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# ILLUMINATUS

*Radiance Of Knowledge*



# **ILLUMINATUS'20**

Radiance of knowledge

VOLUME 6

Department of Economics  
St. Xavier's College, Jaipur

# Preface Message

It is a matter of immense pleasure and pride that the Department of Economics, St. Xavier's College, Jaipur is coming up with its 6th edition of ILLUMINATUS - Radiance of Knowledge. The department feels extremely over-whelmed to present this journal which is a live combination of student's initiative to discover and explore the new avenues and challenges in the field of research and ethics. It is not wrong to say that the phrase "Learn, Action and Transform" is quite apt for the Economics department of St. Xavier's College, Jaipur. It is such small integrated efforts that provide students with a plethora of opportunities to inculcate the gist of the economics as an autonomous discipline besides what the curriculum offers.

I would also take the opportunity to thank the entire college management Rev Fr Varkey Perekatt SJ (Manager), Dr. Sheila Rai (Former Principal), Rev Fr A. Rex Angelo SJ (Principal), Rev Fr Dr. Sherry George SJ (Vice Principal), Rev Fr Jose V.K. SJ (Former Administrator) and Rev Fr Raymond Cherubin SJ (Vice Principal) for their immense support for the journal. I would like to express my gratitude to my colleagues Mr. Yashwardhan Singh, Head (Officiating), Department of Economics, Ms. Poorvi Medatwal, and Ms. Sunita Choudhary for their exemplary support and inspiration towards the promotion of such exertions. My heartfelt gratitude to the editorial team who have set an example of coordination and cooperation in front of all. Kudos to their sincere efforts and strong dedication. I would like to express my gratitude to our former HoD, Late Dr. Sapna Newar whose vision and tireless efforts in promoting research culminated in the making of Illuminatus. I would like to further appreciate all the students who have contributed papers, book reviews and interview for the journal.

The editorial team has tried to invite research papers from all the sub-disciplines of Economics so that the students can have a proper analysis of the subject in its minute detail. So, we wish all the readers an enjoyable reading and learning. As another year comes to an end, I would like to wish the students best of luck for their future endeavors and encourage researchers to actively contribute papers in the future. Many congratulations to the editorial team for the successful compilation of ILLUMINATUS.

Happy Reading!

Ms. Maharshi Sharma  
Faculty Coordinator

## From the Editor's Desk

ILLUMINATUS is a thoroughly revised and reviewed economics journal for the enhancement of research in different areas of the subject. Our editorial team aims to bring before the readers some of the exceptionally weaved informative pieces which will definitely serve as an excellent reference for the coming years. Hereby, we're pleased to announce the 6th edition of ILLUMINATUS. As the Editor, I take this opportunity to express my sincere gratitude to our beloved professor Dr. Sapna Newar, who is no more with us. This Journal wouldn't have been possible without her and her absence is a great loss for the department. Her recommendations and guidance for the entire department and especially for this edition of ILLUMINATUS was immense. Words are not enough to express her contribution towards the department. Also, it was she who ignited the researcher in me and gave me the right platform to express. I was really lucky that she was there to witness my small winning moment in the National Symposium of our college. Not just me, each and every student of our batch was lucky and blessed to have her as a mentor.

I would also like to take this opportunity to thank Yash sir for keeping faith in us, his constant deadline is what motivates us to be better and efficient each day. All work and no play make Jack a dull boy, yes, it's true, and there's no one better than Poorvi ma'am to understand this. Our work space would have been pretty boring without her. Thank you, ma'am, for teaching us how to strike a perfect balance between work and play. Editing process of the Journal is a long task, and it's natural to get off track sometimes but Maharshi ma'am made sure that we do not falter. Thank you, ma'am, for being so patient throughout. Sunita Ma'am, thank you for always attending my end moment calls and guiding me in difficult situations. You've been an immense help in motivating students to write for the Journal. The collaboration with Political Science department in the making of this Journal would have been really hard to achieve without the support of an experienced mentor. We wanted one but found two, thanks a lot Meeta ma'am and Preeti ma'am for helping us out in this.

Thus, together with my fellow editors, Shailee, Tanishq, Manas, Nameera and Naman, I proudly present to you the 6th edition of ILLUMINATUS.

Lopamudra Mishra

# Messages

**Fr. Varkey Perekatt S.J., Manager and Rector**

Illuminatus has successfully completed 6 years, and this wouldn't be possible without the dedication and diligence of students and the guidance by the teachers. The months of hard work has finally bore fruits and it makes me happy to declare that the fruit is really sweet. The wide vision through which each and every topic has been researched makes me proud. I hope that wherever the students go they will keep the head of their family and this institution held high.

**Dr. Sheila Rai, Principal**

Books are not the only way to learn and the students of our college has proved it yet again. Learning by doing is one of the best ways to explore new horizons and Illuminatus is the best example of it. The Department of Economics, with its creativity and resourcefulness has promoted students in the field of research. I wish students all the luck for their future endeavours.

**Rev. Dr. Sherry George S.J., Vice Principal**

The best way to create future is to research it. This is exactly what Illuminatus stands for. The research of students and the dedication of the team has made the 6th edition of Illuminatus possible, and like every year it has a wide range of topics ranging from Politics to Economics and much more. I congratulate all the students for their hard work and wish them the very best for their future.

**Mr. Yashwardhan Singh, Assistant Professor**

I couldn't be prouder to announce the sixth edition of illuminatus. The students have worked hard for this to happen. I congratulate all the paper contributors for their research on such wide area of subjects and the team of Illuminatus for their months of hard work has finally paid off. I wish everyone all the best for their future.

# Messages

**Ms. Poorvi Medatwal, Assistant Professor**

The best way to create future is to research it. This is exactly what Illuminatus stands for. The research of students and the dedication of the team has made the fifth edition of Illuminatus possible, and like every year it has a wide range of topics ranging from politics to economics and much more. I congratulate all the students for their hard work and wish them the very best for their future.

**Ms. Maharshi Sharma, Assistant Professor**

Illuminatus is a commendable platform for giving direction to the bright research ideas of students of Economics. I feel extremely happy to see the diverse ideas of students and their skills in writing research papers. The Journal is highly beneficial for all students and will play an important role in boosting their career in research.

**Ms. Sunita Choudhary, Assistant Professor**

Curiosity turns into research and Illuminatus is a platform to validate that research. The focus of this edition is on Environment problems that need to be studied thoroughly with an open and innovative mind. I applaud the tireless efforts made by the core team and would like to congratulate the researchers for their contribution in this edition. My best wishes to everyone.

## Editor's Speak

Being a part of team Illuminatus has been an exhilarating experience. Our team has put in immense amount of work in discussions, meetings, structuring of research papers and meeting the deadlines, yet with the team all this work was fun. It was a feast of knowledge and a realistic way of learning economics. My special gratitude for all, who guided me. I cannot miss this chance to thank all those who helped and contributed in this endeavour.

**Shailee Saboo, Associate Editor**

"Tell me I forget. Teach me and I remember. Involve me and I learn." This is what being in the team of Illuminatus stands for, from the beginning we have been learning through proper guidance and involvement. Working together taught me a lot of lessons be it life or Economics. This has been one of the best learning curves of my life till now. I'm grateful to the team members and teachers who with their proper guidance not just made it an educational experience but a memorable one too.

**Tanishq Israni, Associate Editor**

Completing this venture with the whole journal team was a completely unfamiliar yet a memorable and enjoyable experience. I am grateful to have worked in coordination with other people in the team. I would like to thank all the people who have made this journey fun and cherishable. I hope to work with the team again.

**Manas Joshi, Assistant Editor**

'To define is to limit' has been rightly worded by Oscar Wilde. This phrase incorporates the essence of working with team Illuminatus. Be it strict deadlines or careful editing, this journal is the outcome of a hard-working team that have skilfully weaved together a design that showcases knowledge conjured by young intellectuals. I'm grateful to call myself a part of this journal. The lessons I've acquired of teamwork and dedication will always remain intact within me.

**Nameera Anjum, Assistant Editor**

Being a part of Illuminatus journal as an assistant editor was a marvellous experience. The post helped me understand the importance of research work in economics and at the same time honed my analysis and decision-making skills. Working under my seniors and with my contemporaries gave me an insight on how day to day activities are carried out in a team dedicated to their work. I am grateful to have been introduced to the world of research and be playing a role in it at the same time. It has been truly an enriching opportunity for me.

**Naman Madhav Sogani**

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## THE RELEVANCE OF ECONOMY OF ODISHA ON THE GROUNDS OF SUSTAINABLE DEVELOPMENT GOALS:

### Indigenous Agriculture, Forests, Natural Calamities and Political Stability

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#### **Abstract**

*Sustainable Development Goals were adopted in the year 2015 by UN. It has 109 targets and 17 goals. These goals are legally nonbinding and is made for a period for 15 years, so it has to be achieved by 2030. Sustainable development goals mainly deal with people, planet, prosperity, peace, partnership. It basically shows a symbolic relationship among these 5 P's.*

*India is amongst the 190 countries who are the member of the UN and have adopted 'Sustainable Development Goals 2015'. To reflect the progress of India in terms of Sustainable Development Goals set by UN, an SDG India Index was published which gives a comparative performance report of various states and union territories in India to achieve SDG's.*

*Based on the score of 0-100, the states are categorized into four groups and Odisha has been classified as a 'performer state' based on its aggregate performance on 13 out of 17 SDG's. The performance of Odisha is still low in achieving goals like Hunger, Health and Industrial Progress but it has still managed to secure an overall score of 51 by performing well in terms of other goals. Thus, the research aims to find out how by performing well in terms of Indigenous Agriculture, Forest Management, Political Stability and Disaster Management, a state can compensate its negative impacts that comes from its least developed sectors. In case of Odisha, the service sector is stricken by heavy migration whereas the industries are not able to progress due to low level on investment. And in such a situation, the only potential sector becomes the agriculture as Odisha is naturally blessed with right type of topography and soil fertility to sustain this sector considerably.*

*The research also claims to show how Odisha is performing in goals like Life on Land, Climate Action, Peace, Justice and Strong Institutions which are alarming issues but are often paid little or no attention.*

**Keywords**

Indigenous agriculture, Political Stability, Disaster Management, Forest Management

**Objectives of Study**

- To check the relevance of economy of Odisha on the grounds of Sustainable Development Goals with the chosen area of study. (Indigenous Agriculture, Forests, Natural Calamities and Political Stability).
- To analyze the economic aspects of Indigenous agriculture, Forests, Natural Calamities and Political Stability.

**Review of Literature**

An Economic Analysis of Agricultural sustainability in Orissa by L.D.Hatai and C. Sen mentioned that agriculture in the state is mostly indigenous, practice of traditional methods persists. Farmers have uneconomic size of holdings and thus farming in the state is merely for sustenance and not commercial.

Economic Impact of Climate change on Agriculture sector of coastal Odisha by Diptimayee Mishra and Naresh Chandra Sahu concludes that Agriculture of Odisha is climatic sensitive to an extent that increasing temperature for all the seasons might have adverse impact on the health of agriculture sector of coastal Odisha.

Impact of Political instability on Foreign Direct Investment and Economic Growth by Nazeer, Abdul Malik and Masih, Mansur (INCEIF Malaysia) concluded that political instability is cointegrated with FDI and economic growth.

**Analysis and Findings**

Sustainable Development Goals were adopted in the year 2015, September, by UN. It has 169 targets and 17 goals. These 17 goals are legally nonbinding. It has to be achieved by 2030.

Sustainable Development Goals deals with 5 P's: -

- PEOPLE
- PLANET
- PROSPERITY
- PEACE
- PARTNERSHIP

India is among the 193 countries who are the members of United Nations and have adopted Sustainable Development Goals 2015.

## SDG India Index

It's a comparative performance report of various states and union territories in India in their effort to achieve the SDG's. It shows “what they've achieved” or “what is the status of their achievements.”

The index comprises of composite score for each state and union territory which is based on their aggregate performance across 13 out of 17 goals. Note that United Nations has given us 17 goals but in the report of NITI AAYOG we are considering the performance of the States and Union Territories only based upon 13 goals.

The score ranged from 0-100 and the average Indian's score according to the report was 57.

Sustainable indicators have been developed to record the performance of States and Union Territories on the 13 goals. A total of 62 indicators have been put to use.

## Highlights of the Report

Based on the score of 0-100. The states are categorized into four groups:-

**Achievers:** These are those states and Union Territories that have already achieved the set target.

**Front runners:** These are those states and Union Territories which are very close to realising that they will achieve their target soon. Eg: Himachal Pradesh, Kerala and Tamil Nadu.

**Performers:** Majority of Union Territories and few states are lying in this category and Odisha too falls in this category – aiming for the title of Front Runner.

**Aspirants:** Whosoever lags behind and do not fall in the above three categories are termed as Aspirants. Eg. Assam, Bihar, Uttar Pradesh.

Note that no State or Union Territory can be put under the category of “Achievers” till now.

India is least performing under parameters like:

- Gender Equality - 36
- Sustainable - 39
- Enabling Industries, Innovation and Infrastructure - 48
- Hunger – 48

### **Importance of this Index**

This index is important because it will support the States and the Union Territories to benchmark their progress. The progress then can be further analyzed by the States and the Union Territories and they can improve their score further and take necessary steps to curb the evil factors hampering the same.

Secondly, it will help the States and the Union Territories to identify their priority area.

Thirdly, it will also highlight the data gaps related across the SDG's.

### **Limitations**

1. Assessment is not complete because there are total 17 goals and this Index is only based on 13 goals. And the other goals are not included due to lack of availability of data. Thus, we cannot say that it is a complete analysis of state with regard to SDG's. So, if it has to be complete, all the 17 goals and related parameters has to be added.
2. Also, indicators that are emerging from state schemes are not included.

**Background of the Research**The celebrated Ranjan Committee Report in 2013 has ranked Odisha as the least developed State in India on its Index of Economic development. But today, the economy of Odisha is one of the fastest growing economies of the country.

Odisha is located in the Eastern Region of India. The State shares its borders with West Bengal on the north east, Jharkhand on the north, Andhra Pradesh on the south, Chhattisgarh on the west, and the Bay of Bengal on the east.

The state ranks 1st in Production capacity and actual output of Aluminium. It is also one of the largest producers of Iron and Steel. Also, Odisha is among the top states accounting highest no of MSME enterprises.

Odisha has registered an impressive growth rate of 8.4% in 2018-19, bettering its GSDP growth of 7.4% in the preceeding fiscal year. With this Odisha has put behind several developed states in Economic Growth over a period of five years. Also, economic growth rate of Odisha is higher than the National Average.

As per the Niti Aayog's SDG's Baseline Report 2018, Odisha has been classified as a “performer state” based on its aggregate performance on 13 out of 17 SDG's. The overall score of Odisha is 51 in this report. The state has a low level of performance in areas like hunger, health and industrial progress. And high-level performance in areas like Indigenous Agriculture and Forest, Disaster Management and Political Stability.

However, Service and Industrial sector is not able to flourish much due to migration and low level of investment.

### **Area of Study**

Since it is evident from the “Background of the Research” that Odisha has improved itself considerably, thus it is going to be interesting to throw light on the areas that has helped in its overall development.

1. Indigenous Agriculture
2. Forests
3. Natural Calamities
4. Political Stability

### **Indigenous Agriculture**

Odisha is adorned with rich tribal culture which is evident from its share of tribal population. 22% of the total population of state is Tribal which also constitutes 9.7 % of the total tribal population of India.

Traditional farming systems in India have always been superseded with modern technologies but still there are many places where this culture is still alive. Naturally too, Odisha's soil fertility isn't something hard to deal with. And use of fertilizers is also not a major concern because the soil is naturally fertile, blessed with appropriate topography. Also, Odisha is one of the top Agro Climatic zones.

The Food and Agriculture Organisation (FAO) of the United Nations has accorded the status of **Globally Important Agriculture Heritage System (GIAHS)** to the traditional agricultural system being practiced in Koraput district of Odisha. The recognition has come following a proposal submitted by Chennai - based M.S Swaminathan Research Foundation(MSSRF) to conserve the practice.

### **What is GIAHS?**

In 2002, the Food and Agriculture Organisation of the United Nations launched an initiative called GIAHS. It aims to recognize, conserve and manage best agricultural biodiversity knowledge systems, food and livelihood security and culture throughout the world. The project aims to identify around 100 to 150 Agricultural Heritage Systems in the world that would be protected and managed for this traditional knowledge.

The Koraput region situated in the Eastern Ghats is a high land plateau with number of hills and hillocks. The tribal people have indigenous knowledge system for their various

agricultural practices. For example, they use their traditional knowledge to check viability of seeds before sowing, maintain soil fertility and conserve land races of rice and other crops. The knowledge is transmitted from generation to generation by families.

Odisha has been suffering from natural calamities one after the other almost every year in the past 10 years. Some studies say that thousands of farmers have committed suicide due to these disasters. Also, due to increased period of dryness, pest attacks and untimely rains in 2017, the crop loss reported to be 5 lakh hectares and 33 % due to drought in 70 administrative blocks of 15 districts.

However Indigenous farmers who prefer traditional farming are usually free from agrarian distress and this happens due to multi cropping practice by Odisha farmers.

Types of Tribes:

1. Kondh
2. Santala
3. Gadaba
4. Oraon
5. Juang
6. Koyas

The Kondh farmers are known for their traditional farming techniques and Multiple Cropping. This farming technique helps to sustain extreme weather conditions of Odisha. It also helps to overcome problems like irrigation, heavy rainfall, drought, fragmentation. In short, it reduces agrarian distress and gives many more alternatives to depend upon in ease of crop failures. The Kondh farmers believe that their farms are influenced by forest culture around them. Their farms have diverse crops just as a jungle that has diverse plants in it. This kind of practice provides them protection from crop failures.

The multiple cropping system demonstrate the efficient use of water, soil, light energy and other natural resources, all of which are important for agricultural production and food security. Wherever the natural conditions allow, it is necessary to adopt high intensity cultivation to secure efficient food supply. Methods like Multiple cropping, zero budget farming, organic farming has been much prevalent here. The methods basically act as a rescue from machine intensive techniques.

### **Forests**

The percentage of actual forest cover in Odisha has increased to over 32% of the state's geographical area, which is more than the national average (21%) (2015). The Forest Survey of India in its November 2015 report has accounted 50 sq. km. growth of actual

forest cover in Odisha over 2013. And this was only possible because of excellent forest management technique adopted by the tribal population.

### **Kaptapalli Village**

Kaptapalli village is a great example of empowering women for sustainable development. *Vasundhara* has been helping women groups in protecting forest since a very long time. The Forest Act in 2006 gave community and individual rights to ADIVASIS (tribal communities) and other forest dwellers. Mining is destroying forest cover in Koraput and Nayagarh districts and the forest act came as a rescue for the forest dwellers. They cultivate their own land and take their crops home without any intervention from the Forest Department. The Forest Department cooperates with them and do not seize their crops.

30 families have got individual forest rights via which they are eligible to make use of the forest produce without any government intervention. Usually they collect Firewood from the forest but while doing this they make sure they cut dry trees only. The village residents carry out the process very systematically, they go there, identify a tree to cut, they report the place to the organisation responsible and finally get their proposal sanctioned.

They pluck out Sal leaves and later stitch these leaves to make plates out of them. They dry them up and press them with stones. They make bundle of those leaf plates and sell each bundle of 80 plates for Rs. 35 and to facilitate this small-scale business Vasundhara organisation gave a sewing machine for Sal leaves on loan.

### **Vasundhara**

Vasundhara is an action Research and Policy Advocacy Organisation working on Natural Resources, Governance, Conversation and Sustainable Livelihood. They begin with a focus to support and strengthen self-initiated community Forestry groups – conserving and managing community forest in the state of Odisha. This organisation is working with nearly 10,000 to 12,000 such forums who are involved in the protection and management of forest resources. They themselves are protecting their forests. Both Kaptapalli Village of Nuagaon block and Dengajhari village of Ranpur block in Nayagarh are excellent examples of forest management.

### **Natural Calamities**

Out of 52 years only 13 years have been normal years. This almost put the state with a 75% probability of being visited by natural calamities of any kind. 35% of all the cyclonic storm that have crossed the eastern coast of India have affected Odisha and the associated storm surges have often inundated large track of coastal distress is what the economic survey report of Odisha 2018 - 19 points out.



During the drought year of 1996-97 the economic growth of state turned negative (-4.85%). Post the devastating super cyclone 1999, Gross State Domestic Product growth rate was -1.72 percent in succeeding years.

It observed similar situations, post two consecutive cyclone and flood in 2013 and 2014, the growth rate fell to 1.8% in 2014 to 15, in comparison to a high growth rate of 9.3 % in 2013 to 14.

Super Cyclone 1999:	Cyclone Phailin 2013:	Cyclone Hud-Hud 2014:	Cyclone Fani 2019:	Cyclone Bulbul: 2019:
10,000 approx	22 approx	2 approx	89 approx	

The 1999 Odisha Cyclone was one of the most life threatening and extremely disastrous moment in the history of Odisha which claimed around 10000 lives in Odisha. However, with decades of positive intervention by the government, civil society groups and NGO's, the state has received praise from numerous National and International organisations, including the United Nations.

In 2013, when Cyclone Phalin rattled the Indian Coasts, the Government of Odisha undertook the largest ever evacuation, shifting 11 lakh people into safety. The state stood as rains lashed the landscape and death toll was contained 221. Next year, when cyclone Hud Hud hit Odisha, the death toll was contained to just 2.

According to the report, apart from losses to life and property, natural disasters also led to crop failure, decline in surface and groundwater and increasing unemployment and underemployment, migration and indebtedness.

Thus, it is clear that natural calamities impair the growth of an economy making it imperative to take measures to mitigate losses.

The state is naturally disadvantaged in this area and thus Odisha has been pushing for inclusion of natural calamities as a Criterion for according special category states as its economic growth is hindered largely by frequent occurrences of natural disasters.

### **Political Stability**

In a political active country like India, it's very rare to find a state like Odisha where the continued political stability and enlightened political leadership of Mr. Naveen Pattnaik is something one can't overlook easily.

The debt stress of the state has been brought down to 17.8% in 2017-18 from the level of 50.7% in 2002 - 2003 due to the concerted efforts of the government. Similarly, the interest payments to revenue receipt ratio has been brought down from 40.2% in 2001-2002 to 25.9% in 2017 -2018. And this isn't an easy task to achieve without the stability in governance. Attracting the highest private investment in industries mainly in manufacturing and mining compared to other states and clocking 8% growth rate between 2003 to 2011, Orissa has dramatically reduced poverty leaving behind Gujarat, Madhya Pradesh, Maharashtra, Uttar Pradesh etc.

In case of Odisha, the industrial policy document of 2001 made case for aggressive industrialist by attracting private investments. The BJD government provided land at concessional rates, gave tax concessions, exempted in new industrial unit from electricity duty and rationalised labour laws and this clearly shows how the faith and trust builds eventually among the people for the existing Government and Institutions.

The economic growth and political stability are deeply interconnected. On one hand, the uncertainty associated with an unstable political environment may reduce investment and the pace of economic development. On the other hand, poor economic performance may lead to Government collapse and political unrest.

Apart from this, there are enough evidences to show that the political stability is definitely development friendly provided, it very much depends on the extent to which the stability translates into good governance.

As per BARRO (1991), from the research made concluded that political instability and growth are negatively correlated. Furthermore, Ross (1992) studied political instability, instability of governments, regimes and communities within a nation and growth in sub-Saharan African countries and found adverse impact of political instability on economic growth. In general, political instability affects the investment climate negatively which in turn reduces foreign direct investment inflows and would result in slow growth of the economy.

Many developing countries in the world are not politically stable and mostly they suffer from poor equality of governance. However, some of those countries have been showing decent economic performance in the recent past, Malaysia is one of them.

Figure 1: Response to one 'SE' shock for DGDP

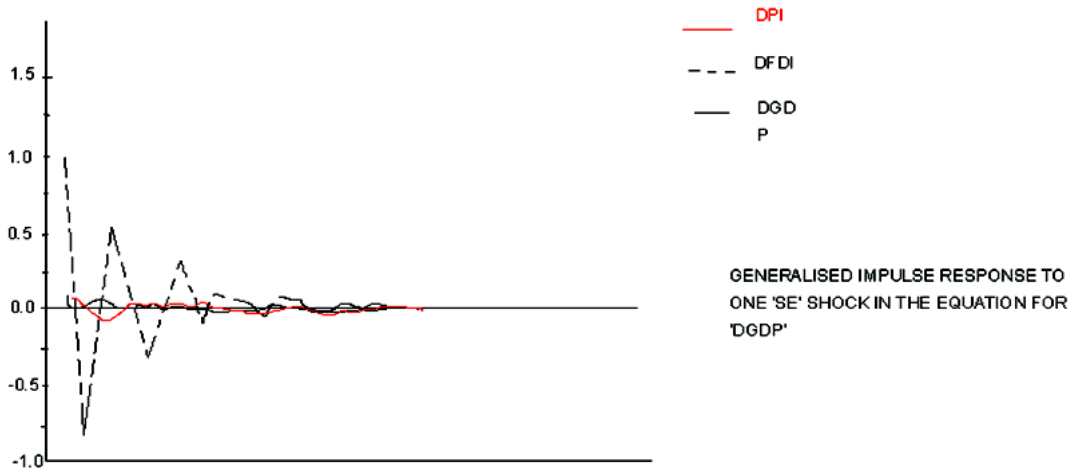
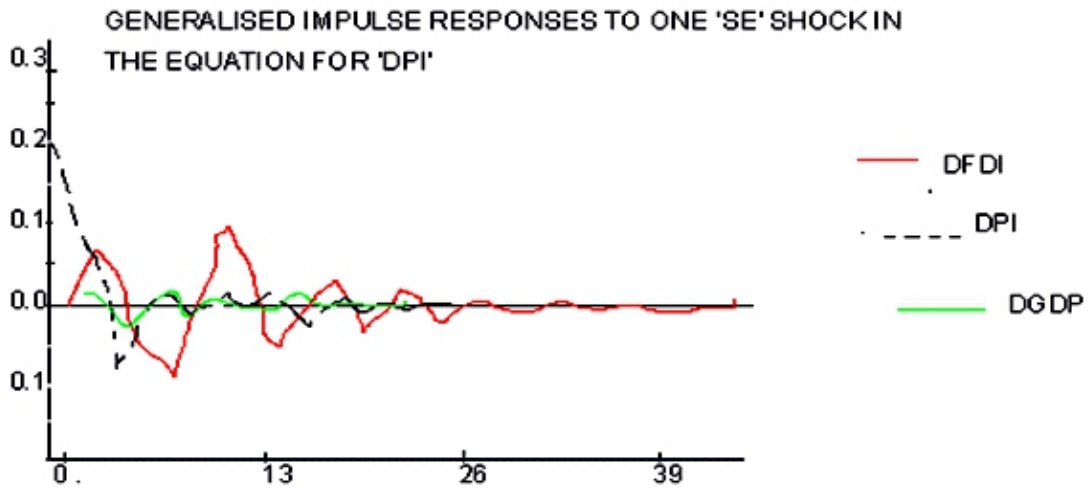


Figure 2: Response to one 'SE' shock for DPI



### **Analysis of the figures**

Impulse response allows us to observe how long it takes for the variables to get back to equilibrium if there is a shock in one particular variable. For the purpose of the analysis, the graph of generalized impulsive response for each variable shocked into the system and see the degree of response and how long it would take for other variables to normalize.

The variable that is shocked is political instability. Since this variable is focal variable, big outcomes are expected out of other variables.

Figure 1 shows that FDI in Malaysia will take a long time to close its equilibrium and Malaysia's GDP is not affected much as a result of the shock in political instability. And in graph 2 Shock of economic growth is recorded with respect to other variables.

When political instability is shocked to see the effect on other variables, finding is that foreign direct investment and response fluctuates largely then GDP and takes more time to reach the level of equilibrium. Here it is arguable that when the level of political instability increases the level of foreign direct investment will be impacted seasonally and this moment is in line with most of the studies, whereby it has been concluded in the study that foreign direct investment and political instability are negatively related.

On the other hand, when GDP was shocked to observe the reaction of other variables, FDI takes the longest time to reach the normal equilibrium and political instability have a very minimal level of fluctuation.

This shows that FDI is most prone to move away from equilibrium when the variables PI and GDP are shocked.

### **Conclusion**

Traditional Farming is economically less viable. Also, there is no point of producing organically if they are sold for the same price as the normal produce. Commercial Farming is not their aim anyway.

Odisha is naturally disadvantaged so natural calamities should be a criterion for the accordance of special status.

Lastly, Political Stability, FDI and Economic Growth are deeply interconnected.

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## ECONOMIC INEQUALITIES

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### Abstract

*The agenda of 10 sustainable development Goals aims at reducing "income inequalities within and among the countries". Economic Inequalities can be measured by difference in distribution of income and wealth. This paper aims at studying the impact of globalization, technological advancement and imperfect competition of the market economy on inequalities on a global and country level.*

*The Billionaires form 0.001% of the total population but they own more than 50% of the total wealth. We live in a world where rich owns too much leaving very little for the rest. The rich earn most of their wealth from capital income, (income assets like property, stocks, shares) which grows exponentially as compared to labour income. Inequality within a nation hinders growth of the country which is the essence for development. The paper also discusses the fall of Roman empire and emergence of communism.*

*There are many indices which are used to measure Inequality. One of the most used is the Gini Index which measures from perfect to imperfect Inequality*

*International Inequality refers to the idea of inequality between countries and is comparable to the term global inequality which is inequality between people across countries. This refers to economic differences and other differences like differences in education, medical care, nutrition, security and social discrimination. This global inequality peaked in 1970's. Democracy, education, family planning and providing latest technology to masses are some of the solutions which can reduce inequality.*

### Keywords

Gini index, Globalization, Income inequalities

### Introduction

The 17 Goals set by the UN general assembly for sustainable development of our globe are to be achieved by 2030. I will be discussing the tenth goal of above in this paper which aims at **“reducing income inequalities within and among countries”**. More than 40% population has low income, so the target is to sustain income growth of them at a rate higher than the national average. This also directly complements Goal 1 aiming at total eradication of poverty in every form. Actually, half of the world's population lives on less

than \$5.50 a day, 10% of the population lives on less than \$ 1.90 a day.

Inequalities hinder the growth of a nation which is the necessary condition for development. Globalization has led to a reduction in global inequalities between the nations because of fast growth rate of third world countries, however it has increased inequality within the nations. The competition created by technology and market economy are imperfect and actually becomes unfair as people having superior approach with these exploit the unprivileged.

### **Objectives of Study**

To analyse the impact of globalization and technology on income inequalities within and among countries and provide solutions to tackle the problem.

### **Research Methodology**

This paper is based on secondary research. An empirical study has been done to understand the emergence of inequality and its measurement.

### **Gini Index**

Economic inequality can be measured by the difference in distribution of income and wealth among different groups. Gini in 1912 gave a statistical measure of distribution to gauge economic inequality. This coefficient ranges from 0 (or 0%) to 1 (or 100%) measuring from perfect equality to perfect inequality. Value over one can happen when there is negative income leading to taking loans for sustaining. Gini Index was very high in the 19th and 20th centuries but the recent trend is towards decline.

### **Billionaires**

Billionaires constitute 0.001% of the total population, however their numbers are booming. In 1987 there were an estimated 140 billionaires (net worth: \$300 billion). In 2019 there are 15 times as many billionaires (net worth: \$8.7 trillion). John D Rockefeller was the world's first billionaire. But it is important to know he became rich through his political connections, monopolization of oil and gas, corruption and exploitation of workers. Billionaires are responsible for the widening gap. Most billionaires have earned their wealth due to monopolization in industries like oil and gas, steel and tech industry. Billionaires have faced protests for their irregularities with movements like Occupy Wall Street.

Billionaires earn through capital income and some by illegal activities and the growth is geometrical. Their wealth and earnings are difficult to estimate as they do jugglery in their accounts by creating overseas assets, shell companies and undisclosed assets. Some mega billionaires (assets more than 30 billion dollars) who form 1% of the global population

control over 80% of the world's wealth. So, can anyone solve inequality for those who depend on labor. Here is a big 'NO' and we as economics students need to find a way.

### **History**

A Stanford officer posits that in history inequality was rectified by one of these four horsemen

1. Warfare
2. Revolution
3. State Collapse
4. Plague (disease)

Fall of Roman Empire and adaption of communism in Russia and China are historical examples of disasters to remove inequality Thousands of years have passed yet the richest country US has more inequality than the Roman Empire. So, what do we want...Solution by crisis or a systemic solution? Public Policies becomes very important to address inequality in Capitalism societies.

Haas Institute for a Fair and Inclusive Society at UC Berkley has suggested six evidence based policy solutions:

1. Increase Minimum Wage
2. Expand the Earned Income Tax
3. Build an Asset for working Families
4. Invest in Education
5. Make the Tax Code more Progressive
6. Eliminate Residential Segregation

### **Solutions**

Malthus stressed on population control and said it is only chance against. When overall tax revenue has higher share of GDP income inequality is less, example Switzerland and France has less inequality than US. Government should aggressively achieve full employment by manipulating fiscal and monetary policies. Consumers interest and financial protection laws are important for fair providence. Safety net programs for labourers, sick and needy. Basic living standard assurance and infrastructure development.

### **Society**

In Society apart from financial inequality there are racial inequalities, gender inequalities that destroy human capital. All this destroy health of society and causes social problems,



illnesses, crime, poor nourishment and mental health problems. In Sao Paulo city, Brazil, Rich has life expectancy of 75 while the poorest have 64 years. 26 People own as much wealth as the 3.8 billion poor people of the world. The Unpaid care work by women is estimated at 10 trillion Dollars. Naturally Women have half the wealth than men in the world. India is no better with malnourishment, unemployment, below poverty population. Result of Oxfam Survey done on 70000 people in 10 countries. In this online survey Indian respondents had these opinions:

- 15 % felt working harder won't raise income
- 84% felt that there is a wide gap between the rich and poor
- 73% felt there is an urgent need to address this problem
- The policy changes suggested by respondents on education, medical care, corruption and minimum wages etc.

International Inequality refers to the idea of inequality between countries and is comparable to term global inequality which is inequality between people across countries. This refers to economic differences and other differences like differences in education, medical care, nutrition, security and social discrimination. The global

Figure 1: The Elephant Curve



Source: Friedrich Ebert Stiftung

Branco Milanocvich's Elephant Curve shows the income distribution around the world. The curve resembling an elephant with a raised trunk shows that the gains of globalization have been unevenly distributed around the world.

The curve shows that the lower middle class from countries such as USA and Europe, Japan have made the weakest relative gains compared to their rich countrymen.

While the rich and middle class from the lower middle-income countries such as India, Brazil and China have continued to gain at the cost of the poor. People from underdeveloped countries such as Africa are at the tail of the elephant. This shows that the lowest earning classes around the world are the biggest losers of globalization. This implicates that globalization has widened the gap between the rich and the poor and benefitted those who were already better off.

Can you think of a new threat to equality? To me it is AI... Yes, the Artificial Intelligence!!

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# WHY THERE IS A DIFFERENCE BETWEEN THE PAY SCALE OF MALE AND FEMALE?

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## Abstract

*The difference in the pay scale of men and women has been talk of town for decades. This has further been intensified by the third wave of feminism by the radical feminist of the world. In 2019, in the western society the difference in the pay scale of men and women does go as high as 21 percent. This means for every dollar a man earns a woman earns only 79 cents. In retrospect, this seems like a huge gap and something that must be eradicated from the society, but in reality, the factors which has resulted in the difference in the pay gap of men and women is not merely gender. This paper seeks to analyse the factors because of which this pay gap exists.*

## Keywords

Feminism, Gender, Sex, PayScale, Agreeableness, Professions

## Objectives of Study

- To find out the reason for the difference in the pay scale of men and women working in the same industry.
- To have a multi varied analysis of the gender pay gap.
- To analyse the biological difference between men and women and how they play a huge role in the workplace.

## Review of the literature

Jordan B. Peterson has talked about gender pay gap in a lot of his interviews stating, “I'm saying that the claim that the wage gap between men and women is only due to sex is wrong. And it is wrong. There's no doubt about that. The multivariate analysis has been done.”

Geli Becker, CEO of CAULIPOWER, “Supporting pay equality for women also means supporting women-owned businesses. When people talk about the 'wage gap,' they often overlook the overwhelming disparity that exists for female entrepreneurs. During my

time in corporate America, I saw firsthand the far-reaching effects of gender inequity, but I never experienced its impact as deeply as I did when I left to start CAULIPOWER.”

### **Analysis and findings**

The difference between the pay scale of men and women in the economy of USA is drastic, and even though it is reducing over the last couple of decades the difference is still huge. It stands at 21 percent, when measured on median scale level, this means, for every 1-dollar man in USA earns, a woman only earns 79 cents. What is important to note that a lot many people has been pointing that gender is the main reason for this major difference in the pay scale of men and women.

The different variables for the difference in pay scale are:

1. Agreeableness
2. Women taking up a job which pay less
3. Gender
4. Cost of equal pay
5. Biological Differences

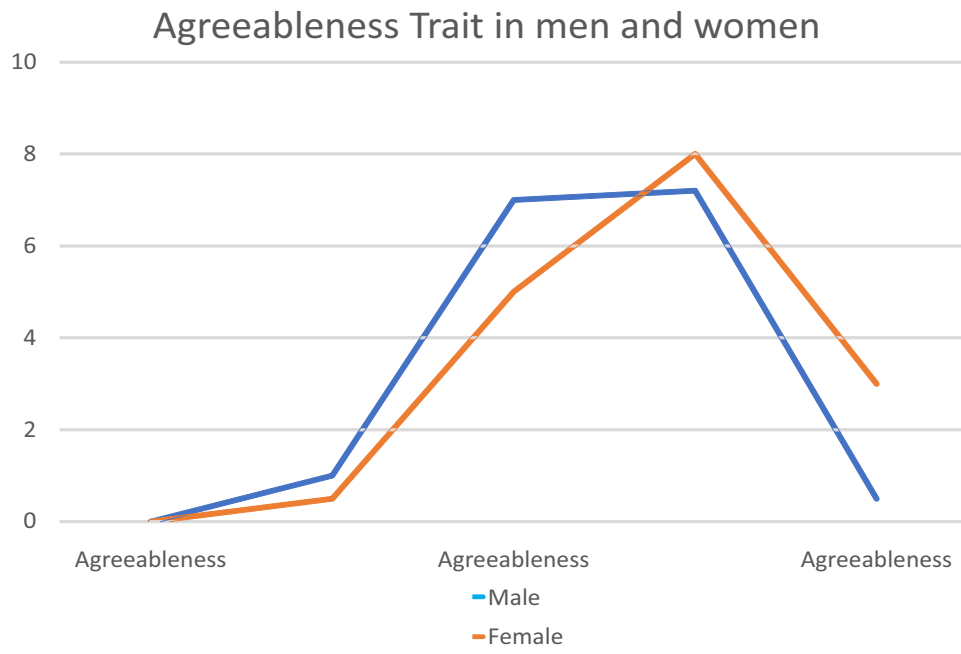
### **Agreeableness**

Agreeableness is a personality trait manifesting itself in individual behavioural characteristics that are perceived as kind, sympathetic, cooperative, warm, and considerate.

Over the course of men and women has evolved differently, while men were supposed to be hunters and gatherers, women were were supposed to take care of the offspring. This strictness with gender bias has led women to be developed as more compassionate, caring and agreeable in nature.

This trait of agreeableness in women has led people to believe that whatever the work will be given to them at whatever the pay scale, the women folk will agree to it. This shows that a lot of times a woman is paid less for the same work than men is not because that she is a woman, but because she didn't negotiate for a higher pay.

