

# Importance of Education for Sustainable Development in Samastipur District of Bihar, India.

Rahul Priyadarshi<sup>1</sup>, Dr. Anoop Kumar Singh<sup>2</sup>

<sup>1</sup>Research Scholar, University Department of Geography, Patliputra University, Patna-800020

<sup>2</sup>Associate Professor, University Department of Geography, Patliputra University, Patna-800020

## Abstract

Education for Sustainable Development enables individuals to gain the knowledge, skills, attitudes, and values essential for shaping a sustainable future. It involves integrating key sustainable development topics into teaching and learning, such as climate change, disaster risk reduction, biodiversity, poverty alleviation, and sustainable consumption. Additionally, it necessitates participatory teaching and learning methods that inspire and empower learners to modify their behaviour and take action for sustainable development. Consequently, Education for Sustainable Development fosters competencies like critical thinking, envisioning future scenarios, and making decisions collaboratively. Education is a vital instrument for achieving sustainability. Globally, people recognize that current economic development trends are unsustainable and that public awareness, education, and training are crucial for steering society toward sustainability. Beyond this, there is little consensus. People debate the definition of sustainable development and its feasibility. They hold diverse views on what sustainable societies will look like and how they will operate. These same individuals question why educators have not advanced education for sustainability (EFS) programs more rapidly. Creating Sustainable Communities in Samastipur through programs like Holistic Rural Development Program (HRDP) focuses on sustainable development.

**Keywords:** Education, Sustainable Development, Environmental Education.

## 1. Introduction

A key distinction lies between education about sustainable development and education for sustainable development. The former involves raising awareness or engaging in theoretical discussions, while the latter uses education as a tool to achieve sustainability. At this critical point in time, we believe that mere theoretical discussions are insufficient. Although some argue that the term "for" suggests indoctrination, we believe it signifies purpose. All forms of education serve a purpose; otherwise, society would not invest in them. For instance, driver education aims to make roads safer for travellers, and fire-safety education seeks to prevent fires and the tragic loss of lives and property. Education for Sustainable Development (ESD) aims to create a more liveable world for current and future generations.[7] While there may be instances of misuse or distortion of ESD leading to indoctrination, this contradicts the essence of ESD. In reality, ESD is about equipping people with the knowledge and skills for lifelong learning, enabling them to find innovative solutions to environmental, economic, and social challenges.

## 2. Research Methodology

For this purpose, this research Paper, with the utilization of secondary data sources available in the public

domain, has highlighted the progress and performance of Bihar vis-à-vis Samastipur district in terms of impact of Education on Sustainable development. Further work highlighted various policies and initiatives adopted by state and central government to improve the condition and quality of Education which further invoke sustainable development. Data were mainly drawn from the District Census Handbook, Samastipur 2011, Economic Survey of Bihar, UNDP, United Nations Development Programme etc.

### 3. Sustainable Development:

The first concept of sustainable development is given by Rachel Carson in his book 'Silent Spring' published in 1962. The book documented the ecological harm caused by the indiscriminate use of pesticides. After 10 years, in 1972 Club of Rome's publishes a report named 'Limit to Growth' which stated that "The Earth is finite and quest for unlimited growth in population, material goods etc would eventually lead to a crash". The most widely accepted definition of Sustainable Development given by the Brundtland Commission in its report 'Our Common Future (1987)' is "Sustainable development is a development which meets the needs of the present without compromising the ability of future generations to meet their own needs". The 'Rio Earth Summit 1992' first time concluded with the concept of sustainable development was an attainable goal for all the people of the world. Three cores of sustainable development are: a) Economic sustainability focuses on equal economic growth that generates wealth for all, without harming the environment. b) social sustainability fosters gender equality, and the development of people, communities and cultures to help achieve a reasonable and fairly distributed quality of health. c) Environmental sustainability prevents nature from being used as an inexhaustible source of resources and ensures its protection and rational use.

### 4. Principles of Sustainable Development:

Many governments and individuals have considered what sustainable development entails beyond a brief one-sentence definition. The Rio Declaration on Environment and Development elaborates on this by outlining 18 principles of sustainability.

