

Analysis of Development for Tripura to Achieve SDG Goals: With Special Reference to Tripura State, India

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Abstract

In feasibility analyses and the preparation of Detailed Project Reports (DPRs), most development planning frameworks account for financial, technical, and operational factors. However, **Competency-Based Human Resource Development (CBHRD)** is often overlooked as a critical component. Across the spectrum from least developed to developed contexts, this omission reflects a broader gap in addressing the urgency of building human competencies alongside infrastructure and investment.

Effective development planning requires that CBHRD be systematically integrated into project design, with dedicated budgetary provisions for all stakeholders involved. The absence of such an approach not only diminishes the return on investment but also constrains progress toward achieving the targets of the Sustainable Development Goals, particularly Goals 8 (Decent Work and Economic Growth), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities) and 17 (Partnership for the Goal).

Although Tripura (a state of India) is a relatively small and less populated state, its strategic geographical position offers significant potential for contributing to SDG outcomes. Substantial investments by central and state governments, as well as international donors, are being directed toward various development sectors in the region. However, inadequate emphasis on CBHRD in both public and private sector initiatives has limited the effectiveness of these investments. In many cases, allocated funds remain underutilized or are not optimally deployed due to a lack of competency-driven human resource planning.

Introduction

Tripura is a state in Northeast India. It is the third-smallest state in the country, covering an area of 10,491 km² (4,051 sq. mi.), and the seventh least populous state, with a population of approximately 3.67 million. The state is bordered by Assam and Mizoram to the east and by Bangladesh to the north, south, and west. Tripura is administratively divided into eight districts and twenty-three subdivisions, with Agartala serving as both the capital and the largest city.

Tripura is home to 19 different tribal communities, while Bengalis constitute the majority of the population. Bengali, English, and Kokborok are the official languages of the state. Geographically, Tripura remains relatively isolated from the rest of India, as National Highway 8 is the only major highway connecting the state with the mainland. According to the 2011 Census of India, Tripura is one of the most literate states in the country, with a literacy rate of 87.75%.

Over the last decade, several mega projects have been developed in Tripura. Some of the major projects are highlighted below:

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Maharaja Bir Bikram Airport

The Airports Authority of India (AAI) upgraded Maharaja Bir Bikram Airport to international standards, making it the third international airport in the North-Eastern region after Imphal. AAI undertook a project worth ₹438 crore (approximately US\$61 million) to provide world-class facilities. The State Government provided 72 acres (29 hectares) of land for the construction of a new terminal building, runway, and other necessary infrastructure. The Government of India also proposed leasing a portion of land from Bangladesh for the installation of perimeter fencing and landing lights.

Railway Connectivity: Agartala to Kolkata via Dhaka

The 15-km railway link (5 km in India and 10 km in Bangladesh) has significantly reduced travel time between Agartala and Kolkata via Dhaka. The rail connection also enables goods trains to access the North-Eastern region through Bangladesh at a considerably lower transportation cost. Furthermore, it provides direct access between landlocked North-Eastern India and the Chittagong Port of Bangladesh. According to official estimates, the construction of the Indo-Bangla international railway link through the Agartala–Akhaura route has cost approximately ₹862.5 crore.

Special Economic Zone (SEZ)

The Central Government allocated 16.35 hectares of land at Paschim Jalefa, Sabroom, in South Tripura District, for the establishment of a sector-specific Special Economic Zone (SEZ) for agro-based food processing industries. The proposed SEZ is also envisioned as a multi-sector zone accommodating manufacturing, services, trading, and warehousing activities.

The SEZ at Sabroom is expected to create new opportunities and attract private sector investment due to its strategic proximity to Chittagong Port and the construction of the bridge over the Feni River in South Tripura. The project aims to:

1. Generate additional economic activity
2. Promote exports of goods and services
3. Encourage domestic and foreign investment
4. Create employment opportunities
5. Develop infrastructure facilities

The preliminary project projections are as follows:

- Estimated project cost: approximately ₹60.57 crore
- Estimated investment: approximately ₹635.5 crore
- Estimated employment generation: 4,920 jobs

Tripura Mega Food Park

The Tripura Mega Food Park is located at Tulakona Village in Agartala. It is the 17th Mega Food Park in India and the first in the state of Tripura. Established on 50 acres of land at a cost of ₹87.45 crore, the park includes:

- A fully operational dry warehouse with 5,000 MT handling capacity
- Pineapple canning and pulping lines of 2 MT/hour each
- Packing units
- Ripening chambers with 40 TPD capacity
- Cold storage facilities of 5,000 MT, including frozen storage of 1,000 MT
- Quality Control and Research & Development Centre

The park also provides developed industrial plots and Standard Design Factory (SDF) sheds for micro and small enterprises. It is expected to attract additional investments of around ₹250 crore across 25–30 food processing units and generate an annual turnover of ₹450–500 crore. Moreover, the project is projected to create direct and indirect employment for approximately 5,000 people while benefiting around 25,000 farmers.

Tea Museum at Durgabari Tea Estate

The Tripura Tea Development Corporation has proposed establishing a Tea Museum at Durgabari Tea Estate on the outskirts of Agartala. The museum will showcase the rich legacy of the tea industry, one of the oldest surviving industries in Tripura.

The project also includes modernization of the state-owned Brahmakunda and Durgabari tea estates. The estimated cost of the Tea Museum project is around ₹3.5 crore. Tripura has 54 tea estates spread across 12,800 hectares, along with 2,755 small tea gardens covering an additional 1,398 hectares. The total number of tea garden workers in the state is approximately 7,230.

SMART City Agartala

The Smart Cities Mission is an urban renewal and retrofitting initiative of the Government of India aimed at developing 100 citizen-friendly and sustainable cities across the country. Agartala was selected in the second round of the Smart Cities Mission.

The major objectives of the Smart City initiative include:

1. Improvement of existing infrastructure
2. Decongestion of the central and eastern zones of the city
3. Enhancement of public spaces
4. Promotion of eco-tourism
5. Implementation of ICT-based applications
6. Development of efficient parking systems using ICT solutions
7. Promotion of sustainable urban planning practices

The Smart City projects are broadly divided into:

1. Area-Based Development (ABD)
2. PAN-city projects

Apparently, several large-scale projects are visible across the state of Tripura; however, many of them are not functioning to their full potential. One of the major reasons behind this situation is the lack of Competency-Based Human Resource Development (CBHRD) integration within the development planning process. Policymakers did not adequately recognize the importance of CBHRD while preparing the Detailed Project Reports (DPRs).

The successful implementation of any development initiative largely depends on the competency and capacity development of all stakeholders. Unfortunately, this critical aspect was overlooked during project planning and execution. Had CBHRD initiatives been developed simultaneously with the physical infrastructure projects, many of the intended outcomes could have been achieved upon project completion.

As a result, several of the aforementioned projects are struggling to become fully operational. Although policymakers may present various explanations for this non-functionality, the reality indicates that insufficient attention was given to human resource competency development alongside physical infrastructure development.

A deeper analysis suggests that the absence of CBHRD is one of the fundamental reasons behind the underperformance of these mega projects. Consequently, not only are the expected returns on investment being compromised, but the state is also falling behind in achieving holistic and sustainable development, particularly in relation to the Sustainable Development Goals (SDGs).

Literature Review

Although the concept of Capacity Development (CD) is relatively recent in academic literature and still lacks a strong theoretical foundation, it has remained a central focus of development and assistance programs worldwide since the post-World War II era. In international development initiatives led by governments and international non-governmental organizations (NGOs), CD is widely regarded as a fundamental mechanism for achieving the Sustainable Development Goals (SDGs) (Vallejo and Wehn, 2016). CD is generally conceptualized at three

interrelated and interactive levels: individual, organizational, and environmental (i.e., the enabling environment) (Otoo, Agapitova, and Behrens, 2009). It encompasses processes, approaches, methodologies, and strategies aimed at improving performance at these levels through education, training, learning, and development.

Both CD and Human Resource Development (HRD) are fundamentally concerned with learning as a means of enhancing effectiveness and efficiency across various dimensions of adult life. While HRD primarily focuses on training and development within organizational settings (Torraco and Lundgren, 2020), CD adopts a broader perspective that includes institutional strengthening and community or societal development (Lusthaus, Adrien, and Perstinger, 1999).

Since the 1960s, conventional forms of development aid have faced criticism due to the disparity between the substantial investments made—including the deployment of expatriate experts to emerging economies—and the limited sustainable development outcomes achieved (Kühl, 2009; Nair, 2003). This situation created a growing recognition that emerging economies needed to utilize development assistance more effectively in order to attain meaningful results (Kühl, 2009). The success of development aid largely depends on the extent to which recipient countries and communities can effectively apply the assistance to solve their own development challenges, rather than treating it merely as credit, subsidies, or external advice (Jaycox, 1993).

The concept of CD emerged during the 1980s through discussions among donor agencies, governments, and local leaders in aid-receiving countries and communities. These stakeholders collectively acknowledged that without strengthening the capabilities of individuals, groups, organizations, and society as a whole, efficient utilization of resources and sustainable economic development would remain difficult to achieve (Lusthaus, Adrien, and Perstinger, 1999).

CD gained significant prominence during the 1990s and gradually became a central pillar of development practice (Kühl, 2009; Lavergne and Saxby, 2001). Today, CD has been widely adopted, and most national and international development organizations have formulated policies emphasizing its implementation and importance (Kühl, 2009).

The term “capacity” refers to the abilities and competencies necessary for individuals and institutions to improve their living and working environments. These competencies include job-specific technical skills, such as operating machinery and technical expertise, as well as broader competencies including conceptual thinking, problem-solving, decision-making, diagnostic ability, and communication skills (Kühl, 2009). Capacity development is required at every level—from individuals to supranational institutions—because it serves as a critical mechanism for enhancing performance (Horton, 2002). In essence, CD is the process through which individuals, groups, and organizations strengthen their abilities to perform functions effectively and achieve intended outcomes over time (Morgan, 1997).

Similar to HRD, the scope of CD has expanded considerably in recent decades, with many scholars and institutions now associating it with broader societal and national development objectives (CIDA, 2000; OECD-DAC, 2006; Otoo, Agapitova, and Behrens, 2009; UNDP, 2008; Wubneh, 2003).

The concept of capacity building traditionally refers to the introduction of new capacities into a population through carefully planned and systematically implemented interventions based on predefined frameworks (Horton, 2002). In contrast, CD emphasizes building upon existing knowledge, competencies, and local capabilities, thereby promoting a dynamic and adaptive transformation process driven by local stakeholders.

Whether implemented as a large-scale development initiative or a targeted intervention project (Lavergne and Saxby, 2001), the primary objective of CD is to advance long-term development goals and accelerate sustainable development processes (Analoui and Danquah, 2017). CD approaches are commonly linked to global development agendas such as the Sustainable Development Goals (SDGs) and the Millennium Development Goals (MDGs), which have been formulated and endorsed by international institutions including the United Nations (Analoui and Danquah, 2017). Furthermore, CD aims to bridge development gaps through interventions in areas such as education, training, institutional strengthening, and organizational development.

More specifically, the major objectives of CD include:

1. Enhancing and effectively utilizing skills, abilities, and resources;
2. Strengthening relationships and mutual understanding among stakeholders; and
3. Addressing issues related to values, attitudes, motivations, and enabling conditions necessary for sustainable development (Bolger, 2000).