Figure 1: Agreeableness trait in men and women



Source: Based on analysis and findings

### Industry Differences

There are thousands of different industries for people to work in from engineering, medicine, real estate to teaching. Thousands of people work in different sectors of the economy, some sectors are better paid than the others and some are not. We all know that every job is important in the society but it is valued differently. The major reason for which is that landing different career require different qualification, for example being a doctor requires much more efforts and time than being a brick layer. Now both of these jobs are important but don't possess the same value and this is clearly shown with the difference in money earned by them.

This means that the particular basis according to which the current gender pay gap is calculated is flawed, because as men and women work in different professions and jobs which pay differently. Each job has a certain pay scale and according to the data, the professions dominated by men and women are different, and the professions dominated by the men tends to pay more than the professions dominated by women, thus explaining the difference between the pay scale of men and women.

Figure 2: Careers dominated by Women

<b>Industry</b>	<b>Percentage</b>
Nurse	91.5
Secretaries and Administrative Assistants	94.2
Preschool and Kindergarten Teachers	97.2
Waiters and Waitresses	71.8
Social Workers	81.9
Flight Attendants	75.8

Source: learnhowtobecome.org

Figure 3: Careers dominated by Men

<b><i>Industry</i></b>	<b><i>Percentage</i></b>
<i>Software Developers</i>	<i>91.5</i>
<i>Farmers</i>	<i>74.2</i>
<i>Financial Analyst</i>	<i>63.5</i>
<i>Sports Person</i>	<i>78.7</i>
<i>Aerospace Engineers</i>	<i>92.2</i>
<i>Pilots</i>	<i>94.8</i>

Source: www.insider.com

### **Cost of equal pay**

A lot of people believe that males are being paid more just because they are born male, a lot of people also call it the “Male Privilege”. What most people often don't realise that a higher pay comes with more responsibilities, longer work hours, more stress and tension. Being at the top of any business or corporation is a very tiring job and one has to practically give up everything and dedicate their lives for the same. Women has a trait call compassion and care which makes them question, “Is the increase in pay significant enough to give up everything else?” and most of the times the answer is no and this is completely reasonable and we sometimes wish this was a question at least some males ask themselves.

- The average difference in the pay between a corporate position and the one immediately above it is 20 percent.
- The average difference in the work-hours between a corporate position and the one immediately above it is 10 percent.

### **Gender**

On observing the data which has been collected by the Pay Scale Incorporation it shows that the under controlled environments, that is when the median salary is measured between men and women with the same job and qualifications is just 2 percent. This means for every dollar a man earns doing a particular job, woman earns 98 cents doing the same job.

### **Biological Differences**

Men and Women are inherently different. The major difference being the biological difference between a male body and a female one. Often these differences do not play a major role in the careers of anyone, but there is one major difference that changes it all for women, that is, women give birth. Now this is an undue advantage to males but that is not given to them by society but by mother nature and evolution. According to the National centre for health statistics the average for women to have baby is 26.3 years. Economics times has found out the timespan for career boom of an average corporate employee is between the age of 25-30.

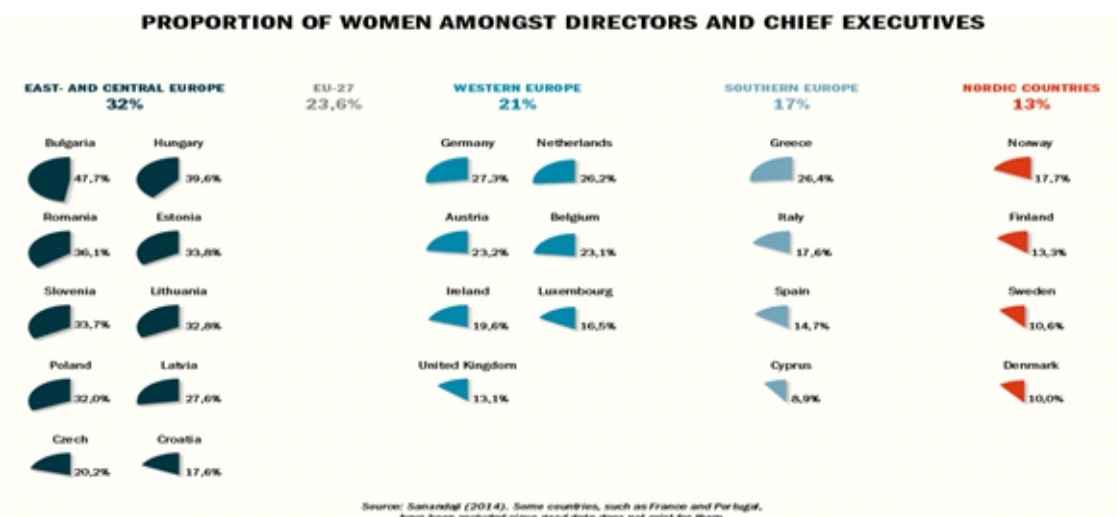
### **Case Study of Scandinavian Countries**

The gender-equality paradox most commonly refers to the findings of a study by Gijsbert Stoet and David C. Geary that, counter-intuitively, suggests that countries with a higher

level of gender equality tend to have less gender balance in fields such as science, technology, engineering and mathematics (STEM), than less equal countries.

As societies become more gender-equal in their social and political policies, men and women become more different in certain aspects, rather than more similar. This difference in men and women becomes more apparent when the societies become more egalitarian. Women tend to take up jobs in careers with more flexible working hours and less pressure even if it means a lower pay for them.

The pie charts below show that as countries get more egalitarian the differences between male and female increases.



## Conclusion

During the course of the research I have found out that the difference of the pay-scale of men and women due to gender which stands at 2 percent is the main issue here, I believe that it should be curbed and everyone should be paid according to the work and efficiency, and all the countries.

Everyone would benefit with equal pay and participation of women in all professions and jobs but we need to understand that reason for not equal representation of women in society is not because of the men but because of the women themselves and their own choices. The calculation of gender pay gap as it is at the moment is not correct and thus should be changed taking in the factors involved of difference in professions, psychological factors, personal women of choice and a lot of other factors.



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## MAYHEM IN THE WALLED PINK CITY: AN ANALYSIS OF THREAT TO PEACE AND JUSTICE

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### Abstract

*Indian secularism does not mean irreligiousness, it means profusion of religion. It is our diversity that sets us apart from the rest of the world, and marks India as one of the largest democracies. India is clearly dedicated towards maintenance of peace and justice through the efforts of strong institutions committed to the cause, which shows clear dedication of our nation towards sustainable goal no 16. Despite this commitment, problems arise in day to day life in the name of religion, language, caste, community etc. The Pink City (Jaipur) spiritually known as 'CHOTI KASHI' has numerous people of different caste, and religion, it is known for its peace, tranquility, and co-habitation. But certain recent incidents disrupted the brotherhood and defamed the name of the city. Secularism was in jeopardy when riots broke out on midnight **12th August, 2019** in Galta gate area in northern Jaipur, and it perpetuated on the eve of a religious festival EID-UL-ADHA. In the blink of an eye the whole festive mood morphed into that of terror and violence. There was a clash between two groups of 'Muslims' and 'Kanwariyas' when a mob pelted stones on a bus bound to Haridwar leaving some passengers badly injured. Kanwariyas raised anti-Muslim slogans. After that both the communities gathered on Delhi-Jaipur expressway and pelted stones at each other and on every vehicle passing by leading to blockage of the highway. Several Police men, 25 locals and some passengers were injured according to a police report. Following all this, it was the 62nd shutdown of internet service in Rajasthan since 2015. Section 144 was imposed of CRPC, Police took the charge and the whole area was transformed into a Cantonment.*

### Keywords

Riots, Secularism, Democracy

### Introduction

The incident that took place on midnight of 12th August 2019 in the city of Jaipur was a clear-cut instance of deteriorating tolerance and lack of brotherly spirit amidst prevailing communities of our country. The umbrella theme that covers up such outbreak is often a form of 'Communal Violence' that initially surfaced in the city of Jaipur during the riots of 1989 and 1990. As a response to the disturbances, the authorities, in order to cool down

the aftermath of the riot shut down the internet services in the sensitive areas of the city. Communal violence has become a common setback of diversity. It not only hampers growth and development of a city but also stands as an obstacle to the true essence of democracy as well as the values upon which our past leaders took pride on establishing this nation such as tolerance, peace and unityti a nation that selflessly accepts secularism as an integral parThe incident that took place on midnight of 12th August 2019 in the city of Jaipur was a clear-cut instance of deteriorating tolerance and lack of brotherly spirit amidst prevailing communities of our country. The umbrella theme that covers up such outbreak is often a form of 'Communal Violence' that initially surfaced in the city of Jaipur during the riots of 1989 and 1990. As a response to the disturbances, the authorities, in order to cool down the aftermath of the riot shut down the internet services in the sensitive areas of the city. Communal violence has become a common setback of diversity. It not only hampers growth and development of a city but also stands as an obstacle to the true essence of democracy as well as the values upon which our past leaders took pride on establishing this nation such as tolerance, peace and unityti a nation that selflessly accepts secularism as an integral part of its existence. t of its existence.

### **Objectives of Study**

- To find out what are the root causes of such happenings so that the future generations can be saved from this type of menace.
- To analyze the possible ways to maintain law and order as people are very quick in believing rumors.

### **Review of Literature**

Communal violence being the cynosure of unrest within communities has hitherto been a bane to the growth of many countries of the world. The coinage and usage of the term 'Communal Violence' dates back to the era whence at the time of colonial rule, the British used it to define the differences that add to clashes between a group of people which took place mainly in African and South Asian colonies during the 20th century<sup>1</sup>. When it comes down to the history of India, it's hard to pinpoint any one incident that would mark the beginning of communal violence. However, it so happens that the frequency of these incidences saw a perpetual increase soon after the first partition of Bengal in the year 1905. The parameters of division adopted by Lord Curzon were that of creating differences between Hindus and Muslims on various bases which enraged the people, quite naturally. Apparently, communal violence was the seed that was to reap many a major change that broke lose upon India. It becomes quite evident that this has been the biggest setback of thriving as the biggest diversity in the world. The influx of many a

religion and communities makes India stand out as well as a victim of differences of opinions, of caste, culture and creed which unfortunately tend to take the form of extreme radicalism. The Indian law defines communal violence as, "any act or series of acts, whether spontaneous or planned, resulting in injury or harm to the person and or property, knowingly directed against any person by virtue of his or her membership of any religious or linguistic minority, in any State in the Union of India, or Scheduled Castes and Scheduled Tribes within the meaning of clauses (24) and (25) of Article 366 of the Constitution of India"<sup>2</sup>.

Rajasthan, with hardly any contribution to the communal riots entered the arena during the events of 1989 and 1990. Tensions broke out between two communities wherein ShailMayaram, in the research titled 'Communal Violence in Jaipur' published in

Economic and Political weekly brings up the atrocities that took place in Rishi Ghalav Nagar, a colony to the North of Jaipur which witnessed the most amount of rioting and mentioned how one of the reasons to propel it was 'Community-formation' between Hindus and Muslims<sup>3</sup>. The problem of communities that move around like sheep in a herd, failing to overcome their inherent differences will always remain entrapped within the never-ending cycle of violence and be the first to produce a negative impact upon outbreak of such issues. The dismemberment of society comes from a close-knitted, narrow outlook towards others. There's a need for appreciation of each other's differences and to learn about one another rather than succumbing to ignorance and intolerance which practically never let peace stay intact.

The problem in today's scenario again is the age-old intolerance and blind belief in rumors that go around twisting facts and morphing them into something far, far away from the reality.

### **Research Methodology**

- Primary data was collected through a questionnaire within the sample size of 50.
- Tools at the disposal are Google forms.
- Secondary data is inclusive of sources such as online and newspaper articles, journals and books.

### **Analysis and Findings**

The survey has yielded an intriguing outcome. When asked if such mishaps are a threat to democracy, quite evidently a major chunk of the sample was in agreement. Furthermore, with very little difference between the percentage of those who believe that the administration of law and order is effective and those who don't, it becomes clear that the

faith in law and order still remains intact however on the contrary many believe it to be inefficient. The common practice of internet shut down has also prevented the spread of rumors, despite the setbacks it posed in routinely activities. A very large number considers the outbreak of riots on 12th August 2019 an outcome of vote bank politics. Politics has always had an irrevocable influence over the minds of public. With only a difference of 20 per cent, majority of the people still feel safe in the walled city of Jaipur. The safety concerns plus other necessities often leads to urbanization and industrialization. It also increases the demands of a population. An unsurprisingly large number feels that the judiciary can play a more constructive role in solving the riots that persist. When it comes down to awareness, nearly more than half are well-aware about the organizations that contribute to maintenance of peace in the city. The outcome also brings to light the point that Jaipur is moving away from secularism owing to the recent communal violence incidences that have surfaced persistently. It seems as though intolerance has dissipated in its entirety. The solutions provided by the government are somewhat effective in curbing the riots across the country. Jaipur, however is still known for its peace and co-habitation since, when compared to other cities it still falls in a liveable zone. It's believed that the role of local politics isn't justified, considering the present scenario. Fundamental rights were wholly jeopardised during the recent rioting in the walled city of Jaipur. Thus, justifying the term 'mayhem', there's violation of fundamental rights in a city that has never before been a witness to persistent clashes until quite recently.

### **Why do people belonging to minority groups feel insecure in a secular country like India?**

The responses garnered were that it happens due to unethical and unaccommodating mindsets of people because of which the minorities feel uncomfortable to express themselves freely.

### **As per your views, how can we deal with the problem of communalism?**

Following suggestions have been recorded through the public:

- By not segregating the communities in the first place and through increased bonds within different communities
- Mutual understanding amongst people should be promoted
- Better and ethical education should be provided to the youth
- People should check and consider the authenticity of incidents and not blindly fall trap to flying rumours

- Hatred against other religions should be countered tactfully
- People should be taught to respect each and every religion
- Awareness needs to be created and promoted
- Unethical politics must be curbed

**Conflict Resolution in Jaipur** There's a need for ensuring proper implementation of existing conflict resolution bodies in the city such as 'Mohalla Samitis' and 'Shanti Sabhas'. The root cause of communal riots stems from ignorance and lack of education. Hence, there's a requirement of uplifting the mindsets of those at the ground level. The government must step in and prioritise these institutions for the safety of citizens. Even internet shutdown combats the spread of illegitimate rumours at the cost of disruption in day to day activities. With constant shutdowns many professionals and students suffer, however only temporarily. It basically boils down to ceasing the daily routine of people which is the worst outcome of such incidences. Down the line, in the long run it eventually caters to hindering growth of a city, a government and its people.

### **Causes of Riots**

The factors that embitter inter-community relations are the process of 'othering' and normalisation of beliefs such as 'us' and 'them'.

Often times, even vote bank politics adds flame to communal riots across the country. This is when the importance of awareness, that can only come with education comes into the picture yet again, with its dire necessity.

It's also vital to in-still values of peace in the youth. The present mindset cannot be the validity for ensuring a safe future for the adults of tomorrow.

When our differences are used against us, against peace then it's high time the communities think on a larger scale. We dwell in a society before falling under any one community. Hence, co-existence and tolerance is the ultimate solution that can curb the riots.

### **Sustainable Development & Peaceful Societies**

What would be there to sustain when peace has vanished from the face of earth?

The UN adopted 17 Sustainable Development Goals at the United Nations

Sustainable Development Summit in New York in September 2015. FSDS

Trustee Janos Zlinsky was active in the development of these Goals as part of a UN Open Working Group (OWG) formed in 2013, whose discussions and proposals formed the

basis of the agreed Sustainable Development Goal Agenda5.

It is a pretty clear fact that the sustainable development goal number 16 stands as an epitome for the need of the hour. Peace is one important thing to sustain for the future generation because without it, even the environment can't be ensured with growth and safety. Peace is the very basis of co-existence.

The Goal's aim is to *“Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”*.

India needs to immediately work upon guidelines accordingly to ensure safety in the long run since it has already adopted its goal but the effect is yet to be seen. With the normalisation of violent behaviour and talk, the society unknowingly births the roots of evils such as communal violence that bring about clashes, resulting in riots.

SDG number 16 is a solution at our very disposal.

People constitute the integral part of a government, especially democracy. It's important to make them aware not only of their rights, but also of what's good for them in the long run.

Deliverance of justice is another important factor that requires an address instantly. All of these areas are efficiently covered under SDG 16. Besides, on a thoughtprovoking basis SDG number 16 technically is a basis for all the other goals since a disturbed society can never sustain anything in the long run.

### **Conclusion**

The rumours spread through social media play a major role in creating a havoc and sense of insecurity amongst people. They get triggered in the name of religion very easily. Many events like mob lynching, Triple Talaq, etc. arose as a feeling of religious biasses in the people. It is the responsibility of the civilised society, intellectuals and administration to bridge the gap of no confidence between communities.

Upon a careful introspection, the outcome of the research is in line with the hypothesis made beforehand. Jaipur is slowly moving away from Secularism; communal violence is taking an entirely new form day by day. Intolerance is a major reason for unlawful influences.

The mayhem in the pink city has been a blot upon the peaceful image it still carries. India is moving away from secularism and slowly free falling into the domain of insecurities, doubts, vengeance, ignorance and lack of respect.

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## UNPACKING THE EFFECTS OF GAMBLING ON GROWTH AND DEVELOPMENT OF INDIAN ECONOMY

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### Abstract

*Access to casino gambling and the commercial gaming industry in India has risen significantly in recent years. As a result, there have been various critiques regarding the legalisation and expansion of such activities since they severely affect the country's growth and development. Though issues of morality centre the debates and controversies over gambling, the goal of this study was not to explore whether gambling is morally 'bad' or not. Our primary concern was to review the impacts of gambling in India through a socio-economic context rather than narrowing it to only social and moral aspects. This paper uses data from National Indian Gaming Commission (NIGC) to analyze economic impacts of commercial gaming and gambling. Our research is intended towards gaining more perspective on gambling in India as well to help the society and policy makers to make more informed decisions towards this industry.*

### Keywords

Gambling, Growth, Socioeconomic development

### Objectives of Study

The aim of this study was to examine the predicaments as well as the benefits associated with Gambling in context to the growth and development of the Indian economy. It addresses economic and related social issues, mainly poverty to evaluate the nature of social as well as private costs and benefits. In turn, this was aimed to reveal the impact of such activities on both growth and development of the Indian economy. It may be significant to study gambling and the commercial gaming industry deeply through the social context but are beyond the scope of this study.

### Hypothesis

Gambling and its proliferation in the current Indian economy is expected to bring significant economic growth. Economic development, on the other hand would be determined by weighing private and social costs with private and social benefits. Costs are anticipated to be greater than benefits, suggesting poor economic development.

**Research question: Unpacking the effects of gambling on the growth and development of the Indian economy.**

Gambling is heavily restricted in India and only selective activities can be undertaken that include lotteries and horse racing. For instance, gambling in the form of Casinos is legal and regulated by government in the states of Goa, Sikkim and Daman. Moreover, these activities generate high revenues in the country. As gambling continues to become more popular and prevalent, there are increasing public debates and controversies regarding the costs and benefits associated with this sector of the Indian economy. It is believed and strongly agreed by economists that gambling in India is dangerous for the economy since a large sector is informal and unregulated by the government. Thus, this is a main concern for the country as it is contributing significantly to the problem of poverty in the country. Another concern is that unregulated and informal gambling would produce numerous other negative effects on the Indian society and various stakeholders. These include negative consequences for gamblers themselves such as family breakdowns caused by problematic gambling as well as the negative externalities imposed on society, such as increased violence and crime.

On the other facet of the debate, various supporters and politicians in favour of gambling operations argue that state lotteries and casinos have a large revenue generating potential which may translate to growth and betterment.

Thus, this paper would study, in depth, the impacts of gambling operations on both economic growth and development since they are expected to provide different conclusions regarding the nature of the costs and benefits in each case.

**Background Research**

In recent years, there has been a substantial rise in both access to casino gambling and personal bankruptcy rate. A parallelism between convenient access to gambling and high bankruptcy rates might also occur if distressed communities are more receptive to the introduction of casinos than prosperous communities. For instance, Chinese smartphone brand Gionee is on the verge of bankruptcy since the company has failed to pay its suppliers and its chairman has lost over \$144 million to gambling in a casino and the shops could be soon shutting.

Barron et al. (2002) note the possibility that a destination resort casino may be a net exporter of 'negatives' given the fact that many of its patrons are tourists who take their problems, including financial losses, home with them. It has been also founded that the growth of Indian gaming has affected Native Americans living on or near reservations, and affected nearby localities and regions.

Though Indian Gaming has strengthened local economies by providing jobs, supporting local vendors, boosting tourism and generating new tax revenues. On the contrary, gambling raises the increased presence of casinos and state lotteries results in relatively more bankruptcy filings in the states that offer them.

This information encouraged us to explore the effects of gambling in greater depth and relate it to the socioeconomic aspects of India.

### **Data analysis: economic impacts of gambling in India**

Before analysing the economic impacts of gambling specific to India, it may be essential to discuss general impacts of such activities to compare and conclude whether gambling is affecting the economy positively or negatively in monetary terms.

Gambling leads to an increase in the **government revenue** in various forms. It can be received directly through the provision of gambling as well as indirectly through indirect taxes by firms and companies providing gambling and casino facilities. Taxes can be received in various forms including property tax, goods and services taxes, corporate income tax and licensing fees.

Secondly, there are transitions, usually positive in the quantity and quality of **public services** (e.g. education, health care, infrastructure, etc.) provided by the government as a result of increased government revenue from gambling.

*Note: This impact can also be discussed in social aspects but is included here since it is closely associated with public or government revenue and these public services can also be defined in monetary terms.*

While, government gains from the operation of these activities, it also incurs **regulatory costs** to ensure regulation of gambling activities.



Moreover, gambling adds to **infrastructural value** in the economy as a result of the introduction of buildings such as casinos, roads, and infrastructure improvements which contribute to the capital wealth of the community. On the other hand, government also allocates revenue to upgrade the infrastructure that is needed to provide new gambling services. Such services include road maintenance, police services, etc. and contribute to **infrastructure costs** that are covered by government revenue collection.

It is now important to understand the economic impacts of gambling operation in the Indian context to understand its effect on the economy.

The Law Commission of India (LCI) suggested that sports betting be legalised in India (Abraham, 2019) since it was expected to show an increase in the growth of the economy.

The graph above shows the trend of gross gaming revenue in different financial years. The data is collated by National Indian Gaming Commission (NIGC). All figures on the graphs are in billion. It is evident from the graph that there is an increase in the revenue generated from gambling and has reached to a value equal to \$33.7 billion in the 18th financial year. There has been a 4% increase in the revenue from 17th to the present (i.e. 18th) financial year. Moreover, according to data collected by Klynveld Peat Marwick Goerdeler (KMPG), a well-known provider of Audit, Tax and Advisory services, the gambling revenue was around Rs. 4,380 crores in FY18. Data collected by both organisations is approximately same.

Similarly, according to The Federation of Indian Chambers of Commerce & Industry (FICCI), the Indian government is forfeiting a revenue of around Rs. 19,000 crore every year by declaring sports betting as illegal. Therefore, it is evident that gambling is beneficial for the economy in terms of monetary growth.

Thus, the revenue collection is seen to be increasing every year and as discussed above, it can lead to improved public services, infrastructural value and eventual economic growth in India.

There has also been creation of employment in states where gambling is prevalent. For instance, the gaming industry has created 7000 direct and 3000 indirect jobs in ancillary sectors like marketing and financial services (Abraham, 2019.)

In conclusion, government and policy makers should focus more on making policies that aim at regulating gambling so that there is no loss of revenue that can be generated from these activities.

**Development or regression? - Analysis of socioeconomic impacts of gambling in India.**

Indian Gaming has been estimated to produce \$4 billion per year in Gross Revenues and \$750 million per year in net revenues. This represents approximately three percent of all gambling in the United States and the single largest source of revenues for Indian tribes. The funds raised from Gambling sector are used in the social welfare, education and health needs of the Indian tribes. Virtually, the proceedings from Indian Gaming activities are used in the creation of Infrastructure by the Indian Tribes which helps to raise the value of assets. In today's world, India stands ninth, by gross profits, in the list of the leading global betting and gaming nations. Gambling propensity of people is deeply entrenched in the tradition and culture of Indian society. It leads to impact the social and economic life of the country. Gambling boom fuels new wave of super-rich.

For hundreds of years, gambling was termed as immoral and banned. J.S. Mill, "the saint of rationalism," (called by Gladstone) was raising question on licensing of gambling and prostitution 150 years ago. An activity is branded as illegal because the government considers it wrong and undesirable as it is likely to have a negative impact on the society. Currently, the future of the legal status of poker in India looks bleak. Since, gambling is a state subject, different states have reacted differently and made the scenario very obscure. It depicts the rundown situation in economic sense also. In the next few years, one may see a change in the attitude of Indian courts in favour of classifying poker as a game of skill.

The preponderance illegal economy of India has both positive and negative impacts. As casinos provide employment to masses and it leads to growth in country. But on the other hand, illegal funds have various distorted impacts. Gambling in particular transfers money from the poor to the rich – as the proportion of the sum of money from poor person's income betted on game is high as compared to rich. Despite employment creation the net effect of illegal economy is bad for income distribution. Illegal activities often generate super profits, which are then redeployed in the main stream economy. It leads to the problems like money laundering, inflation, improper allocation of resources within the economy. The youth class of India is obsessed with making (not earning) quick money. The illegal economy of India complicates and undermines the management of the economy. Poverty serves as an important risk factor for problem gambling. Problem gambling is associated with the harms like emotional (such as guilt, shame), legal, interpersonal, housing and financial. Unorganised gambling in the form of betting in India takes place at very large scale. Illegal activities become a coping strategy to deal with complex social and health problems for the people involved in such illegal activities.

Sometimes, poker players may face problems like significant job loss, homelessness, mental illness.

Gambling industry in India has an important economic dimension. Gambling in India serves two purposes: one is to introduce a new concept in the entertainment and hospitality industry and the other is to generate revenue for the state. It is also a good way for employment generation and reduction of crime rate. In the absence of money laundering and compulsive gamblers it has multifold effects on the state's economy.

Stock market gambling has become very popular in India now a days. Common people of India use to invest in shares. The Sensex in India is rising too swiftly. A study of Budget 2002- 03, shows that there is a tremendous increase in states' profits from lotteries. Sports gambling in India has become very widespread particularly in the urban centres of India, mostly in cricket. Thus, we can say that gambling in India is making a growth in economy by rising GDP but not the development of the economy.

### **Conclusion**

The study allowed deep data interpretation that provided some very interesting conclusions about the effects of Gambling in India.

Primarily, the hypothesis made at the beginning of the research is supported by the data and the information used in the study as the data shows that there is an increase in the revenue generated from gambling, leading to growth potential. On the other hand, there have been problems as a consequence of such activities such as poverty, homelessness, etc.

Since there is a 4% sustained increase in the gross revenue from gambling since the 15th financial year, an increase revenue generation potential is visible. The current calculated revenue (in the 18th financial year) has risen to \$33.7 billion.

Although there is an increase in the revenue generated, illegal gambling persists in the economy, leading to poverty and its after effects such as homelessness, depression and other mental issues.

Thus, while economic growth is possible in India as a result of increased gambling, the standards of living are expected to fall, hindering economic development.

This study provides a general overview of the socioeconomic impacts of gambling in India that is extracted from critical investigation of the data taken from various trusted organisations. However, it may be necessary to account for the various sectors of economy associated with gambling such as agriculture in order to analyse problems and frame policies for these sectors accordingly.



Only a narrow range of sources are used in the study since there were very few available for the Indian economy. However, the data of revenues used is verified from different sources and is approximately the same. Similarly, the data collected by different organisations used in this study is approximately same and thus reliable for research.

For further research, it may be necessary to investigate gambling and its effects by deeply considering social effects in order to make conclusions about the effects of such activities on economic development. Moreover, it may be necessary to use first hand resources such as interviews and questionnaires to grab more information about social impacts of gambling in India.

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## CIRCULAR ECONOMY

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### Abstract

*There has been a growing importance of the concept of the Circular Economy as a way to attain sustainable development. A large number of studies have been performed by various scholars, in order to find ways of implementing policies and devising methods to adopt this structure of economy and reap its benefits. Business leaders and governments around the world are increasingly looking beyond the linear 'take, make, dispose' model of growth, with a view to operate a strategic move towards an approach fit for the long term. Circular Economy tries to encourage a change in the way that it requires the society to focus more on making products which last for as long as possible rather than resorting to replacing them frequently. The circular economy attempts to mimic the biological world where nutrients metabolized by life processes are produced with the help of other living systems, it tries to achieve the same results in technical cycles through strategies such as reuse, repair, refurbish, re-manufacture, and recycle.*

*In the recent scenario majority of the countries are following the linear economic structure which began during the industrial revolution in the 17th century with the exploitative scientific and technological innovations which ignored the limits of the environmental and the long-term damage they were causing to society. This paper attempts to propose a consensus view of the basic notions of the circular economy framework and highlight its relationship with eco-innovation, also how a country can make its transition from a linear or reuse economy to a Circular Economy.*

*To develop a global circular economy, a number of countries have taken considerable steps in the transition of their economy. In the middle of all this the position of India, its stance on the idea of SDGs and the various policies as well as their implementation have been reviewed in this paper. As the fastest growing major economy of the world, today, India is uniquely placed to deliver on its commitments to inclusive and sustainable development. India has played key roles externally as well as internally in shaping of SDGs and keeping the balance among its three pillars - economic, social and environmental. How the National Development Goals should be mirrored in SDGs so as to allow the country to make a jump from its underdeveloped and subaltern economy to a circular economy in a prudent way has been discussed in this paper.*

### Keywords

Circular Economy (CE), Closed cycles, System thinking, 2nd generation biofuels, Indian



Resource Panel (InRP), Public Private Partnership (PPP) model, Resource Efficiency (RE).

### **Objectives of the study**

- To analyze the model of Circular Economy.
- The difference between circular and linear economy.
- The ways in which Circular Economy helps in achieving the sustainable development goals.
- Scope of Circular Economy in India.
- Creating awareness among the people about the need for sustainable development and about the circular economic structure.

### **Review of the literature**

The paper used a narrative literature review approach for searching, organizing, and analysing the literature on CE and SDGs. The first step of the review was a keyword search, using online search engines Google and Google Scholar and academic databases Scopus, and search engines of the academic publishers Wiley Online Library and ScienceDirect to search and collect academic and non-academic literature relating to CE and the SDGs.

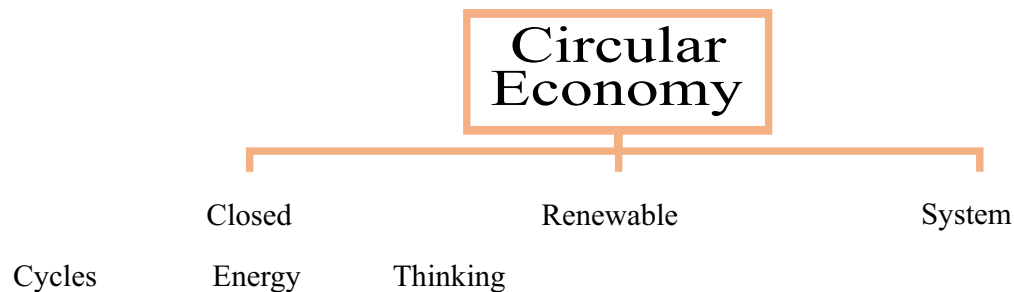
In total, more than 30 pieces of literature were reviewed and informed the CE SDG matching exercise. We aimed to achieve a balance between comprehensiveness and relevance to the topic. The literature review revealed that information about CE practices is widely dispersed over different fields and media. One of the contributions of this exploratory narrative literature review is the gathering of relevant materials from the fields of environmental sciences, industrial ecology (IE), business studies, and development studies.

### **The Circular Economy: a step in the right direction**

International organizations including the United Nations (UN), the Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (WEF) have increasingly called for a new development paradigm: one that prioritizes pathways for poverty reduction and improved standards of living, while promoting resource efficiency and easing pressure on natural resources and the environment. The answer for the problem came not as a straight one but rather circular, the Circular Economy model. A circular economy is an economic system of closed loops in which raw materials, components and products lose their value as little as possible, renewable energy sources are used and systems thinking is at the core of the system. The novelty of

the 'circular economy' (CE) as a unifying concept is that it is comprehensive. It brings different elements together into a single framework to enable a more systemic and cohesive approach – in theory, allowing policymakers and businesses to better manage trade-offs associated with resource efficiency practices. Where the CE is successfully deployed, it not only reduces waste and resource needs but also unlocks additional value from natural resources.

The process of the Circular Economy can be broken down in three types of activities:



### 1. Closed Cycles

In a circular economy, material cycles are closed following the example of an ecosystem. Every residual stream can be used to make a new product. Toxic substances are eliminated, and residual flows are separated into a biological and a technical cycle. The products are made by the manufactures, then distributed to the consumers and then the most important step taken back by the producers, leaving behind the harmful substances. Technical materials such as fossil fuels, plastics and metals have limited availability and cannot easily be recreated. Hence, the different reuses within the techno-cycle are (see figure 1):

- o Maintenance (& repair): Repair and maintenance during use to extend the lifespan.
- o Reuse/redistribution: Direct re-use by re-marketing a product.
- o Refurbish/Remanufacture: The thorough refurbishment and repair of a product by the manufacturer.
- o Recycle: Retrieving parts or materials from the product for reuse.

These cycles are differently placed depending upon the damage or the time of use of the product by the consumer.

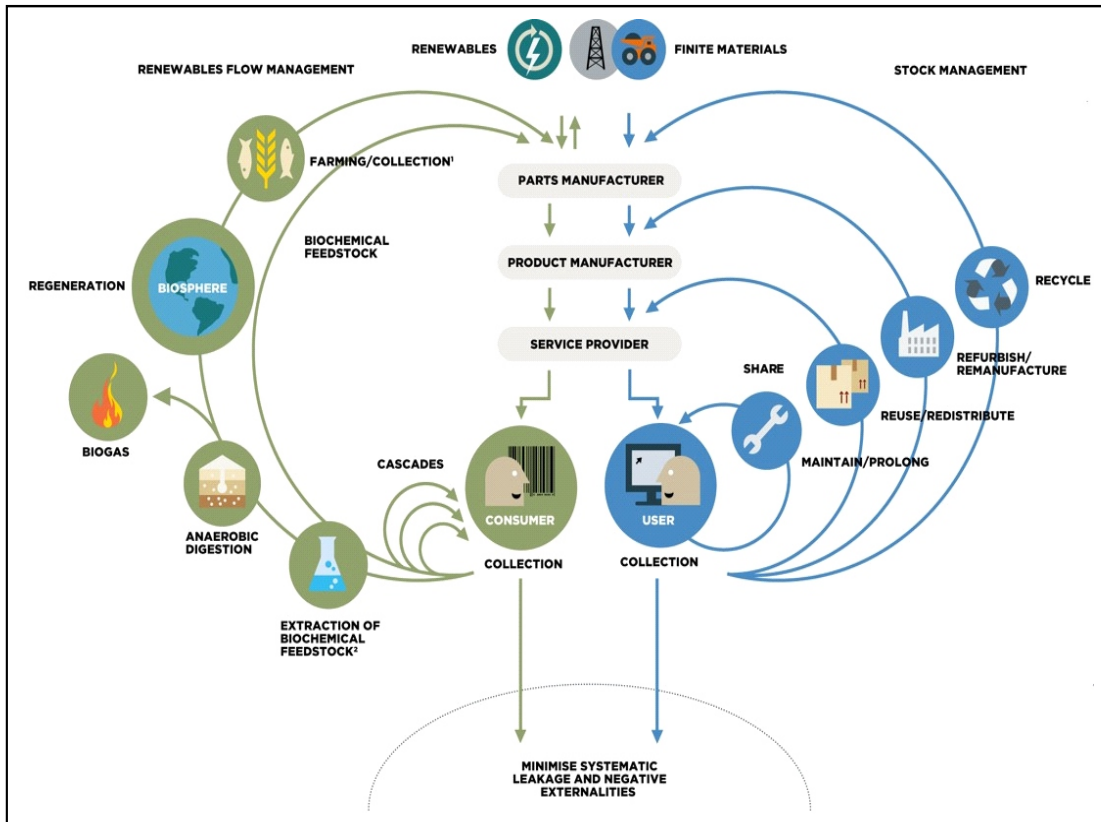
Within the bio-cycle, reuse takes place in cascades. Cascading means 'using (part of) a product for another application'. When a product is no longer able to perform its initial

function, it is passed on for reuse to serve a completely new purpose depending upon the raw material strength. The rule of thumb is smaller the cycle more valuable will be the retrieved raw material.

## 2. Renewable Energy

The circular economic system is fed by renewable energy sources. Because it is not possible to recycle energy, there is no mention of

**Figure: Circular Economic System fed by renewable energy resources**



Source: Ellen MacArthur Foundation energy cycles or energy cycles, but of 'cascade type energy flows. An example of this is the co-production of heat and power.

## 3. System Thinking

Many real-world elements, such as businesses, people or plants, are part of complex systems where different parts are strongly linked to each other. Every actor in the economy (company, person, organism) is connected to other actors. Together, this forms a network in which the actions of one player influence other players. A system thinkers' goal is not so much to see that which no one has seen, but to see that which everyone sees in a totally different way.

E.g.

- One for One' program: - offers companies the opportunity to compensate for the raw material consumption of new mobile phones upon purchase. This is done by linking the purchase to the collection and responsible recycling of an old telephone.
- SMARTCLUSTER: - A device that separates the unused cement stone from the concrete rubble allowing cement stone to be used directly in concrete production and thus saves cement and CO2 emissions.
- MNC's like Philips offering light as a “Circular Lighting” service and buying back used equipment by Philips Medical Systems.
- VANDERLANDE is the world market leader in airport baggage systems and sorting systems for parcel and postal services has designed a circular conveyor belt in such a way that it can be easily and quickly disassembled, and all materials can be reused to a high standard.

### Linear Vs Circular Economy

For many years, most manufacturers and production facilities have operated using a linear economy. This 'take, make, dispose' method of manufacturing means that instead of recycling the raw materials and any waste associated with the production process, they are disposed of instead. Not only does a linear economy produce a huge amount of unwanted, and sometimes dangerous landfill waste, it also puts a lot of pressure on the country's existing resources.

Figure 1: Model of linear economy



Source: <https://www.ciee.org/go-abroad/college-study-abroad/blog/circular-economies-lessons-monteverde>

The circular economy is more profitable and less harmful to the environment and its main goals include sustainable economic growth, increased competitiveness, and new jobs. In order to create a truly sustainable future for generations to come, it has to be made sure that all manufacturing processes are carried out with a circular economy in mind. The world population is booming and at the same time it is draining out the Earth's natural resources at an alarming rate. The growing human need for food, water, housing, clothing, and recreation take a heavy toll on the environment.

### From eco-efficiency to eco-effectiveness

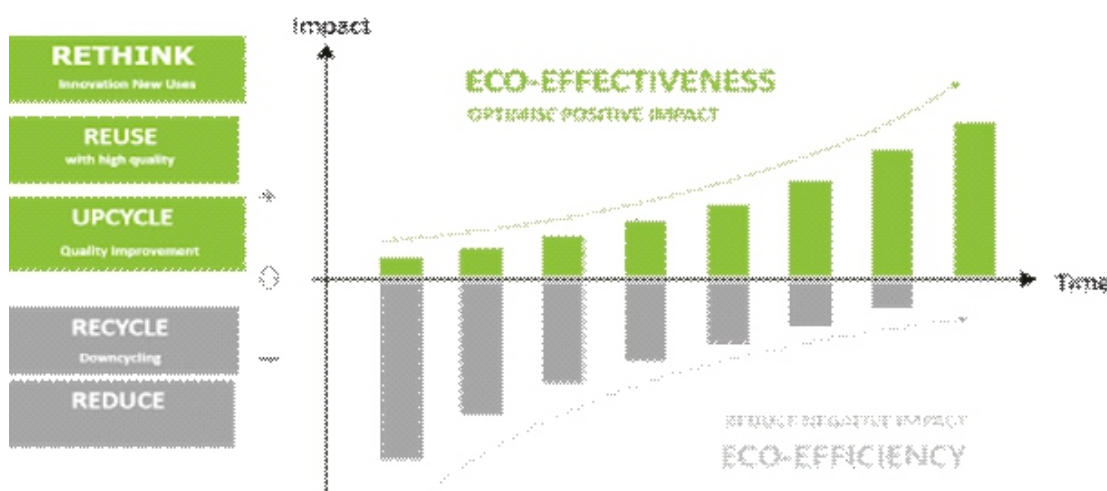
#### o Eco-efficiency: -

When working on sustainability within a linear economy, the focus is on eco-efficiency. This is to minimise the ecological impact for the same output. This will extend the period in which the system becomes overloaded.