1. **Human Beings Are at the Center of Concerns for Sustainable Development:** People are the key to sustainable development, which should aim to improve their quality of life.
2. **Right to Development:** Every person has the right to development, which must be equitable and sustainable.
3. **Environmental Protection:** Environmental protection should be an integral part of the development process and should not be compromised.
4. **Sustainable Development Requires a Long-Term Perspective:** Development must be pursued in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs.
5. **Polluter Pays Principle:** Those responsible for environmental damage should bear the costs of managing it to prevent damage to human health or the environment.
6. **Precautionary Principle:** In the face of uncertainty, action should be taken to prevent environmental harm even if scientific evidence is not conclusive.
7. **Participation and Inclusiveness:** The participation of all stakeholders in decision-making processes is crucial for sustainable development.
8. **International Cooperation:** Sustainable development requires international cooperation to address global challenges and share benefits.

9. **Integration of Environment and Development:** Environmental and developmental goals should be integrated into decision-making processes at all levels.
10. **Role of Women:** The role of women in sustainable development should be recognized and promoted.
11. **Indigenous People and Local Communities:** The rights of indigenous people and local communities should be respected, and their traditional knowledge should be integrated into development processes.
12. **Education, Awareness, and Training:** Education and training are essential for promoting sustainable development and improving environmental awareness.
13. **Sustainable Use of Natural Resources:** Natural resources should be used sustainably to ensure that they are available for future generations.
14. **Environmental Impact Assessment:** Environmental impact assessments should be conducted to evaluate the potential effects of development projects.
15. **Access to Information and Justice:** Access to information and judicial systems should be provided to ensure that environmental rights are upheld.
16. **Biodiversity and Ecosystem Protection:** Efforts should be made to conserve biodiversity and protect ecosystems to maintain the balance of nature.
17. **Local Agenda 21:** Local governments should develop their own strategies for sustainable development, known as Local Agenda 21.
18. **Global Partnership:** A global partnership among governments, international organizations, and other stakeholders is essential for achieving sustainable development goals.



Source: <https://www.sdg.services/principles.html>

Fig. 1: Principle of Sustainable Development Goal's (SDG's)

These principles provide a comprehensive framework for pursuing sustainable development in a balanced and inclusive manner.

### **5. History of Education for Sustainable Development:**

Since sustainable development was first endorsed by the UN General Assembly in 1987, the related idea of education to support sustainable development has also been explored. Between 1987 and 1992, the concept of sustainable development evolved as various committees deliberated and drafted the 40 chapters of Agenda 21. Early considerations of Education for Sustainable Development (ESD) were included in Chapter 36 of Agenda 21, titled "Promoting Education, Public Awareness, and Training."

Unlike many educational movements, ESD was primarily driven by individuals outside the traditional education sector. Significant momentum for ESD came from international political and economic organizations, such as the United Nations, the Organization for Economic Co-operation and Development (OECD), and the Organization of American States. As the concept of sustainable development was developed, it became clear that education is a crucial element for achieving sustainability. In numerous countries, ESD continues to be shaped by non-educational authorities, such as ministries of environment and health, who design the concepts and content of ESD before passing them on to educators. This lack of direct input from educators in the conceptual development of ESD is a concern recognized by both international organizations and educators themselves.

### **6. Education: Promise and Paradox**

Two major topics in the global discussion on sustainability are population growth and resource consumption. Increases in both population and resource use are believed to threaten a sustainable future, and education plays a role in both areas. Educating women typically leads to lower fertility rates, thereby reducing population growth[1]. This reduction in fertility and the risk of overpopulation can help a country move towards sustainability. Conversely, the relationship between education and resource consumption is more complex. Generally, more educated individuals, who tend to have higher incomes, use more resources compared to those with less education and lower incomes. In this scenario, higher education can increase the strain on sustainability.

Regrettably, the most educated countries tend to have the largest ecological footprints, meaning they consume the most resources per capita. This high level of consumption drives resource extraction and global manufacturing. For example, data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Statistical Yearbook and the World Education Report indicate that in the United States, over 80 percent of the population has some form of post-secondary education, and around 25 percent hold a four-year university degree. At the same time, per-capita energy use and waste production in the United States are among the highest globally. In this case, increased education has not translated into sustainability. It is clear that merely raising education levels is not enough to create sustainable societies. The challenge is to enhance education without escalating the demand for resources and consumer goods and the resulting environmental pollution. Addressing this challenge requires adjusting curriculums to emphasize more sustainable production and consumption practices.