Traditionally, CD at the individual level has focused heavily on training interventions designed to improve the knowledge, attitudes, and skills of individuals (Brinkerhoff and Morgan, 2010). This includes individuals from diverse professional and social backgrounds such as planners, engineers, accountants, farmers, and administrators who function as organizational or societal actors (Bolger, 2000).

At the organizational level, CD primarily emphasizes improving management systems, institutional restructuring, public sector reform, decentralization, and modernization of civil services (Brinkerhoff and Morgan, 2010). However, the OECD-DAC (2006) broadened this perspective by arguing that organizational-level CD encompasses public, private, and civil society organizations and includes strategic management, operational capacity, human resources, financial management, information systems, and infrastructure development.

The enabling external environment significantly influences the effectiveness of individual and organizational CD initiatives. Consequently, CD interventions increasingly address broader political, institutional, and policy-related dimensions (Brinkerhoff and Morgan, 2010). For example, initiatives aimed at strengthening civil society participation or promoting pro-poor budgeting are closely connected to individual-level capacity enhancement efforts.

CD is therefore understood as a complex endogenous process involving individuals, organizations, societies, and nations. Although the concept is broadly applicable, it is most frequently used by donor agencies, development planners, international organizations, and policy strategists. The interventions commonly associated with CD closely resemble HRD activities, particularly education, training, learning, and organizational development. At its core, CD is a continuous learning process intended to create a competent workforce capable of improving both individual and collective performance in pursuit of long-term development objectives.

Development agencies and governments gradually realized that merely providing financial resources and constructing infrastructure without adequately training people would lead to unsustainable outcomes. Consequently, the contemporary philosophy of CD emphasizes shared ownership, participatory processes, and sustainability as essential components of development interventions (Horton et al., 2003; Lusthaus, Adrien, and Perstinger, 1999).

In the 21st century, organizations such as UNESCO (2010) increasingly highlighted HRD—particularly training and learning—as the individual-level dimension of CD activities. Similarly, regional organizations such as the Association of Southeast Asian Nations (ASEAN) emphasized HRD policies aimed at strengthening the competencies of adult workers through education, training, and development initiatives (Crocco and Tkachenko, 2022; Crocco, 2021).

HRD also focuses on organizational development through the achievement of both individual and institutional goals (Chalofsky, 1992; Marsick and Watkins, 1994; McLagan and Suhadolnik, 1989; Stewart and McGoldrick, 1996; Swanson, 1995; Watkins, 1989). Likewise, CD at the organizational level emphasizes institutional strengthening and management development (Brinkerhoff and Morgan, 2010; Kühl, 2009). Wilson (2009) similarly viewed people as the focal point of organizational development and emphasized the importance of employee development and participation in enhancing organizational capacity.

Practices such as effective staffing, ethnic group integration, and HRD functions are positively associated with enhanced organizational capacity and performance and play a significant role in decentralization and institutional reform (Berman, 2015). Without competent and efficient human resources, development goals at any level cannot be effectively achieved. Therefore, individual development should receive the highest priority in development planning and implementation.

One significant distinction between CD and HRD lies in their primary objectives. CD seeks to achieve broader long-term development outcomes aligned with frameworks such as the SDGs, whereas HRD focuses on improving learning and performance within organizations or among individuals for short-term or long-term goals (Wang et al., 2017). While CD is generally grounded in normative and ethical frameworks such as human development (Sen, 2000) and the capabilities approach (Nussbaum, 2001), HRD is often utilized by organizations and institutions to achieve strategic and competitive objectives within economic systems.

Berman (2015) emphasized the importance of HRD activities and expertise within development contexts and highlighted their contributions to strengthening state institutions and improving governance performance. According to Berman (2015), weak political commitment and corruption are among the major causes of poor governance and limited development progress. HRD interventions—particularly training and competency development—can therefore play a significant role in mitigating corruption and strengthening institutional effectiveness.

The term “development” itself broadly refers to the capacity of a society to continuously satisfy the needs of different stakeholders using available resources (Lavergne and Saxby, 2001).

Historically, the concept of CD emerged because traditional forms of technical and financial assistance failed to adequately address development challenges or achieve desired outcomes. Early development experiences demonstrated that the mere provision of financial, physical, and informational resources was insufficient to resolve complex development problems. Instead, it became increasingly evident that creating a competent and capable workforce was essential for effectively utilizing these resources.

Without the appropriate knowledge, skills, and competencies, hard forms of assistance—such as financial investments, infrastructure, and technology—are unlikely to generate sustainable change and may instead remain underutilized or mismanaged. Consequently, CD evolved to emphasize the “soft” dimensions of development, which closely align with the foundational principles of HRD. While material resources create opportunities, it is ultimately people who determine whether development objectives are successfully achieved.

Therefore, the concept of HRD is highly relevant to the core objectives of CD. Sustainable attainment of long-term development goals depends significantly on the ability of organizations, societies, and nations to develop competent human resources through appropriate HRD interventions.

Statement of the Problem

Development is essential for ensuring the sustainable future and improved survival of all environmental elements, including human beings. Governments, private sector organizations, development agencies, and think tanks continuously work toward achieving sustainable and inclusive development. In the context of Tripura, development is closely associated with improving regional connectivity and strengthening economic integration with neighbouring countries, particularly Bangladesh and Southeast Asia. Owing to its strategic geographical location, Tripura is often referred to as the “Gateway” or “Corridor of the East.”

With the objective of achieving the Sustainable Development Goals (SDGs), implementing India’s Act East Policy, and accelerating the progress of one of the country’s historically underdeveloped states, the concerned authorities initiated a series of development projects across Tripura. Infrastructure development plays a crucial role in regional and national development, as it involves the establishment of basic physical systems necessary for economic growth and public welfare. Such infrastructure includes transportation systems, communication networks, water supply systems, sewage systems, educational institutions, and other essential public facilities.

Infrastructure investments are generally capital-intensive and costly; however, they are fundamental to economic prosperity, regional competitiveness, and improved quality of life. These projects may be financed through public investment, private investment, or public-private partnerships. Infrastructure may be categorized into “hard infrastructure,” such as roads, railways, airports, and utilities, and “soft infrastructure,” such as education, healthcare, governance, and institutional systems. Both forms are indispensable for sustainable socio-economic development.

Over the last two decades, significant infrastructural and economic development initiatives have been undertaken in Tripura. However, a critical question remains unresolved: who will effectively operate, manage, and sustain these development projects? In the changing socio-economic and technological environment, the successful functioning of modern development initiatives requires Competency-Based Human Resource Development (CBHRD) and Competency-Based Human Resource Management (CBHRM). Unfortunately, these crucial components were not adequately incorporated into the development planning process.

Competency-based human resource systems cannot be developed overnight. They require long-term planning, systematic training, institutional capacity building, and continuous skill development among all stakeholders. As a consequence, although substantial physical development is visible across Tripura, the functional efficiency and operational outcomes of many projects remain far below expectations.

A comparison between the projected outcomes in the Detailed Project Reports (DPRs) and the actual performance of these projects reveals considerable gaps in operational efficiency, cost-benefit realization, and expected returns on investment. One of the major reasons for this discrepancy is the inadequate emphasis placed on CBHRD during project planning and implementation. While large investments were made in physical infrastructure, insufficient attention was given to developing competent human resources capable of effectively managing and sustaining these projects.

As a result, the state is not receiving the anticipated socio-economic benefits from its development investments. This situation represents a significant challenge within the development planning framework of Tripura and acts as a major barrier to achieving the Sustainable Development Goals (SDGs) and effectively implementing the Act East Policy. Therefore, integrating Competency-Based Human Resource Development into development planning has become an urgent necessity for ensuring the sustainability, functionality, and long-term success of development initiatives in Tripura.

Significance / Rationale of the Study

The environment forms the foundation of all Sustainable Development Goals (SDGs), ranging from eliminating poverty and hunger to reducing inequalities and building sustainable communities worldwide. The United Nations Environment Programme (UNEP) is committed to collaborating with governments, institutions, and other stakeholders to support the achievement of the 17 Sustainable Development Goals. UNEP recognizes environmental sustainability as a critical enabling factor for implementing the SDGs and ensuring the long-term health of the planet. Furthermore, UNEP supports countries in strengthening their capacities to monitor and evaluate progress toward achieving these goals while ensuring that environmental concerns are integrated into all dimensions of sustainable development.

UNEP's approach to the 2030 Agenda is based on four core principles: universality, integration, human rights and equity, and innovation.

Universality

The 2030 Agenda is global and universally applicable, while also recognizing different national realities, development priorities, and policy contexts. It requires collective action and strengthened governance systems, allowing countries to formulate their own pathways toward achieving national development targets.

Integration

The 2030 Agenda moves beyond the traditional view of sustainable development as three separate pillars—economic, social, and environmental. Instead, it emphasizes an integrated approach that balances these dimensions while incorporating governance and institutional coordination.

Human Rights and Equity

Inequality extends beyond economic disparities and includes unequal access to opportunities, resources, information, and justice. Achieving equitable development requires new approaches that build capacities at all levels of society and ensure inclusive participation in development processes.

Innovation

Innovative approaches and technological advancements are essential for enabling countries to accelerate development and respond effectively to emerging global challenges. Technology transfer and innovation are therefore considered integral components of sustainable development.

In 2018, UNEP and its partners introduced the “Good Life Goals,” which outline practical lifestyle actions that individuals can adopt to support the achievement of the SDGs. These goals are carefully aligned with the 169 SDG targets and indicators.

Relevance to SDG Goal 8

Sustainable Development Goal 8 emphasizes the promotion of sustained, inclusive, and sustainable economic growth, productive employment, and decent work for all. Environmental sustainability is essential for economic growth because natural resources and ecosystems directly and indirectly support economic activities. Natural resources such as water, minerals, forests, and land provide raw materials for production, while ecosystem services—including carbon sequestration, flood control, water purification, and nutrient cycling—contribute significantly to economic resilience.

Natural disasters and environmental degradation negatively affect economic activities and often push vulnerable populations into poverty. Therefore, preserving ecosystems and mitigating climate change are critical for sustainable economic and employment growth. Sustained economic growth can generate employment opportunities, improve livelihoods, and reduce inequalities between developed and developing regions.

Relevance to SDG Goal 9

Sustainable Development Goal 9 focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. Resilient infrastructure serves as the foundation of successful and sustainable communities. To address future developmental challenges, industries and infrastructure systems must be modernized through innovative and sustainable technologies while ensuring equal access to information, financial markets, and technological resources.

SDG 9 contains eight targets, including the development of sustainable infrastructure, promotion of industrialization, enhancement of financial access, upgrading industries for sustainability, strengthening research and innovation, and expanding access to information and communication technologies. These objectives are particularly relevant for developing regions such as Tripura, where infrastructure development is considered essential for economic transformation and regional connectivity.

Although global carbon emission intensity has declined over the last two decades, millions of people worldwide still lack access to digital connectivity due to economic and infrastructural limitations. This highlights the continuing need for integrated and inclusive infrastructure development policies.

Relevance to SDG Goal 10

Sustainable Development Goal 10 seeks to reduce inequalities within and among countries. The goal emphasizes inclusive economic, political, and social participation; equal opportunities; reduction of discrimination; and equitable policy frameworks.

