains responsive to student needs and effective in providing coverage.
- Foster strong collaboration between the university, government bodies, and private insurers. Set up dedicated support services within the university to assist students with enrollment, claims, and any insurance-related queries. Ensure that support staff are well-trained and accessible, providing timely and accurate assistance to students.

#### *Terms of Policy and Coverage*

- All students will be automatically enrolled in the health insurance scheme during the annual fee payment process. Students who have existing health insurance coverage can opt-out by providing proof of their coverage within a specified time frame.
- The policy will cover hospitalization expenses, pre and post-hospitalization care, emergency services, outpatient services, mental health support, and annual preventive health check-ups. A minimum coverage of INR 600,000 per student per annum will be provided.
- The annual insurance premium, estimated between INR 300 to INR 500, will be included in the tuition fee structure. Payment will be collected along with tuition fees, ensuring convenience and compliance.
- Claims will be managed by the partnered private insurance providers through a digitized and user-friendly portal. The process will include clear instructions, minimal paperwork, and timely processing to ensure ease of access for students during medical emergencies.
- The scheme will include a robust monitoring and evaluation framework. Regular feedback from students will be collected through surveys and health outcome assessments to continuously improve the policy. Transparency in policy terms, benefits, and claim processes will be maintained to build trust and ensure effective implementation.

#### *Implementation Roadmap*

- **Planning Phase:** In integrating health insurance into the fee structure of colleges at the University of Delhi, the planning phase begins with rigorous research and analysis. This entails comprehending market dynamics, assessing student and faculty health needs, and navigating regulatory requirements. Clear objectives are defined, specifying the model's goals such as enhancing healthcare access and student well-being, while success metrics are established to gauge outcomes effectively. Risk assessments are vital to foresee potential challenges in insurance coverage and mitigate them proactively. Resource allocation, encompassing skilled personnel and robust IT systems, is meticulously planned to support seamless insurance administration within college operations.

Stakeholder engagement is prioritized to gather diverse perspectives and ensure alignment with institutional objectives. Continuous refinement based on stakeholder feedback and evolving healthcare trends is integral, fostering an adaptable approach to implementing a health insurance model that enhances college affordability and student support.

- **Development Phase:** During the development phase of integrating health insurance into University of Delhi college fees, critical steps include designing tailored insurance plans compliant with regulations and getting the same approved from the statutory bodies of the University, like the Finance Committee and the Executive Council. Regular conferences should be organized for all updates. Partnerships with insurers and healthcare networks are finalized for negotiated rates and streamlined claims processing. Robust IT infrastructure is developed to enable online enrollment and efficient claims management. Training programs ensure staff readiness. Continuous testing optimizes system performance before launch, ensuring a seamless transition and effective support for student and faculty healthcare needs.

- **Launch Phase:** During the launch phase of integrating health insurance into University of Delhi's college fees, key activities include launching awareness campaigns via campus events, posters, emails, and social media. Support services, such as dedicated help desks and hotlines, assist with enrollment inquiries and guide stakeholders through the process. Enrollment begins at the start of the new academic session, with clear timelines communicated for prompt coverage initiation. Online platforms are optimized for user-friendly enrollment, ensuring smooth transitions.

- **Evaluation Phase:** During the evaluation phase of integrating health insurance into University of Delhi's college fees, rigorous monitoring and assessment are crucial. Regular reviews analyze enrollment rates, claims processing efficiency, customer satisfaction, and financial viability. Data analysis identifies trends and improvement opportunities. Insights from enrollment data, claims statistics, and stakeholder feedback inform adjustments to coverage options, premiums, IT systems, and support services. Stakeholder engagement ensures ongoing communication and responsiveness to feedback, fostering an effective healthcare solution for the University of Delhi community.

### *Challenges and Limitations*

Even after so much research and creating an affordable design of the scheme, there are some major challenges that will be faced initially and it's essential to understand the obstacles.

**Awareness and Outreach-** This is one of the major challenges that will be encountered at the launch phase. Despite extensive awareness campaigns, there is still a high probability of unawareness and lack of understanding among students, especially new and international students.

**Enrollment and Opt-Out Complexity-** Timely opt out process for students with existing health coverage is complicated. So, if it's not done by administration in a timely and systematic manner, it will lead to administrative burden and student dissatisfaction.

**Financial Burden on Students-** Even if it is best to try to design affordable health coverage, some students still find it burdensome, especially students who are from economically disadvantaged backgrounds.

**Administrative and Implementation Challenges-** Getting statutory approvals and then coordination between university and insurers can be complex initially. Variation in implementation and bureaucratic hurdles may affect the efficiency and effectiveness of the scheme.

**Coverage Limitations-** Despite the broad coverage, Students with specific health needs may find that the insurance does not fully cover their medical expenses, leading to dissatisfaction.

**Resistance to Change-** There might be resistance from various stakeholders, including students, parents, and university administrators, to integrating health insurance into the fee structure.

**Technological Infrastructure-** Developing and maintaining robust IT infrastructure for online enrollment, claiming coverage, opt out option and data management is crucial. So, there is always the threat of technical glitches, cybersecurity issues and continuous updating and maintenance of data.

**Regulatory and Legal Compliance-**Navigating the regulatory and legal landscape to ensure compliance with health insurance laws and university policies is vital. Any lapse in legal aspects will lead to legal challenges and loss of credibility of the scheme.

#### *Important Considerations for successful implementation*

- Establishment of a dedicated Committee for Student Well Being which would report on a monthly basis directly to the Vice Chancellor Office, University of Delhi on matters related to the above implemented model.
- Implement robust mechanisms to detect and prevent fraudulent claims.
- Extensive campaigns must be done to spread awareness.
- Develop robust IT infrastructure for claim processing of coverage, opt out process for students with existing healthcare coverage and data updating and management.
- Collaboration with the insurers to design an affordable scheme.
- Variation for different category (General, EWS, SC, ST) students can be done.
- Understand legal aspects of coverage vividly.
- Coordination between University and insurers must be smooth and hurdles such as bureaucratic, administrative etc. needs to be mitigated.

#### **Conclusion**

The proposed model emphasizes a strategy leveraging the strengths of government health initiatives and private insurance providers to offer extensive coverage, manage claims efficiently, and ensure affordability. By embedding health insurance into the educational ecosystem, students will have access



to essential medical services without the burden of significant out-of-pocket expenses. This approach not only promotes a healthier student body but also fosters an environment where academic and personal growth can thrive without the constant worry of medical costs.

The implementation of this model will require strategic awareness campaigns, streamlined enrollment and claims processes, and robust monitoring, evaluation frameworks and collaboration. Financial projections indicate that with a 70% adoption rate, the scheme could generate substantial revenue, ensuring its sustainability and scalability.

Ultimately, this initiative aims to create a replicable model that prioritizes student well-being in higher education policy and administration. By setting a precedent for integrating health insurance into the educational framework, the University of Delhi can lead the way in promoting health and financial security for students, contributing to the nation's academic, social and thus, holistic development.

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## Need of Green Technology for Sustainable Development

Satyendra Prajapati

### Abstract:

In the framework of green technology, the purpose of this investigation is to analyse the characteristics of a sustainable development evaluation technique that is currently under development. In particular, the ecological aspect of the Sustainable Development Goals Index (SGDI) serves as the underlying foundation for the technique in question. Greening the economy has received a lot of attention as a potential new tactic that can simultaneously reduce environmental pressures, promote economic growth, and improve social well-being. One of the instruments that can be utilised to provide a description of the expansion of green growth is the indicator. The Averaging Sustainable Development Index (ASDI) and the Normalized Sustainable Development Index both rely on these metrics as their foundation (NSDI). The methodology that was developed as a result was used on 20 countries taken from the SDGI ranking. According to the findings of the research, considerable amounts of carbon dioxide were released into the atmosphere as a consequence of the vigorous operations carried out by brown businesses in the United Arab Emirates, Kazakhstan, the United States of America, Korea, and Russia. In terms of environmentally responsible management of water and sanitation, Switzerland, Kazakhstan, and Russia all received top marks. The fact that Russia was the only developed nation to have an ASDI that was greater than its SDGI and that the gap between its NSDI and ASDI indices was not significant indicated a favourable trend in the development of green technology. In addition, the fact that Russia was the only developed nation to have an ASDI that was greater than its SDGI. Many nations place their emphasis, while putting together a set of indicators for sustainable development, on particular aspects of sustainable development, such as the economic, environmental, social, and institutional aspects, amongst others. In addition to these sets of indicators, governments may also utilise composite or integrated metrics. Countries who do not currently have a strategy for sustainable development but are working toward establishing one have also developed their own methodological methods to the assessment of sustainable development. In the framework of green technology, the purpose of this investigation is to analyse the characteristics of a sustainable development evaluation technique that is currently under development.

The methodological suggestion is anticipated to be helpful in locating gaps in the implicit values between indicators and, as a consequence, in helping to acquire real results, which are required for determining the potential for the development of environmentally friendly technologies. Additionally, it is anticipated that the suggestion will help in the acquisition of real results, which will help in determining the potential for the development of environmentally friendly technologies. Using specific sets of indicators in accordance with a strategy that was specifically established helps to determine the level of sustainable development that has been achieved. Not only may the sets of indications be different from one another, but they could also point to actual consequences. As a result, the purpose of this research is to examine and contrast various metric classification schemes with the proposed methodological approach. The reason that the NSDI began to diverge more and more from the SDGI was due to the fact that countries that topped the socio-economic rankings had a higher overall consumption of energy and resources as well as a significantly larger environmental footprint than countries that had a lower overall consumption.

This study is ground breaking in that it finds gaps between the values of the NSDI and the ASDI. These gaps suggest that the conditions for the adoption of environmentally friendly technology in the majority of developing nations are unfavourable.

**Keywords:** Sustainable Development index; green economy; green technology; innovation; investment.

### Introduction:

In order to address global issues including climate change, population expansion, environmental degradation, and wasteful use and depletion of natural resources, nations must adopt environmentally friendly technology and methods to economic activity. These problems are causing natural resources to be depleted at an alarming rate. The term "sustainable development" refers to development that causes less harm to the environment and is driven by policies that are global as well as those that are specific to individual nations, which are comprehensive and all-encompassing.

Consider the requirements that the generations to come will have. Several of these initiatives advocate for the implementation of green technology. Threats such as the depletion of natural resources, climate change as a result of overpopulation, and the rapid economic growth of new industrial countries (South Korea, Singapore, India, Malaysia, Turkey, Iran, the Philippines, etc.) are all widely recognised as having a negative impact on the environment. Moreover, these dangers are associated with a growing number of new industrial countries.

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They demand the execution of new strategies for economic growth and development, with a major focus on the creation of additional sources of growth to minimise the use of natural resources and improve the standard of living of the population. The Europe 2020 strategy for smart, sustainable, and inclusive growth distinguishes the following major factors that contribute to the strengthening of the economy: smart growth (the development of a knowledge- and innovation-based economy); sustainable growth (the promotion of a more resource-efficient, environmentally friendly, and competitive economy); and inclusive growth (fostering a high-employment economy that delivers social and territorial cohesion). These three characteristics lead to the phenomenon known as "inclusive growth." This plan has parts devoted to the effective use of resources and energy sources in Europe, the economic transition towards a scenario with less reliance on hydrocarbons, and the benefits of utilising renewable energy sources and modernising the transportation sector. The strategy did not adequately cover the whole spectrum of green sectors, despite the fact that its field of application is sufficiently broad, comprising acts ranging from the improvement of energy efficacy to the reduction of emissions. According to the OECD report "Towards Green Growth," policymakers should adhere to the green growth idea. In order to preserve the environment, the economy must be adaptable, dynamic, and efficient while utilising resources and having an effect on the environment. The development of environmentally friendly technologies is seen as being driven by innovation and investment. A prognosis of future development is often founded on an all-too-familiar scenario (increasing productivity, innovation, and technology) that also results in an extensive collection of positive ecological outcomes. Growth promotion is hindered by recognised issues that are occurring behind the scenes, such as climate change, the loss of biodiversity, and food shortages. Another aspect of sustainable development and green growth that is frequently disregarded is the social component. Green technologies that are sustainable provide a major contribution to the creation of a more sustainable society, while also fostering the preservation of the environment and the expansion of the economy. After that, a particular focus should be placed on both the factors that influence the production of environmentally friendly technologies that are sustainable and the disparities that exist between their respective development goals. However, the combined efforts of participants in a leader-follower supply chain with sustainable eco-innovations have an effect not only on the development of sustainable green innovations, but also on their equity. The latter resulted in severe problems for all of the entities involved in the supply chain, including imbalances in supply and demand, damage to the environment, and uneven employment distribution.

To get started on the path to green growth, each nation first needs to figure out how to resolve a variety of problems relating to financing. Consequently, the current framework for sustainable development has a financial component alongside the recognised environmental, social, and economic components. This is done in order to bring financial sustainability more in line with existing best practises. Green financing is prevalent today. can be considered both (1) A component of the sustainable development finance framework and

(2) a component of the sustainable development financial framework. The practise of providing financial support for a variety of endeavours, especially those that promote sustainable development. Various models of decision-making, including quantitative and qualitative economic analysis, environmental modelling, and others Impact assessments as well as assessments of sustainable development might make fresh perspectives and approaches possible. To encourage environmentally responsible growth and to make the world more sustainable.

The following important indicators are part of the sustainable development assessment in the environmental context:

Ecological Sustainability Index 1. (ESI). This index has 76 factors that are integrated into environmental sustainability measures. These indicators include the country's endowment of natural resources, environmental management efforts, past and present pollution levels, its ability to increase environmental efficiency, etc.

Index of Environmental Performance 2. (EPI). 16 factors make up the EPI index, which tracks how far we've come toward environmental sustainability. Some of the indicators on this list are child mortality (deaths per 1000 children aged 1 to 14), air pollution (g/m<sup>3</sup>), access to drinking water (%), regional ozone,

nitrate levels in drinking water (mg/l), water use, wilderness protection (%), timber harvest rate (%), agricultural subsidies, overfishing, renewable energy, energy efficiency, and carbon dioxide emissions per GDP.

**Materials and Methods:**

The methodological approach applied in this investigation is shown in Figure 1. It is based on the Sustainable Development Goals Index (SDGI), which consists of 17 SDGs: The Sustainable Development Goals (often abbreviated as SDGs) are as listed below: SDG 1 is the eradication of poverty, SDG 2 is the eradication of hunger, SDG 3 is the promotion of good health and well-being, SDG 4 is the provision of quality education, SDG 5 is the promotion of gender equality, SDG 6 is the provision of clean water and sanitation, SDG 7 is the provision of affordable and clean energy, SDG 8 is the promotion of decent work and economic growth, SDG 9 is the promotion of industry, innovation, and infrastructure, and SDG 10 is the (partnerships for the goals).

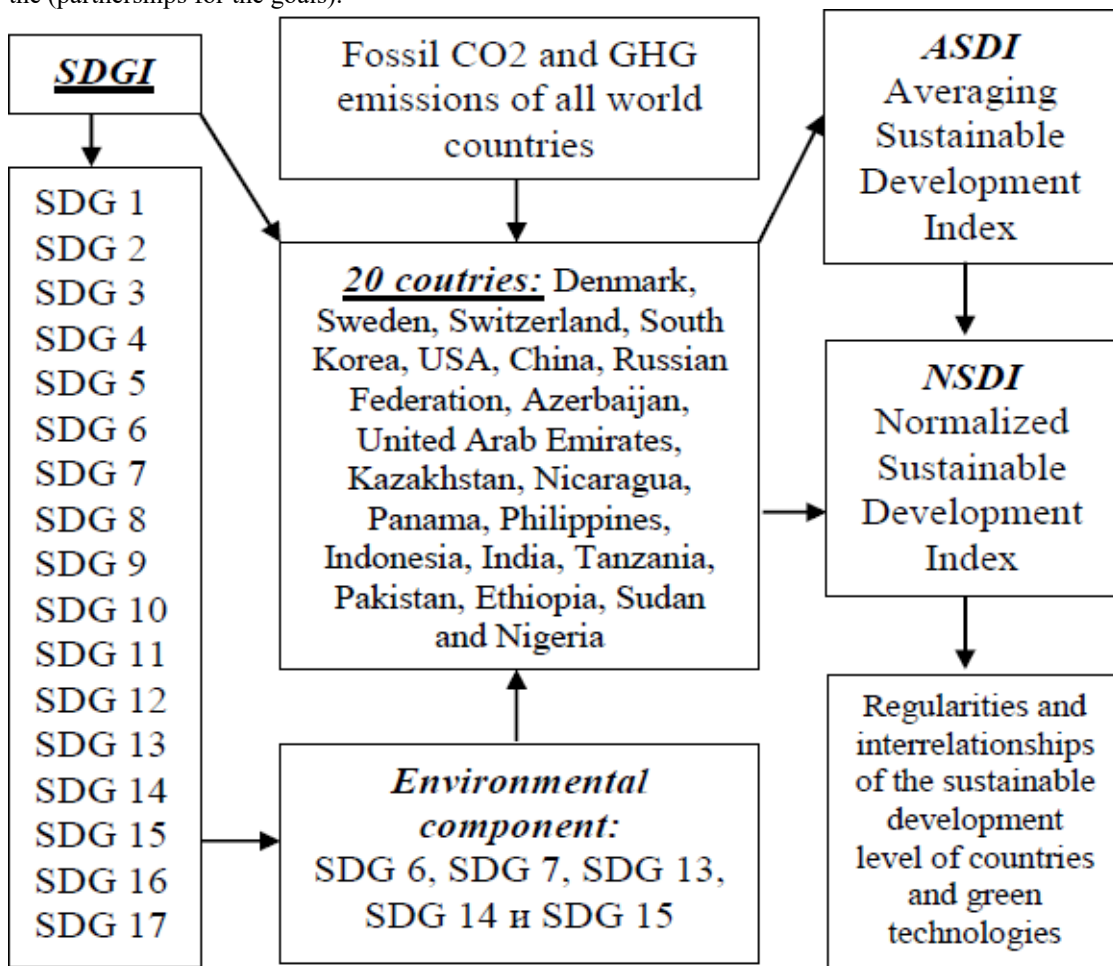


Figure 1 illustrates the evaluation process for the relationship between green technology and sustainable development.

**Results:**

No of their access to natural resources or geopolitical location, all nations face difficulties in achieving sustainability, such as resource depletion and climate change. Carbon dioxide emissions are among the most significant indicators in environmental sustainability assessments (Figure 2).

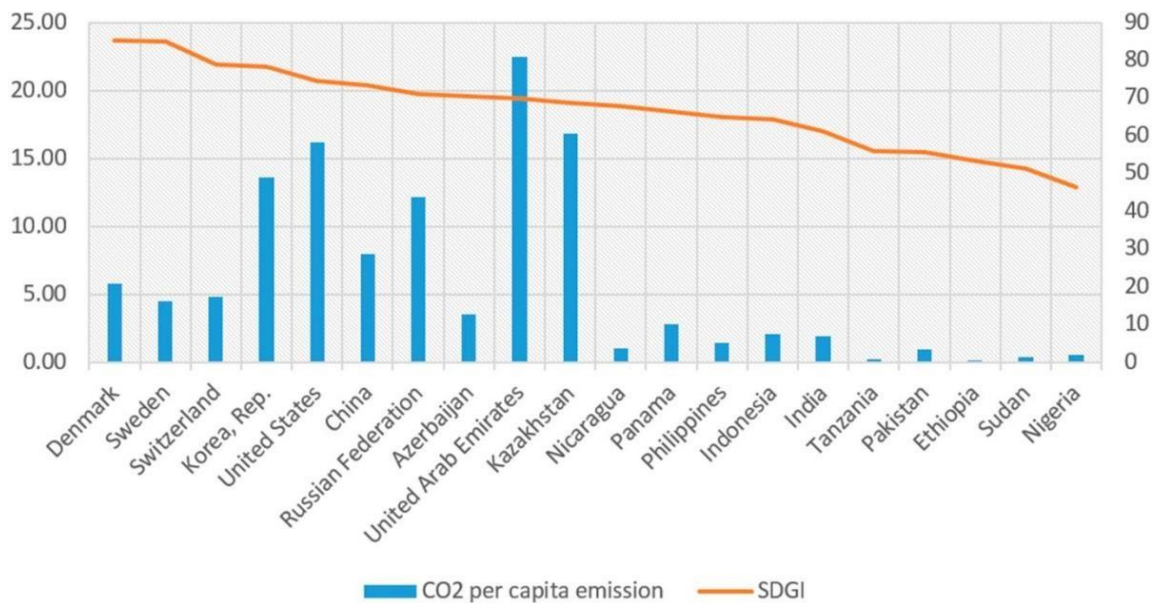


Figure 2 shows 2019 CO2 per capita emissions and the index for the Sustainable Development Goals.

Even if the United Arab Emirates, Kazakhstan, the US, Korea, and Russia take steps to protect the environment, their carbon dioxide emissions may be seen as high compared to those of other countries. Several mining and oil and gas businesses are to blame for these emissions. Carbon dioxide emissions are lower in island nations because they don't have as much sustainable development as other places. This dependence can be explained by the fact that these countries don't have a lot of natural resources to use, don't have a lot of industry, etc.

The United States' Green New Deal project, which aims to move away from fossil fuels and toward renewable energy, was unveiled at the start of 2019. This legislative package is anticipated to assist in resolving the climate catastrophe and creating a new economic model based on the decarbonization of energy and the switch to renewable energy sources. It calls for the renovation of transportation infrastructure, the encouragement of the manufacturing of electric vehicles, the updating of all current structures to achieve greater energy efficiency, and the phasing out of fossil fuels. The Green New Deal proposes for enhancing social protections for workers, creating new jobs, and reducing greenhouse gas emissions from agriculture and the production of nutritious food (including medical care, paid leave, etc.). The nation must gradually cut back on those economic sectors, particularly those in the oil, gas, and coal industries, that produce carbon dioxide emissions in order to implement the Green New Deal's goals. The government can achieve this by increasing taxes on oil and coal firms and by regulating their operations.

The relationship between carbon emissions and GDP in the research countries is crucial to evaluate the effectiveness of sustainable environmental development (Figure 3).

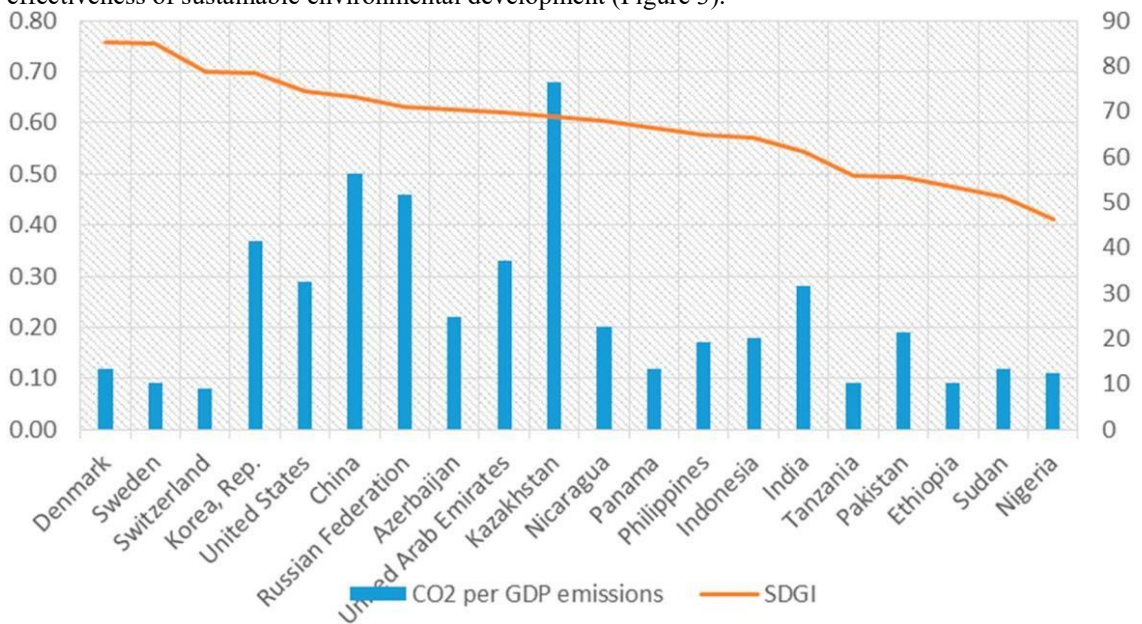


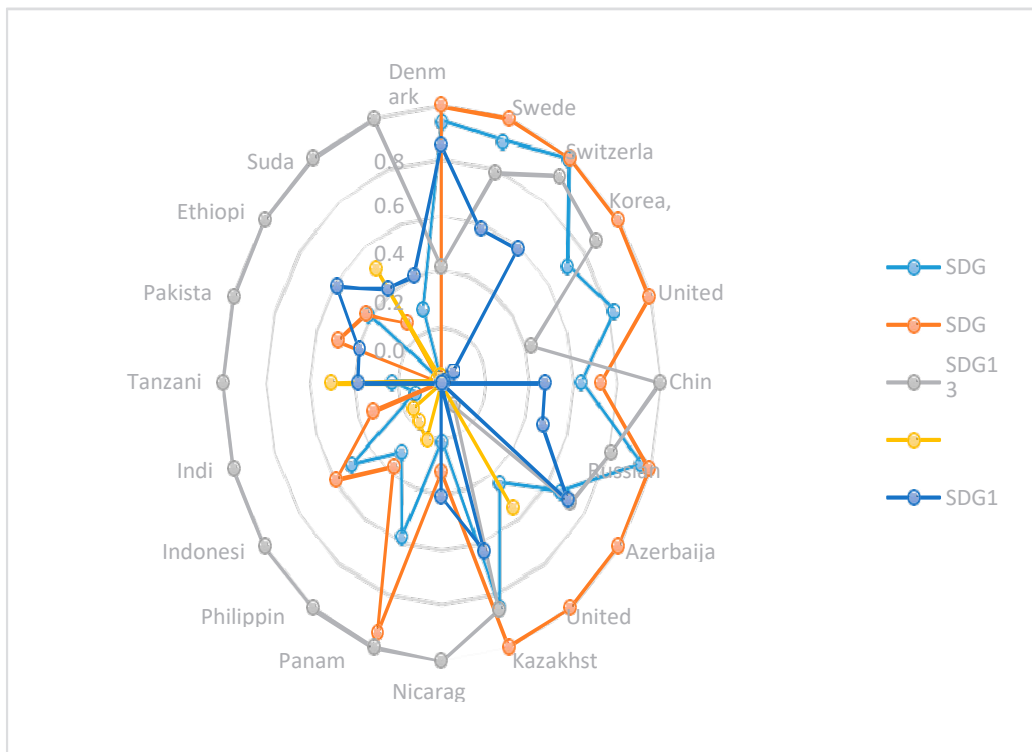
Figure 3 shows the 2019 GDP Sustainable Development Goals Index as a measure of the metric tonnes of CO2 per person emitted.

High-income, oil-exporting countries emit the most carbon dioxide. South Korea was among the first countries to announce green growth goals plans. Its National Strategy for Green Growth (2009–2050) intends to establish eco-friendly economic growth engines, improve quality of life, and reduce climate change. To implement this goal, a 2010 Framework Act on Low-Carbon Green Growth allocates portion of the annual GDP to green development programmes and projects. Renewable energy, energy-efficient building, and waste management get the most funding. The Act is projected to increase budget receipts, improve energy security, and cut CO2 emissions.

EECCA's policies are also greening. Kazakhstan has approved a long-term policy for a green economy transformation and ensured its implementation. Less-developed countries have low-carbon development policies and/or energy efficiency initiatives.

Different countries focus on different components of sustainable development when building an indicator system, such as economic, environmental, social, institutional, etc. Composite or integrated indicators are also used. Countries that are working toward a sustainable development strategy have their own assessment methods. Indicators of sustainable development and a measurement method that takes each country's development route into consideration are being studied. Comparing EECCA indicators reveals commonalities and variances. These sets may have identical names, but their assessment metadata differs. It's hard to compare them without examining each sustainable development indicator. Diverse evaluation methodologies and measurement frequency complicate sustainable development measurement. One indicator cannot fully describe a country's sustainable development. A comprehensive description with multiple indicators is needed.

Given the importance and significance of environmental sustainability, it is essential to track its progress and the nation's overall sustainable development. SDG 6 (providing availability and sustainable management of water and sanitation), SDG 7 (ensuring access to affordable, reliable, sustainable, and modern energy), SDG 13 (taking action to combat climate change and its impacts), SDG 14 (conserving and sustainably using the oceans, seas, and marine resources for sustainable development), and SDG 15 (ensuring sustainable consumption and production patterns) (Figure 4).



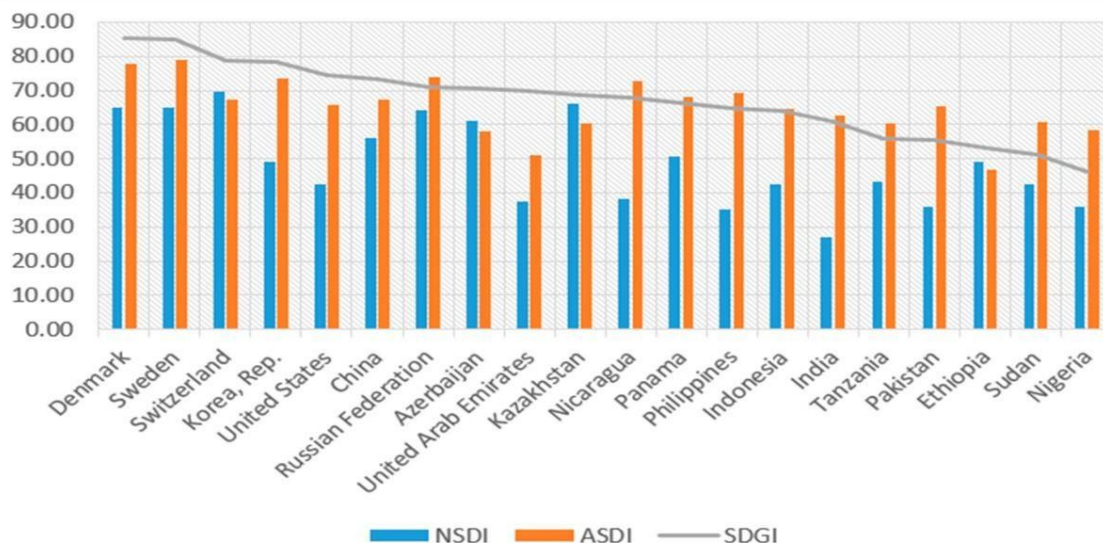
**Figure 4.** Greentech efficiency by Sustainable Development Goals in 2019.