#### o Eco-effectiveness: -

Within a circular economy, sustainability is sought in increasing the ecoeffectiveness of the system. This means that not only the ecological impact is minimized, but that the ecological, economic and social impact is even positive.

Figure 2: Eco-effectiveness of circular model



**Source:** Ellen MacArthur Foundation

In order to achieve eco-effectiveness, residual flows must be reused for a function that is the same (functional recycling) or even higher (upcycling) than the original function of the material. As a result, the value is fully retained or even increased. For example: concrete is ground into granules that are used to produce the same or a stronger wall again. This is different in a linear economy. An eco-efficient system typically works on downcycling: a (part of a) product is reused for a low-grade application that reduces the value of the material and makes it difficult to reuse the material flow again. For example: concrete residues are processed in asphalt in the road surface.

### **Circular Economy and SDGs**

In recent years, the circular economy has gained increasing prominence as a tool which presents solutions to some of the world's most pressing cross-cutting sustainable development challenges. By addressing root causes, the concept of a circular economy, an economy in which waste and pollution do not exist by design, products and materials are kept in use, and natural systems are regenerated provides much promise to accelerate implementation of the 2030 Agenda. The circular economy holds particular promise for achieving multiple SDGs, including SDGs 6 on energy, 8 on economic growth, 11 on sustainable cities, 12 on sustainable consumption and production, 13 on climate change, 14 on oceans, and 15 on life on land.

World Economic Forum (WEF) in January 2019 year's circular gap report notes that, of the 92.8 billion tonnes of biomass, fossil fuels, metals and minerals that enter the global economy annually, only nine percent are re-used. In parallel, the notion of a Circular Economy allows policymakers and businesses to better manage trade - offs associated with resource efficiency practices. Where the CE is successfully deployed, it is not only reducing waste and resources needs but also unlocks additional value from natural resources.

It is an alternative economic framework that has been gaining significant momentum over the last few years, also seen as offering an “approach for achieving local, national, and global sustainability”. This growing CE interest is reflected in numerous actors including governments, cities and not least many large multinational companies actively exploring ways to shift to circular economy practices. According to the study, implementing CE practices can directly contribute to achieving 21 SDG targets.

#### **SDGs directly benefitting from CE practices**

SDG 6 – Clean Water and Sanitation: CE practices such as small-scale water purification, sustainable sanitization, wastewater treatment, water reuse and recycling, nutrient recovery, biogas systems etc. can help increase access to safe drinking water and

equitable sanitation, reduce pollution and improve water quality.

SDG 7 – Affordable and Clean Energy: Renewable energy systems, incl. small-scale biomass technologies and 2nd generation biofuels, energy (heat) recovery and improved utilisation in industrial systems (e.g. industrial symbiosis) all contribute to this goal.

SDG 8 – Decent Work and Economic Growth: New circular business models are a major potential source of increased resource effectiveness and efficiency, waste valorisation and green jobs.

SDG 12 – Sustainable Consumption and Production: CE practices are all about decoupling economic activity from resource use and associated environmental and social impacts, which is also very much at the heart of this goal.

SDG 15 – Life on Land: At the core of CE practices is the aim to restore natural capital. This involves adopting sustainable and regenerative agricultural and agroforestry practices that embrace and protect biodiversity and returning biological material back to soils as nutrients practices which are fundamental for restoring terrestrial ecosystems.

### **SDGs indirectly benefitting from CE practices**

In addition to direct contribution, implementing CE practices can also contribute indirectly to several SDGs:

SDG 1 – No Poverty: Adoption of CE practices, such as repair, remanufacturing and recycling can lead to generation of employment, which indirectly contributes to poverty reduction. CE practices, e.g. related to water management and agriculture, also build resilience.

SDG 2 – Zero Hunger: Implementing CE principles in local agriculture, e.g. composting and diversified integrated farming practices, improves soil which increases farm productivity and system resilience. Combined with circular food system initiatives that reduce food-waste and cascading of food-waste into animal feed can free up farmland for human-consumption.

SDG 11 – Sustainable Cities and Communities: With expected three quarters of world's population living in cities in 2050, a transition to a circular economy is imperative for reducing cities' resource and environmental impacts. Also, CE principles such as modular, adaptable and flexible building design, can help enable access to housing for low-income groups.

SDG 14 – Life below Water: Preventing waste generation and leakages from land-based activities through CE practices will directly reduce waste entering the oceans. This also includes recovery of nutrients from wastewater streams before entering oceans.



### **SDGs facilitating the uptake of CE practices**

The study also finds that a number of SDGs, including 52 targets, would positively contribute to the uptake of CE globally”. In CE terminology these factors can be seen as some of the important enablers of the CE transition. They include:

**SDG 4 – Quality Education:** Efforts towards several of the targets related to e.g. equal access to technical, vocational and tertiary education – in particular when combined with focus on CE, systems thinking, design for circularity, entrepreneurship and innovation - are fundamental for enabling circular practices.

**SDG 9 – Industry, Innovation and Infrastructure:** While CE practices will contribute directly to retrofitting industries to make them more resilient and sustainable, achieving targets under this goal is also important for enabling a CE. This includes new infrastructure, such as for renewable energy, circular water and waste resource management, reverse logistics, support to research and innovation as well as ensuring access to suitable financing.

**SDG 10 – Reduced Inequalities:** Social and economic inclusion has strong synergies with promoting safe working environments - important not least for informal waste sector workers in developing countries. This goal also relates to equal representation of developing countries in international collaboration, equal access to technical support and financing for a CE and ensuring that trade agreements facilitate rather than counteract equitable distribution and circular flow of resources.

**SDG 13 – Climate Action:** CE practices contribute directly and indirectly to mitigating climate change and increasing resilience. The 2019 circular gap report finds that implementing CE practices could reduce GHG emissions by more than a third by 2100, in addition to existing low-carbon technologies. Additionally, achieving targets on climate related policies at national, regional or local levels, incentives, financing mechanisms as well as increased climate awareness are likely to facilitate uptake of CE practices.

**SDG 16 – Peace, Justice and Strong Institutions:** Improved and more equitable access to basic resources as well as increased resilience of natural systems, aided by CE practices, contributes to environmental justice and can help indirectly avoid environmentally triggered social conflicts. Additionally, achieving targets under this goal through stronger institutions, reduced corruption and more transparency will help enable CE practices - such as in creating healthy markets for waste resources for reuse and recycling.

**SDG 17 – Partnership for the Goals:** Achieving targets relating to debt relief for developing countries, more equitable free trading systems and agreements, enhanced macroeconomic stability, enhanced global policy on sustainability and developing



countries' access to technical support, can all facilitate CE practices according to the study.

Almost all the SDG goals and in particular SDG 17 – Partnerships for the Goals, have targets that can allow for partnerships and collaboration that could help promote CE practices. Increased collaboration is frequently highlighted as imperative for enabling the shift of CE. This includes multi-stakeholder collaboration within and across supply chains, networks to enable circular business models and between private and public sector to align incentives and remove barriers for CE.

### **Scope of Circular Economy in India**

Today, products are designed to have a particular shelf life, meaning they only last for so long before we are compelled to dispose of them. This could be either because we think we have exhausted its “usability”, or a newer, more efficient version of the same product has been developed. In a constant race to stay updated with the latest and the fastest technology, we involve ourselves into repeated consumption and disposition. This forms a linear pattern, is not as feasibly sustainable when it comes to the environment. As an ever-growing population, India plays a major role in making a global impact on the environment. And the time couldn't be riper than now for the country to recourse to a circular economy. The selected focus areas are crucial for the Indian economy and population in several ways and come with significant potential for circularity. Representing more than two-thirds of spending by urban as well as rural households in India, they are critical to meeting the basic human needs of housing, food, and mobility. Agriculture and the construction industry are the two largest sources of employment in India, together accounting for around 60% of the working population and are responsible for the vast majority of India's raw materials consumption. Additionally, construction and vehicle manufacturing are expecting huge growth over the next decades. Overall, the three focus areas account for more than 30% of India's gross value added.

### **Circular Economy opportunities**

#### **A. Cities and construction: liveable cities with buildings and infrastructure that meet the future needs of India's expanding population**

Circular economy principles can contribute to the unprecedented urbanizing rate of India (an estimated 700-900 million square metres of new commercial and residential space a year) in ways that create economic value and decouple development from the use of virgin, non-renewable resources. Renewable and recycled materials and modular construction methods can minimize waste and reduce construction costs. Buildings can be designed to be adaptable to changing needs and contribute to the regenerative urban

ecosystem during their use phase (energy generation, connection to nutrient cycling systems, etc.).

Systemic planning of city spaces, integrated with circular mobility solutions, can contribute to higher air quality, lower congestion, and reduced urban sprawl. Higher efficiency and lower overall building and infrastructure costs could also help meet the housing needs of the urban poor without compromising safety and quality.

**B. Food and agriculture: a regenerative, restorative agricultural system that combines modern technology with traditional practices to meet India's growing food demand**

Employing half of the country's working population, the agricultural sector remains essential to the Indian economy and vital to the nation's food security. An agricultural system geared towards closing nutrient loops could give the sector a framework for retaining natural capital, boosting economic and ecological resilience, and delivering a stable supply of fresh, healthy, and diverse food to India's growing population.

Reducing food waste across the supply chain would require optimizing production and digitalizing food supply chains to match supply and demand more easily. Urban and peri-urban farming can bring food production closer to consumption, reducing food waste and transportation requirements, composting and anaerobically digesting food waste with no other valuable use and post-consumption nutrients.

**C. Mobility and vehicle manufacturing: a convenient, multimodal transport system enabled by digital technology, for resource-optimized and efficient mobility**

Circular economy principles can contribute to a mobility system that would meet the growing needs of the Indian population, especially in cities, while limiting negative externalities, such as GHG emissions, congestion, and pollution. Mass transit as the backbone combined with other forms of transport – including vehicle as a service – for convenient last-mile connectivity can create convenient door-to-door journeys. Technological innovation building vehicles that rely on zero-emission propulsion technology could reduce negative externalities.

**Technological advancements and processes for Circular economy**

Under each area of opportunity mentioned above, new machinery and methods have come up which have shown a positive response in reducing the waste generation.

**A. Cities and Construction: -****a. Biopolus Water System-**

Redesigning the urban metabolism encourages cities to invest in effective water management solutions that close water, food, nutrient, and energy loops while delivering social benefits. Biopolus offers an integrated network of water treatment facilities (metabolic hubs) in aesthetically appealing multi-functional buildings that can provide sanitation solutions. The hubs occupy as much as 60% less land, save up to 35% on operating cost compared with traditional solutions, and can be installed with minimal disruption to local residents. Each hub can serve 5,000-50,000+ people and use innovative Metabolic Network Reactor (MNR) technology in a controlled, bio-engineered process to tailor water output for specific uses, including irrigation, industrial processes, and potable water. The hubs can be designed in modules to provide functions of the community's choosing, such as water reuse, energy or materials recovery, bathroom blocks, laundry facilities, and even food production.

**b. Circular Building-**

THE CIRCULAR BUILDING Arup's circular building project, launched in September 2016, used technology to maximise utilisation of components and materials. It is designed for disassembly, using non-toxic and prefabricated components that can easily be taken apart. There is also transparency into building material composition, and digital technology tagged all items, from window frames to individual fittings, each with a unique QR code containing information needed for reuse. This improved access to information helped multiple stakeholders collaborate more efficiently on building design, construction, and operation and enabled Arup to contract with suppliers to take back materials after their use.

**B. Food and Agriculture****a. E-Choupal**

Launched by the Indian conglomerate ITC, e-Choupal seeks to increase the economic and competitive capacity of farmers and agricultural communities by providing internet access to rural farmers. It gives farmers access to market information and best practices via computers in the homes of farmers trained to use ITC's agricultural website. The system provides demand information for available markets, reducing the mismatch of supply and demand that often forces farmers to

discard parts of their produce. Farmers have definitely benefitted from e-Choupal. Data on acreage and yield, 2000- 2012, shows that profits of farmers accessing the e-Choupal platform almost tripled. In 2015 four million farmers used the service via 6,500 e-Choupal access points spread over 40,000 villages in 11 states.

#### b. INORA

Institute of Natural Organic Agriculture, an NGO based in Pune, INORA works in research, education, and technology transfer for regenerative farming and nutrient recovery, specifically composting and anaerobic digestion. INORA's decentralised technological solutions enable the transformation of food waste into nutrients that the agricultural system can use in both rural and urban settings. The company processes material for over 300 housing societies, 35 schools, and 14 industrial projects and works with some 100,000 citizens and 300 organic farmers. INORA's anaerobic digestion technology can be small enough for use in a single building, with units built to digest about 3 kg of food waste a day that produce 90 minutes' worth of gas for cooking, as well as 60 litres of liquid organic fertiliser and has also implemented industrial composting solutions that can process 2 tonnes of food waste a day and produce 400 kg of compost.

### **B. Mobility and Vehicle Manufacturing**

#### a. MAHINDRA E2O AND ZOOMCAR

Mahindra launched the e2o, an EV designed for urban use in 2013. The car is available for purchase or use through car-sharing pools. The EV has a charging chord that plugs into a regular 15-amp socket and needs 90 minutes to power a cruising range of 100-130 kilometres. Mahindra's collaboration with the carpool Zoomcar allows users to pay per hour, day, or week, rather than having to own the car.

#### b. HELSINKI'S MOBILITY PLAN

Helsinki, the capital of Finland, developed a point-to-point, mobility-on demand network. The network will integrate all transport options, including buses, taxis, carpools, and shared bikes, on a single payment platform. The user will access the platform via a smartphone app. The app will function as a journey planner, with the user entering origin and destination and receiving available travel routes. The transport system will be flexible and effective. The user will buy kilometre-based packages based on time of day, weather, and other variables. Bus routes will be dynamic, changing based on demand. Ultimately, the transport system is expected to be convenient enough to compete with private car ownership.

## Advantages

1. A circular economy development path in India could create an annual value of 14 lakh crore (US\$ 218 billion) in 2030 and 40 lakh crore (US\$ 624 billion) in 2050 compared with the current development scenario.
2. By adopting circular economy approaches, businesses could achieve material cost savings and increase their profits. The key drivers of value creation include better product design, innovative business models, and reverse logistics.
3. A circular economy development path could significantly mitigate negative environmental externalities. For example, greenhouse gas (GHG) emissions could be 23% lower in 2030 and 44% lower in 2050 compared with the current development scenario, helping India deliver on its targets promised in the recently ratified Paris agreement. Other negative externalities, such as those resulting from the linear use of virgin materials and water, and the consumption of synthetic fertilisers, would also decrease.
4. A circular economy could deliver benefits for the Indian population, such as cheaper products and services and reduced congestion and pollution. In all three focus areas studied, the analysis showed that the cost of providing the expected services for each citizen would be considerably lower on the circular development path than on the current path. While businesses will capture part of this value, most of it would boost disposable income. The lower costs could also help India implement such initiatives as Pradhan Mantri Awas Yojana (Housing for All) and the National Food Security Mission. The circular scenario would also include more zero-emission vehicles reducing pollution and their associated negative effects on health and costs.
5. Leveraging digital technology to enable the circular economy could reinforce India's position as a hub for technology and innovation. The interplay between circular economy and digital technology creates fertile ground for value creation and given its renowned IT sector, India is particularly well positioned to leverage these opportunities.
6. By actively leveraging and reinforcing circular economy opportunities now, India could move directly to a more effective system and avoid getting locked into linear models and infrastructure. As the systems that provide housing, food, and mobility require development in a growing economy like India's, the country could realise significant value by developing them in a circular, rather than a linear, way. For example, only about 2% of the Indian population currently owns a

car, but the demand for mobility is increasing. Designing and building a mobility system that enables safe, convenient, and comfortable travel without car ownership could meet people's mobility needs with lower cost and fewer negative externalities than in the current development scenario.

7. High-growth markets like India can achieve competitive advantage over mature economies by moving to a circular economy. Applying circular economy principles to new activities from the start would firmly set the direction of travel and favour early success. In contrast, because of existing linear lock-in, mature economies would need to transform large parts of their systems to reach the same level of circularity. This advantageous starting point could provide India and other high-growth markets with a competitive advantage over those economies.

### **The Way Ahead**

India possess the full capacity to integrate the Circular Economy model in its system. One of the most substantial steps is the introduction of the Indian Resource Panel (InRP) which is an advisory panel by the Indian Government to prepare a meticulous roadmap for appropriate utilization of secondary sources.

Another challenge for the government is the lack of appropriate statistics. There are conflicting reports on how much we generate and no appropriate methodology of how we estimate the potential of resources. So, there is a meagre scope of a Public Private Partnership (PPP) model in dealing with Resource Efficiency RE.

Subsequently, the InRP should put forth an approved methodology to build credible data so that private entities are encouraged to participate.

Developing countries knows how to manage their resources when it comes to sorting, separating, and the other low hanging fruits. But, when it comes to advanced technologies, there is scope for them to incorporate some expertise. This can be done by creating links between the research institutions and industry. There is a need for a coherent roadmap that ushers mutually complementary and boosting transition towards a circular economy. This is an opportunity which the world should harness, to take the lead in a circular model of development without sacrificing economic growth.

### **Conclusion**

The CE concept is fast becoming a new model for resilient growth in both developed and developing economies. In particular, it offers a viable alternative strategy for industrial development and job creation compared with the traditional manufacturing led growth pathway for developing countries. The coming years offer a critical window of

opportunity in which to set in motion an inclusive, global vision for the CE which is aligned with existing policy commitments at both domestic and international level. As countries around the world ratchet up their climate policy ambitions in 2020 under the Paris Agreement and take stock of progress against the 2030 Agenda for Sustainable Development, the CE offers a useful pathway through which to embed sustainable resource use at the heart of industrial growth. Robust governance frameworks, in inclusive policies that harness existing circular activities in the informal sector in developing countries, and in partnerships at national, regional and international level to support cross-border trade and knowledge exchange – can provide the impetus required to deliver on circular practices at scale.

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## **INFLUENCE OF MEDIA ON PUBLIC PERCEPTION – A SPECIAL CONTEXT TO SANITATION IN JAIPUR CITY**

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### **Abstract**

*There are psychological aspects to what a person thinks about something, and what are his beliefs and perceptions based on, and there are some factors affecting his cognitive behaviour on which this research paper is focused on. This paper will establish a relation between Media practices and its effects on people's thoughts and how they perceive the world and how seriously people take issues like sanitation and hygiene which are interest of a nation's reputation, threat to the heritage and economy and along with that it will help in knowing the mindset of people of Jaipur and the reality behind the sanitation programs in the city like Swachh Bharat Abhiyan, the rank Jaipur Railway Station won recently for being one of the most clean Railway Stations of India, the reputation which Jaipur International Airport has been holding along with other initiatives.*

*Media, including written formats, televised and social media platforms used by some media houses and independent journalists, alters perception of public exposed to it. Primary research methodology will be a part of this research paper in which surveys will be done by the team.*

### **Keywords**

Swachh Bharat Abhiyaan, Sanitation, Jaipur Railway Station

### **Review of the literature**

John Dollard and Neil E. Miller in their book "Frustration and Aggression" wrote about how people can learn a behaviour by not actually doing it by themselves. Another American- Canadian psychologist Alber Bandura in his book "Aggression: a social learning analysis" (1971), explained and stretched this concept further and elaborated it. George Gerbner in his book "The Global Media Debate" put forth the cultivation theory in which he explained how people may mirror the behaviour they repeatedly watch on the TV.

### **Objectives of Study**

- To find out the reality behind human cognitive functioning.



- To find out the role of media in creating awareness about real issues.
- To find out the reality behind government's schemes and their fulfilment.
- To find out if media really alters public's perception.
- To find out the sanitation conditions of the city.

### **Research Methodology**

Primary research methodology was used with the help of google forms which included a survey. Secondary research methodology was also used for this paper.

### **Findings**

- With the data collected from the survey, it was found that 68.8% of the population thinks that nowadays media has become more consumer oriented.
- More than 75% of the population is satisfied with the sanitation conditions of the city.
- Out of whole, 87.5% population feels that it is not the responsibility of any authorities or government to keep the city clean. It is their own duty instead.
- 75% population thinks that media can mould a mind blank individual to create a view upon certain topics.
- 87.5% population thinks that the news can affect their opinions on certain topics.
- Only 37.5% population thinks that media gave their best to put light on such day to day issues like sanitation. One example was of Jaipur Railway station getting 1st rank on cleanliness index.
- 75% population believes almost everything said by the media houses through any source.
- 87.5% population believes that they can be influenced easily by the media.
- 43.8% population is dissatisfied with the current news sources. They don't believe them to be trustworthy.

### **Conclusion**

Media houses influence public's perception regardless of the source they are broadcasting the news with. Most of the people from the city are satisfied with the sanitation conditions of the city. The government is not to be held responsible for the bad conitions. It is the duty of one's self to keep their surroundings clean. **References**

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## POPULATION BOOM: ASSET OR LIABILITY ON ENVIRONMENT

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### Abstract

*"Don't consider 136 crore people as a 136-crore stomach to feed, consider them as 136 crore minds.*

*Sustainable development goals are the blue print proposed by UN for the progress and development of all the countries without inflicting damage on the environment and biodiversity. Unfortunately, progress has been woefully slow, with many areas worsening instead of improving, largely because development efforts are not keeping pace with our rapidly increasing numbers. Developing countries are under increasing pressure to compete with developed countries and satisfy the demands of their citizens. It has a negative impact on overall quality of life. Population increase can be an asset also and can work wonders for the development of the country if the talents of expanding population are used to the maximum extent.*

*Demographic change in India too can open up new opportunities. If people can be productively employed, India' economy will grow. Policy choices can lead to India' economic growth, but our population in the present era is becoming a liability. Growing human population is putting an incredible strain on our environment and on the other hand it is giving rise to problems such as unemployment, increment in slums, global warming, pressure on infrastructure etc.*

*In 1955 the population of India was 40 crore which has become triple now. Notable causes for this skyrocketing population are reduced childhood mortality, increased life expectancy, urbanization, improvement in the field of medical science, illiteracy and unawareness, priority given to male child etc. India needs to invest more in the health sector. India invests only 1.3% of its GDP. The family planning budget is only 4% of the entire health budget and within that India spends only 1.5% on birth spacing methods. Investments should be made particularly for the old people because by the year 2050, India' population of old people is going to grow almost 10 times more. Education is very important, not only for empowering women but for fertility to decline. Education should be made free for women till college-level. Better education will help women in better decision making for family planning. Unless women are part of the workforce, no society*

*can bring down fertility rates with progress. Therefore, policies must look at the whole issue of declining workforce participation by women. India needs to focus on some areas which are socially, culturally, economically depressed. Identification of 140 high focussed districts is the right step by the government in this direction. However, it needs to work in the whole of Bihar, U.P., Madhya Pradesh and Assam. India needs to give huge stress on declining sex ratios and the discrimination towards girls so that people don't have a high number of children in the hope of having a boy. India can achieve a number of SDGs if it links them with family planning. Family planning is a primitive and preventive method for bringing down maternal mortality and child mortality. It is important to see the issue of population growth not only from the national perspective but also from the state' point of view i.e. different states need to be encouraged to take necessary steps for containing the population.*

**Keywords**

Asset, Liability, Population, Poverty, Family planning

**Objectives of Study**

- To discuss the ways to convert the population into resource.
- To find out the ways for achieving sustainable development goals of zero hunger, no poverty, good health and wellbeing etc.
- To find out merits and demerits of increasing population size.
- To analyse the effect of population growth on environment

**Review of Literature**

Mahindra K. Premi has also written a book on Indian population in which he mentioned Demographic change in India too can open up new opportunities. If people can be productively employed, India' economy will grow. Policy choices can lead to India' economic growth, but our population in the present era is becoming a liability. Growing human population is putting an incredible strain on our environment and on the other hand it is giving rise to problems such as unemployment, increment in slums, global warming, pressure on infrastructure etc.

An article written by Smrutisikha on Increase in population of India mentioned India with a population of about 950 million (in 1997) accounts for 16 per cent of the world population, as compared to about 15 per cent a decade and a half ago. It is the second largest country in the world, next only to China with a population of about 1200 million (in 1995). Five countries (China with 21.7%, India with 16.0%, US with 5%, Brazil with 3.5% and Russia with 3%) account for nearly half (49.2%) of the world population.

## Research Methodology

This study is chiefly based on secondary data collected from various published research papers, internet articles of various reputed researchers include data and facts collected from websites.

## Analysis and Findings

- Population in 2019 stands at 1.36 billion, growing from 541.5 million in 1969 and 942.2 million in 1994. It accounts for over one-sixth of the world' population in 2019 (7.71 billion).
- **Growth rate-** India has seen a growth rate of 1.2% per year between 2010 and 2019. This is just over the world growth rate of 1.2%. China, the world' most populous country at 1.42 billion, has a population growth rate of 0.5% per year between 2010 and 2019.
- **Agecomposition-** 27% of India's population is in the age bracket of 0-14 years and 10-24 years each. 67% of the country' population is in the 15-64 age bracket.6% of the country' population is of the age 65 and above.
- **Life expectancy**at birth in India is lower than the world' (69 years to 72).
- **Healthcare-** India scores higher than the global average in terms of access to healthcare during childbirth. Between 2006 and 2017, 86% of births in India were attended by skilled health personnel (79% across the world).
- **MMR-** India' maternal mortality ratio (MMR) in 2015 was 174 deaths per lakh live births (down from 448 in 1994). On the other hand, the global MMR in 2015 was 216.Two-thirds of all maternal deaths today are said to occur in sub-Saharan Africa.
- **Adolescent birth rate**in India is much lower than the global rate. In contrast, the global adolescent birth rate was at 44 per 1,000.
- **Fertility rate**in India in 2019 is 2.3 births per woman, compared to 2.5 worldwide. In India, the total fertility rate per woman has been reduced from 5.6 in 1969 and 3.7 in 1994 to 2.3 today. Globally, the average number of births per woman has been reduced form from 48 in 1969 and 2.9 in 1994 to 2.5 today.
- If we take example of Russia whose economy is going in declining due to less population i.e. 14 crores, the government is giving subsidies to couples for having

children.

- Demographic change in India is opening up new opportunities. Like in many countries, infant and child mortality declined which helped to spark lower fertility, effectively resulting in a temporary baby boom. If working age people can be productively employed, India's economic stands to accelerate. Policy choice can potentiate India's realization of economic benefits stemming from demographic change. Advantage of the opportunities inherent in demographic change can lead to an economic stagnation of failure
- According to estimates in a recently released United Nations report, India is expected to add 273 million people by the year 2050. The report stated that in the year 2019, India has an estimated population of 1.37 billion and China, 1.43 billion and by the year 2027, India's population is projected to surpass China's, making India the most populous nation in the world
- 30 years down the line, the global population is projected to increase by another 2 billion people by the year 2050, (from 7.7 billion in 2019 to 9.7 billion). The report has highlighted higher fertility rates, growing older population and migration as few reasons behind projections of the population growth.
- Health economists claim that the major implications of population growth will be for the young population that will face a situation of lack of resources in the future.

#### **Asset**

- Like in China where they have used their population as an asset to develop their economy. China has developed it as a manufacturing sector by using its population as a cheap source of labour. It helps it to lower the price of the good which helps to compete in the international market and earn profit.

#### **Liability**

- Like in India the national capital Delhi has hiked up to 2.5 crore with the population density of 11,320 people per square km thus it led to severe toxication of the climate. The air quality index is fallen exponentially and the water is highly polluted not worthy drinking. The roads are crowded and it takes time to clear. The houses are closely built which leads to the poor standard of living for the people in Delhi.

#### **Solutions**

- The most important and integral point of the core of this research is based and that

is identifying solution provided that it is a sustainable one. Releasing posters and memes on the situation are not going to help at all, they can only create awareness amongst people but what is going to pay actually is the seriousness and the determination of both the government and citizens in combating the problem and its effects wo child policy should be strictly implemented throughout India.

- Family planning should be included in the school curriculum. Before marriage couple should attend a session on family planning.
- Contraception devises should be subsidized and made affordable for the poor people
- The quality of education in school should be enhanced and it should be strictly made compulsory for everyone as countries with higher literacy rate as have lower population

### **Conclusion**

To sum up it can be said that population can be both asset and liability and it depends on government' capability to convert growing population into human resource. With improvement in education and health facilities this goal can be achieved. Government programs such as SKILL INDIA can help in providing required skills. This human capital can then be use to achieve the aim of making India a \$5 trillion economy soon.

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## SUSTAINABLE TOURISM IN RAJASTHAN

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### Abstract

*The world tourism organization define Sustainable Tourism development as meeting the needs of present tourists and host regions while protecting and enhancing opportunities for future. The backdrop behind this whole concept of sustainable tourism is to retain the economic and social benefits of tourism while mitigating all the unnecessary effects on the natural, historic, cultural and social environment. Various organizations like WTO have pointed out that vast development potential of tourism, particularly with reference to the developing nations like India. The objective of this paper is to analyze the effect of the Sustainable Tourism in Rajasthan, being one of the most tourist visited place with approximately 5.19 crore Domestic and International tourists in 2018. Tourism in Rajasthan is one of the major sources of revenue earning and it contributes about approx. 15% of the growth rate in Rajasthan.*

*The ministry of tourism, culture and art has initiated a project which will formulate a road map plan to identify the tourism perspective of the state. This is done by the way of a 20-year perspective plan which had analyzed the strengths, weaknesses, opportunities and threats for tourism in the state and forecasted the growth in terms of tourist traffic. In this plan 9 tourist circuits were identified by the Rajasthan department of tourism, based on their geography, attractions and coverage by independent/group tourists.*

*In the above context this paper seeks to find out the major problems faced by the tourism industry in Rajasthan, the various measures the government has taken, whether the measures of the government are successfully implemented or not, what are the limitations of the existing plan and also to analyze the case of Rajasthan in more detail.*

*The study is based on the secondary data compiled from Ministry of Tourism, Art and Culture, Rajasthan. This paper highlight how the Sustainable Tourism in Rajasthan can contribute towards achieving and promote impactful communication and nourishment, that are deemed to have the greatest potential to impact positively on society*

### Keywords



Sustainable Tourism, Mitigation, Tourism Circuits, Sustainable Development, Perspective and Forecasted.

### **Introduction**

From our cycling at home to cycling to work, there is always something we can do to reduce our impact on the planet including how we tour, travel and vacation around it. As the tourism industry expands so will its impact on the environment. 50 years ago, around 25 million people fueled the World's Tourism Industry, today it has become 1.18 Billion. Tourism industry accounts for 10% of the world's Gross Domestic Product, it also places a major strain on our planet. The nature of tourism is unique among industries. It's a product which is not owned by anyone and shared among many. It's a fragile product that needs protection. The tourism today operates in a price driven market where margins are increasingly squeezed, and if care isn't taken the quality will be driven down and destinations will be dead. Also, the opportunity to offer an enriched touring experience to customers is messed. So basically, Sustainable Tourism is the concept of visiting somewhere as a tourist and making a positive impact on the environment, society and the economy. With different and more sustainable approach, tourism can offer greater rewards to business and at the same time benefit the environment and communities living in destinations, and of course the customers.

As per the 20-year perspectives plan, 2001, Rajasthan is divided into 9 circuits according to their geography, attractions and coverage by tourists. Due to the growing number of tourists and the state faced some major problems which has been discussed further. The state has a well-established infrastructure for tourism in terms of traveling to major circuit hub from different parts of the country. Accommodation here is dynamic and variant, it ranges from Hotels to Dharmshalas. At Pilgrim location, amongst which more than 75% are located in the major tourist hub. Tourism here occupies a prominent place in the state's agenda as a crucial engine for income and employment. Tourism has the potential to disturb the environment of a place, so to maintain the sustainability of tourism government has initiated concepts such as Eco-Tourism etc.

Tourism and Natural-Tourism in the state. To combat the problems faced in the state and to make a way for Rajasthan to become a sustainable spot, the government took various initiatives. Some of the new tourism projects have been proposed in addition to the ongoing projects in individual circuits, for the purpose of phasing of the project 3 time periods have been considered, short, medium and long term. On comparing Rajasthan with some other countries, various similar measures that could be taken in the state has also been discussed further.

### **Objectives of the study**



- To find out the major problems faced by the tourism industry in Rajasthan.
  - To suggest practical and remedial measures for development of tourism in the state.
  - Comparative Analysis of various measures taken by different countries.
- Research Methodology** his study is chiefly based on secondary data from various published internet articles of several reputed researchers and also the 20-year perspective plan of 2001, includes data and facts collected from websites.

### **Circuits**

Rajasthan is divided into nine tourist circuits which are identified by the department of tourism of Rajasthan based on their geography and attractions. The study involves following nine circuits:

- 1) Desert Circuit
- 2) Mewar Circuit
- 3) Vagad Circuit
- 4) Dhundhar Circuit
- 5) Godwar Circuit
- 6) Merwara-Marwar Circuit
- 7) Brij Mewat Circuit
- 8) Shekhawati Circuit
- 9) Hadoti Circuit

### **Desert Circuit**

This circuit includes 3 districts in western Rajasthan namely, Jodhpur, Jaisalmer and Bikaer (commonly referred as the Desert Triangle) rising out of the golden sands of the Thar Desert.

#### **Main tourist locations and attractions:**

**Jodhpur-** It is one of the important cities the circuit has. Major attractions of the city are Mehrangarh fort, Umai Bhavan Palace, Jasvant Thada, Mandore etc. Osian village located around an hour's drive from Jodhpur is another emerging destination.

**Jaisalmer-** It is the golden city of Rajasthan and most visited destination for both domestic as well as foreign tourist. The main attraction is the Jaisalmer fort known for its

beautifully carved havelis, other popular destinations are Patwan Ki Haveli, Salim Singh Ki Haveli, Gadisar Lake, Sam and Sand Dunes, The Desert Nation Park etc.

**Bikaner-** It is famous for its fort, palaces and havelis. Other places of tourist include the Junagarh fort and museum and the Lallgarh palace. It is also famous for Karni Mata temple, Gajner Palace and Wildlife sanctuary etc.

### **Mewar Circuit**

The circuit consists of beautiful hills, lakes and deep valleys. It is very popular among the domestic tourists. The circuit includes locations like Udaipur, Chibaurgarh and Nathdwara.

### **Main tourist locations and attractions**

**Udaipur-** It is the main tourist destination of Mewar circuit. The main attractions of the city are the City Palace, Lake Pichhola, Fateh Sagar Lake, Jag Niwas Palace, Jagdish Temple, Sahelion Ki Bari, Ahar, etc.

Udaipur is full of lakes and palaces. On the outskirts of the city lies Nathdwara (famous Krishna temple) Nagda (temple ruins), Eklingji (temple complex), Haldighati (battle ground), Rajsamand Lake and Kankroli.

**Chittaurgarh-** It is a very popular place among the domestic tourists particularly due to its historical interests. The Chittaurgarh fort is also gaining popularity among the foreign tourists.

**Kumbhalgarh-** Kumbhalgarh fort is a World Heritage Site included in Hill Forts of Rajasthan. It is popular with the domestic tourists and is famous for its camping sites and horse safaris.

### **Vagad Circuit**

The circuit combination of tribal culture, religion and history and is popular among the domestic tourists. This circuit primarily includes Dungarpur and Banswara. It lies to the south of Mewar circuit bordering Gujarat.

### **Main tourist locations and attractions**

**Dungarpur-** It is famous for its unique architectural style in the Udai Bilas Palace and Juna Palace. People also visit this place as it is famous for the large variety of migratory birds. Banswara - It is known as the land of Hundred Islands due to a large number of islands which are present in the Mahi river, it is also known for the Mahi Bajaj Sagar Dam.

**Baneshwar-** It lies 60 kms east of Dungarpur and is famous for its Shiva Temple revered by the Bhils and the annual fair of tribals from Rajasthan and the adjoining states.

### **Dhundhar Circuit**

This circuit constitutes of tourist locations around Jaipur. It includes tourist destinations in Jaipur, Dausa and Tonk districts. Jaipur is the capital city of Rajasthan, i the hub of this circuit.

#### **Main tourist locations and attractions**

Jaipur-lthoughtermed as Dhundhar circuit but it is mainly concentrated to tourist locations in Jaipur which has some unique tourist attractions such as the Hawa Mahal, Amer Fort, Jantar Mntar, Jal Mahal, etc. It hasalarge inventory of attractions covering history, religion, culture and leisure. Other tourist locations are within 80 kms from Jaipur, tourists generally stay in Jaipur and visit other places taking day excursions. Thus, thecircuit can be completed within 2 days from Jaipur.

### **Godwar Circuit**

It consists of the only hill station of Rajasthan- Mount Abu. Ranakpur is the other important attraction in the circuit. Other city included in the circuit is unexplored town of Rajastha named Jalore.

#### **Main tourist locations and attractions**

**Mount Abu-** It is the popular hill station of Rajasthanmany ouristsvisit here due to its pleasant climate and scenic beauty. Many people also visit here to see the famous Dilwara temples and the beautiful Nakki Lake around which most of the tourist activity is centered.

**Ranakpur-**This place is popular among both domestic as well as foreign tourists. It is also one of the five holy places for the Jains.

### **Merwara-Marwara Circuit**

The circuit primaril includes pilgrim towns of Ajmer and Pushkar, and relatively unexplored places like Merta and Nagaur.

#### **Main tourist locations and attractions**

**Ajmer-** It is one of the main cities of the circuit and has the famous dargah if the sufi saint Khwaja Moinuddin Cishti. The Urs at the dargah attracts pilgrims from around the country and also from abroad. Other tourist locations in the city are Shahjahan' mosque inside the dargah, Adhai-din-kajhonpra and the lakes.

**Pushkar-** It is important pilgrimage for the Hinds as has the only temple in India dedicated to Lord Brahma. Also, it is famous for the colourful Pushkar fair which is held

every year on the banks of the Pushkar Lake.

### **Brij Mewat Circuit**

The circuit covers locations bordering Delhi, Uttar Pradesh, Madhya Pradesh, Sariska, and Bharatpur. Other places in the circuit include mainly Alwar, Deeg, Karauli and Sawai Madhopur. It is most famous for its Keoladeo National Park, Sariska National Park and Ranthambor National Park.

#### **Main tourist locations and attractions**

Brij Mewat Circuit is famous for its wildlife experience. The national parks at Sariska, Bharatpur and Ranthambhor attracts both domestic as well as foreign tourists. Alwar-Sariska sub-circuit also has some beautiful palaces and lakes. Lake Jaisaman near Alwar is also a popular destination during the rains. In Bharatpur, the Lohagarh fort, is usually visited along with Keoladeo National Park. It houses some beautiful palaces and the Iron Tower (Lohastambh).

### **Shekhawati Circuit**

This region is known as the 'open art gallery of Rajasthan' is famous for its painted havelis, it includes the three districts of Churu, Sikar and Jhunjhunun.