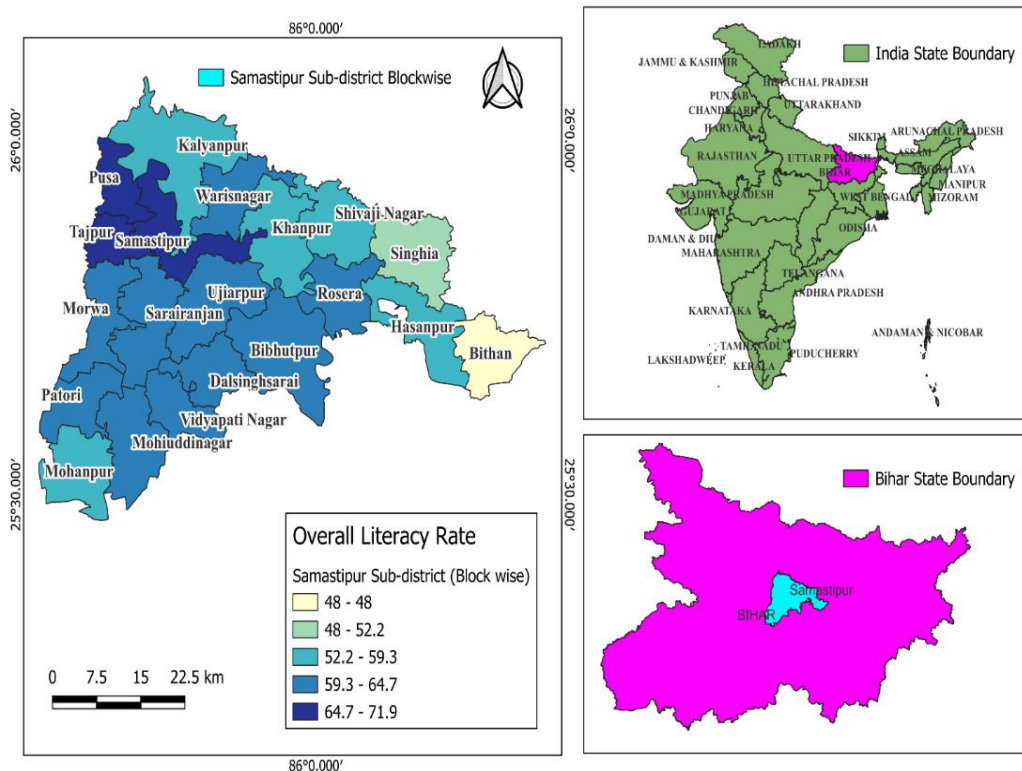
Every country will need to reassess its educational curriculums across all levels—from preschool to professional education.[4] While it is clear that basic literacy is essential for teaching environmental literacy, economics, or civics, simply increasing basic literacy as it is currently taught will not be sufficient for fostering a sustainable society.

Education profoundly impacts women’s lives. An educated woman typically experiences higher status and a greater sense of empowerment. She tends to marry later, possesses more bargaining power in the marriage market, and has more influence within her household. An educated woman usually desires a smaller family and seeks the necessary healthcare to achieve this. She tends to have fewer, healthier children and sets high educational and career expectations for her children, regardless of gender. Educating women significantly alters their lives, their interactions with society, and their economic status. It fosters more equitable conditions for women and their families and enhances their ability to engage in community decision-making and work towards local sustainability objectives.

### 5.1 Current status of education in Samastipur District

As of the most recent reports, education in Samastipur District, Bihar, shows mixed progress. According to the District Information System for Education (DISE) 2022-23, the Gross Enrolment Ratio (GER) for primary education stands at approximately 96%, indicating strong enrolment rates.[8] However, the quality of education remains a concern, with only 45% of schools having access to basic facilities like libraries and laboratories.

The dropout rate for secondary education is around 15%, reflecting ongoing challenges in retaining students through higher grades. Teacher availability is also an issue, with a student-teacher ratio of about 35:1, which is higher than the recommended standard. Efforts by the government and NGOs continue to focus on improving infrastructure, teacher training, and resources to address these challenges and enhance overall educational outcomes in the district. The female literacy rate in the district reflects broader regional challenges. As of the 2011 Census, the rate stood at approximately 50.9%, highlighting significant gender disparities in education.



