INTEGRATING SUSTAINABLE DEVELOPMENT GOALS INTO NATIONAL ECONOMIC POLICIES

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ABSTRACT

The development of India is now at a crossroads, and the country must find a way to strike a careful balance between the requirements of economic growth and the attempts to accomplish the Sustainable Development Goals (SDGs) that have been established by the United Nations. Utilizing viewpoints from the fields of economics, ecology, sociology, and policy studies, this multidisciplinary analysis investigates the intricate relationship that exists between the Sustainable progress Goals (SDGs) and the economic progress of India. The purpose of this study is to examine the existing literature, collect data, and develop conclusions on the impact that India's economic policies have had on the country's progress towards the Sustainable Development Goals (SDGs). In light of the challenges posed by fast economic expansion, this study investigates how technical innovation, institutional frameworks, and social dynamics affect a nation's ability to achieve sustainable development goals. In addition, considering the unique socioeconomic circumstances of India, this study thoroughly analyzes how inclusive growth strategies have contributed to promoting social justice and reducing poverty. Comprehensive solutions that balance economic success with environmental sustainability and social inclusion are necessary, and the work explores potential compromises and cooperation between sustainable development and economic growth. By providing a holistic perspective on the relationship between SDGs and economic growth, this study aims to offer substantial insights to scholars, practitioners, and policymakers involved with India's sustainable development target. In order to ensure a more equitable and sustainable future for all Indian residents, it is crucial to implement comprehensive solutions that address the interconnected problems of poverty reduction, environmental conservation, and inclusive economic growth.

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Keywords: *Sustainable Development Goals, Economic Growth, India, Multidisciplinary Assessment.*

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Introduction

The Indian economy has reached a crucial crossroads in its growth as it continues to exceed the economies of the majority of other countries. At the same time as people are trying to develop their economy, they are also working to achieve the Sustainable Development Goals (SDGs) that have been established by the United Nations. The Sustainable Development Goals (SDGs) are a collection of objectives that have been designed by the United Nations in order to address these specific difficulties as

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well as other important concerns (United Nations, 2015). Following the identification of a number of key global concerns, these goals were formulated at that time. In particular, the primary objective of this extensive research will be to investigate the complex relationship that exists between economic development and the Sustainable Development Goals (SDGs), with a particular emphasis on India.

India's tremendous economic progress over the last several decades has enabled it to become a significant player in the global economy and has helped millions of people escape poverty (World Bank, 2020). India has also elevated millions of people out of poverty. In spite of these gains, India continues to struggle with a number of significant challenges, including extensive social inequality, environmental degradation, and persistent poverty. The fast expansion of India's economy has resulted in the emergence of a great deal of challenges. In order to address these concerns, the Sustainable Development Goals (SDGs) provide a comprehensive framework. These goals lay a particular emphasis on the promotion of sustainable development that incorporates each and every person.

The primary purpose of this research is to investigate the ways in which the Sustainable Development Goals (SDGs) are connected to the rapidly growing economy of India. A broad variety of perspectives will be obtained via research that incorporates a wide range of disciplines. These fields include, but are not limited to, sociology, economics, environmental science, and policy studies. Taking on the difficulties and being willing to make the required sacrifices in order to accomplish both economic growth and environmental development are of the utmost importance. The accomplishment of this objective may require the use of a number of different approaches and points of view.

Several essential aspects need to be taken into consideration, including the impact that India's economic policies have on the country's capacity to meet the Sustainable Development Goals (SDGs), the role that technological innovation plays in fostering sustainable development, and the degree to which social policies effectively promote equitable growth. The purpose of this research is to conduct a comprehensive analysis of the specific socio-economic and environmental challenges that India is now facing. In addition to assessing possible solutions to guarantee that economic development is in accordance with the Sustainable Development Goals (SDGs), this study will include an analysis of prospective solutions.

Objective

- To study the impact of economic policies on the achievement of SDGs in India.
- To study the role of technological innovation in fostering sustainable development and economic growth.

Research Methodology

This approach is primarily concerned with determining how to bring the goals of domestic policy and those of foreign policy into alignment with one another. The researchers Weitz et al. (2014) used three additional methods in order to conduct their examination of cross-SDG linkages. Identifying "nexus objectives" across sectors, determining the kind of desired connections (interdependent, constraining, or reinforcing), and screening for interactions across specified goals are some of the ways that Weitz et al. (2014) highlighted in their list of methods. This research makes use of a methodology that is similar to the methodologies described above. Several different qualitative analysis methods, including content analysis, were used to the data in order to make sense of it. According to Yan Z. and Barbara (1996), content analysis is defined as an assessment based on a systematic approach of the content of a text. In order to carry out this content analysis, the three primary components that were used were customization, interaction scoring, and analysis of interactions. It was determined that a total of 22,338 incidents were thoroughly investigated. There were a total of 1,958 interactions that were analyzed from the Economic Recovery and Growth Plan, whereas there were 280 interactions that were analyzed from the National Policy on Food and Nutrition. Furthermore, this technique is congruent with the idea of qualitative content analysis that was presented by Yan Z. Zhang and Barbara M. Wildemuth in their work that was published in 1996 (Yan Z. & Barbara, 1996).