#### **Main tourist locations and attractions:**

**Mandawa-**The place is famous for its fort, the Mandawa Castle, now converted into a heritage hotel. Some famous havelis in town are Chokhani, Saraf, Goenka and Ladia.

**Nawalgar-** It has one of the finest havelis in the region. Some of the havelis are converted into museums.

**Mukundgarh-** The town built around a temple square is known for its fort, which is now a heritage hotel. Mukundgarh also has painted havelis. It has good handicrafts market, selling textiles, brassware and iron scissors.

**Sikar-** It is the largest town in the region and is known for its havelis and temples.

**Dundlo-** Dundlod is known for its fort and the horse safaris. It also has the famous Goenka Haveli.

**Jhunjhunun-** It is the capital of Shekhawati and has painted havelis. Other attractions include Khatri Mahal, Badalgarh, Jorawargarh, Mertani Baori, Ajit Sagar and Jain temple.

### **Hadoti Circuit**

It is the least explored regions of Rajasthan. The region is known for its beautifully sculpted temples and forts and palaces. It includes locations like Bundi, Kota and

Jhalawar which compose the backbone of the Hadoti region

### **Main tourist locations and attractions**

**Kota-** Kota is a major industrial town of the state. The most popular destinations are the Kota fort and the various palaces and havelis within the fort, Jag Mandir and the Chambal Gardens.

**Bundi-** The city includes impressive medieval forts, palaces, havelis, temples with beautiful stone idols and chhabris with carved pillars, along with a picturesque lake in the heart of the town. Bundi is very famous for its intricate carvings and murals.

**Jhalawar-** Jhalawar boasts of rich historic as well as natural wealth with some exquisite pre-historic cave paintings, massive forts and thickly wooded forests and exotic wildlife variety.

### **Problems faced by the tourism industry in Rajasthan**

Following are the major problems faced by the tourism industry in the state:

- **Transportation**

The lack of proper transportation system is creating a problem in the tourism industry. Most of the public transportation are not in good condition and are in the need for proper attention.

- **Poor advertisement**

There is lack of advertisement and marketing for the promotion of tourism in the state. The government should take initiatives for the specialized advertisement and publicity of the major attractions and the heritage sites situated in Rajasthan for promoting tourism.

- **Lack of tourist information centers**

There is a lack of tourist information centers in Rajasthan. The centers help the tourist by providing the basic information about various tourist destination.

- **Unhygienic conditions**

Lack of cleanliness at the monuments, railway stations, bus terminals and hotels create problems for the tourist visiting the state, also there are unhygienic toilet facilities at many places.

- **Lack of professional personnel**

The tourism industry of Rajasthan lack professionalism which is a hindrance for the development of the industry. Due to lack of professional personnel many tourists face a number of problems such as non-availability of registered guides also communicating with the tourists is also a major problems with the guides.

- **Harassment by beggars and thieves**

Several cases of misbehave and molestation have been reported but no strict action is taken by the government regarding this, also the beggars siEng outside the temples and monuments also create problem for the tourists.

- **Insensitive tourists create problems**

Some tourists behave in a very insensitive manner and indulge in the type of activities that affects the beauty of the monuments and the heritage sites.

### **Transport infrastructure**

Rajasthan has a well-established infrastructure for tourism in terms of travel links to major circuit 'hubs' from different parts of the country. Jaipur, Udaipur, Jodhpur and Mount Abu from the important gateways to the state, with well-developed road and rail networks connecting these places to the rest of the tourist locations in the state (also air, excluding Mount Abu).

### **Existing Road Transport Infrastructure**

The state has a well-established network of roads that facilitate access to main tourist hubs within and outside the state and makes the movement within the circuits easier. These well-developed networks of roads also connect hubs such as Jaipur, Jodhpur and Udaipur to other tourist places in the state.

Road travel facilities in the state include buses, tourist taxis and rickshaws. These are provided by both state transport undertakings and private operators. Tourist taxis are mostly hired for local excursions to various tourist sites and intra-city travel. Buses and passenger tempos are used for inter-city transport, whereas, rickshaws are used for local travel.

Rajasthan State Road Transport Corporation (RSRTC) is a state undertaking which is the provider of public transport facilities in the state. It operates close to 4,500 buses (including 200 privately owned buses) and over 13,000 bus services all over Rajasthan and to adjoining states of Gujarat, Haryana, Punjab, Delhi, Uttar Pradesh, Himachal Pradesh, Madhya Pradesh and Maharashtra. Apart from inter-city transport, RSRTC also runs city buses in Jaipur.

## **Railways**

The rail network in Rajasthan mainly falls under Western and Northern Railway zones with a small section of track also falling under the Central Railway zone. Jodhpur, Jaipur, Ajmer, Bikaner, Kota, Sawai Madhopur, Chitaurgarh, Merta Road and Bharatpur are the major rail junctions in Rajasthan with a broad-gauge connectivity with the rest of the country. Udaipur is also an important railway terminal though at present it is on the metre gauge network. Major circuit hubs and standalone tourist locations are well connected by rail network in Rajasthan. Jaipur, Ajmer, Jodhpur and Mount Abu have regular train services to and from important cities in the country and in the state. The Mewar region with exception of Chitaurgarh currently has a metre gauge network. Udaipur, the main tourist hub of Mewar has no broad-gauge connectivity with other tourist locations in and outside Rajasthan. Broad gauging of Chitaurgarh-Udaipur link is proposed which is expected to improve the connectivity of Udaipur with the main Mumbai-Delhi trunk line. The proposed broad gauging of the Ahmedabad-Udaipur link would bring Udaipur in the important Ahmedabad, Delhi and Mumbai-Ahmedabad-Udaipur network.

## **Air Links**

Rajasthan has 19 airstrips and 128 helipads still regular commercial air services are operational only at Jaipur, Jodhpur and Udaipur. Kota and Jaisalmer do not have regular commercial flight services in spite of having enough landing and taking off facilities. Flights to Jaisalmer have recently been discontinued given its sensitive location bordering Pakistan. Airports at Jaipur and Udaipur are managed by Airports Authority of India (AAI) whereas the airstrips at Jodhpur and Jaisalmer are under the control of Indian Air Force (IAF). The Jaipur airport has been upgraded to an international airport. The airport upgradation project has been implemented by AAI with a strong catalytic role being played by RIDE especially in the funding of the project (from HUDGI and OECF, Japan). Already Indian Airlines has initiated a once-a-week flight service from Jaipur to Dubai (via Delhi) from February 2002.

## **Tour Operators**

Large number of private tour operators provide travel related services, such as transport vehicles, hotel reservations, local sightseeing, air and rail bookings, airport and railway pickups, guide services, etc. It is estimated that Rajasthan has over 200 tour operators. Complete tour planning is usually provided by national and regional tour operators for inbound tourists. Local tour operators arrange for travel for excursions within the circuit and organize tours for domestic group travelers. Regional tour operators have annual contracts with their international counterparts which are usually obtained through a bid process.



RTDC also organizes daily sightseeing tour from Jaipur, Jodhpur, Sawai Madhopur, Sariska and Jaisalmer.

### **Accommodation**

Rajasthan has a variety of tourist accommodations available ranging from five-star palace hotels to dharamshalas/dormitories at pilgrim locations. It offers the tourist a variety of accommodation options to suit their budget as well as their preferences. Estimatedly, the total number of hotels in the state are around 1450 with a bed capacity of approx 55000-60000. More than 75% of these hotels are located in the major tourist hub. It has also been a pioneer state in launching heritage hotels in the country by converting old palaces and havelis of erstwhile rulers into tourist accommodations. The luxury range of hotels (Heritage and Resorts, 5 Star Deluxe, 5 Star, 4 Star) constitute approx 9% of the total number of hotels in the state. Mid-range hotels constitute 14% and the remaining 73% are accounted by the budget range of hotels. Over the years, a shift in profile of foreign tourists travelling to the state has been observed, with an increasing number of young tourists travelling to the state, who are not willing to spend on luxury/heritage experience, but demand clean and comfortable accommodation at an affordable price. Thus, there exists a gap in terms of good quality economy hotels in the state, given the younger and not so wealthier profile of the foreign tourist. This gap is accentuated particularly during the peak season.

Rajasthan Tourism Development Corporation (RTDC) today owns/manages 61 properties consisting of 36 hotels and 15 motels. It provides suites, AC rooms, cool rooms, nuts, ordinary rooms and dormitories to the tourists available at reasonable tariffs. Another government of Rajasthan undertaking except RTDC is Rajasthan State Hotel Corporation Ltd (RSHCL) also owns and manages two hotels in the state. Indian Tourism Development Corporation (ITDC) manages 3 hotel properties, another Govt of Rajasthan undertaking.

Beside these undertakings there are Circuit Houses, PWD and Electricity Board Dak Bungalows in Sikar, Churu, Jhunjhunu, Khetri and Pilani. Permission for accommodation can be obtained from local authorities. These alternatives offer accommodation at reasonable rates. Experiencing local life at a particular place is a major part of the tourism experience for a tourist. Recognizing this the Rajasthan government as a part of its tourism activities launched Paying Guest Scheme in 1991, wherein tourists can stay as paying guests in the family atmosphere. This scheme is presently in operation in 12 cities with the estimated number of facilities across the state, approx 450 which has been only moderately successful. The reasons for the same apparently being the loss of personal space of offering families. Another discouraging factor has also been the



expected standards to be eligible for this scheme.

Temporary rented accommodations are also available particularly during specific events such as fairs and festivals, accommodating large influx of tourists. Permanent accommodation in form of tents is also provided by various star hotels providing the tourist with a tent/camp site experience at smaller tourist locations. Tented accommodation is also provided by organisers of various safaris in the state.

Several religious trusts across the state run dharamshalas/dormitories that provide basic accommodation largely to the Pilgrim tourists and is also flexible. It can also be extended to accommodate a large mass of pilgrims arriving during fairs and festivals.

Overall occupancy level was around 60% in the past few years across different categories of hotels in the state. In recent years (particularly 2001) the average occupancy level fell to as low as 35-40%. The peak time occupancy levels rise to 90-100% in the main tourist cities in the state such as Jaipur, Jopur, Jaisalmer, Bikaner and Udaipur. With a shortage of rooms particularly in the mid-range hotels. Shortage of rooms is experienced in all category of hotels during the season time in Mount Abu with the occupancy levels rising to 90-100%. Same is the case with Ajmer and Pushkar during festival time. Occupancy in all hotels is stretched by accommodating more people in each room. In smaller cities the peak occupancy levels are high (80-90%) and shortage of rooms is experienced in luxury/mid-range categories.

### **Tourism and Employment**

Employment has always featured as an element of development policy in India. Effective generation of employment opportunities in a country enhance the standard of living encouraging the economic growth contributing to increased national income. Tourism created 25.9 million jobs in India in 2017 Indian economy and employment restructured mainly in three important sectors wise segregation which includes Primary sector or Agriculture sector, Industrial sector or Secondary sector and Tertiary sector or Service sector. In world scenario also, tourism has emerged as a biggest industry and possess great employment potential.

Talking about Rajasthan, it is one of the most favoured destinations of tourists in India for both domestic & International traffic. Rajasthan, which is a premier tourist destination attracts tourist for its historical forts, palaces, art and culture. Tourism here occupies a prominent place in the state's agenda as a crucial engine for income and employment. The state Government in the recent past has made efforts for the maximum benefit from tourism sector.

The State new Tourism Policy was released on 27-9-2001. The mission statement of the

Tourism Policy is to evolve a pragmatic policy designed to ensure optimum utilization of rich tourism resources of the state to generate employment especially in Rural Areas. In the year 2006, the Tourism Department had announced a New Hotel Policy of Rajasthan. This policy is proposed to be replaced by Rajasthan Tourism Un Policy–2007. Tourism is a labour-intensive industry and is likely to offer more jobs in the coming years. And since most of the natural beauty and wildlife are to be found in non-urban areas, rural people could find employment as guides with proper training. More jobs in rural areas would also help reduce continuous migration of people to towns.

Tourist arrivals in Rajasthan surged 21 per cent in the last three years, making it a favoured destination for both domestic and international visitors as reported by Times of India. Over

5.19 crore domestic and international tourists visited the state with a royal essence in 2018, an increase of nearly 90,000 visitors from 2016.

### **Tourism and Environment**

Tourism has the potential to disturb the environment of a particular place by water, air and noise pollution, destruction of the biodiversity of a place, disturbing the social and cultural fabric of a place etc. Activities such as hunting, camping, fishing, constructing roads, ropeways, resorts and hotels may lead to the loss of biological diversity of a place. Places of high tourist visitations have high degree of environment threat due to the pressure on the natural resources.

Rajasthan has emerged as one of the popular tourist destinations in India for both domestic as well as foreign tourists, so to maintain the sustainability of tourism government has initiated concepts such as eco-tourism, rural tourism and natural tourism in the state. Some suggested environment controls for the tourism industry in Rajasthan are as follows:

- Restriction on vehicles in the protected areas.
- Restriction on development activities in the protected areas.
- Creating the walk ways, pre-marked nature trails etc. in the protected areas.
- Installation of renewable energy equipments in the hotels.
- Conserving old cities and monuments through restricting polluting vehicles within the precincts.
- Activities such as plantation, afforestation etc. for soil conservation should be

made compulsory for the tourism projects.

### **Government Initiatives**

- Restriction on vehicles in the protected areas.
- Restriction on development activities in the protected areas.
- Creating walk ways, pre-marked nature trails etc. in the protected areas.
- Installation of renewable energy equipments in the hotels.
- Conserving old cities and monuments through restricting polluting vehicles within the precincts.
- Activities such as plantation, afforestation etc. for soil conservation should be made compulsory for the tourism projects.

### **New Research Projects**

Abundant of new tourism projects have been identified across different categories in the state. For each of the identified projects an indicative cost estimate is provided and priority assigned to prepare a phased investment plan spanning the next 20 years (upto 2021). For the purpose of phasing of the projects, three time periods have been considered

- 1) Short term (2002-06) I.e. 5 years
- 2) Medium term (2006-11) I.e. next 5-10 years
- 3) Long term (2011-21) I.e. beyond 10 years

While providing the overall cost estimates and phasing of investment for the proposed projects, the likely parties for the funding and implementation of the projects have been identified.

### **Accommodation**

Rajasthan presently has a bed capacity close to 70,800 beds across different categories of accommodations such as hotels, paying guests, dharamshalas, dormitories and tents. Out of this estimated capacity more than 75% is concentrated at the major tourist hubs like Jaipur, Udaipur, Mount Abu, Jodhpur, Ajmer, Jaisalmer, etc. Planning for hotel capacity for the future is based on the concept of 'Peak time' requirement. For the present capacity assessment, 'Peak time' has been defined as the time (day/ days/ week or months) during which there is maximum pressure on the tourism sector from September to March. The domestic tourist season is evenly spread out, with large number of arrivals coinciding

with. However, certain cities/ locations have distinct peak periods (particularly accommodation). At most places in Rajasthan the tourist season extends from September to March (7 months), however, the tourist arrivals are concentrated in the winter months of December, January and February. The arrival of two categories of tourists, viz. foreign and domestic exhibits a distinct pattern. The domestic tourist season is evenly spread out, with large number of arrivals coinciding with the annual Diwali, Christmas-New Year and summer vacations. Based on the future tourist arrivals and their stay patterns, the future capacity requirement in accommodation has been chalked out for the main hubs in the state. The existing demand supply gaps and future peak time capacity requirement for accommodation for important locations in the state. Presently there is an aggregate overcapacity in accommodation availability in the state. Current occupancy levels at most tourist locations in the state are in the range of 80-85%.

In addition to the standard forms of accommodation facilities (hotels and paying guest), accommodation in form of resorts and camping sites have also been proposed in the perspective plan.

Accommodation capacity at a place is incidental upon the tourist arrivals which in turn is dependent upon the tourist attractions / tourism products in the place. In contrast, the resort itself being an independent attraction/ tourism product, the resort facilities and room capacity can influence the tourist arrivals. The capacity of the resorts is recommended based upon our understanding of the carrying capacity of the place. Thus, an estimated Rs. 75 Cr. would be spent on constructing new resorts/ camping sites in the state. Private sector would be responsible for creating this tourism asset.

### **Wayside Facilities**

Based on the traffic and tourist movement analysis in the individual circuits, 17 new midways / wayside facilities have been proposed in the Rajasthan. Besides the new midways, augmentation of the midway at Gulabpura in Bhilwara district has also been proposed. A total of Rs. 7 Cr. would be required for developing and augmenting wayside facilities in the state. Investment in wayside facilities has been proposed in the first 3 years of the perspective plan as it is primarily for improvement of direct tourism related facilities and hence should be taken up on priority basis. Since its creation, RTDC has been responsible for constructing and managing the wayside facilities in the state. However, in the recent years RTDC has licensed out many of its properties (including wayside facilities) to private parties for management. The investment in the new wayside facilities would largely come from the private parties.

### **Tourist Offices**

Based on the trends in tourist arrivals at different locations and focus on development of lesser-explored tourist locations in Rajasthan, 10 new tourist information offices have been proposed in the state. These consist of a mix of Tourist Information Bureaus, Tourist Reception Centres and Tourist Information Kiosks. The function of Tourist Information Kiosk located at the tourist site would be to provide the visiting tourists with guide serves (only those guides registered with the DoT). The idea behind the concept of Information kiosk is to limit the 'lapka' menace and safeguard the tourist from unscrupulous elements in the business. A total investment of approx. Rs. 70 lakhs would be required for Tourist Information Offices in the state. Investment in most of these tourist offices is suggested to be done in the short term (first 5 years) of the perspective plan. To regulate the quality of information disseminated to the tourists and to maintain objectivity while guiding, it is proposed that the investment and management of the proposed tourist information offices be taken over by DoT/RTDC.

### **Travel Links and Transport Connectivity Infrastructure**

#### **Air**

Of the 6 civilians airports in the state, Jodhpur, Jaisalmer and Bikaner have airstrips under the control of the Indian Air Force (IAF) with the runway shared by the civilian aircrafts and IAF. Presently, regular flights are operational from Jaipur, Udaipur and Jodhpur only.

**Jodhpur:** the current runway can only handle smaller aircraft- AT7 (62-eater) operated by et Airways and 737-100/200 (~110-eater) operated by Alliance Air. However, with only 6 flights per day the airport capacity is sufficient to meet short / medium term needs. In long term, there is a need to upgrade the airport at Jodhpur to handle bigger aircraft (Boeing 737) with a scope for future expansion to Airbus A320, which can facilitate direct flight services to Jodhpur. Also, based on the future arrival forecast at the Jodhpur airport, a separate airport terminal is required in Jodhpur in the longer term.

**Bikaner:** A separate airstrip is recommended at Bikaner. There is an unused airstrip in Bikaner under the control of the state government. This could be upgraded to facilitate small and medium capacity aircraft. At the same time, domestic carriers should be encouraged to start flight services to Bikaner. This project could be undertaken over a long term.

**Udaipur:** The current runway at Maharana Pratap Airport, Dabok can only handle smaller aircraft (737-200 and A37 type aircraft). There is a need to extend the runway to handle bigger aircraft over the medium/ long term.

**Ajmer/ Pushkar:** An airstrip, which would handle small and medium capacity aircrafts,

s recommended near Ajmer. A small terminal to handle tourist traffic is also proposed to be constructed. Domestic air taxi operators should be invited to start flight services to Ajmer from Delhi and Mumbai. On this front, AAI has recently commissioned a feasibility study for construction of a domestic airport at Ajmer. This project is expected to cost Rs. 2500 Lakhs and would be undertaken over the next 5 years.

**Jaipur:** Jaipur Airport is being developed as an International Airport, by he extending the runway from 7500 feet to 12000 feet (including building of culverts). Phase I envisages construction of RCC culverts and extension of he runway from 7500 feet to 9000 q while Phase II encompasses extension from 9000 feet to 12000 feet. Other works such as parking aprons, taxi track and international terminal building is also proposed to be carried out. The total cost of the proposed work is estimated to be Rs. 7700 Lakhs. Since the funds for the project have already been allocated and the project implementation work is already underway, it has not been excluded from he list.

**Others:** Helipads to cater to tourist arrivals in Dungarpur, Kota and Mount Abu is proposed to be constructed in the medium term. The estimated cost of the three helipads with the associated passenger' terminals would be around Rs. 750 Lakhs A total of approx. Rs. 124 Cr. would be needed on additional infrastructure for air connectivity he DoT has proposed works amounting to Rs. 5382.07 Lakhs for road development and repairs for tourist locations in the state. (This has been discussed earlier in Chapter 6 on a circuit-wise basis). Some of these projects are already underway. To ensure smooth flow of tourists and accessibility of the tourist attractions, it is recommended that the remaining works be carried out in the short term (within the next 5 years). The main implementing agency for road projects in the state would be the Public Works Department (PWD). Besides PWD other agencies like Forest Department (approach roads to sanctuaries) and private owners (approach roads to hotels, resorts, amusement parks and other private properties) would also be responsible for development of roads falling within respective interest areas.

### **Development of the tourist Spots / Tourist Site Enhancement**

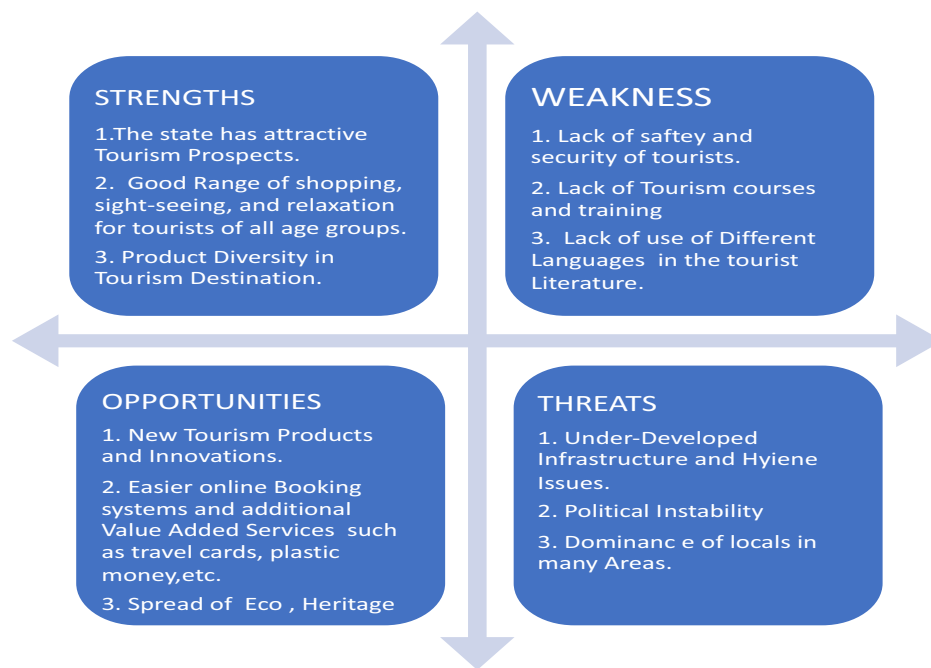
Several projects for the development of tourist sites (new and old) and tourist site enhancement have been proposed. Development of tourist sites could be with private sector investment (including NGOs for restoration projects) wherein DoT could identify such projects and invite private sector to undertake the enhancement / beautification work. Local community also has a responsibility in the maintenance of the sites and creating basic tourist facilities.

### **Sanctuaries / Eco-tourism**

Rajasthan Forest Department has identified a total of 20 eco-tourism projects to be implemented in the state within the next 5 years. The estimated spend on these projects is close to Rs. 574 Lakhs with almost 50% investment coming in the first two years. The responsible agency for implementing these eco-tourism projects in the state is primarily the State Forest Department. Sponsorship could be sought from the private sector/ corporates like hotels, tourist agencies, tour operators, etc. to fund and promote eco-tourism project.

### **Tourism Products (Cultural Complexes, Adventure Tourism, Aqua Tourism, etc)**

Apart from the core tourism infrastructure projects, some tourism products have also been proposed at the individual circuit / location level. Development of tourism products would be primarily the private sectors' responsibility. The State Government (DoT) would create the necessary mechanism for inviting and clearing private sector investment proposals. It is recommended that community participation be sought in projects like artists' villages, cultural complexes, handicrafts plazas, etc. Development of tourism products would be primarily the private sectors' responsibility. The State Government



### **Comparative Analysis**

After studying various countries and states, and their policies, geographical areas and infrastructure, Rajasthan can be compared with some of the countries and states around the world and the sustainable approach of their tourism sector can be taken into consideration in the state. In Bhutan, the Government created low Carbon tourism packages. The creation of garbage trails from the indiscriminate disposal of non-biodegradable waste is another visible environmental problem associated with the



tourism industry. The Department of Tourism has banned the use of firewood on treks. Tour operators now use liquid petroleum gas or kerosene. The Department also levies a fine of Ngultrum 5,000 on operators who continue to use firewood on treks and for littering. Rajasthan Government can Take the same Initiative to accelerate sustainable tourism in the state.

Nepal Government has provided financial support to construct numerous public and private toilets to promote hygiene, also eco clubs have been formed in schools and several clean up campaigns have been started.

Rajasthan with its abundance of sunlight can adopt the initiative taken by the government of Costa Rica i.e. generation of electricity from renewable resources. the country uses 99.2% renewable energy, 78% from hydroelectric and 18% by geothermal. Costa Rica is also goal set on being carbon neutral by 2020.

The government of Rajasthan can launch campaigns similar to the #EnjoyRespectVenezia campaign which aims at telling the tourists how to behave while exploring the city. The objective is to raise awareness of tourist impact, with the belief that responsible travelling can contribute to sustainable development.

This is one of the most crucial steps that a government can take because if the tourists are not educated and dedicated the concept of sustainable can never be achieved.

We can also adopt the initiative taken by the Malaysian government i.e. incorporation of water and energy conservation plants as well as waste disposable aspects. There, hotels and resorts have incorporated water and energy conservation as well as waste disposable aspects implementation.

## **Conclusion**

This paper aimed at analyzing the tourism Industry of Rajasthan, studying about the problems faced and discussing the Major initiatives that already have been taken and those that should be taken. It explains why it is important to have a sustainable approach towards tourism. And if sustainability is not taken as a major concern the state will be degraded further ruining the touring experience of the tourists.

In conclusion, here are some of our views:

- Police security should be increased in order to crack down on badly behaved tourists, thieves and beggars.
- Lesser explored areas should be promoted through publicity campaigns.
- Alternative visitors' route should be highlighted in the map issued at local tourist



office.

- Tourist Information Centers should be located at maximum tourist destinations.
- We should always educate ourselves about the destination before we travel so that we understand more about the cultural expectations and current issues affecting people.
- Government should organize the Indian Tourism Service exam to ensure the employment of professional personnel only.

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## COMPARATIVE CASE STUDY OF THE GOVERNMENTS OF INDIA AND USA: IN CONTEXT TO RIGHTIST, LEFTIST AND CENTRIST

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### Abstract

*“In the past two cycles of governance in the Republic of India the voter demographic has been shifting towards an extremist rightist form of government at an alarming rate”. (TK Arun ET Bureau 2019). This paper will find out that are the leading democratic countries leaning towards rightist extremist form of government. When an analysis is performed with retrospection in mind, we can very blatantly witness a departure from centrist politics towards extremist's form of governments. “Democracy is not an absolute state but an evolving process, anywhere in the world” (T.K Arum, ET Bureau 16-05-2019). Hence it would be baseless to identify an ideal form of government so early in the life under democracy. However, ills can be seen and witnessed and furthermore felt under extremist leftist or rightist forms of governments. The irony is perhaps more lost when we saw a landslide victory for an extremist right wing party in the Indian Political Scenario. From allegations of elections being rigged to media houses being bought for promotion of political agenda. As of now even the most seasoned political pundits are baffled by the picture that has been painted. Via this research paper we would like to focus our efforts on the political turmoil and how the paradigms have shifted so drastically to build a house of card so delicate that any small revolutionary flare can invite a mass wave of change. The fact that small eastern state of Tripura, where since the past 25 years Communist rule has been a common situation now suddenly faces a brand-new paradigm which the voters themselves have bought upon. Whether or not this gamble by the voter demographic works out in favor of them remains to be seen because as we know democracy is an evolving entity. Furthermore, by forming the government in Nagaland which is statistically a Christian state the ruling party has once again defied the tried and tested methods of winning an election and elegantly has delivered a victory for a party that's extremely rightist in nature. Furthermore, as we all are aware the world and all the democracies have agreed upon that regardless of the format of government when it comes to development sustainable development is the way to carry forth the beacon. However, we can unfortunately witness our subject government's taking questionable decisions for example. The honorable president of the United States withdrawing from the Paris Climate Agreement citing no penalties on China and India. Diving in our country's scenario sustainable development targets have been set but the very famous decisive*

*government spectacularly and ironically fails to make any major policy altering decisions.*

*As we can clearly see. We're witnessing something politically unique. In layman's terms we're in uncharted territory. Via our research we'll be sampling voter opinion and critically analyze it to predict and understand how the Indian voters reached to the current political scenario. Furthermore, we'll analyze why their actions were taken in the very first place and how and what drove them away from a relatively stable centrist form of governance.*

### **Keywords**

Rightist, Leftist, Centrist, Paradigm

### **Objectives to study**

- To compare the governments of India and USA in terms of Rightist, leftist and centrist.
- To see analyze the governments of India and USA.
- To rule out the inclination of these two democracies towards the right wing.

### **Review of Literature**

Introduction of the topic and connect it with three forms .In politics, centrism—the center (British/Canadian/New Zealand/Australian English) or the center (American English)—is a political outlook or specific position that involves acceptance or support of a balance of a degree of social equality and a degree of social hierarchy, while opposing political changes which would result in a significant shift of society strongly to either the left or the right.[1]. Various political ideologies, such as Christian democracy and Pancasila, can be classified as centrist[2]. Independent candidate H. Ross Perot garnered nearly 19% of the popular vote in the 1992 presidential election. His "get under the hood" campaign focusing on balancing the budget has been one of the most successful centrist efforts in U.S. history [3]. Centrists in the two major U.S. political parties are often found in the New Democrat Coalition and the Blue Dog Coalition of the Democratic Party and the Republican Main Street Partnership of the Republican Party. Outside of the two major parties, some centrists inhabit the Libertarian Party [4]. Left-wing politics supports social equality and egalitarianism, often in opposition to social hierarchy.[5][6] It typically involves a concern for those in society whom its adherents perceive as disadvantaged relative to others as well as a belief that there are unjustified inequalities that need to be reduced or abolished. The political terms "Left" and "Right" were coined during the French Revolution (178–1799), referring to the seating arrangement in the French Estates

General: those who sat on the left generally opposed the monarchy and supported the revolution, including the creation of a republic and secularization [7]. Right-wing political thinking holds that certain social orders and hierarchies are inevitable, natural, normal, or desirable [8][9][10] typically supporting this position on the basis of natural law, economics, or tradition.[11]. The term right-wing can generally refer to "the conservative or reactionary section of a political party or system" [12].

### **Research Methodology**

- This research was made possible through primary data collected by a survey with a Sampling size of 25+25 (India+ USA)
- Survey was conducted by Google forms and was circulated amongst the vote demographic of both the countries.

### **Analysis and Findings**

India, the most populous democracy in the world stares at a completely unprecedented political voyage. On 26th May 2014 Honorable Prime Minister Modi took his oath unleashing a number of reforms establishing himself as the most decisive PM the country has ever had or witnessed in such pace. As a result, the politically dormant voter demographic sprung to life at the end of the government cycle of 2014 and now we can witness across all platforms. Voters have started to overwhelmingly participate in the day to day logistics of the daily life. In our survey the initial and macro level question revealed some intriguing answers. For some perspective, the rightist government driving majority party that is BJP. The Bharatiya Janata Party: Indian People's Party abbr BJP) is one of the two major political parties in India, along with the Indian National Congress. As of 2019, it is the country's largest political party in terms of representation in the national parliament and state assemblies and is the world's largest party in terms of primary membership. BJP is a right-wing party, and its policy has historically reflected Hindu nationalist positions. It has close ideological and organizational links to the Rashtriya Swayamsevak Sangh (RSS).The BJP's origin lies in the Bharatiya Jana Sangh, formed in 1951 by Syama Prasad Mukherjee. After the State of Emergency in 1977, the Jana Sangh merged with several other parties to form the Janata Party it defeated the incumbent Congress party in the 1977 general election. After three years in power, the Janata party dissolved in 1980 with the members of the erstwhile Jana Sangh reconvening to form the BJP. Although initially unsuccessful, winning only two seats in the 1984 general election, it grew in strength on the back of the Ram Janmabhoomi movement. Following victories in several state elections and better performances in national elections, the BJP became the largest party in the parliament in 1996ti however, it lacked a majority in the lower house

of Parliament, and its government lasted only 13 days. After the 1998 general election, the BJP-led coalition known as the National Democratic Alliance (NDA) under Prime Minister Atal Bihari Vajpayee formed a government that lasted for a year. Following fresh elections, the NDA government, again headed by Vajpayee, lasted for a full term in office, this was the first non-Congress government to do so. In the 2004 general election, the NDA suffered an unexpected defeat, and for the next ten years the BJP was the principal opposition party. Long-time Gujarat Chief Minister Narendra Modi led it to a landslide victory in the 2014 general election. Since that election, Modi has led the NDA government as Prime Minister and as of February 2019, the alliance governs 18 states. We can observe that the BJP is a very radical political organisation with conservative perseverance at its core. In layman's terms it's evident that the BJP led by PM Modi is a rightist government. Furthermore, our question clearly states that out of a sample size of 56 the current situation in India is rightist 52 left 32 center 16. This blatantly dictates that the voter demographic clearly favors the rightist wave. As the now retrogressive party that is Congress finds itself retreating. For some perspective: The Indian National Congress (INC, often called the Congress Party or simply Congress) is a political party in India with widespread roots. Founded in 1885, it was the first modern nationalist movement to emerge in the British Empire in Asia and Africa. From the late 19th century, and especially after 1920, under the leadership of Mahatma Gandhi, Congress became the principal leader of the Indian independence movement. Congress led India to independence from Great Britain, and powerfully influenced other anti-colonial nationalist movements in the British Empire. Congress is a "big tent" party whose social democratic platform is generally considered to be on the center-left of Indian politics. Congress' social policy is based upon the Gandhian principle of Sarvodaya—the lifting up of all sections of society—which involves the improvement of the lives of economically underprivileged and socially marginalized people. The party primarily endorses social democracy—seeking to balance individual liberalism and progressivism, welfare and secularism. Its constitution states democratic socialism to be its ideal. After India's independence in 1947, Congress formed the central government of India, and many regional state governments. Congress became India's dominant political party as of 2019, in the 17 general elections since independence, it has won an outright majority on seven occasions and has led the ruling coalition a further three times, heading the central government for more than 54 years. There have been six Congress Prime Ministers, the first being Jawaharlal Nehru (1947–964), and the most recent Manmohan Singh (2004–014). Although it did not fare well in the last two general elections in India in 2014 and 2019, it remains one of two majors, nationwide, political parties in India, along with the right-wing, Hindu nationalist Bharatiya Janata Party (BJP). In the 2014 general election,

Congress had its poorest post-independence general election performance, winning only 44 seats of the 543-member Lok Sabha. As we can clearly analyze. Repeated coalition government have weakened the resolve and dedication and above all the will to work within the party itself. Coming over to U.S.A, The United States finds itself in quite the volatile political environment at this moment. America could be the case in point for Indian voters regarding extremist rightist parties. Although the 020 presidential election is a year away, more than half of Americans say it as a significant stressor in their lives, according to the annual

"Stress in the Americas survey from the American Psychological Association

APA). More than half of the adults surveyed this year said they believe the United States is at the lowest point in its history that they can remember. But they apparently don't believe that things will remain dire. More than three quarters of the survey's respondents also said they feel hopeful about the future. here is a lot of uncertainty in our world right now—from mass shootings to climate change. This year's survey shows us that more Americans are saying these issues are causing them stress, says Arthur C. Evans Jr., APA's chief executive officer, in a released statement. Our macro level question surprisingly revealed a similar optimistic pattern as in USA Rightist= 51, Leftist=39, Centrist=10

Our next macro question led us to discover the despite of the strong chaotic evidence the voters chose to back rightist governments as they supported the rightist format over centrist and leftist in USA= 52 and in INDIA= 56

The American political climate is in a very oddly divided into a black and white area.

But collectively the voter demographic strongly believe together that the rightist format will positively bring progress. This a generalized opinion they are almost never backed by facts or articulate representations Government satisfaction level USA= 66% INDIA= 57%

## **SUSA**

Rightist Leftist Centralist

In the long 70 years of Indian independence the voter demographic has never witnessed a government who's so keen on public approval of its every action. This leads to the masses feeling uplifted and the rightist wave coming into power. However, a trend sees to emerge that a few voters, the ones that are able to comprehend entire paradigms end up criticizing the government and then they yearn for a centrist party. Further general observation provides the current generation is not really so keen in actively participation in democracy if we speak on a macro level. Furthermore, the trend of governments not providing

enough visible development is leading to the voters to adopt a less popular measure of NOTA: None of the above.

### **Conclusion**

We speak, we breathe, we observe, we soak in, we melancholically or nostalgically sit and observe the waves that sweep our great nation and planet day after day in absolute disciplined silence. That was the position of the voter demographics of the two resectable largest democracies of the world. A stagnant and unapologetic democratic rule led to intellectual and plebeian unrest. As a result, quite blatantly the voter demographic, irrespective of their education, economic background or very broadly speaking religion chose to shift dramatically and drastically from the old leftist way of life which was bestowed upon to them over a very slow course of time. Upon a long and hard analysis and some analytical retrospection our survey conclusively led us to agree that the people of India and the United States are voting in power rightist governments under the umbrella of the assumption that their way of life and regiment will radically alter itself as the policies and procedures and norms that'll be introduced by these rightist governments. Via critical analysis it was revealed that the voter demographic was tired of the divide between the government and the voters that was immediately created after the governments took charge. It was widely felt that the amount of development that has taken place wasn't visible if at all taken place. Furthermore, a majority percentage also believe that the governments prior to the rightist regime didn't alter the policies according to the times they were operating in. Alarming the voters via their answers also tend to prove that their critique and complaints were falling on to deaf ears. Which if viewed from a third person perspective dictates that democracy as a whole is failing on some level. Via our survey it was quite unfortunately obvious that the general and creme de la creme didn't bother with understanding the peripherals and the repercussions of voting a rightist government into power. It's been statistically proven that a significant amount of people now after going through an election cycle merely voted as they demanded a wave in "stagnant politics of the country". The paradigms of the American people were however worlds apart. By voting an industrialist into power they expected a wave of reforms regarding employment but instead got married with administrative controversy day after day. A similar horrific picture could be of course painted for the Indian voter for the next elections except with a few colorful spots. Our personal suggestions would be to firstly introduce Informative studies about elections, party ideologies type of governments, their working and their preferences at a very micro level. As reforms on a macro level never tend to work out. Furthermore, a well-educated guess should be the bare minimum requirement for a vote. As that would be the only possible way ensure that democracy lasts for posterity on our humble planet and more



importantly our nation. Via our research we have firmly established the fact that the current wave of democracy is experiencing a rightist extremist wave. Since democracy is itself an evolving process labelling this wave as a negative output would be a biased assumption. With this we would like to conclude that sure the current paradigms might be unknown and turbulent but the future is not exactly bleak or grim. It might just bear a leaner, brighter and better political landscape.