Target 10.1 specifically aims to increase the income growth of the bottom 40 percent of the population at a rate higher than the national average. Despite some improvements in income growth among poorer populations between 2012 and 2017, inequalities remain substantial in many countries. Reports by the United Nations have also highlighted that women, particularly women with disabilities, continue to experience disproportionate levels of discrimination and exclusion.

Therefore, achieving SDG 10 requires strengthening institutional capacities, improving access to opportunities, and ensuring equitable participation in development processes through effective human resource and competency development strategies.

Relevance of SDG 17**1. Multi-Stakeholder Collaboration**

- Development initiatives in Tripura require coordination between the Government of Tripura, Central Government agencies, NGOs, academic institutions, and private-sector organizations.
- Effective partnerships help mobilize financial, technical, and human resources for sustainable development.

2. Resource Mobilization

- Achieving SDGs in a developing state like Tripura requires investment in infrastructure, education, healthcare, renewable energy, and livelihood generation.
- SDG 17 emphasizes financial support, investment, and resource sharing to accelerate development outcomes.

3. Technology Transfer and Innovation

- Modern technologies in agriculture, healthcare, digital governance, and environmental management can improve development indicators in Tripura.
- SDG 17 promotes technology transfer, innovation, and capacity-building mechanisms for developing regions.

4. Capacity Building and Institutional Strengthening

- Strengthening local institutions, administrative systems, and community organizations is essential for effective SDG implementation.
- Partnerships facilitate knowledge exchange, training, and institutional development.

5. Data Collection and Monitoring

- Accurate and timely data are necessary to assess Tripura's progress toward SDG targets.
- SDG 17 highlights statistical capacity-building and improved data systems for monitoring sustainable development performance.

6. Regional and International Cooperation

- Tripura's strategic location near Bangladesh provides opportunities for cross-border trade, connectivity, cultural exchange, and economic cooperation.
- Such partnerships can contribute to economic growth, infrastructure development, and regional sustainability.

Link with the Research Topic

The study analyzes Tripura's progress toward achieving the SDGs. Since SDG 17 acts as an enabling goal that supports the implementation of all other SDGs, the research can evaluate how partnerships, funding mechanisms, institutional cooperation, technology adoption, and stakeholder engagement contribute to development outcomes in Tripura. Strong partnerships can accelerate progress in poverty reduction, education, healthcare, gender equality, infrastructure development, environmental conservation, and economic growth across the state.

Significance of the Act East Policy

India's Look East Policy emerged during the 1990s as part of broader efforts to strengthen economic and strategic engagement with East and Southeast Asia. Later transformed into the "Act East Policy," it emphasized deeper economic cooperation, cultural ties, strategic partnerships, and enhanced regional connectivity with countries in the Asia-Pacific region.

The North-Eastern region of India, including Tripura, has become a central component of the Act East Policy due to its strategic geographical position connecting India with ASEAN countries. The policy aims to improve trade, infrastructure, communication, transport, tourism, and people-to-people connectivity between Northeast India and Southeast Asia.

Several major initiatives have been undertaken under the Act East Policy, including:

- Kaladan Multi-Modal Transit Transport Project
- India–Myanmar–Thailand Trilateral Highway Project
- Rhi-Tiddim Road Project
- Border Haats and regional trade initiatives

The ASEAN-India Plan of Action (2016–2020) further strengthened cooperation in political-security, economic, and socio-cultural dimensions. India has also enhanced collaboration with regional organizations such as ASEAN, BIMSTEC, ARF, EAS, ACD, MGC, and IORA. In addition, cultural and civilizational linkages rooted in Buddhism and Hinduism are being utilized to strengthen regional integration and connectivity.

Despite these policy initiatives and infrastructural investments, the anticipated developmental outcomes in many parts of Northeast India, including Tripura, have not been fully realized. One of the major reasons for this gap is the inadequate focus on Competency-Based Human Resource Development (CBHRD) alongside infrastructure and economic investments.

Rationale of the Study

This study is significant because it examines the critical relationship between infrastructure development, Competency-Based Human Resource Development (CBHRD), and sustainable development outcomes in Tripura. Although substantial investments have been made in infrastructure and connectivity projects under the SDGs and Act East Policy frameworks, insufficient attention has been paid to developing the human competencies required to operate, manage, and sustain these initiatives effectively.

The study aims to identify how the absence of CBHRD affects the operational efficiency and sustainability of development projects in Tripura. It also seeks to explore how competency-based approaches can contribute to achieving SDGs, strengthening institutional performance, improving governance, and maximizing the socio-economic benefits of development investments.

Furthermore, this research will contribute to academic knowledge by integrating the concepts of sustainable development, infrastructure development, HRD, and competency-based management within the context of regional development planning. The findings of the study may provide valuable policy recommendations for governments, development agencies, planners, and institutions involved in development initiatives in Tripura and other similarly situated regions.

Objectives of the Study

The central purpose of this study is to examine the role of Competency-Based Human Resource Development (CBHRD) in the sustainable development initiatives undertaken in Tripura, with particular emphasis on the relationship between infrastructure development, human resource competencies, and the operational effectiveness of major development projects. The study aims to assess how the absence or inadequacy of competency-based human resource planning affects the functionality, sustainability, and developmental outcomes of large-scale projects implemented under the Sustainable Development Goals (SDGs) and India's Act East Policy.

The specific objectives of the study are as follows:

1. **To examine the existing infrastructure and development initiatives undertaken in Tripura** under the frameworks of the Sustainable Development Goals (SDGs) and the Act East Policy.
2. **To analyze the role and significance of Competency-Based Human Resource Development (CBHRD)** in ensuring the operational effectiveness and sustainability of development projects in Tripura.
3. **To identify the gaps between physical infrastructure development and human resource competency development** in the planning and implementation of major projects in Tripura.

4. **To assess the perceptions of policymakers, administrators, project stakeholders, and development practitioners** regarding the importance of competency-based human resource management in achieving sustainable development outcomes.
5. **To evaluate the extent to which the absence of CBHRD affects project performance, operational efficiency, and expected socio-economic returns** of development investments in Tripura.
6. **To examine the relationship between CBHRD and the achievement of Sustainable Development Goals (SDGs)**, particularly in relation to economic growth, infrastructure sustainability, employment generation, and regional development.
7. **To analyze the relevance of CBHRD in the successful implementation of India's Act East Policy**, especially in the context of Tripura's strategic geographical location and regional connectivity initiatives.
8. **To propose a conceptual and practical framework for integrating Competency-Based Human Resource Development into development planning and policy formulation** in Tripura.
9. **To provide policy recommendations for governments, development agencies, and institutions** to strengthen competency-based approaches for sustainable and inclusive development in Tripura and other similar regions.

Hypotheses / Research Questions

Development planning is generally based on feasibility analysis, budgetary allocation, projected outcomes, and expected socio-economic benefits. Following these assessments, development projects are implemented with the expectation that the intended outcomes will be achieved upon completion. However, in many cases, completed development projects fail to deliver the expected results immediately or function effectively after implementation. One of the major reasons for this gap is the insufficient attention given to the preparedness and competency of stakeholders responsible for operating, managing, and sustaining these projects.

In most development initiatives, emphasis is primarily placed on physical infrastructure, financial investment, and technical implementation, while Competency-Based Human Resource Development (CBHRD) receives limited consideration. As a result, although projects may be physically completed, stakeholders often lack the required competencies, technical expertise, managerial capabilities, and adaptive capacity necessary to ensure effective utilization and sustainable operation of these projects.

If CBHRD initiatives are integrated parallel to the planning and implementation phases of development projects, stakeholders can gradually adapt to technological, organizational, and operational changes. Such an approach is likely to ensure more immediate and sustainable project outcomes. This issue is particularly relevant in least-developed and developing regions where communities may have limited exposure to modern technology, institutional systems, and advanced management practices.

In the context of Tripura, although the literacy rate is relatively high, a significant section of the population remains socially and economically isolated from modern technological and industrial systems. Consequently, adapting to rapid developmental changes and effectively utilizing modern infrastructure becomes challenging. Furthermore, both government and private sector stakeholders often face limitations in competency, institutional readiness, and technical expertise, which restrict their ability to support and manage newly developed projects efficiently.

Although numerous meetings, seminars, workshops, training programs, and financial investments have been undertaken to address these challenges, the implementation outcomes remain inadequate due to the insufficient integration of competency-based human resource development into the broader development framework. Financial support, infrastructure completion, and sector-specific skill development alone are insufficient to ensure sustainable development outcomes. Rather, an integrated stakeholder-oriented CBHRD framework is necessary to strengthen the competencies of all parties involved in the development process.

Therefore, this study assumes that sustainable and effective development outcomes can only be achieved when competency-based human resource development is incorporated as a core component of development planning and implementation.

Based on the extensive review of literature and the conceptual framework of the study, the following research hypotheses have been formulated:

Hypotheses

H1: There is a significant relationship between Competency-Based Human Resource Development (CBHRD) and the operational effectiveness of development projects in Tripura.

H2: Inadequate integration of Competency-Based Human Resource Development (CBHRD) in development planning significantly affects the sustainability and performance of infrastructure projects in Tripura.

H3: There exists a significant gap between physical infrastructure development and stakeholder competency development in the implementation of major development projects in Tripura.

H4: Effective implementation of Competency-Based Human Resource Development (CBHRD) positively contributes to the achievement of Sustainable Development Goals (SDGs) and the successful implementation of the Act East Policy in Tripura.

Research Questions

Questionnaire for Survey

Analysis of Development in Tripura to Achieve Sustainable Development Goals (SDGs)

Survey Introduction

Thank you for participating in this survey. This research aims to analyze the development initiatives in Tripura in relation to achieving the United Nations Sustainable Development Goals (SDGs). The study particularly focuses on the role of Competency-Based Human Resource Development (CBHRD) in ensuring sustainable and effective implementation of development projects.

Your responses will provide valuable insights into the progress, challenges, and opportunities associated with sustainable development in Tripura. Participation in this survey is entirely voluntary, and all responses will remain confidential and anonymous. The survey is expected to take approximately 10–15 minutes to complete.