Economically developed countries have better water supply, sanitation, and access to renewable energy, whereas less-developed countries are better at climate action. Most nations made little progress on SDG 14.

For more accurate rankings, NSDI values were used (Figure 5). The ranking used the Averaging Sustainable Development Index and Sustainable Development Goals Index.

Switzerland, Kazakhstan, and Russia had the highest NSDI scores. SDGs 6 and 7 were surpassed by Switzerland. Assuming a positive trend in the development of green technologies, Russia was the only developed nation with an ASDI higher than the overall level of sustainable development. However, the difference between its NSDI and ASDI was not significant.

Most less-developed countries exhibited a large disparity between NSDI and ASDI, indicating adverse greentech adoption. Green innovations may have been declared but not used.



This Figure 5. Show the efficiency of Sustainable development in the field of green technology.

### Conclusions

With averaging indicators, there is no evident connection between the number of established indicators and ranking discrepancies. Due to differences in weighing coefficients and relative importance, more indicators may not necessarily guarantee better averaging. Compared to developing nations with lesser resource consumption, high socioeconomic countries often consume more energy and resources and leave a bigger environmental imprint.

The nations that emit the most carbon dioxide are those that export oil and are highly industrialised with a significant industrial complex. The United Arab Emirates, Kazakhstan, the US, Korea, and Russia all have larger carbon dioxide emissions than the other research nations. These emissions are produced by various mining, oil, and gas companies. Island nations, which have lower levels of sustainable development, have less important natural resources to draw from.

Reduce carbon dioxide emissions via extracting. Each nation has unique traits that result from its history of growth, geographic location, and abundance of natural resources. As a result, different countries may have different greening scenarios.



A link between environmental development and overall sustainable development was established using the suggested methodological approach based on the Sustainable Development Goals Index (SDGI), particularly its environmental component. The Averaging Sustainable Development Index (ASDI) and the Normalized Sustainable Development Index were built on eco-related indicators (NSDI). Less economically developed nations perform better in terms of climate action, whereas more economically developed nations demonstrate progress toward SDGs 6 and 7. Most of the nations included in the report made very little progress toward SDG 14. Switzerland has the highest NSDI rating, followed by Kazakhstan and Russia. Switzerland made the most headway in terms of sustainable energy management as well as sustainable water management. Assuming a favourable trend in greentech development, Russia was the only developed nation with an ASDI higher than SDGI, and the difference between its NSDI and ASDI indexes was not substantial. The majority of less developed nations had large differences between their NSDI and ASDI scores, which suggested unfavourable conditions for the adoption of green technologies.

The majority of less developed nations had large differences between their NSDI and ASDI scores, which suggested unfavourable conditions for the adoption of green technologies. At first, there is no obvious relationship between the quantity of averaging indicators and ranking deviations. Better averaging does not always result from having more indicators. The countries with the highest socioeconomic rankings consumed more energy and resources and left a larger environmental imprint than those with the lowest consumption, which is why the NSDI diverged more and more from the SDGI.

Countries' policies and laws must clearly define sustainable development in the context of a green economy and adhere to accepted international norms. Continually enhancing national plans will help countries identify a clear vision, precise goals, a flow of events, and mechanisms to carry out their promises.

To track sustainable development and green growth, nations require well defined action plans and metrics. The shift to green technologies should reinforce current global trends that aim to improve social equity and human well-being while lowering environmental hazards. The success of this course depends on countries' efforts to increase public investment and spending, introduce environmental taxes and approaches (that compensate for the market institutions' underwhelming impact on reducing industries' environmental footprints), outlaw environmentally harmful subsidies, and improve the legal and regulatory framework for environmental protection.

The baseline data, which only provide the macro-level assessment, is a drawback of the suggested technique. The strategy could be used as part of a holistic framework that supports cross-sectoral integration, the application of regional practises and expertise, stakeholder involvement, and organisational empowerment.

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## Trends In The Growth Of Urbanisation In Undivided Andhra Pradesh

D. Pulla Rao<sup>1</sup>

### Abstract

Urbanization is a process where in there is an increase in the urban population to the total population in a given state or country. This process takes place due to increase in population in urban areas and also migration of people from rural areas to urban areas. In 1901, only 10 per cent of the population in Andhra Pradesh lived in urban areas, it was increased to 33.34 per cent by 2011. Out of the 23 districts in Andhra Pradesh, Hyderabad is unique with cent per cent urban population. In Andhra Pradesh there are four urban agglomerations (UAs) in 1971 and it increased to 37 by 2011. Among the urban agglomerations Visakhapatnam Urban Agglomeration occupies the top rank with a population of 2,035,922 in the 2011 Census. Among 37 urban agglomerations in the state the smallest urban agglomeration is Bheemunipatnam with a total population of 48,670. The proportion of urban population in Class I cities has increased from 24.38 per cent in 1901 to 75.31 per cent in 2011. The increase in urban population due to industrialization in Andhra Pradesh has resulted into over-crowding and urban poverty.

### 1. Introduction

Urbanization refers to the population of a nation living in urban areas. Urbanization is an indicator of modernization, the sign of growth and economic progress. It is a natural consequence of economic changes that take place, as the nation develops. It is indispensable to economic growth and leads to social equity. Urbanization is the result of more avenues of industrialization but it is not matched by a commensurate degree of energy and transportation. "The most distinctive feature of the twentieth century has been the rapid and massive urbanization taking place everywhere in the world as a consequence of the process of modernization. Migration from rural areas into towns is not peculiar to developing countries alone, but is a worldwide phenomenon". In the 21<sup>st</sup> Century, the rate of urbanization is much more in developing countries than in developed countries.

Almost half of the world population lives in the urban areas and the cities are growing rapidly, both in size and numbers. The trend is especially stronger in developing world, where in the rate of rural to urban migration is high as people flock to cities in search of employment and higher standard of living. Globally, the urban population has grown at an average rate of 4.2 per cent in the past two decades. However, the overall population growth in developing countries in the 1960s and 1970s too was almost double of England during the first industrial revolution.

Urbanization in India has shown its phenomenal growth during post-independence years because of pressure of growing population, rapid industrialization, rural to urban migration and the growing tempo of modernization. As a result new towns are coming up, already existing commercial and industrial towns are expanding to accommodate the continuing influx of the rural population. The rate of urbanization varies over time and space. In the early period after independence and also the starting point of the planned economic development in India, in 1951, the level of urbanization was 17.29 per cent with only 62.44 million urban people in 2843 towns. The 2011 population census has recorded 377 million urban populations which accounts for 31.16 per cent of 1210 million total populations, distributed over 5161 urban agglomerations/towns.

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## 2. Concept Of Urban Area

The Census Authorities in India defined urban area as follows:

- a) All places with a municipality, corporation, cantonment board or notified town area committee, etc.
- b) All other places which satisfy the following criteria:
  - i) Minimum population of 5,000;
  - ii) At least 75 per cent of male working population engaged in non-agriculture pursuits; and
  - iii) A density of population of at least 400 persons per sq.km.

The definition of urban area given above is not comparable with the definition of urban area provided in other countries. For instance, in Japan, a place having 30,000 or more inhabitants is classified as urban. An area consists of 2,500 population is regarded as an urban area in the USA. The United Nations has identified a place which has 20,000 population as an urban area. An area having more than 2,000 population and more than 50 per cent of labourers working in non- agricultural activities are identified as an urban area in China.

## 3. Urbanization Trends In Andhra Pradesh

The State of Andhra Pradesh is known for its agricultural base. It is the fifth largest state in India, both in area and population. Andhra Pradesh covers an area of 2.75 lakh Sq. Kms., which constitutes 8.37 per cent of the total area of the country. The state of Andhra Pradesh shows a very slow process of urbanization since 1901. Andhra Pradesh occupies 10<sup>th</sup> place in the composition of urban population in the country (excluding the Union Territories). According to the 2011 census, the total population of Andhra Pradesh is 75.73 million which constitutes 7.4 per cent of the total population of the country. The decennial growth rate of population in Andhra Pradesh during 1991-2011 stood at 13.86 per cent only, whereas it was 24.20 per cent during 1981-91. This is a very interesting trend observed in the case of Andhra Pradesh. In 1901 there were only 9.65 per cent of the state's population lived in urban areas. Every decade then onwards, the urban population had increased by one or two per cent and had reached 23.32 per cent by 1981. For the first time in 1981 the population of urban population of Andhra Pradesh is just higher than India's urban population, in 1991 the urban population of Andhra Pradesh increased to 26.89 percent which is 1.17 per cent higher than the national average. Ultimately, the urban population in the state reached 27.08 per cent by 2011, which is less than the national average. Four urban agglomerations (UAs) in 1971 increased to 37 in 2011. The exponential growth rate of UAs in Andhra Pradesh rose from 2.92 in 1971 to 3.96 in 1981 and then declined to 3.59 in 1991 and further to 1.37 in 2011 (Table-1). Decennial and exponential growth rates and increase in number of urban agglomerations indicate that small towns and Class I cities are emerging into urban agglomerations. The urbanization process was really accelerated only after 1960 in Andhra Pradesh. This is due to the priority given by the government to improve agriculture in the state which was favoured by the presence of the huge Godavari and Krishna deltas with fertile alluvial soil and water for irrigation. The industries started during this period were mostly agro based industries in Coastal Andhra earlier than independence and only after 1961 emphasis was also laid in promoting industries in Andhra Pradesh.

**Table-1: Trends In Urbanization In Andhra Pradesh: 1901-2011**

Andhra Pradesh										India
Census year	Total No. of Towns/ UAs	Total Population	Decennial Growth of Total Population		Total urban population	%of urban Population to total population	Decennial Growth of urban population		Annual Exponential Growth rate	%of urban population in India
			Absolute	%			Absolute	%		
1901	116	19065921	----	---	1839750	9.65	----	----	----	10.84
1911	133	21447412	2381491	12.49	2165095	10.09	325345	17.68	1.63	10.29
1921	153	21420448	-26964	-0.13	2187317	10.21	22222	1.03	0.1	11.18
1931	176	24203573	2783125	12.99	2694147	11.13	506830	23.17	2.09	11.99
1941	212	27289340	3085767	12.75	3665928	13.43	971781	36.07	3.08	13.86
1951	291	31115259	3825919	14.02	5420325	17.42	1754397	47.86	3.91	17.29
1961	223	35983447	4868188	15.65	6274508	17.44	854183	15.76	1.46	17.97
1971	224(4 U.A)	43502708	7519261	20.96	8402527	19.31	2128019	33.92	2.92	19.91
1981	252(4 U.A)	53549673	10046965	23.10	12487576	23.32	4085049	48.62	3.96	23.34
1991	264(15 U.A)	66508008	12958335	24.20	17887126	26.89	5399550	43.24	3.59	25.72
2001	210(37 U.A)	75727541	9219533	13.86	20503597	27.08	2616471	14.63	1.37	27.78
2011	245 (35 U.A)	84580777	8853236	10.46	28219075	33.36	7715478	27.34	1.42	33.36

Source: Computed from Census Reports, (1901 to 2011).

#### 4. District -Wise Trends Of Urbanization In Andhra Pradesh

Out of the 23 districts in Andhra Pradesh, Hyderabad is unique with cent percent urban population. The districts where urban population was higher than the state average in 2011 are Rangareddy (53.27), Visakhapatnam (39.89), Krishna (32.37), and Guntur (27.95). The rest of the districts of Andhra Pradesh have an urban population lower than the state average (Table-2). The Mahaboob Nagar district, with 10.59 per cent has recorded the lowest proportion of urban population in the state.

It is evident therefore, that the level of urbanization has been steadily increasing all through the decades since 1901. The percentage of urban population to the total population has increased less than three times, whereas the actual number of city dwellers recorded roughly a twelve fold increase during the period 1901-2011.

**Table -2: District -Wise Urban Population In Andhra Pradesh: 1981-2011**

Sl.No.	Name of the District	Urban population in 1981	% of Urban population	Urban Population in 1991	% of Urban population	Urban population 2001	% of Urban population	Urban population 2011	% of Urban population
1	Adilabad	316,983	19.34	481,576	23.13	656,343	26.47	757826	26.85
2	Nizamabad	322,653	19.21	412,944	20.27	422,533	18.04	587800	20.82
3	Karimnagar	384,730	15.79	624,319	20.55	678,944	19.53	994231	35.23
4	Medak	216,404	11.97	328,487	14.47	3894,675	14.45	728121	25.80
5	Hyderabad	2,260,702	100.00	31,45,939	100.00	3,686,460	100.00	4010238	100.00
6	Rangareddy	3,76,977	23.83	12,05,177	47.23	1,878,138	53.27	3724364	56.32
7	Mahabubnagar	267,221	10.93	3,42,192	11.12	3,71,431	10.59	606423	11.59
8	Nalgonda	259,517	11.38	3,31,453	11.87	4,29,458	13.26	661743	16.23
9	Warangal	396,474	17.24	5,46,622	19.39	6,20,791	19.21	998146	21.33
10	Khammam	297,386	16.98	4,48,163	20.23	5,08,048	19.30	655674	20.13
11	Srikakulam	213,404	10.89	2,90,238	12.50	2,78,203	11.00	436347	13.20
12	Vizianagar	287,499	15.94	3,63,500	17.22	4,12,093	18.36	490422	19.52
13	Visakhapatnam	805,961	31.28	13,08,583	39.83	15,11,840	39.89	2037458	52.13

14	East Godavari	822,180	22.21	10,80,804	23.80	1,136,714	23.33	1314597	25.23
15	West Godavari	596,874	20.76	7,28,553	20.71	7,47,458	19.69	808597	22.65
16	Krishna	992,062	32.54	13,24,954	35.82	1,365,617	32.37	1857291	33.80
17	Guntur	945,702	27.53	11,86,700	28.89	12,31,253	27.95	1656745	28.23
18	Prakasam	3,49,277	14.99	4,53,902	16.45	4,66,709	15.28	662116	16.38
19	Nellore	4,18,389	20.76	5,69,062	23.79	6,03,634	22.70	862309	24.99
20	Cuddapah	3,74,503	19.37	5,44,973	24.03	6,00,487	23.33	1228887	25.64
21	Kurnool	5,89,599	24.49	7,68,100	25.84	7,92,664	22.57	2040101	21.32
22	Anantapur	5,30,917	20.84	7,48,053	23.50	9,20,079	25.28	1146956	26.23
23	Chittoor	4,62,142	16.88	6,45,832	19.80	8,10,015	21.69	1228887	21.77
24	Andhra Pradesh	1,24,87,576	23.32	1,78,87,126	26.89	2,05,03,597	27.08	2,83,53,745	33.36

Source: Computed from the Census reports (1981-2011).

### 5. District-Wise Percentage Of Urban Population In Andhra Pradesh

In Andhra Pradesh, Hyderabad district having 100 per cent urban population during 2001-2011. The next highest per cent of urban population to total population (53.27%) was found in Rangareddy district, which is adjacent to Hyderabad district. Visakhapatnam district having 39.89 per cent urban population ranked third followed by Krishna district (32.37%). Mahbubnagar district was found to have the least urban population (10.59%) in Andhra Pradesh. The change in percentage of urban population to total district population during 2001-2011 reveals that eight districts experienced increase in their percentage of urban population and the rest of the 15 districts underwent decline in percent of urban population (Table-3).

To understand the tempo of urbanization, the percentage of urban population to total population has been calculated for all the districts of Andhra Pradesh for the decade 2001-2011. Hyderabad district contributes the highest around 18 per cent to state urban population followed by Rangareddy district. Visakhapatnam, Krishna and Guntur districts contribute 6-7 per cent each to state urban population. Among the 23 districts in Andhra Pradesh, Mahbubnagar and Srikakulam districts are found to have the least urban population. Comparison between two census periods in terms of per cent urban population to district population showed that Visakhapatnam and Vizianagaram districts in Coastal Andhra Pradesh, Anantapur and Chittoor districts in Rayalaseema region, and Adilabad, Nalgonda and Rangareddy districts in Telangana region showed increase in per cent urban population. Hyderabad district showed no change in percent of urban as it has achieved 100 per cent growth in urban and reached "saturation" level in 2001.

**Table - 3: District-Wise Percentage Of Urban Population To Total Urban Population And Per Cent Of Urban Population To Total District Population In Andhra Pradesh: 2001-2011**

District	% of urban population to total urban population		Change (2001-11)	% of urban population to total district population		Change (2001-11)
	2011	2001		2011	2001	
Hyderabad	17.98	17.59	+	100.00	100.00	Same
Rangareddy	9.11	6.74	+	53.27	47.23	+
Visakhapatnam	7.37	7.32	+	39.89	39.83	+
Krishna	6.66	7.41	-	32.37	35.82	-
Guntur	6.00	6.63	-	27.95	28.89	-
East Godavari	5.54	6.04	-	23.33	23.80	-
Anantapur	4.49	4.18	+	25.28	23.50	+
Chittoor	3.95	3.61	+	21.69	19.80	+
Kurnool	3.87	4.29	-	22.57	25.84	-
West Godavari	3.65	4.07	-	19.69	20.71	-
Karimnagar	3.31	3.49	-	19.53	20.55	-
Adilabad	3.20	2.69	+	26.47	23.13	+
Warangal	3.03	3.06	-	19.21	19.39	-
Nellore	2.94	3.18	-	22.70	23.79	-
Cuddapah	2.93	3.05	-	23.33	24.03	-
Khammam	2.48	2.51	-	19.80	20.23	-
Prakasam	2.28	2.54	-	15.28	16.45	-
Nalgonda	2.09	1.89	+	13.26	11.87	+
Nizamabad	2.06	2.31	-	18.04	20.27	-
Vizianagaram	2.01	2.03	-	18.36	17.22	+
Medak	1.88	1.84	+	14.45	14.47	-
Mahbubnagar	1.81	1.91	-	10.59	11.12	-
Srikakulam	1.36	1.62	-	11.00	12.50	-

Source: Computed from Census Reports (2001 and 2011).

## 6. Growth of Urban Agglomerations in Andhra Pradesh

The concept of urban agglomeration was first introduced in the 1971 census, continued in the 1981 census and further also. The growth of urban population in 23 districts of Andhra Pradesh was further examined by analyzing Urban Agglomerations (UAs). Outgrowths of cities and towns are also treated as urban in census. Each such towns and cities along with its outgrowths and with adjoining towns are termed as urban agglomerations.

The Andhra Pradesh state had four such urban agglomerations namely Hyderabad, Visakhapatnam, Vijayawada and Rajahmundry in 1971. The same were found in the 1981 census also. But the number of urban agglomerations has increased to 15 in the 1991 census. According to the 2011 census, there were 37 urban agglomerations. Out of the 37 urban agglomerations 14 existed at the time of the 1991 census and 23 urban agglomerations were newly formed by the time of the 2011 census. Jammalamadugu in Cuddapah district was deleted from the list of Urban Agglomerations in the 2011 Census.

Among the urban agglomerations Hyderabad UA occupies the top rank with a population of 67,31,790 in the 2011 census compared to 43,57,219 in 1991 showing a decadal percentage growth of



27.00 per cent. The other major urban agglomerations are Visakhapatnam U.A. with a population of 20,37,458 as are Visakhapatnam U.A compared to 10,57,118 in 1991 showing a decadal percentage growth of 25.76 followed by Vijayawada U.A. with a population of 10,21,806 as compared to 8,39,590 in 1991 showing a decadal percentage growth of 20.43.

Among the 37 urban agglomerations in the state the smallest urban agglomeration is Bheemunipatnam in Visakhapatnam district with a total population of less than 50 thousands i.e. 48,670. The last but one urban agglomeration in the list is Gadwall (56,849) in Mahbubnagar district proceeded by Guduru (69,860) in Krishna District (Table- 4).

**Table-4: Growth Of Urban Agglomerations In Andhra Pradesh: 1971-2011**

Name of the UA	1971		1981		1991		2001		2011	
	Population	Rank	Population	Rank	Population	Rank	Population	Rank	Population	Rank
Hyderabad	17,96,339	1	25,45,836	1	43,57,219	1	57,51,780	1	67,31,790	1
Visakhapatnam	3,63,467	2	6,03,630	2	10,51,918	2	13,45,776	2	20,37,458	2
Vijayawada	3,44,607	3	5,43,008	3	7,07,817	3	10,11,526	3	10,21,806	3
Rajahmundry	1,88,805	4	2,68,370	4	4,03,781	5	4,13,349	5	5,79,802	4
Kakinada	-	-	-	-	3,27,407	6	3,76,670	7	5,34,350	5
Warangal	-	-	-	-	4,66,877	4	5,77,968	4	4,43,028	8
Kurnool	-	-	-	-	2,74,794	7	3,42,628	8	4,57,633	7
Kadapa	-	-	-	-	2,15,545	8	2,60,962	10	3,44,893	10
Tirupati	-	-	-	-	1,89,030	9	3,02,698	9	3,95,323	9
Vizianagaram	-	-	-	-	1,76,125	10	1,95,562	16	2,28,720	16
Khammam	-	-	-	-	1,48,646	11	1,98,665	15	1,38,956	15
Chirala	-	-	-	-	1,42,654	12	1,65,838	17	2,50,000	17
Ongole	-	-	-	-	1,28,128	13	1,53,891	19	2,65,746	19
Kothagudem	-	-	-	-	1,02,061	14	1,05,265	28	1,98,190	28
Adilabad	-	-	-	-	-	-	1,29,041	23	1,17,167	23
Mancherial	-	-	-	-	-	-	1,18,047	24	89,935	24
Ramagundam	-	-	-	-	-	-	2,48,834	11	2,29,644	11

Karimnagar	-	-	-	-	-	-	2,17,607	13	297447	13
Mahbubnagar	-	-	-	-	-	-	1,39,534	22	157733	22
Gadwal	-	-	-	-	-	-	53,601	36	56849	36
Suryapet	-	-	-	-	-	-	94,660	30	115250	30
Nalgonda	-	-	-	-	-	-	1,11,735	26	135744	26
Miryalaguda	-	-	-	-	-	-	91,270	31	109891	31
Srikakulam	-	-	-	-	-	-	1,17,066	25	13567	25
Bheemunipatnam	-	-	-	-	-	-	48,670	37	52110	37
Eluru	-	-	-	-	-	-	2,05,592	14	283020	14
Tanuku	-	-	-	-	-	-	72,609	34	90430	34
Bhimavaram	-	-	-	-	-	-	1,41,975	21	142184	21
Palacol	-	-	-	-	-	-	76,224	33	104216	33
Narasaraopeta	-	-	-	-	-	-	97,482	29	117849	29
Kavali	-	-	-	-	-	-	85,563	32	150333	32
Guduru	-	-	-	-	-	-	68,753	35	69,860	35
Nellore	-	-	-	-	-	-	4,04,624	6	499576	6
Adoni	-	-	-	-	-	-	1,61,618	18	184625	18
Nandyal	-	-	-	-	-	-	1,56,216	20	222937	20
Anantapur	-	-	-	-	-	-	2,43,359	12	261004	12
Madanapalli	-	-	-	-	-	-	1,07,262	27	180180	27

Source: Computed from Census Reports, 1971 to 2011.

According to the concept of Urban Agglomerations 2011 census classifies 37 locations as UAs in Andhra Pradesh. The growth rate of population in 37 UAs in considering 2011 data as base shows that the highest decadal growth rate was observed in Mancherla (62.78%) followed by Tirupati (37.76%), Suryapet (35.90%), Adilabad (34.89%) and least Urban agglomeration growth rate was observed in Eluru (1.36%) followed by Rajahmundry (2.95%). Out of 37 urban agglomerations, 17 UAs are having decadal growth rates between 20 percent and 37 per cent and 14 UAs between 10 per cent and 20 per cent. Five UAs are having less than 10 per cent decadal growth rate (Table-6).

**Table-6: Decadal Growth Rate Of Urban Agglomerations In Andhra Pradesh (2001-2011)**

S. No	Urban Agglomerations	Decadal Growth Rate (%)	S.No	Urban Agglomerations	Decadal Growth Rate (%)
1	Mancherial UA	62.78	20	Vijayawada UA (Dists 16&17)	18.64
2	Tirupati UA	37.76	21	Guduru UA	18.61
3	Suryapet UA	35.90	22	Kadapa UA	17.77
4	Adilabad UA	34.89	23	Adoni UA	16.71
5	Karimnagar UA	31.94	24	Ongole UA	16.37
6	Madanapalli UA	31.30	25	Mahbubnagar UA	16.35
7	Anantapur UA	28.30	26	Bhimavaram UA	14.61
8	Miryalaguda UA	27.89	27	Bheemunipatnam UA	14.51
9	Palcole UA	26.13	28	Chirala UA	14.14
10	Khammam UA	24.94	29	Kurnool UA	13.88
11	Hyderabad UA (Dists 04,05,&06)	24.34	30	Tanuku UA	13.78
12	Nalgonda UA	24.30	31	Kakinada UA	13.09
13	Srikakulam UA	24.24	32	Narasaraopet UA	12.10
14	Gadwal UA	23.93	33	Ramagundam UA	9.8
15	Nandyal UA	23.74	34	Vizianagaram UA	9.59
16	Kavali UA	23.02	35	Kothagudem UA	2.97
17	Nellore UA	21.78	36	Rajahmundry UA	2.95
18	Visakhapatnam UA	21.46	37	Eluru UA	1.36
19	Warangal UA	19.24			

Source: Computed from Census Reports, 2001 and 2011.

### 8. Growth Of Urbanization As Per Size Class Towns/Cities In Andhra Pradesh

It has been observed from Table-7 that Class I number of urban areas/Cities (Large towns) found to be very low and increased up to 39 in 2011. Same trend was observed with Medium Towns (Class II and Class III). There was substantial decline in number of small towns (Class IV, Class V) after 1971. Population in Class I cities / towns found to be around 50 per cent in 1971 increased to 75 per cent in 2011. From the Table-7 it is evident that there is shift in population from small towns to class I cities contributing to decline in number and percentage of population in Small and Medium towns during 1971-2011. Urban concentration was found to be more in Class I and UAs in Andhra Pradesh in the recent Periods.

**Table-7: Number Of Urban Areas/Cities/Towns And Population In Each Size- Class In Andhra Pradesh: 1901-2011**

**\*Excludes Class I: 4 UAs in 1971, 4 UAs in 1981, 15 UAs in 1981 and 37 UAs in 2011**

Cen sus Yea r	All Classes		Class I		Class II		Class III		Class IV		Class V		Class VI	
	No. of U.A / To wns	% of Popul ation	No. of U.A / To wns	% of Popula tion	No. of U.A / To wns	% of Popula tion	No. of U.A / To wns	% of Popula tion	No. of U.A / To wns	% of Popula tion	No. of U.A / To wns	% of Popula tion	No. of U.A / To wns	% of Popula tion
1901	116	100	1	24.38	0	0.00	11	22.96	44	29.97	60	22.70	0	0.00
1911	130	100	1	23.19	1	5.21	12	19.96	45	27.40	68	23.59	3	0.64
1921	149	100	1	18.54	2	7.82	13	20.80	45	26.14	74	24.06	14	2.63
1931	175	100	1	17.33	8	18.91	11	13.26	57	27.25	78	20.33	20	2.92
1941	211	100	1	20.16	10	20.17	21	15.49	55	19.81	122	24.11	2	0.27
1951	276	100	6	33.35	10	13.72	34	16.04	81	19.46	114	15.15	31	2.29
1961	211	100	11	44.04	8	9.46	50	22.69	71	15.12	70	8.64	1	0.03
1971*	206	100	13	49.40	17	13.80	60	21.04	75	12.31	37	3.27	4	0.18
1981*	234	100	20	56.14	30	16.08	87	19.42	65	7.01	28	1.23	4	0.12
1991*	213	100	32	66.98	34	12.56	91	16.48	39	3.29	14	0.64	3	0.05
2001*	173	100	39	75.31	43	13.95	46	8.35	23	1.69	20	0.68	2	0.04
2011*	245	100	45	77.31	56	12.36	47	8.36	28	1.25	35	0.35	6	0.32

Note: The Towns have been placed in six categories, following demographic criteria as given below:

Class 1 Towns 1, 00,000 or more      Class 2 from 50,000 to 99,999  
 Class 3 from 20,000 to 49,999      Classes 4 from 10,000 to 19,999  
 Class 5 from 5,000 to 9,999              Classes 6 Below 5,000

Source: Provisional Population Totals, Paper-2 of 2011, Rural-Urban Distribution of Population, Series-29, Census of India-2011.