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# **ECONOMICS AND PEACE**

## A Case Study into the Impacts of Violence on the Economy of Nations

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### Abstract

*Peace is not only important for an individual but also for a nation. However, due to conflicting interests of various individuals, groups and nations as well, conflicts do come into existence. As long as a conflict takes place only in verbal and diplomatic terms, there is not much crisis experienced by a nation. But, when a conflict takes the form of an armed attack, consequences do follow, vastly affecting the social, political and economic conditions of a nation. This report aims to study the impact of violence on the nation's economic growth. We will be studying the impact by preparing a case study on four countries naming Iceland, New Zealand, Afghanistan and Pakistan. The case study will comprise comparisons of these four nations on the basis of indicators of economy, peace and sustainable development. The significance of universal peace can be understood by the fact that the United Nations Development Programme included 'Peace, Justice and Strong institutions' in the Sustainable development Goals highlighting the fact that we cannot hope for sustainable development without peace, stability, human rights and effective governance, based on the rule of law. The statement for this goal states that armed violence and insecurity have a destructive impact on a country's development, affecting economic growth, and often resulting in grievances that last for generations. To cater to the threats of violence, a nation has to invest in 3 different ways to safeguard its interests-*

- *Preventive investments*
- *Defensive investments or costs incurred during a conflict*
- *Investments on arrangements to deal with the consequences generated by such conflicts*

*These investments amount to a significant portion of a country's economic resources. Also, there is a loss of the vital human resource, as hundreds of lives are lost during armed conflicts among nations. As a result of the destructions caused by such violence, a nation is pushed back on its path of development, making it difficult to prosper and participate in the global economy. This report presents a detail comparison of the countries which have not been involved in any kind of violence or armed conflicts in recent past with those who*

*have been constantly witnessing deteriorations in their peace levels due to the impact of frequent armed conflicts. According to global peace index 2019, Iceland remains the most peaceful country in the world, a position that it held since 2008. It is joined at the top of the index by New Zealand. So, these two countries are the most appropriate examples when it comes to defining peace aligned with economic development. Whereas Afghanistan is now the least peaceful country in the world, replacing Syria, which is now the second least peaceful and also Pakistan which stands relatively low at the index due to its continuous conflicts with its neighbouring countries. So, these two countries are the most appropriate examples of countries with the deteriorating level of peace and development. Sustainable development is only possible if a country prospers with growing resources. However, in the face of an armed conflict, resources of a country are depleted at a much faster rate, as a higher proportion of them are spent on military and defensive purposes. Therefore, the growth of other important sectors is hampered. Thus, it becomes vital to study this growing proportion of military expenditure in a country's economic resources in order analyze the potential threats to a country's economy and society.*

**Keywords**

Peace, armed conflicts, development, military expenditure, economy, comparison.

**Objectives of Study**

- To compare the economic growth level of the countries which top the 'GLOBAL PEACE INDEX 2019' with those who stand at the bottom
- To comprehend the impact of armed conflicts or violence on the economic growth potentials of the above-mentioned countries.
- To measure the contribution of the countries in fulfilling and achieving the Sustainable Development Goals.
- To know how much % of country's GDP is being occupied by the military expenditure and thus analyzing its possibility to be transferred to more productive uses.
- To analyze the political stability of the countries and its impact in disturbing the peace levels.

**Review of Literature**

The literature we went through enlightened us with the negative impacts of a conflict and

high military expenditure on a nation's economic growth. The following are the findings from some top sources-

### **Opportunity Costs: Military spending and the UN's Development Agenda**

The United Nations' Office for Disarmament Affairs recently set up an exhibit at its New York headquarters entitled *The World is Over-Armed and Peace is Under-funded*. Using the figures of 2010, it juxtaposes global military expenditure and the UN budget. The comparisons are shocking: military spending was 12.7 times higher than the Official Development Assistance (\$128 bn), 604 times higher than the regular UN budgets for Peace and Security, Development, Human Rights, Humanitarian Affairs and International Law (\$2.7 bn), and 2508 times higher than the combined expenditures of the (UN) International Disarmament and Non Proliferation Organizations<sup>3</sup> (\$0.65 bn).

In developing countries, large scale arms purchases tend to have serious effects on the resources that can be made available for development purposes. It is worth emphasizing that excessive military spending – which is after all the financial source material for arms purchases - is not a problem confined to large and affluent states. While it is true that bulk of the world's military expenditure total is accounted for by the 'big spenders', it is often poorer countries who apportion the largest percentages of their government spending to defence. Here the opportunity costs are the most acute and immediate for the populations concerned, in terms of schools and clinics not opened, poverty programmes not funded etc. Low income states are in general less stable and are located in conflict-affected regions. Within the nation, a vicious circle tends to operate, whereby authoritarian military government and social inequality give rise to rebellion, which if it turns violent in response to repression, then justifies higher military spending and arms purchases, further reinforcing the regime in power.<sup>14</sup> Such action-reaction mechanisms serve to seriously undermine progress towards sustainable development.

### **Analysis and Findings**

- Poverty makes civil wars more likely, civil wars in turn worsen poverty. These relations are stronger for very poor countries than for developing countries generally.
- Countries that rely heavily on primary commodities are more vulnerable to conflict.
- Countries with severe inequality between ethnic or regional groups are more vulnerable.

- Countries that trade with each other are less likely to fight each other.
- Short term fluctuations in GDP do not make international conflicts more likely.
- Domestic investment collapses during conflicts, it does not recover until long after they end.
- Health infrastructure is especially hard hitting the damages, endure well after conflicts end.
- Economic sectors that depend on the capital and high levels of internal trade (for example, construction, finance, manufacturing etc.) are likely to be hit hardest.
- Wars last longer if rebels finance themselves using illegal commodities.
- Wars last longer in poorer countries.
- Scholars find that on average economies in conflict grow at annual rates of between 1% and 2% lower than economies during peacetime.

### **Basis for comparison of Peace Indicators**

To compare the levels of peace in the 4 nations under consideration- Iceland, New Zealand, Pakistan and Afghanistan, we used the following indicators-

- Global Peace Index Ranking
- Political Stability
- Firearms imports

### **Global Peace Index Rankings**

Global Peace Index ranks 163 independent states and territories according to their level of peacefulness. Produced by the Institute for Economics and Peace (IEP), the GPI is the world's leading measure of global peacefulness. This report presents the most comprehensive data-driven analysis to date on peace, its economic value, trends, and how to develop peaceful societies.

The GPI covers 99.7 per cent of the world's population, using 23 qualitative and quantitative indicators from highly respected sources, and measures the state of peace using three thematic domains: the level of *Societal Safety and Security*, the extent of *Ongoing Domestic and International Conflict* and the degree of *Militarisation*.

According to the GPI 2019, the following are the rankings of the nations under consideration-

Iceland- 1

New Zealand- 2

Pakistan- 153

Afghanistan- 163

As per the rankings given above, one could easily analyse that the levels of peace in Iceland and New Zealand are much higher as compared to Pakistan and Afghanistan.

### **Political Stability Index**

Political stability being a major factor in the increasing conflicts in different nations is also an important factor or indicator in determining the levels of peace in a country.

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
Lower	81.73	87.50	15.87	0.00
Higher	95.67	99.04	40.38	2.38

**Lower-** Lower bound of 90% confidence interval for governance, in the percentile rank terms

**Upper-** Upper bound of 90% confidence interval for governance, in the percentile rank terms

**Source-** [hBps://info.worldbank.org/governance/wgi/](https://info.worldbank.org/governance/wgi/)

The above data from the World Bank organisation on political stability provides a clear picture on the stability in the 4 nations with Iceland and New Zealand having high political stability in both the lower and higher bounds while Pakistan and Afghanistan have comparatively low political stability which is also a major reason behind conflicts in these nations.

### **Fire Arm Imports**

Firearms imports in a nation are a direct indicator of rising military expenditure and probability of a conflict.

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
Small Arms Imports (US\$)	1,987,800	22,805,399	15,035,522	64,016,650

Source- <https://www.gunpolicy.org/firearms/region/new-zealand>

Firearms imports in Iceland are the lowest, followed by Pakistan, Afghanistan and New Zealand. It is quite surprising that the firearms imports in New Zealand, a peaceful nation are high as compared to Pakistan, a nation with lower levels of peace. Therefore, in order to get the real picture behind this irrationality in the figures of imports of firearms, we did a deep background study of the same in Pakistan and obtained the following results-

- Federal government of Pakistan restricted the import of firearms in 2015. However, far from making the country any safer, the ban has led to a staggering rise in the sale of smuggled weapons, many of which use prohibited bores and modes of operation.
- The All Pakistan Arms and Ammunition Dealers Association (APAADA) estimated that illegal arms worth between Rs3 billion and Rs4 billion have been smuggled into the country every year since the ban has been in effect.

Source- [hBps://tribune.com.pk/story/2093657/1-illegal-industry-thrives-pakistanamid-ban-firearms-import/](https://tribune.com.pk/story/2093657/1-illegal-industry-thrives-pakistanamid-ban-firearms-import/)

### **Economic Indicators**

In order to have a comparison of the economic conditions of the 4 nations with varying levels of peace, the following indicators were used-

- Military Expenditure
- GDP per capita
- GDP growth rate
- Unemployment Rate

### **Military Expenditure**

Military expenditure for a country includes the expenditure incurred by a country on the defence mechanisms for the country's protection. It is the most important element while studying economics and peace as it indicates how much a country is spending on an army

to defend its frontiers. Defence comes into existence only when there is a possible threat of conflict. Therefore, military expenditure shows how much part of its resources is a country spending on defensive purposes and it directly reflects the conflict conditions in a country.

Such expenditures should include:

- personnel
  - › all expenditures on current personnel, military and civil
  - › retirement pensions of military personnel
  - › social services for personnel and their families
- operations and maintenance
- procurement
- military research and development
- military construction

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
Military Expenditure 2017(% of GDP)	0.0	1.2	3.8	0.9
Military Expenditure 2018 (% of GDP)	0.0	1.2	4.0	1.0

Iceland has no military expenditure. For New Zealand, the military expenditure remained constant for two years while for Pakistan and Afghanistan, it saw an increase indicating the possibility of conflicts.

Experts noted the increase in Pakistan's military expenditure could also be used to back terrorist attacks in Kashmir. Another important reason could be dwindling US security aid. In January, 2018, the US had suspended about \$1.1-billion security assistance to Pakistan until Islamabad took action against the militant groups allegedly operating out of its territory.



## Gross Domestic Product Per Capita

Per capita gross domestic product (GDP) is a metric that breaks down a country's GDP per person. It is calculated by dividing GDP over a country's population. GDP per capita is a universal measure globally for gauging the prosperity of nations. Worldwide it is used by economists alongside GDP to analyze the prosperity of a country and its economic growth.

- GDP Per Capita is a significant economic indicator as it gives an overall picture of the state of the economy to that of a satellite in space that can survey the weather across an entire continent. GDP enables policymakers and central banks to judge whether the economy is contracting or expanding, whether it needs a boost or restraint, and if a threat such as a recession or inflation looms on the horizon.
- We picked GDP per capita to have an analysis and comparison of the economic conditions of the 4 nations- Iceland, New Zealand, Pakistan and Afghanistan.

**Figure: GDP per capita figures of select countries**

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
GDP Per Capita 2010 (current US\$)	41553	33543	1023	558
GDP Per Capita 2016 (current US\$)	60 966.0	40 233.0	1 462.0	584.0

Source: data.worldbank.org

- The GDP Per Capita of Iceland is the highest and also shows a growth from 2010 to 2016.
- The GDP Per Capita of New Zealand is less than that of Iceland but considerably higher than that of Pakistan and Afghanistan.
- The GDP Per Capita of Pakistan and Afghanistan are considerably low and also have shown low growth in these figures from 2010 to 2016 indicating poor economic conditions.

### Gross Domestic Product Growth rate

Real Economic Growth Rate is the rate at which a nation's Gross Domestic product (GDP) changes/grows from one year to another. GDP is the market value of all the goods and services produced in a country in a particular time period.

We took up GDP growth rate as an indicator to study the growth of a county's economy in the face of a conflict (as in case of Afghanistan and Pakistan) and sustained peace (as in the case of Iceland and New Zealand). This would help to better analyse the impact of violence on a nation's economy.

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
GDP growth rate 2010 (annual %, const. 2010 prices)	-3.6	1	1.6	3.2
GDP growth rate 2016 (annual %, const. 2010 prices)	7.2	3	5.7	3.6

- The GDP Growth Rate of Iceland and Pakistan saw a considerable rise from 2010 to 2016 as compared to New Zealand and Afghanistan.
- Iceland shows a tremendous GDP Growth Rate over the years.
- Afghanistan witnessed the lowest growth from amongst the 4 countries under comparison.
- Pakistan being a nation under conflict shows considerable growth between the years 2010 and 2016.

### Unemployment Rate

The unemployment rate is the share of the labour force that is jobless, expressed as a percentage. It is a lagging indicator, meaning that it generally rises or falls in the wake of changing economic conditions, rather than anticipating them. When the economy is in poor shape and jobs are scarce, the unemployment rate can be expected to rise. When the economy is growing at a healthy rate and jobs are relatively plentiful, it can be expected to fall.

Unemployment rate has been taken up to put forward the impacts of violence

(Afghanistan and Pakistan) and peace (Iceland and New Zealand) in a country on the vital human resource. Unemployment gives rise to a series of other problems in the lives of people; therefore, it is important to study the unemployment rate in an economy. Also, unemployment rises in the wake of economic crisis, directly reflecting a country's situation.

INDICATOR	ICELAND	NEW ZEALAND	PAKISTAN	AFGHANISTAN
Unemployment rate 2010 (% of labour force)	7.6	6.1	0.6	7.8
Unemployment rate 2018 (% of labour force)	2.8	5	4.2	8.8

- While Iceland and New Zealand witnessed a decline in the unemployment rate between 2010 and 2016, Pakistan and Afghanistan saw a rise in the unemployment rate during the same time period.
- The growing rate of unemployment in Afghanistan is a result of population explosion, poor law and order situation, bad economic situation, corruption, terrorism and defective education system.
- Most of the institutions in Pakistan are being privatized as for instance PIA. This is the main reason as to why the level of unemployment is rocketing day by day. Rapid growth in population is also one of the major determinants of increasing the unemployment rate of Pakistan.

### **Contribution of Sustainable Development Goals**

All the four countries have been working towards the Agenda 2030. While Pakistan and Afghanistan are still working to fulfil the targets of certain basic goals, Iceland and New Zealand are efficiently contributing to all the 17 SDGs. As our focus is majorly on the 16<sup>th</sup> goal of 'Peace, Justice and Strong Institutions', we will see what basic steps have been taken by these nations to fulfil the same.

#### **Iceland**

Iceland has been constantly working on all the 17 SDGs. In order to meet the needs of the 16<sup>th</sup> goal, the nation has taken steps to-

- Fight against organised crime
- Reduce all types of violent offences
- Promote trust in politics, the administration and the judicial system
- It has further set its priority targets 2018-20 to-
- Significantly reduce all forms of violence and related death rates everywhere.
- Promote the rule of law at the national and international levels and ensure equal access to justice for all.
- Substantially reduce corruption and bribery in all their forms

### **New Zealand**

As in the case of Iceland, New Zealand as well has been ensuring constant action towards the 17 SDGs. It has contributed to the 16<sup>th</sup> goal by working towards the following-

- Generalised trust
- Institutional trust
- Justice equity
- Perceptions of safety/ feelings of safety
- Eradicating Harm against children
- Uprooting Victimisation
- Eradicating Experience of discrimination
- Controlling Domestic violence
- Sense of belonging
- Loneliness

### **Pakistan**

Although Pakistan has been making persistent efforts to work for the SDGs by linking them to its national policies but it has significantly worked on the following goals-

- Goal 1-No Poverty
- Goal2- Zero hunger
- Goal 3- Good Health and Well Being
- Goal 5- Gender Equality

- Goal 7- Affordable and clean energy
- Goal 8- Decent work and economic growth
- Goal 13- Climate Action
- Goal 17- Partnerships for the Goals

### **Afghanistan**

Due to ongoing conflicts and disturbances, Afghanistan could contribute to the SDGs in a very limited fashion. The country has taken steps to fulfil the following goals-

- Goal 1- No Poverty
- Goal 2- Zero Hunger
- Goal 3- Good Health and Well Being
- Goal 5- Gender Equality
- Goal 9- Industry, Innovation and Infrastructure
- Goal 17- Partnerships for the goals

### **Conclusion**

From the above data, the following conclusions can be drawn-

- Political stability has been much higher in the 2 peaceful nations as compared to the ones less peaceful.
- New Zealand being a peaceful country as compared to Pakistan, has higher small guns imports while Afghanistan has the highest.
- Most importantly, the military expenditure of Iceland and New Zealand remained stable, it increased in the case of Pakistan and Afghanistan, thus taking away resources from other important fields.
- GDP per Capita of Iceland and New Zealand have been better than that of Pakistan and Afghanistan.
- GDP growth rate of Iceland and Pakistan (though having a low peace index rank) have been much better as compared to that of New Zealand and Afghanistan. But we cannot ignore the fact that New Zealand already has a much better GDP as compared to that of Pakistan.
- While unemployment rate fell for Iceland and New Zealand, it grew considerably for Pakistan and Afghanistan, reflecting the growing strain in the economy.

- To build their study, the authors use military spending information from the Stockholm International Peace Research Institute (SIPRI) dataset. Their results show that increased military spending has consistently negative impacts on a country's economic growth. This even is the case when analyzing different time periods and countries with varying GDPs, as well as when comparing military spending to other forms of government spending. When analyzing all countries together, the findings show that over a 20-year period, a 1% increase in military spending decreases economic growth by 9%.
- Military expenditure if reduced, can be put to work as resources in other important sectors like education, healthcare etc.
- A decrease in conflicts would further lead to a decrease in the military expenditure of a nation, facilitating its higher participation in the fulfilment of the SDGs by using these added resources.  
higher participation in the fulfilment of the SDGs by using these added resources.
- From the study of the above indicators it can be concluded that a peaceful country has better economic growth potential in the long run as compared to the countries facing armed conflicts.

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## **AGROECOSYSTEM: A solution to climate change**

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### **Abstract**

*he natural biodiversity plays a key role in the existence of human life. Like the nonhuman life on earth, the natural biodiversity sets a combination of living and non-living components in the environment which helps in running our lives. The living components share an equal proportion to the non-living components in the natural biodiversity. Both the components share equal dependency on each other; one cannot survive without the other. But with the degrading natural biodiversity, the agriculturalists and the environmentalists have tried to find key solutions to the problem. And according to them, the best solution is to set up an Agroecosystem. An Agroecosystem is a type of ecosystem which is setup artificially to manage the relationship between living and non-living components on the earth. It also provides an earning platform to the farmers. Its benefits range from restoring soil fertility to mitigating greenhouse gases. According to the statistics, Agroecosystem covers 35% of land area and provides living to 45% of the population. (since 1970's). The Agroecosystem prevails in the Brahmaputra Valley and the areas around its tributaries. The Brahmaputra Valley covers 72% of the total geographical area. The Brahmaputra play a major role in maintaining Agroecosystem along its tributaries. It has led a helping hand to the tribal population as it supports their livelihood. Practice of Jhum cultivation has been witnessed mainly in this area. To a great extent, it also solves the problem of unemployment in the neighboring areas.*

### **Keywords**

Agroecosystem, overexploitation, climate change, global warming, Brahmaputra valley, sustainable development.

### **Introduction**

Agroecosystem as the word suggests is combined to two words namely “AGRO”- meaning agriculture and “ECOSYSTEM”- meaning agriculture and organisms. Therefore, collectively the term agro ecosystem means a study within the agriculture sciences that deals with the units of living and non-living components and their interactions as well. The agro ecosystem comprises 30% of the Earth's surface.

Agro ecosystem being an interaction of both living as well as non-living components



keeping in mind the agriculture practices as well therefore provides a platform to maintain the global balance of the environment plus the management services used in the agro-ecosystem determine the global environment.

### **Objectives of Study**

The study covers the theoretical knowledge regarding the initiatives required by the Indian Government to improve the climatic conditions by adopting the policy of Agroecosystem.

### **Research methodology**

This study is mainly based on the secondary data collected from the reports of Government Records (official sites). Also included are economist's opinion and other published and unpublished reports.

### **LOSS OF NATURAL BIODIVERSITY**

The loss of biodiversity has become a serious issue in the world. There are factors which impact the biodiversity. Some of them are:

1. Degradation, over exploitation which destroys natural resources.
2. Global climate change is occurring at an unexpected rate due to greenhouse effect, carbon dioxide, emissions of CFCs in the atmosphere.
3. Due to this the sea level has also risen by 12-22 cm in last 10 decades. It is also affecting the life stage such as flowering, germination process, food source of species, etc.

### **Reasons for Biodiversity loss**

1. Habitat loss and degradation
2. Invasive species
3. Over exploitation
4. Pollution
5. Climate change

### **Climate Change**

Increased temperature and atmospheric carbon dioxide can stimulate plant growth, but they can also be harmful. That's because many weeds, pests, and fungi thrive under warmer temperatures and higher carbon dioxide levels, which could cause problems for farmers' crops previously unexposed to these species – and increased carbon dioxide

reduces the nutritional value of most food crops. extreme temperatures can prevent crops from growing successfully, particularly if the temperature exceeds a crop's optimal level. The temperature above 50°C may kill many annual crops.

Climate change can impact farm animals, too. Heat waves, which are projected to increase under climate change could directly threaten livestock. In 2011, events involving exposure to high temperatures caused more than \$1 billion in heat-related losses to agricultural producers.

Furthermore, heat stress over time can increase an animal's vulnerability to disease and reduce its fertility and milk production. Climate change may also increase the prevalence of parasites and diseases that affect livestock—warmer winters and an earlier onset of spring could enable some parasites and pathogens to survive more easily. It may also increase the prevalence of parasites and diseases that affects livestock.

It's also important to consider how climate change can increase the likelihood and intensity of natural disasters such as hurricanes and tornadoes—practically guaranteed to cause serious damage or even destroy an operation. Droughts and floods are another highly problematic effect of climate change—case in point—the recent floods in the Midwest.

With increasing global surface temperatures, the possibility of more droughts and increased intensity of storms will likely occur. As more water vapor is evaporated into the atmosphere it becomes fuel for more powerful storms to develop. More heat in the atmosphere and warmer ocean surface temperatures can lead to increased wind speeds in tropical storms. Rising sea levels expose higher locations not usually subjected to the power of the sea and to the erosive forces of waves and currents. Global temperature has increased by about 0.62 -0.76 degree Celsius since 1900s.

It is predicted to further increase by 1.4-5.8-degree celsius by 2100. Climate change is expected to have greater effects on fire regimes in regions where fire weather factors like high temperature and supper wind strength is there. Currently regions such as the temperate forests of the south-east and south-west of Australian landscape is affected because of changes in temperature, rainfall, humidity, wind, and the amount of carbon dioxide in the atmosphere, extreme fire danger days in south-eastern Australia may occur 5 to 65 per cent more often than at present. Also, climate change is expected to have less effect on fire regimes in places where fuel levels or ignition sources determine fire occurrence and intensity, such as northern tropical savannas. Deforestation is one of the main contributors to climate change.

The year 2019 saw the worst fire to hit the Amazon Basin for over a decade, as compared

to last year there is about 80% of the increment in the fire as compared to the previous year. In a time where environmental issues are becoming increasingly political, the Amazon wildfires have become an incendiary topic that has garnered much attention on the international stage. And according to the survey this has happened due to the problem of deforestation.

### **Adaptation and mitigation**

Adverse effects between climate change and agriculture can also be observed in the changing rainfall levels. In North Florida, normal rainfall for the month of December is around a few inches, but in 2018, 25 or more inches flooded the region's orchards, eroded crop lanes and tractor roads, washed away mounds of vital pine bark substrate, and greatly increased labor costs.

Looking towards the future, climate change will eventually affect food security at the global, regional, and local level due to its propensity for disrupting food availability, reducing access to food, and negatively impacting food quality

The effects of global warming on productive croplands are likely to threaten both the welfare of the population and the economic development of the countries. Tropical regions in the developing world are particularly vulnerable to potential damage from environmental changes because the poor soils that cover large areas of these regions already have made much of the land unusable for agriculture.

Although agronomic simulation models predict that higher temperatures will reduce grain yields as the cool wheat-growing areas get warmer, they have not examined the possibility that farmers will adapt by making production decisions that are in their own best interests.

The threat of global climate change has caused concern among scientists because crop production could be severely affected by changes in key climatic variables that could compromise food security both globally and locally. Although it is true that extreme climatic events can severely impact small farmers, available data is just a gross approximation at understanding the heterogeneity of small-scale agriculture ignoring the myriad of strategies that thousands of traditional farmers have used and still use to deal with climatic variability. many small farmers cope and even prepare for climate change, minimizing crop failure through a series of agroecological practices. agricultural performance after extreme climatic events in the last two decades have resiliency to climate disasters is closely linked to the high level of on-farm biodiversity, a typical feature of traditional farming systems.

Rescuing traditional management systems combined with the use of agroecologically based management strategies may represent the only viable and robust path to increase the productivity, sustainability and resilience of peasant-based agricultural production under predicted climate scenarios.

### **Agroecosystem as a solution to climate change**

Agroecosystem provides artificial platform or surroundings for the existence for both living or non-living species on earth.

Agroecosystem helps in many ways in controlling the problem of climate change in the following ways-

1. It helps in improving the nutrient values of the soil by providing a large area for the production of crops and even support the non-living creatures which helps in maintaining the balance.
2. It helps in reducing the green house emission to a larger extent. It reduces the CO<sub>2</sub> content of the atmosphere and thus is preferred to resist the global warming than the industrial agriculture.

### **Agroecosystem in the Brahmaputra Valley**

The Brahmaputra Valley covers 72% of the total geographical area. The Brahmaputra among its 32 tributaries play a major role in maintaining this agro-ecosystem by providing water to these lands. The agro-ecosystem also supports the livelihood of many tribes such as the Garos, the Ahoms and many more. The agro-ecosystem have led to rise in production of RICE crops but has also led to the fall in the production in many crops. Secondly due technological advancement it has also led to the development of the human labour and also led to the development of agriculture technology.

It is noted that there has not been changed in the nature of use of the traditionally developed agriculture implement during the British period in the early 19th century. The early methods that is ploughing, transplanting etc are even carried out today. However, some new methods have been added to the valley's agriculture landscape with the introduction of modern agriculture inputs and implements like HYV seed, fertilizers, pesticides, sprayers etc during and after 1900s.

The agro-ecosystem in the Brahmaputra valley has been changing both in the qualitatively and quantitatively over time and across space due to the nature and degree of modification made by the people. Due to the growing rate of population and increasing rate of need for food the modern technology in the agriculture has

been introduced and this helps in witnessing a perceptible change over there. The tradition system of farming in the valley is in the process of transforming into the modern phase. The diversity and long-term sustainability of the valley's tradition method of agro-ecosystem have been gradually giving ways to the process of modernization. After the introduction of modern methods of agriculture, inputs and technologies over there the production, yield and the area of the crops have been increasing. It has been observed that the crops in the valley have undergone considerable change both in terms of cultivation and in production due to the shrinkage of agricultural lands, transfer of agriculture land to non- agriculture uses, mono-cropping of HYV seeds, lack of sufficient irrigation and application of modern inputs and machines. It has been found that the area of cereals (10.03%), pulses (53.96%), oilseeds (27.15%) and the horticulture crops (10.23%) in the valley has been declined during 2001-2006.

It has been found that the area under rice has shown increasing rate of 51.45% during the period 1960-2000. The area under rice after every five years from 1960-2000 has shown positive changes, except in the year 2005. There was a severe drought in 2005 due to which production of rice area has been declined. The area under different types of rice (autumn and winter) has also witnessed considerable changes both negative and positive in the subsequent period. However, the area of summer has been increasing continuously.

But the main reason that came out for the decline in the area of agricultural land was shifting of agricultural land to non-agricultural uses , mono cropping of HYV crops and application of modern inputs and machines and similarly the production of crops declined which were considered to be due to traditional mode of cultivation , use of local variety and erratic nature of rainfall.

The cropping intensity in the Brahmaputra valley in 1992-93 was 150.31% which decreased to 144.19% in 2001-02. A district level of observation of change in the cropping pattern can be seen in Barpeta, Golaghat, Nagaon, Kokrajhra, and Sibsagar. But the cropping intensity has shown a positive trend in rest of the districts, the highest increase in the intensity was recorded in Dhemaji district (+23.21) and the lowest in the Dibrugarh district (+0.94).

There has also been seen a change in the physiological density of population in the Brahmaputra valley. As the Brahmaputra valley has uninhabited and uncultivated fertile lands it attracts immigrants from East Pakistan (Bangladesh) and Nepal, especially after 1950s. The immigrants along with the growing population exerted immense pressure on the valley as it has limited agricultural lands. It has been

observed that the physiological density in the valley in 1991 was 798 persons per sq km which increased to 947 persons in 2001.

Hence, the agricultural ecosystem in the valley are no doubt in a state of transformation from to traditional to modern state. However, some elements of primitive and traditional society and culture are still found to characterize the basic creeds of valley's agro-ecosystem.

### **Conclusion**

Agro-ecosystem being an artificial setup to maintain the diversity comes out to the beneficiary in terms of climate control. Since it helps in growing the crops in number of ways hence makes the environment cleaner and also helps in regulating the nutrient cycle of the soil. On the other hand, it mitigates the Green House Gas emission in the environment and thus making it a better place to live. But the problem arises in taking this initiative is its high initial cost which is due to the involvement of advanced machinery and more amount of labour.

But as far as the agro-ecosystem is concerned and can be analysed it does not prove to be much beneficiary in increasing the land area and the production of crops. As discussed above it has led to increase in the cropping intensity in many districts. Thus agroecosystem prove out to be both beneficiary as well as a concern in many areas.

## REINTRODUCING INHERITANCE TAX IN INDIA: CHALLENGES AND PROSPECTS

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### Abstract

*Inheritance Tax: It is the tax which was levied on the total value of the property held by an individual calculated at the time of his / her demise. It was payable at the time when the deceased individual's property was passed on to the successors. Estate duty was payable only if the total value of the inherited portion of the property exceeded the exclusion limit prescribed under the Estate Duty Act, 1953 ("the Act"). In India, estate duty was set at a rate as high as 85% (eighty-five per cent). However, in 1985, estate duty law was abolished in India. Inheritance tax is a type of tax which is levied on the income earned by an individual from his/her ancestral property. In case of properties that are equally divided among all the siblings, the tax is equally levied on the inheritors. Also popularly known as estate tax or estate duty, Inheritance tax was a tax that was levied against a particular asset during the time of its inheritance. For example, the inheritance of ancestral land. Inheritance tax is no longer levied in India and was abolished during the time of the Rajiv Gandhi Government in 1985. Though its intentions were noble, the then finance minister, V.P. Singh was of the opinion that it had failed to bring about an equilibrium in society and reduce the wealth gap. During its stay, inheritance tax or estate duty was levied from the period between 1953 and 1985. Many economists and a few rumour mills have contributed to the idea of bringing about a resurgence of this tax and lobbied for the reintroduction of Estate duty as they view it as a viable instrument against rising inequality and beating the deficit and bolstering revenues. These have been repeatedly denied by Government sources and even the Finance Minister Arun Jaitley has denied the reintroduction of this tax as he says that revenue garnered from this tax will be dismal as Indians do not inherit assets with values as high as those in developed countries. There are certain countries that practice this form of taxation. Countries like USA, UK, Netherlands, Spain and Belgium all follow inheritance tax and China had gone to the extent of introducing rules for inheritance tax back in 2002 but was met with heavy opposition to the idea and were not able to implement it. Most developed countries that practice inheritance tax levy a maximum rate of as high as 80% on the net value of the*



*assets passed on to legal heirs after the owner's demise but these high rates are offset with the fact that most of these countries provide a strong form of social security to their citizens*

Estate duty, Taxation, Inheritance tax

### **Review of Literature**

- The impact of the estate on wealth accumulation and avoidance behavior of donors – By Joel Slemrod and Wojciech Kopczuk.
- Attitudes towards inheritance taxation results from a survey experiment – By C. Gross
- Rethinking the estate tax and gift tax – By W.G Gale
- Inheritance tax: an equitable tax no longer, time for abolition? – By N. Lee
- Inheritance and wealth inequality: Evidence from population registers – By M. Elinder

### **Objectives of Study**

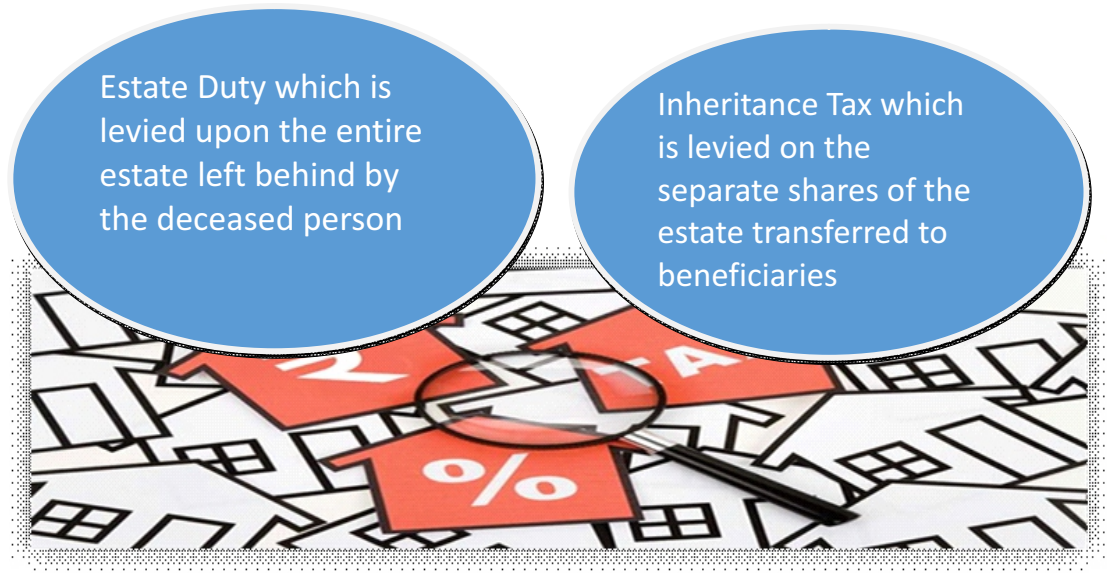
- Study estate duty act 1953
- Study reasons behind the abolition of the estate duty act 1953
- Study and compare the inheritance tax of different countries
- Different economists view on inheritance tax
- Study challenges and prospects of reintroducing inheritance tax in India
- Inheritance tax and sustainable development

### **Taxation of Ancestral Property**

Taxation of ancestral property that has been inherited is not applicable but income earned from such property is taxable. To explain this better, let us use the following example. Let us say Mr Gopal has a property that he purchased back in 2000 for an amount of Rs 1 crore. The property was being rented out and the rent earned was Rs 50,000. Now let us assume that Mr Gopal meets his unfortunate demise in 2016 upon which the property was inherited by his son Mr Krishna. No income tax will be levied against the receipt of the property by Mr Krishna as inheritance tax is not applicable in India but the income earned by Mr Krishna through the rent of this building need to be disclosed during filing of income tax returns.

Even if Mr Krishna decides to sell this property, that is income earned and is liable for payment of capital gains on the sale of the property and the sale will be taxed using the cost at which Mr Gopal purchased the property as the cost of acquisition. If the property was equally divided among many other siblings, the tax levied on either rental income or the capital gains will be equally divided among the inheritors

- It had failed to bring about an equilibrium in society and reduce the wealth



In India, in terms of the Act, the property deemed to pass on death included property which the deceased individual at the time of his / her death was competent to dispose of, and property in which the deceased individual or any other person had an interest ceasing on the former's death. Further

- if the deceased individual was domiciled in India at the time of his death, the duty was leviable on all immovable property situated in India, and on all movable property (situated in India or outside) which passed on upon his death
- if the deceased individual was domiciled outside India, the duty is leviable on all immovable property situated in India, all movable property situated in India and movable property situated outside India, if it is settled property and the settler was domiciled in India at the time the settlement took effect.

While calculating the total value of the property of the deceased individual, the market value as at the time of the death was taken into consideration.<sup>4</sup> Certain deductions were permissible from the value so determined, subject to certain limitations, on account of reasonable funeral expenses and for debts and encumbrances.

The Act contained various provisions to counteract attempts at legal avoidance. One set of provisions was that the gifts made by an individual 'in contemplation of death' (donatio mortis causa) as defined in the Indian Succession Act, 1945, were treated as passing on death of such individual. Gifts inter vivos for public charitable purposes made within a period of 6 (six) months before the death, and gifts for other purposes made within 2 (two) years before death takes place, were also treated as passing on death.<sup>6</sup> Such gifts, however, were exempted from duty up to a maximum of INR 2,500 (Rupees two thousand five hundred) in case of gifts for charitable purposes and of INR 1,500 (Rupees one thousand five hundred) in case of other gifts. Further, where the deceased individual had transferred any property to a controlled company and derived any benefits from it, a part of the assets of the company were deemed to be property passing on his / her death.

In the same proportion as the benefits derived by him / her during last 3 (three) accounting years of the company bearing to the income of the company in those years.

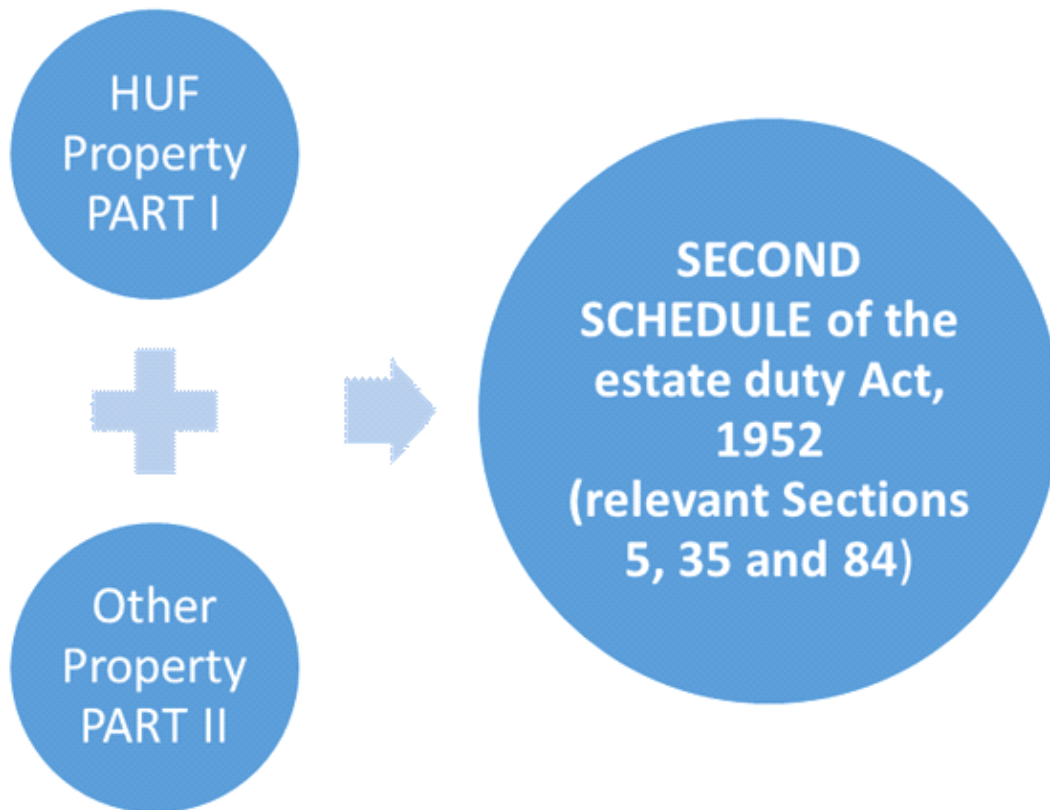
Like all other tax legislations, one of the objectives behind imposition of estate duty was to increase state revenue. Additionally, the other important objective of the tax was to prevent accumulation and preservation of wealth in the hands of a few and reduce the stark economic disparity between the rich and the poor in the country and consequently achieving a more egalitarian distribution of wealth. Despite the bona fide objective of the duty, it faced a lot of criticism from multiple sectors throughout the three decades it was in force. The Act was widely perceived to be a complex piece of legislation, primarily owing to the different valuation rules for different kinds of property. The complexities resulted in increased number of litigations relating to determination of principal value of the property. Further, estate duty and wealth tax were together seen as double tax on the same base and were thus criticized as being onerous. Collection of tax was meagre and it was reported to constitute a miniscule percentage of the total direct tax collected by the central government during the relevant years. On the other hand, the administration cost incurred by the government remained high, inter alia, on account of the large number of litigations.