Section 1: Respondent Information

1. Name (Optional): _____
2. Profession: _____
3. Designation: _____
4. Mobile Number (Optional): _____

Section 2: Demographic Information

1. Age Group
 - 18–24
 - 25–34
 - 35–44
 - 45–54
 - 55 and above

2. Gender

- Male
- Female
- Non-binary / Other
- Prefer not to say

3. Educational Qualification

- High School
- Bachelor's Degree
- Master's Degree
- PhD

- Other: _____

4. Occupation

- Government Employee
- Private Sector Employee
- Self-Employed
- Student
- Unemployed
- Other: _____

5. Area of Residence

- Urban
- Semi-Urban
- Rural
- Other: _____

6. District

- West Tripura
- Gomati
- Dhalai
- Khowai
- Sepahijala
- Unakoti
- North Tripura
- South Tripura
- Other: _____

Section 3: Awareness and Perception of Sustainable Development Goals (SDGs)**1. Have you heard about the United Nations Sustainable Development Goals (SDGs)?**

- Yes
- No

2. If yes, how did you learn about SDGs? (Select all that apply)

- Government Programs
- Social Media
- News / Media
- Educational Institutions
- NGOs / Development Organizations
- Other: _____

3. Do you think achieving SDGs is important for the development of Tripura?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

4. Please rate the performance of Tripura in the following areas:

(1 = Poor, 5 = Excellent)

Areas	1	2	3	4	5
Decent Work and Economic Growth (SDG 8)	○	○	○	○	○
Industry, Innovation, and Infrastructure (SDG 9)	○	○	○	○	○
Reduced Inequalities (SDG 10)	○	○	○	○	○
Partnerships for the Goals (SDG 17)	○	○	○	○	○

Areas

1 2 3 4 5

5. What do you think are the biggest challenges Tripura faces in achieving SDGs?**(Select all that apply)**

- Lack of Funding
- Poor Infrastructure
- Lack of Public Awareness
- Political Constraints
- Environmental Challenges
- Lack of Skilled Human Resources
- Other: _____

6. Are government initiatives effective in promoting SDG-related development in Tripura?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

7. Do you believe there is sufficient community involvement in SDG-related development efforts?

- Yes
- No
- Not Sure

8. Which areas should the government prioritize for sustainable development in Tripura?**(Rank in order of importance, where 1 = Most Important)**

- Decent Work and Economic Growth
- Industry, Innovation, and Infrastructure
- Reduced Inequalities
- Sustainable Cities and Communities
- Partnerships for the Goals

9. In your opinion, what is the most pressing issue affecting Tripura's development?

- Unemployment
- Poverty
- Access to Quality Education
- Gender Inequality
- Climate Change
- Lack of Skilled Human Resources
- Other: _____

10. What role can local communities play in achieving SDGs in Tripura?**(Open-ended)****11. What recommendations would you suggest to improve Tripura's progress toward achieving SDGs?****(Open-ended)****12. Do you have any additional comments or suggestions regarding development in Tripura?****(Open-ended)****Section 4: Competency-Based Human Resource Development (CBHRD) for Achieving SDGs**

This section aims to gather perceptions, practices, and challenges related to Competency-Based Human Resource Development (CBHRD) in achieving Sustainable Development Goals.

1. What competencies are considered most critical for HRD initiatives aimed at achieving SDGs?**(Select all that apply)**

- Leadership Skills
- Sustainability Awareness
- Innovation and Creativity
- Communication Skills
- Ethical and Responsible Behavior
- Technical Skills
- Problem-Solving Skills
- Other: _____

2. Does your organization conduct skill gap analyses to align HRD initiatives with SDG objectives?

- Yes
- No
- Not Sure

3. How effective are current HRD programs in developing competencies related to SDGs?

- Highly Effective
- Effective
- Moderately Effective
- Slightly Effective
- Not Effective

4. Are there specific training programs focused on sustainable development and related competencies?

- Yes
- No

5. What challenges does your organization face in implementing competency-based HRD for SDGs?**(Select all that apply)**

- Lack of Awareness
- Financial Constraints
- Lack of Skilled Trainers
- Organizational Resistance
- Lack of Clear Policies
- Lack of Institutional Support
- Other: _____

6. Have you observed improvement in organizational performance related to SDG achievement through competency-based HRD?

- Yes
- No
- Not Sure

7. How does your organization measure the success of HRD initiatives in contributing to SDGs?**(Open-ended)****8. Please share any suggestions or insights on enhancing competency-based HRD for achieving SDGs.****(Open-ended)****Section 5: Competency-Based HRD for Mega Development Projects**

This section is designed to assess perceptions, practices, challenges, and impacts of competency-based HRD in the context of large-scale development projects.

1. How familiar are you with competency-based HRD principles?

- Very Familiar
- Familiar

- Somewhat Familiar
- Not Familiar

2. Do you believe competency-based HRD is essential for the successful implementation of mega development projects?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

3. Does your organization implement competency-based HRD tailored to mega project requirements?

- Yes
- No
- Not Sure

4. What key competencies are prioritized for project personnel?

(Select all that apply)

- Technical Skills
- Project Management Skills
- Leadership and Decision-Making
- Communication Skills
- Adaptability and Resilience
- Cultural Sensitivity
- Teamwork and Collaboration
- Other: _____

5. Are competency mapping and assessment conducted regularly for project staff?

- Yes
- No
- Occasionally

6. Does the organization provide specialized training to develop competencies relevant to mega project execution?

- Yes
- No

7. How effective are the available training programs in enhancing project-specific competencies?

- Highly Effective
- Effective
- Moderately Effective
- Slightly Effective
- Not Effective

8. What challenges are faced in implementing competency-based HRD?

(Select all that apply)

- Lack of Skilled Trainers
- Insufficient Funding
- Resistance to Change
- Absence of Clear Competency Frameworks
- Rapid Project Timelines Limiting Training Opportunities
- Other: _____

9. To what extent has competency-based HRD contributed to project success?

- Significantly
- Moderately
- Slightly
- Not at All

10. Are project outcomes (e.g., timely completion, quality, sustainability) improving due to competency development?

- Yes
- No
- Not Sure

11. How is the effectiveness of competency-based HRD monitored within the project?

(Open-ended)

12. What additional competencies do you think are necessary for the success of future mega development projects?

(Open-ended)

13. Please share any suggestions to improve competency-based HRD strategies for mega projects.

(Open-ended)

Section 6: Impact of the Absence of Competency-Based HRD on Mega Development Projects

This section aims to gather insights regarding the impact of the absence of competency-based HRD strategies on mega development projects.

1. Do you think the absence of competency-based HRD affects the success of mega development projects?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

2. In your opinion, has the lack of competency-based HRD hampered the progress of mega projects?

- Yes
- No
- Not Sure

3. Which areas do you believe are most affected by the absence of competency-based HRD?

(Select all that apply)

- Project Delays
- Cost Overruns
- Poor Quality Outputs
- Lack of Innovation
- Stakeholder Dissatisfaction
- Sustainability Issues
- Inefficient Resource Utilization
- Other: _____

4. Have you observed skill or competency gaps among project personnel due to the absence of competency-based HRD?

- Yes
- No
- Sometimes

5. What are the primary reasons for the absence of competency-based HRD approaches in projects?

(Select all that apply)

- Lack of Awareness of Benefits
- Budget Constraints
- Organizational Resistance
- Absence of Clear Policies

- Rapid Project Timelines
- Lack of Trained Personnel
- Weak Institutional Frameworks
- Other: _____

6. Do you think traditional HRD approaches are insufficient for ensuring mega project success?

- Yes
- No
- Not Sure

7. Would the inclusion of competency-based HRD strategies improve the success rate of future mega projects?

- Yes
- No
- Maybe

8. What competencies should be prioritized if competency-based HRD strategies are implemented?

(Open-ended)

9. Please share any suggestions or insights on integrating competency-based HRD into mega development projects to avoid implementation challenges and ensure sustainable outcomes.

(Open-ended)

Thank you for your valuable participation and contribution to this research study. Your responses will help in understanding the role of Competency-Based Human Resource Development (CBHRD) in achieving sustainable development and improving the effectiveness of mega development projects in Tripura.

Methodology / Data Collection Techniques / Assessment Measures / Procedure / Proposed Analysis:

This study is both explanatory and diagnostic in nature. It aims to examine the role of Competency-Based Human Resource Development (CBHRD) in the sustainable development initiatives undertaken in Tripura, particularly in relation to achieving the Sustainable Development Goals (SDGs) and supporting the successful implementation of major development projects under India's Act East Policy.

The study seeks to evaluate the relationship between infrastructure development and competency-based human resource development through perceptual and empirical data collected from policymakers, government officials, project administrators, HRD practitioners, line managers, development professionals, academicians, and other stakeholders associated with development projects in Tripura.

Research Design

The study adopts a mixed-method research design integrating both quantitative and qualitative approaches. The quantitative component is intended to assess perceptions, awareness levels, competency gaps, and stakeholder evaluations regarding development initiatives and CBHRD practices. The qualitative component aims to provide diagnostic insights into the operational challenges, institutional limitations, and human resource competency issues affecting the sustainability and effectiveness of development projects in Tripura.

The study mainly focuses on two broad dimensions:

1. Stakeholders' perceptions regarding sustainable development initiatives, SDGs, and the role of Competency-Based Human Resource Development (CBHRD) in development planning and implementation; and
2. The relationship between competency development, project functionality, operational efficiency, and sustainable development outcomes in major infrastructure and development projects in Tripura.

Population and Sampling

The target population of the study consists of stakeholders associated with development initiatives in Tripura, including:

- Government officials and administrators
- HRD and HRM professionals
- Line managers and project managers
- Development practitioners
- Academicians and researchers
- Representatives of private sector organizations
- Public sector organizations
- Multinational corporations (MNCs)
- NGOs and civil society organizations
- Local community representatives

The study primarily focuses on medium and large-scale organizations and development projects because such organizations generally possess relatively mature and structured HRD systems compared to small-scale organizations. Furthermore, large and medium-scale projects have greater strategic significance in achieving SDGs and implementing the Act East Policy.

A purposive and stratified sampling technique has been adopted to ensure fair representation of stakeholders from public, private, and multinational sectors operating in Tripura.

Sources of Data

The study is based on both primary and secondary sources of data.

Primary Data

Primary data have been collected through:

- Structured questionnaires
- Focus group discussions
- Personal interviews
- Observations

Secondary Data

Secondary data have been collected from:

- Government reports and policy documents
- SDG reports and UN publications
- Academic journals and books
- Research articles
- Industry and institutional reports
- Development project reports and Detailed Project Reports (DPRs)
- Publications of organizations such as CII, ICC, FICCI, UNEP, UNESCO, OECD, and UNDP

Data Collection Procedure

The data collection process involved approaching medium and large-scale organizations, government departments, institutions, and stakeholders associated with development initiatives in Tripura. Respondents were contacted through official communication channels, email correspondence, and personal visits wherever possible.

The sampling frame was prepared using available directories and institutional databases, including:

1. Confederation of Indian Industry (CII) Directory
2. Indian Chamber of Commerce (ICC) Directory
3. Federation of Indian Chambers of Commerce and Industry (FICCI) Directory
4. Government and institutional records related to development projects in Tripura

Focus Group Discussion

To examine the suitability, relevance, and validity of the research instrument within the context of Tripura, a focus group discussion was conducted in Agartala. The focus group consisted of a small sample of experts and practitioners, including academicians, HRD practitioners, policymakers, and representatives from public and private sector organizations.

The primary objective of the focus group discussion was:

- To assess the relevance and applicability of competency-based HRD concepts in the context of Tripura;
- To evaluate the clarity and appropriateness of the questionnaire; and

- To identify important issues related to development planning, stakeholder competency, and sustainable project implementation.

The discussion was moderated by the researcher, and participant responses and observations were carefully documented for further refinement of the research instrument.

Research Instrument

The structured questionnaire used for the quantitative survey consists of six major sections:

1. Respondent demographic and organizational information
2. Awareness and perceptions regarding Sustainable Development Goals (SDGs)
3. Perceptions regarding development initiatives in Tripura
4. Competency-Based Human Resource Development (CBHRD) practices and challenges
5. Competency requirements for mega development projects
6. Impact of the absence of CBHRD on project sustainability and performance

The questionnaire includes:

- Multiple-choice questions
- Likert scale statements
- Ranking questions
- Open-ended questions

The questionnaire was designed to capture respondents' perceptions regarding:

- Development effectiveness
- Competency gaps
- Organizational preparedness
- Skill development needs
- Institutional capacity
- Stakeholder participation
- Sustainability challenges

Reliability and Validity

To ensure content validity, the questionnaire was reviewed and refined through expert consultation and focus group discussions. The study also incorporated concepts and assessment measures used in previous competency and HRD studies conducted in different international contexts.