Coding Interactions

Following the selection of the subset of targets and the subsequent placement of their codes inside a "cross-impact matrix," a code was assigned to each encounter in relation to a key question by the investigators. An examination of the relevant literature for each policy aim was carried out in order to ascertain the nature of the link that exists between each policy objective and the target of the Sustainable Development Goals. The interactions were coded using the numbers one, two, and zero, and we numbered from one to zero throughout the process. In the beginning, a mixed-method approach was

used in order to find links. These linkages were first classified as neutral (meaning there were no direct interactions), synergies, and trade-offs. This strategy included doing specialized literature searches in conjunction with multidisciplinary skills in order to provide the foundation for evidence that did not come from a single subject. The following codes were used at various points over the course of this procedure:.

Analysis

Microsoft Excel was used to conduct an analysis of the data in order to identify quantifiable examples of how certain policy aims correspond with the Sustainable Development aims. Additionally, we looked for any potential trade-offs or neutral interactions that may take place. The frequency with which these interactions took place served as the impetus for the project that was being undertaken. The following data visualization displays the findings in the form of a bar chart, in contrast to the pie chart that displays the proportion of interactions. Both visualizations were created using the same data that they had acquired. The qualitative method that was presented by Gala et al. (2010), who carried out a research study on the use of synergies and the resolution of trade-offs among a number of Goals, is given credibility by the analytical techniques that are shown here.

Result

The Economic Recovery and Growth Plan (ERGP 2017- 2020)

By means of a short-term strategy, the ERGP intends to achieve its goal of long-term growth that is inclusive. An urgent pursuit of fundamental economic changes that concentrate on improving the efficiency of both the public and private sectors was advocated for in this piece of writing. Increasing national productivity and encouraging long-term production diversification have as their major objective the improvement of the economy and the provision of maximum welfare for the people, beginning with the guarantee of food and energy security. The people of India have expressed their desire to see a certain kind of India in the near and medium future, and this strategy helps to promote that vision by underlining the significance of innovation, technology, and science in the process of driving economic growth. Along with this, it outlines a strategy for the sort of foundation that has to be set for the benefit of generations to come, with the primary objective of enabling the young of India to lead the nation into the future (Planning, 2017). Both of these things are included in the plan.

The Economic Regional Growth Plan (ERGP) has three primary strategic goals that were aimed to realize the inclusive growth vision that was presented earlier:

- Restoring growth,

- Investing in our people, and

- Constructing a globally competitive economy.

The Economic Recovery and Growth Plan (ERGP) had several key execution priorities, including the stabilization of the macroeconomic environment, the achievement of food and agricultural security, the guarantee of energy sufficiency (both in terms of power and petroleum products), the improvement of transportation infrastructure, and the promotion of industrialization through an emphasis on small and medium-scale entrepreneurship.
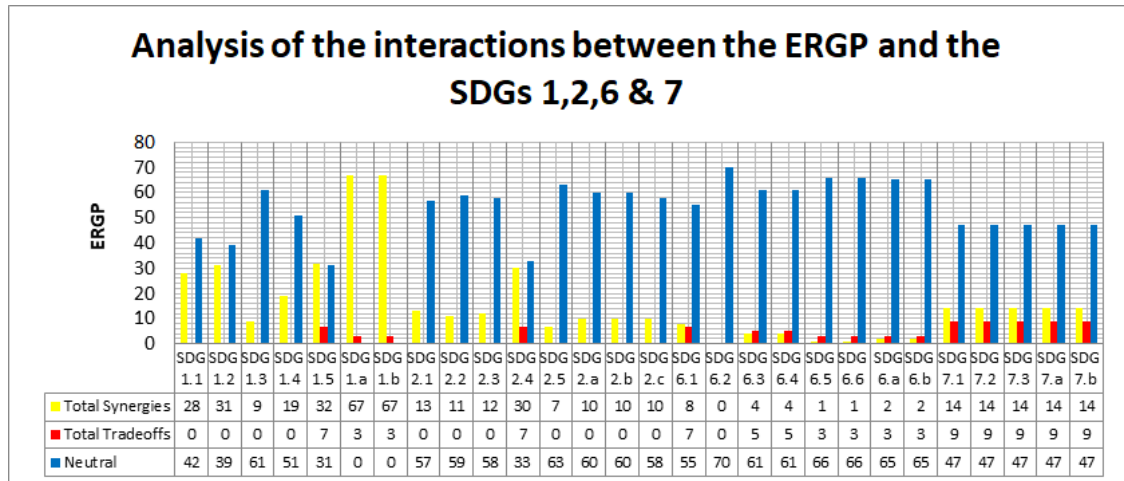

Analysis of the interactions between the ERGP and the SDGs 1,2,6 & 7

	SDG 1.1	SDG 1.2	SDG 1.3	SDG 1.4	SDG 1.5	SDG 1.a	SDG 1.b	SDG 2.1	SDG 2.2	SDG 2.3	SDG 2.4	SDG 2.5	SDG 2.a	SDG 2.b	SDG 2.c	SDG 6.1	SDG 6.2	SDG 6.3	SDG 6.4	SDG 6.5	SDG 6.6	SDG 6.a	SDG 6.b	SDG 7.1	SDG 7.2	SDG 7.3	SDG 7.a	SDG 7.b
Total Synergies	28	31	9	19	32	67	67	13	11	12	30	7	10	10	10	8	0	4	4	1	1	2	2	14	14	14	14	14
Total Tradeoffs	0	0	0	0	7	3	3	0	0	0	7	0	0	0	0	7	0	5	5	3	3	3	3	9	9	9	9	9
Neutral	42	39	61	51	31	0	0	57	59	58	33	63	60	60	58	55	70	61	61	66	66	65	65	47	47	47	47	47

Fig 1 An examination of the ways in which the ERGP and the SDGs interact with one another

Interactions Between the ERGP and the SDGs 1,2 6 & 7.