Practice of holding benami properties was prominent and it was important to put in place an efficient legislation in order to curb the practice.

A lot of inherited properties remained illegitimately concealed from the purview of tax and therefore the rate of tax collection was low.

Estate duty law was abolished in 1985. One of the most important factors which led to its pitfall was the high cost and time involved in the administration of collection of estate duty compared to the actual estate duty collected. Apart from the high administrative

costs involved in implementation, imposition of the estate duty was alleged to have caused disruption to the financial economy of Indian families.



### **PART I**

- In the case of property which consists of an interest in the joint family property of a Hindu family governed by the Mitakshara, Marumakkattayam or Aliyasantana law: -
- For e.g. If a person dies leaving behind principle value of his asset valuing only Rs. 50,000 then – NO ESTATE DUTY will be levied upon his Estate, however if the value is Rs. 1,00,000 then 5% Estate Duty will be levied on Rs. 1,00,000/-

S. No.	Principal value of the Estate	Rate Chargeable on the Principle Value
(1)	On the first Rs.50000	Nil
(2)	On the next Rs.50000	5 %
(3)	On the next Rs.50000	7.5 %
(4)	On the next Rs.50000	10 %
(5)	On the next Rs.100000	12.5 %
(6)	On the next Rs.200000	15 %
(7)	On the next Rs.500000	20 %
(8)	On the next Rs.1000000	25 %
(9)	On the next Rs.1000000	30 %
(10)	On the next Rs.2000000	35 %
(11)	On the balance of the principal value of the estate	40 %

## PART II

In the case of property of any other kind

(1)	<b>Chargeable on the principle value</b> On the first Rs.1, 00, 000 of the principal value of the estate	Nil
(2)	On the next Rs.50, 000	7.5 %
(3)	On the next Rs.50, 000	10 %
(4)	On the next Rs.1, 00, 000	12.5 %
(5)	On the next Rs.2, 00, 000	15 %
(6)	On the next Rs.5, 00, 000	20 %
(7)	On the next Rs.10, 00, 000	25 %
(8)	On the next Rs.10, 00, 000	30 %
(9)	On the next Rs.20, 00, 000	35 %
(10)	On the balance of the principal value of the estate	40 %

### **International trend on Inheritance Tax**

It is interesting to note countries like the United States of America, United Kingdom, Canada and France also impose a tax on inheritance. In these jurisdictions, the basic rationale behind imposition of a tax on inheritance is to reduce social inequality and to facilitate economic redistribution of wealth (in addition to the tax being an additional source of revenue for the government).

In England, estate duty was introduced in 1894 as a 'back tax' and the principal taken into consideration for its imposition was that estate duty represented the duty due from the estate to the State. It was believed that the title of the State to a share of the accumulated property of the deceased is anterior to that of the interest to be taken by those who are to share it. Inheritance tax is also viewed as a tool to decrease inflation in residential property as some property may be sold to pay the tax, thereby bringing more property into the market which would align the supply of property with the increasing demand.

In the USA, inheritance tax is seen as a means to prevent accumulation of wealth in a few hands and to provide equal opportunities to the citizens irrespective of their social or economic backgrounds.

A brief outline of the applicable law in relation to inheritance tax in the aforementioned countries is as follows:

#### United States of America (USA)

- a. In terms with the law of inheritance taxation in USA, estate tax is applicable to the value of the estate, held by an individual at any place in the world, which is transferred upon his / her death. Therefore, a citizen of USA is liable to pay estate tax on his / her entire estate irrespective of the estate being in USA or outside USA.
- b. The rate of estate taxes in USA capped at 40% (forty per cent), with the estate and gift tax exemption threshold being \$5.49 million per person for 2017. The exemption gets doubled to \$10.98 million for married couples filing joint tax returns. Besides the estate tax (a federal tax) several states have a state-level estate tax over and above the federal limit.

#### United Kingdom (UK)

- a. The taxation of individuals in the UK is determined by their domicile status or by their residential status. The tax is levied on the worldwide estate of the deceased who was domiciled in the UK. UK has a uniform regime of estate and gift tax called inheritance tax. It is applied on the value of an individual's estate when he or she dies (in which case he or she is deemed to make a transfer of the whole estate immediately

before such time) and to certain transfers or gifts made during the lifetime of an individual.

- b. Presently, the standard rate of the inheritance tax is set at 40% (forty per cent), with an exemption threshold of £ 325,000 (Pound Sterling three hundred twentyfive thousand). If the estate is given to the children or grandchildren, the threshold increases to £ 425,000 (Pound Sterling four hundred twenty-five thousand).

#### Canada

- a. Canada does not have an estate tax, the taxation of individuals in Canada is determined by residence. In Canada, after the death of a person, their estate is considered to have been transferred to their spouse and if the spouse is not there, the deceased is considered to have sold their estate at fair market price immediately before his death. This results in recognitions of some amount of gain/loss which is included in computing income in the year of death. These gains are further taxed at the applicable capital gains tax.
- b. The deemed disposition at death applies to the worldwide assets of all Canadian residents at the time of death. Non-residents may also be liable for tax at the time of death if they own taxable Canadian property.

#### France

- a. In France, the estate tax rate is varied between a minimum of 5% (five per cent) to a maximum of 60% (sixty per cent) with several tax slabs in between. There is a condition, whereby, if the beneficiaries are children or parents of the deceased, and the value of taxable inheritance (after permitted deduction) is up to € 8,072 (Euro eight thousand seventy-two), the tax rate is 5% (five per cent). Whereas, if the value of taxable inheritance is above € 1,805,677 (Euro one million eight hundred five thousand six hundred seventy-seven), the tax rate is 45% (forty-five per cent).
- b. If the beneficiary does not fall within the category of children, parent, brother, sister, nephew or niece, the taxable inheritance (after permissible deduction), is taxed at the rate of 60% (sixty per cent).

#### Japan

The estate tax rate ranges between 10% (ten per cent) to 70% (seventy per cent); in South Korea, the estate tax rate is up to 50% (fifty per cent); in Spain it varies between 7.65% (seven point six five per cent) to 34% (thirty-four per cent).



## Inheritance Tax in Other Countries

Ranking	Country	Tax Rate
1	Japan	55%
2	South Korea	50%
3	France	45%
4	United Kingdom	40%
5	United States	40%
6	Spain	34%
7	Ireland	33%
8	Belgium	30%
8	Germany	30%
10	Chile	25%
11	Greece	20%
12	Netherland	20%
13	Finland	19%
14	Denmark	15%
15	Iceland	10%

### Views of different economists

- Marx and Inheritance; In Marx's view, "the abolishment of all right of inheritance," as he put it in his 1848 tome, was essential to a collectivist society. In an 1869 pamphlet titled the "Report of the Fourth Annual Congress of the International Working Men's Association," Karl Marx wrote that the abolishment of inheritance would be part of a natural progression, once private ownership of land and "means

of production” discontinued. With the means of production transferred to the state, there would no longer be any personal, privately held wealth to pass down. Marx cautioned, however, that abolishing inheritance without a radical change in the socio-economic order would be a reactionary distraction.

- The Saint-Simonian View; Forty years before publication of Marx' pamphlet, followers of French aristocrat Claude Henri de Saint-Simon, known as SaintSimonians, built upon Saint-Simon's promotion of social interdependence and anti-individual selfishness by attacking inheritance. Inheritance, they believed, was a counterproductive practice in which children of the rich were given wealth unearned by merit or contribution to society. Although Saint-Simon believed that ownership of private property was proper and necessary to create productivity, he did not believe property was imbued with natural dynastic rights.

### **Reintroduction of Estate Duty Act in India**

According to a recent report, 58% (fifty-eight per cent) of the entire wealth of India is concentrated with the top 1% (one per cent) of the population of India which earns the highest income. Given that the global average is 50% (fifty per cent), there is a growing concern about the increasing economic disparity in India. Considering that the intention behind reintroducing estate duty will be to avoid accumulation of wealth in the hands of few and to bring about economic equilibrium, imposition of estate duty may seem desirable. However, given that gift tax is currently applicable to several kinds of transfers without consideration, In the event the government reintroduces estate duty or any other form of inheritance tax, it must be ensured that such tax does not lead to double taxation over and above gift tax.

A fair share of Indian businesses is run by business families and therefore reintroduction of estate duty will impede economic growth of the country. This is because, in wake of a tax on inheritance, Indian promoters may give up their residential status or business operations may move overseas as tax planning measures. It may also be argued that when the deceased has already paid income tax and (in many cases) wealth tax each year for possessing the assets, it is harsh to levy inheritance tax on the same assets as this in a way amounts to double taxation.

The kind of law Government may introduce is unknown, however, taking a clue from the Estate Duty Act, 1953, the year 2017 has witnessed a struggle amongst taxpayers to transfer, settle or gift their assets to their intended successors during their life time in order to avoid the payment of estate duty on their death. Further, a number of high net worth individuals ('HNIs') have started taking measures (like family trusts, benami transactions,

gifts) to shield their assets from being covered under the tax bracket.

Taxes like estate duty are successfully levied in highly developed economies which can support taxpayers with a robust social security incentive.

In the absence of a strong social security framework, the pressure on individuals to have enough wealth stashed away for future uncertainties poses a roadblock in the successful implementation of such a tax.

Further, the existing high rate of income tax for high-income groups and capital gains tax impose enough of a tax burden on an estate which would suffer even more from the levy of an additional inheritance tax.

Such a move, which is aimed at the reduction of inequalities and redistribution of wealth, would not be well received by the financially stronger sections of society. Thus, introduction of inheritance tax, if it happens at all, must be carried out with low rates, high thresholds and adequate exemptions such as in case of inheritance of single property.

The cost of collecting the tax might turn out to be too high compared to the total collections, and may not result in it being a "pragmatic tax".

If reintroduced, it can lead to a reduction in direct tax rates

Most developed countries in the world levy an inheritance tax. The basic goal of imposing estate duty is to bring in equality of income among taxpayers. The objective is to tax the rich and distribute it to the poor.

I would not be surprised if estate tax is reintroduced. The richest 10% of Indians own 77.4% of the country's wealth. The bottom 60%, which is the majority of the population, owns 4.7%. The richest 1% own 51.5%. There is a huge gap between the rich and the poor, and estate tax can bring equality in distribution of income and wealth. This could be a significant step in that direction. Aside from the economic agenda, the reintroduction can be also politically guided.

Earlier, information collation was a difficult process, but in today's digital age, information is available at the click of a button. If reintroduced, I feel that inheritance tax would be in the range of 30-40%.

Reintroduction of estate tax could lead to some high net-worth individuals moving out of the country, but the number may be limited. If implemented, this can lead to reduction in direct tax rates.

Inheritance tax is levied mostly in developed countries, at rates as high as 55%. In India, it was in force till 1985, payable on a slab basis, ranging from 10% to 85% of the principal value of the property. However, implementation and procedural issues resulted in its

elimination.

Inheritance tax, if reintroduced, is expected to bring economic stability in India. Moreover, it would reduce wealth concentration, widen the tax base and enhance revenue, which may eventually lead to reduction in tax rates.

However, reintroduction of the tax might be met with resistance from Indian taxpayers, as the same property would then incur both income tax and inheritance tax. The government should, thus, consider levying it only under specified circumstances, along with exclusions and limits. For instance, the inheritance of one residential house property may be exempt from this tax. This would also necessitate a strong social security system to circumvent any setbacks. The government must also try to find a way to prevent Indians from taking or retaining their wealth outside India. Proposed duty may appease some sections of the society. There are whispers in the official corridors surrounding the reintroduction of estate duty. The re-elected government has made references to some kind of tax on the "rich" in the past as well. So, the intrigue continues. Estate duty was abolished in India in the year 1985 in view of narrow estate assets and meagre revenue sources with high administrative costs. The proposed duty may appease certain sections of the society, who believe that its reintroduction may reduce wealth polarization in India and do away with concentration of wealth in a few hands. It could also potentially help the government fund its dream of an equitable society. According to a survey conducted by Oxfam, 58% of India's total wealth is concentrated within 1% of its population. If the tax is reintroduced, the asset base, rates and corresponding exemptions should be carefully thought through and fair exemptions or limits put in place. There has been a gradual shift in the restructuring landscape, with individuals considering formal sophisticated arrangements such as private trusts.

### **Estate tax and Sustainable development**

India should also introduce other direct taxes such as inheritance tax and estate tax, in order to generate a greater proportion of its taxes from direct taxes and reduce the burden of indirect taxes.

India should also invest in increasing the capacity in its tax departments to have effective tax administration, investigation and litigation. This will help finance other Sustainable Development Goals that aim to improve the quality of every living being's life.

The incline in Estate Tax will lead to growth in other sectors and lead to employment generation as well.

Spending land tax revenue on Infrastructure, Health or Social Security could create a social return and facilitate development.

Infrastructure access can contribute to more productive land use.

Standard economic reasoning implies MCF's (Marginal Cost of Public Find) of one for land value taxes as a supply of land is fixed (Standard MCF ranges between 1.2 and 1.5.

Land tax after household saving and investment behavior, when land value is taxed it becomes more attractive to invest in capital as capita accumulates faster.

Land taxes can under specific condition affect land use decision because if land is an open access reason it is prone to unsustainable over use.

These goals also suggest tax breaks could be given for green energy - for example enhanced or accelerated depreciation for investments in solar and wind power. It would be necessary to balance carefully the cost of such incentives against the benefit of encouraging the relevant activity.

Implementation of Estate duty will help in conversion of unwanted residential land into green spaces which will benefit the environment.

Sustainable development is a transformation process whereby economic progress is a combination of social and cultural changes enabling individuals to realize their full potential.

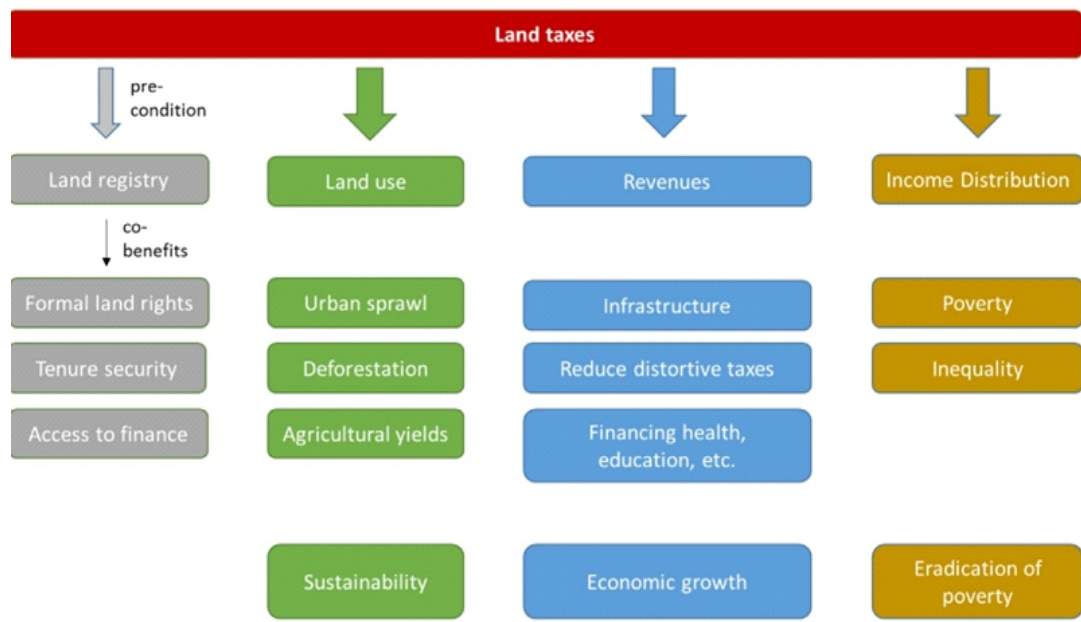
### **Sustainable Development Goals**

GOAL 10: Reduce Inequalities

GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss





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## **PATTERN OF INDUSTRIAL SECTOR IN INDIA AND THE ROLE OF INDUSTRIES TOWARDS ENVIRONMENT**

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### **Abstract**

*This paper seeks to throw light on the pattern of Industrial Growth in India and also investigates the role of an Industry in building up the model of Sustainable Environment. India has made a considerable economic progress since its Independence. The expansion and diversification of Industrial sectors is one of the most noticeable, with the introduction of new technologies, increase in investment, an entirely new class of entrepreneurs with the support system from the Government, and a large number of new industrial centres developed in almost all parts of the country are some of the reason for rise in GDP. As a result, India now, have a widely diversified base of industries and an increased domestic production of a wide range of goods and services. The Industry has traditionally also been considered as the main contributor to environmental pollution and, therefore, it was among the first sectors to draw government intervention so, the growth in the industrial sector is playing a crucial role in the growth and development prospect of India's industrial economy with the target of achieving sustainable goal (Less of environmental pollution).*

*The industrial growth pattern in India is divided into four phases; Strong Industrial Base, Deceleration and Retrogression, Industrial Recovery, Modern Industry (Industrial Slowdown since 2001), which later in detail has been discussed in this paper with the comparative growth analysis that the industrial sector has achieved. Along with that the paper also highlights the role (positive and negative role) industry have played towards the environment as they are a major contributor to environmental pollution and what the effective measures government has taken to control the pollution. So, the aim of research is to compare and analysis the Industrial Growth, since independence, along with how much pollution industries are creating and their contribution is beneficial or hazardous for the environment along with a feasible solution.*

### **Keywords**

Industrial Sector, Growth, Industrial sector phase, investment, sustainable growth, Deceleration and Retrogression.



## **Introduction**

Since independence, India is largely an agrarian economy. But for economy (country) to be globally successful it must have a strong industrial sector; so, from the first seven five-year plans India actively focused on industrial development through industrial policy formation. Industries in India has developed with ever growing days. The industrial sector is one of the main sectors that contribute to the Indian GDP. The country ranks fourteenth in the factory output in the world. The industrial sector is made up of manufacturing, mining and quarrying, and electricity, water supply, and gas sectors. The industrial sector accounts for around 27.6% of the India GDP and it employs over 17% of the total workforce in the country. Industries since then has played an important role in development prospects but also playing both negative and positive role towards the environment.

## **Objectives of Study**

- A. To analysis and compare Indian Industrial Development.
- B. The paper also highlights the role (positive and negative role) industry have played towards the environment as they are a major contributor to environmental pollution and what the effective measures government has taken to control the pollution.

## **Review of Literature**

At the time of Independence, the Indian economy was facing severe problems of illiteracy, poverty, low per capita income, industrial backwardness, and unemployment. After India attained its Independence in 1947, a sincere effort was made to begin an era of industrial development. The government adopted rules and regulations for the various industries. This industrial policy introduction proved to be the turning point in Indian Industrial history. The industries have made a prominent growth towards the economy with the passage of time. Industrial output also raises/ed the per capita income of the country. Industries has sustained historically impressive growth (under different patterns).

## **Methodology**

In order to study and analysis, the Secondary data has been collected from the various data available on the government sites and from five-year plan report.

## **Pattern of Industrial Sector in India**

### **First Phase (1951-65)**

### **Strong Industrial Base**

The phase consists of the first three plan periods from where the strong base of the industrial sector was built up in India. During this phase, huge investments were made (major industries like iron and steel, heavy engineering and machine building industries).

The annual compound growth rate of industrial sector during the first three plan periods was between 5.7 per cent to 9.0 percent. The capital goods industries had its annual average compound growth rate between 9.8 per cent to 19.6 per cent during this period.

And the annual rate of growth of basic industries moved between 4.7 per cent to 12.1 per cent over the same period.

### **Second Phase (1965-80)**

#### **Deceleration and Retrogression**

The second phase covers the period of three Ad-hoc Annual Plans (Fourth Plan and Fifth Plan). The annual growth rate in industrial production declined from 9.0 per cent during the third Plan to only 4.1 per cent covering the period of 1965 to 1976.

In 1976-77, the annual rate of growth of industrial output was 6.1 per cent.

In 1979-80, a negative annual growth rate of (-) 1.6 per cent was recorded in respect of industrial outputs as the index of industrial production in this year (base 1970 = 100) has declined to 148.2 as compared to 150.7 in 1978-79.

The industrial sector faced a structural retrogression during the second phase. The capital goods industries registered its annual average growth rate of only 2.6 per cent during the second phase Fifth Plan recorded the annual growth rate of 5.7 per cent which was far below as compared to that of first three five-year plans. For, basic industries, the annual growth rate during the second phase was far below as compared to that of Third Plan. Thus, basic industries were engaged in the production of ferrous metal groups, construction materials, mechanical engineering industries etc.

#### **Causes of Deceleration and Retrogression**

The causes of deceleration and structural retrogression during the second phase are;

- (a) The wars of 1962, 1965 and 1971. During this period investment was made into unproductive uses. Successive droughts of 1965-67 and 1971-73, and oil crisis of 1973 was also responsible for supply constraints.
- (b) Considerable slackening of real investment;
- (c) Unequal distribution of income in favour of the rich followed by stagnation in demand for consumer goods;

- (d) Unsatisfactory performance of the agricultural sector;
- (e) Policy constraints and bureaucratic obstacles on industrial growth;
- (f) Conflicts in the dominant coalition between proprietary classes, capitalist class and the class representing rich agricultural farmers.

### **Third Phase**

#### **Industrial Recovery in Eighties (1981 to 1991)**

The third phase of industrial growth covers the period of eighties consisting of both Sixth and Seventh Plan. This period of eighties experienced industrial recovery. During the period 1981-85, the average annual rate of growth of industrial production was accelerated to 7.0 per cent which further increased to 8.6 per cent during 1985-90. In 1990-91 also, the annual rate of industrial growth was registered at 9.0 per cent.

The growth rate for consumer durable goods increased to 16.9 percent in 1985-89. In 1981-90, there was a set back as the segment recorded only 1.7 per cent growth rate and then the same rate again shot up to 14.8 per cent in 1990-91.

The basic goods industries maintained the annual average growth rate of 8.8 and 8.9 per cent during 1980-85 and 1985-89 respectively. But gradually declined to 5.4 per cent and 3.8 per cent in 1989-90 and 1990-91 respectively. The capital goods industries recorded 6.3 per cent annual rate of growth during 1980-85 which experienced increase in its growth rate of 13.0 per cent in 1985-89 and then significantly 24.0 percent in 1989-90. The growth rate of capital goods was 17.4 per cent in 1990-91.

Thus, during this third phase, there is a clear shift in the pattern of industrialisation in the country. Looking at the growth of different product group in the manufacturing sector, chemicals, petrochemicals and allied industries recorded a faster rate as compared to others. During this period, the production of chemicals and chemical product industries, expanded at an annual average rate of 11.19 per cent as compared to that of only 5.47 per cent in machine building sector.

Moreover, during this period, iron and steel, basic metal and alloys and metal products recorded only 5.15 percent 4.94 per cent and 3.95 per cent. It shows a clear shift in the growth pattern of the industrial sector during eighties (Third Phase) as compared to two earlier phases.

*Causes of Industrial Recovery:*

The main factors which were responsible for the industrial recovery during eighties are described as under:

- (a) Introduction of new industrial policy and liberal fiscal period.
- (b) Higher contribution of agricultural sector in some of the regions in the country which helped in raising the demand for industrial inputs used for agricultural production.
- (c) Revival of investment in the infrastructure sectors and its effects in raising the degree of efficiency of the industrial sector.

#### **Fourth Phase**

##### **Industrial Retrogression followed by an Upturn and Downturn Nineties (1991-92 to 1997-98)**

The fourth phase of industrial growth covers the early part of nineties, from 1991-92 to 1997-98. This short period has witnessed a sharp industrial retrogression and later after it has an immediate upturn in the industrial growth of the country.

During 1991-92, the sector had a bitter experience of negative growth rate of (-) 0.10 per cent as compared to that of 8.5 per cent in 1990-91. This is the clear evidence of sharp industrial retrogression in the country.

Later after, in 1995-96 the country has witnessed an industrial upturn trend as annual growth rate; during this year stood at 11.7 per cent, During the year 1996-97 industrial output has increased by 7.1 per cent and further 8.6 per cent in 1997-98.

The industrial growth rates by use-based industrial classification again showed downward trend from April to Feb. 1997 to 7.2 and 10.2 per cent in April to Feb. 1998. The growth rate of consumer non- durables decreased to 4.2 per cent and 2.4 per cent during April-Feb. 1996-97 and 1997-98 respectively. The growth rate of capital goods industry declined to 7.2 per cent in 1996-97 and to 1.8 per cent in 1997-98. During the same period, the general growth rate of industrial production declined from 7.7 per cent in 1996-97 to only 4.7 per cent in 1997-98.

##### **Causes of Industrial Slow down**

- (a) Decline in the growth rate of export to 4.6 per cent.
- (b) Due to the impact of the tight money policy (1995-96) when the monetary expansion was about 13.7 per cent;
- (c) Significant build up industrial capacity in the first phase of liberalisation;
- (d) In some cases, the rate of demand growth was overestimated.

### **Signs of Sustained Industrial Recovery in 1999-2000**

The acceleration of growth rates in various sectors of the economy highlights the significance of industrial recovery in the current year and cyclical downturn. But there are some of the major indicators of industrial recovery in recent years:

- (a) Overall industrial output of the country i.e. 6.2 per cent in April-December 1999 as compared to that of only 3.7 per cent in April-December 1998.
- (b) The position of electricity generation remained much better in 1999-2000.
- (c) Manufacturing segment of the industrial sector has grown by 6.7 per cent in April to December 1998.
- (d) As per use-based classification, basic goods, intermediate goods and consumer goods, are having higher growth in 1999-2000.
- (e) Non-metallic mineral products, machinery and equipment, wool, leather, paper and basic chemicals are some of the industries growing at more than 10 percent during 1999-2000.
- (f) Industries like electricity, crude oil, coal, steel and cement having a weight of 26.7 per cent in overall IIP, grew at 8.2 per cent in April-December 1999.
- (g) Better corporate performance in 1999-2000 compared to previous year.

### **Industrial slowdown since 2001**

In recent years, the country is experiencing a serious phase of industrial slowdown during 2000-01 and in 2001-02. The overall industrial growth during April-December 2001-02 at 2.3 per cent, is substantially lower than the 5.8 per cent achieved during the corresponding period of 2000-01. In fact, the growth rate of the industrial sector during the first nine months of 2001-02 is considered as the lowest during the last ten years.

Industrial slowdown was recorded in all broad sectors such as manufacturing, electricity and mining and all end use-based groups such as capital goods, intermediate goods, consumer goods both durables and non-durables. However, the reasons for slowdown in industrial growth during this period is due to a number of structural and cyclical factors.

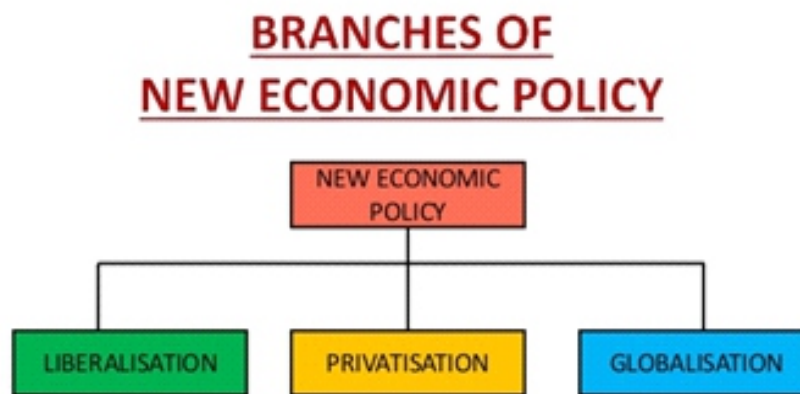
### **Reasons of the slowdown**

1. The adjustment process in industry in response to increased competition in the form of Mergers and Acquisitions is taking longer time than expected.
2. Infrastructural bottlenecks and high costs.
3. Unreliable supply of services in transport, communications and power sector.
4. Low levels of productivity due to low economies of scale, out-dated technology and restricted labour laws.

5. Lower speculative demand for sectors like automobiles and real estate due to expectation of lower prices and reduction of taxes and duties in the short-term period.
6. High interest rates.

### **New Economic Policy of India**

Launched in the year 1991, the policy opened the door of the India Economy for the global exposure for the first time. In this New Economic Policy government reduced the import duties, opened reserved sector for the private players, devalued the Indian currency to increase the export (LPG Model of growth).



#### **1. Liberalisation**

Removal of Industrial Licensing and Registration before that private sector had to obtain a license from Government for starting a new company. In this policy the private sector has been freed from licensing and other restrictions.

Industries licensing is necessary for following industries:

- (i) Liquor
- (ii) Cigarette
- (iii) Defence equipment
- (iv) Industrial explosives
- (v) Drugs
- (vi) Hazardous chemicals

*Following steps were taken under the Liberalisation measure:*

(i) Free determination of interest rate by the commercial Banks:

Under the policy of liberalisation interest rate of the banking system will not be determined by RBI rather all commercial Banks are independent to determine the rate of interest.

(ii) Increase in the investment limit for the Small-Scale Industries (SSIs):

Investment limit of the small-scale industries has been raised to Rs. 1 crore. So, these companies can upgrade their machinery and improve their efficiency.

(iii) Freedom to import capital goods:

Indian industries will be free to buy machines and raw materials from foreign countries to do their holistic development.

(iv) Freedom for expansion and production to Industries:

In this new liberalized era now, the Industries are free to diversify their production capacities and reduce the cost of production. Earlier government used to fix the maximum limit of production capacity. No industry could produce beyond that limit. Now the industries are free to decide their production by their own on the basis of the requirement of the markets.

(v) Abolition of Restrictive Trade Practices:

According to Monopolies and Restrictive Trade Practices (MRTP) Act 1969, all those companies having assets worth Rs. 100 crore or more were called MRTP firms and were subjected to several restrictions. Now these firms have not to obtain prior approval of the Govt. for taking investment decision. Now MRTP Act is replaced by the competition Act, 2002.

## **2. Privatisation**

Privatisation means permitting the private sector to set up industries which were previously reserved for the public sector. Under this policy many PSU's were sold to private sector. Literally speaking, privatisation is the process of involving the private sector-in the ownership of Public Sector Units (PSU's).

The main reason for privatisation was in currency of PSU's are running in losses due to political interference. The managers cannot work independently. Production capacity remained under- utilised. To increase competition and efficiency privatisation of PSUs was inevitable.



*Step taken for Privatisation:*

## 1. Sale of shares of PSUs:

Indian Govt. started selling shares of PSU's to public and financial institution e.g. Govt. sold shares of Maruti Udyog Ltd. Now the private sector will acquire ownership of these PSU's. The share of private sector has increased from 45% to 55%.

## 2. Disinvestment in PSU's:

The Govt. has started the process of disinvestment in those PSU's which had been running into loss. It means that Govt. has been selling out these industries to private sector. Govt. has sold enterprises worth Rs. 30,000 crores to the private sector.

## 3. Minimisation of Public Sector:

Previously Public sector was given the importance with a view to help in industrialisation and removal of poverty. But these PSU's could not able to achieve this objective and policy of contraction of PSU's was followed under new economic reforms. Number of industries reserved for public sector was reduces from 17 to 2.

(a) Railway operations

(b) Atomic energy

**3. Globalisation**

Globalisation means to make Global or worldwide, otherwise taking into consideration the whole world. Broadly speaking, Globalisation means the interaction of the domestic economy with the rest of the world with regard to foreign investment, trade, production and financial matters.

*Steps taken for Globalisation:*

## (i) Reduction in tariffs:

Custom duties and tariffs imposed on imports and exports are reduced gradually just to make India the economy attractive to the global investors.

## (ii) Long term Trade Policy:

Forcing trade policy was enforced for longer duration.

Main features of the policy are:

(a) Liberal policy

(b) All controls on foreign trade have been removed

(c) Open competition has been encouraged.

(iii) Partial Convertibility of Indian currency:

Partial convertibility can be defined as to convert Indian currency (up to specific extent) in the currency of other countries. So that the flow of foreign investment in terms of Foreign Institutional Investment (FII) and foreign Direct Investment (FDI).

This convertibility stood valid for the following transaction:

- (a) Remittances to meet family expenses
- (b) Payment of interest
- (c) Import and export of goods and services.

(iv) Increase in Equity Limit of Foreign Investment:

Equity limit of foreign capital investment has been raised from 40% to 100% percent. In 47 high priority industries foreign direct investment (FDI) to the extent of 100% will be allowed without any restriction. In this regard Foreign Exchange Management Act (FEMA) will be enforced.

### **Role of Industries towards building up the model of Sustainable Environment**

The industrial sector is a key driver of India's impressive economic growth and wellaware of the current environmental challenges, the Indian government and the industrial sector are giving much attention to sustainable development. With this focus, the government and the industry have applied the Eco Industrial Development approach in the Indian context. It is seen that on the industrial park level, the challenge of Eco Industrial Development can be tackled by developing new as well as by transforming existing parks into Eco Industrial Parks.

1. Industrialisation, while important for the economic growth and development of a society, can also be harmful to the environment.
2. Amongst other things industrial process can cause climate change, pollution to air, water and soil, health issues, extinction of species, and more.
3. Some of the environmental ills caused by business and industry in India.

### **Pollutions by Industry**

Air Emissions and Pollution (Industrial structure is being analyzed on the basis of four parameters- types of industries, total employment, total output and net value added.)

Red category (more polluting industries)

Orange category industries (somewhat polluting)

Green category industries (fewer polluting industries)

1. Land Pollution
2. Marine and Coastal Pollution
3. Hazardous Material
4. Asbestos and Harmful Dust
5. Noise Pollutions
6. Global Warming

### **Solutions to Control Industry Pollutions**

1. The industrial site should be properly examined considering the climatic and topographical characteristics before setting of the industry.
2. The industrial wastes should be subjected to proper treatment before their discharge.
3. Intensive plantation in the region, considerably reduces the dust, smoke and other pollutants.
4. Efficient transportation services. Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product.
5. Increase the access of small-scale industrial and other enterprises, in particular in developing countries.
6. By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
7. Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
8. Industrial diversification and value addition to commodities

### **Analysis and Findings**

The following are some of the major problems and obstacles that are faced in the growth of Industrial Sector:

- Poor capital formation

- Political Factors
- Lack of Infrastructure
- Gap between Target and Achievements
- Poor Performance of Agricultural Sector

The following are some of the major achievement in the growth of Industrial Sector:

- Rise in the share: GDP
- Rise in Consumer Goods Industries
- Expansion of Government Sector
- Growth of Infrastructure Industries



Market Realist

Source: Central Statistics Office

Private sector industries production increased.

**Conclusion**

It may be concluded that there is the growth of industrial sector and also slow down. According to the economists, if India grows at the rate of 6.2% per annum in a sustainable manner, it will take years to reach the current level of per capita income of China. It can also be said that the first phase was intended at industries building and structural adjustments. The fourth phase aimed at liberalisation and privatisation and globalisation. The development of Indian economy since independence is appreciable. The study shows that Growth Rate of Industry in India has been on the rise over the last few years. The reasons for the increase are that huge amounts of investments are being made in this sector and this has helped the industries to grow, the consumption of the industrial goods has increased a great deal in the country, which has boosted the industrial sector to grow and the industrial goods are being exported in huge quantities from the country. India has over three million Small and Medium Enterprises (SMEs). Since the beginning of planned economic development, India has followed a policy for the development of industrial estates and industrial parks to facilitate the establishment of small and medium industrial units. Special Economic Zones (SEZ) have been developed to host bigger companies. Recent trends show setting up of Special Investment Zones/ Regions, National Manufacturing and Investment Zones (NMIZ), and Petroleum Chemicals and Petrochemical Investment Zones (PCPIR), in addition to the SEZs and the more traditional industrial estates and industrial parks.

The industries are also playing both negative and positive role towards the environment, most of the industries are polluting the environment as well as polluting the water which in turn creating a problem for human being and several diseases. But government is focusing on the following to control it.

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## CLIMATE CHANGE: A challenge and its Framework

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### Abstract

*People across the world are struggling with the everyday realities of Climate Change, which is one of the complex problems and developmental challenge for the planet today. Dealing with higher temperatures, change in rain patterns, rising sea levels and weatherrelated disasters, these have become a struggle for growth and lead into the imbalance economic development among countries, which is unequivocal now. The major problems are depletion of the natural resources which has alter a huge ecological balance which have occurred a huge impact on agriculture, Industrial and Services Sectors in the form of global warming and change in climate.*

*The economic development, which is being critically affected by change in climate; negatively affect and slow down the overall development rate of country's Progress. Most of the nation such as India been a large country where people living in poverty, inadequate infrastructure, climate deterioration and a lack of government planning and weather systems makes India to be in a vulnerable position. The increase in global temperature and change in climatic condition over the past fifty years is very likely due to human emissions of greenhouse gases (Carbon Dioxide, Methane, Nitrous Oxide, Fluorinated Gases) which now is more than 50% higher than in 1990. The paper also highlights the effective measures International Organisations like the United Nations Environment Programme (UNEP), the Intergovernmental Panel on Climate Change (IPCC), World Meteorological Organisation and World Wide Fund for Nature, has taken to control such a huge global problem. The paper supports the Sustainable Development Goal 13: Climate Action and also throws a light on presence of uncertainties related to climate change pattern and adaptation and mitigation of greenhouse gas emissions.*

*So, the aim of research is to analysis the policies of climate, along with a feasible solution that how it can be controlled. How to mitigate the risks for development? Because it will threaten irreversible consequences if we do not act now as because we have already stepped into the years of dangerously for surviving.*

### Keywords

Climate Change, Development, Mitigation, Greenhouse gases, Environment, Climate Action, Growth, United Nations Framework.

## **Introduction**

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, it has become a serious problem that is costing people, communities and countries. Change in Weather patterns like rise in sea levels, are becoming more extreme and greenhouse gas emissions are now at highest levels. Without action, the world's average surface temperature is likely to surpass 3 degrees centigrade this century. The poorest and most vulnerable people are being affected the most and which overall is affecting the GDP of country also.

Affordable and scalable solutions are now available to enable countries to more resilient economies. The pace of change is quickening as more people are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts. Climate change, an issue that requires solutions that need to be coordinated at the international level to help developing countries move toward a low-carbon economy.

## **Objectives of Study**

The objective of the paper is to analysis the policies on climate, along with a feasible solution that how it can be controlled.

## **Review of Literature**

Climate change is a rise in atmospheric temperature, melting of glaciers, occurrence of disease, sinking islands, sea-level rising, water scarcity, increased mental stress and disease, augmented illness from diarrhoea disease and endemic mortality, rising of coastal water temperature associated with aggravate toxicity of choler. Every nation in the world in one way to another contribute the phenomena change to the climate which consists of industrialisation, burning of fossil fuels, deforestation, and unlimited use of resources and vigour contributing to Green House Gases emissions. The various studies have been undertaken to control the change in climate pattern and various frame work as well as policies has been formulated to have a look on it. 'Addressing Climate change through sustainable development and the promotion of human rights' by Margreet Wewerinke and Vicente Paolo, in this research they have address a risk to the human rights of millions of people (life, health and food). The risk is highest in developing countries, where extreme weather events, crop failure and other emergencies related to climate change are projected at higher frequency.

## **Research Methodology**

The secondary data and source have been used in order to analysis the effects of climatic condition on the economy.