Reliability of the instrument was ensured through pilot testing and internal consistency assessment before final data collection.

Response Rate

Questionnaires were distributed both physically and electronically to selected respondents. Follow-up communications, reminder emails, and telephone calls were made to improve the response rate.

After careful screening and editing of the completed questionnaires, incomplete and inconsistent responses were excluded from the final analysis. Only usable responses were included in the study.

Data Analysis Techniques

Both quantitative and qualitative data analysis techniques have been employed in this study.

Quantitative Analysis

Quantitative data collected through questionnaires will be analyzed using statistical techniques such as:

- Frequency distribution
- Percentage analysis
- Mean and standard deviation
- Ranking analysis
- Correlation analysis
- Comparative analysis
- Regression analysis (where applicable)

The statistical analysis will be conducted using appropriate software tools such as SPSS, Excel, or similar statistical packages.

Qualitative Analysis

Qualitative data collected through focus group discussions, interviews, and open-ended responses will be analyzed using:

- Thematic analysis
- Content analysis
- Interpretative analysis

The qualitative component of the study is intended to complement the quantitative findings by explaining the underlying causes, institutional challenges, and competency-related issues affecting development outcomes in Tripura.

Proposed Analytical Framework

The study proposes to analyze the relationship between:

- Infrastructure development and human resource competency development;
- CBHRD and sustainable development outcomes;
- Stakeholder competency and project functionality; and
- Competency gaps and the achievement of SDGs and Act East Policy objectives.

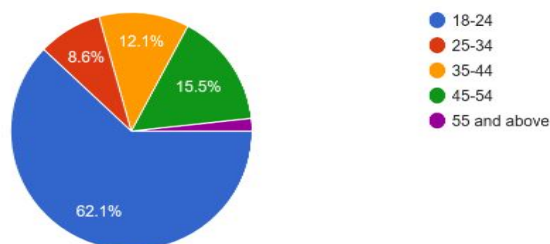
The analytical framework of the study assumes that sustainable development outcomes cannot be achieved solely through physical infrastructure investments unless they are supported by effective competency-based human resource development strategies.

Therefore, the study seeks to establish that the integration of CBHRD into development planning and implementation is essential for ensuring the sustainability, operational efficiency, and long-term success of development initiatives in Tripura.

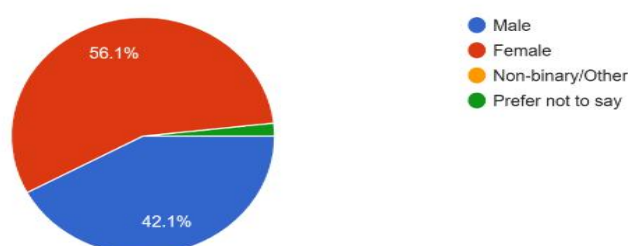
Results / Findings

Data Analysis:

Your Age
58 responses

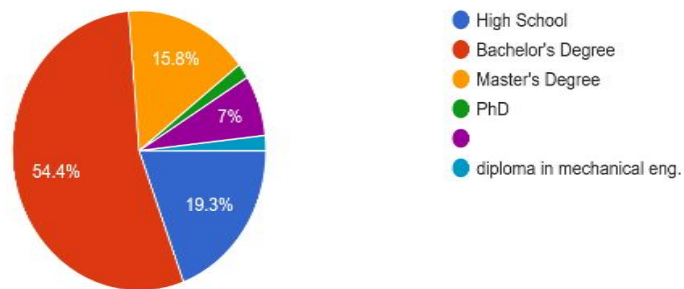


Your Gender
57 responses



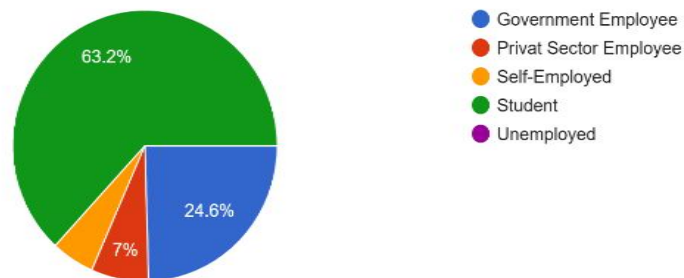
Educational Qualification

57 responses



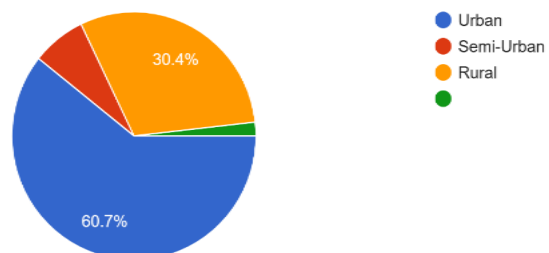
Occupation

57 responses



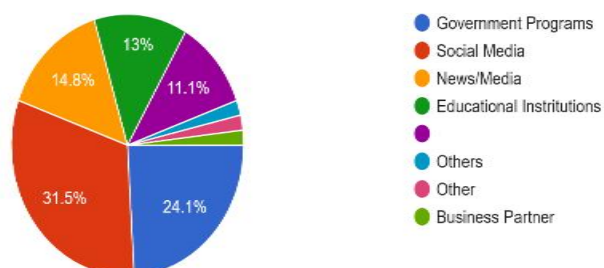
Residence Location

56 responses



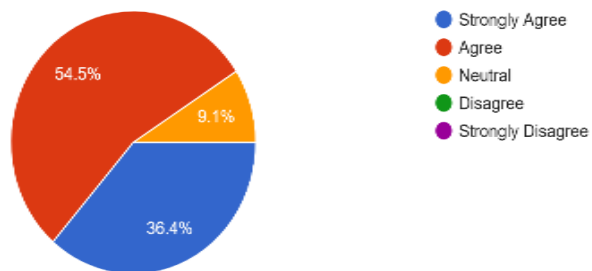
If yes, how did you learn about SDGs? (Select all that apply)

54 responses



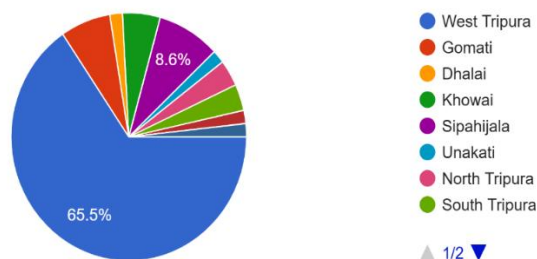
Do you think achieving SDGs is important for the development of Tripura?

55 responses



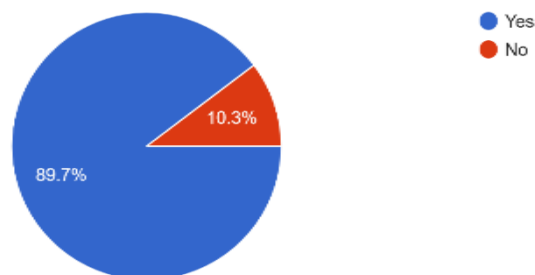
District

58 responses



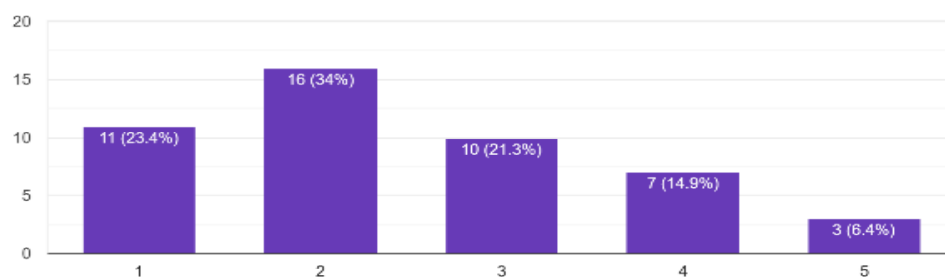
Have you heard about the United Nations Sustainable Development Goals (SDGs)

58 responses



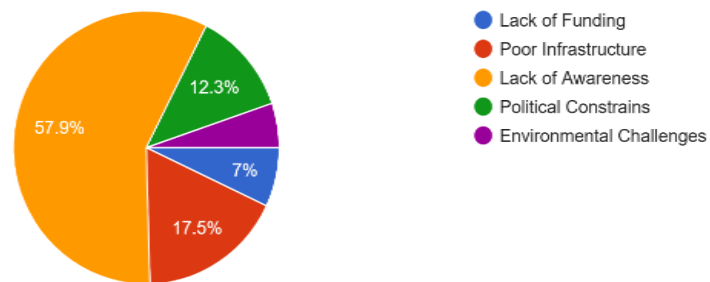
Rate the performance of Tripura in the following areas (1 = Poor, 5 = Excellent): 1. Decent Work and Economic Growth (SDG 8) 2. Industry, Innovation, T...ties (SDG 10) 4. Partnership for the Goal (SDG 17)

47 responses



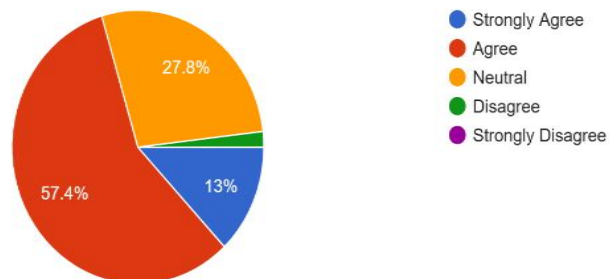
What do you think are the biggest challenges Tripura faces in achieving SDGs? (Select all that apply)

57 responses



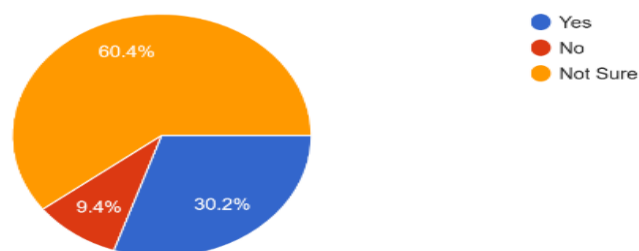
Are government initiatives effective in promoting SDG-related development in Tripura?

54 responses

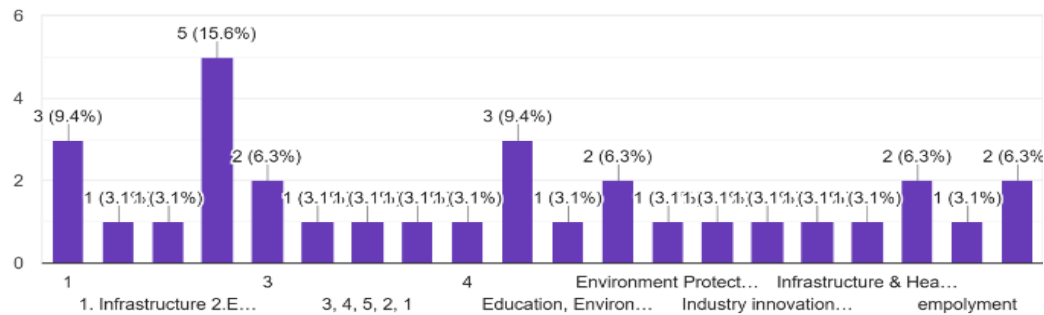


Do you believe there is sufficient community involvement in SDG-related development efforts?