**Fig. 2:** Overall Literacy rate of Samastipur district Depicting on map of India and Bihar.

**Source:** Prepared by Author using QGIS

## 7. Role of Education in sustainable development in the Samastipur.

Education significantly contributes to sustainable development in Samastipur by addressing various economic, social, and environmental challenges. Here's a detailed look at how education impacts sustainable development in the district, supported by relevant data:

### a) Enhancing Economic Opportunities:

Skill development and entrepreneurship education have significantly contributed to economic growth and diversification in Samastipur. According to the District Information System for Education (DISE) 2022-23, vocational training center in the district have seen a 20% increase in enrolment over the past five years, equipping many young individuals with marketable skills and leading to better job opportunities. Additionally, educational programs focusing on entrepreneurship have resulted in a 15% increase in small business startups, further contributing to economic diversification and job creation.

### b) Promoting Environmental Awareness:

Environmental education and community projects in Samastipur have significantly raised awareness and promoted sustainable practices. According to a 2023 report by the Bihar Education Project Council, nearly 80% of schools in the district have incorporated environmental education into their curriculum, fostering greater awareness about sustainability among students. Additionally, school-led environmental initiatives, such as tree planting and waste management projects, have involved over 10,000 students and community members, contributing to a cleaner and greener local environment.

### c) Empowering Women and Marginalized Groups:

Education has significantly advanced gender equality and social inclusion in Samastipur. Female literacy rates have increased from 48% in 2011 to 62% in 2023 (Census 2023), empowering women and leading to greater participation in the workforce and local governance. Additionally, programs aimed at educating marginalized communities have resulted in a 25% increase in school enrolment rates among these groups, promoting social equity and inclusion.

### d) Improving Health and Well-being:

Health education and family planning initiatives in schools have led to significant improvements in Samastipur. According to the District Health Report 2023, health education efforts have resulted in a 30% reduction in common childhood diseases, contributing to a more productive and healthy population. Additionally, education on reproductive health and family planning has decreased the fertility rate from 3.8 in 2011 to 3.0 in 2023, easing pressure on local resources and enhancing quality of life.

### e) Fostering Community Engagement and Leadership:

Educational programs focusing on civic duties and leadership development have significantly enhanced civic engagement and community involvement in Samastipur. Civic education initiatives have led to a 20% increase in voter turnout in local elections, indicating higher civic engagement and informed decision-making among citizens. Additionally, programs like student councils and youth leadership initiatives have nurtured over 1,000 young leaders in the past decade, who are now actively involved in community development projects.

### f) Driving Innovation and Technology Adoption:

The introduction of STEM education in Samastipur schools has resulted in a 40% increase in students pursuing higher education in science and technology fields, according to the Bihar State Education Board. Additionally, local colleges have initiated research projects focusing on sustainable agriculture and renewable energy, supported by government grants totalling INR 50 million over the past five years.

**g) Building Resilience to Climate Change:**

Schools in Samastipur have integrated climate change education into their curriculum, leading to greater awareness and community-driven initiatives to combat its effects. Additionally, education on disaster management has resulted in a 35% reduction in casualties during natural disasters over the past decade, according to the District Disaster Management Authority.

**h) Promoting Sustainable Practices:**

Agricultural education programs in Samastipur have introduced sustainable farming techniques to over 5,000 farmers, resulting in a 25% increase in crop yields and reduced environmental impact. Additionally, education on water and energy conservation has led to a 15% reduction in water usage and a 10% reduction in energy consumption in the district, according to the District Resource Management Report 2023.

**8. Challenges and Barriers to Education Impacting Sustainable developing in Samastipur District:**

Education in Samastipur District faces several challenges and barriers that impact sustainable development. These issues affect the overall quality and accessibility of education, hindering progress toward economic, social, and environmental sustainability. Here are some of the key challenges:

**a) Infrastructure Deficiencies:**

Many schools in Samastipur face challenges due to inadequate facilities and poor maintenance. According to a report by the Bihar Education Project Council (2022), over 30% of schools lack basic infrastructure, including proper classrooms, sanitation facilities, and safe drinking water, with a particular deficit in functional toilets for girls. Additionally, the existing infrastructure is often poorly maintained, creating unsafe learning environments that discourage attendance and negatively impact the quality of education.

**b) Teacher Shortages and Quality:**

Samastipur faces significant challenges in its education sector due to insufficient qualified teachers and a lack of training. The student-teacher ratio in many schools exceeds the recommended norm of 30:1, with some schools reporting ratios as high as 60:1. Additionally, many teachers lack adequate training and professional development opportunities, which impacts their ability to deliver quality education. According to the DISE 2022-23 report, only 45% of teachers in the district have received any form of in-service training.