## **Sustainable Development Goal 13**

### **Climate Action**

ble Development Goal 13 aims to “take urgent action to combat climate change and its impact”, while acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

With rising greenhouse gas emissions, climate change is occurring at rates much faster than anticipated and its effects are clearly felt worldwide. While there are positive steps in terms of the climate finance flows and the development of nationally determined contributions, far more ambitious plans and accelerated action are needed on mitigation and adaptation. Access to finance and strengthened capacities need to be scaled up at a much faster rate, particularly for least developed countries and small island developing States.



## How is Climate Changing? Factors

### Human Emissions of Greenhouse Gases

- **Carbondioxide:** key source burning of fossil fuels such as coal, oil and gas, and deforestation.
- **Methane:** Key sources agriculture (especially livestock and rice fields), fossil fuel extraction and the decay of organic waste in landfill sites.
- **Nitrous oxide:** Key sources agriculture (especially nitrogen-fertilised soils and livestock waste) and industrial processes.
- **Fluorinated gases:** Key sources are industrial processes.

<b>Greenhouses Gas sources</b>	<b>% Of Green House gas</b>
<b>Industry</b>	19%
<b>Transport</b>	13%
<b>Agriculture</b>	14%
<b>Forestry</b>	17%
<b>waste and wastewater</b>	3%
<b>Energy supply</b>	26%

### International Institutional and Policy Framework on Climate Change

2015: 2030 Agenda: Sustainable Development Goal 13

Paris Agreement

2014: SIDS Accelerated Modalities of Action (SAMOA) Pathway

2013: Warsaw Climate Change Conference

2012: Future We Want (Paragraphs 190-192)

2011: Durban Climate Change Conference

2010: Cancun Agreements

2007: Integrating Climate Change into NSDS

Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report

2005: Kyoto Protocol

1994: United Nations Framework Convention on Climate Change

1992: Agenda 21 - Climate Change

To strengthen the global response to the threat of climate change, countries adopted various policy to control it, few important of them are:

- 1. United Nations Framework Convention on Climate Change:** The UN family is at the forefront of the effort to save our planet. In 1992, its “Earth Summit” produced the United Nations Framework Convention on Climate Change (UNFCCC) as a first step in addressing the climate change problem. Today, it has near-universal membership. The 197 countries that have ratified the Convention are Parties to the Convention. The ultimate aim of the Convention is to prevent “dangerous” human interference with the climate system.
- 2. The Paris Agreement** at the COP21 in Paris, which went into force in November of 2016. In the agreement, all countries agreed to work to limit global temperature rise to well below 2 degrees centigrade. As of April 2018, 175 parties had ratified the Paris Agreement and 10 developing countries had submitted their first iteration of their national adaptation plans for responding to climate change.
- 3. Kyoto Protocol:** By 1995, countries launched negotiations to strengthen the global response to climate change, and, two years later, adopted the Kyoto Protocol. The Kyoto Protocol legally binds developed country Parties to emission reduction targets. The Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on 1 January 2013 and will end in 2020. There are now 197 Parties to the Convention and 192 Parties to the Kyoto Protocol.
- 4. In the 2030 Agenda for Sustainable Development,** Member States express their commitment to protect the planet from degradation and take urgent action on climate change. The Agenda also identifies, in its paragraph 14, climate change as “one of the greatest challenges of our time” and worries about “its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many

least developed countries and Small Island Developing States. The survival of many societies, and of the biological support systems of the planet, is at risk”.

5. **2019 Climate Action Summit:** On 23 September 2019, Secretary-General convened a Climate Summit to bring world leaders of governments, the private sector and civil society together to support the multilateral process and to increase and accelerate climate action and ambition. He named Luis Alfonso de Alba, a former Mexican diplomat, as his Special Envoy to lead preparations. The Summit focused on key sectors where action can make the most difference—heavy industry, nature-based solutions, cities, energy, resilience, and climate finance. World leaders reported on what they are doing, and what more they intend to do when they convene in 2020 for the UN climate conference, where commitments will be renewed and may be increased.
6. The United Nations Climate Change Conference, COP19 or CMP9 was held in Warsaw, Poland from 11 to 23 November 2013. This is the 19th yearly session of the Conference of the Parties (COP 19) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 9th session of the Meeting of the Parties (CMP 9) to the 1997 Kyoto Protocol. The conference delegates continue the negotiations towards a global climate agreement. UNFCCC's Executive Secretary Christiana Figueres and Poland's Minister of the Environment Marcin Korolec led the negotiations. The conference led to an agreement that all states would start cutting emissions as soon as possible, but preferably by the first quarter of 2015. The term Intended Nationally Determined Contributions was coined in Warsaw upon a proposal from Singapore. The Warsaw International Mechanism was also proposed.

### **General Solutions**

- Reducing emissions of and stabilising the levels of heat-trapping greenhouse gases in the atmosphere (“mitigation”).
- Adapting to the climate change already in the pipeline (“Adaptation”).
- Powering home with solar or wind is still one of the best ways to fight climate change.
- Stop cutting down the Trees.
- Recycling, Reusing can also help us in controlling the climate change.
- Lower greenhouse gas emissions by eating less meat, choosing local foods when possible and buying food with less packaging.
- Choose a fuel-efficient vehicle when purchasing, take public transportation if

it's available, carpool to work, ride a bicycle or walk when possible.

- Increase in the usage of LED lighting.
- Use of compressed natural gas as fuel.
- Usage of renewable sources of energy.

Since vehicles contribute to air pollution in a significant manner, a practical solution needs to be developed to curb this issue, like Odd Even in Delhi.

### **Analysis and Findings**

- From 1880 to 2012, average global temperature increased by 0.85°C. To put this into perspective, for each 1 degree of temperature increase, grain yields decline by about 5 per cent. Maize, wheat and other major crops have experienced significant yield reductions at the global level of 40 megatons per year between 1981 and 2002 due to a warmer climate.
- Oceans have warmed, the amounts of snow and ice have diminished and sea level has risen. From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and ice melted. The Arctic's sea ice extent has shrunk in every successive decade since 1979, with 1.07 million km<sup>2</sup> of ice loss every decade.
- Given current concentrations and on-going emissions of greenhouse gases, it is likely that by the end of this century, the increase in global temperature will exceed 1.5°C compared to 1850 to 1900 for all but one scenario. The world's oceans will warm and ice melt will continue. Average sea level rise is predicted as 24 – 30cm by 2065 and 40- 63cm by 2100. Most aspects of climate change will persist for many centuries even if emissions are stopped.
- Global emissions of carbon dioxide (CO<sub>2</sub>) have increased by almost 50 per cent since 1990.
- Emissions grew more quickly between 2000 and 2010 than in each of the three previous decades.
- It is still possible, using a wide array of technological measures and changes in behaviour, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels.
- Major institutional and technological change will give a better than even the chance that global warming will not exceed this threshold.
- In March 2017, a report from the World Meteorological Organisation stated that climate change has now taken the planet into 'uncharted territory' and we

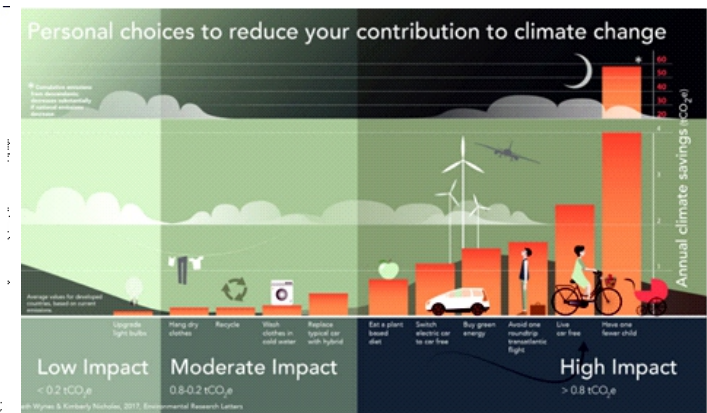
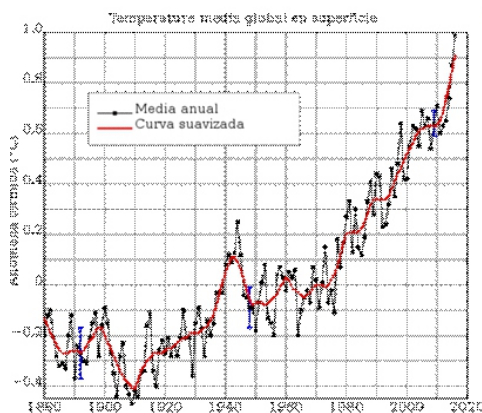
have entered into the year of dangerous which is evidenced by the continued melting of ice in the arctic, rising sea levels, record high temperatures, droughts, floods, extreme weather events, and the highest concentration of carbon dioxide (CO<sub>2</sub>) in the earth's atmosphere for three million years.

## Conclusion

“Even if we succeed in limiting warming to 1.5C, this would not be a 'safe' level of warming for the world. Therefore, we must focus on cutting global emissions to net zero as soon as possible. We know the transition to a net zero economy is the growth story of the 21st century.”— Bob Ward, Grantham Research Institute on Climate Change at the London School of Economics.

The aforementioned analyses of the changing in climate can now be summed up. It is now well recognised that the issue of climate change cannot be resolved without the active support of rapidly growing economies like India. As a rapidly growing economy, could not simply ignore the mounting pressure on the country as one of the major global polluters to take a lead role in the mitigation process.

Climate Change has emerged as one of the most serious environmental concerns. There is a need to pay adequate attention to the concerns of developing countries on vulnerability and adaptation issues. A warming climatic system is expected to impact the availability of basic necessities like freshwater, food security, and energy, while efforts to redress climate change, both through adaptation and mitigation, will similarly inform and shape the global development agenda. The links between climate change and sustainable development are strong. The Poor and developing countries, particularly least developed countries, will be among those most adversely affected and least able to cope with the anticipated shocks to their social, economic and natural systems.

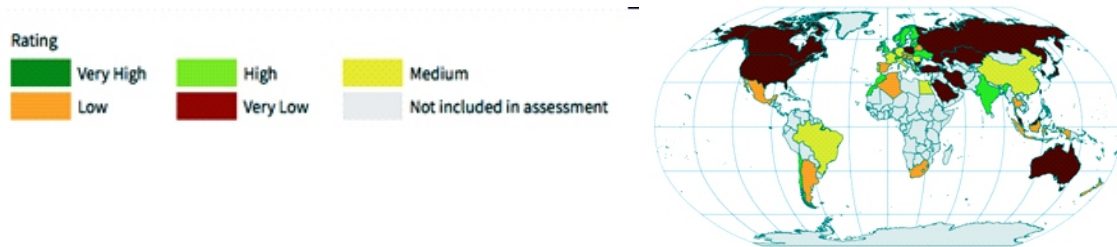


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## The Role of Tourism in Poverty Reduction in Rajasthan

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### Abstract

*The Government of India's National Tourism Policy puts poverty eradication as its key objective. The policy aims to develop tourism in India in a systematic manner, position it as a major engine of economic growth, and harness its direct and multiplier effects for employment and poverty eradication. Recently Hon'ble Prime Minister of India urged people to visit at least 15 tourist destinations within India by 2022, saying there is a "huge" scope to improve India's tourism sector. He felt that their visit to Indian destinations would boost tourism in these areas and automatically lead to better facilities. Tourism is pro-poor if it provides economic gain through the creation of full or part-time employment or the development of SME opportunities by sales to tourism businesses or to tourists. There are other livelihood benefits such as access to potable water, developed infrastructure which bring benefits to poor producers through, for example, improved access to markets, better and faster access to health and education facilities etc. and the poor are able to improve their livelihood by securing better access to tourists and tourism enterprises. The present paper attempts to evaluate the state of tourism in Rajasthan through the empirical analysis of the secondary data and the findings of the sample socioeconomic survey of the tourists held at major tourist destinations of the State. It is concluded, with Rajasthan's enormous cultural and natural heritage, tourism can ensure the sustainable development of cultural and natural environment as well as the mitigation of poverty in the State.*

**Keywords:** Tourism, infrastructure, Rajasthan

### An Overview

Over the years, tourism has been recognised as an 'industry' in view of its cascading effect on the economy of nations. In India, and particularly in Rajasthan, this concept has taken roots, resulting in high focus on promotion and development of tourism. Rajasthan has taken a lead in introducing several new concepts with this objective in view, including that of heritage hotels. The Department of Tourism has been converting local fairs and festivals as real tourist attractions, and tapping high segment of tourists.

The two districts of Rajasthan, namely Jaipur & Udaipur, figure in the top ten popular

destinations in India among the foreign tourists. Rich cultural heritage & diverse tourism products attract foreign as well as domestic tourists to the State. The other states of India, like Gujarat, U.P., Meghalaya etc., are following the example of Rajasthan for developing their own tourism industry. Rajasthan is searching for new ideas, ways and methods to attract and enchant the visitors.

### **The Importance of the Tourism Industry**

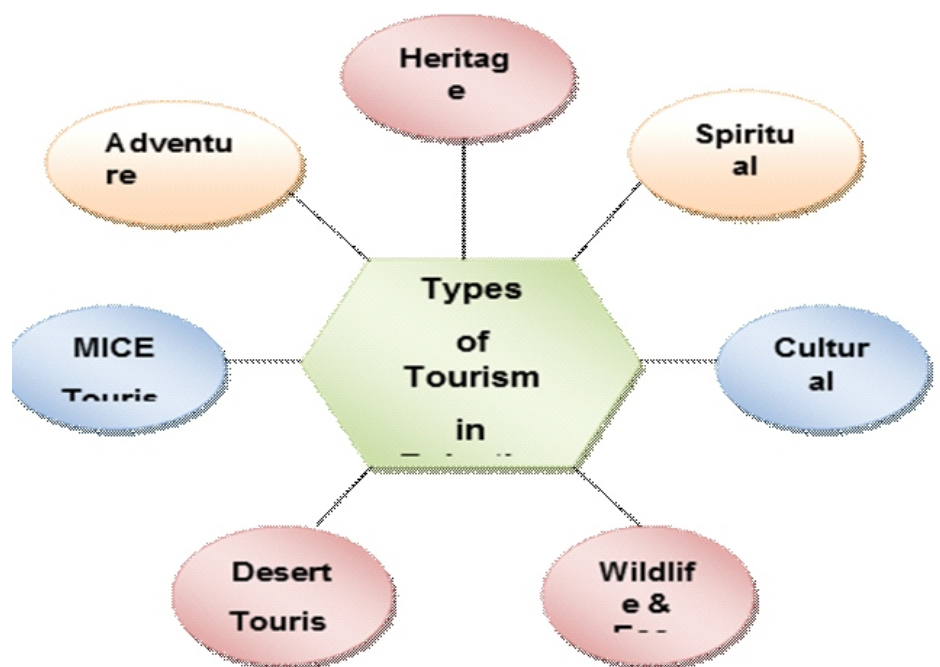
- Globalization of development programmes has raised the foreign exchange requirements of the state.
- With the least possible investment this industry bears the efficiency of earning more.
- Tourism seems to be more effective than other industries in generating employment and income in less developed often outlying regions of the country.
- Tourism both international and domestic brings about an intermingling of people from diverse, social and cultural back grounds and also a considerable spatial redistribution of spending power which has significant impact on the economy of the destination area.
- The developing countries have points in favour of tourism industry which shows multiplier effect and simplifies the task of manpower planner, environmentalist, social scientist and economist.
- Tourism industry requires the existence of an infrastructure as well as hotel accommodation and other facilities specific to tourism. These utilities are providing for tourist now available for the use of local people and provide an access of wider markets for many locally produced goods.
- Tourism industry through the hotel & restaurants, transportation services, tourism resorts, amusement parks, entertainment centers, sales outlets of curios handicraft jewelries etc. earn income.

### **Contribution of Tourism in Rajasthan Economy**

- Tourism accounts for approximately 15 percent of Rajasthan's economy and provides economic benefits like foreign exchange earnings, regional development, infrastructure development and promotion of local handicraft.
- In Rajasthan tourism accounts for 2.7 percent (5.2 percent after adding indirect - tax) in Gross State Domestic product and 1.9 percent (7.2 percent after adding indirect effect) in state employment.

- Expansion of employment opportunities is an outstanding contribution of tourism industry. Being a highly labour-intensive industry in which we absorbed our different types of unemployed people like skilled, semi-skilled and unskilled persons. The labour capital ratio is highest in this sector. In Rajasthan tourism is 3rd largest employer after agriculture and textile sector.
- The significant feature of tourism is that it employs number of skilled and educated women, this industry is more gender neutral as compared to other industries and women account for 65 percent of its international tourism workforce. These women are actively involved in hotels, airline services, travel agencies, handicrafts and cultural activities. The indirect employment in the case of tourism is fairly high and is estimated at 2.358, if direct employment is 1, according to the International Journal of Advanced Research and Development. In the tourism sector the generated employment is 1.358/ persons in other sectors of economy due to linkages with tourism.
- Tourism has a significant multiplier effect on the state economy by generating revenue, increasing investment opportunity and revival of traditions and heritage conservation and management. It is estimated that every rupee spent by tourist changes hands 13 times and that every hotel room generates direct employment to 3 persons and indirect employment to 8 persons.

### Types of Tourism in Rajasthan



## STATUS OF TOURISM

### The Nature of Tourist Arrivals in Rajasthan

Every inch of Rajasthan has history and romance associated with it. In Rajasthan, an individual breathes air infused with bravery, patriotism and national pride. This has led Rajasthan to play a pioneering role in displaying a unique blend of products, ranging from golden triangle, palace on wheels, desert triangle, heritage hotels to the pastoral fairs and festivals. Owing to its unique topography, history and culture, customs and relatively peaceful environment, the tourists flow to Rajasthan has steadily increased.

In the initial years of development of tourism industry in the country, it has reaped the advantage of close proximity to Delhi, which is one of the major ports of entry for foreign tourists in the country. The recent years have witnessed an increase in the flow of both domestic as well as foreign tourists. The foreign tourists comprise 3.37% of total tourist's arrivals in Rajasthan. The domestic and foreign tourists visit Rajasthan in a ratio 3.5:1 (approx.).

Jaipur, Udaipur, Jodhpur, Pushkar, Ajmer and Jaisalmer, Mt. Abu, are the popular tourist destinations in Rajasthan. Among foreign tourists, Jaipur and Udaipur are favorite destinations. Besides these, they also opt for Jodhpur, Pushkar, Ajmer, and Jaisalmer. The domestic tourists flock to Mt. Abu, Ajmer, Pushkar, Jaipur and Udaipur. Major religions, like Jainism, Islam and Hinduism find important pilgrimage centres in Rajasthan. Also, tourist destinations, popular with domestic tourists, have historically important religious sites e.g. Mt. Abu, Delwara, Ranakpur, Ramdeora, Deshnok, Pushkar, Ajmer and Nathdwara. Religious tourists form a major part of domestic tourists, who combine their religious motives with sight- seeing. The other purposes of visit by domestic tourists are mainly business, leisure, and study.

The French and British nationals followed by Germans, Americans and Italians form a major contingent of foreign tourists, compared to other nationalities in the world. It can be safely assumed that the Europeans, Americans, Australians and Japanese drive international tourism in Rajasthan. The foreign tourists mainly come for leisure and exploring the culture and customs of the people. Some, on their world tour, include Rajasthan in India in their itinerary. Many like to acquire skills of language, folk dances, music, local musical instruments etc.

While comparing with other states, Rajasthan stands fifth with regard to foreign tourist arrivals. Tamil Nadu, Maharashtra, Uttar Pradesh and Delhi take the lead. The State stands far behind in infrastructural development index, compared to these states. Also, the airport at Delhi and Mumbai (Maharashtra) are the main ports of entry in the country

for the foreign tourists and the other two states, namely U.P. and T.N. also have international airports. Still, due to proximity to Delhi and good connecting links (air, road, and rail) between Jaipur-Delhi, Rajasthan has impressive number of foreign visitors.

In the case of domestic tourism, Tamil Nadu, Uttar Pradesh, Karnataka, A.P. and Maharashtra were among the top ten states in the country. In the year 2019, provisional figures for top ten states in domestic tourism show that domestic tourists in Rajasthan were only one-eighth of that in Tamil Nadu. It is found that in India religious tourism is the main factor, which is coupled by leisure. A general disappointment among the people associated with, and dependent on the tourism industry is related to the future prospects of the industry. The numbers of high-income group tourists have been decreasing. On the other hand, the middle level travelers are still coming in two-star and one-star hotels, and paying guest accommodations have not suffered to the same extent as the five-star category.

### **Present Status of Hotel Infrastructure**

The State Government has initiated the development of hotel infrastructure by establishing RTDC hotels at all major tourist centres in Rajasthan. In order to cater to the needs and requirements of incoming tourists, the private sector has also exerted itself to its maximum. With the incoming tourist volume of around 519 lakhs during the year, which peaks in winter for foreign and summer for domestic tourists, the total beds available are 50,000 (including RTDC hotels) all over the State. The approved hotels constitute only around 9% of the total hotels in Rajasthan. Heritage hotels form large portion of approved hotels, and have a share of 51.6% of all heritage hotels in India. The concept of heritage hotels was born in Rajasthan, and later adopted by other States. Since Udaipur, Jaipur and Mt. Abu are on the top agenda for all kinds of tourists, these boost the number of hotels and bed capacities. Jaisalmer, Jodhpur, Bikaner, Ajmer, Kota, Alwar, Chittaurgarh, and Bharatpur follow this.

This clearly shows that private sector investment in developing hotels follow the trail of tourists. The share of RTDC has been only 4.38% of total hotel accommodation available in the State. The state government's 'Resurgent Rajasthan' campaign recognises tourism and hospitality as two focused sectors for investment. Based on their forecasted growth, Rajasthan is likely to face a shortfall of approximately 36,000 hotel rooms by the year 2021. The state government recommends not just the creation of hotels, but also the development of adventure sports activities, golf courses and convention centres through Public-Private Partnership investment schemes. While the entire state is up for development, cities such as Udaipur are getting special attention with plans such as the

establishment of a golf course, night-viewing of monuments to incorporate summer tourism, eco-tourism, as well as restoration of Jaisamand Lake.

### **Employment Scenario**

Tourism is the largest industry of the world and globally it accounts for 8% of world employment and 11% of global GDP. Total contribution by travel and tourism sector to India's GDP is expected to increase from Rs 15,24,000 crore (US\$ 234.03 billion) in 2017 to Rs 32,05,000 crore (US\$ 492.21 billion) in 2028. According to WTTC, India ranked 3rd among 185 countries in terms of travel & tourism's total contribution to GDP in 2018. Tourism generates employment in both ways, directly and indirectly. The indirect employment is many times more than the direct employment. As of 2017-18, 81.1 million people are employed in the tourism sector in India which was 12.38 per cent of total employment in the country.

It is estimated that while in energy Rs.10 lacs invested creates 47.5 jobs directly in the tourism sector, 89 jobs in terms of direct and indirect employment, as compared to 44.6 jobs in agriculture and 12.6 jobs in manufacturing sector for similar amount invested in these sectors respectively. **Tourism is a major engine of economic growth in most parts of the world. Tourism has great capacity to create large-scale employment of diverse kind from the most specialized to the under skilled.** *Hence, there lies immense scope for employment generation in urban and rural areas for which the State Government needs to initiate suitable policy measures.* The State Government needs to conduct an exercise to estimate the employment potential of the tourism industry, and explore the possibilities of additional employment generation in the urban and rural areas.

### **Product Mix / Product Design**

Rajasthan being a land of kings and kingdoms, it boasts of a variety of architectural marvels with forts, fortresses, temples, palaces, lakes, and natural endowments like hills/mountains, etc. The State also has a rich tradition of folk music and folk lore, which have universal appeal. On the one hand, it has dense forests, which have wildlife in abundance. On the other hand, it has vast tract of desert. All this varied scenario attracts tourists, who want to explore the history, culture and natural endowments of the state.

The Department of Tourism has tried to organize market fairs and festivals, which are celebrated by the local people to present to the tourists with a wide choice. The fairs and festivals have become popular with tourists and managing these events has become a focal issue for the Department. The Department is trying to woo various kinds of organisers of mega events and the film producers to unfold the heritage of Rajasthan. This



helps in further promoting the tourism products of the State, as it gets publicity on television, internet, magazines and newspapers. Developing various tourist circuits along the popular places and important highways that may boost the economy of the rural areas and small towns can consolidate the present product mix further. The general impressions of the tourists visiting Rajasthan range from good to excellent. Most of them have come to experience the culture and colourful history, and to visit historical monuments. Some have chosen Rajasthan as a centre to be visited during their world tour. The State Government can project Rajasthan as a destination in India to complete the world tour.

### **Marketing**

The State Government has established a network of tourist information bureaus in important tourist centres in the State, and in other metropolitan cities as well. The publicity of Rajasthan State as a tourist destination is also done through publication of relevant material on various tourist attractions. But this material though affordable and cheap, is not popular with the tourists. Maximum number of tourists coming to Rajasthan already have literature on the State before they arrive here. The relevant information that tourists require is about the hotels and their tariffs, and also about the transport facilities available to visit the tourist places in the area.

The condition of Tourist Information Bureaus (TIB) is deplorable, as the requisite staff is not employed, as vacancies are lying unfilled, and there are only few tourist officers. Government needs to strengthen these TIBs by deploying the required manpower and providing multiple facilities for tourists, so as to make them as reliable centres for providing information to all categories of tourists.

Overseas marketing is done under the umbrella of the Union Government and also by participating in travel marts. The other avenues of marketing are liasioning with travel agencies, operating in India and abroad for attracting tourists. Other and the most potent tool of marketing is to give the visitor due value for the money he spends. He/She needs to be accorded respect by all those stakeholders with whom he is coming into contact, i.e. common man, shopkeepers, taxi drivers, guides, hotel staff, bus/rail staff, etc.

### **Recent State Government Initiatives**

Government of Rajasthan has vision of doubling (present 1.5 million to 3.0 million tourists) the footfall of International Tourists traffic by the year 2020. In the same period, the Government also aims to increasing the Domestic Tourist traffic from the present 33 million to 50 million tourists. Consequently, various initiatives have been taken by Rajasthan Government to improve state of tourism in Rajasthan, including:



➤ **PPP in Tourism Sector:**

Rajasthan Government has identified various projects to be developed in public private participation mode in the tourism sector.

- Water based activities like cruise and boating in Chambal and other water bodies.
- ATVs (All Terrain Vehicles) in the sand dunes of Jaisalmer / Barmer / Bikaner
- Mountaineering and Trekking activities in Mount Abu / Jaipur
- Establishment of Golf Resorts and Convention Centers.
- Night viewing of monuments at Jaipur, Udaipur, Jaisalmer, Bharatpur, Chittorgarh.
- Development of eco-tourism in various places in the state.
- Development of tourism at Sambhar & Jaisamand lake

➤ **Promotion of Agri-tourism and Eco Tourism**

The Government of Rajasthan notified Rajasthan's Eco-tourism policy in 2010. This policy has been framed with a view to sensitize the public, government departments, NGOs and others about eco-tourism and for laying down the framework for its growth in the State in a sustainable manner. Sunda Mata temple in Jalore district, Bassi in Chittorgarh district, Kumbhalgarh in Rajsamand district, Hamirgarh and Menal, both in Bhilwara district have been developed as per guidelines of eco-tourism.

➤ **Government to Government partnerships**

Rajasthan Government engagement with Singapore has led to a direct flight and a skill development centre for hospitality.

➤ **Holding fairs and festivals**

Department of Tourism, Rajasthan is engaged in the organization of various fairs and festivals to promote tourism in State.

➤ **Policy incentives**

Rajasthan Government also provides various policy incentives for the development of tourist infrastructure including hotels, convention centers, tourist places.

- Incentives available for the establishment of Hotels in Rajasthan
- Regional Connectivity Scheme to improve intra-state air connectivity.

- Development of a 'Mega Desert Tourist Circuit' comprising Bikaner, Jodhpur, Jaisalmer, Pali, Mount Abu and Sambhar

- **Rajasthan tourism 3.0**

Rajasthan tourism 3.0 is a multiyear, multi-modal, multi narrative and multi-crore global campaign to galvanize tourism in the state. Rajasthan Tourism 1.0 lasted from Independence till the early 80s and was powered by Rajasthan's landscape. Rajasthan Tourism 2.0 began in the 1980s with heritage hotels that married historical narrative with commercial hardware. But Rajasthan Tourism 3.0 is government's goal of 50 million foreign and domestic tourists based on enhancement of Rajasthan's current literature, music and folk festivals with new museums, exhibits and events, strong enough for tourists to plan itineraries around them.

- **Marketing Campaign**

Rajasthan Government has launched a new aggressive campaign with tagline “Jaane Kya DikhJaaye” to market state among tourists. The campaign developed by Ogilvy consists of six films and development of the new logo of Rajasthan Tourism.

- **Promotion of Religious Tourism**

Rajasthan Government has decided to renovate 11 religious sites to promote religious tourism in the state.

- **Rajasthan Tourism Policy**

In a bid to attract more tourists and ease the setting up of tourism-related projects, Rajasthan revamped its tourism unit policy in 2015. Highlights of policy are

- Investment Subsidy of 50% of VAT and CST which have become due and have 19 Rajasthan Tourism Unit Policy 2015 been deposited by the enterprise for seven years.
- Employment Generation Subsidy up to 10% of VAT and CST which have become due and have been deposited by the enterprise, for seven years.
- Reimbursement of 25% of amount of VAT paid on purchase of plant and machinery or equipment for a period up to seven years from the date of issuance of the entitlement certificate
- Exemption from payment of 50% of Entertainment Tax for seven years

- Exemption from payment of 100% of Luxury Tax for seven years
- Land allotment in urban and rural areas at DLC rates
- 25% additional exemption from payment of stamp duty chargeable on the instrument of purchase or lease of more than 100 years old heritage property in the State, for the purpose of hotel development under the Scheme declared by the Tourism Department
- 50% additional exemption from payment of conversion charges for heritage property converted into a heritage hotel.
- All fiscal benefits to tourism units and heritage hotels will be as per Rajasthan Investment Promotion Scheme, 2014
- Development of Ajmer under Pilgrimage Rejuvenation and Spirituality Augmentation Drive (PRASAD) & Heritage City Development and Augmentation Yojana (HRIDAY) Scheme

### **Problems of Tourism in Rajasthan**

Despite its many tourist attractions tourism has not been developed in its full potential in Rajasthan because of the following constraints:

- **Poor infrastructure:** Deficiencies of basic infrastructure which lies at the root of a series of serious problems, related to the development of tourism. In Rajasthan, most infra-structure development has been concentrated around industrial districts while tourist destinations have been neglected in this respect. The maintenance of link roads other than national and state highways is extremely poor. The absence of intra-city air connectivity has been a major bundle. Accessibility to reach tribal remote areas is so poor that the tourism is not able to reach these areas.
- **Lack of cleanliness at various monuments:** Apart from roads, tourist visiting Rajasthan have stressed the need to provide basic amenities like clean toilets and other facilities. Udaipur is a very beautiful city an exotic local perfect holiday spot but also deals with dirty interiors of city. The tourist complains of lack of cleanliness in and around the tourist sites. They are forced to use mask while walking in the city. They are also annoyed by people who take their photographs without due permission. According to the State of India's Environment - 2017 Report by Sunita Nrain, Centre for Science and environment (CSE) many water bodies in India are now severely polluted and three of Rajasthan's most well know lakes the Jalmahal - Jaisamand and Udaisagar are in the list of most severely

polluted water bodies in the country. The improper maintenance and management of heritage sites and pilgrimage places is also causing them to lose their architectural value.

- **Safety Concerns:** With the growing number of crimes like theft and looting taking place with tourists, there is also an evident lack of safety and security in the state for the visiting tourists. The State Government presently has no legal provisions to give protection to the visiting tourists. Several incidents of misbehavior, molestation and sexual harassment with foreign tourist have been reported in various parts of the state in the recent past. Another major problem is the large number of tours, who are constantly trying to short snags the visitors and pestering them for money, which also create insecurity amongst them. There is no effective measure for speedy settlement of complaints of the tourists.
- **Marketing Lacunae:** There is a lack of aggressive outline and other marketing facilities for tourist places. There is no target-oriented marketing is a planned manner is hampered the tourists.
- **Lack of Public Convenience:** Lack of public convenience at various places which forces the people to sometimes use the very same monuments as urinals.
- **Non-availability of registered guides:** Non-availability of registered guide at tourist places is another problem. Language is also a problem in communicating with tourists.
- **Paucity of Funds:** The budget allocated towards the advancement of this sector by the state government is extremely low when we compare it with the tourism budget of other Indian states.

### Suggestions

Rajasthan has undoubtedly made several efforts in the past few years to improve the provision of tourist services in the state, but as discussed there are many avenues in which the tourism sector needs to improve its facilities to create Rajasthan an even more attractive tourist destination than it already is.

- Rajasthan has a vast potential for Heritage Tourism. Hence, establishment of Heritage Hotels should be heavily supported to provide quality accommodation to the tourists, and project and promote the heritage image of the state.
- As there is only one international airport in the state i.e in Jaipur. There is a need of at least another international airport in Udaipur to cater to the needs of more and more tourists.

- The quality of local transportation between the tourist attractions in the cities also needs to be improved.
- Tourist Reception and Information Centers are a major source of help for the tourists hence they should be operational 24 hours during the tourist season in important cities like Jaipur, Udaipur and Jodhpur.
- The tourist guides should be given proper training of skills sets to allow them to help the tourists better.
- The Government should ensure that vigilant tourism police is in place for the regulation of tourism industry in the state.
- Lack of trained manpower in the hotel industry is harmful for both hotels and tourism. A proper infrastructure of training system is necessary in Rajasthan. It is suggested that more hotel management institutes should be opened with latest training facilities.
- Local people should also be motivated as well as involved in the tourism process. The people of the region should come forward and help in providing safe and secure atmosphere for the tourists.
- Clearly planned, focused tour packages can be introduced which may attract the travelers.

### **Conclusion**

Tourism in Rajasthan has undergone a drastic change during the last few decades. As compared to the past, where the tourism in the state meant desert tourism, heritage tourism (forts, palaces, etc.) and pilgrim tourism, today the tourists have a wide range of places, attractions and activities to choose from in the state, which enhances the overall tourism experience. Due to the focused efforts of Rajasthan Tourism department, various State Government agencies, select entrepreneurs / individuals, tourism has grown from an elite and pilgrim phenomenon to a mass phenomenon putting Rajasthan firmly on the foreign tourist map. Travel and tourism industry have emerged as one of the fastest growing sectors contributing significantly to Rajasthan's economic growth and development by bringing much-needed revenue and employment to the inhabitants of the place and simultaneously preserving the cultural, historical, and natural 'attractions. However, still a lot is needed to be done to exploit this sector's true potential and to achieve a sustained growth. Additionally, there are several problems pertaining to this sector such as tourists' safety and security, lack of public convenience facilities, cleanliness issue, registered guides, inadequate infrastructure etc which needs to be given proper attention to. There plethora of opportunities in the tourism sector which if are

optimally harnessed, can result in an increase in the number of tourists and positive impact on the State Economy and reduction of poverty.

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## ACCESS, AVAILABILITY AND AFFORDABILITY:

### Energy for Sustainable Development

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#### Abstract

*Energy is the cornerstone of sustainable development. Demand for energy globally is rising and the Asia-Pacific region consumes more than half of global energy supply. However, over 325 million people across the region remain without electricity, and 1.98 billion people remain without access to clean cooking. Meeting rising energy demand and achieving universal access while ensuring energy sector development that is environmentally friendly, socially sound and economically feasible presents a significant challenge. Energy is the golden thread that connects economic growth, increases social equity and an environment that allows the world to thrive. Development is not possible without energy and sustainable development is not possible without sustainable energy. It is very important to understand renewable energy as a means to enable sustainable development at a global scale. As renewable energies represent both an environmental necessity and an economic opportunity. And It is also very necessary to ensure the access to affordable, reliable, sustainable, and modern energy for all with the main target of sustainable development and along with that we shouldn't forget our responsibility to enhance energy and its availability and affordability for our coming generations. So, the objective of our study is to understand how energy can be used for sustainable development. To obtain our objective we have included most of the findings from various online websites .Since the research area covers the huge area worldwide so it was very hard to approach for the primary method for the collection of data and information .So, this research is based on the secondary data and information published materials such as article , documents, journals, magazines and published papers . The main theme of sustainability is to practice using the energy in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs. As every developmental process requires huge amount of energy from its start to the very end, it is necessary to be understood about its availability and our affordability taking into consideration the accessibility of the energy for the user. There should always be a balance in between the energy utility and energy availability. Excess of energy with no use*



*has no meaning whereas excessive use with no storage for future is very risky. So, it is necessary for all of us to be aware about the energy required for sustainable development.*

### **Keywords**

Access, Affordability, Availability

### **Introduction**

Recent advances in sustainable energy are encouraging signs for ensuring access to affordable, reliable and modern energy for all. Access to electricity is outpacing population growth in many countries. In addition, energy efficiency continues to improve, which is offsetting carbon dioxide emissions, reducing energy demand and making energy more affordable. Although renewable energy in the electricity sector has advanced rapidly, accelerated progress is also needed in the areas of transport, heating and cooling. Despite some steps forward, 41 per cent of the world's population still lack access to clean cooking fuels and technologies. Overall, progress on Goal 7 remains too slow to be on track to meet the global energy targets for 2030. An adequate energy supply has been identified as a key prerequisite for economic, cultural and social development in complex societies.

### **Access, Availability and Affordability**

**The UN explains:** "Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Transitioning the global economy towards clean and sustainable sources of energy is one of our greatest challenges in the coming decades. Sustainable energy is an opportunity – it transforms lives, economies and the planet."

At the current time, there are approximately 3 billion people who lack access to clean-cooking solutions and are exposed to dangerous levels of air pollution. Additionally, slightly less than 1 billion people are functioning without electricity and 50% of them are found in Sub-Saharan Africa alone. Fortunately, progress has been made in the past decade regarding the use of renewable electricity from water, solar and wind power and the ratio of energy used per unit of GDP is also declining.

However, the challenge is far from being solved and there needs to be more access to clean fuel and technology and more progress needs to be made regarding integrating renewable energy into end-use applications in buildings, transport and industry. Public and private investments in energy also need to be increased and there needs to be more focus on regulatory frameworks and innovative business models to transform the world's energy systems.

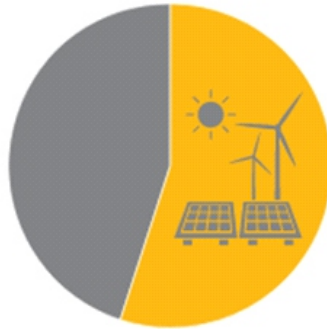
*The Sustainable Development Goals Report 2018* reviews progress in the third year of implementation of the 2030 Agenda for Sustainable Development. This overview presents highlights of progress and remaining gaps for all 17 Sustainable Development Goals (SDGs), based on the latest available data, and examines some of the interconnections across Goals and targets. Subsequent chapters focus in more depth on the six Goals under review at the high-level political forum on sustainable development in July 2018.

While people overall are living better lives than they were a decade ago, progress to ensure that no one is left behind has not been rapid enough to meet the targets of the 2030 Agenda. Indeed, the rate of global progress is not keeping pace with the ambitions of the Agenda, necessitating immediate and accelerated action by countries and stakeholders at all levels.

Ensuring access to affordable, reliable and modern energy for all has come one step closer due to recent progress in electrification, particularly in LDCs, and improvements in industrial energy efficiency. However, national priorities and policy ambitions still need to be strengthened to put the world on track to meet the energy targets for 2030.