- 25% Total Synergies
- 5% Total Tradeoffs
- 70% Neutral
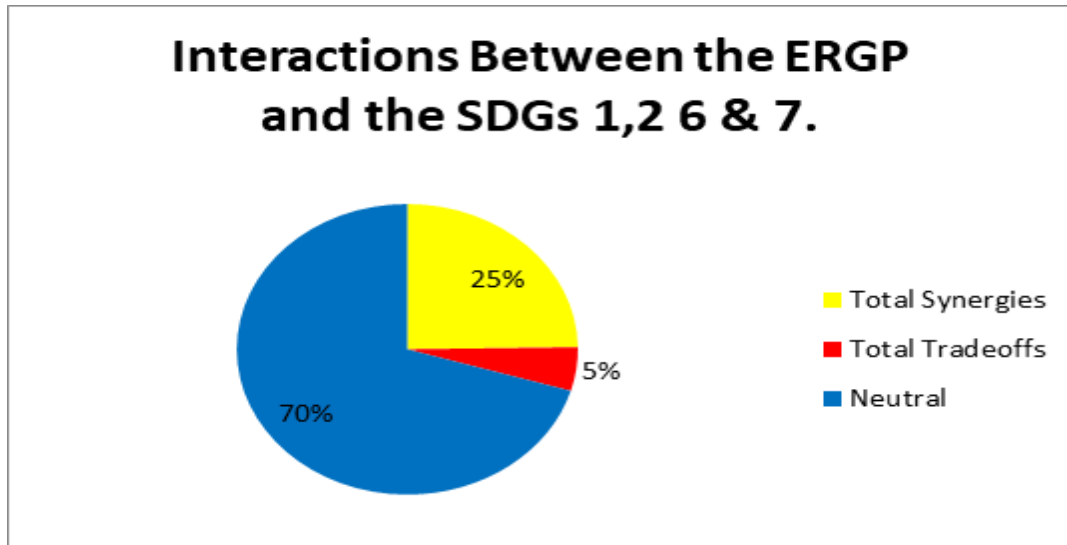
Fig 2 To what extent does the ERGP interact with the Sustainable Development Goals 1,2,6, and 7

Seven hundred eighty-two experiences were assessed and reviewed in total. In 485 encounters (or 25% of the total) at this time, synergies were observed. A small percentage of interactions (5% of the total) did show tradeoffs, however most interactions (1378 out of 95) seemed to have no effect.

There were a total of 41 interactions that had no effect, 7 that had a negative impact, and 32 that had a positive one in relation to Sustainable Development Goal 1.5, which aims to reduce the vulnerability of the poor and vulnerable to climate-related extreme events and other economic, social, and environmental shocks and disasters by 2030. In terms of the ESG and SDG goals, 41 out of 70 interactions were determined to be neutral.

The compromises may be attributed to the aims highlighted in columns 1.3 and 1.6 of the ERGP. The first column is devoted mostly to crude oil exploration, while the second column is devoted mostly to the development of solid minerals, which includes mining activities. Results from the research by Adeyinka and colleagues show that there are several harmful effects associated with coal mining. Some of these issues include, but are not limited to, flooding with acidic water, which can damage machinery and pose health risks to miners, changes in topography caused by mine waste dumps, acidic mine water pollution of surface and underground water sources, coal dust air pollution, and subsidence (Adeyinka et al., 2019).

This study examines the costs and benefits of implementing ERGP column 1.6 in relation to Sustainable Development Goal (SDG) 1.5. These costs and benefits back with Campbell's findings that emissions from oil-polluted areas and petrochemical companies may alter the flavor of water sources in the area and cause unpleasant smells. These were the findings that Campbell reported in 1983. Additionally, these results are consistent with the study that Blanes-Vidal and colleagues did in 2012, which is the same year in question. The study shows that chemicals with the potential to be dangerous are consumed and produced throughout the oil refining and manufacturing processes. Concern about the potential negative effects of environmental pollutants on human health is heightened, according to Blanes-Vidal (2012), since some of these substances are combustible, smelly, or poisonous. The 2013 report of Ordinioha and Brisibe is further supported by these results. Ordinioha and Brisibe (2013) explain the high frequencies of a variety of symptoms among oil-polluted communities in the Indian delta, including headaches, nausea, diarrhea, sore eyes, sore throat, cough, itchy skin, rashes, respiratory difficulties, and general discomfort.