## 9. Conclusions

Andhra Pradesh occupies 10<sup>th</sup> place in the composition of urban population in the country. The growth of urbanization i.e., the percentage of urban population to the total population has increased four times during the period 1901-2011. The rate of growth of urban population has increased much faster during the period 1971-81, then it was slow down in 1981-91 and 1991-2011. The total urban population of Andhra Pradesh in each region contributes in different ways to the total population. The growth of urban population in the Telangana region also is found to be impressive. As per the 2011 Census the districts of Rangareddy, Visakhapatnam, Krishna and Guntur have higher population than the state average, but Hyderabad is unique with cent per cent urban population. In the case of district-wise urban

population, Hyderabad district contributed the highest 17.98 per cent to state urban population and lowest in Srikakulam district with only 1.36 per cent as per 2011 Census. There are four urban agglomerations in 1971, but it increased to 37 per cent by 2011 in Andhra Pradesh. The highest decadal growth rate of urban population between 1991-2011 was recorded for Mancherial Urban Agglomeration (62.78%) and the lowest for Eluru Urban Agglomeration (1.36%). A comparative study of the growth of number of towns in various six class in Andhra Pradesh reveals that urbanization particularly during 1980's is that the small and medium urban centres on an average had relatively fast rate of population growth than in the cities with one lakh and above population. The increase in urban population due to industrialization, means of transportation, and establishment of educational institutions in Andhra Pradesh has resulted into over-crowding and urban poverty.

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## **Business Barriers Faced By Women In Small Businesses: A Confirmatory Factor Analysis Approach**

**Anil kumar &  
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### **Abstract**

This paper endeavours to examine the business barriers faced by women in small businesses. To achieve this objective a sample of 192 women entrepreneurs has been taken from the state of Haryana. A pre-tested well designed questionnaire was designed and administered to these small enterprises. All these entrepreneurs have employed at least two workers in their enterprises. Spss software has been used to analyse the data. The analysis of data reveals that women entrepreneurs face the various business problems such as labour, finance, technological and economic policies of the government. Modern HRM practices should be used by women entrepreneurs to resolve the various issues. Awareness about the various Government schemes should be increased and more efforts should be made to provide accessibility of technology to these small enterprises.

Key words: labour, finance and policies

### **BUSINESS BARRIERS FACED BY WOMEN IN SMALL BUSINESSES: A CONFIRMATORY FACTOR ANALYSIS APPROACH**

#### **Introduction:**

Entrepreneurship is a process through which an individual creates innovation opportunities for additional and novel contribution to society. Small businesses are important driver of economic growth and women entrepreneur play a vital role in developing the small business sector and drive entrepreneur in transition economics.

The term 'women entrepreneur' refers to wide range of women owned enterprises. Women entrepreneur is a woman who generates employment opportunity, willing to take risks and create wealth with her entrepreneur skills and innovative thinking. According to UNCTAD (2014) Six indicators were noted as measurement of successful female entrepreneur. Indicators are easy access to funding for the expansion of their business, easy access to customers, suppliers and business partners, work life balance, increase literacy and education skills, independence and the ability to earn income and global presence. Women entrepreneur are vital sources of growth that can empower the economy, yet they face tremendous challenges regardless of their gender such as time management, lack of marketing skills, family and culture, education, legal, financial and economic, organisation and geographical, government support, absence of empowerment training, information about business growth and lack of career guidance etc.

Women's entrepreneurship at all levels has been sponsored throughout the world as a strategy to reduce the feminization of poverty in an increasingly globalised economy. Developing countries have focused on the large number of micro-business self-help enterprises set up by women and sponsored by various local and international NGOs. Women entrepreneurs in developing societies whose firms more closely approximate the size of those in more highly industrialised countries have received less research attention. That small but growing group of women who have managed to not only start a business of this type and maintain it successfully can be considered pioneers in facing the hurdles that women entrepreneurs face in piloting their enterprise.

## Review of literature:

Literature cites the various studies conducted at national and international level. The following paragraph highlights the studies conducted by researchers in this field.

Welsh et al, (2016) examined the effects of family moral support on Turkish women entrepreneurs along with main advantages (i.e., judgments of the value of education and job experience) and barriers (i.e., personal issues and acknowledgment of lacking management abilities and knowledge) encountered by them while managing their businesses. Data was gathered from corporate groups in Turkey. Research demonstrated the dual effects of family moral support on Turkish women entrepreneurs' opinions. The study further exhibited that the Turkish women entrepreneurs' personal issues grow as a result of their families' spiritual support. The research demonstrated that family moral support may influence Turkish women entrepreneurs in both favourable and unfavourable ways.

Ghouse, el al, (2021) examined the problems and opportunities faced by rural women entrepreneurs in Oman. The paper focussed on how these women are stepping outside of their conventional family responsibilities for a variety of reasons in order to become established in the community. Additionally, the current study used a mixed research methodology that includes an exploratory factor analysis and confirmatory factor analysis along with a quantitative survey of 142 cottage-based Omani women entrepreneurs and ten qualitative face-to-face interviews. The main conclusions of the study highlighted that marketing-related issues are of the least importance, while access to the government for current business needs, access to specialized suppliers for staying one step ahead of the competition, and high raw material costs were the issues mentioned as being important.

Tambunan (2017) study investigated the growth of female entrepreneurs in Indonesia by examining their primary individual motivations or initial reasons for starting their own enterprises and by identifying their primary barriers for doing so. A desk study, secondary data analysis, and a brief field survey of 108 women who operate micro and small businesses (MSEs) in the Greater Jakarta region served as the foundation for the research. According to the survey's findings, many Indonesian women do own enterprises as a means of subsistence, particularly those in MSEs, which are typically run in the informal economy. Another significant result from the research is that respondents' restricted access to finance and a lack of valuable assets to use as collateral are their biggest challenges. This would imply that Indonesian initiatives promoting female entrepreneurship should concentrate on gaining access to capital. The paper comes to the conclusion that the rise in the number of women-owned enterprises, particularly MSEs, in Indonesia should not be seen just as a sign of female entrepreneurship there. Many women may have been motivated to run their own small companies on account of poverty or unemployment.

Machado el at, (2016) study highlighted the primary barriers that prevent women from starting businesses, as well as potential distinctions between those who start enterprises in industry and those in commerce or services. A quantitative study was conducted on 102 industry women business owners and 96 business/service owners. A structured questionnaire was used to gather data. Cluster analysis and Mann-Whitney test were used to analyze the factors that affected the development of businesses in the two categories (industrial and commerce/service). The study highlighted the desire to financially support children, re-entry into the labour market, and making a lot of money to start business by both groups. The findings further indicated that women entrepreneurs were not a homogeneous group and that public policies are required to reduce obstacles to business formation in order to enhance women's engagement in entrepreneurship.

Ghouse (2017) examined the difficulties faced by rural women business owners in Oman. Women in rural and mountainous areas who want to go beyond their typical household duties are the subject of the study. The study pointed out a number of issues, such as the difficulty in obtaining finance for creative projects and new companies, the dearth of skills-based education, and the weakness of family support

associated with women business owners in rural Oman. Oman is undoubtedly one of the most advanced Arab nations in terms of gender equality and women's empowerment, but the results show socio-cultural issues that limit the establishment of women's entrepreneurial ventures and the success of those ventures.

Hurang et al, (2012) investigated the relationship between the abilities held by female entrepreneurs and their driving forces & obstacles. To achieve this objective, various factors connected to the abilities needed for a business owner are examined, including educational attainment, past professional experience, prior business competence, and managerial abilities. The study revealed that two of the most significant factors when it comes to comprehending the motives and challenges faced by women company owners were their lack of managerial training and education. The constraints and challenges women faced while operating a business were exacerbated by their lack of education, and management abilities tend to be positively correlated with the elements that encourage and drive women to establish their own firm.

Panda (2018) paper strived to list and rate the obstacles faced by women business owners in developing nations. It provided a framework to distinguish between the limitations experienced by male and female business owners. To classify and rank entrepreneurial obstacles, the current study used a qualitative technique. The limitations experienced by female entrepreneurs are reviewed and ranked in this research using data from 35 studies conducted in 90 developing nations. It lists seven major obstacles that women entrepreneurs must overcome, including those brought on by gender discrimination, work-family conflicts, financial hardships, a lack of infrastructure support, unfavourable environments, a lack of entrepreneurship-related education, and personality-based challenges. According to this research, women entrepreneurs confront more intense hurdles, which are worsened by the unfavourable circumstances existing in emerging nations. Given this situation, it is challenging for female entrepreneurs to launch and maintain their own firms.

Winn (2005) analyzed the reasons for women choosing in entrepreneurship as a career, their motivations and job choices, their attitudes and behaviours linked to successful enterprises, and the ongoing issues that prevent more women from starting their own firms. Study concluded that reducing the existing hurdles to success will require more than just the drive of entrepreneurial women. Due to societal and legal discrimination as well as biological differences, women and men experience life differently. Families suffer when women are expected to succeed without any support. It hurts women's businesses when they were expected to be the primary care givers. Educators must comprehend the elements essential to the success of independent businesses, address them, and paint a

more accurate image of what launching a new company requires. Legislators and policy makers need to be aware of the social policies and tax systems that, despite well-intentioned efforts, hinder women from achieving financial independence. Independent company ownership can help women achieve their goals of self-actualization and economic success, but it will come at a high personal cost. In order for women to select a job path without having to give up their aspirations, neglect their families, endanger their health, or sell their souls, proactive legislative reforms are required to undermine gender-biased attitudes and behaviour.

The foregoing studies analysed the business problems faced by women entrepreneurs in small business by following the traditional approach. But the present research has tried to examine the problem by following confirmatory factor analysis approach with the help of Spls software..

### **Research methodology:**

The study analyses problems faced by women entrepreneurship in small scale sector. To achieve this objective, a sample of 192 women entrepreneurs of small scale enterprises has been taken from the State of Haryana. A well designed questionnaire was prepared which includes Likert type five-point scale



(from a great extent to not at all). Study has used confirmatory factor analysis (CFA) technique. SPLS software has been used for this purpose. Initially twenty-one statement were administered and one statement LB5 was dropped due to low factor loadings. Thus, analysis of data is based on twenty statements. Details of statements has been given in table number 3.

### Results and discussion:

The result of construct reliability and validity, the internal consistent reliability has been assessed on the basis of composite reliability (CR). The CR values for all factors fall in between 0.861 and 0.908, which is above the required value 0.7 (Hair et al., 2011). It means acceptable internal consistent reliability is above the recommended value. The values of Cronbach alpha for all five factors ranges between from 0.844 to 0.796. Convergent validity has been assessed by AVE value (Average Variance Extracted). Moreover, the AVE values of LA, LB, LC, LD, LE are above 0.5 which means the measures have high level of convergent validity.

Table 1. Construct Reliability and Validity

Factors	Cronbach Alpha	Composite Reliability	Average Variance Extracted (AVE)
LA(Financial Problems)	0.873	0.908	0.664
LB(Labour problems)	0.809	0.861	0.510
LC(Problem of accessibility of technology)	0.844	0.889	0.617
LD (Economic policies of Government)	0.796	0.865	0.615

Source: Primary Data

The table 2 shows the discriminant validity of model, discriminant validity is the degree of differentiation among factors (LA, LB, LC, LD, LE) measuring the different concepts. Discriminant validity is good (Fornell and Larcker, 1981).

Table 2. Discriminant Validity of Model:

Factors	LA(Financial Problems)	LB (Labour related problems)	LC(Problem of accessibility of technology)	LD (Economic policies of Government)
LA(Financial Problems)	0.815			
LB(Labour related problems)	0.254	0.714		
LC(Problem of accessibility of technology)	0.582	0.392	0.785	
LD (Economic policies of Government)	0.632	0.203	0.366	0.785

Source: Primary Data

**Table 3. The results of measurement Model**

Code of Items	Name of Statement	LA(outer loadings)	LB(outer loadings)	LC(outer loadings)	LD(outer loadings)
LA1	Do you face problems of getting finance from banks while establishing your business?	0.719			
LA2	Do you face problems of getting fixed assets(land and building etc.) while establishing your business?	0.858			
LA3	Up to what extent you face the problem of working capital?	0.830			
LA4	Up to what extent you face the problem of rate of interest?	0.833			
LA5	Up to what extent you face the problem of collateral security?	0.828			
LB1	Up to what extent you face the problem of labour absenteeism?		0.780		
LB2	Up to what extent you face the problem of labour turnover?		0.769		
LB3	Up to what extent you face the problem of getting skilled labour?		0.698		
LB4	Up to what extent you face the problem of cost of labour?		0.769		
LB6	Up to what extent you face the problem of costs of inputs?		0.641		
LB7	Do you think survival of business is becoming difficult in the era of globalization and liberalisation?		0.610		
LC1	Up to what extent you face the problem of getting information?			0.786	
LC2	Up to what extent you face the problem of providing information to your customers?			0.730	
LC3	Up to what extent you face the problem of getting quality raw material?			0.750	
LC4	Up to what extent you face the problem of availability of technology?			0.876	

LC5	Up to what extent you face the problem of acquisition of technology?			0.778	
LD1	Up to what extent you face the problem of taxation?				0.839
LD2	Up to what extent the government policies effect your business?				0.769
LD3	Do you think change in Govt. policies affect your business?				0.802
LD4	Up to what extent you face the problem of fixing of price of your product?				0.725

LA: financial problems, LB: labour problems, LC: Problem of accessibility of technology, LD: Economic policies of Government

Source: Primary Data

Table shows that the outer loadings loading values of LA ranges from 0.719 to 0.858, the outer loading values of LB ranges from 0.610 to 0.780, the outer loading values of LC ranges from 0.730 to 0.876 and the outer loading values of LD ranges from 0.725 to 0.839.

#### **Financial problems(LA):**

The first factor emerged from analysis reveals that women entrepreneurs face the financial related problems. The outer loadings in case of labour related problem varies from 0.880 to 0.719. The problem of labour can be sorted out by following the progressive HRM policies and motivation to labour force.

#### **Labour problems(LB):**

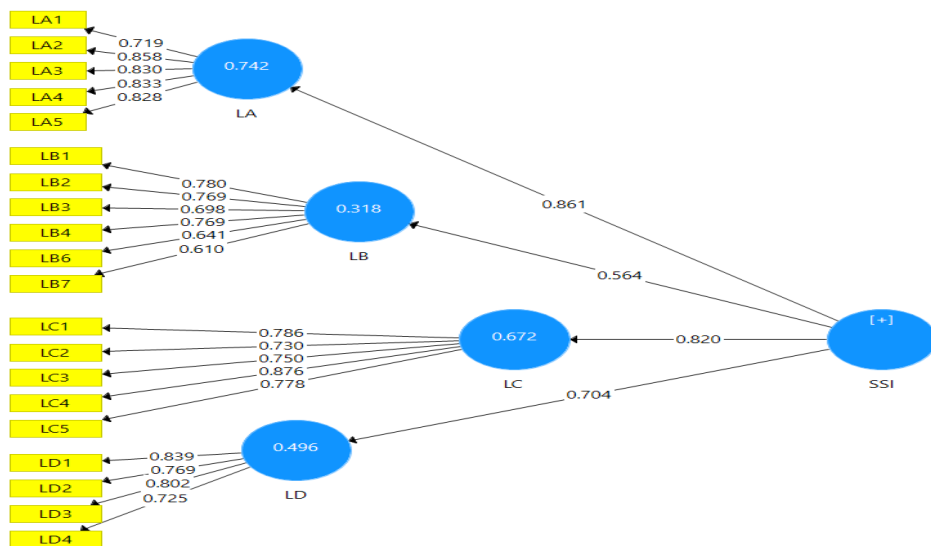
The second factor emerged from analysis that women entrepreneurs face the labour related problems. The outer loadings in case of labour related problem varies from 0.880 to 0.719. The problem of labour can be sorted out by following the progressive HRM policies and motivation to labour force.

#### **Accessibility of Technology (LC):**

The third factor has been designated as accessibility of technology by women owned small enterprises. The accessibility of technology acts as obstacle to get information related to market, raw material and customer identification at far off places. Easy availability of technology can help entrepreneurs to sort out various problems of business problems.

#### **Economic Policies of Government (LD):**

Small entrepreneurs face the problem relating to government policies towards this sector. Tax structure needs to be made more suitable to these enterprises.it will help these enterprises them to make pricing policies suitable to their customers. Efforts should be made to increase the awareness among women entrepreneurs towards the economic policies and incentives available to this sector. Tax structure needs to be made more suitable to these enterprises.



## Conclusions:

The foregoing analysis reveals that women in small businesses face the problem of finance, labour, accessibility of technology and Government policies. There is need to provide technology to these enterprises on easy terms and conditions. Financial be provided on liberal terms and conditions. Skill development programme of Government should lay emphasis to provide technological equipped manpower to these enterprises. Moreover, awareness of various government schemes be enhanced among these enterprises.

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## Inclusive Health-Care System in India: Environment for Sustainable Development

Suvranshu Pan

### Abstract

*Heading towards equitable allocation of resources with benefits rendered to every section of society, inclusive growth has taken into account of economic growth leading to sustainable economic development as a whole. Inclusive growth addresses the basic interrelated issues like education, health, employment, rural-urban infrastructure and financial inclusion. It allows people to “contribute to” and “benefit from” economic growth on the whole on equitable terms. Out of these elements of inclusive growth, health-care is considered as the most important element through which citizens are formalized to the basic social security health measures, with quality management, patient safety, efficiency and appropriateness of care. Thus inclusive health-care facilities helps the citizens of the concerned country to act as the raw material to learn, examine, analyze and implement the policies needed for economic development of the country, in a best possible way.*

*The contribution to the health of a population derives from basic three social determinants of living - a) Living conditions with respect to nutritious food, safe drinking water and sanitation facilities; b) Well maintained health facilities with respect to development of hospitals pharmaceutical facilities; and c) Reliable logistics, healthcare delivery strategies of hospitals quality medicine and technological health-care facilities.*

*For this, the Government of India needs to improve Quality, Efficiency and Equity by providing the best health-care facilities to all, with improvement in the economic reforms of India heading towards progressive economic growth with strong equality. Throughout this paper it is discussed in detail the concept of inclusive health-care, its types and importance, history of Indian healthcare policies, statistics of Indian healthcare facilities, challenges and measures to implement inclusive health-care in India and suggestions for inclusive growth in India as a part of sustainable development.*

**Keywords:** Health Economics, Healthcare System, Inclusive Growth, Sustainable Development

### I. Background:

Inclusive growth addresses the basic interrelated issues like education, health, employment, rural-urban infrastructure and financial inclusion. Under these elements inclusive growth allows people to “contribute to” and “benefit from”, economic growth on the whole on equitable terms. Of these elements health-care is considered as the most important element through which citizens are formalized to the basic social security health measures, with quality management, patient safety, efficiency and appropriateness of care. In this way inclusive health-care facilities helps the citizens of the concerned country to act as the raw material to learn, examine, analyze and implement the policies needed for economic development of the country, in a best possible way.

We know that the contribution to the health of a population derives from basic three social determinants of living, which are as follows:

- (a) Living conditions with respect to nutritious food, safe drinking water and sanitation facilities.
- (b) Well maintained health facilities with respect to development of hospitals pharmaceutical facilities.
- (c) Reliable logistics, healthcare delivery strategies of hospitals quality medicine and technological health-care facilities.

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progressive economic growth with strong equality. This paper discusses in detail the concept of inclusive health-care, Indian healthcare situation, challenges and measures to implement inclusive health-care in India, and some policy prescriptions to usher in attaining inclusive growth in India.

## **II. Inclusive Healthcare System:**

The Healthcare system is an organization established in the country to meet the health needs of people living there means the citizens of the country along with the foreigners. This system entity varies under their exact conjuration settings followed by their service-delivery though at national and sub national level. Thus health-care refers to both necessary and preventive human efforts made to improve their physical and mental well-being. It is done by following the procedures of diagnosis, treatment and prevention of disease, illness, injury and other physical-mental impairments in human beings.

According to the World Health Organization (WHO), a well-functioning healthcare system requires: (a) a robust financing mechanism; (b) a well trained and adequately-paid workforce; (c ) reliable information on which decisions and policies can be made; and (d) well maintained health facilities along with its logistics, to deliver quality medicines and technologies.

So on the basis of the above mentioned features of inclusive growth under health care system, it is told that to make that economic development more inclusive, it requires better healthcare coverage and quality. This can be checked and analyzed on the basis of the parameters like birth rate, death rate, total fertility rate, maternal mortality rate, infant mortality rate and life expectancy at birth. There raises a concept of inclusive healthcare, as for all these development, we need a healthy human resource in the country, which is possible only through inclusive health care facilities.

Inclusive healthcare is defined as a development strategy, which aims at making health care services and facilities, at least in terms primary health care services universally accessible and affordable to all, including poor, vulnerable and socially marginalized groups of the society, on an equity basis. In these terms, this strategy is heading towards “Health for All”, which aims to attain health as a part of overall development with its core value of equity, starting with primary health care based on “acceptable methods and technology”. It is made universally accessible to all individuals and families in the community through their full participation and at a cost that it can be afforded with respect to the health care needed and made available in the country.

According to the supporter of inclusion, the practise of developing inclusive health-care services, followed by development of its institutions involves:

- a) Understanding health-care inclusion as a continuous process and not a one-time event or happening.
- b) Strengthening and sustaining the participation of all health-care institutions, its staffs, community members and pharmacies in the work of inclusive health-care systems.
- c) Restructuring the societal values, cultures, policies and practices both within an inclusive health-care institution as well as outside to respond to the diversity of patients health-care demand in a given locality.

For identifying and providing support to staff as well as patients with the view to make inclusion in health-care systems a success, the most important factors are: (i) health-care institutions, its staffs, community members and pharmacies partnerships; (ii) collaboration between general and special health care institutions, its staffs and pharmacies; (iii) well-constructed individualized health-care programme and plans; (iv) team planning and communication, followed by integration of health-care service with respect to its delivery; and (v) ongoing training and staff development.

## **III.Types of Inclusive Healthcare System:**

Under the concept of inclusive growth followed by health care facilities, that include inclusive health care policies build on an equity basis, promises to prioritize to attain health care to all including vulnerable and socially marginalized groups of the society. This is taken as a very important part of overall development of the country with respect to the health-care system under it, motivating the all human resources of the concerned country, to work for the country's progressive and positive economic growth with efficiency under a healthy-life, following motives of equity. It is observed that role of health-care in economic development is analyzed via two channels: (a) the direct labour productivity effect, and (b) the indirect incentive effect.

Inclusive health-care is categorized into three sub-types:

**(a) Inclusive Primary Health-Care Services:** Primary health care services refer to the work of health professionals who act as a first point of consultation for all patients within the health care system. Such a professional would usually be: (i) Primary care physician (such as a general physician or practitioner); (ii) Licensed independent practitioner (such as physiotherapists); and (iii) Non-physician primary care provider (they are mid-level provider, such as physician assistant or nurse practitioner).

**(b) Inclusive Secondary Health-Care Services:** Secondary health care includes acute health care, that is necessary treatment for a short period of time for a brief but in a hospital emergency department such as serious illness, injury or other health condition. However, many secondary healthcare suppliers do not essentially work in hospital like psychiatrists, psychologists, clinical activity therapists, most dental specialties, physiotherapists etc.

**(c) Inclusive Tertiary Health-Care Services:** Tertiary health-care is those healthcare service sector referral hospitals, clinics etc which is specialized in health care consulting. They function usually for both inpatients and on referral from professional of primary or secondary health care. This is done with the facility that has both personal and advanced medical investigations with treatment in these tertiary referral hospitals. Examples of Tertiary health-care services are cancer management, cardiac surgery, neurosurgery, plastic surgery etc.

But under the implementation of inclusive-health care facilities in all these types of the health-care system, there are always few problems seen in the Indian health-care system like: (a) unequal distribution of health-care services, (b) communicable diseases, (c ) poor-management, (d) privatisation-competition, and (e) poor maintenance of health-care centres. Thus, inclusive approach focuses on identifying and reducing the barriers to learning along with participation related to it.

#### **IV. History of Indian Health-Care Policies:**

It is found that since ancient period of time, hospitals existed in India. During the time of *Goutam Buddha*, there were a number of hospitals which looked after the handicapped and the poor people of India in the sixth century BC. The first outstanding hospital in India was built by *King Ashoka* during the period between 273-232 BC. The invasion of foreigner in tenth century AD brought with them their own physicians called *Hakims*. With the arrival of European missionaries in the sixteenth century, the use of the allopathetic system of medicine commenced. During the British rule in nineteenth century there was progress in the construction of hospital, organized medical training was started in India.

**Table 1: History of Medical Healthcare Development in India**

Sl	Periods	Healthcare Systems
1.	<b>Vedic Period</b>	The chief source of knowledge of Indus Valley culture or Aryan culture and medicine are the four Vedas. These all were based on mental and physical ingredient of positive health with respect to human and prayers to free the world from disease and with an aim that everybody should have a healthy mind. Traditional medicine is based on Ayurveda. <i>Danvantri</i> is called the patron god of Indian medicine, who initiated many methods of healing and passed it to <i>Sushruta</i> , who was the celebrated surgeon and <i>Chakra</i> , a court physician of <i>King Kanishka</i> of this time.
2.	<b>The Buddhist Period</b>	<i>Lord Buddha</i> himself took very keen interest in supporting the science of medicine as he used to attend to sick himself. During the course of his travel for propagating Buddhism care of sick and medical education was given special attention.
3.	<b>Post-Buddha and Muslim Period</b>	<i>Emperor Ashoka</i> established many hospitals throughout the country onward, middle east physician in Umami system created their impact. <i>Emperor Akbar</i> (1555-1605), during his period encouraged the amalgamation of Umami and Ayurveda system.
4.	<b>Christianity and Medical Care Period</b>	During 1300-1800, hospital became an integrated part of church of monasteries. Medicine was treated as religious practice and all missionaries with trained nuns and monks for medical treatment knowledge were present to take care of the sick. It was because of crowding and infection prevalent in hospital.
5.	<b>Modern Period of Medicine</b>	In Goa between 1510-1515, Portuguese founded the royal hospital and later basic-general medical training programmes was introduced by the Jesuits at Indian hospital, which was converted into a school of medicine and surgery in 1842.
6.	<b>British Indian Period</b>	In 1846, the 1 <sup>st</sup> medical school was started in Calcutta, followed by Madras. The government of India appointed a committee (called Health Survey and Development Committee) headed by <i>Sir Joseph Bhore</i> and having nineteen other members in 1943. Before 1947, that is in the pre-independence period of India depicted only authentic record of hospital development and health care system in India.
7.	<b>Independent India</b>	Details of the Healthcare policies taken by the Government of India have been analyzed just after this table.

Some revolutionary steps taken by Indian government to improve inclusive healthcare facilities in India are: (a) in 1859, the appointment of royal commission took place, to enquire into the health of the Indian army; (b) there were two reports of plaque commission, which was in 1896 followed by next in 1904; (c) in 1919, the first health-reform was introduced; and (d) in 1935, the second health-reform was introduced.



As per the discussion in serial number 7 of the Table-1, the government of India is giving due attention to health care in its five year plans. Some of the glimpses of these are as follows: (i) National Leprosy Eradication Programme (NLEP, 1955), (ii) National Programme for Control of Blindness and Visual Impairment (NPCBVI, 1976), (iii) National Mental Health Programme (NMHP, 1982), (iv) National Iodine Deficiency Disorders Control Programme (NIDDCP, 1992), (v) National Vectors-Borne Disease Control Programme (NVBDCP, 2002), (vi) National Rural Health Mission (NRHM, 2005), (vii) Janani Suraksha Yojana (JSY, 2005), (viii) National Programme for Prevention and Control of Deafness (NPPCD, 2007), (ix) National Tobacco Control Programme (NTCP, 2007-08), (x) National Programme for Prevention and control of Fluorosis (NPPCF, 2008-09), (xi) Navjat Sishu Suraksha Karyakaram (NSSK, 2009), (xii) National Programme for prevention and control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS, 2010), (xiii) National Programme on Prevention and Management of Burn Injuries (NPPMBI, 2010), (xiv) National Programme for Health Care of Elderly (NPHCE, 2010), (xv) Janani Sishu Suraksha Karyakaram (JSSK, 2011), (xvi) Home Based New Borne Care (HBNC, 2011), (xvii) National Council for Clinical Establishments (NCCE, 2012), (xviii) National Programme on Containment of Anti-Microbial Resistance (NPCAMR, 2012-17), (xix) National Rabies Control Programme (NRCP, 2012-17), (xx) Programme for Prevention and Control of Leptospirosis (PPCL, 2012-17), (xxi) Inter-sector Coordination for Prevention and Control of Zoonotic Diseases (ICPCZD, 2012-17), (xxii) National Programme for Prevention and Control of Viral Hepatitis (NPPCVH, 2012-17), (xxiii) National Oral Health Programme (NOHP, 2014-15), (xxiv) National Organ Transplant Programme (NOPT, 2014), (xxv) Mission Indradhasnush (MI, 2014), (xxvi) National Ayush Mission (NAM, 2014).

#### V. Statistical Status of Health-Care in India:

We know that health is defined under the ability to lead a socially and productive life. On the basis of this health indicators are variable, susceptible to direct measurement. Hence, Health measurement is framed in terms of illness, consequences of ill-health and factors that promote ill-health. On the basis of these things, health indicators help to measure the extent to which the objective and targets of the programme are being attained. The selected health indicators are: (a) crude birth rate (CBR per 1,000 populations), (b) crude death rate (CDR per 1,000 populations). (c) total fertility rate (TFR per women), (d) maternal mortality rate (MMR per 1,00,000 live births), (e) infant mortality rate (IMR per 1,000 live births), and (f) life expectancy at birth (LEB).

CBR gives the annual number of births per 1,000 people of the population at mid-year. It is a dominant factor in determining the rate of population growth. It depends on the level of fertility and age structure of the population and shows a declining trend since independence (Table 2).