- From 2000 to 2016, the proportion of the global population with access to electricity increased from 78 per cent to 87 per cent, with the absolute number of people living without electricity dipping to just below 1 billion.
- In the least developed countries, the proportion of the people with access to electricity more than doubled between 2000 and 2016.
- In 2016, 3 billion people (41 per cent of the world's population) were still cooking with polluting fuel and stove combinations.
- The share of renewables in final energy consumption increased modestly, from 17.3 per cent in 2014 to 17.5 per cent in 2015. Yet only 55 per cent of the renewable share was derived from modern forms of renewable energy.
- Global energy intensity decreased by 2.8 per cent from 2014 to 2015, double the rate of improvement seen between 1990 and 2010.

**55 per cent** of renewable energy was derived from modern forms in 2015



**4 in 10 people** still lack access to clean cooking fuels and technologies



The four dimensions of SDG 7 are affordability, reliability, sustainability and modernity. These different dimensions are not mutually exclusive. They overlap, and in some cases even entail each other.

Affordability is meaningless, however, if energy provision is unreliable. In many parts of the developing world, energy sources are often scarce and their supply intermittent. Today, 20 per cent of the world's population still lacks access to electricity, and a larger share suffers from persistent power failures. In 2012, the massive, nationwide blackout that struck India affected nearly 700 million people, paralyzing transportation and communication systems and causing an unknown number of fatalities. This disaster was caused not just by supply issues, but also by mismanagement and an underdeveloped energy infrastructure. Thus, basic economic activity depends on a steady supply, robust governance, and an efficient and stable distribution system. There are multiple socioeconomic dimensions of energy reliability.

Electricity, automated transportation and information technology are essential to economic development. They are also basic features of modern society, and thus energy sources and systems that meet these needs reliably and affordably can be considered as “modern”. Population growth will continue in India, sub-Saharan Africa, and other parts of the developing world. Per capita economic consumption will also increase, creating

much greater demand for the services described above and consequently for access to modern energy. Over the next quarter century, about 90 per cent of the growth in energy demand will come from countries that are outside of the rich Western economies and Japan.<sup>5</sup> Meeting this rising wave of energy demand will be one of the paramount challenges of the twenty-first century, and is a reason why it occupies such a central place in the SDGs. It also brings us to the final dimension of sustainable development goals (SDGs): sustainability.

Energy should generate a consistent stream of power to meet basic human needs, maintain and improve social functioning, and advance living standards. It should also fulfill these functions as sustainably as possible—that is to say, the power generated by energy use should be much greater than the resulting waste and pollution. All sustainable energy must be modern, although not all forms of modern energy are sustainable. Coal is perhaps the most important case in point. Historically, coal has been indispensable to industrialization and the advancement of human well-being. If more of the world's people enjoy previously unimaginable living standards today, it is in large part because of coal. Offsetting its many virtues—for instance, abundance, wide distribution, and ease of use—is a long list of serious problems, however. In an age of population growth and environmental decline, this list is still growing.

Access to affordable, reliable, sustainable and modern energy is integral to global development in the twenty-first century. Not all the solutions needed to meet this challenge are yet available, and those that are may not be apparent. Figuring out these solutions and aligning them across scales will be difficult. Yet the task is achievable if international organizations have sufficient vision, if Governments can work together, and if communities and individuals are offered the right incentives and the necessary means.

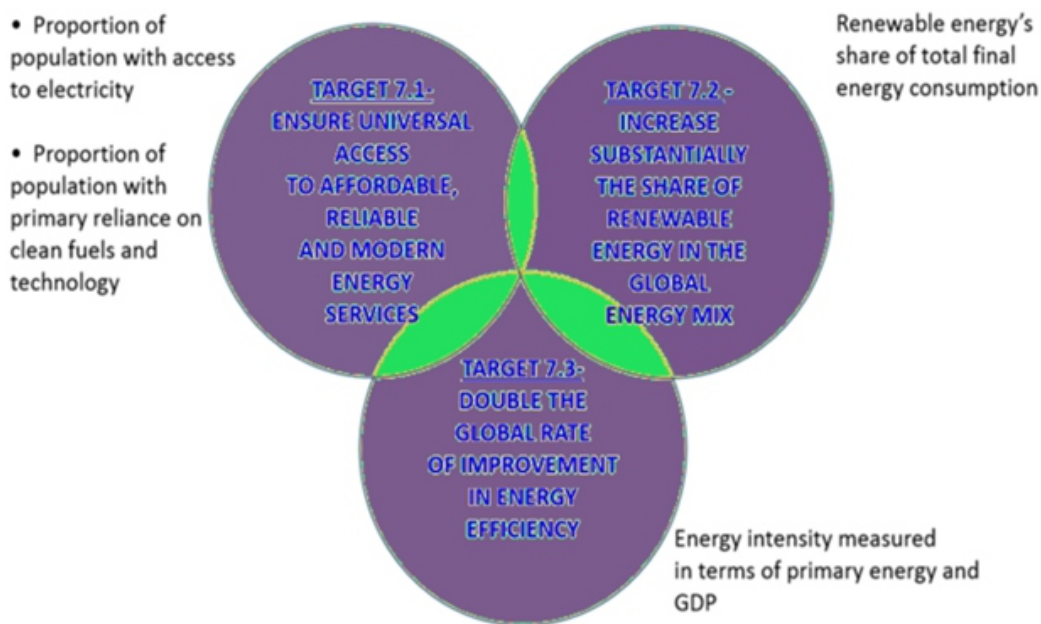
### **Sustainable Energy**

Access to modern energy is fundamental for development and poverty reduction, yet many countries in Asia and the Pacific are struggling to ensure affordable, reliable, sustainable and modern energy resources to meet their increasing energy demand. This poses significant economic, environmental, and social challenges. Affordable and clean energy services are a crucial input to supporting the provision of basic needs such as food, lighting, use of appliances, water, sanitation, essential health care, education, communication and transport. They are also a necessary input into income generation and productive activities such as agriculture, industry as well as poverty alleviation, and reduction of inequality.

Recognition of the synergies between energy and many facets of development are increasing along with the demand for more sustainable energy production, distribution

and use. The Sustainable Development Goals (SDGs), have set global targets for energy development that, if achieved, will serve to increase and expand socio-economic benefits while reducing environmental impacts.

ESCAP is committed to supporting member States in defining sustainable development priorities within the scope of energy and to contributing to the implementation of Sustainable Energy for All and the 2030 Agenda for Sustainable Development, particularly Sustainable Development Goal 7.



## SDG7

Sustainable Development Goal 7 (SDG7) aims to “ensure access to affordable, reliable, sustainable and modern energy for all,” and has targets to ensure universal access to affordable, reliable and modern energy services, increase substantially the share of renewable energy in the global energy mix, and double the global rate of improvement in energy efficiency, all by 2030.

The goal of energy access is wide-ranging, covering not only electrical services but also thermal energy needs for cooking and heating.

The Global Tracking Framework 2017: Regional Assessment Report provided a look at the progress made in three critical areas of sustainable energy at the regional and country

levels, providing an overview of long-term trends since 1990, and focuses on the most recent period. The key drivers behind progress are reviewed and major challenges in achieving energy access, efficiency, and renewable energy objectives are identified.

### **Energy Transition**

Tackling the multiple energy-related challenges necessitates a transition in the way energy is generated, transmitted and consumed. Major components of this transition are enhanced energy efficiency, increased renewable energy in the energy mix, improved energy access and better connectivity across the region. While the energy sector in many countries is slowly being transformed, the pace of the change needs to accelerate.

Energy transition is not only essential to reach the targets of SDG7, but indeed, many of the other SDGs can benefit from the spillover effects of affordable, reliable, sustainable, and modern energy for all. Moreover, fulfilling the commitments made in the Paris Agreement requires a rapid energy transition in the Asia-Pacific region. The energy transition has the potential to contribute to energy security it can reduce energy poverty, leading to a wide range of social benefits and it can drastically reduce environmental and health hazards.

Report on Regional Cooperation for Sustainable Energy 2017 analyses a number of considerable challenges in the Asia-Pacific region and its efforts to accelerate the energy transition to achieve Sustainable Development Goal 7 (SDG7). The Energy Transition Pathways for the 2030 Agenda: Regional Trends Report 2018 identifies the gap between the baseline and the 2030 targets to demonstrate the additional efforts and resources that would be needed to achieve the SDG7 targets.

### **Energy Access**

#### **Electrification**

Electricity is a fundamental input to socio-economic development. It is an essential input to the daily life for the majority of the global population. At the household level, electricity is critical for basic functions, such as lighting and the operation of appliances. It is needed to support livelihoods, education and well-being. With electricity, men and women are increasingly engaged in productive activities and public lighting in communities' increases safety at night, particularly for women. Yet, the level of service (hours per day with electricity, etc.) is not fully captured in the current metrics – largely due to the lack of adequate data

### **Clean Cooking**

Electricity is a fundamental input to socio-economic development. It is an essential input to the daily life for the majority of the global population. At the household level, electricity is critical for basic functions, such as lighting and the operation of appliances. It is needed to support livelihoods, education and well-being. With electricity, men and women are increasingly engaged in productive activities and public lighting in communities' increases safety at night, particularly for women. Yet, the level of service (hours per day with electricity, etc.) is not fully captured in the current metrics – largely due to the lack of adequate data

### **Renewable Energy**



Increasing the use of renewable energy supports the development of energy and other sectors. It offers social, economic, and environmental benefits. To meet energy demand and to reduce import dependencies that raise vulnerabilities to global market shifts, some economies are pushing the use of renewables to balance their energy mixes with indigenous resources. Renewable energy also offers options for energy access through decentralized applications. On-grid and off-grid renewable energy markets are expanding as private sector participation increases.

The Asia-Pacific region has emerged as the global leader in renewable energy with more investment, installed capacity, and consumption than any other world regions. Large installations of renewables have been made across the region in recent years, with the installation of solar and wind power growing rapidly.



Renewables are a key component for decarbonizing economies. Under the Paris Agreement, countries have pledged to reduce carbon emissions from the use of fossil fuels. In 2014, the Asia and the Pacific region were responsible for 55.2 per cent of global emissions from fuel combustion, 66 per cent of which were from coal. Decarbonizing the energy sector by shifting to renewable energy, thus, supports efforts to achieve climate objectives, including nationally determined contributions.

### **Energy Efficiency**



Energy efficiency is key to the realization of sustainable development objectives that pertain to the energy sector, as well as to other sectors. Increased energy security is supported through energy savings and reduction in investment needs for capacity additions, reliance on energy imports and vulnerability to fluctuations in energy prices. While energy efficiency for importing countries can boost currency reserves, energy efficiency for exporting countries increases their energy resources available for export. Energy efficiency also facilitates greater economic productivity and provides social and environmental benefits, including increased energy affordability, improved air quality, reduced pollution and global climate change mitigation. It can be of benefit to economic development and job creation as well.

Energy efficiency is closely tied to the realization of universal access targets by enabling higher levels of energy services at lower consumption rates and costs. Synergies between efficiency and renewable energy are also strong, as lower overall energy demand contributes to efforts aimed at meeting renewable energy targets by making it easier to increase the share of renewable energy in the energy mix.

**Energy intensity** is the best available proxy measure for energy efficiency. It is being used to monitor progress as in achieving the objectives set out in SEforAll initiative and Sustainable Development Goal 7. Energy intensity is measured in units of energy per dollar of GDP, in which high numbers indicate more energy consumption per dollar of economic output and declines in energy intensity are a proxy for efficiency improvements. The Asia-Pacific region has experienced a steep decline in regional energy intensity, from 9.1 MJ/2011 PPP \$ in 1990 to 6.0 MJ/2011 PPP \$ in 2014 heading towards the global average. With the further decoupling of GDP growth and total final energy consumption during the period 2012-2014, the region achieved a short-term annual average energy intensity reduction of 3.0 per cent, outpacing other global regions.

A key issue in the transition towards a sustainable society is the access to modern fuels/energy for cooking. We know that worldwide 2.7 billion people access energy through traditional biomass, i.e. traditional three-stone wood fires for cooking. This habit carries problems around health and involves a gender issue. The fumes of burning fuels are a death killer for low-income people that do not have other modern fuels or energy sources for cooking. In poor context, 4000 premature deaths everyday are due to biomass fumes that is 1.5 million a year, they kill more than malaria. Furthermore, women and children make several kilometers a day to collect wood.

This is one of the main astonishing problems, but more in general, lack of access to energy hampers the provision of basic services such as health care, security and education.

Some numbers related to Energy Access:

- 1.2 billion people worldwide lack access to electricity
- Furthermore, 1 billion do not have reliable access to electricity.  
Who are those living without electricity?
- More than 95% are in the sub-Saharan Africa and low-income Asia countries
- 80% of the world totals are in rural areas.

Therefore, access to energy may strongly contribute to reducing inequality and poverty. Energy is an essential input to almost every good and service provided in the current economies. Energy services have a profound effect on productivity, health, education, food and water security, and communication services.

Modern fuels for cooking and heating relieve women from the time-consuming drudgery and danger of traveling long distances to gather wood. Electricity enables children to study after dark. It enables water to be pumped for crops, and foods and medicines to be refrigerated.

The World Energy Outlook 2015 highlights that access to energy also involves consumption of a specified minimum level of electricity, and the amount varies based on whether the household is in a rural or an urban area. The initial threshold level of electricity consumption for rural households is assumed to be 250 kilowatt-hours (kWh) per year and for urban households it is 500 Wh per year. The higher consumption assumed in urban areas reflects specific urban consumption patterns. Both are calculated based on an assumption of five people per household. In rural areas, this level of consumption could, for example, provide for the use of a floor fan, a mobile telephone and two compact fluorescent light bulbs for about five hours per day. In urban areas, consumption might also include an efficient refrigerator, a second mobile telephone per household and another appliance, such as a small television or a computer.

Another important issue that defines access to energy is linked to the affordability of supply and legality of connection, which represent several problems, especially in low-income countries. Illegal connections are mostly in precarious housing, which increases the insecurity of families that live inside them.

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**ROLES OF SECTORS IN POVERTY AND HUNGER IN INDIA**

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**Abstract**

*Poverty is not simply a lack of adequate income. it is a social phenomenon in which a section of a society is unable to fulfil even its basic necessities of life. Poverty in India is mainly due to lack of proper government policies and the exploitation of the financially weaker section by the richer class. The main outcome of poverty is hunger. Hunger's seriousness can be understood easily from the fact that every year 5.8 million children die from the hunger related causes around the world. Hence this paper intends to study the intensity of poverty and hunger in India by appraising the indices like Global Hunger Index, Below Poverty Line Index and Multidimensional Poverty Index calculated by various global institutions. The Human Poverty Index (HPI) uses indicators of the most basic dimensions of deprivation of human life already reflected in the HDI like survival, knowledge and a decent standard of living. Multidimensional Poverty Index, which also reflects the HDI. The Global Hunger Index is calculated by the International food Policy Research Institute (IFPRI), The Food and Agriculture Organization (FAO) of the United Nations. Global Hunger Index combines three equally weighted indicators into an index number to reflect the multidimensional nature of hunger.*

*1) Undernourishment 2) Child underweight 3) Child mortality*

*Eradication of poverty and hunger lie at the heart of the Sustainable Development Goals (SDGs) 2030 agenda. Ending poverty in all its forms everywhere forms the first goal of the 2030 Sustainable development goals. Goal 2 of the 2030 SDGs seeks to end hunger or Zero hunger. Rural Unemployment is one of the most visible faces of poverty in India. Poverty alleviation is one of the important objectives of plan programs. It is a multidimensional problem which needs innovative and coordinated action at macro, sectoral and micro level. A large number of programs and schemes are in operation both at National and State level which aim to strengthen and improve the quality and standard of living of weaker and deprived sections of the society. For example, In February 2005 India has adopted the MGNREGA to generate employment and remove poverty. India's strategy for reducing poverty and hunger has always placed a great deal of importance on the agricultural sector.*

**Keywords-** *No Poverty, Zero Hunger, SDGs*

## **Introduction**

Poverty means not having enough money for basic needs such as food, drinking water, shelter or toilets. They have a job, but do not earn enough money for basic things such as Food. The main outcome of poverty is hunger. Hunger is the condition where both adults and children cannot access food constantly and have to decrease food intake, eat poor diets, and often go without any food. According to Amartya Sen, he discovered that the real cause for hunger is the lack of ability to pay for food.

## **Poverty in India**

India is the second most populous country after China with about 1.2 billion people and is the 7th largest country in the world with an area of 3,287,000km<sup>2</sup>. It is one of the largest economies in the world with a gross domestic product (GDP) of 1,644 billion US dollars. But only a small percentage (%) of the Indian population has benefited from this impressive economic boom so far, as the majority of people in India are still living in Poverty. India ranked 114 GNI per capita with 7,680 US dollars in 2018. Poverty in India is mainly due to lack of proper government policies and the exploitation of the Financially weaker section by the richer class.

## **Root Causes of Poverty**

- 1) Rapidly Rising of Population
- 2) Low Productivity in Agriculture
- 3) Lack of Education
- 4) Unemployment
- 5) Unequal distribution of Income
- 6) Price Rise

## **Root Causes of Hunger in India**

- 1) Poverty
- 2) Lack of access to food
- 3) Lack of safe drinking water
- 4) Disease
- 5) Seasonal Migration
- 6) Climate Change

**Poverty Line**

It is amount of money needed for a person to meet his basic needs. It is defined as the money value of the goods and services needed to provide basic welfare to an individual. The Current Poverty line is \$14 per month (\$ 0.46 per day) in rural areas and \$17 per month (\$ 0.56 per day) in urban areas.

**Global Hunger Index**

The global hunger index is calculated by the International Food Policy Research Institute (IFPRI), The Food and Agriculture Organization (FAO) of the United Nations.

**Multi-Dimensional Poverty Index (MPI)**

It Use a range of indicators to calculate a summary poverty figure for a given population, in which a larger figure indicates a higher level of Poverty. India still has the largest number of people living in multidimensional poverty in the world (364 million people).

Formula of MPI

$$\text{MPI} = H \times A$$

H - % of people who are MPI the poor (Incidence of Poverty)

A – Average Intensity of MPI Poverty across the poor (%).

**Roles of various sectors to Poverty and Hunger in India-**

Poverty reduction is one of the world's most important challengers. So various sectors play important to reduce poverty are follows as:

- 1) **Private Sector-** Private Sector has an important role to play in creative the economic growth, employment and purchasing options needed for significant poverty reduction.
- 2) **Sustainable Development Goals (SDGs)-** SDGs are a bold commitment to finish what we started, and end poverty in all forms and dimensions by 2030.
  - a) Goal 1 of 17 SDGs is No Poverty. This involves targeting those living in vulnerable situations, increasing access to basic resources and services, and supporting communities affected by conflict and climate related disasters.
  - b) Goal 2 of 17 SDGs is Zero Hunger. So, the SDGs aim to end all forms of hunger and malnutrition by 2030 making sure all people – especially children have sufficient and nutritious food all year.
  - c) This involves promoting sustainable agricultural, supporting small scale farmers

and equal access to land, technology and markets.

- 3) **Education**- Education can be the most effective tool to tackle large scale poverty in various parts of India.
  - a) Prime Minister Narendra Modi who has said “This is an era of knowledge. This is the only potent route to fight poverty. We have to review our commitment to education”.
  - b) Nelson Mandela once said, “Education is the most Powerful weapon which you can use to change the world”. When children in India will get educated, they can contribute their significant bit to the process of nation- building
  - c) Quality Education for all is at the heart of the hunger. And take an active role in their communities to ensure the rights.
- 4) **Agriculture Sector**- India's strategy for reducing poverty and hunger has always placed a great deal of importance of the agricultural sector. Because 70% of population live in rural areas and majority of them depend upon agriculture as their primary source of Income.
- 5) **Government Sector**- Following are some other plans initiated by the national government for poverty reduction in India.
  - Annapurna
  - National Rural Employment Program (NREP)
  - Rural Labor Employment Guarantee Program (RLEGP)
  - National Old Age Pension Schemes (NOAPS)

### **Conclusion**

Poverty alleviation is one of the important objectives of plan programs. It is a multidimensional problem which needs innovative and coordinated action at macro, sectoral and micro level. A large number of programs and schemes are in operation both at National and State level which aim to strengthen and improve the quality and standard of living of weaker and deprived sections of the society.

For example, In February 2005 India has adopted the MGNREGA to generate employment and remove poverty. India's strategy for reducing poverty and hunger has always placed a great deal of importance on the agricultural sector.



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## REVIEW OF RECENT RECHNOLOGICAL ADVANCEMENTS FORENVIRONMENTAL UPLIFTMENT

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### Abstract

*Environmental problems are one of the most important concerns these days. We are currently living in an environment which is highly polluted. This review paper aims at the qualitative analysis of the recent technological developments for environmental upliftment so to develop a common understanding of these newly proposed concepts which may attract new researchers towards the field to remediate our environment rapidly. World Health Organization has defined the word 'Environment' as "all the physical, chemical, and biological factors external to the human host, as well as those factors impacting related behaviours". The behaviour is related to the social and cultural environment and genetics. Though all these aspects are of extreme importance but defining the environment as a subject of environmental science, the environment includes the natural functioning of and balance between its segments- Hydrosphere, Atmosphere, Lithosphere, and Biosphere. The focus of this review article is mainly over this. When the ability of nature to function as a supply depot, or waste manager, or living space or all of these are overused, then environmental problems take place. This overuse and misuse cause all types of pollution including air, water and land pollution. World Atlas of Desertification reports that approximately 20% of the earth vegetated land surface showed persistent declining trends in land productivity between 1999 and 2013. The New York Declaration on Forests (NYDF 2014) has not yet been as effective as it was supposed to be. Unhygienic practices and careless attitude are one of the major reasons for such a state. The common practices related to the consumption and generation of energy, dependence on fossil fuels, urbanization, overpopulation harm environment a lot. Though Science and Technology have made good progress, still there is a long way to go. This progress has been closely reviewed in the paper. Mentioning some of them such as digital technologies to assess the state of soil and the AI-based various types of recommendations for food production causing optimal productivity and minimum land degradation. CO<sub>2</sub> filtration, conversion and utilization technologies are of extreme importance to take the note of as it is one of the greenhouse gases affecting adversely our environment the most. Further battery innovations which include advancements not only*

*in the efficiency but also in the eco-friendly functioning. All these have been discussed in the paper and future market trends for a better environment have been analysed.*

**Keywords** Environment, Digital Technologies, Battery Innovations, CO<sub>2</sub> Management.

## **Introduction**

***“Education is the most powerful tool which you can use to change the world”***

***-Nelson Mandela***

The above sentence of Nelson Mandela cites the importance of Education. We all are the part of this huge process and result. Education is not merely the superficial learning of concepts but to open our minds and as the development of the sense of Live to Learn & Learn to Live. Developing Practical approach for the same is essential. This leads us to the analysis of practical situations: being able to see the problems and trying to solve them.

A such common and concerning problem for all of us today is Environmental degradation and unfortunately, very few of us have the true realization of the problem. Environmental Degradation is an issue under the scope of almost every discipline as environmental science is a multi-disciplinary subject covering the concepts of Physics, Chemistry, Biology, Economics, Geography, Political Science, Literature Subjects etc. This means as a young student we are to have the basic understanding and realization of this issue. But that is the point where many of us are a failure. As a young mind it is our responsibility to have the true realization of the issue because it's we who will suffer, it's we who will have to bear that unbearable pain, it's we who will be facing numerous health issues and ultimately, it's we who are here to find the solution.

## **General Meaning and Concepts**

Environment: World Health Organization has defined the word 'Environment' as *"all the physical, chemical, and biological factors external to the human host, as well as those factors impacting related behaviors"*. The behavior is related to the social and cultural environment and genetics. (Preventing disease through healthy environment, WHO) (Figure 1)

## **Segments of Environment**

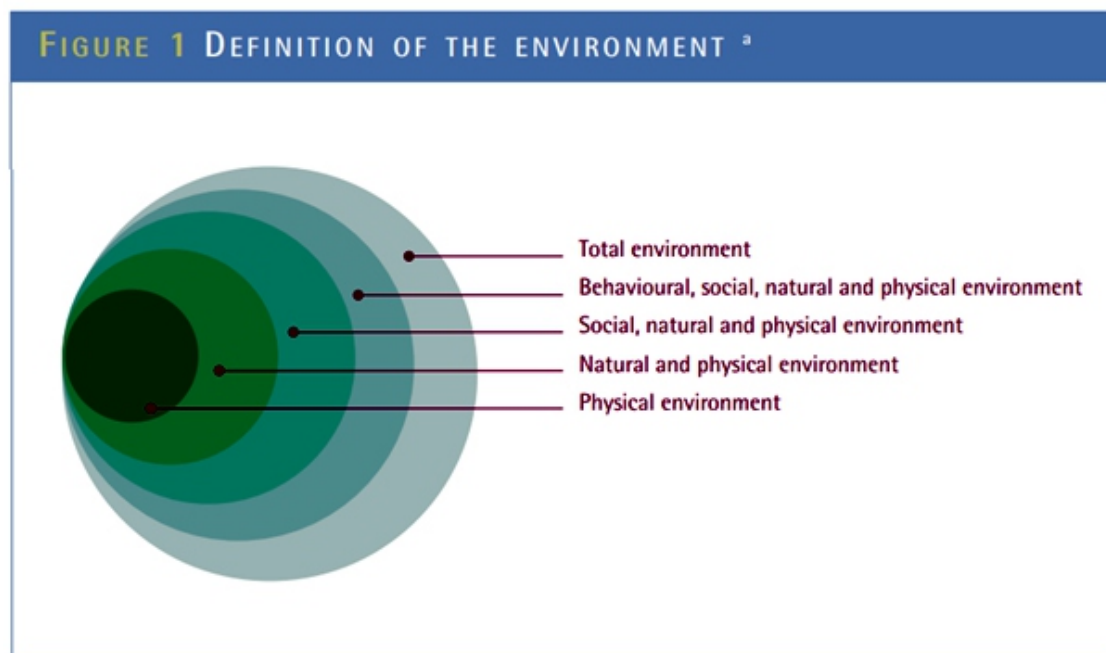
- **Hydrosphere:** The Hydrosphere includes all types of water resources- oceans, seas, rivers, lakes, streams, reservoirs, glaciers, polar icecaps, and ground water.
- **Atmosphere:** The atmosphere is the protective blanket of gases surrounding the earth which sustains life on the earth and saves it from the hostile environment of

outer space.

- **Lithosphere:** This is the outer mantle of solid earth, consisting of minerals occurring in the earth's crust and the soil.
- **Biosphere:** This denotes the realm of living organisms and their interaction with environment, viz. atmosphere, hydrosphere, and lithosphere. (Anil K De, 2019)

### Current Status

- **4.2 million** deaths every year because of exposure to ambient (outdoor) air pollution. Worldwide, ambient air pollution contributed to 7.6% of all deaths in 2016. (1 million+ deaths in India)
- **3.8 million** deaths every year because of household exposure to smoke from dirty cookstoves and fuels. In 2016, household air pollution was responsible for 3.8 million deaths, and 7.7% of the global mortality. Africa is the biggest victim in the



<sup>a</sup> (Adapted from Smith, Corvalán and Kjellström, 1999)

- **91%** of the world's population lives in places where air quality exceeds WHO guideline limits. {Source of Info: WHO}
- The local information obtained from Central Pollution Control Board the prominent pollutant in Jaipur is  $PM_{2.5}$ ,  $PM_{10}$  means those particles size of which is less than 10 microns. As per WHO guidelines the level of their concentration is 300-600% higher which is very alarming.

### **New York Declaration on Forests**

- The New York Declaration on Forests (NYDF) is a voluntary and non-binding international declaration to take action to halt global deforestation.
- It was first endorsed at the United Nations Climate Summit in September 2014.
- In September 2019 the list of NYDF supporters has grown to include over 200 endorsers: national governments, sub-national governments, multi-national companies, groups representing indigenous communities, and non-government organizations. These endorsers have committed to doing their part to achieve the NYDF's ten goals and follow its accompanying action agenda. (NYDF 2014)

### **Highlights of the NYDF Review Report**

- The title of the report is “Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress.”
- Five years later, there is little evidence that these goals are on track, and achieving the 2020 NYDF targets is likely impossible.
- Despite what these trends may suggest, many private and public actors have taken action to address deforestation — but these often lack ambition and remain isolated.
- On average, an area of tree covers the size of United Kingdom was lost every year between 2014 and 2018.
- The accelerated loss of irreplaceable primary forests is particularly alarming given that they serve as invaluable carbon sinks.
- Restoration of forest ecosystems must be accelerated.
- Larger scale and more coordinated actions are needed.
- Improving implementation conditions is essential to achieving forest goals.
- To achieve the goals of the NYDF and keep global warming below 2 degrees Celsius, it is essential to preserve natural, and primary, forests, as well as to restore natural forests, with a focus on restoration and protection efforts in tropical countries.
- In parallel, direct and indirect drivers of deforestation from the production of food, fuel, and fiber must be reduced to remove undue pressures on land while

also feeding growing populations.

- Policies motivated by other priorities, such as food security, public health, or rural development, should incorporate conservation into their program priorities. (NYDF Report 2019)

**Possible Basic Reasons for Environmental Degradation**

- Our Carelessness
- Lack of quality education because quality education develops the person to think critically, true realizations and solve the problems.
- Lack of eco-friendly technological advancements.
- Expenses on the maintenance and sustenance of such advancements.

Figure 1.

**New York Declaration on Forests  
2019 Progress Assessment: Key Messages**

Deforestation and forest landscape restoration are closely connected, but they have largely been treated as separate conservation processes. We must preserve and restore natural forests, focusing on primary forests and developing countries.

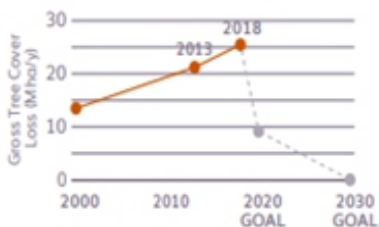
On the current trajectory, our goals become more ambitious every year as timelines get shorter. The world is running out of time to save tropical forests.



**NYDF Goal 1**

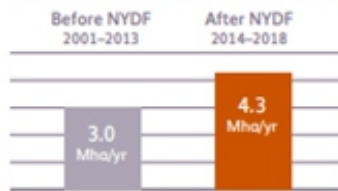
Globally, we have not made progress toward ending the loss of natural forests. Particularly concerning is the increasing rate of loss of irreplaceable primary forests.

The global rate of gross tree cover loss has increased by 43%—rather than decreased toward the goal.



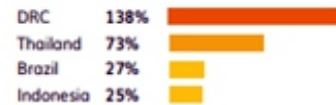
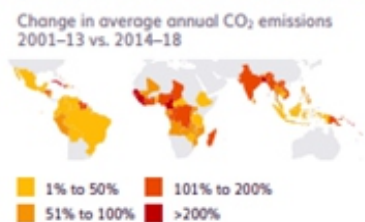
However, in 2017–18 national government and non-government actions contributed to a >30% reduction in the rate of deforestation in Indonesia.

Since the NYDF was endorsed, average annual humid tropical primary forest loss has accelerated by 44%.



Latin America continues to lose the most primary forests per year. West Africa recently experienced a sharp increase in the rate of loss.

Annual CO<sub>2</sub> emissions from tropical tree cover loss are equal to the total GHG emissions of the European Union.





## NYDF Goal 5

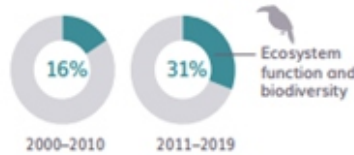
There is mixed progress on the implementation of forest landscape restoration. Restoring natural forests is vital for recovering ecosystem function and services. Data limitations make progress difficult to evaluate.

Large pledges indicate high political will, yet, since 2000 only 18% of the 2020 goal has been realized as increases in forest or tree cover.



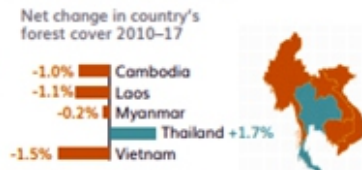
Forest landscape restoration aims to restore ecological integrity at the same time as improving human well-being through multifunctional landscapes.

Since 2011, the primary objectives for restoration have shifted more toward recovering ecosystem function and biodiversity.



Natural regeneration and ecological restoration of forests generate large benefits to ecosystem function and services. Agroforestry (outside forests) improves livelihoods and climate adaptation.

A pilot study of the Mekong region found that, despite restoration taking place, there is an overall net loss of natural forests.



Three times more restoration is happening outside forests compared to inside forests. Restoration of forests takes decades to centuries and cannot replace halting deforestation.

Serious corrective action is needed. Efforts to date have been inadequate to achieve systemic change.



The private sector is not on track to eliminate deforestation from agricultural production. Non-agricultural economic sectors continue to pose risks to forests.



Finance is needed. Grey finance for agriculture is 15 times more than green finance for forests. Forests receive 1.5 percent of the climate finance to all sectors.



Improvements in forest governance have been too slow to effectively protect forests. This includes land titling, transparency, adoption of policies, and strengthened law enforcement.

## Recent Scientific Milestones

Increasing level of carbon di-oxide is one of the major concerns these days because it is one of the most problematic greenhouse gases. So, it is very essential to manage this gas. The management includes control in emission, its capturing, and its utilization for energy generation. The basic elements in fuels and CO<sub>2</sub> and water are the same. So, there are possibilities that we would use CO<sub>2</sub> for power generation very soon.

Important milestones are achieved for this in recent time.

## Capture Technology

- Scientists at the **University of Waterloo, Canada** have created a powder that can capture carbon dioxide from factories and power plants. The technique they developed uses heat and salt to extract a black carbon powder from plant matter. Carbon spheres that make up the powder have many pores, and most of them are less than one-millionth of a meter in diameter.
- A very recent research published in *NPG Asia Materials* shows the development of highly CO<sub>2</sub> permeable membrane which is a huge progress in this field. As we are going towards making artificial machines for CO<sub>2</sub> capturing. (Figure: Scheme 1)

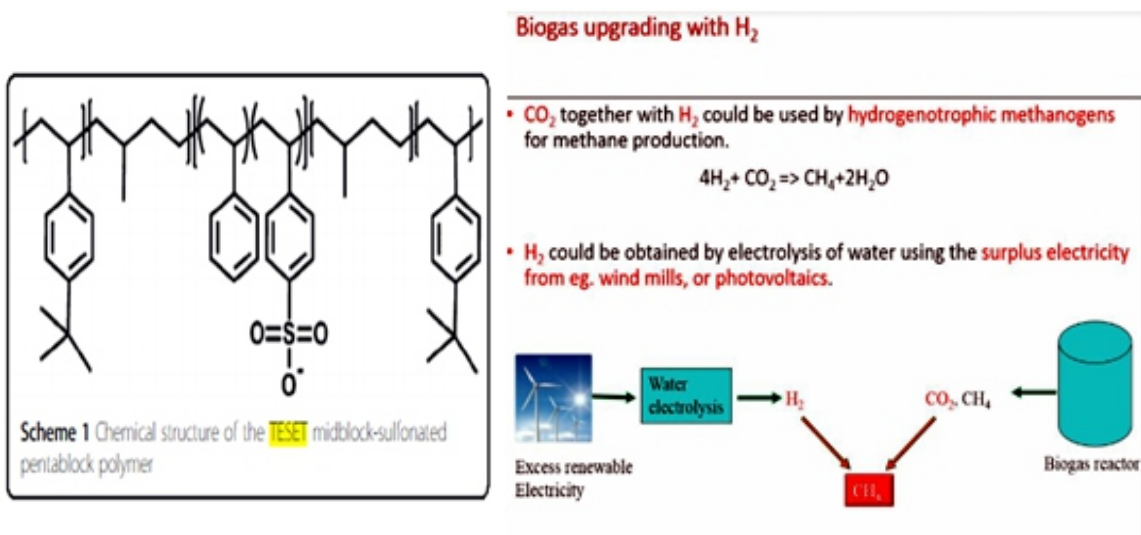


## Utilization for Energy Generation

- Swedish researchers are working on converting water and carbon dioxide to a renewable source of energy using the energy from the sun and graphene applied to the surface of SiC. Researchers have recently developed a method that makes it possible to produce graphene with several layers in a tightly controlled process. Graphene is one of the thinnest materials ever produced. It is a highly conducting material and can be used in the conversion of sunlight into energy. The key thing to note is that the elements present in carbon dioxide and water are **Carbon**, **Oxygen**, and **Hydrogen** which are also the building blocks of the chemical substances which we use for fuel like ethanol and methane. Thus, there is a possibility of using CO<sub>2</sub> and H<sub>2</sub>O for generating renewable fuel which may complete the need of the future.
- The companies **Nature Energy** and **Biogasclean**, as well as the research institutions the **University of Southern Denmark** and **DTU**, are working together to develop the future raw material for energy: **methane** from carbon dioxide obtained from the biogas plants. Here is the process (Biogas upgrading.). (Lovish Raheja and Mohit Dixit, 2019)

## Battery Innovations

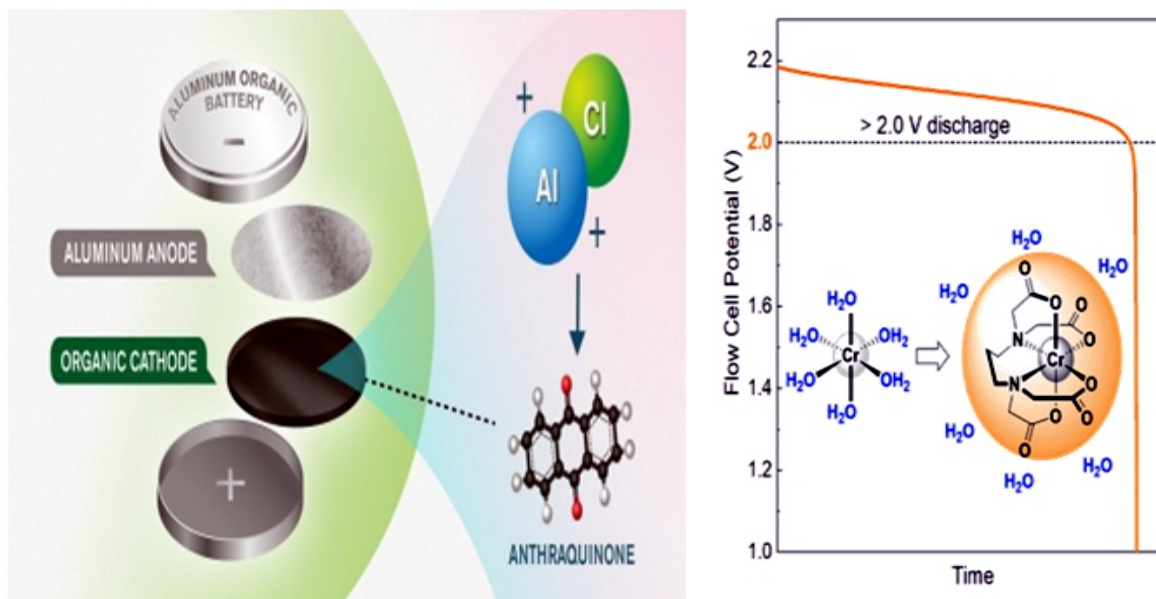
Eco-friendly battery innovations are also noteworthy. A latest study proposes the use of anthraquinone based organic material as cathode and Al as anode for eco-friendly and economic applications. (figure at the bottom of next page).



- Using chelated electrolyte in flow batteries have also opened new dimension. Recently the use of chelated Chromium electrolyte has been tested which is proven very useful. (Figure at bottom right)

### Conclusion

Overall, this paper aims at the increase in awareness and an urge to understand and consider latest scientific technologies for the betterment of our environment and ultimately ourselves. And being self is a part of it is very essential because each and every person has his unique mind and one must use it for environmental benefits because our existence is because of this environment. We are concentrated more towards “living” rather than the environment we “live in”. Thus, our focus needs a drastic change, things are not as good as they seem but we have the potential to make them. Escaping reality will not give results instead working on it will. The introduction to recent scientific milestones is aimed mainly at the igniting the minds and thinking of the possible similar or same purpose solutions.



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