In order to correlate ERGP column 1.3 with Sustainable Development Goals 1.a and 1.b, modifications were necessary. There were no neutral interactions found out of the 70 that were analyzed in relation to Sustainable Development Goals 1.a and 1.b. Instead, 67 suggested synergies, 3 emphasized tradeoffs, and none were neutral overall. The findings of this study align with those of Engle

(2011), Cutter et al. (2008), and Berman et al. (2012), who classified the Sustainable Development Goals (SDGs) as follows: improving socio-ecological resilience through adaptive capacity, reducing the impact of natural disasters, and eliminating social vulnerability convergence. Societal vulnerability is identified by these research in SDGs 1, 2, and 5. A compromise with respect to the ERGP column 1.3 is required after a more thorough examination of these figures and the Sustainable Development Goal 1.a (Berman R., 2012; Cutter SL., 2008; NL., 2011).

According to paragraphs 1.3 and 1.6, SDGs 2.4 did not include any concessions. Out of the seventy interactions that were scrutinized, 33 shown neutrality, 7 showed tradeoffs, and 30 showed synergy. The mining industry and the hiring of more people from rural areas for mining jobs are promoted in Column 1.3 and its subcolumns. However, the acquisition of crude oil via exploration and mining is encouraged under column 1.6 and its sub-columns. Goal 2.4 of the Sustainable Development Agenda, which states: "ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters, and that progressively improve land and soil quality," has zero bearing on these desired outcomes. In 2021, Ogunmodede and Olufemi investigated the issue of preventing oil pollution from reaching India's food basket; this lends credence to their findings. A post-oil metropolis' perspective was used to perform the study. The Niger Delta is a region in Nigeria renowned for its great agricultural production; nevertheless, their investigation found that oil spills on land, in wetlands, and at sea had entirely devastated the region. Furthermore, oil spills continue to have devastating effects on people's lives and livelihoods, endangering food supply (Ogunmodede & Olufemi, 2021). Consistent with the findings, the research found that mining activities impact the ecosystem by discharging pollutants and silt. The safety of people's food supply is also threatened by these actions (Blanco, 2020).

There were 55 neutral interactions, 8 positive interactions, and 7 damaging interactions in SDGs 6.1. With respect to Sustainable Development Goal 6.1, namely "achieving universal and equitable access to safe and affordable drinking water for all by the year 2030," a compromise was reached concerning columns 1.3 and its sub-columns, as well as the ERGP cells. Blanco (2020) and Olufemi and Olufemi (2021) state that the accessibility of equitable and clean water is negatively affected by the mining of coal and crude oil.

As we examined the connections between the ERGP and the SDGs, we discovered 61 neutral points, 5 synergies, and 4 tradeoffs. Chapter 6.3. Goal 6.3 of the Sustainable Development Agenda, which reads as follows: "improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally by 2030," found common ground with the ERGP's articles and subsections.

The Sustainable Development Goals are the inspiration for this objective. In line with this, a study done in 2021 by Ogunmodede and Olufemi found that crude oil production is a known source of oil leaks. Contaminated water is a result of these incidents because harmful chemicals are released into bodies of water (Ogunmodede & Olufemi, 2021). Goal 6.4 of the SDGs aims to enhance water-use efficiency across all sectors in order to ensure sustainable withdrawals and supply of freshwater. Furthermore, the aim is to eradicate water wastage.

Furthermore, it collaborates with the Environmental Resource Governance Plan (ERGP), which is similar to Goal 6.3, to address water shortages and significantly reduce the number of people impacted by them by 2030.

Between the ERGP and SDGs 6.5, 6.6, 6.a, and 6.b, there were sixty-six interactions that had no effect. One of these interactions was a synergy, while the other three were tradeoffs. By 2030, we aim to have implemented integrated water resources management at all societal levels, in line with Sustainable Development Goal 6.5. We will place special emphasis on international cooperation where it is suitable. Our aim is to have ecosystems connected to water that have been restored or maintained by 2030 via the execution of Sustainable Development Goal 6.6. Mountain ranges, rivers, aquifers, woodlands, and wetlands are all parts of these ecosystems. By 2030, one of the Sustainable Development Agenda's stated goals is to boost international cooperation and assistance for low-income governments' capacity-building efforts. This objective is centered on issues pertaining to water and sanitation. Water harvesting, wastewater treatment, recycling and reusing technology, desalination techniques, and other measures to increase water efficiency are among the current endeavors. Goal 1 of the Sustainable Development Agenda aims to enhance water and sanitation management via fostering

and strengthening community involvement. According to Ogunmodede and Olufemi (2021), these Sustainable Development Goals (SDGs) had to compromise with the 1.6 columns and their sub-columns so that India may increase its crude oil production. We did this so that we may increase our crude oil output.