53 responses

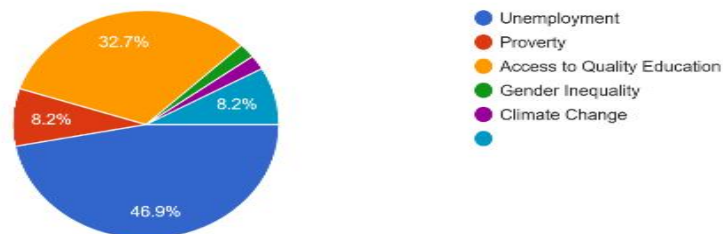


What areas should the government prioritize for sustainable development in Tripura? (Rank in order of importance, 1 = Most Important) 1. Decent work...ties and communities 4. Partnership for the goals
32 responses



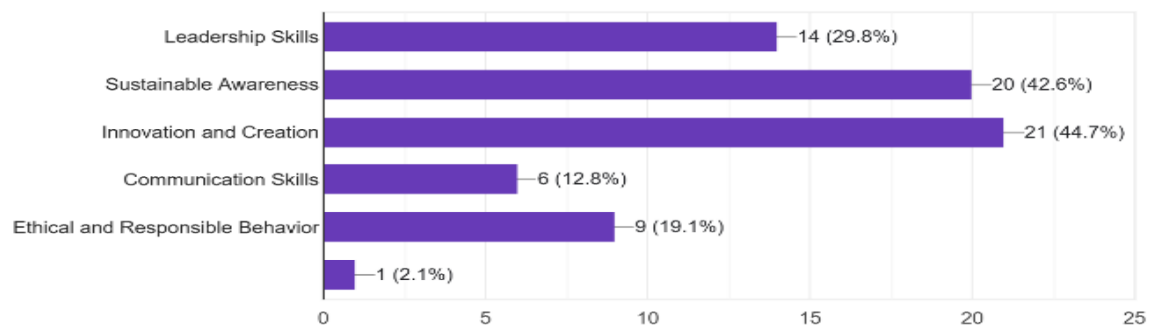
In your opinion, what is the most pressing issue affecting Tripura's development?

49 responses



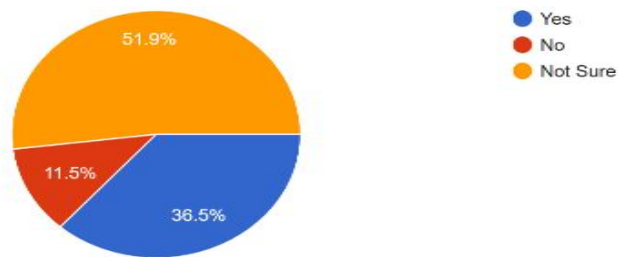
What competencies are deemed critical for HRD initiatives aimed at achieving SDGs? (Select all that apply)

47 responses



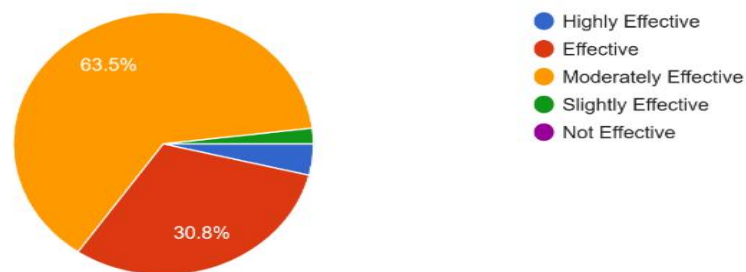
Does your organization conduct skill gap analyses to align HRD with SDG objectives

52 responses



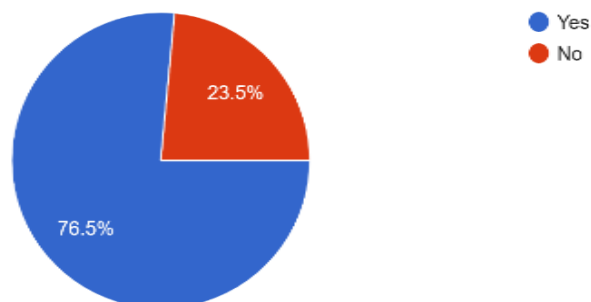
How effective are current HRD programs in developing competencies related to SDGs?

52 responses



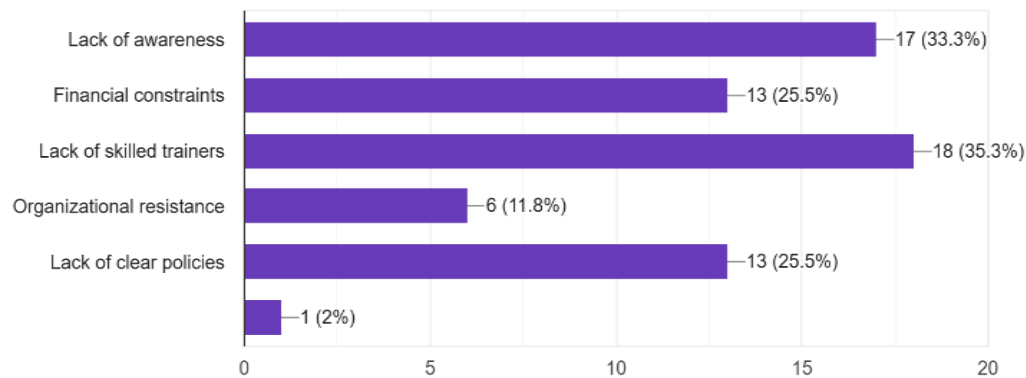
Are specific training programs focused on sustainable development and related competencies?

51 responses



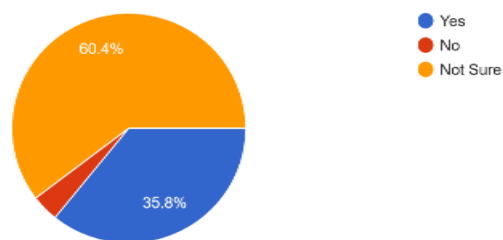
What challenges does your organization face in implementing competency-based HRD for SDGs?
(Select all that apply)

51 responses



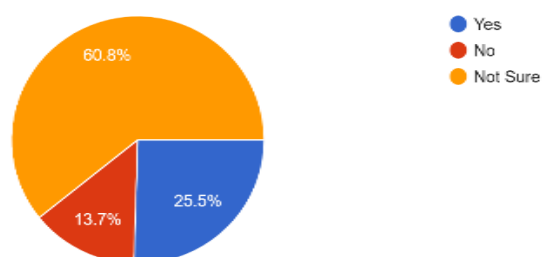
Have you observed an improvement in organizational performance related to SDG achievement through competency-based HRD?

53 responses



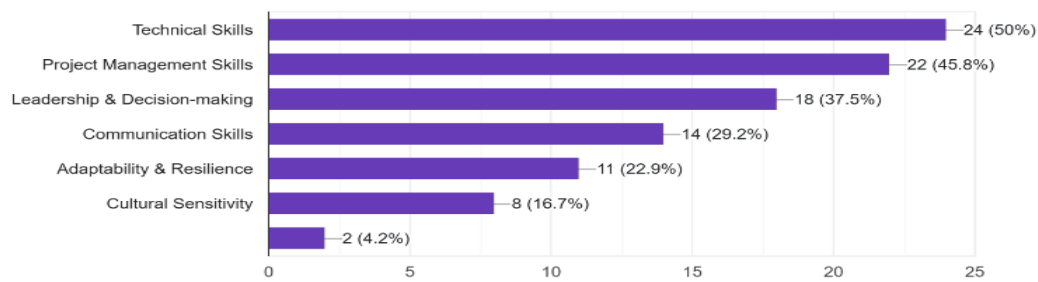
Does your organization implement competency-based HRD tailored for mega project requirements?

51 responses



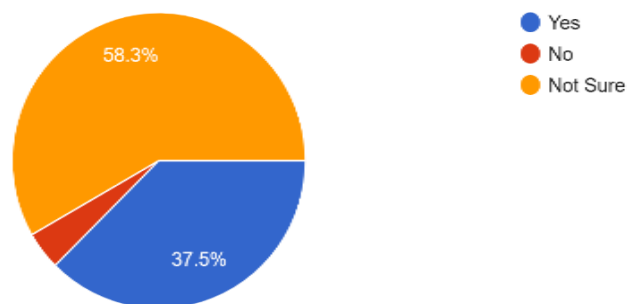
What key competencies are prioritized for project personnel? (Select all that apply)

48 responses



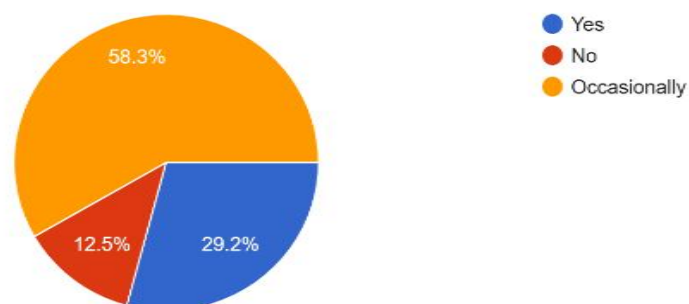
Are project outcomes (e.g., timely completion, quality, sustainability) improving due to competency development?

48 responses



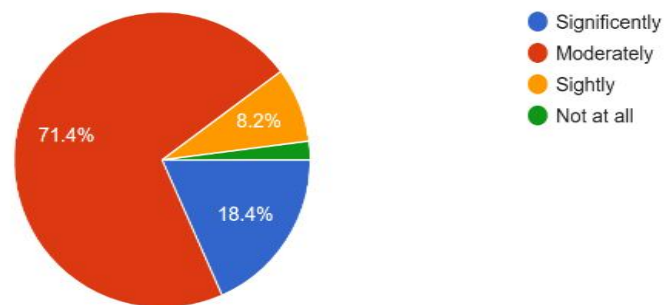
Are competency mapping and assessment conducted regularly for project staff?

48 responses



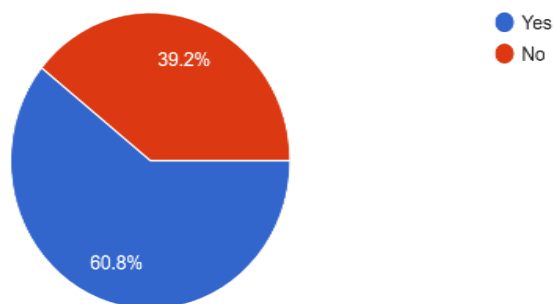
To what extent has competency-based HRD contributed to project success?