**Table 2: Crude Birth Rate (per 1,000 populations)**

Year	1951	1961	1971	1981	1991	2001	2011	2021
Value	40.8	37.2	35.6	33.9	29.5	25.4	21.8	17.8

**Sources:** 1. CSO: *Data Tables on Indian Economy (2014-15)*;

2. Government of India: *Economic Survey (2021-22)*

CDR indicates the annual number of deaths per 1,000 midyear population. It is also a dominant factor in determining the rate of population growth. It shows a declining trend except for 2021 as due to COVID-19 (Table 3).

**Table 3: Crude Death Rate (per 1,000 populations)**

Year	1951	1961	1971	1981	1991	2001	2011	2021
Value	22.18	21.65	16.73	13.03	10.59	8.56	7.39	7.64

**Sources:** 1. CSO: *Data Tables on Indian Economy (2014-15)*;

2. Government of India: *Economic Survey (2021-22)*

For India, inclusive health-care facility as per the Total Fertility Rate (TFR per women) has always been declining, giving a positive impact on the fertility situation of India's population-citizens. In 1951 the TFR per women of the population of India was 6.0, which decreased to 4.5 in 1981, then to 3.6 in 1991, 3.04 in 2001, then to 2.62 in 2011, further to 2.35 in 2015, and then 2.3 in 2021. Maternal mortality rate (MMR per 1,00,000 live births) has always been declining, giving a positive impact on the current mortality situation of India population-citizens. In 1991, MMR was 437, again declined to 398 in 2001, then to 212 in 2011, further to 176 in 2015, then in 2021 MMR decreased to 174. Life expectancy at birth (LEB) of India has always been increasing over the years, giving a positive impact on the health situation of India's population-citizens.

#### **VI. Need for Inclusive Health-Care in India:**

There is a great need for inclusive healthcare in India, raising its importance with respect to evaluations of the process of health care, health care structures and/or outcomes of health care services in India. This evaluation of the quality of health care should always be based on: (a) hospital quality, (b) health plan quality, (c) physician quality, (d) quality of other health professionals, and (e) patients' experiences.

Accordingly to enhance the India's health-care system on the above mentioned basis, inclusive health-care plans and policies are very needed to be implemented in India, to improve all the above mentioned health-care qualities in Indian systems of health-care service delivery at its level best. The need of Inclusive Health-Care System can be analyzed through following factors:

To promote collaboration of general and special health-care institutions of India for delivering continuous health-care services to all patients-removing any discrimination between wealthy and low-income citizens of India.

For strengthening the participation of all health-care resources of India like health-care institutions, doctors, its staffs, pharmacies, etc. for delivering health-care services in all areas of India. This will help in the delivery of health-care services on a sustainable basis, following the principles of inclusion, reducing and removing the inequality of health-care service delivery in rural and urban areas of our country.

To restructure the Indian health-care service delivery policies and programmes with well constructed individualized health-care plans following the principles of inclusion, for improving the maintenance and management of health-care structure of India.

To provide integrated health-care service delivery by the development of training programmes and support system to all care resources to India. This will help in developing and improving the potential of the Indian health-care system by collecting, giving and using the correct information on health-care services with respect to its process, its uses and problems involved, followed by how the problems can be solved.

To create appropriate and accessible curriculum for providing correct & full information to all Indian citizens about health-care systems & its accessible payment mechanism like health insurance policies, available in India. This can help the Indian patients' to understand and know that where they can get specific solution of their health problem answering in what manner it afforded to them by trusted providers.

## **VII. Challenges to Indian Healthcare System:**

Inequality of services under rural and urban medical centers: It is seen that still in India, the incidence of the diseases is steadily increasing and mostly vast majority of rural and poor patients still suffer from infectious diseases. This is because the urban areas of India have numerous government plus private hospitals and clinics which provide quality health care, with better doctors, access to preventive medicines, but most of the rural areas of India lack these facilities.

This rises to severe inequalities in health-care infrastructure between urban and rural areas with respect to all major health indicators.

i) Lack of Effective payment mechanism: The Indian government has often facilitated its citizens with safety net health insurance programmes, which is designed for people to pay upfront cash for medical treatments. There are also few private additional plans, which sell private health insurance to public. But still the key-drivers of India's health-care payment are often high out-pocketing expenditure, which are mostly straight forward cash payments.

ii) Lack of Basic primary health care and its infrastructure: Indian population faces the growing needs to address the basic health concerns in the areas of HIV, malaria, tuberculosis, diarrhea etc. And surveys show that only about 30 percent of total budget are in healthcare.

iii) Low growth of pharmaceutical sectors in terms of both quality and quantity: Though development of pharmaceutical industries is rising day by day in India, still it is seen that mostly this market is composed of low-cost with respect to low-quality drugs.

iv) Underdevelopment of medical device sectors: In India, the smallest piece of health-care pie is medical device sector related to the adoption of IT healthcare, exchange of health information in all the areas of India and population health management and health-care delivery systems.

## **VIII. Conclusions and Policy Prescription:**

We know that health care delivery is expensive with respect to the wide deployment of specialized knowledge and labour in most phases of care and treatment. But, under inclusive health-care facilities, health as a human right should provide a useful breakdown of different aspects of rights to health, with respect to the relationship between health and following development systems: (a) inclusive rights, (b) freedom from non-consensual medical treatment, and (c) entitlements to prevention, treatment and control of diseases, by giving access to essential medicines, health related education, timely services. India does not have a central health reimbursement process, no willingness-to-pay thresholds, no consensus statement, policies or guidelines on economic evaluations in health. Moreover the delivery is nonuniform. However, we could still use health technology assessments (HTAs) to guide public reimbursement of healthcare interventions, to inform pricing strategy for new drugs or drug classes and also to help healthcare decision makers to formulate clinical practice guidelines to ensure consistency of provision and evidence-based interventions for maximum efficiency. We need government-approved policy guidelines for inclusive health economic evaluations in India for sustainable development.

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## The Influence of Entrepreneurship on Women Empowerment

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### Abstract

This research paper explores the influence of entrepreneurship on women's empowerment, with a focused study in India. Utilizing secondary data, the study aims to analyze three key objectives: first, to assess how entrepreneurship contributes to the economic independence of women, facilitating their financial self-sufficiency; second, to examine the impact of entrepreneurial activities on enhancing women's decision-making power and social status within their communities; and third, to identify the main challenges and enablers affecting women entrepreneurs in the region. The findings indicate that engaging in entrepreneurial ventures significantly boosts women's economic independence, allowing them to generate income and make autonomous financial decisions. Additionally, women entrepreneurs experience increased agency and respect, thereby improving their social standing and encouraging greater gender equality. However, the study also reveals persistent challenges, including limited access to financial resources, societal biases, and balancing family responsibilities, which hinder women's entrepreneurial success.

### Introduction

The term "woman entrepreneur" describes a woman who achieves financial independence and social engagement by creating, expanding, and managing a business while balancing her personal responsibilities. Thus, while an entrepreneur is an individual, entrepreneurship itself is a skill set.

Today, there is broad consensus that women's full participation in economic activities is essential for both national and women's development. Globally, the trend of women engaging in economic activities is on the rise, with women entering the workforce and entrepreneurial roles at an unprecedented pace. In India, this shift is marked by two key trends: an increasing number of women actively contributing to the economy and a growing presence of women-led enterprises. This shift signifies not only economic empowerment for women but also societal progress, as female entrepreneurs drive innovation, create jobs, and play a crucial role in the country's development.

### Definition of Women empowerment

According to Sahay (1998), one definition of "empower" is "to give power or authority to," while another interpretation is "to give capacity to; enable; permit." In the context of empowerment, the term "power" is pivotal, encompassing not only the ability to create and maintain ideologies but also control over tangible resources, such as property and wealth (Sahay, 1998).

### Education and Women Empowerment

The transformative impact of education on society is profound, making the prioritization of women's education essential for sustainable development. Providing women with equitable access to education not only fosters individual growth but also drives economic, social, and cultural progress. An inclusive educational system is crucial, ensuring that more women have equal opportunities to pursue higher education, leading to a more skilled and empowered female workforce.

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In addition to expanding access, fostering a deeper understanding of gender dynamics within educational institutions is vital. Educational policies must actively promote gender sensitivity and inclusivity, helping to break down stereotypes and biases that have historically limited women's educational advancement. Addressing these issues involves integrating gender studies into curricula, training educators to recognize and mitigate gender biases, and creating a supportive learning environment where female students feel encouraged and valued.

Furthermore, the high rate of female dropouts must be monitored rigorously, with tailored interventions aimed at reducing school abandonment. These efforts could include providing financial aid, scholarships, and incentives specifically for female students, along with offering counseling and mentorship programs to guide young women in their educational journeys. Ensuring safe, accessible, and conducive learning environments—especially in rural areas—also plays a significant role in keeping girls in school.

Promoting women's education is not just about providing academic opportunities; it is about equipping women with the knowledge and skills they need to be influential contributors to society. When women are educated, they can make informed decisions, advocate for their rights, and pursue careers that were previously inaccessible. This empowerment extends beyond individual lives, strengthening communities, enhancing economic productivity, and fostering a more equitable society. Prioritizing women's education ultimately paves the way for a future where every individual has the potential to contribute meaningfully to society's collective growth and well-being.

### **Need for Women Empowerment**

In traditional societies, women have long been perceived as the weaker gender, bound by cultural norms that reinforce their dependence on male figures. The ancient text *Manusmriti* illustrates this by stating that a woman is to be protected throughout her life by three generations: her father during childhood, her husband in marriage, and her son in old age. This notion perpetuates a view of women as reliant on male guardianship, limiting their autonomy and reinforcing gender inequality. In India, this belief has contributed to significant disparities in income, education, health, employment, and access to medical care, creating a socio-cultural environment where women are often undervalued.

Socialization practices further deepen these divides, rendering women "faceless and invisible" within the family and society. Many women are restricted by societal expectations to fulfill domestic roles, often deprioritized in terms of education, career aspirations, and healthcare needs. For adolescent girls, adult women, and female children, the effects of these ingrained biases manifest in various forms of unfair treatment, especially regarding food distribution within households. It is common for female family members to receive smaller portions of food or lower-quality nutrition, reflecting a mindset that prioritizes the well-being of male members over females.

### **Objectives of the Study:**

1. To analyze the impact of entrepreneurship on the economic independence of women in India
2. To examine the role of entrepreneurship in enhancing decision-making power and social status among women in India
3. To identify the key challenges and enablers of women's entrepreneurial success in India based on existing studies

## Literature Review:

Goel and Madan (2019) explored the cause-and-effect relationship to enhance understanding of the effectiveness of different strategies for promoting financial inclusion in women's entrepreneurship. In their study, the success of women entrepreneurs was treated as the dependent variable, whereas the effort dedicated to financial inclusion was considered the independent variable.

Katre (2018) conducted a study focusing on the affective experiences of women entrepreneurs to identify solutions for challenges such as overcoming socio-cultural barriers and fostering entrepreneurship. This research specifically targeted managers of craft-related businesses in the Indian state of Bihar.

According to Gadila Vakula Devi (2018), empowering women is fundamental to the empowerment of a nation. Telangana is recognized for its entrepreneurial ecosystem, supported by various government initiatives aimed at promoting female entrepreneurship. Programs such as WE-Hub, T-Hub, TFund, and the State Innovation Cell are specifically designed to prioritize the growth and development of women entrepreneurs in the region.

Verena Tandrayen-Rangoobur and Harshana Kasseeah (2017) conducted a study exploring the impact of financial access on small business performance, suggesting that limited access to finance is a significant barrier. The study aimed to understand the importance of gender in the business landscape, while also highlighting ethnicity as a critical factor influencing overall business success.

Khan (2017) identifies prejudice as a significant issue in Pakistan and globally, noting that discrimination against women and girls persists worldwide. Women often face limited educational opportunities and longer working hours compared to men. In many cultures, where having a son is preferred, girls are often denied fundamental rights, including the right to identity, nationality, and even life itself, reflecting the widespread hardships they endure.

Dr. S. Jayanna and Prof. Rajshekar BasavaPattan (2016) conducted a study to examine the relationship between the new Karnataka industrial policy and the opportunities available for women entrepreneurs in the Hyderabad-Karnataka region. The findings indicated that there has been consistent growth in this area in recent years, aided by support from the government and various agencies.

D Arul Paramandam and P.Packirisamy (2015), The objective of this study was to determine whether or not the formation of a micro-enterprise can lead to the empowerment of women and the entrepreneurial endeavors that enable them to take full part in the process of generating income by selecting a line of work for which they are solely responsible.

Susan Clark Muntean (2013) notes that while numerous comparative studies have attempted to quantify the percentage of women who start or own businesses, there has been insufficient research on the factors that motivate women to pursue more productive forms of entrepreneurship. The research findings highlight three key cultural and institutional factors that influence women's decisions to establish and grow their businesses: their social and legal status, the availability of supportive institutions, and their level of economic empowerment.

## Conclusion:

**Economic Independence through Entrepreneurship** The study concludes that entrepreneurship significantly enhances the economic independence of women in Delhi NCR. By engaging in business activities, women not only generate their own income but also reduce their financial dependence on others, contributing to a greater sense of autonomy and security. This financial empowerment allows

women to make independent economic decisions, supporting both personal and family well-being, which is critical for overall empowerment.

**Enhanced Decision-Making Power and Social Status** Entrepreneurship has also been shown to increase women's decision-making power and elevate their social status within their communities. Women entrepreneurs gain confidence and authority in both personal and professional realms, challenging traditional gender roles. As women take on leadership roles in their businesses, their voices carry more weight in familial and societal matters, fostering a shift toward greater gender equality. This enhanced social standing promotes respect and recognition for women, inspiring others in their communities to pursue similar paths.

**Challenges and Enablers of Women's Entrepreneurial Success** The analysis of secondary data reveals both challenges and enablers affecting women entrepreneurs in Delhi NCR. Key obstacles include limited access to financing, balancing family responsibilities, and overcoming societal biases. However, factors such as supportive policies, access to networks, and targeted skill-building programs enable women to overcome these challenges and succeed in their ventures. Recognizing these factors can inform more effective policies and initiatives, helping to create a favorable ecosystem for women entrepreneurs in the region.

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## India's Transformation towards Green Economy: Challenges and Opportunities

Samit Mahore

### Introduction

We all are familiar with the concept of sustainable development. Sustainable development can be interpreted in different ways. It is an approach to balance development which often competing, needs against an awareness of the environmental, social and economic limitations. In many ways sustainable development promotes transition of an economy towards a green economy. Green economy has recently emerged as an important concept on the global agenda of sustainable development. The green economy promotes macro-economic approach to sustainable economic development. In fact, green economy is a vehicle to achieve sustainable development.

### What is a Green Economy?

The green economy helps to improve human well-being and social equity and significantly reduce environmental risks and ecological scarcities. Green economy is a model of economic development based on sustainable development and knowledge of ecological economics. A Green Economy is a linkage between economy, society, and environment which transform various economic activities like consumption and production with contributing to a reduction per unit in waste. It also considers best possible use of resources, materials, energy and pollution emission will revitalize and diversify economy, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution. (UNEP, 2022). According to UNEP, A green economy is defined as low carbon, resource efficient and socially inclusive.

### World as a Green Economy

In the 2021 Glasgow Climate Pact targeted to reduce global carbon dioxide (CO<sub>2</sub>) emissions to net zero by 2050 is consistent with efforts to limit the long-term increase in average global temperatures to 1.5°C. This calls for nothing less than a complete transformation of how we produce, transport and consume energy. In line to achieve this target ambitious climate policies are framed. Few countries like, Denmark and UK are currently slated to reach GHG neutrality by 2050. Other countries like China, India and Russia are headed in the wrong direction and rapidly rising GHG emissions. As fastest fifth growing economy in the world, India is Asia's second largest economy in terms of nominal GDP. India's Gross Domestic Product for 2022 was \$3.535 trillion with an annual growth rate of more than 7%. But India is far away from the target of net-zero GHG emission. The Environmental Performance Index (EPI) predicts that only four countries – China, India, the United States and Russia – will account for more than 50% of the world's remaining GHG emissions in 2050. A total of 24 countries will account for nearly 80% of emissions by 2050, unless policymakers strengthen climate policies and change emissions pathways.

Pandemic was a good opportunity to change policies. After a record decline in global GHG emissions in 2020, emissions returned to pre-pandemic levels in 2021. The global figures mask some of the most striking and important country-level trends. China and India's 2021 emissions were 5.5% and 4.4% higher than their 2019 levels, respectively, while the US and EU's emissions fell below their 2019 levels in 2021. These downward trends in emissions suggest that stimulus packages were given by many developed and developing countries during pandemic era may be successful in promoting climate change. US and EU's both were declared many packages during the pandemic and reduced GHG emissions at some extent.

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But both are not on track to meet the goal of net zero emissions by 2050. Globally, economic growth seemed to have picked up in the last one year and it is expected to further improve in future. Key development indicators for top 10 high GDP countries are listed in Table 1.

**Table No. 1**  
**Key Indicators of Top Countries (in GDP)**

Rank	Country	GDP in USD Bn (2022)	GDP per capita (USD)	CO2 emissions (MT) (2022)	2CO2 emissions MT per capita) (2022)	Net trade in goods and services in USD Bn (2021)	Energy Use (Kilograms of oil equivalent Per Capita)
1	United States	25,346.81	63,416	4,535.30	13.68	-861.4	6804
2	China	19,911.59	17,192	11,680.42	8.2	462.81	2224
3	Japan	4,912.15	42,248	1,061.77	8.39	-22.51	3429
4	Germany	4256.54	54,076	636.88	7.72	228.91	3818
5	India	3,534.74	6,461	2,411.73	1.74	-74.7	637
6	United Kingdom	3376	44,117	313.73	4.66	-39.9	2765
7	France	2936.7	46,062	279.99	4.26	-35.93	3692
8	Canada	2221.22	48,720	542.79	14.43	1.89	7631
9	Italy	2058.33	40,861	297.35	5.03	51.07	2482
10	Brazil	1,833.27	14,916	451.80	2.11	19.26	1496

Source: World Bank Database.

### Environmental Performance Index (EPI)

The EPI 2022 is a data-driven summary of the state of sustainability around the world. EPI ranks 180 countries on climate change performance, environmental health and ecosystem vitality using 40 performance indicators in 11 thematic categories. At the country level, these indicators show how far each country is from its environmental targets. The EPI Indicator provides a way to identify problems, set goals, track trends, understand results, and identify policy best practices to achieve the United Nations Sustainable Development Goals and move society towards a sustainable future. (Wolf, 2022)

High-scoring countries have a long-term commitment to action to protect environmental health, protect biodiversity and habitats, conserve natural resources, and decoupling GHG emissions from economic growth. It represents a sustainable investment. Denmark tops in 2022 ranking of EPI. This feat builds on a strong performance on nearly every issue tracked by EPI and outstanding leadership in efforts to advance a clean energy future and sustainable agriculture. The UK and Finland are ranked second and third, both achieving high scores in reducing GHG emissions in recent years. China stood at 160<sup>th</sup> rank and India is on the last rank i.e. 180 with 18.9 EPI score. (See table no. 2)

**Table No. 2****Environmental Performance Index of selected countries. 2022**

Rank	Country	EPI Score
2	United Kingdom	77.7
12	France	62.5
13	Germany	62.4
23	Italy	57.7
25	Japan	57.20
43	United States	51.10
49	Canada	50
81	Brazil	43.60
160	China	28.40
180	India	18.90

Source- (Wolf, 2022)

**Green Growth Challenges**

Being a fastest growing economy, India is lagging in many indicators i.e., lack of capital formation, limited availability of resources, unemployment, un-utilisation of working populations, dependency on other countries for latest technology. Similarly transition towards green economy has also many challenges. Some of them are discussed here.

**Insufficient Climate Action and Net zero target**

India, the world's third largest emitter of GHG, faces many challenges including heavy dependence on coal and lack of funding. With a strong and effective policy framework, India has set a target to achieve net zero by 2070. But it is more challenging because we do not set sectoral targets to achieve this milestone. Still India is depending on fossil fuels and transition towards renewable energy is not clear. There is huge gap in demand and supply of the renewable energy sources. To achieve net zero target upto 2070, India needs an investment of \$10.1 trillion in the beginning. If the deadline is advanced to 2050, the amount rises to \$13.5 trillion. (Sharma, 2022). Green Investment is also important challenge to Indian Economy.

**Air Quality**

Poor air quality is a serious global public health issues in most of the countries. It results many deaths every year. Vehicle emissions, fuel oils and natural gas to heat homes, by-products of manufacturing and power generation, coal-fuelled power plants, and fumes from chemical production are the main human made sources to degrade the air quality. Continuously we are using many efforts, but due to slow progress the India has not gained much ground toward improving the air quality. Similarly, exposure to other noxious pollutants like sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>X</sub>), carbon monoxide (CO), and volatile organic compounds have marginally improved in recent years. Many of the countries including India with low scores in the overall EPI also place near the bottom of the Air Quality issue category.

## **Waste Management**

Inadequate waste management can put great strain on ecosystems and undermine public health. Waste management shows such a marked difference in performance between developed and developing countries. India produced 72,368 million liters per day (MLD) sewage, while the installed capacity of sewage treatment plants was 31,841 MLD (43.9%). Out of installed capacity, 26,869 MLD (84%) was operated and only 20,235 MLD (75%) was actually in use. Five States and Union Territories – Maharashtra, Gujarat, Uttar Pradesh, Delhi and Karnataka account for 60 % of the country's total installed capacity. Reuse of treated wastewater is an issue that has received little attention in policymaking by many state governments.

The Central Public Health and Environmental Engineering Organization reports that treated wastewater is reused for horticulture, irrigation, washing operations (roads, vehicles, and trains), firefighting, industrial refrigeration, toilet flushing, and gardening. Reusing treated wastewater can reduce the demand for water from sources such as rivers, ponds, lakes and groundwater sources. According to the CPCB report, reducing raw water consumption contributes to the conservation of natural water resources. (Down to Earth, 2021)

## **Forest Cover**

According to the Indian Forest Survey, India's total forest and tree cover in 2021 was 80.9 million hectares, representing 24.62% of the country's geographical area. Compared to the 2019 assessment, the country's total forest and tree area increased by 2,261 km<sup>2</sup>. Of these, an increase in forest cover of 1,540 km<sup>2</sup> and tree cover of 721 km<sup>2</sup> was observed. 17 states/UT have more than 33% of their geographic area covered by forest. Increased forest cover was observed in sparse forests, followed by very dense forests. The three states with the largest forest cover are Andhra Pradesh (647 km<sup>2</sup>), followed by Telangana (632 km<sup>2</sup>) and Orissa (537 km<sup>2</sup>). (GOI, 2022)

## **Biodiversity & Habitat**

Loss of biodiversity and habitat is one of the important challenges of climate change. India is a highly diverse country covering just 2.4% of the world's land area and hosts a significant proportion of recorded species. Four of the world's 34 biodiversity hotspots i.e. The Himalayas, Western Ghats, Northeast, Andaman and Nicobar Islands are in India. To date, over 147,500 species have been assessed on the IUCN Red List. According to the International Union for Conservation of Nature's Red List, India has a total of 199 endangered species in 2021. The 20 number of species is added to the IUCN's Indian Red List of Threatened Species in 2021, 14 of which are animals and 6 which are plants. (RED LIST, 2022).

## **Water**

India is heading towards a permanent water shortage. In India, water has become as precious as gold. India's population is 18% of the world, but water resources are only 4%, which makes India one of the driest countries. Many Indians face extreme water stress. This challenge is compounded because it relies more and more on unstable monsoons for its water needs. Climate change is likely to increase these pressures on water resources, even as domestic floods and droughts increase in frequency and severity. (World Bank, 2022) Water is one of the most important renewable natural resources for sustaining life. On an average, India receives about 4000 km<sup>3</sup> of annual rainfall (including snowfall). However, there are significant spatial and temporal differences in the distribution of precipitation and, therefore, significant differences in the temporal and spatial availability of water across the country. Of the 4000 km<sup>3</sup> of water, 1869 km<sup>3</sup> is estimated to be the average annual potential flow of rivers available as a water resource. Of this available water resource, only 1123 km<sup>3</sup>

is available (690 km<sup>3</sup> from surface water resources and 433 km<sup>3</sup> from groundwater resources). Water demand was 634 km<sup>3</sup> in 2000 and is expected to grow to 1093 km<sup>3</sup> by 2025. Due to rapid population growth and the country's economic growth, the demand for water will continue to grow and will become scarce in the coming decades. (India WRIS, 2022)

## Climate Change

Climate, Ecosystems, Biodiversity and human society are interconnected and the effects of climate change are beginning to affect India. Rising heat is breaking records, with temperatures in the capital surpassing 49 degrees Celsius. Heatwaves are becoming more likely, afflicting in India. The latest Sixth Assessment Report of IPCC Working Group II warns that without immediate action to mitigate or adapt to climate change, the consequences could be dire, especially in India.

The increase in emissions is an all-time high, evidenced by recorded global temperature rise, 1.1 degrees Celsius higher than at the end of the 19<sup>th</sup> century. The last decade between 2011-2020 was the warmest one on record. The report outlines several impacts of the above projections such as reduction in food and water security, implications on social and economic human systems, limited functioning of critical infrastructure due to heatwaves, air pollution, etc. In addition, it also predicts adverse effects on climate-sensitive sectors such as forestry, fisheries, agriculture, energy and tourism as well as humanitarian crises such as climate-induced migration, etc. (PIB-GOI, 2022)

## Energy

India's energy supply is heavily dependent on fossil fuels, coal and petroleum products, together accounting for about 88% of total primary energy supply. Most of the domestically consumed oil is imported, posing serious challenges to long-term energy security. In recent years a severe heat wave has pushed the electricity demand forecast to 7% from the previous 6% for 2022. The heat wave spurred the use of air conditioning, causing a large surge in electricity demand with a shortage of supply. Considering the increasing demand for electricity in the country, conventional thermal power projects with a total capacity of 27,550 megawatts (MW) and conventional hydropower projects with a capacity of 14,103.50 MW are currently under construction in the country. In addition, an 8,700 MW nuclear power project is under construction. India is unlikely to meet its target of adding 175 GW of renewable energy generation capacity by December 2022. India, built 116 GW of renewable capacity by mid-2022, still only 66% of the 2022 target. Much of the deficit exists only in four states i.e. Maharashtra, Uttar Pradesh, Andhra Pradesh and Madhya Pradesh. (Noble Varghese, 2022)

## Agriculture

India holds the record for the second-largest agricultural area in the world, with approximately 60% of India's rural households making their living from agriculture. The agricultural sector employs half of the country's population and is highly dependent on farms for their livelihoods. The food and livelihood security of millions of people in India is highly precarious. Indian agriculture is sensitive to climate change and variability. The impact of climate change on agricultural systems varies by region, and the impact of changes in temperature and precipitation on major crops is well known. Despite the success of manufacturing in ensuring the country's food security, food inflation and its volatility remain challenges, requiring supply-side interventions such as increased public investment, storage infrastructure and food processing support. (Manjula, 2022). India needs a second green revolution and next-generation reforms to make agriculture more climate-resilient and environmentally sustainable. It has also been observed that Indian agriculture has shown remarkable resilience during the COVID-19 period.

## **Urbanisation**

The important challenge to green economy is about the ongoing urbanization process in India. The population of Indian cities is estimated to have nearly quadrupled from 197 million to 460 million between 1970 and 2018. Already India has a second largest urban community in the world and the country is expected to see an additional 416 million people moving into cities making its 50% of the population in cities by 2050. Indian cities occupy only 3 % of the country's area but contribute a whopping 60% to the GDP. Urbanization and industrialization continue to emit dangerous levels of air pollutants with challenge to sustainability. At the same time, Indian cities face major challenges related to the quality and availability of infrastructure such as power, telecommunications, roads, water and mass transit, which if left unchecked could seriously hinder economic growth. (NITI Aayog, 2022)

## **Opportunities to India as a Green Economy**

In transition to a green economy, Economic policies for the recovery should aim to support sustainable growth by facilitating the reallocation of resources to green sectors and business models. It is also important to recognize that COVID-19 is a crisis within a larger crisis arising from the escalating impacts of climate change on lives and economies. Preserving the ability of governments to invest in the transition to a green economy will be critical to counteract the inequitable impacts of climate change. Pandemic may be an opportunity to take political harsh and economically good decision specially in India.

## **The Green Path of Indian Economy**

After a huge shock of Covid-19 pandemic Indian economy is stabilising. Economist, researchers and policy makers agree that a capital approach is essential for a smooth and fast recovery of economy and for empowering sustainable development. Being a biodiverse country, natural capital plays an important role in the sustainable development. Many core sectors like, agriculture, mining, energy, MSMEs and tourism heavily rely on natural resources and natural capital. These sectors have significant role in employment generation, income generation, rural development, poverty alleviation, decrease in inequality and development of MSMEs. To overcome these economic, social and natural challenges, transition to green economy is one of the best options.

## **Major steps towards Green Economy**

India has already started journey towards green economy. To cope up with covid pandemic and crisis of the healthcare system policy makers have made budgetary allocation to maintain economic stability and human wellbeing. Faster economic recovery prioritizes to maintain sustainability and strengthen natural capital, ecosystem services and biodiversity for a green economic recovery. This implies taking action for nature-positive impact as well as minimizing the negative impact of certain policies and programmes. (Datta, 2021).

As part of a global study commissioned by the Green Economy Coalition and funded by the Mava Foundation, a country study on India is identified and assessed the integration of natural capital in the post-COVID policy. The study came up with assessment of the direction (positive, negative or neutral) and degree of natural capital impacts of the post-COVID public policies of five sectors: agricultural and allied, MSME (Micro, Small and Medium Enterprises), power, mining and the social sector.