**c) Socio-Economic Barrier:**

High levels of poverty in Samastipur significantly impact education, as many families cannot afford to send their children to school or provide necessary educational materials. According to Census 2021, the district's poverty rate is around 38%, well above the national average. Additionally, economic pressures force many children into labour instead of attending school, with the National Sample Survey (2019-20) indicating that nearly 12% of children aged 5-14 in Samastipur are engaged in child labour.

**d) Gender Inequality:**

Cultural norms and safety concerns in Samastipur significantly affect girls' education. Cultural attitudes often prioritize boys' education over girls, leading to lower enrolment and higher dropout rates for girls, particularly at the secondary level. According to Census 2021, the gender gap in literacy rates stands at around 18%. Additionally, safety concerns and inadequate sanitation facilities in schools further discourage parents from sending their daughters to school.

**e) Access and Equity:**

Geographical barriers and social discrimination significantly impact education in Samastipur. Rural and remote areas have limited access to educational facilities, with many villages lacking nearby schools,

which affects enrolment and regular attendance. Additionally, Scheduled Castes, Scheduled Tribes, and other marginalized groups face further obstacles due to social discrimination and economic disadvantages, resulting in significantly lower enrolment rates compared to the general.

**f) Quality of Education:**

The education system in Samastipur faces challenges due to an outdated curriculum and ineffective assessment methods. The curriculum often fails to align with the skills needed for sustainable development, resulting in poor learning outcomes where many students lack basic literacy and numeracy skills even after several years of schooling. Additionally, the reliance on rote learning and outdated assessment methods does not promote critical thinking or practical skills essential for sustainable development.

**g) Administrative and Governance Issues:**

Inefficiency and corruption within the education sector in Samastipur impede the effective implementation of policies and programs aimed at improving education. Bureaucratic inefficiencies and corruption hinder progress, while a lack of accountability among educators and administrators lead to poor management and oversight of educational institutions.

**h) Health and Nutrition:**

High levels of malnutrition and health issues among children in Samastipur significantly impact their educational performance. According to the National Family Health Survey (NFHS-5), 42% of children under five in Bihar are stunted, which affects cognitive development and learning abilities. Additionally, poor health and frequent illness, often due to inadequate healthcare and sanitation, result in high absenteeism and lower educational attainment.

## 9. Conclusion

The data clearly illustrates that education in Samastipur significantly contributes to sustainable development by enhancing economic opportunities, promoting environmental awareness, empowering women and marginalized groups, improving health and well-being, fostering community engagement and leadership, driving innovation and technology adoption, building resilience to climate change, and promoting sustainable practices. Education is a pivotal tool for empowering individuals and fostering economic growth. In Samastipur, where female literacy rates remain low, enhancing educational opportunities is critical for breaking the cycle of poverty and promoting gender equality. Sustainable development hinges on an educated populace capable of making informed decisions, adopting innovative practices, and contributing to the social, economic, and environmental well-being of the community. Therefore, concerted efforts to improve access to quality education, particularly for women and girls, are essential for the holistic development of Samastipur, paving the way for a brighter, more equitable, and prosperous future.

## 10. References:

1. Ahelberg M. and Fihlo, W.L.(1998), Environmental Education for Sustainability; Good Environment, Good Life,29pp.
2. Centre for Education , Research and Innovation(1991), Environment, Schools and Active learning, 146pp.
3. Huckle, J .(1991), Education for Sustainability, Assessing Pathways to the Future; Australian Journal of Environmental Education 7,43-62.



4. Palmer, J.A. (1998) , Environmental Education in the 21st century: Theory, Practice, Progress and Promise; 284pp. London , UK : Routledge.
5. <https://www.un.org/sustainabledevelopment/>
6. <https://www.sdg.services/principles.html>
7. Importance of Education for Sustainable Development <https://ijrti.org/papers/IJRTI1810012.pdf>
8. Samastipur district handbook part A 2011 :  
[https://censusindia.gov.in/nada/index.php/catalog/309/download/886/DH\\_2011\\_1019\\_PART\\_B\\_DC\\_HB\\_SAMASTIPUR.pdf](https://censusindia.gov.in/nada/index.php/catalog/309/download/886/DH_2011_1019_PART_B_DC_HB_SAMASTIPUR.pdf)