49 responses



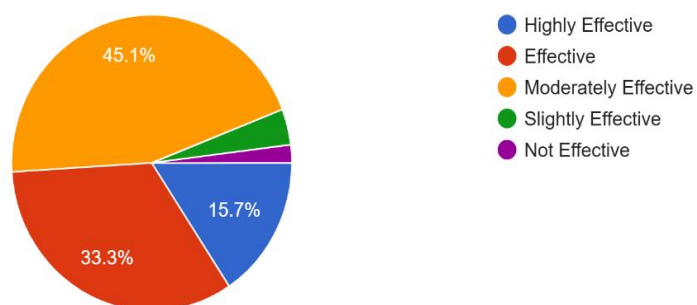
Does the organization provide specialized training to develop competencies relevant to mega project execution?

51 responses



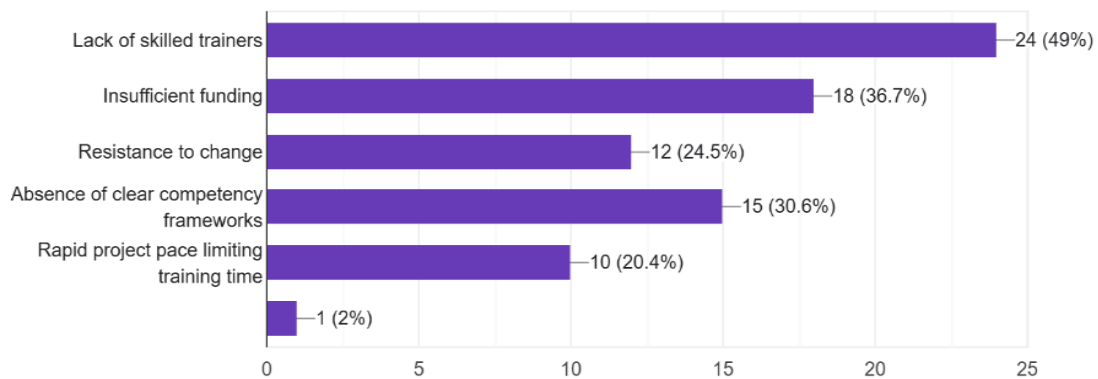
How effective are the available training programs in enhancing project-specific competencies?

51 responses



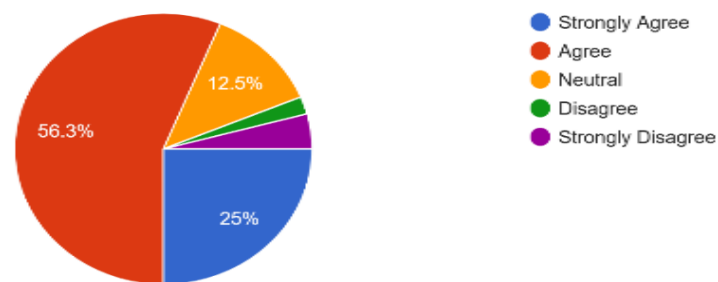
What challenges are faced in implementing competency-based HRD? (Select all that apply)

49 responses



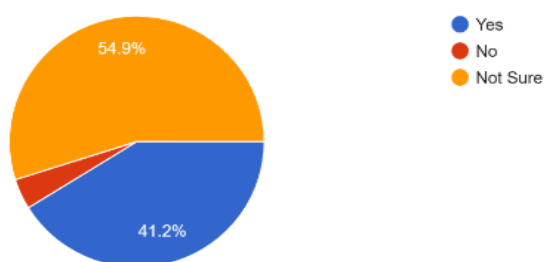
Do you think the absence of competency-based HRD impacts the success of mega development projects?

48 responses



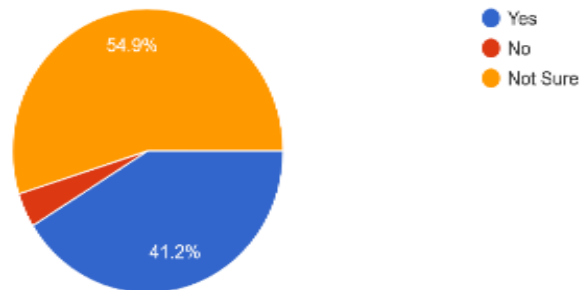
In your opinion, has the lack of competency-based HRD hampered the progress of the mega project?

51 responses



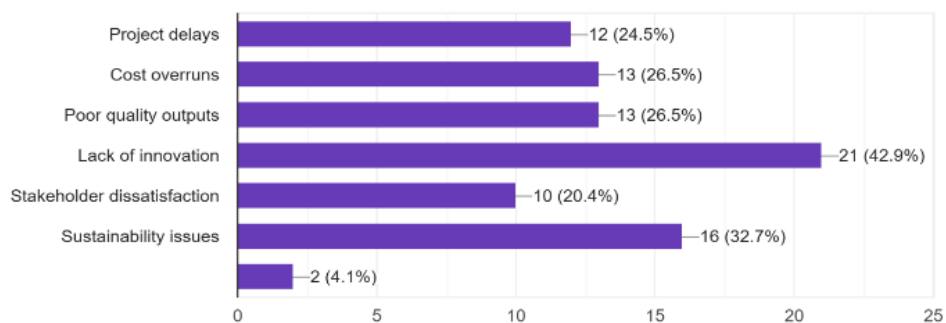
In your opinion, has the lack of competency-based HRD hampered the progress of the mega project?

51 responses



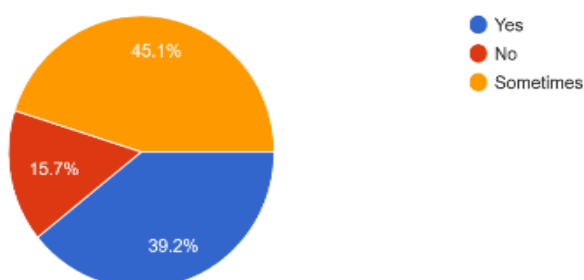
Which areas do you believe are most affected by this lack? (Select all that apply)

49 responses



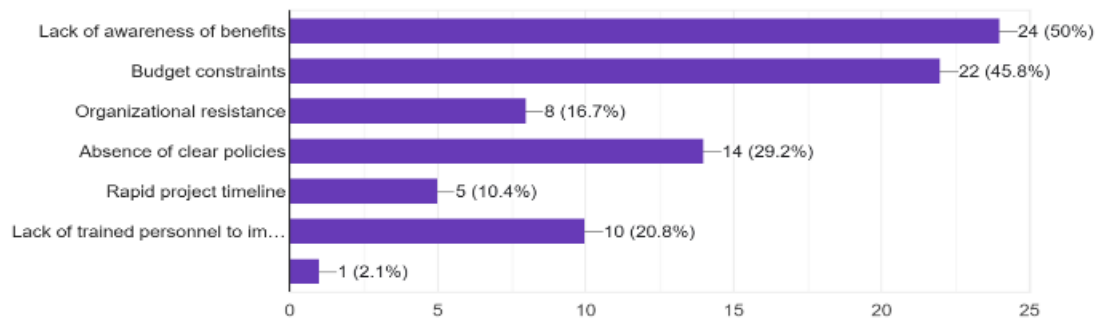
Have you observed skills or competencies gaps among project personnel due to this absence?

51 responses



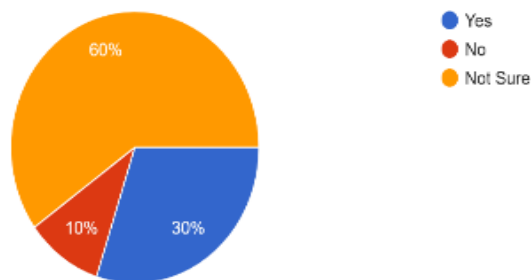
What are the primary reasons for the absence of a competency-based HRD approach in the project?
(Select all that apply)

48 responses



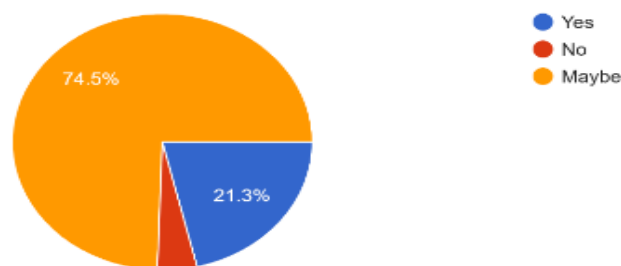
Do you think traditional HRD approaches are insufficient for mega project success?

50 responses



Would the inclusion of competency-based HRD strategies potentially improve the success rate of future mega projects?

47 responses



Discussion

The present study entitled “**Analysis of Development for Tripura to Achieve SDG Goals: With Special Reference to Tripura State, India**” critically examines the relationship between development initiatives, Sustainable Development Goals (SDGs), and Competency-Based Human Resource Development (CBHRD) in the context of Tripura. The findings of the study indicate that although Tripura has experienced significant infrastructural and institutional development during the last two decades, the expected socio-economic outcomes of many development projects have not yet been fully realized. The study identifies inadequate integration of competency-based human

resource development into the planning and implementation process as one of the major underlying causes of this gap.

Tripura occupies a strategically important geographical position in Northeast India due to its proximity to Bangladesh and Southeast Asian countries. The state has emerged as a significant focal point within India's Act East Policy and regional connectivity initiatives. Major infrastructure and development projects such as the Maharaja Bir Bikram Airport modernization project, the Agartala-Akhaura railway connectivity project, the Special Economic Zone (SEZ) at Sabroom, the Tripura Mega Food Park, Agartala Smart City initiatives, and various industrial and connectivity projects were undertaken with the objective of accelerating economic growth, industrialization, regional connectivity, employment generation, and sustainable development.

However, the findings of the study suggest that the physical completion of infrastructure projects alone does not guarantee operational success or sustainable developmental outcomes. A significant number of projects continue to face operational inefficiencies, underutilization, delays in functional implementation, and limited socio-economic impact. This situation demonstrates that development cannot be viewed solely from the perspective of physical infrastructure creation; rather, it requires simultaneous development of institutional capabilities, technical competencies, administrative efficiency, and stakeholder preparedness.

The study strongly supports the argument advanced in the literature on capacity development and human resource development that sustainable development outcomes depend largely on the competencies and capabilities of individuals, organizations, and institutions responsible for managing and utilizing developmental resources. The findings are consistent with the works of Horton (2002), Kühl (2009), Brinkerhoff and Morgan (2010), and UNESCO (2010), who emphasized that development initiatives fail to achieve long-term sustainability when competency development is neglected.

One of the major observations emerging from the study is the existence of a substantial gap between infrastructure development and human resource preparedness in Tripura. While considerable financial investments have been made in roads, transportation systems, industrial facilities, technology, and connectivity infrastructure, comparatively limited attention has been given to developing the competencies required to operate, manage, sustain, and optimize these projects effectively. Consequently, many projects have remained partially functional, inefficient, or unable to generate the expected economic and social returns.

The findings also indicate that policymakers and implementing agencies often prioritize physical and financial dimensions of development while underestimating the importance of CBHRD during project planning stages. Detailed Project Reports (DPRs) generally emphasize technical feasibility, economic viability, and financial investment but rarely incorporate comprehensive competency development strategies for stakeholders. As a result, once the infrastructure is established, stakeholders frequently lack the technical knowledge, managerial capacity, operational skills, and adaptive competencies necessary to utilize the facilities effectively.