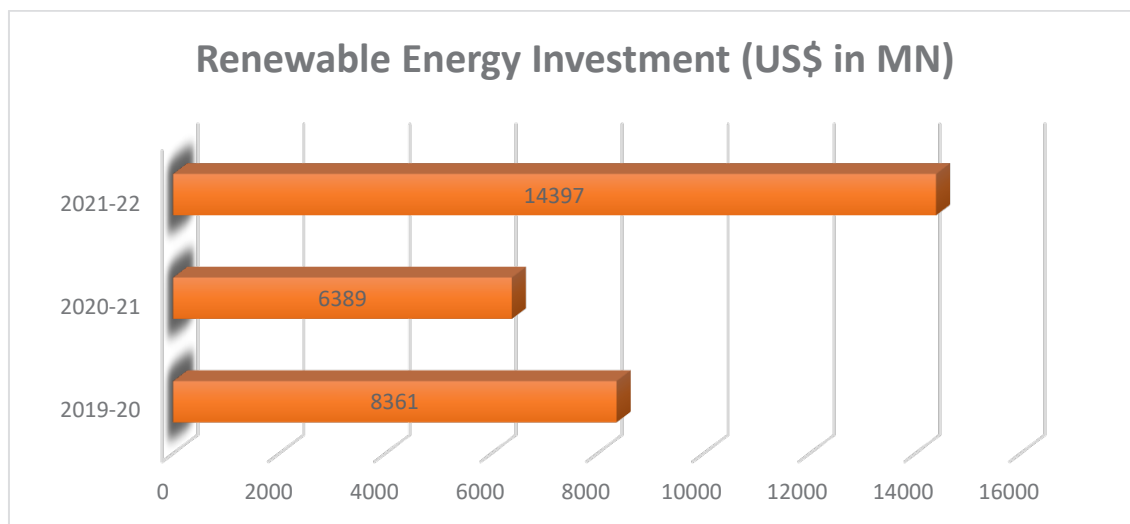
Last two consecutive budgets announced by the national government, certain policies were promoted with a significant linkage to natural capital. Promotion of the agriculture sector investment in micro irrigation will promote organic farming. This will have positive impact on the small traditional farmers and allied industries. Development of traditional industries will reduce environmental impact of MSMEs

and promotes use of renewable energy to maintained balanced between natural resource and rural development.

**Investment in renewable energy**

According to latest report of the Institute for Energy Economics and Financial Analysis investment in renewable energy hit record levels in India in the FY 2021-22. A total of \$14.5 billion was invested in renewable energy, up by 125% compared with FY 2020-21 and 72% higher than in the pre-pandemic period of the 2019-20 financial year.

**Figure No. 1**  
**Investment in Renewable Energy in India**



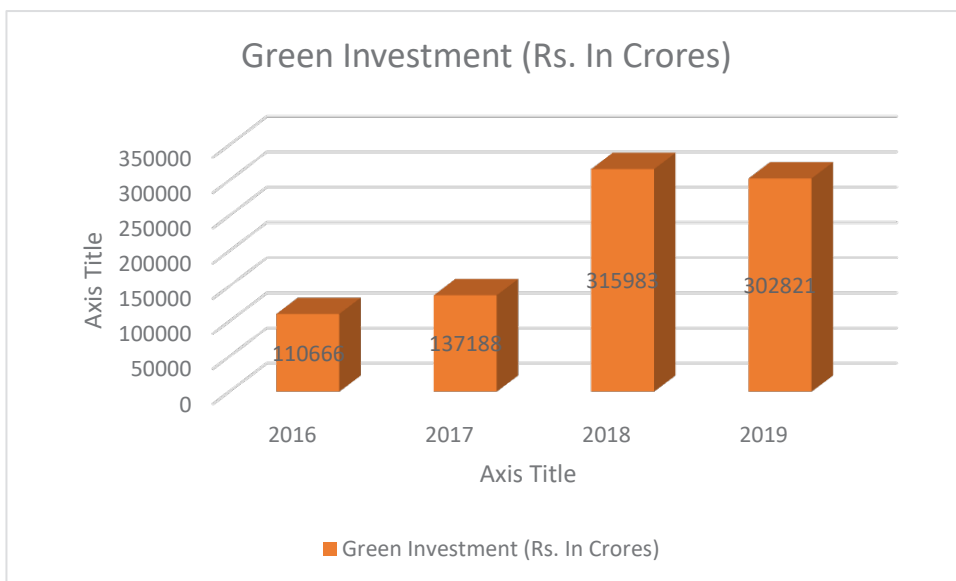
Source: (Khanna, 2022)

**Green Finance Inflow in India**

The Landscape of Green Finance in India evaluates finance flows to key real sectors i.e. clean energy, clean transport and Energy efficiency. This study tracks both public and private sources of capital--domestic as well as international— and builds a framework to track the flow of finance right from the source to the end beneficiaries through different instruments.

India's National Contributions (NDCs) under the Paris Agreement require the country to make approximately Rs. 162.5 billion (USD 2.5 trillion) from 2015 to 2030, or approximately Rs. 11 billion (USD 170 billion) annual increase. In 2021, India has increased its climate change ambition and announced the 'Panchamrit targets'. This includes expanding non-fossil fuel-based power capacity by 500 GW to meet 50% of energy demand from non-renewable sources. This increased ambition requires faster mobilization of green finance.

**Figure No. 2**  
**Green Investment in India**



Source: (Khanna, 2022)

Domestic sources continue to make up the majority of green finance, with 87% and 83% in FY 2019 and 2020 respectively. The share of international sources increased from 13% to 17% for the same period. The clean energy sector is evenly split between public and private sources of funding, with cash flows from PSUs accounting for 35%, followed closely by commercial FIs at 27%. Domestic inflows (82%) were much higher than foreign inflows (18%).

Within the clean energy sector, solar power projects received the largest share of accounting for 41% of the total financial flows to the clean energy sector. Clean transport received the largest amount of public funds (96%) in FY2019-20. Domestic inflows of 72% far exceeded international inflows of 27% (of which 99% were from international public sources). The flow of funds into the energy efficiency sector was mainly from the private sector (91%). Domestic inflows are 96%, well above international inflows of 4%. Cash flow to energy efficiency sector increased by 26% from 2019 to 2020, while cash flow to process efficiency and green buildings decreased by 83% and 81% respectively in 2020. (Khanna, 2022)

### Conclusion

India is one of the fastest growing economies and second highest populated country in the world. In many indicators India stood among first 10 countries. Similarly, India is also lagging in many indicators in the world. There is a need to focused need-based practical approachable policies to achieve sustainable development. Green economy is one of the important aspects of it. Natural economy may achieve many SDGs. But this is not possible without the help from the developed countries. This transition requires huge capital investment. But we people of India, considered to achieve this target by



curtailing the time and help to reach our destination. This will help us to overcome many problems of our economy.

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## Odisha's Initiative Towards Achieving Sustainable Development Goals (Sdgs)

**Purushottam Sahu**

### Abstract

Odisha is now considered as a good performer state in terms of better economic growth rates as compared to the other States of the country. Odisha ranks 9<sup>th</sup> position in terms of area, 11<sup>th</sup> position in terms of population in the country. Its gross domestic product (GDP) is approximately USD 85.7 billion in 2021-22. Odisha is also faced the impact of COVID-19. Its GDP declined by 5.3 per cent in 2021-22 against an average growth of 8.7% in real terms over the preceding five years. Industry sector highly affected followed by service and agricultural sector, however the agriculture and allied sectors remain resilient to COVID-19 impact in 2021-22. Agriculture has been the dominant sector in Odisha. It experienced decelerating trend but continues to remain as priority sector because of its highly potential for employment generation and inclusiveness. Agricultural development is fundamental to feed people, in poverty, promote shared prosperity, increase economic growth and achieve the sustainable development goals. After a series of intergovernmental negotiations, evolving since 1992, more than 190 countries of the UN General Assembly adopted a status of 17 Sustainable Development Goals (SDG) on 25<sup>th</sup> Sept. 2015 in place of eight Millennium Development Goals (MDG) being pursued since 2000. The SDGs officially known as transforming our world : the 20-30 agenda for sustainable development with 17 aspirations goals (UNO 2015) which have 169 targets and 304 indicators.

Odisha being a state focused on progressive development through social reforms, government action and participation of social actors, has conceptualized and implemented several initiatives the realization of SDGs at all levels of governance. Odisha is a leading state among many other Indian states in introducing for reaching reforms in governance and budgeting. The SDG budget being one of the most significant government fiscal policy document provides an extensive road map for the integration of twenty-thirty agenda and the goals, targets and associated indicators in the state, financial planning regime. It has also vital means highlighting accountability, transparency of the state towards its commitment to inclusive development. The implementation of state citizens, tricks approach through the 5T framework of Teamwork, Transparency, Technology, Transformation and Time. The state is also prioritising the localization of SDGs in order to promote the last mile rich of development initiatives. With the ongoing Covid-19 Pandemic situation the state has also placed more focus on ensuring that SDGs at the core of the initiatives rendered for a response as well as recovery from severe after shocks. This paper has made an attempt to analyse the initiative and performance of Odisha in achieving the sustainable development goals. The presentation of the paper has outlined as introduction, concept of sustainable development, SDGs, present status of Odisha's development, Odisha's SDG initiatives and performance and Conclusion.

The Odisha is now considered as good performance state in terms of better economic growth rates as compared to other states. The state is know now a track of development i.e., faster and impressive. To make the process sustainable over a long run, a win-win opportunities available in an environment, forest, land management and social sector should be more vigorously taken up. Poverty reduction is the priority of the state government to be monitored with true spirit. The state is being based on non-renewable sources, the state should integrate its development policy, with more sustainable initiative.

The findings of the paper reveals that the performance of Odisha in achieving SDGs increased by 10 points to 61 in the year 2020-21 from 51 in the year 2019 as per the SDG related multi-dimensional poverty index. The state has taken concrete initiatives for achieving the SDG framework through flagship programmes under the 5T framework of good governance strategies.

**Key words:** *Sustainable, Development, Resources, Framework, Climate Change.*

## INTRODUCTION

Odisha is now considered as a good performer state in terms of better economic growth rates as compared to the other States of the country. Odisha ranks 9<sup>th</sup> position in terms of area, 11<sup>th</sup> position in terms of population in the country. Its gross domestic product (GDP) is approximately USD 85.7 billion in 2021-22. Odisha is also faced the impact of COVID-19. Its GDP declined by 5.3 per cent in 2021-22 against an average growth of 8.7% in real terms over the preceding five years. Industry sector highly affected followed by service and agricultural sector, however the agriculture and allied sectors remain resilient to COVID-19 impact in 2021-22. Agriculture has been the dominant sector in Odisha. It experienced decelerating trend but continues to remain as priority sector because of its highly potential for employment generation and inclusiveness. Agricultural development is fundamental to feed people, in poverty, promote shared prosperity, increase economic growth and achieve the sustainable development goals.

The United Nations Commission on sustainable development (UNCD) had approved a list of 130 indicators of Sustainable Development (SD) in 1995. These are organized in a framework of driving force state and responsible indicators with reference to the chapters of the Agenda 21 of the Rio-Earth Summit Declaration. These indicators represents human activities, process and patterns that impact on SD. The state indicators reflect the safe and status of development. The response indicators are the policy choices available to change of the State. The indicators are classified into socio-economic, environmental and institutional categories which can be monitored with reference to the various dimension of development such as poverty, education, health, demography, land and water, forest, biodiversity and people's participation (UNO, 1996).

After a series of intergovernmental negotiations, evolving since 1992, more than 190 countries of the UN General Assembly adopted a status of 17 Sustainable Development Goals (SDG) on 25<sup>th</sup> Sept. 2015 in place of eight Millennium Development Goals (MDG) being pursued since 2000. The SDGs officially known as transforming our world : the 20-30 agenda for sustainable development with 17 aspirations goals (UNO 2015) which have 169 targets and 304 indicators. The 17 over-reaching goals are further broken down to 169 targets and 249 indicators at the global level. Each catering individually to a developmental issue that the study aims to address. The accomplishment these goals requires the commitment of government at all levels, while financial investment from a sizeable components for the support rendered in this regard.

Odisha being a state focused on progressive development through social reforms, government action and participation of social actors, has conceptualized and implemented several initiatives the realization of SDGs at all levels of governance. The state has also organized a series of consultations with the key stakeholders focusing on capacity building and development of monitoring frameworks and sharing the new ideas and best practices related to the SDGs in line with the national convergence plan. The state is also adopted the Whole of Government Approach (WGA) in addressing the 20-30 SDGs targets.

## CONCEPT OF SUSTAINABLE DEVELOPMENT

The brookland report defines SD as a process that “builds the needs of present without compromising the ability of the future generation to meet their own needs”. It is a process of change in which the exploitation of natural resources the direction of investments, the orientation of technology and institutional change all mutually compatible. The fundamental message of concept is that the developmental achievements of the economic should last well into the future. The scope of the concept has further burdened to imply Sustainable Human Development (SHD) by the United Nations Development programme (UNDP) in the Human Development Report (1994). SHD envisages that the

country should have non-declining human development index which includes along with the indicators of economic development elements like educational attainment, health standards, nutritional status, state of environmental and human rights profile (Sahu N.C., 2016).

## **SUSTAINABLE DEVELOPMENT GOALS**

The 17 sustainable development goals are as follows:

1. End poverty in all its forms everywhere
2. End hunger, achieve food and nutrition security and promote sustainable agriculture
3. Ensure good health and well-being for all at all ages.
4. Ensure inclusive quality education and promote lifelong opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of clean water and sanitation for all.
7. Ensure access to affordable energy for all, which is reliable, sustainable and modern.
8. Promote inclusive and sustainable economic growth, with full and decent work for all.
9. Build resilient infrastructure, promote sustainable industrialisation and innovation.
10. Reduce inequality within and among countries.
11. Make inclusive, safe, resilient and sustainable cities and human settlements.
12. Ensure sustainable and responsible consumption and production patterns.
13. Take urgent action to combat climate change and its impacts.
14. Conserve life below water and sustainably use the oceans, seas and marine resources.
15. Protect life on land, sustainably manage forests and halt bio-diversity loss
16. Promote peace, justice and strong institutions and build inclusive societies.
17. Strengthen partnerships for the goals and the means of implementation.

## **The Present status of Odisha's Development**

Odisha is now considered as a good performer in terms of better economic growth since 1997 the plan-wise annual average growth rate is quite good. As per the advance estimates, the performance during 2019-20 has been further impressive with anticipated growth rates of GSDP at 18.73 per cent and per capita NSDP at 7.3 per cent in real terms (GOO, 2019). The standard of living in Odisha has improved over the years with the rise in the real per capita income. Though its continued gap from the national average remains a matter of concern. Further the state's economy is diversifying at a faster rate. The structural shifts from primary to service sector has been visible over the period of time. But the state's unemployment in rural areas is marginally higher than the national rate of unemployment, while it is lower than all India average in case of urban areas. It is heartening to note that the share of women employees in the organized sector has been steadily increasing (GOO, 2019).

Most large-scale industries in Odisha are mineral based. Presently in steel production has 10% of the total capacity of the nation, while it has 25% of total iron production in the State. Odisha occupies the 1<sup>st</sup> place in the country in aluminum both in terms of production capacity and actual output. Odisha has historically witnessed higher incidence of poverty but now it is one among the very few leading states with faster reduction of poverty ratio from 57.20 per cent in 2004-05 to 32.59 per cent in 2011-12. As per the estimates made by the Planning Commission based on Tendulkar Committee Methodology, decline in Poverty 24.61 per cent points in Odisha was the highest reduction by any other major states in the country. The natural capital endowment in Odisha is enhanced by the diversity of its natural regions like the coastal plains, middle mountaineers country, rolling uplands, river valleys and subdued plateaus.

The coastal plains are gift of six major rivers Subarnrekha, Budhabalanga, Baitarani, Brahmani, Mahanadi and Rushikulya. The mountainous region covering about  $\frac{3}{4}$  area of the state is fertile, well-drained and thickly populated. (Sahu, N.C., 2016)

Odisha mainly depends upon monsoon rains for its water resources. The long term annual average rainfall is 1415 mm but their occurs spatial variations ranging about 1200 mm in southern region to about 1700 mm in northern plateau, which causes droughts in some parts and floods in others. The state is endowed with an extensive network of rivers and streams. Odisha has recorded a forest land of 58,136 sq. km., which constitutes 37.34 per cent of the total geographical area of the State. This includes 26,329 sq. km (45.29 of reserve forest, 15,525 sq. kms (26.70 per cent at protected forest. About 12 sq.km forest under private ownership. The actual forest covered of Odisha in terms of different canopy density classes was 50,347 sq. kms which constitutes 32.33 per cent of the states land area. The increase in forest covers due to conservation measures and improvement in scrub areas including afforestation activities and involvement of Bana Sarkhana Samiti at the village level. The forest of they are rich in bio-diversity. There are two national parks, 18 sanctuaries and one bio-sphere reserve in the state. There are two notified tiger reserve namely Similipal and Satakosia. The protected area for wild life management constitutes 4.25 per cent of the total geographical area of the State. The wetlands of odisha have received international accreditation. Chilika, Ramsar site is the Asia's largest brackish water lagoon having rich estuarine and marine fauna including 152 Irrawain Dolphins. About 9 lakh migratory birds visit lake every year. Bhitarkanika mangroves designated as Ramsar wetlands in 2002. It is famous for its salt water crocodiles and Olive Ridley sea turtles. Gahiramatha sanctuary attracts more than 5 lakhs sea turtles for nesting during February to March.

Odisha is a richly endowed with a variety of metallic and non-metallic minerals and occupies a prominent place in the country. Mineral resources and metallurgical industry are treated as the real wealth of the state. As per the surveys in 2010 that about 93 per cent chromite, 72 per cent of bauxite, 44 per cent of Manganese, 33% of iron ore and 24 per cent of coal deposits of India are located in the State. The abundance of quality grades minerals support the state to achieve higher industrial growth. Odisha has 12 industrially active zone such as Rourkela, Rajgangpur, Ib-valley, Hirakud, Angul-Talcher, Chowdar, Balasore, Duburi, Chandikhole, Pradeep, Khorda, Tapang, Joda, Barbil and Rayagada (Sahu, N.C.)

The development of Odisha is the centre of the stated conditions. Certain facts are prominently visible. The state is rich natural capital and socio-cultural heritage. So far as the human made capital is concerned, there is deficiency with regard to infrastructure. However, the process and the pace of development in Odisha seems to be on track. Economic growth of the State has been fast and inclusive. There are positive activities in all fronts of the SDGs large reduction in poverty indicates that growth has been inclusive. The scope for mineral processing activities is high. The involvement of the corporate sector for industrial growth in the state has increased.

### **SDG and Odisha's perspective**

Odisha is a leading state among many other Indian states in introducing for reaching reforms in governance and budgeting. The SDG budget being one of the most significant government fiscal policy document provides an extensive road map for the integration of twenty-three agenda and the goals, targets and associated indicators in the state, financial planning regime. It has also vital means highlighting accountability, transparency of the state towards its commitment to inclusive development. The implementation of state citizens, tricks approach through the 5T framework of Teamwork,

Transparency, Technology, Transformation and Time. The state is also prioritising the localization of SDGs in order to promote the last mile rich of development initiatives. With the ongoing Covid-19 Pandemic situation the state has also placed more focus on ensuring that SDGs at the core of the initiatives rendered for a response as well as recovery from severe after shocks. (GOO, SDG Budget, 2020-22)

### **Odisha's SDG Initiatives**

The Odisha SDG indicator framework (OSIF) is a monitoring framework developed by the planning and convergence department in consultation with all other department has identified 367 indicators which includes 100 outcome indicators, 143 output indicators and 124 process indicators across all the 17 goals. Out of the 367 OSIF indicators, 269 are from national indicator framework (NIF) and 98 are state specific indicators (Table-1).

The government of Odisha has taken concrete initiatives for achieving the SDG framework in the state. The flagship programmes of the State such as Biju Swasthya Kalyan Jogana, Sampurna, KALIA, MAMATA, Mission Shakti, Basudha etc. directly address the challenges highlighted by SDGs. The OSIF will help to streamline and track Odisha's progress with collective responsibility with true spirit of 5T framework to achieve the values enshrined in the sustainable development goals, living non one behind. (LNOB).

### **Odisha's SDG performance**

The performance of Odisha in achieving the sustainable development goals increased by 10 pints to 61 in the year, 2020 from 51 in the year 2019 as per the SDG related multi-dimensional poverty index held in 2021, to deliberate on the inter-relationship the MPI and SDG's with the aim of expediting the attainment of SDGs in the state. The state has ranked no. 1 in Goal 13 relating to action on combating climate change and its impacts as per the statements of the Odisha government. The state has also ranked no. 1 in Goal 14 relating to conservation and sustainability of the use of ocean, sea and marine resources. The state was also ranked a front runner in the achieving of 9<sup>th</sup> goals and aspiring state in the achievement of six goals and did well in pursuing Goal 6 relating to clean water and sanitization. In collaboration with world food programme in India the state's progress in achieving zero hunger and other U N sustainable development goals is highly appreciated by the World Food Programme team for the transformational work of the State government in the field of disaster management, food production and food security.

### **Conclusion**

The Odisha is now considered as good performance state in terms of better economic growth rates as compared to other states. The state is now on a track of development i.e., faster and impressive. To make the process sustainable over a long run, a win-win opportunities available in an environment, forest, land management and social sector should be more vigorously taken up. Poverty reduction is the priority of the state government to be monitored with true spirit. The state is being based on non-renewable sources, the state should integrate its development policy, with more sustainable initiative. Apart from augmenting renewable resources, steps should be taken to tap the mineral resource rents for human made capital formation. The ecological systems of Chilika lake, Bhiatarkanika, Similipal, Satakosia, Mahendragiri, Gandhamardan etc. constitute the critical natural capital of Odisha. Sustainable tourism has a huge growth potential in Odisha. It can create decent jobs on large scale and generate business opportunities. The State has scope for cultural heritage tourism and natural heritage tourism. Reduction of risk and building resilient to shocks have to be addressed with a renewed sense of priority in the context of poverty reduction, climate change and sustainable development. Desirable coping strategies have to be designed and propagated among the people to achieve sustainable development goals.

The results of the paper reveals that the performance of Odisha in achieving SDGs increased by 10 points to 61 in the year 2020-21 from 51 in the year 2019 as per the SDG related multi-dimensional poverty index. The state has taken concrete initiatives for achieving the SDG framework through flagship programmes under the 5T framework of good governance strategies.

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**Table-1: SDG Goalwise Distribution of Targets and Indicators in Odisha (2019)**

Goal No.	SDG goal	Targets	Total OSIF indicators	Specific indicators		Types of indicators			Targets
				National	State	Outcome	Output	Process	
1	No poverty	07	29	19	10	07	12	10	To eradicate poverty by 2030
2	Zero hunger	08	31	17	14	11	11	09	To end hunger and nutritional food by 2020.
3	Good health and wellbeing	13	46	29	17	14	25	07	To reduce MMRR less than 70 per lakh births
4	Equality education	10	27	20	07	09	10	08	To ensure free, equitable and quality primary education
5	Gender equality	09	29	26	03	06	15	08	To ensure gender equality
6	Clean water and sanitation	08	27	18	09	06	09	12	To provide clean water and sanitation
7	Affordable and clean energy	07	05	04	01	03	02	--	To provide affordable clean energy
8	Decent work and economic growth	12	41	36	05	10	19	12	To sustain per capita economic growth
9	Industry innovation and infrastructure	08	33	17	16	03	13	17	To develop quality, reliable sustainable and resilient infrastructure
10	Reduce inequalities	10	11	07	04	03	04	04	To empower and promote social, economic and political inclusion of all.
11	Sustainable cities and communities	10	15	15	00	06	04	05	To ensure safe and affordable housing to all



									by 2030.
12	Responsible consumption and production	11	13	11	02	01	02	10	Sustainable management and efficient use of natural resources.
13	Climate extent	05	00	04	04	00	01	07	To strengthen resilience and adoptive capacity to climate related hazards.
14	Life below water	10	11	10	01	03	04	04	To reduce marine pollution of all kinds by 2025.
15	Life and land	12	20	19	01	06	07	07	To ensure the conservation, restoration and sustainable use of fresh water eco-system.
16	Peace, justice and strong institutions	12	21	17	04	12	05	04	To reduce all forms of violence and related to deaths and exploitation of children.
17	Partnership for the goal.	19	--	--	--	--	--	--	--
	Total	169	367	269	98	100	143	124	

Source : Odisha SDG Indicator Framework, (2019) Department of Planning and Convergence, Government of Odisha, Bhubaneswar

## “Impact of Sustainable Development Goal, Challenges And Strategies In India”

Md Umar Rayees & Anis Ahmad

### Abstract

Sustainable development is the key for overall prosperity of the world. “Brundtland”, which defines sustainable development as “development that meets the needs of present without compromising the ability of future generations to meet their own needs”. To achieve sustainable development of prosperity and for protecting planet by 2030, Sustainable Development Goals had been developed. There are 17 SDGs and have specific targets for each.

India had played a vital role in shaping the SDGs. Unsurprisingly; therefore, the country’s national development goals are mirrored in the SDGs. As such, India has been effectively committed to achieving the SDGs even before they were formally crystallized.

As Prime Minister Narendra Modi has stated, “These goals reflect our evolving understanding of the social, economic and environmental linkages that define our lives.” India’s development mantra “Sabka Saath Sabka Vikas” (Collective Effort, Inclusive Development) and the associated national programs closely track the SDGs.

In this article will focus on the strategies for sustainable development which are very much essential for the survival of our present generation and keeping things for the future generation are coming generation.

**Key words:** Sustainable Development in India, Sustainable development goals, challenges and strategies.

### Introduction

There are many different origins and definitions of the term sustainable development but in 1987 the World Commission on Environment and Development’s report called the Brundtland Report is by far the best and is now one of the most widely recognized definitions. “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

In isolation from the environment during the last few decades we can evident that we can no longer think of social economic development. The UN conference on earth environment and development UNCED held in Rio in June 1992 was a milestone event it was basically focusing the world attention on environmental and development problem which the country is globally face as a community this submit brought together government from around the countries that representative and international agencies as well as Government and non-governmental organization with common objective of repairing or to make the world prepared to attend long term goal in terms of sustainable development.

21 agenda were adopted. Governments were expected to design National strategies plans and policies for sustainable development in consonance with the countries particular situation priorities and capacity. The agenda also recognized the need of new assistance for developing countries to support the incremental cost of action to deal with the global environmental problem and accelerate sustainable development.

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Jointly Government and the international organization have made extensive effort in order to draft and design the strategies in order to integrate environmental economic and social objectives into decision making through new policies and strategies for attaining sustainable development. This principal are embedded in planning the process of country and their for need for a distinct strategy on national level for sustainable development was not felt yet.

### **Review of Literature**

Examining the review of the literature on Sustainable Development in India. We are here going to examine the government policies and major trends in research related to SDGs. This systematic review on sustainable development practices in India had found that there is a huge gap on literature regarding sustainable development in India.

**Lakota - “We do not inherit the Earth from our ancestors; we borrow it from our children”.**

### **Objectives of Study**

This article seeks to study & examine how far the Sustainable Development Goals have been achieved in India. We will focus on some selected human development and environment protection goals in our article. Basically, we have examined the government policies and major trends in research related to SDGs.

The main objective is to study, examine and analyze the Sustainable Development Goals moving forward we trace the Challenges of Sustainable Development faced by an economy and by the government in the implementation of the policies. And then finally chalking down the Strategies for Sustainable Development

### **Research & Methodology**

Research is the moment to move from the known to the unknown. The process of research requires a great deal of attention to conduct surveys and obtain results. It is a careful investigation or inquiry about the discovery of new facts in the current issue. The main objective of this research is to discover the hidden truth. The research process begins with defining the problem or opportunity and ends with the preparation of the research report.

### **Data Collection Methods**

Two types of data will be used for the study is included in

#### **Primary Data Collection**

It is the basic fact or data collected by the researcher through observation, inquiry, questionnaire etc. Usually, primary data is more reliable and it is time consuming process.

#### **Secondary Data Collection**

The data which is collected by others and if we are using only such data then it is called secondary data. In this research paper I have used secondary data from various books, magazines and authentic websites.

### **Sustainable Development Goals**

The Sustainable Development Goals were adopted by the United Nations in 2015 as a call-to-action for people worldwide to address five critical areas of importance by 2030: people, planet, prosperity, peace, and partnership.

Before going into the main challenges which are faced for the sustainable development let us first discuss the goals of sustainable development, which are as follows-

1. No poverty - The goal of sustainable development is to remove poverty at all levels in any economy.
2. Zero hunger- To achieve food security improved nutrition and hunger and promote sustainable agriculture.
3. Good health and well-being- To ensure healthy life and promote well-being for all and at all ages.
4. Education - To insure and provide inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Gender equality- Empowering women and girls in order to achieve gender equality in the society.
6. Clean water and sanitation- Ensure availability and sustainable management of water and sanitation for all.
7. Clean and affordable energy- To ensure the access of reliable affordable sustainable and modern energy for all.
8. Decent work and economic growth- To provide and create decent work promote sustained inclusive and sustainable economic growth full and productive employment to all.
9. Industry innovation and infrastructure- To promote sustainable industrialization create and foster innovation and build resilient infrastructure.
10. Reduce inequality– Reduce inequality within among the countries.
11. Sustainable cities and communities- In order to make cities sustainable and human settlement inclusive safe and reliable to all.
12. Responsible consumption and production- Sustainable measures for production and consumption pattern should be ensured.
13. Climate action- In order to combat climate changes and its impact climate studies needs to be undertaken and implemented and act accordingly.
14. Life below water- The conservation of the ocean seas and Marine resources for the sustainable development.
15. Life on land- The conservation and sustainable use of territorial ecosystem in order to protect restore and promote forest and reserve land degradation and biodiversity loss.
16. Please justice and strong institution- In order to promote peace in the society for sustainable development justice for all effective building accountable and inclusive institutions at all levels is required for all.
17. Partnership to achieve the goals- Global partnership to achieve strengthen implement and revitalize for sustainable development.