Results indicated that there were 47 neutral interactions, 14 synergies, and 9 tradeoffs between the European Regional Growth Plan (ERGP) and SDGs 7.1, 7.2, 7.3, 7.a, and 7.b. "Ensure universal access to affordable, reliable, and modern energy services by the year 2030," reads the subtitle of the seventh Sustainable Development Goal. The aim of the 7.2 SDGs is to "increase substantially the share of renewable energy in the global energy mix by the year 2030," According to SDG 7.3, "By the year 2030, double the global rate of improvement in energy efficiency by the year 2030," The seventh Objective for Sustainable Development aims to "enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology by 2030," in addition to the seventh and eighth Sustainable Development Objectives, aimed at "expand infrastructure and upgrade technology for the purpose of supplying modern and sustainable energy services to all in developing countries, particularly the least developed countries, small island nations, and other developing countries." These Sustainable Development Goals (SDGs) were used to justify compromises in the ERGP's columns 1.3 and 1.6. As a result of burning coal, several chemical processes occur in power plants. Many gasses that are harmful to the environment are discharged into the air during this procedure. Nitrogen dioxide (NO_2), nitric oxide (NO), sulfur dioxide (SO_2), carbon monoxide (CO), and carbon dioxide (CO_2) are all examples of such pollutants. There may be major consequences for human health and climate change due to this specific combination of pollutants (Juciano G. and Kátia Da, 2020; M. Hendryx, 2020). Because contaminants may set off a broad range of chemical reactions, this is what happens.

A great deal of agreement existed between the first column and its sub-columns of the ERGP and the first, second, sixth, and seventh Sustainable Development Goals. The degree of congruence was high. Sustainable agriculture and improved food production are highlighted in ERGP sub-columns 1.1.1 to 1.13 in line with the idea of Sustainable Development Goals 1 and 2 (UN., 2015b). The three columns that comprise the ERGP shared some content with all of the SDG-related sub-columns in column 3, which is a good sign. Column 3.1 deals with healthcare, column 3.2 with education, and column 3.3 with social inclusion. Rising out of poverty becomes more feasible as a result of increased access to better-paying jobs made possible by higher levels of education. There would be more opportunities for high-quality education if more money were available, however. There is a correlation between increased parental education and lower newborn mortality rates (Obiwulu., 2019). Kids with college-educated parents are more likely to follow in their footsteps and excel academically. There is a synergistic interaction between Sustainable Development Goals 7 and Sections 2.1-2.16. Column 2.1 of the ERGP contains the portion dealing with electric power generation; column 2.2 contains the portion dealing with transportation infrastructure; and column 2.3 contains the portion dealing with the operational environment of enterprises. Furthermore, it has shown alignment with SDGs 1.5-1.b (UN, 2015b). Since no more evidence of interactions between SDGs and ERGPs has been found in the scientific literature, they were classified as neutral.
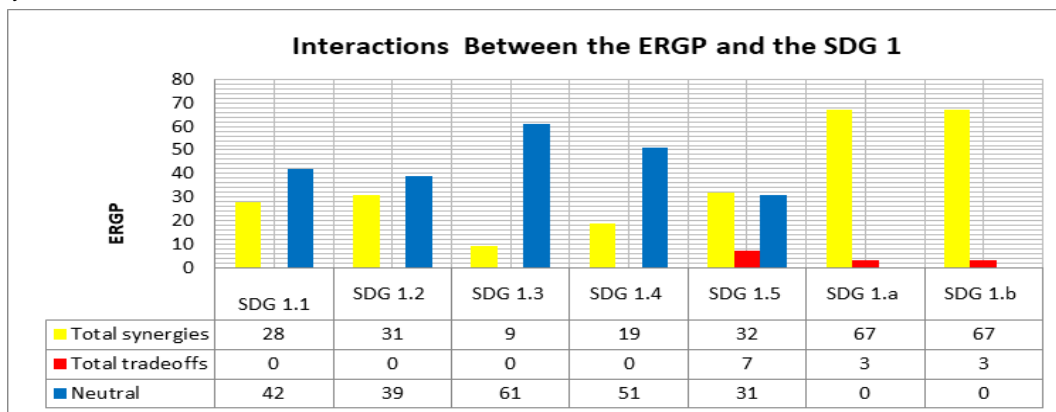

	SDG 1.1	SDG 1.2	SDG 1.3	SDG 1.4	SDG 1.5	SDG 1.a	SDG 1.b
Total synergies	28	31	9	19	32	67	67
Total tradeoffs	0	0	0	0	7	3	3
Neutral	42	39	61	51	31	0	0

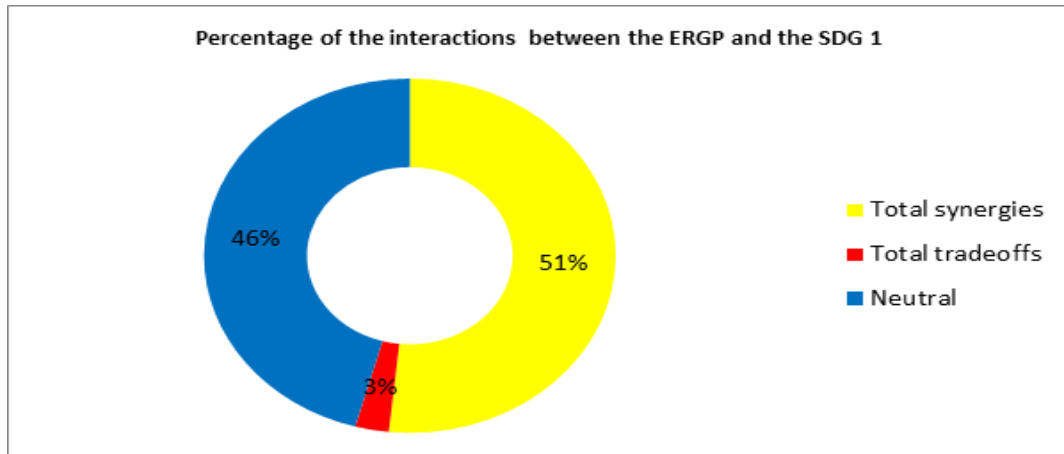**Fig 3 Relationships between SDG 1 and the ERGP**