This challenge is particularly significant in the context of Tripura due to its historical geographical isolation, relatively underdeveloped industrial base, and limited exposure to modern industrial and technological systems. Although Tripura possesses a comparatively high literacy rate, literacy alone does not necessarily translate into competency readiness for complex development environments. The study reveals that many stakeholders—including local communities, employees, administrators, and institutional actors—require specialized competency development interventions to adapt to rapid socio-economic and technological changes associated with modern development projects.

The survey findings further demonstrate that respondents perceive competency-based human resource development as a critical requirement for achieving Sustainable Development Goals in Tripura. Most respondents strongly agreed that sustainable economic growth, industrialization, innovation, employment generation, and regional connectivity initiatives cannot succeed without developing competent human resources at all levels. Respondents also emphasized the importance of leadership skills, technical competencies, communication skills, innovation capabilities, sustainability awareness, and project management skills for successful implementation of mega development projects.

Another important finding of the study is that existing HRD practices in many organizations and institutions remain largely conventional and administrative in nature rather than competency-oriented and strategically aligned with sustainable development objectives. Skill development initiatives are often fragmented, short-term, and not integrated into broader institutional or developmental frameworks. In many cases, training programs are conducted without systematic competency mapping, skill gap analysis, performance assessment, or long-term capacity-building strategies.

The study also highlights several institutional and structural challenges affecting competency-based development initiatives in Tripura. These include:

- Lack of awareness regarding the importance of CBHRD;
- Financial constraints;
- Inadequate institutional frameworks;
- Shortage of skilled trainers and experts;
- Weak policy integration;
- Resistance to organizational change;
- Limited coordination among stakeholders; and
- Insufficient monitoring and evaluation mechanisms.

The findings further suggest that competency gaps contribute directly to project delays, cost overruns, poor-quality outputs, stakeholder dissatisfaction, low operational efficiency, and sustainability issues. In several cases, development projects could not generate the expected employment opportunities and economic multiplier effects because the local workforce lacked the competencies necessary to participate effectively in emerging sectors.

The study also establishes a strong relationship between CBHRD and the achievement of specific Sustainable Development Goals, particularly:

- SDG 8 (Decent Work and Economic Growth),
- SDG 9 (Industry, Innovation, and Infrastructure),
- SDG 10 (Reduced Inequalities), and
- SDG 17 (Partnerships for the Goals).

The absence of competency-oriented development approaches undermines the achievement of these goals by limiting the operational effectiveness and sustainability of development interventions.

In the context of India's Act East Policy, the study reveals that Tripura possesses enormous strategic and economic potential due to its geographical location and emerging connectivity with Bangladesh and Southeast Asia. However, unless competency-based human resource development is integrated into development planning, the state may not fully benefit from regional trade, industrialization, logistics, tourism, and cross-border economic opportunities. Infrastructure connectivity alone is insufficient without a competent workforce and institutionally prepared stakeholders capable of managing and utilizing these opportunities effectively.

The study therefore argues that development planning in Tripura must move beyond traditional infrastructure-centric approaches toward a more integrated human-centered development model. Competency-Based Human Resource Development should be treated as a core investment component rather than a secondary administrative activity. Development planning must incorporate:

- competency mapping,
- stakeholder capacity assessment,
- institutional strengthening,
- continuous skill development,
- leadership development,
- technology adaptation,
- sustainability education, and

- participatory governance mechanisms.

The findings also suggest that CBHRD should not be limited to employees within organizations alone; rather, it should include all stakeholders associated with the development ecosystem, including government agencies, private sector organizations, local communities, educational institutions, project authorities, and civil society organizations.

In conclusion, the study demonstrates that sustainable development in Tripura cannot be achieved solely through financial investments and physical infrastructure development. Human competency development is equally essential for ensuring operational efficiency, sustainability, institutional resilience, and long-term socio-economic transformation. The integration of Competency-Based Human Resource Development into development planning and implementation frameworks is therefore indispensable for achieving Sustainable Development Goals and realizing the broader objectives of India's Act East Policy in Tripura.

Limitations and Delimitations of the Study

Time Delimitations

Time delimitation refers to the specific time frame within which the research is conducted. Establishing a defined time frame is important to ensure that the study remains manageable and feasible within the available research period. Since the present study involves field surveys, stakeholder consultations, and analysis of development projects in Tripura, limitations related to time availability may affect the depth and breadth of data collection and analysis.

Geographical Delimitations

The geographical scope of the study is limited to the state of Tripura in Northeast India. Tripura is geographically unique as it is surrounded by Bangladesh on approximately 90 percent of its border and remains relatively isolated from mainland India except through a narrow corridor connected by National Highway 8. The study specifically focuses on development projects, human resource development practices, and sustainable development initiatives within the geographical boundaries of Tripura.

Population Delimitations

The study is confined to selected stakeholders associated with development initiatives in Tripura. These include government officials, policymakers, HRD practitioners, project managers, line managers, academicians, development professionals, private sector representatives, and local community stakeholders. Since Tripura is still a developing state with emerging industrial and institutional structures, the availability of experienced respondents and specialized professionals may be limited.

Data Delimitations

The study relies on both primary and secondary sources of data. However, limitations may arise due to the unavailability, inconsistency, or inadequacy of organized and updated data sources in certain sectors of Tripura. In some cases, official records and project-related information may not be systematically maintained or publicly accessible. Therefore, the study may face constraints regarding the reliability, accessibility, and comprehensiveness of data.

Scope Delimitations

The scope of the study is limited to examining the relationship between Competency-Based Human Resource Development (CBHRD), sustainable development, and major development projects in Tripura. The research primarily focuses on selected Sustainable Development Goals (SDGs), infrastructure development, stakeholder competency development, and the implementation challenges of development projects. The study does not attempt to cover all aspects of development in Tripura or all SDGs comprehensively.

Limitations of the Study

The study may encounter several limitations, including:

- Limited availability of structured and updated data related to development projects and HRD practices in Tripura;
- Constraints in accessing policymakers, senior administrators, and project stakeholders for interviews and surveys;
- Possible response bias in questionnaire-based data collection;
- Difficulty in measuring competency-related variables due to their qualitative and perceptual nature;
- Limited generalizability of findings beyond the geographical and socio-economic context of Tripura;
- Time and financial constraints associated with conducting extensive fieldwork across different districts of the state.

Despite these limitations, every effort has been made to ensure the reliability, validity, and academic rigor of the research.

Time Frame of the Dissertation

It is expected that the fieldwork, data collection, analysis, and preparation of the dissertation report will be completed by June 2025. The publication of research papers, presentation of findings, and seminar-related activities are expected to be completed by June 2026.

Conclusion

The present study entitled “Analysis of Development for Tripura to Achieve Sustainable Development Goals (SDGs): With Special Reference to Tripura State, India” examined the nature, effectiveness, and sustainability of development initiatives undertaken in Tripura in the context of the United Nations Sustainable Development Goals (SDGs) and India’s Act East Policy. The study particularly focused on the role of Competency-Based Human Resource Development (CBHRD) in ensuring the operational success and sustainability of development projects in the state.

The findings of the study reveal that Tripura has experienced significant infrastructural and developmental transformation during the last two decades. Several major projects, including transportation networks, railway connectivity, airport modernization, industrial infrastructure, smart city initiatives, food processing facilities, and regional connectivity projects, have been undertaken with the objective of accelerating economic growth, industrialization, employment generation, and regional integration. These projects were also expected to strengthen Tripura’s strategic role as a gateway between India and Southeast Asia under the framework of the Act East Policy.

However, despite substantial investments in infrastructure and development, many projects have not been able to deliver the expected socio-economic outcomes in terms of operational efficiency, employment creation, sustainability, and long-term developmental impact. The study identified that one of the major reasons behind this gap is the inadequate integration of Competency-Based Human Resource Development (CBHRD) into development planning and implementation processes.

The research demonstrates that development cannot be sustained merely through physical infrastructure creation and financial investment. Sustainable development requires a parallel process of human capability enhancement, institutional strengthening, stakeholder preparedness, and competency development. The absence of adequately trained, skilled, and competent human resources often leads to project inefficiency, underutilization of infrastructure, implementation delays, cost overruns, poor service delivery, and limited developmental outcomes.

The study further reveals that policymakers and development authorities have traditionally emphasized technical feasibility, financial planning, and infrastructure development while comparatively neglecting the human resource dimension of development. Detailed Project Reports (DPRs) and implementation frameworks frequently lack comprehensive strategies for competency mapping, institutional capacity building, stakeholder training, and long-term human resource preparedness. Consequently, although infrastructure may be physically completed, the required competencies to operate, maintain, and maximize the benefits of such projects are often absent.

Tripura’s socio-economic and geographical context makes this issue even more significant. Despite possessing a comparatively high literacy rate, the state continues to face challenges related to technological adaptation, industrial

exposure, institutional efficiency, and workforce readiness. Due to its historical geographical isolation and relatively underdeveloped industrial base, many stakeholders remain insufficiently prepared to manage the rapid technological, administrative, and economic changes associated with large-scale development initiatives.

The findings also establish a strong relationship between Competency-Based Human Resource Development and the achievement of specific Sustainable Development Goals, particularly:

- SDG 8: Decent Work and Economic Growth,
- SDG 9: Industry, Innovation, and Infrastructure,
- SDG 10: Reduced Inequalities, and
- SDG 17: Partnerships for the Goals.

The study concludes that without competent human resources, effective institutions, and stakeholder participation, sustainable development initiatives are unlikely to achieve their intended outcomes. CBHRD therefore emerges as a critical enabling factor for ensuring inclusive, resilient, and sustainable development in Tripura.

The study further highlights that the successful implementation of India's Act East Policy in Tripura depends not only on regional connectivity and infrastructure development but also on the availability of a competent workforce capable of utilizing emerging economic opportunities. In the absence of adequate human resource preparedness, Tripura may not be able to fully capitalize on its strategic geographical location and cross-border economic potential.

Based on the findings, the study strongly recommends that Competency-Based Human Resource Development should be incorporated as a central component of development planning, policy formulation, and project implementation frameworks. Development authorities, policymakers, educational institutions, private sector organizations, and civil society stakeholders should collaboratively design integrated competency development strategies aligned with sustainable development objectives.

The study also emphasizes the need for:

- competency mapping and skill-gap analysis,
- continuous professional training,
- institutional capacity building,
- leadership development,
- technology-oriented education,
- stakeholder participation,
- effective monitoring and evaluation systems, and
- stronger coordination between development agencies and local communities.

In addition, educational and vocational institutions in Tripura should be aligned more closely with the emerging demands of infrastructure development, industrialization, digital transformation, and sustainable economic growth. Special emphasis should be placed on developing technical, managerial, entrepreneurial, and sustainability-oriented competencies among youth and project stakeholders.

In conclusion, the study establishes that sustainable development in Tripura requires a balanced integration of physical infrastructure development and competency-based human resource development. Infrastructure alone cannot guarantee development unless supported by competent institutions, skilled human resources, and adaptive governance systems. The long-term success of development initiatives in Tripura therefore depends on adopting a holistic development approach where human capability development becomes an integral part of the development process.

The study ultimately concludes that Competency-Based Human Resource Development is not merely a supportive component of development but a fundamental prerequisite for achieving Sustainable Development Goals and ensuring sustainable socio-economic transformation in Tripura.

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