In 2015, the 193 countries that make up the United Nations (UN) agreed to adopt the 2030 Agenda for Sustainable Development. The historic agenda lays out 17 Sustainable Development Goals (SDGs) which have been discussed above in our article and targets for dignity, peace, and prosperity for the planet and humankind, to be completed by the year 2030. The agenda targets multiple areas for action, such as poverty and sanitation, and plans to build up local economies while addressing people's social needs.

## Challenges of Sustainable Development

Population is a major challenge for sustainable development in beginning of 21st century the population of total Earth were around 6 billion and is expected to level out between 10 and 11 billion over next 50 years this basic challenge will be shortages of drinking water land for agriculture and food production.

1. Poverty - The biggest ever challenge is the poverty almost 25% of the country population lives on less than 100 rupees per day.
2. Shortage of drinking water - In many regions of the world shortage of drinking water is also one of the major barriers to sustainable development it is being expected that at the current rate of development every second person will suffer from water shortage by year 2025.
3. Human health- Another obstacle in sustainable development death in developing countries are avoidable in comparison to the under developed countries. Imitate to reduce the death rate among children and the death rate of young mother.
4. Inequality - Another serious obstacle to the sustainable development with the number of people suffering from nutrition the fall of food prices over the past 30 and 20 years may have contributed to increase in consumption in the future the growth of food production should not come at expense of nature.
5. Consumption of energy –It is major challenge for sustainable development of all forms of energy is continuously rising the improvement of access to reliable sustainable and environmentally friendly energy resources and services.
6. Deforestation- Deforestation is particularly great challenge before the sustainable development due to expansion of agriculture world's forest is diminishing in the coming years improving the recovery and management of forest will be of high importance.
7. Petrol consumption- Petrol consumption is constantly rising.The article emphasizes the need to realize the decision of the Kyoto protocol for reaching an agreement on emission norms for greenhouse gases in developed countries.

The main challenges to sustainable development which are global in character include poverty and exclusion, unemployment, climate change, conflict and humanitarian aid, building peaceful and inclusive societies, building strong institutions of governance, and supporting the rule of law.

## Strategies for Sustainable Development

The conceptual meaning of sustainable development is not to create an obstacle in development process but how to utilize our resources so that an inter relationship can be filled among present and future generation whatever think should be done in order to attend sustainable development which can secure the coming future generation. In order to attend sustainable development, the below strategies can be useful-

1. Promoting environmental education and awareness- Environmental education should be made the Centre of all learning process it will greatly help in changing the thinking pattern and attitude of people towards our mother earth and its nature.
2. Technology - Using the appropriate technology is one which is locally accepted resource efficient and eco-friendly the local resources and local labour is the first-choice indigenous technology is also useful this are cost effective and are sustainable in nature is often taken as a model using the natural condition of that region, we can attend sustainable development this concept is known as designed with nature the technology should use less of resources and should produce minimum waste.
3. Resource utilization as per carrying capacity- Any system can sustain limited number of organisms on a long-term basis which is known as it carrying capacity in human beings the carrying capacity concept becomes all the more complex it is because unlike other animal human being not only need food to leave but need so many other things to maintain the quality-of-life sustainability of a system depends largely upon the carrying capacity of system. If the carrying capacity of a system is crossed environmental degradation starts and continuous lite reaches appoint of no return basically it has two component which are as follows

- A. Supporting capacity - capacity to generate.
- B. Assimilative capacity - capacity to tolerate different stress level.
- 4. Improving quality of life including social cultural and economic dimension – Development should not only focus just on one-section of already affluent people. Rather it should include sharing of benefits between the rich and the poor. The tribal, ethnic people and their cultural heritage should also be conserved. Strong community participation should be there in policy and practice.
- 5. Reduce reuse and recycle approach – The three R approach advocates the minimization of resources used using them again and again instead of passing it on as a waste recycling of materials reusing of material in achieving the goals of sustainability. It reduces pressure on our resources as well as reduces waste generation and pollution.

## Conclusion

Sustainable development is a way of thinking and acting so that we can secure the resources which is limited and scarce for our future generation. It will not be brought about by the policies only it must be taken by the society as a principal guiding the many choices each citizen makes every day. It is clear that environmental degradation tends to impose the largest price on those generations that are not yet born. Future generations are disadvantage to the present generation because they inherit a different quality of life from the other share a condition of structural weakness in having no representation among the present generation and so their interest is also neglected in the present decision and planning while it is very much needed that we think about our current generation. We can improve the sustainable development by emphasizing and involving citizen and stakeholders. Everyone's contribution is a necessary where economic freedom social justice and environmental protection go hand in hand together making our own future generation better than now and better for tomorrow.

Sustainable development is not an easy task to achieve yet it is an unavoidable responsibility which can be achieved with proper planning by chalking out strong policies effective strategies and execution. To avoid the stabilization of planet the inclusion of sustainable development agenda in public and private policy spares is not only unavoidable but inescapable. We cannot escape development; we cannot escape the agenda and lesson until we do a lot with proper planning strategies and effective execution to attend sustainable development.

India will continue to pursue the implementation of the SDG agenda through close collaboration between the national and sub-national governments as well as active participation of all other relevant stakeholders. Bi-annual reviews will be conducted with the state governments for identifying good practices as well as challenges and undertaking the appropriate course corrections.

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## An Inclusive Green Economy and Sustainable Development

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### Abstract

There is a clear relationship between investing in the environment, socioeconomic framework, and sustainable development. Resonating the human welfare should be the ultimate goal for any development strategy, a well-designed sustainable development strategy should result in poverty eradication. An Inclusive Green Economy could be viewed as an approach that emphasizes these linkages. It could therefore be considered as a tool or vehicle that facilitates the transition to sustainable development. The United Nations Environment Programme (UNEP) defines the Green Economy as “one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”. An Inclusive Green Economy approach advocates the adoption of integrated policymaking. Adopting an ecosystem approach rather than dealing with different environmental biomes such as deserts, forests, and aquatic life as separate and isolated components of the environment. Following an integrated approach in dealing with the three sustainability dimensions and in dealing with the environment as an ecosystem enables us to better communicate the relationship between investing in the environment and the resulting positive social and development outcomes. It, therefore, provides a strong message to policy and decision-makers of the necessity of integrating environmental, social, and economic issues to obtain better sustainable development results. A suite of measures and actions is needed to achieve the goals and objectives of specific policies. In many instances, policy tools are designed independently and may be in contradiction with one another. Coherence and supportiveness of the different policy tools and measures should be maintained to support the realization of policy objectives. Phasing out fossil fuel subsidies will release funds to support investment in renewable energy. Such policies may be supported by regulatory emission standards. Constraints impeding the active involvement and contribution of civil society toward a transition to a Green Economy should be removed. Civil society being more familiar with realities on the ground, working closely with local communities, more familiar with their needs and priorities, and increased capabilities to operate on the ground can contribute effectively to achieving sustainable development objectives. Moreover, public-private-partnership consolidates efforts and enhances the potential for realizing sustainable development objectives. Governments should ensure that funding provided by Central banks supports government policies in pursuit of sustainable development objectives. Appropriate measures should be introduced to discourage banks from providing loans to environmentally damaging and polluting activities. By greening their procurement, governments can demonstrate leadership and set an example for environmentally sound practices. On the physical side, this includes greening the construction of government offices, schools, hospitals, post offices, and other public buildings. Other green expenditures include the purchase of environment-friendly office equipment and material. well-designed trade policy can encourage investment in environmental goods and services, and technologies to satisfy the local market and for export. It can also encourage access to foreign environmental technologies. It should be emphasized that there is no one size fits all approach to sustainable development.

**Key Words:** Inclusive Green Economy; sustainable development; Environment; Ecosystem; Socioeconomic Development; Human well-being; Macroeconomic Strategy; Empowering Vulnerable Groups; Efficient use of resources.

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## **Introduction**

In 2008, the United Nations Environment Programme (UNEP) launched the Green Economy Initiative (GEI), which included global research and country-level assistance to encourage policymakers to support environmental investments in the framework of sustainable development. The "green economy in the context of sustainable development and poverty eradication" was placed on the 2012 Rio+20 agenda and recognized as a tool for achieving sustainable development as a result of this initiative and the work of other agencies.

The concept of a Green Economy was first mooted by the London Environmental Economics Centre (LEEC) in a publication (*Blueprint for a Sustainable Economy*) in 1989, at that time the concept did not receive wide acceptance. With the outbreak of the financial crisis and the failure of most countries to move onto a sustainable development path, it has become clear that the current development paradigm is not yielding the desired outcomes on all fronts- economic, social, and environmental sustainability. Efforts to transition to a sustainable development path and realize the objectives of Agenda 21 have been very modest. To encourage policy and decision makers to invest in the environment, they need to be convinced that such a transition to the environment would result in economic benefits as well. These benefits include additional jobs generated, increased output, creation of new market niches and increased trade, and a positive impact on GDP.

## **Conceptual Approach to Green Economy**

A green economy, according to UN Environment, improves human well-being and social fairness while considerably lowering environmental dangers and ecological scarcity. A more elaborate definition of the green economy is: "The Green Economy is one in which the vital linkages among the economy, society, and environment are taken into account and in which the transformation of production processes, and consumption patterns while contributing to a reduced waste, pollution, and the efficient use of resources, materials, and energy, will revitalize and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution." The Green Economy is a macroeconomic strategy for long-term economic growth that focuses on investments, employment, and skills. Multi-stakeholder collaborations for the promotion of a Green Economy are encouraged to accelerate and consolidate long-term changes in consumption and production patterns. The concept of the Green Economy has evolved as a strategic focus for many countries and multilateral organizations during the last decade. In total, 65 countries have committed to an Inclusive Green Economy and related measures. They will be better prepared to face the major problems of the twenty-first century if they transform their economies into drivers of sustainability, from urbanization and resource scarcity to climate change and economic volatility. A green economy seeks to reduce environmental dangers and ecological scarcity, while also pursuing sustainable development without hurting the environment. It is related to ecological economics but has a greater political application. The green movement is a diversified scientific, social, conservation, and political movement that addresses environmental challenges widely. It includes a wide range of political parties, organizations, and individual advocates at the world, national, and local levels.

## **Why Green Economy?**

The Green Economy approach emphasizes the numerous benefits - economic, health, security, social, and environmental - that such an approach may provide to nations while keeping in mind the various problems that governments encounter along the development continuum, whether developed, developing, emergent, or in conflict. It advocates for nuanced, context-dependent, and adjusted policies. An integrated approach can assist states in understanding how to maximize, prioritize, and sequence the various human well-being advantages that can be received from a healthy environment. The environment can no longer be treated in isolation from mainstream economic policy. Though integrating the environment in macroeconomic policies has been long called for even as far back as the Brundtland



Commission, efforts have been modest to achieve this goal. In most instances, the environment continues to be addressed as a separate component without clear linkages to the social and economic aspects. The lack of an integrated approach to policy formulation and implementation is therefore one of the main reasons for failing to achieve sustainable development. Finally, an inclusive green economy must give not only jobs and income, but also our health, the environment, and our future. This is our shared challenge: to create the conditions for increased prosperity and social equality within the constraints of a finite and vulnerable planet. Going green protects us from hazardous items and pollution. This allows us to live a healthy lifestyle, which boosts productivity both at work and at home.

### **From Green Economic Initiatives to an Inclusive Green Economy**

An Inclusive Green Economy (IGE) arose from earlier Green Economy efforts. Such an economy, in its most basic form, is a low carbon, efficient, and clean in production, but also inclusive in consumption and outcomes, based on sharing, circularity, collaboration, solidarity, resilience, opportunity, and interdependence. It is centered on extending national economies' alternatives and choices, utilizing targeted and appropriate fiscal and social protection measures, and is supported by strong institutions that are expressly designed to maintain social and ecological floors. It also acknowledges that there are numerous and unique paths to environmental sustainability. The term "eco-friendly" isn't as comprehensive. It signifies that something is not harmful to the environment. However, sustainable is the most precisely defined phrase here, and it refers to a wide range of challenges and actions that, according to the United Nations, do not jeopardize future generations' ability to meet their requirements.

### **Green Economy for All**

A balanced and realistic road to sustainable growth is an inclusive green economy. It differs from typical economic models in that it considers environmental and social externalities and does not prioritize GDP growth as the ultimate economic aim. It instead focuses on resource efficiency and ecosystems as economic building blocks, recognizing that environmental degradation affects long-term economic progress and human development. The transition to an inclusive green economy necessitates collaborative efforts at multiple levels, including encouraging sustainable lifestyles, scaling up sustainable consumption and production (SCP), and encouraging green entrepreneurship through the advancement of Eco-innovations, resource efficiency facilitation, and mainstreaming of green consumer behavior. New green jobs are to be generated while existing jobs are preserved, and major reductions in carbon emissions, waste, and other forms of pollution are to be achieved.

### **Green Economy and Sustainable Development**

The primary distinction between sustainable development and green economy is that sustainable development is concerned with society, the environment, culture, and the economy, whereas green development is solely concerned with the environment. Sustainable economic growth is defined as a pace of growth that can be sustained without causing severe economic concerns, particularly for future generations. There is certainly a trade-off between current rapid economic growth and future growth. Sustainability entails addressing our demands without jeopardizing future generations' ability to meet their own. We require social and economic resources in addition to natural resources. Sustainability is more than just environmental activism.

### **Is it possible to be both Green and Sustainable?**

Sustainability entails using products or services in a way that does not deplete the resources of future generations. As a result, while a final product may be green, its manufacture or production process may not be. It denotes that the item or action provides environmental, social, and economic advantages while not depleting resources or producing pollution. Yes, this one word encompasses all of these qualities. Sustainability has considerably higher requirements than "green" and "eco-friendly." What does it mean to be green, eco-friendly, and sustainable? Going green entails utilizing ecologically friendly goods and

services. Economic sustainable development is defined as balanced economic growth that is free of debt and over consumption of production factors, as well as activities that take into account the carrying capacity of the environment and future generations. The term "sustainable" does not have the same definitional difficulties. While the term "green" refers to the environmental movement as a whole, the phrase "sustainable" has specific criteria incorporated into its definition. Sustainability elevates the concept of green and invites us to explore it deeper. At its essence, Eco Friendly means that any given object does not harm or negatively influence the world. In contrast, the United Nations defines sustainability as "filling the requirements of the present without jeopardizing future generations' ability to meet their own needs." Three ways to control environmental deterioration in response to the definition of sustainable economic growth are:-

- 1) Recycling, reducing, and reusing should be practiced;
- 2) Renewable energy resources must be used in place of conventional and non-renewable energy resources; and
- 3) New technology for resource conservation and pollution-free environments should be developed.

### **Future Pathway**

An Inclusive Green Economy is a viable alternative to today's dominant economic model, which creates broad environmental and health concerns, encourages wasteful consumption and production, exacerbates ecological and resource scarcity, and exacerbates inequality. It is a chance to promote both sustainability and social equality as functions of a stable and profitable financial system within the constraints of a finite and fragile world. It is a road toward accomplishing the 2030 Agenda for Sustainable Progress, which aims to eradicate poverty while protecting the ecological thresholds that support human health, well-being, and development., according to European Environment Agency, a green economy is one in which environmental, economic, and social policies and innovations enable society to use resources efficiently, inclusively improving human well-being while preserving the natural systems that sustain us. An inclusive green economy is associated with a plethora of opportunities for both people - to improve their living conditions and obtain decent jobs - and businesses - to increase benefits through more efficient production practices that generate savings, take advantage of the growing market for environmental goods and services, improve their image, and so on.

### **Discovering a Route to an Inclusive Green Economy**

An Inclusive Green Economy (IGE) is centered on extending national economies' alternatives and choices, employing targeted and suitable fiscal and social protection measures, and being supported by strong institutions that are specifically tailored to protecting social and ecological floors. It also acknowledges that there are numerous and unique paths to environmental sustainability. This article discusses the numerous benefits that such an approach can bring to nations, including economic, health, security, social, and environmental benefits, while keeping in mind the various challenges that states face along the development continuum, whether developed, developing, emerging, or in conflict. It advocates for nuanced, context-dependent, and adjusted policies. An integrated approach can assist states in understanding how to maximize, prioritize, and sequence the various human well-being advantages that can be received from a healthy environment. Finally, an inclusive green economy must give not only jobs and income, but also our health, the environment, and our future. This is our shared challenge: to create the conditions for increased prosperity and social equality within the constraints of a finite and vulnerable planet.

### **The Road to Sustainable Development through Inclusive Green Growth**

Decisions made now will lock countries into development patterns that may or may not be sustainable in the future when the global population approaches 9 billion by 2050. Cities and highways, industries, and

farms must be constructed, maintained, and governed as effectively as possible to use natural resources wisely while enabling the vigorous growth that developing countries still require. The next two decades of economic development cannot be the same as the last two: poverty reduction remains critical, but growth and fairness may be pursued without relying on policies and practices that pollute the air, water, and land. Thus it goes without saying that greening growth is important, efficient, and inexpensive.

### **The Pathway to Sustainable Development :**

Boosting growth without assuring equity, on the other hand, will stymie attempts to alleviate poverty and enhance access to health, education, and infrastructure services. Countries must undertake strategic investments and long-term policy adjustments that recognize natural resource restrictions while also allowing the world's poorest and most vulnerable people to benefit from efficient, clean, and resilient growth. Natural assets, like other types of capital, are limited and require accounting, investment, and upkeep to be successfully harnessed and used. We can afford to do the things we need to do by maximizing co-benefits and preventing lock-in, encouraging smarter decisions in industry and society, and establishing novel finance instruments for green investment.

1. **The green economy is centered on people.** Its goal is to foster true, shared prosperity. It focuses on building riches to support happiness. This richness is not only financial, but also comprises personal, social, physical, and ecological capital. It prioritizes investment and access to the sustainable natural systems, infrastructure, knowledge, and education that all people require to thrive. It provides opportunities for sustainable and dignified livelihoods, businesses, and jobs. It is based on individual decisions and is based on group action for public goods. The economy allows everyone to produce and enjoy affluence.

2. **It is based on the Principle of Justice.** The green economy is non-discriminatory and inclusive. It distributes decision-making, benefits, and expenses evenly to resist elite capture, and promotes women's empowerment in particular. It encourages the equitable distribution of opportunity and outcome, so minimizing gaps between people, while also providing adequate space for wildlife and wilderness. It takes a long-term view of the economy, producing wealth and resilience that benefit future generations while also moving quickly to address today's multifaceted poverty and inequality. It is founded on solidarity and social justice, and it promotes human rights, the rights of workers, indigenous peoples, and minorities, as well as the right to sustainable development. It advocates for the empowerment of Micro-Small-Medium-Enterprises (MSMEs), social enterprises, and long-term livelihoods. It aims for a quick and fair transition while covering its expenses, leaving no one behind, empowering vulnerable groups to be transition agents, and innovating in social protection and reskilling.

3. **The Principle of Planetary Boundaries:** The economy protects, restores, and invests in nature. An inclusive green economy recognizes and supports nature's varied values, including functional values such as supplying commodities and services that underpin the economy, cultural values that underpin society, and ecological values that underpin all of life. It recognizes natural capital's limited sustainability with other capitals, applying the precautionary principle to avoid the loss of important natural capital and exceeding ecological boundaries, including climate stability. It invests in biodiversity conservation, growth, and restoration, as well as soil, water, air, climate, and other natural systems. It is innovative in managing natural systems, guided by features such as circularity, and aligned with biodiversity and natural system-based livelihoods in local communities.

4. **The Principle of Efficiency and Sufficiency:** An inclusive green economy is low-carbon, resource-conserving, varied, and circular. It welcomes innovative economic development methods that allow for economic expansion while reducing negative social and environmental consequences. It recognizes that a large worldwide shift is required to limit natural resource consumption to physically sustainable levels to decarbonize economies and stay within planetary bounds. It recognizes a social floor' of basic goods and services consumption that is necessary to meet people's well being and dignity, as well as

undesirable consumption 'peaks.' It aligns prices, subsidies, and incentives with genuine societal costs via mechanisms in which the 'polluter pays' and/or benefits flow to those that produce inclusive green outcomes. The economy is designed to promote both sustainable consumption and sustainable production.

**5. The Principle of Good Governance:** An inclusive green economy is evidence-based, with trans disciplinary norms and institutions that employ both sound science and economics, as well as local knowledge, for adaptive strategy. It is supported by institutions that are integrated, collaborative, and coherent—horizontally across sectors and vertically across governance levels—and have sufficient capacity to carry out their various duties in an effective, efficient, and responsible manner. It necessitates public engagement, prior informed permission, social discourse, transparency, democratic accountability, and the absence of entrenched interests in all institutions - public, private, and civil society - for intelligent leadership to be supplemented by societal demand. It encourages decentralized decision-making for local economies and natural system management while maintaining strong common, centralized standards, procedures, and compliance systems. It creates a financial system to deliver well being and sustainability, set up in ways that safely serve society's interests. The economy is guided by institutions that are integrated, accountable, and resilient.

**6. Priorities and Activities aimed at hastening economic change:** A truly inclusive green economy will require structural transformation, during which the economy will increasingly represent the principles listed above. This will take time, and there are numerous obstacles in the way. Ten catalytic activities are suggested to get started. They will assist a country's stakeholders in achieving clarity of direction, engaging and mobilizing important players, defining priority objectives, and therefore embarking on the transformation path with greater confidence and dedication. These efforts imply that the ensuing task of developing and implementing policies, finding& financing specific investment projects, and so on can be undertaken with greater certainty. National SDG and NDC planning, implementation, and review procedures, as well as other holistic conversation and policy initiatives, might provide good chances to engage in these catalytic activities. The tasks could also serve as the basis for a programmatic framework to increase coordination among international aid organizations. Members of the Partners for Inclusive Green Economy are committed to assisting country stakeholders in identifying and carrying out such activities. The catalytic initiatives are taken from priorities identified as laying the groundwork for a green economy through transformational investments, institutional reforms, and behavioral shifts across sectors and players.

**7. Diagnosis:** Examine a country's green economy assets - its natural, social, human, physical, and financial capital - and their values for people, economy, and planet; how economic development, inclusion, and sustainability have been pursued to date nationally and in key sectors; specific policies, institutions, and initiatives that already work for inclusive and integrated outcomes; barriers (e.g. political, attitudinal, capacity, and technical); and challenges (e.g. balancing winners and losers, handling systemic risks and stranded assets). **8. Awareness-raising:** Invest in communications, education, and political and social interactions so that stakeholders understand the diagnosis in terms that are significant to them, particularly the issues of the brown economy and the opportunities for lifestyle and investment in the green economy.

**9. Activities to better understand the requirements and potentials of the green economy:** Convene stakeholders to contribute to the above-mentioned diagnostic, co-create a vision and objectives for a (national) green economy, identify possible transition pathways, and develop shared commitment and effective partnerships.

**10. Empowerment and capacity development:** Provide opportunities for often marginalized stakeholders, as well as diverse green economy leaders, champions, institutions, and alliances, to have a strong voice in dialogue, mobilize, and develop their capacity through appropriate activities to accelerate progress by involving and mobilizing stakeholders.

**Routes Processes of transformation toward inclusive green economies:** No country has made the shift to an inclusive green economy as of yet. However, many countries have many "pieces of the puzzle" in place, and it is becoming evident that the changeover will take between 10 and 20 years. It will include a significant interplay between political and commercial leadership and societal demand, as with all big transformations in history. Each must be able to contribute positively. Government, for example, can implement necessary governance changes and enable progressive approaches to scale; international organizations can share knowledge and support capacity development; businesses can innovate and drive new markets, and civil society can demand economic change and hold decision-makers accountable across short political cycles. This will depend on the political and socioeconomic context, but stakeholders will require time for debate, experimentation, learning, reasoning, changing perspectives, and policy adaptation. While the five preceding principles (A) can provide a coherent approach, and the ten priority activities (B) can inform an initial plan, the transition is not prescriptive and must be an adaptive process. As a result, there may emerge the type of process that might be expected in practice.

**Activities aimed at innovating and scoping solutions New metrics:** Begin by aligning economic policies and performance measures with the inclusive and green economic outcomes revealed by discourse and diagnosis and reflected in, for example, SDGs, NDCs, and national plans, including sector plans. 'Catalogue of Best Practices: Promote current and 'within-reach' best practices for inclusive green economic activities, such as natural resource management, industrial policy, small businesses, and livelihoods, as well as inside government and business, to generate interest and scale them up. 'Catalogue of Finance': Examine the available finance sources and procedures in-country that are consistent with inclusive green economy ideals – as well as those that perpetuate the brown economy – and match them to identified finance needs.

#### **Activities for innovating and scoping solutions:**

**Social protection:** In conjunction with affected stakeholders, develop the parameters for a quick and equitable transition, satisfying the reskilling and safety-net needs of those who bear costs or risks while preventing elite capture.

**Policy, legal, and fiscal alterations:** Prepare a road map of step-by-step reforms that will best garner public support, such as initiating a shift away from penalizing 'goods' such as jobs and incomes and toward penalizing 'bads' such as subsidies that produce environmental and social externalities. Prospectus for investment: Determine the resource requirements based on the foregoing, and develop business cases for investment by public, private, and community organizations in specified priorities (notably natural capital protection, management and restoration, and sustainable infrastructure). In 2013, China introduced the Belt and Road Initiative to increase transcontinental connectivity and collaboration. This study, conducted by a team of World Bank Group economists led by Michele Ruta, examines the initiative's economics. It evaluates the connectivity gaps between economies along the initiative's corridors, investigates the costs and economic effects of the proposed infrastructure improvements, and identifies complementary policy reforms and institutions that will support welfare maximization and risk mitigation for participating economies.

#### **The Changing Nature of Work, World Development Report 2019**

Technological advancements are continually reshaping the workplace. New production methods are adopted, markets develop, and society evolves. However, some changes garner more attention than others, owing in part to the enormous uncertainty involved in making predictions. The 2019 World Development Report investigates how the nature of work is evolving as a result of technological improvements. Existing systems are being disrupted by technological advancement. To smooth the transition and prevent rising inequality, a new social compact is required. This attempt requires significant investments in human capital throughout a person's career. Workers must train or retool

existing skills to compete with machines. A social protection system that provides employees and citizens with a baseline degree of protection can supplement new forms of employment. Better policies in the private sector to foster startup activity and competition can help countries succeed in the digital era. Governments must also ensure that businesses pay their fair share of taxes to fund this...

### **We desire inclusive green growth in the future!!!**

The first Rio Summit in 1992 was important in that it argued that development must be sustainable and that to be sustainable, it must combine environmental, social, and economic components. That was still a powerful message twenty years later, yet sustainable development was not a reality. Over the last 20 years, there has been substantial progress. While the global population has grown by one-third, global GDP has tripled, allowing millions of people to earn their way out of poverty. Between 1990 and 2008, the number of children dying before the age of five in developing nations fell from 100 to 72 per 1000 live births, and about 90 percent of children in developing countries are now enrolled in primary education.

However, economic growth has come at a cost to the environment. If we do not protect the environment and its natural resources, this expansion may come to a halt because we will have depleted or permanently harmed the water and mineral resources, ecosystem variety, and other natural foundations on which our well-being is based. If we do not alter course, the consequences for our quality of life and health will be severe, with an escalating economic cost. More financial and human resources will be required to make enough water available and drinkable, maintain the land productive, keep the air breathable, and supply the industry with the raw materials it requires. In countries looking for new sources of growth that make economic, environmental, and social sense, inclusive green growth provides a hopeful, realistic option. Green growth is not a substitute for long-term development. Going green, in conjunction with innovation, can be a long-term engine of economic growth.

The OECD Green Growth Strategy lays out a clear path for countries to achieve economic growth and development while avoiding costly environmental degradation, climate change, and inefficient resource usage. The Strategy identifies common concepts and problems, but it also demonstrates that there is no one-size-fits-all prescription for green growth implementation. Each country must develop a plan that is unique to its conditions. To be sustainable, initiatives must be inclusive and open in all circumstances. Growth must alleviate inequality and the conflicts that it causes. "Green" cannot be used as a pretext for protectionism, which deprives residents of choice, raises expenses and stifles innovation. Even the best policies, however, are meaningless without the political will to put them into action. Ministers gathering at the OECD in 2011 hailed the Green Growth Strategy first and foremost as a growth strategy, emphasizing that green development tools and indicators have the potential to unlock new growth engines and job possibilities. The Mexican presidency of the G20 designated green growth as one of its goals almost a decade back. It is also a top priority for the OECD. Economists are investigating how green growth methods might be implemented in the context of developing and emerging economies. And they will continue to collaborate with the members and partner countries to develop cost-effective and politically feasible policy measures; robust indicators, data, and mechanisms to help track progress; and dedicated platforms and innovative ways to facilitate international knowledge sharing and cooperation. They had wished long back Rio+20 every success in making life better for all of us and future generations.