Fig 4 Interactions by percentage between SDG 1 and the ERGP

When it comes to the relationship between the ERGP and SDG 1, there are a total of 223 positive interactions, which account for 51% of the total, 13 negative interactions, which represent 3% of the whole, and 224 neutral interactions, which account for 46% of the total.
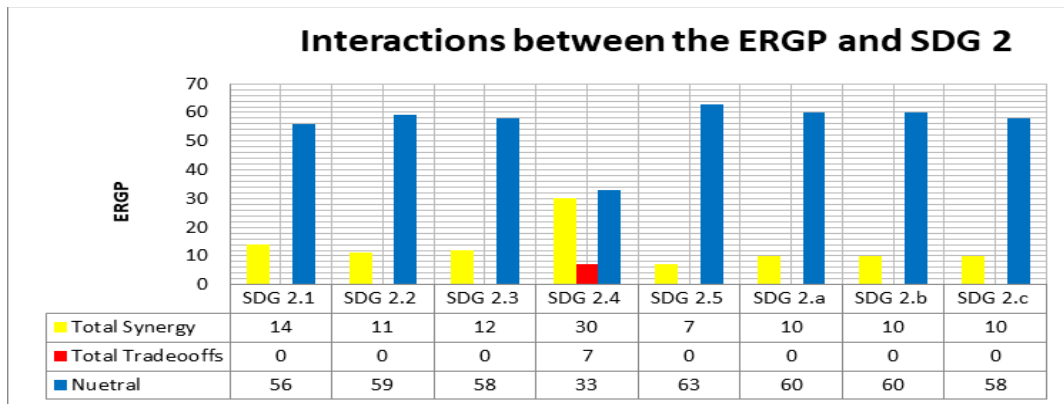

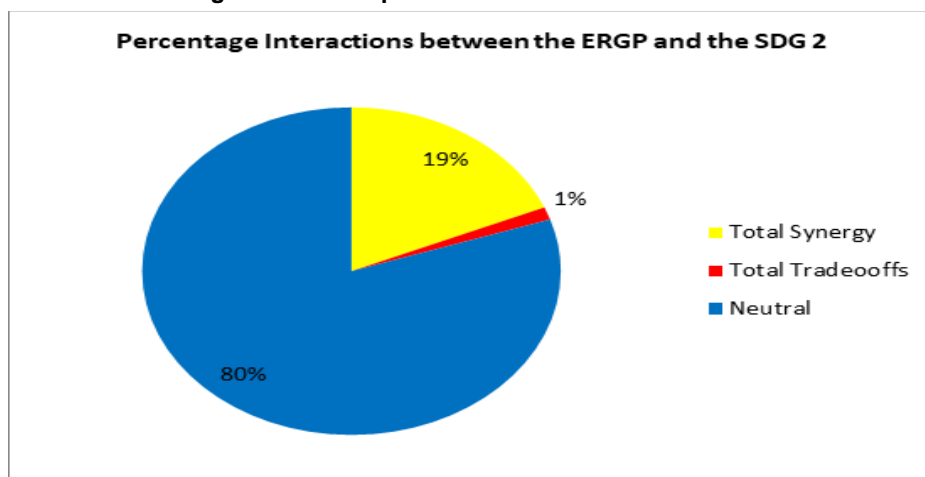**Fig 5 Relationships between SDG 2 and the ERGP**

Fig 6 Interactions between the ERGP and SDGs 2 as a percentage

There were 124 synergies (19%), 7 tradeoffs (1%), and 447 neutral interactions (80%) out of 558 interactions between the ERGP and the SDGs 2.
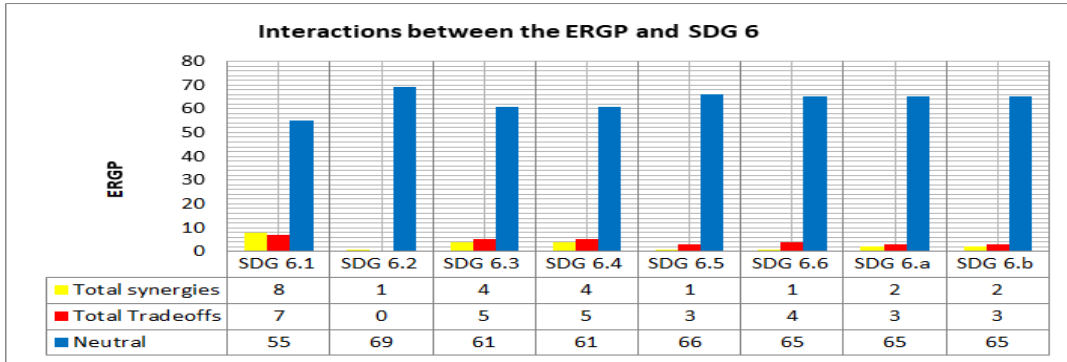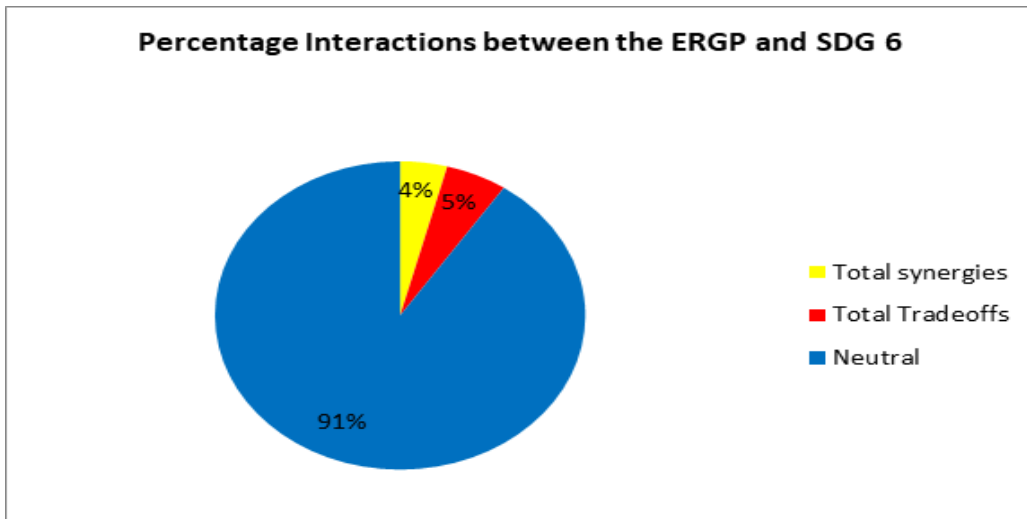
Interactions between the ERGP and SDG 6

	SDG 6.1	SDG 6.2	SDG 6.3	SDG 6.4	SDG 6.5	SDG 6.6	SDG 6.a	SDG 6.b
Total synergies	8	1	4	4	1	1	2	2
Total Tradeoffs	7	0	5	5	3	4	3	3
Neutral	55	69	61	61	66	65	65	65

Fig 7 How SDG 6 and the ERGP interact

Percentage Interactions between the ERGP and SDG 6

4% 5%
91%

- Total synergies
- Total Tradeoffs
- Neutral

Fig 8 The ERGP's Impact on SDG 6 as a Percentage

The ERGP and the Sustainable Development Goals 6 interacted with a total of 560 times; 23 of these interactions resulted in synergies, 30 in tradeoffs, and 507 in neutral interactions, accounting for 91% of the total.
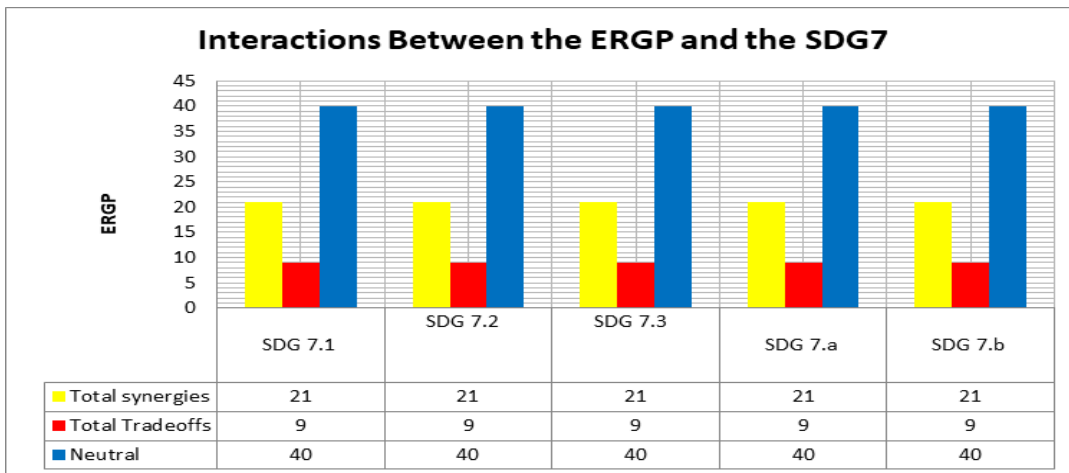
Interactions Between the ERGP and the SDG7

	SDG 7.1	SDG 7.2	SDG 7.3	SDG 7.a	SDG 7.b
Total synergies	21	21	21	21	21
Total Tradeoffs	9	9	9	9	9
Neutral	40	40	40	40	40