### **Principles and Priorities for inclusive Green Economies:**

**Economic transformation for SDG achievement:** The Partners for Inclusive Green Economy developed these ideas. Economic reform is required to achieve the SDGs. We cannot have a common future if we abandon the most vulnerable elements of our community, who are frequently the ones who will be most affected by climate change... Our policies must be developed with the future of our children in mind. Leaders must think big and act big. This fundamental shift necessitates profound systemic

change. The green wave is on its way, and it will obliterate the old economic rules. To better our environment and daily lives, we must collaborate across governments, organizations, boundaries, and sectors... The tasks are too large for a single country or organization to handle. As a result, we must collaborate. We should move on from pledging and politicking. Life and society as the majority of us know and enjoy it now are at stake... We must modify the way our economies operate and the way we value the items we consume. The goal is to break the relationship between growth and rising resource use, as well as to put a stop to our throw away culture. We should be committed to creating a future worth living in all parts of the world. Fostering economic development that offers adequate jobs and income for all while also addressing fast environmental degradation is a massive task. That is why GIZ has been an outspoken supporter of the Partners for Inclusive Green Economy, and why we believe this collaboration can make a difference. Everyone believes that collaboration is essential for dramatic change. The Partners for Inclusive Green Economy provide a diverse variety of skills capable of responding to unique circumstances and catalyzing inclusive green economies at the local, national, and global levels

The Green Economy Principles can help lead us through the transition, ensuring that the green economy is egalitarian, and efficient, and allows the natural world to thrive. A fair and inclusive transition to a green economy will not occur by accident. ... Everything is contingent on what we do. Effective policies, institutions, and actions are required. We will need to assist businesses in taking advantage of opportunities, increase social protection so that people do not fall through the cracks, and prepare individuals for new employment through the implementation of appropriate legislation and training. Reskilling and upskilling are critical not only for ensuring a just transition. They will also contribute to a more human-centered approach to the future of work. Our economies have brought enormous increases in material affluence since the industrial revolution. However, the economic mechanisms that enabled this growth are increasingly jeopardizing it. Our economies are still assessed and governed in ways that encourage over-consumption, harm the environment and social relationships, and contribute to climate change. The global community committed to addressing these interconnected issues in 2015 with the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change. This can only be called historic. Significant economic, societal, and institutional changes are now required to meet the 2030 commitments and climate goals. When national governments and corporations prepare active responses to the 2030 Agenda, they must focus on the economics of sustainable development. It is a key time to act. A broad agreement on what to do Since the 2008 financial crisis, various projects to improve economic governance have been proposed in response to government demands, including but not limited to 'green growth,' 'decarbonization,' and a 'green,' 'blue,' or 'circular' economy. This multiplicity of projects has spurred vital innovation and involved civil society, business, and government - but continuing with a fragmented strategy risks confusing stakeholders and stifling the systemic improvement that is now required. As a result, numerous prominent institutions working on the topic have convened several times to share knowledge and pool resources. They have now agreed that nothing less than a rapid and equitable reform of our economies is required. The partnering institutions have co-created a three-part framework to provide a coherent approach to dealing with the complexities of transitioning to greener, more equitable, and resilient economies. This is not a blueprint; rather, it allows stakeholders to reflect on their progress, issues, and existing goals, and to collaborate on developing a vision and method that will function effectively in their context. It consists of: A set of 'living' principles to drive collaborative action toward inclusive green economies.

Priorities: A set of first catalytic activities that aid in the start and acceleration of the transformation.  
Pathways: A rough depiction of the medium- to the long-term process required to make the transition. We have amply tried to reflect the learning, debate, and consensus of the 'Partners for an Inclusive Green Economy. An Inclusive Green Economy (IGE) is a thriving economy that achieves the SDGs' and Paris Agreement's related economic, social, and environmental aims. It adheres to the foregoing essential principles, each of which draws on significant precedents in international policy and when combined, may guide economic transformation in a variety of circumstances. P

## **Examples of Inclusive Green Economy Approaches in UNDP's Country Assistance**

Even when there is a shared awareness of the potential gains across social, economic, and environmental strands, exploiting the opportunities given by an inclusive green economy approach can be difficult for policymakers and practitioners at all levels. Country environments vary greatly in terms of development starting points and priorities, political will and stability, institutional capacities, technical, financial, and natural resources, economic structure and position in regional and global markets, and so on. Depending on these and other conditions, there may be numerous pathways and policy alternatives for shifting to more equitable and environmentally friendly economies. UNDP supports a wide range of nationally mandated development programs by implementing corporate best practices in the areas of environment, governance, poverty reduction, capacity development, and gender. The main purpose of UNDP is to assist developing nations in making the transition to low-emission, climate-resilient sustainable development.

## **Conclusion**

Adopting an Inclusive Green Economy approach highlights the interrelationships thus making a strong case for the transition. Adopting a participatory approach involving relevant stakeholders in policy making is key to policy development and implementation. It ensures that policies reflect the concerns and priorities of the public, particularly the target group and affected communities. It also ensures the support and contribution of the general public and local communities in the implementation of proposed policies, plans, and programs. Ensuring inter- and intra-generational equity and poverty reduction is one of the main underlying principles of a Green Economy. Designed policies should in the first instance ensure that the interests of the poor and marginalized communities are catered for. It should ensure that the wealth generated should trickle down to the poorer segments of the population and that there is an equitable distribution of wealth between the current generation. It should also ensure that development activities now do not comprise the welfare of future generations. An Inclusive Green Economy advocates good governance as an essential prerequisite for achieving sustainable development. To encourage local and foreign investment, it is essential to have a stable and predictable macroeconomic environment. Such an environment will also need to be transparent and accountable. In the absence of a good and strong governance structure, the likelihood of moving onto a sustainable development path would be meager. Efficient institutions and governance structures are critical in ensuring the effective implementation of policies, plans, and programs. Investing in research, technology development, innovation, and the continuous enhancement of knowledge are essential for transitioning to an Inclusive Green Economy. Research and technology innovation efforts need to be directed towards resource efficiency, and areas such as wastewater treatment and desalination, renewable energy, solid waste recycling and recovery, green construction and buildings, and environmentally friendly equipment and industrial technologies. In many instances, government policies lack a comprehensive and holistic response to policy formulation and implementation.

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## Green Growth: Moving on A New Development Path

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Rupesh Nag

### ABSTRACT

Introduction the global economy is on unsustainable path since the industrial revolution the world economy has grown at the cost of environmental degradation global warming land air and water full of pollutant that has made living beings difficult to survive many of the species on Earth have vanished this that has to be taken into account and the growth process should be need to be changed there is a need to change the production pattern the technological change the consumption pattern the change from linear to circular economy and a change from growth to green growth. On the road of green growth there is need of structural change in the economies especially in the developing countries where poverty prevails in mass the structural change will bring about two important changes firstly shifting the production process from low productivity to high productivity and secondary a new green technology and green pattern of production and consumption is needed to control the intense depletion of natural resources and to bring low carbon technology. by adopting transition from growth to green growth development countries will be benefited in many ways firstly the global environmental agreement will help to address the global problem such as ozone depletion biodiversity extra. This paper has taken into account the concept of Green Growth and what major steps and policies developing countries can adapt to achieve Green Growth. This paper is based on the information from OECD Reports and Government Websites.

**Keywords: Green Growth, Sustainable Development, Green Policy**

### Green Growth: Moving on A New Development Path

**Introduction:** The global economy is on unsustainable path since industrial revolution and the world economy has grown at the cost of environmental degradation, global warming, air, water full of pollutants and this has made survival difficult for living beings. It is a big threat to the Earth and has to be taken into account. Growth process should be changed, there is a need to change the production process, to change the technology and to change the consumption pattern. There is a need to change from linear economy to circular economy and from a growth to the green growth. A lot of steps had already been taken by the Nations to regulate, repair and conserve environment and hence to slow down the process of global warming. According to OECD wellbeing of people can be gained by three aspects of growth, those are, the Productivity Growth, the Inclusive Growth and the Green Growth. The productivity growth is to increase the production efficiency, inclusive growth means every single human is included in the growth and lastly it is the green growth.



Source: OECD 2019

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## Objectives of the study

- (i) To understand the concept of Green Growth
- (ii) To understand the prerequisites of green growth for developing countries

## Research Methodology

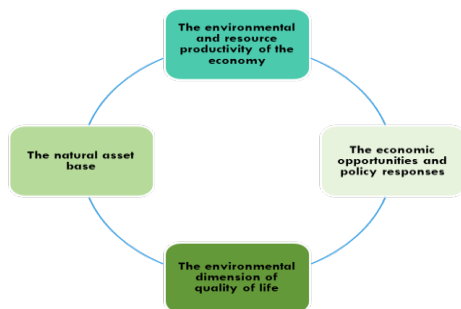
This paper is a review of the concept and strategies of green growth for developing countries. The information has been collected from various publications of OECD Reports, Journals and govt websites.

## What Is Green Growth?

According to OECD, Green Growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our wellbeing relies. The present pattern of global economic growth if continued will increase all types of imbalances of environment, water scarcity, more pollution climate change, loss of biodiversity, loss of flora and fauna etc, so we need to change the pattern of production and consumption. Nations should adopt different policies and strategies, increase efficiency, reduce cost, more participation of local and domestic green production units, social policies of equity and inclusiveness to achieve green growth.

## The Green Growth Indicators

There are certain areas which need to be monitored for the green growth according to OECD, these are, the environmental and resource productivity of the economy, the natural asset base, the environmental dimension of quality of life and the economic opportunities and policy responses. OECD has identified 6 indicators to assess and compare the progress of green growth. These indicators are kept flexible for different nations for easy adaptation. The six indicators are, carbon productivity non-energy material productivity, natural resource index, land cover and use, environmentally adjusted a whole economy productivity, population exposure to the pollution. The policy makers and the media houses and the citizens of different nations need to know and understand these indicators to move towards the green growth path. If a nation has an environmentally adjusted productivity, low land consumption, low air pollution, low exposure to the pollution, low-income inequality, low carbon emissions and environment related innovations, then it is moving towards the green growth.



**The OECD framework for monitoring progress towards green growth includes indicators in four areas, OECD 2019.**

## Green Industrial Policy for Green Growth

Industrial policy refers to government actions to alter the structure of an economy, encouraging resources to move into particular sectors that are perceived as desirable for future development. (OECD 2019). On the road of green growth there is need of structural change in the economies, especially in the developing countries where poverty prevails in mass. The structural change will bring about two

important changes firstly, shifting the production process from low productivity to high productivity and secondly, a new green technology and green pattern of production and consumption will be introduced to control the intense depletion of natural resources and to bring technology for low carbon emissions. To frame a Green Inclusive Policy is a challenge for all the countries, framing policy that will increase the efficiency at all levels and at the same time it will take the negative externalities into account. According to Altenburg and Lutkenhorst, the industrial policy can influence the structural change by such policies that promotes small and labour-intensive industries for production, that are environmentally sustainable etc. The most important aspect of green industrial policy is that takes in account the social cost of environmentally harmful product than corrects the market failure.

### **Innovations For Green Growth**

Innovation in business models, in economic and social systems, change in lifestyle, introduction of new ideas in production, New green production and consumption processes, new methods in agriculture and use of agriculture for fuels and for the electricity generation etc introducing innovation policies for green growth.

### **Fiscal Policy Leading to Green Growth.**

To transit from growth to green growth there must be an environmentally effective and economically efficient policies of the government, adopting policy instruments that caters taxation of energy, use of policy pricing of carbon, proper use of fossil fuel, proper pricing of fossil fuel that counts the social cost of using the fossil fuel, the carbon price in gap for most of the countries fall sort of the EUR 30 benchmark value which needs to be taken care of in the fiscal policy of the country.

### **Mass Participation for Green Growth**

A sense of belonging is very important for participation of common people in the green growth. Accountability and commitment of the people towards environment will help in moving towards green growth, establishing clear governance processes and transparency for the people, creating smart population for smart cities through digitalisation i.e., the paperless economy, introduction of new technology whether it is the waste management or the governance, that means every small green activity of the people will count in the green growth of the nation.

### **Key Sectors of Economy and Green Growth**

it is essential to green the key sectors of the economy like agricultural, energy, transport, services sectors for the social well-being of the people of the country and acquiring economic sustainability. Agriculture is the fundamental industry in low income and developing countries therefore it is necessary to reduce the negative externality arising due to agriculture. Innovations in the fertilizers, technology and policies can make the agriculture sector green contributing in the sustainable development of the country. Today, providing food to the growing population specially in developing countries where the population is a big challenge, so along with enough food supply it is necessary to combat the negative impacts of the agriculture. Another sector which plays an important role in sustaining the economic development along with environment is the energy sector. The current energy sector is completely dependent on the fossil fuels which is the main source of carbon dioxide, so there is a need of alternative sources of renewable energy, need of the transformation from fossil fuel energy system to the green energy essential for the green growth. There is a need of policy change in the economies of the developing countries to faster green energy use both in household and the corporate sector. Transportation and industries are the major games changer in the mitigation of carbon emissions, use of electric base transportation system, hydroelectricity power generation, use of solar energy can help mitigating the carbon emissions in the developing countries. A new project decarboning Transport in emerging economy was launched in 2009 to help the countries identify effective measures and pathway to reduce the transportation carbon dioxide emissions (OECD 2019).

## **Benefits Of Green Transformation to The Developing**

In Countries where more is the brown economy growth, more is the pressure on the environment. There have been inequalities in the contribution of the Nations to environmental degradation, the damage to the environment has already been done by the advanced countries and that cannot be repented but the worst part is that the impact of global warming and environmental degradation is born a by the developing countries. By adopting transition from growth to green growth, developing countries will be benefited in many ways. Firstly, the global environmental agreement will help to address the global problem such as ozone depletion, loss in biodiversity etc., also the developing countries development is basically dependent on the natural resources so it is must for them to address the issue of social cost of negative externality which the present growth cannot address. From the use of clean fuel to the use of electric cars, can reduce the carbon emissions reducing the health affect which in turn decreases the productivity of the labour force, changing production and consumption pattern will take to wellbeing of the people. These countries can develop new sectors for increasing export and jobs innovations that can help to reduce the cost of production and increase efficiency in the developing countries.

## **Challenge For the Developing Economies**

The more is the brown economic growth; the more is the pressure on the environment. The advanced nations are the main reasons for this global warming through their industrialization process and unsustainable use of the natural resources, through their unsustainable production and consumption pattern that is there is inequalities in the contribution to the environmental degradation but now they put all the blame on the developing countries. The worse part of climate change and environmental degradation is that its impact is also borne by the developing countries, also that since these developing countries are dependent on the natural resources so they are more vulnerable to the climate change. For environmental sustainability these developing countries need to work on three dimensions for green growth. These dimensions are, National Green Growth Plan-to create enabling conditions that should include shifting government expenditure, education and training, more effective enforcement of legislation. Resource and land rights regimes. Second dimension is Green Growth Main Streaming Mechanism that includes public environmental expenditure review, greening Accounting etc and the third dimension of Green Growth Policy Instruments that includes subsidy reforms, environmental fiscal reforms, sustainable public procurement and green innovation etc.

## **Green Growth in Indian Context**

India is committed to protect and improve its environment, forest, wildlife. The National Action Plan on Climate Change (NAPCC) along with the State Action Plan on Climate Change are important milestones according to NAPCC. NAPCC has 8 National missions that outline priorities for both mitigation and adaptation of to combat climate change (TERI 2015) These 8 National missions are on the areas of Sustainable agriculture, water, solar energy, energy efficiency, habitat, green India, strategic knowledge and Himalaya ecosystem. The carbon pricing gap is 95% for India which is very far from the EUR 30 benchmark value and therefore it is very necessary to reduce the carbon emissions. Under Copenhagen Accord, India is committed to reduce its carbon dioxide emissions by 33 to 35% of its GDP by 2030. For India, green growth. Involves rethinking growth strategies with regard to their impact on environmental sustainability and environmental resources available to the poor and vulnerable groups (Report 13th finance commission of India). For India it is a challenge for the economy to grow along with sustainable development, the growth that is inclusive sustainable, giving quality of life, social equity, justice, job creation, which green growth can give. For a populated country like India, it will be a challenge to move on the green growth path. In the energy sector, India is totally dependent on the fossil fuels it needs to shift to new and alternative sources of energy solar energy is the best available option in India hydro, wind energy can also be other alternative sources of energy in India. The annual mean temperature of India is 0.51 degree centigrade per 100 years and situation could be much worse in future, use of fossil fuels must be changed with the electric or other energy alternatives. Rapid

urbanization has increased the problems further, for which the government has intended to develop smart City for improving the quality of life of its citizens. Policy change is required in all the sectors like energy, agricultural, transport, finance etc. for sustainable development and green growth in India.

## Conclusion

Transitioning to green economy and achieving green growth requires strong policies which will provide quality of life to not only the present generation but a quality of life to the future generation. Also, production and consumption patterns should be changed in such a way to optimise the use of resource using a green technology that will reduce the carbon emissions on earth. The need is of green investment not only developed countries but developing countries like India and especially the poor countries. (Chandangar.A,2021) The technological development should be such that the initiative must be taken to develop a technology which it will not only shift the production and consumption pattern towards sustainable development but will also provide livelihood to the local community and at the same time protecting the ecosystem. There are many challenges and issues in and transitioning to green economy, so there is a need to identify these obstacles and find measures to remove them and support the green growth and thus achieving the sustainable development.

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## India at 75 years of Independence and roadway for sustainable development

Aparna Bharadwaj

### **Abstract**

*The concept of ‘Sustainable Development’ was formulated in 1987 by the World Commission on Environment and Development, popularly known as the Brundtland Commission. It was established by the United Nations General Assembly in 1983. In the eighties of the 20<sup>th</sup> century, world leaders became acutely aware that the environment was fast deteriorating due to over exploitation of nature by human beings. India has historically presented itself as a developmental paradox—“ample resource, ample poverty”, which some would refer to as a manifestation of the so-called “resource curse”. The resource curse hypothesis is posited as the phenomenon of economies with abundant natural resources still exhibiting “development deficit” and development crisis, i.e. low incomes, low economic growth, weaker democracy, and worse performance in developmental indicators than economies with less bountiful natural resources. But the Indian condition is much more complex than can be explicated by such a linear theoretical construct. Throughout India’s history, there have been regions of underdevelopment, and of growth, located in an almost linear and contiguous fashion. At the same time, it needs to be understood that unbridled and blind pursuit of economic growth without any consideration of the concerns of distributive justice or equity and sustainability of the natural ecosystem brings about an organic corollary in the form of “costs of growth”. They are often not easily perceptible in the short run, but become visible in the long run. These may be in the form of losses to livelihoods and problems of rehabilitation due to creation of physical infrastructure, or losses in ecosystem services affecting human habitat. The Indian development story since independence, and especially after economic liberalisation in the early 1990s, falls in this classification. Economic growth entailed the creation of new capital through large capital expenditures. In many cases, the long-run costs that society must bear due to losses in livelihoods and ecosystem services are more overwhelming than the economic benefits—the negative benefit-cost difference reached through a more comprehensive analysis conducted for a longer run therefore raises questions on the efficacy of such investments. Thus, whereas large-scale land-use changes for linear infrastructure, agriculture, industry, and urban settlements, and alterations of hydrological regimes through structural interventions over natural flows were implemented for economic progress, these have also been associated with social costs of rehabilitation or lack of rehabilitation leading to conflicts. India is an important economic power in the World at this present time. In recent years the socio-economic structure of the nation is found in a strong hold after gaining a political stability under the bold leadership of present Government. The regional and indigenous elements of development are given due importance at this present period. This paper is an honest attempt to highlight the issues for sustainable development at the completion of 75 years of independence for a holistic goal of further development with raising the nationalistic spirit.*

*Keywords: sustainable development, poverty, GDP, Bharat-bodh*

**Introduction:** *Azadi Ka Amrit Mahotsav* is the government’s initiative that was celebrated to commemorate 75 years of India’s independence and the glorious history of its people, cultures, and achievements during 2021-2022. It is not merely a celebration of the India of as a period of celebration of greatness, but of the aspiration and ambitious of India of the present and future. During the 2021 Independence Day celebration, Prime Minister Narendra Modi used the term *Amrit Kaal* (the period of utmost achievement) to delineate India’s development pathway over the next 25 years. “The fulfilment of our resolutions in this Amrit period will take us to the hundredth anniversary of Indian independence with pride,” P.M. Modi stated.

And it is a tribute to the India that will traverse the next 25 years of its development armed with crucial policies that will address enduring challenges and shape a more sustainable future for the country and its people.

The concept of 'Sustainable Development' was formulated in 1987 by the World Commission on Environment and Development, popularly known as the Brundtland Commission. It was established by the United Nations General Assembly in 1983. In the eighties of the 20<sup>th</sup> century, world leaders became acutely aware that the environment was fast deteriorating due to over exploitation of nature by human beings. In his 'Chairman's Foreword' Gro Harlem Brundtland observed:

The decade [of the eighties] has been marked by a retreat from social concerns. Scientists bring to our attention urgent and compelling problems of survival: a warming globe, threats to the Earth's ozone layer, deserts consuming agricultural land. That is why an alarming and widespread policy measures under the name of sustainable development was adopted to ascertain a development way which meets the present generation without compromising the upcoming generations.

### **Environment and Sustainable Development Goals**

Based on the recommendations of the Brundtland Commission, the United Nations adopted 17 Sustainable Development Goals (SDG) in 2015. Among these goals, the first twelve and the last two (16 and 17) may be regarded as **human development goals**. Goals no.13, 14 and 15 may be regarded as **environment protection goals**. Over the last seven decades, the Indian economy has seen several ups and downs. The country has gone from having a GDP of just Rs 2.7 lakh crore at the time of Independence to now sitting close to Rs 150 lakh crore. Once branded a "third world country", India is now among the biggest economies of the world. India's economic history has been marked by several critical milestones amongst which are the crisis years of 1966, 1981 and 1991, and India's emergence from the economic crisis as the world's fastest growing major economy. These goals are a call for action by all countries 'to promote prosperity while protecting the environment'. (United Nations) Environmental degradation ...has become a survival issue for developing nations. (Brundtland, 1987)

#### **Objectives:**

1. To study the state of Indian economy at the completion of 75 years of independence.
2. To study the role and adjustment procedure of sustainable development in Indian economy.
3. To assess the growth situation and the need of further development of Indian economy.

### **The Indian Growth Story and Development Paradox:**

India has historically presented itself as a developmental paradox—"ample resource, ample poverty", which some would refer to as a manifestation of the so-called "resource curse". The resource curse hypothesis is posited as the phenomenon of economies with abundant natural resources still exhibiting "development deficit" and development crisis, i.e. low incomes, low economic growth, weaker democracy, and worse performance in developmental indicators than economies with less bountiful natural resources. But the Indian condition is much more complex than can be explicated by such a linear theoretical construct. Throughout India's history, there have been regions of underdevelopment, and of growth, located in an almost linear and contiguous fashion. At the same time, it needs to be understood that unbridled and blind pursuit of economic growth without any consideration of the concerns of distributive justice or equity and sustainability of the natural ecosystem brings about an organic corollary in the form of "costs of growth". They are often not easily perceptible in the short run, but become visible in the long run. These may be in the form of losses to livelihoods and problems of rehabilitation due to creation of physical infrastructure, or losses in ecosystem services affecting human habitat. The Indian development story since independence, and especially after economic liberalisation in the early 1990s, falls in this



classification. Economic growth entailed the creation of new capital through large capital expenditures. In many cases, the long-run costs that society must bear due to losses in livelihoods and ecosystem services are more overwhelming than the economic benefits—the negative benefit-cost difference reached through a more comprehensive analysis conducted for a longer run therefore raises questions on the efficacy of such investments. Thus, whereas large-scale land-use changes for linear infrastructure, agriculture, industry, and urban settlements, and alterations of hydrological regimes through structural interventions over natural flows were implemented for economic progress, these have also been associated with social costs of rehabilitation or lack of rehabilitation leading to conflicts. Yet, there is no denying the critical role of physical capital in promoting economic growth, even as there is ample empirical evidence of physical infrastructure enhancing the overall business environment and economic competitiveness at the macro-scale. In that sense, this was a necessary evil that the Indian socioeconomic situation had to endure, especially during the initial stages of its post-independence development.

### **Global problems and situations relating to development:**

India is more globally integrated now as compared to 1991 when reforms started. The share of trade (exports+imports) increased from 15% in 1991-92 to 46% in 2011-12 although it declined to 27% in 2019-20. At present India is facing challenges at global level such as climate change, urbanization, migration, technologies like automation, increased inequality, changes in political factors like the US and China policies, Brexit and protectionism. Few of these challenges are given below.

***Geo-political as well as spatial challenges:*** There are uncertainties of transition from old power centric (USA) to new bi-polar world. India's outreach will be constrained by the dramatic rise of China. We also have turmoil in the West Asia and uncertainties in the East like Korean peninsula and South-China Sea. Belt and Road initiative (BRI) massive infrastructure building by China is mostly driven by long-term geopolitical goals. India also had border conflicts recently.

***International Trade, cooperation, competition and protection:*** There have been trade wars between USA and China. The growth rate of global trade has declined in recent years. Global trade in goods and services has grown by 3% since 2012. This is less than half the rate seen the previous 30 years. Between 1985-2007, trade grew twice as fast as GDP. Since then, global trade and GDP are at the same pace. Recent anti-globalisation measures, tariff protections by different countries may have adverse impact on trade further.

***Technology:*** Automation, robotics, 3D printing, digitisation and artificial intelligence (AI) may have impact on employment although efficiency and productivity may be enhanced. World Robotics is growing at the rate of 15% per annum since 2008. Five markets (China, South Korea, Japan, USA and Germany) have 74% supplies. According to the World Bank President's assessment, 69% of jobs in India and 77% of China's jobs are under threat due to automation. We are in the techno-economic paradigm of Information and Communication Technologies and digital age. Gig workers and platform workers are increasing with uberisation.

***(d)Increasing inequalities and disturbances:*** There are a number of studies by IMF and World Bank on inequality at global level. Recent Fiscal Monitor of IMF focuses on tackling inequality (IMF 2017).

***(e)Climate Changes and challenges:*** The latest report of IPCC released in August 2021 has shown evidence that human influence has warmed the atmosphere, land and evidence. It also found that temperature has already risen by 1.07 degrees Celsius since pre-industrial levels, and that widespread, pervasive and unprecedented impacts are in evidence across the world. The recent G20 meeting in Italy also discussed climate change issue and targets 'net zero' emissions by middle of the Century. COP26 meetings in Glasgow have also given some targets.

### Impact on Sustainable Development and Growth dynamics:

These global challenges may have impact on India’s economic, social and sustainable development. Now we turn to issues, challenges and policies for ‘future of India’ in terms of growth, inclusion and sustainability. The Government has mentioned that India would achieve \$5 trillion economy by 2024-25. According to government projections, GDP in current prices is Rs. 222.9 trillion in 2021-22. The \$5 trillion is Rs.375 trillion in current prices. In other words, we need 68% increases in GDP in three years. We may achieve it by 2026-27 if we assume 11% nominal growth (7% real +inflation of 4%) – 2027-28 with 10% nominal growth and 2028-29 with 9% nominal growth. India also wants to be \$10 trillion economy by 2030. Much more efforts are needed to achieve this goal because even in pre-covid period, the economy was slowing down -

Table . GDP Growth 2012-13 to 2021-22: All India

Year	GDP growth (%)
2012-13	5.5
2013-14	6.4
2014-15	7.4
2015-16	8.0
2016-17	8.3
2017-18	6.8
2018-19	6.5
2019-20	4.0
2020-21	-7.3
2021-22	9.5 (projection)

Source; National Accounts Statistics, GOI Fig. : GDP Growth 2012-13 to 2019-20.

India’s development trajectory so far stands out among other countries as the economy has transformed from agriculture to services by passing the industrial route. There is a disconnect between the shares of GDP and shares of employment across sectors. In terms of GDP, there has been structural change from agriculture to services. In terms of employment, agriculture is still the largest employer at 46% :

Table : Shares of GDP and Employment in sectors (%)

Sectors	GDP Share(%) in constant prices		Employment Share (%)	
	2004-05	2019-20	2004-05	2019-20
Agriculture	19.0	18.0	56.4	45.6
Industry	28.0	27.0	18.2	23.4
Services	53.0	55.0	25.4	31.0

Source: National Accounts Statistics and NSS Surveys on employment of particular concern is the inability of manufacturing to absorb labour. The share of manufacturing in employment is only 11% in

2019-20. There are two sources of productivity. One is productivity increase in within sectors. Second one is shifting workers from low productivity sectors to high productivity sectors. India has to focus on both sources to raise growth and quality of employment.

It is important to note that the shares of manufacturing and services in rural employment are more or less similar. This is true for both males and females. During the period of independence, the structural transformation of workers of males and females show that agricultural sector for males is shrinking rapidly as compared to female labourforce. The other sectors industry and service sectors are increasing remarkably. Structural transformation in rural Areas: Workers

	Male				Female			
	Agricu Lture	Industry	Services	Non- farm (industry +services	Agricu Lture	Industry	Services	Non- farm (industry +services
1977-78	80.6	8.8	10.5	19.3	88.1	6.7	5.1	11.8
1993-94	74.1	11.2	14.7	25.9	86.2	8.3	5.6	13.9
2004-05	66.5	15.5	18.0	33.5	83.3	10.2	6.6	16.8
2011-12	59.4	21.9	18.6	40.5	74.9	16.8	8.4	25.2
2017-18	55.0	23.2	22.0	45.2	73.2	13.6	13.2	26.8
2018-19	53.2	23.5	23.2	46.7	71.1	13.4	13.6	29.0
2019-20	55.4	23.1	21.6	44.7	75.7	13.0	11.2	24.2

Source: Periodic Labour Force Survey 2017-18, National Statistical Office.

The female workers are more condensed in agriculture sector and the intensity in manufacturing, services and nonfarm sectors are seen less in development. But male workers are seen condensed in service sector, and non-farm sector.

**In case of rural and urban division of poverty** it is seen that poverty is significantly reducing both in urban and rural areas. ,

	Rural	Urban	Total	Rural	Urban	Total
1993-94	50.1	31.8	45.3	328.6	74.5	403.7
2004-05	41.8	25.7	37.2	326.3	80.8	407.1
2011-12	25.7	13.7	21.9	216.5	52.8	269.3
Annual decline 1993-94 to 2004-05 percentage points	0.75	0.55	0.74			
Annual decline 2004-05 to 2011-12 percentage points	2.32	1.69	2.18			

Changes in Poverty: All India estimates based on Tendulkar Committee methodology

Source: Planning Commission, press release, 2013

## **Sustainable Future and Climate Change:**

In the recent COP20 meeting at Glasgow, Prime Minister Narendra Modi announced that India will aim to **attain net zero emissions by 2070**. Net zero or becoming carbon neutral means not adding to the amount of greenhouse gases in the atmosphere. China has announced plans for carbon neutrality by 2060, while the US and EU aim to hit net zero by 2050. PM Narendra Modi also announced that India will draw 50% of its consumed energy from renewable sources by 2030, and cut its carbon emissions by a billion tones by the same year. India wants Commitments of developed countries on providing finance, transfer of technology and emission reductions due to historically high consumption patterns.

Agriculture is the sector most vulnerable to climate change. Consistent warming trends and more frequent and intense extreme weather events such as droughts have been observed. It is well known that we need adaptation and mitigation strategies regarding impacts of climate change

*Climate-smart agriculture:* FAO (2010) discusses strategies needed for climate-smart agriculture. It is defined as agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes GHGs (mitigation), and enhances achievement of national food security and development goals.

It provides examples of climate-smart production systems such as soil and nutrient management, water harvesting and use, pest and disease control, resilient eco systems, genetic resources etc. It also discusses about efficient, harvesting, processing and supply chains. Efficient harvesting and early processing can reduce post-harvest losses and preserves food quantity, quality and nutritional value of the product (FAO, 2010). This approach also ensures better use of co-products and by-products, either as feed for livestock, to produce renewable energy in integrated systems or to improve soil fertility.

The report says that agriculture in developing countries must undergo a significant transformation in order to meet the related challenges of food security and climate change. Effective climate-smart practices already exist and could be implemented in developing country agricultural systems. For small holders, climate smart agriculture offers a triple-win strategy: (a) improving small holder productivity for nutrition crops; (b) help small holders to adapt to climate change; (c) mitigate agriculture's contribution to climate change.

The problem is much more severe in urban areas with alarming rates of congestion and pollution along with unhealthy population. There is a need to focus on impending crises in air and water pollution, waste management and urban congestion. Recently, government has been taking measures to reduce pollution levels and face climate change challenges. *Namami Ganga* mission is one example of government's initiatives. Also, the existing environmental regulations in the country are among the most stringent laws exist elsewhere. However, their implementation and enforcement has been inadequate. This has resulted in continued deterioration of environment including air and water pollution. Delhi's air pollution goes to emergency levels every year due to crop residue burning in Punjab and Haryana. But, we have to suggest alternatives to the farmers. Industrial, vehicle and construction pollution is more responsible for Delhi's deteriorating air pollution. One can learn less from Beijing and Shanghai cities in China on reducing air pollution and waste management.

## **The linkage between SDGs and Inclusive Development:**

The SDG agenda rests largely on the four forces of capital—human capital (SDGs 1-5), physical capital (SDGs 8 and 9), natural capital (SDGs 14 and 15), and social capital (SDGs 10 and 16). The United Nations Environment Programme's report, *Inclusive Wealth*, discusses the changes in the social values of three of these capital assets, namely, natural, human, and produced or physical capital between 1990 and 2014. As per this report, between 1990 and 2014, although the "inclusive wealth" of India increased by 1.6 percent per annum driven by growth in human and physical capital, there was a decline in per capita inclusive wealth from US\$368 in 1990 to US\$359 in 2014 (both at 2005 prices). If inclusive wealth is taken as the factor or fundamental basis for development, then such a

decline raises serious questions on the sustainability of the development process. However, post-2014, there have been significant policy interventions on various human and physical capital domains that have helped push India's development agenda.

At the same time, academics in the West and their supporters in the Global South have often advocated for 'degrowth' as the solution to the world's woes. The degrowth thesis promotes negative growth and a retreat from the current ways of living. This entails contraction of economic activities in the Global North and emancipation from the dominant reductionist paradigm of growth fetishism.

**Sustainable strategies:** Following are the strategies among many that are poised to shape a sustainable India. These are the following:

**POSHAN Abhiyan**, which strives to minimise the level of stunting, undernutrition, anaemia, and low birth weight babies. As per the outlines the significance of the programme, its achievements so far, and its imperatives in the form of a plot structured, time-bound and location-specific strategies with due consideration to the consequences of socioeconomic factors and the impact of the pandemic.

**Pradhan Mantri Jan Arogya Yojana**, which entails the world's largest health assurance scheme, with the objective of providing a health cover of INR 5 lakh per family per year for the poor and vulnerable households. Oommen C Kurian in his study discusses the programme and uses a small case study on its beneficial impact and how such a scheme is a replicable model for many other parts of the world.

**Jal Jeevan Mission**, which aims to provide access to safe and adequate drinking water by 2024 to all households. It draws the connection and causal relationship of this mission to various health and productivity-related outcomes, and discusses how it will have an impact on the overall progress of the nation.

**Samagra Shiksha Abhiyan**, which presents an overarching and comprehensive programme for the school education sector with the broader goal of improving school effectiveness, measured in terms of equal opportunities for schooling and equitable learning outcomes. It argues how it helps facilitate the achievement of the human capital-related SDGs. She underlines its resonance with the thinking of Indian intellectuals.

**National Skill Development Mission**, which is driven by the objective of bridging the necessary 'skill gap' in the Indian economy. While introducing the wide chasm between the demand and supply of skilled human capital to address the gap between Indian economic ambition and achievement, it highlights the significance of the programme. She outlines what needs to be done to make this programme more effective for building a sustainable India.

**Mahatma Gandhi National Rural Employment Guarantee**, which aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to at least one member of every household whose adult members volunteer to do manual work. It is examined how this has offered a cushion to vulnerable communities during times of crisis, including the pandemic through this act. He reiterates how it helps address the SDGs related to poverty alleviation and food security.

**National Smart Cities Mission**, which is an urban renewal and retrofitting programme with the objective to develop smart cities across the country, making them citizen-friendly and sustainable. It can be evaluated how the mission can help urban centres emerge as hubs of future regional development and economic growth and be resilient to the shocks of climate change.

**Prime Minister Gati Shakti Mission** entails a revolutionary approach to transform mobility keeping in mind economic growth and sustainable development. Launched in October 2021, the mission aims to provide multimodal connectivity infrastructure to various economic zones. It is described how this mission can help address the connectivity conundrum across the country and its potential to emerge as a game-changer in the connectivity domain and help achieve economic growth.

**Swachh Bharat Abhiyan** is a significant cleanliness campaign which aims to eliminate open defecation and improve solid waste management. It is found that the world's largest sanitation campaign and highlights its achievements.

**Aadhaar**, the world's largest biometric system, is another success story. With almost every Indian adult being an Aadhaar holder and a carrier of unique and secure identity, the movement has fostered social, economic, and technological inclusion on a national scale. Aadhaar as a case study of the role of information and communication, the technologies in bringing about social and economic progress is found crucial. They underline its reliability for many parts of the world when governments are trying hard to address concerns of equity and distributive justice.

**To conclude**, India is an important economic power in the World at this present time. In recent years the socio-economic structure of the nation is found in a strong hold after gaining a political stability under the bold leadership of present Government. The regional and indigenous elements of development are given due importance at this present period. The linkage with the south-east Asian regional cooperation is also found in a strong hold. Present Government is trying to link the nationalistic spirit with the development force of the country. The nationalistic movement in the period of British rule was given utmost importance to generate national development with the love and respect of the country. At this critical juncture of development of Indian economy, sustainable development and SDG plays a crucial role for qualitative development of our country. The 'Bharat bodh' plays a crucial role in this regard.

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## India At 75: A Glossy For Inclusive Growth And Development

Bholenath Thakur

### Introduction

The dream of making India successful in all spheres of economic activity has arrived with a bang on inclusiveness, sustainable development and ultimate growth. A most popular indicator used for gauging the economic advancement of a country is the growth of GDP. India ebulliently and at the same time impecuniously managed the GDP growth rate of 3.6 per cent up to 1970's, growth rate (averaged 5.5 per cent) picked up slowly and steadily during 1980-2000 periods plausibly due to the advent of liberalization, open policies and tax solaces and candidly, GDP peaked to an average of about 7-7.4 per cent until the chronic pandemic Covid'19 arrived, since then GDP has declined to a significant level of about 3.5 to 4 per cent during 2019-20 and 2020-21 respectively. Again in 2021 – 22, it picked up significantly to a level of 7.4 per cent due to unlocking the restrictions imposed during pandemic period. The World Bank has projected India's economy expected to grow about 6.9 per cent in 2022-23. It further argued that the merchandise trade deficit will widen due to high crude oil prices but adequate compensation will be possible through Services exports and again this kind of projection must be viewed by taking into consideration of colossal loss of money, resources and lives of people' due to sustainable ongoing Russia-Ukraine War. India's economy has been remarkably resilient to the deteriorating external environment, and strong macroeconomic fundamentals have placed it in good stead compared to other emerging market economies (AT **Kouame**, World Bank's country director in India, **The Hindu**, Chennai edition, dated December 7, 2022, P.1). A notable outlook of India is the fact that our growth is basically financed (investment) through domestic savings and foreign savings playing a subtle role in promoting investment.

### A Case of goose Theory

**India @75'**-there are many ups and downs of economic and social development of India in the past 75 years or so. There are many major issues concerning both planning and budgeting programmes and a plan offers to give the lead role in how to manage the resources efficiently, how to channel the services or activities, how and where to spend the scarce resources and how to cut the expenses in relation to revenues, etc. The budget, on the other hand, is a comprehensive document which handles the resources rationally, even puts all spending under surveillance and estimates different cuts in spending for different services on a coherent basis. ZBB works well with a perceived notion that it bids a thread bugged rational approach to cut the budget size and based on the coercive value, it compares the incremental line-item process with multiple level service lanes and promises to move budgeting to the advanced level. Planning by virtue or planning by vice is a big million dollar question mark looming the planning methods. If the choice of a planning method is appropriate, then the success of planning is a virtue and vice versa. It is a herculean task to be accomplished and there is a saying that **killing "a goose to get eggs** or getting eggs by hatching geese or getting goslings by hatchling and by brooding and rearing"- which method we need to follow in planning and budgeting? The first choice of **"Goose Theory"** tells about the hurriedness in which we go for the planning and the end goal is not near, we have to wait and put our resources in the correct baskets to get the desired result, but unfortunately, instead of going through in a regular phase, we jump to get at the result quickly and end up sordidly.

This is like killing a golden goose to get eggs. **The second theory of goose story** underscores the importance of steadiness in our planning approach and once the due process of planning emerges, we get the good result and hence, it is like getting eggs by hatching geese.

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**The third theory of goose story** captures the true essence of budgeting and it goes like that “getting goslings by brooding and rearing” and a special care to be given to the eggs (hatchling) and geese for nurturing healthy goslings and in the same way, planning the budgeting process takes several forms like objectives, resources availability, decision packages, cost estimation of activities, ranking and evaluation procedure, etc., and in each stages, the budgeting authorities should be careful in passing it to other stages steadily and without any deviation of funding process and the end result can be a successful one. **The moral of the ‘goose story’** is one should not have ‘greediness’ in making planning and budgeting.

### **Review of Studies**

There are many studies which have made detailed research on **India @75** that includes inclusiveness, employment, stability with development and growth in the long-run stole the limelight among researchers. Indian Human Development concentrates on building human capabilities, enhancement of freedom and process of achieving outcomes. Education and health are very important capital to be invested for human development. Economic growth is the reflection of human development. It says budgetary expenditure and military expenditure are too restructured to create better environment for human development. Pal and Pant (1993) suggested that alternate HDI taking into account the poverty along with education, health and material well-being. Indian states were ranked based on this index. The inclusion of poverty alleviation is an explicit social goal, considering distribution of income in the measurement of human development. Srinivasan and Verma (1993) have analysed how the economic, socio-psychological, political and spiritual aspects evolve during human development. And also discussed how some countries exhibit difference in the order of evolution and also discussed about the conceptual matrix comprising three levels of development measured in terms of aggregation of the development. Mahbub- ul-Haq (1997) narrates in article titled "Reflection on Human Development" that the HD is not only GNP growth and growth in income, commodity production, capital accumulation, but should deal more with health, education and access to resources and community participation. **Amarthya Sen (2000)** explains how expansion of human capabilities to enhance their health, knowledge, self-respect and active participation in community life results in greater freedom of choice rather than expanded income level. He recommended that human development should be determined on the basis of standard of living not by the per capita income.

Duraippah (1996) and Prakash (1997) had analyzed how the relationship between poverty, environment and development is interlinked with each other. The poverty is the main reason for environmental degradation, because the poor are not in a position to use natural resources sustainably. Environmental degradation leads to increase the poverty. M.V.Nadkarni (2000) viewed that poor people discount the future benefits from conservation since they are in a hurry to make a livelihood thereby, reducing the time horizon. Prakash (1997) contradicts the above said view and says that farmers strive hard to conserve their resources; the illusion that poor farmers are degrading the environment is basically due to lack of support they get to conserve and their lack of knowledge on property rights. Jodha (1986) illustrates that the poor are in dark about their rights to use the resources which are accessible to the whole village like village pastures, common forests, waste lands, common threshing grounds, waste dumping places, watershed drainages, village ponds, tanks, rivers / rivulets and river beds, etc. R. S. Deshpande and Ratna Reddy (1990) reiterated that in Pani Panchayats, everyone in the village can have equal share in irrigation and water resources. It is also shown how even landless labourers also stand to gain, if there existed a grass root level democracy and poverty can be alleviated through integration of environmental regeneration and rural development.

### **India @75: Functional Dogmas of Budgets and AP Model**

A glaring issue that needs to be addressed in such a discourse is to detect those encumbered with the responsibilities of budget administration in an organisational set up. The primary responsibility of sketch up the budget in most institutional organisation rests with controller of budgets who receive insights from the representatives of various departments and then subsequently canopy the proposals, monitoring



the works and consolidate them for better results. The budget committee tends to bring all together all activities of all departments in an operative manner and in the preparation of a budget, total commitments of all management levels is very essential in the context of developing a good budget. In this connection, Onourah (2005) brought out in a nutshell that “Budgeting is no longer and should not be the responsibility of top executives in the company, rather, all levels of the company should participate in the budgetary process and make commitments to achieving the goals set by the budget”. Lambe (2014) observes that budget periods are the timeframe within which the contents and frameworks of budgetary provisions are brought into realities and the budget itself is an action plan, construction into various forms for efficient and effective implementation and to upkeep long term planned decision making. Moreover, the budget emphasises that all division of a company work toward a common goal and it explains clearly that only when the labours of all employees in the division of a company are well directed to get the best out of it. Pandey (2002) had identified some of the major functions of budget committee to include the following: a. issuing instruction to various departments. b. receiving and checking budget proposals. c. feeding the various data. d. discussing plausible issues with officials. e. to keep up the timing schedule in the final execution of the budget. f. preparing unit wise budget summaries and g. suggesting possible evaluation and revision.

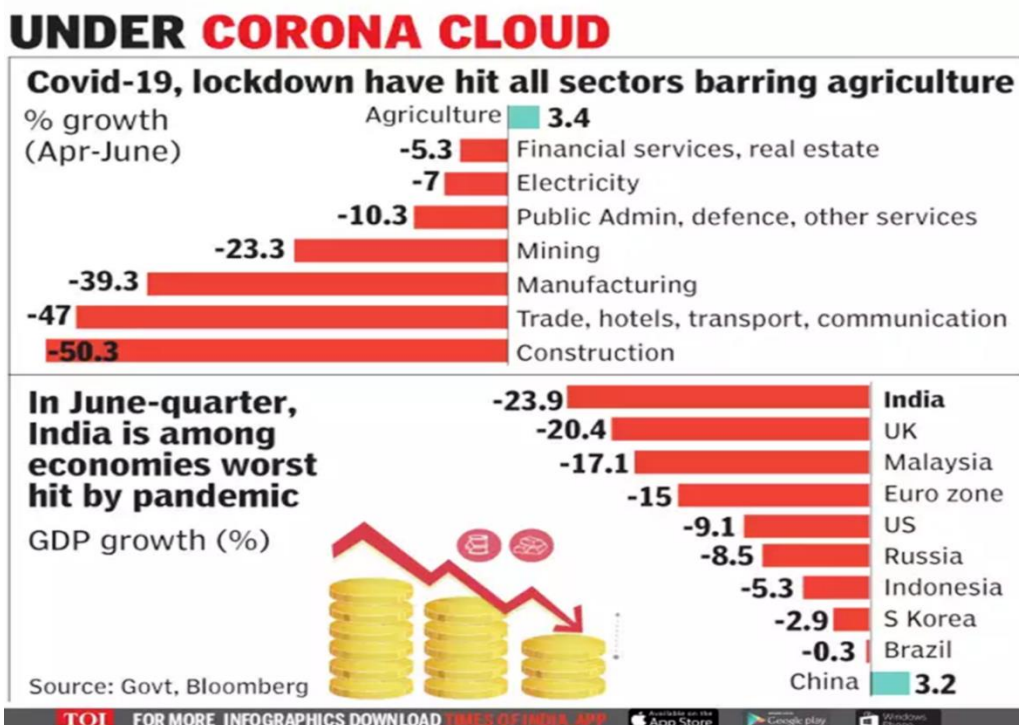
In both developed and developing countries, there has been a significant increase of size of public expenditure and the need for promotion of using the public expenditure has been considered essential in the context of economic development. Therefore, most governments have adopted some types of rational budget design, abandoning the traditional expenditure formations. The **Andhra Pradesh (AP) government** was committed to true leadership in transforming one of India’s first ‘Green Revolution’ states into one of India’s first ZBNF states. It will ensure that the quality of agriculture improves better soil biodiversity and yield and provides elegant livelihoods to small and marginal farmers and agricultural labourers. The ZBNF is driven largely by climate resilient will not only support India in securing its UNSDG’s, but it can also motivate and change the lives of millions of farmers in Andhra Pradesh as well as India. It is economically feasible in reducing farmers’ costs of cultivation by eliminating unwanted inputs and effectively using in-situ resources to invigorate various soils as well as increasing incomes of the farmers and ensuring ecosystem health through multi-layered cropping patterns. The PPP model is working out well in APZBNF programme as one of the agency PNB Paribas was pleased to support such programme that gives farmers’ welfare and sustainable farm practices as dynamic for a sustainable and productive economy. The ZBNF basically aims to establish farmers’ federations and Self-Help Groups (SHG’s), and at the same time placing farmers as an engine of cultivation of knowledge creation and propagation. It also seeks to implant the economic, social and environmental conditions to ensure the inclusive growth. No farming system can be viable, if it continues to drain the natural resources it needs badly and hence, it must be ecologically, socially and economically to be productive. By considering its run up scale, an effective change to a plausible 100 per cent natural farming system with about 8 million hectares of land free from inorganic pollutions will target surplus **nutritional food security in Andhra Pradesh and India.**

### **India @75: Under Corona Cloud**

Covid’19 has hit badly all sectors of economy except farm sector. There are two parts of impact of Covid’19, the first one talks about how Covid’19 does impacted various sectors of Indian economy and the second one captures the cross country status of impact of Covid’19. Table 1 underscores the importance of impact of Covid’19 on segmented sectors of Indian economy. The first quarter (April-June) of 2020-21 experienced a significant fall in the growth of majority sectors of the economy barring agriculture. The worst hit among all sectors of our economy was the construction industry (-50.3 per cent), followed by trade, hotels, transport and communication (-47 per cent), manufacturing (-37.3 per cent), mining (-23.3 per cent), public administration, defence and other services (-10.3 per cent), electricity (-7 per cent), and financial and real estate (-5.3 per cent) respectively. During the same period, India had experienced a positive growth rate in agriculture (3.4 per cent) and this attest the fact

that farm sector had outshined all other sectors amid Covid'19 impact. The second part of analysis is the cross country status of GDP growth rates of some countries of world with India. Covid'19 had created many bursts in GDP's of many countries of the world and India was significantly worst affected due to Covid'19 impact with -23.9 per cent of GDP growth rate during the first quarter of 2020-21, followed by UK (-20.4 per cent), Malaysia (-17.1 per cent), Euro Zone (-15 per cent), USA (-9.1 per cent), Russia (-8.5 per cent), Indonesia (-5.3 per cent), South Korea (-2.9 per cent) and Brazil (-0.3 per cent) respectively. China was the standalone country in earning a positive GDP growth rate of 3.2 per cent during the same period.

Table 1: Covid'19 Impact on Indian Economy



### India @75: The Power of Performance Measurement

Table 2 makes an interesting analysis on the power of performance measurement in the wake of adopting good budgeting method. There are many anecdotes in the run up to the measurement of power driven performance of an organisation and as many as six prominent anecdotes such as 1. 'What gets measured gets done'. 2. 'If you can't see success, you can't reward it'. 3. 'If you can't reward success, you are probably rewarding failure'. 4. 'If you can't see success, you can't learn from it'. 5. 'If you can't recognise failure, you can't correct it'. 6. 'If you can demonstrate result, you can win public support'. If you consider the first anecdote, it tell us clearly what would be in store, if we dot measure the results of budgeting at the right time then, we cannot tell whether the organisation is successful or failure. The second anecdote pinpoints how to reward the higher yield or productivity, the organisation earns every year a significant amount of yield over budgeting and if an organisation fails to see success then, it cannot reward it and hence, it is crucial to identify the success of budgeting process. The third anecdote

crucifies the notion of some organisations out of reasons known to them that they failed to reward any success or even extending any greetings to the employees and under such situations, the organisations would probably rewarding the failures rather than success and this will demotivate the morale of the employees. So, giving periodic incentives to all the employees who are party to the success will give ZBB process a grand success. The fourth anecdote enlightens the learning process under ZBB as it tell us about the importance of identifying the success stories of an organisation and it submits the fact that unless you see the success, you cannot learn from it. The fifth anecdote calls for the rationality for recognising even the failures, if we can't identify where and when, how and for whom failures happened then, we cannot learn and correct our mistakes or failures. Hence, under ZBB method, correcting failures and overcoming mistakes are playing a crucial role in the success of a budgeting programme. The last but not least anecdote under reference makes a positive order that the demonstration of success stories of an organisation publically will give the company an undue advantage over the competitors and if a company's sales success or profit success are shared in the public domain then the said company will not only get the public support but also their investments. Therefore, all these anecdotes are highly indispensable and inevitable in the context of establishing the successful ZBB programmes.

**Table 2: The Power of Performance Measurement**

What Gets Measured Gets Done: If You Don't Measure Result, You Can't Tell Success from Failure	Basically they say that people or employees will respond in a positive action immediately after the adoption of performance measures. If we do not measure the results, then we cannot tell which organizations are successful and which ones failed. Finally, decision-making often be wrong.
If You Can't See Success, You can't Reward It.	The given reward towards the successful persons are important in promoting the achievement of higher levels of productivity. It is therefore crucial to identify success.
If You Can't Reward Success. You're Probably Rewarding Failure.	It emphasized that if we are not able to identify success, then it may take wrong decision which is to give incentives to the parties that have failed.
If You Can't See Success, You Can't Learn from It.	Performance measures are needed so that we can learn from the existence success.
If You Can't Recognize Failure, You Can't Correct It.	Failure can be avoided or remedied in the future if we have information about it.
If You Can Demonstrate Result, You Can Win Public Support	In the end, if we are able to demonstrate the results, i.e. for the good results, surely we can get public support.

Source: Arifin Lubis et, al. (2014), A study on the Different Applications of Performance Based Budget and Zero Based Budget on Regional Task Force Units in North Sumatra, International Journal of Management Sciences and Business Research, Vol.3, Issue.10. P.50.

### India @75: Aristotelian Golden Mean

**Aristotle** kindled the concept of a diverse constitution as a solution to avert instability and establish a lasting form of government in the Greek city-state. He laboured his idea of what he calls '**the Golden Mean**' to create stability. Aristotle wrote a book on 'Ethics' in which he developed the three treatises, namely, 1. **Nicomachean Ethics (1094a)**, 2. **Great Ethics (1181a)** and 3. **Edumian Ethics (1214a)**. In these works, he explains the concept '**Golden Mean**' as a middle path, which in turn means that virtue lies between the two extremes. For instance, courage is a virtue that lies between the two extremes of timorousness and negligence. Similarly, **in the context of economy functioning**, you find the **Aristotelian's** 'Golden Mean' as budget directors who ultimately evaluate and rank the budgetary proposals, stand in between (middle path) the two extremes namely, budget initiators and budget implementers and budget directors who often play a virtue role towards achieving a success in ZBB

process. In the Book V of Nicomachean Ethics, **Aristotle** contemplates two types of justice, namely, ‘**general justice**’ and ‘**specific justice**’. General Justice is concerned with respecting laws and specific justice denotes ‘**fairness**’ in action and delivery of any services. **Aristotle** was more concerned with ‘specific justice’ and investigated further to prove a point that in any organisation, the budgeting or planning process solely depends on ‘voluntary transactions’ which must be considered under the caption ‘**corrective justice**’ that includes, buying, selling, producing, pledging, depositing, lending at interest as well as without interest, and letting the materials or properties for hire. The objective of the corrective justice is to establish an equality in general distributive system. In the same **analogy**, if we apply the principle of **Aristotle’s** specific justice in **ZBB process**, we invariably endorse the fact that ZBB aims at justifying every units of money spent and accounted for to estimate the relevance’s of a budget.

**Aristotle** had written comprehensively on economics and economy in two books (**Oikouvouika** in Greek and **Oeconomica** in Latin). According to Aristotle, there are four different types of economies and they are: a. Royal Economy, b. Satrapic Economy, c. Political Economy and d. Personal Economy. Aristotle argues that whoever inclines to partake voluntarily, dedicatedly and successfully needs to know every distinctive part of the economy he is engaged in. In the same connotation, **under ZBB method**, those who are involved in budget making must know thoroughly, the nuances of a budget, scale of a budget, identification of decision making packages, targeting the priority units, information transparency, execution of a budget, how to justify the expenses, how to rank it item by item and how to review the budget targets, etc. Aristotle’s methodology of classification of economies is well illustrated in **Table 3** which underscores the significance of Aristotle’s contribution towards different types of economies in general and how to impose taxes on various items to enhance revenues for the state (Kingdom). In any type of budgets, imposing tax plays an important role in enhancing revenues for the state. Even during the **period of 384-322 BC (Aristotle) in Athens**, we find the practice of segmenting the economy into four types and based on their capacity and resources, the Kingdom levies taxes accordingly. **Aristotle** was more specific on **Satrapic Economy** on account of contributing more revenues towards the support of the Kingdom. Levying of significant rate of taxes and raising six kinds of revenues marks the Satrapic Economy as major source of incomes that gives the Kingdom to make a good budget. Here, Aristotle was categorical about the economies under reference (Table 3) should have one principle in common, that is, under no circumstances and no matter what is done, the economies budget expenditures should not and cannot exceed incomes

**Table 3: Aristotle Methodology of Classification of Economies.**

<b>Nature of the Economy</b>	<b>Power Domain</b>	<b>Guidelines</b>
1. Royal Economy.	Managing the money, imports and exports, expenditures, etc.	The top advisors of the King to decide the value of money/coins, benefits of the markets /commodities.
2. Satrapic Economy.	Levying of taxes and raising Six kinds of revenues, all from, land, products, cattle, merchandise, property, other sources.	Government official’s work with the Royal Kingdom, instructions from the King on the levy of Taxes is an important one.
3. Political Economy.	Administration of the economy of the city/kingdom	Sources of revenue includes, merchandise, scarce resources, tangible assets, etc.
4. Personal Economy.	Least concerned as income and exchange of money attributed to the individuals.	Revenue augments through taxes on land, property and investments with diversity.

**Source:** [www.wikipedia.com](http://www.wikipedia.com) on Aristotle’s work on Economics.

## Conclusion

The ongoing discussion on **India @75**, a glossy for inclusiveness and development states that, if India exploits on its opportunities, resources and FDI's in an optimum ways and overcomes the conundrums in the short-run, then India could be the country to be reckoned with in terms of investment destination with high growth possibilities. It is quite possible for India to achieve a target of 10 per cent growth per annum in the near future and becoming the second largest economy of the world soon. To achieve this, we need a strong highly skilled labour force to produce more to augment earnings and at present roughly about 10 per cent of labour force are employed in the organised sector and about 90 per cent of labour force is employed in the unorganised sector. The participation rate among women labour force is highly insignificant and this should be pushed up to achieve the increased production and skills of women labour force. This requires creating an awareness in support of working women, flexible working hours, incentives, women dignity policies and more facilities for working women, etc. The challenges of growing inequalities across regions of states, gender-gap, rural-urban divide, destitute, rich-poor divide, caste divide and communalism are all causing negative results and India needs to address these issues on a war footing method. Health, education and welfare have taken a heavy toll and expenses during the pandemic stage and India needs to propel the investment rate in these sectors to have a higher growth rate. Universal free basic services in health and education must be the sole agenda of the government for action. Public-private partnership must play an important role in generating employment, skills, and income.

India has its own unique history of making good programmes such as MGNREGA, Public Distribution System (PDS), Mid-day Meals scheme, ICDS and National Rural Livelihoods Mission, etc., for providing welfare to the poor people across regions. When budgets are effectively used within the given parameters, it serves as a means of coordination, plan of action, and achieving success and as a budgeting technique, it communicates well, motivating the employees and managers at all levels of concern and acts as a clever executor of decision packages. It also provides a good framework for evaluation of each unit function from the scratch. It further associates itself with private and public sector organisations, firms and industries, etc. In the digital era of budgeting, the budget making itself in terms of allocation of resources and planning have become a challenging task for the budgeters and whirling importance being placed on issues such as poverty, education, health, and other social welfare measures have increased the budgetary allocation of resources and the need to review the budgetary programmes of action periodically. If these issues and things are done quickly, then India will become a famous superpower country in the world.

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