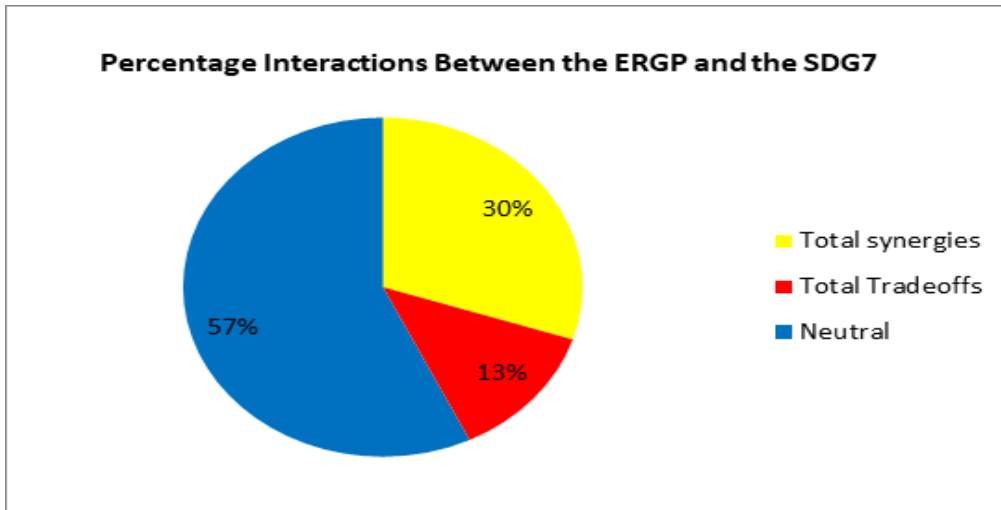**Fig 9 Relationships between SDG 7 and the ERGP**

Fig 10 Interactions in percentage terms between SDG 7 and the ERGP

A total of 350 interactions between the ERGP and the SDGs have been observed, with 105 demonstrating synergies (30%), 45 demonstrating tradeoffs (13%), and 200 demonstrating neutrality (57%).

A Model for Policy-Setting: Incorporating Sustainable Development Goals (SDGs) into National Development Plans and Policies

This idea proposes that prior to the formulation of any national policy, a comprehensive mapping of stakeholders should be carried out. This mapping should include professionals from each of the seventeen Sustainable Development Goals (SDGs). Furthermore, in order for the policy to be legally enforceable at the national level, it is advised that these parties be involved from the very beginning of the process of policymaking all the way through to the point when it is approved.

For the purpose of developing a cross-impact matrix, it is strongly suggested that the content analysis approach be used. If we do this, we will be able to investigate the linkages that exist between the Sustainable Development Goals (SDGs) and each of the suggested policy goals. In this manner, experts in each Sustainable Development Goal (SDG) might bring attention to the possible compromises that may emerge between policy aims and SDG ambitions as the implementation process moves forward. For this reason, it is essential to conduct a thorough evaluation of the policy document in order to guarantee that all of the issues raised by the specialists about tradeoffs have been appropriately handled and reduced. This is something that has to be finished before the document can be made available for approval.
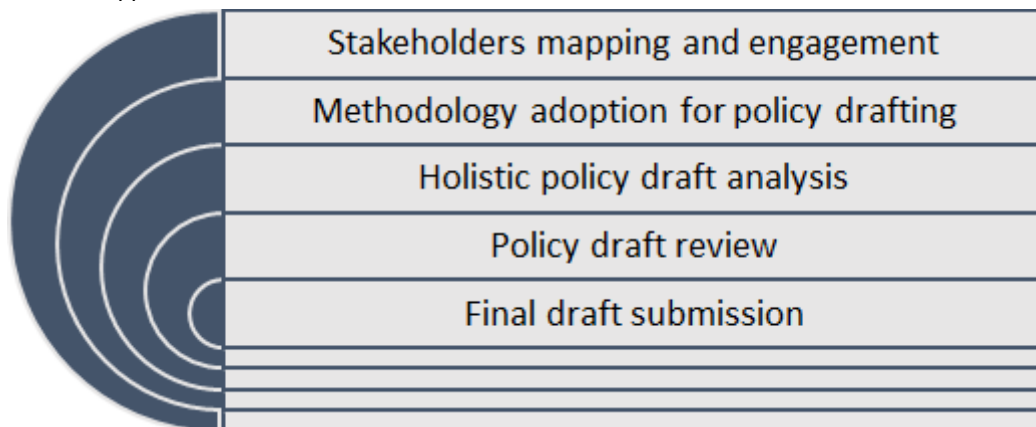

Fig 11. Model of Policy-Setting Approach for Integrating the Sdgs Into the National Development Plans and Policies

Conclusion

         This study has shown how India's National Policies and Plans intersect with SDGs 1, 2, 6, and 7. While there have been notable beneficial interactions between the policies and these SDGs, there are still some negative interactions that need policy coherence and cross-sectoral partnerships amongst the government sectors. The methodology employed in this article demonstrates the relationships between the policies and each of the SDG targets, as well as the possibility for mutually beneficial solutions in terms of national development and the potential for one target to compromise the goals of other policies. Using this framework, policymakers may consider potential repercussions from specific acts or inaction from a more holistic perspective. Globally, a wide range of factors have been taken into account in this research, including time, space, economy, and feasibility. Through the use of a content analysis approach, the procedure may be replicated in other settings, scaled down to fit particular development plans and policies, and even used to analyze objectives from different SDGs. The research backs up an evaluation of how the national plan and policies might help accomplish the SDGs and pinpoint potential co-benefits between their implementations.

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