

**EU-INDIA THINK TANKS TWINNING INITIATIVE 2022-2023
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Title: Bridging Green Horizons: Enhancing EU-India Collaboration through Vocational Education and Training for Sustainable Development

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Bridging Green Horizons: Enhancing EU-India Collaboration through Vocational Education and Training for Sustainable Development

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Abstract

This paper explores the collaborative potential between the European Union (EU) and India in the realm of green jobs, with a particular focus on Vocational Education and Training (VET). Recognizing the critical role of green jobs in sustainable development, the paper delves into the synergistic opportunities presented by EU-India cooperation. Initially, it provides an historical overview of the EU-India relationship, emphasizing the evolution from trade-centric interactions to comprehensive strategic partnerships, with a recent focus on sustainable development and green jobs.

The analysis then shifts to the current state of green jobs in India, highlighting flagship initiatives like the Smart Meter Mission and Green Hydrogen Mission, and emphasizing the necessity of a skilled workforce. The EU's commitment to environmental sustainability, demonstrated through policies like the European Green Deal, is discussed as a framework for promoting green jobs. This is followed by an examination of the role of VET in preparing a skilled workforce for the green sector, underscoring the importance of industry-aligned training and lifelong learning.

Subsequently, the paper discusses the potential of knowledge and technical transfer between the EU and India in renewable energy, sustainable agriculture, green construction, and waste management. It argues for the mutual economic, diplomatic, and environmental benefits of an enhanced EU-India collaboration in green jobs.

In conclusion, the paper offers recommendations for strengthening this collaboration, such as expanding the EU-India Clean Energy and Climate Partnership and establishing a joint VET framework. It highlights the challenges to be navigated, including diverse educational systems and cultural differences, while underscoring the profound global implications of this partnership in leading a sustainable future.

Summary:

EU-India Strategic Partnership Evolution: The paper begins by tracing the development of the EU-India relationship from trade-focused to a comprehensive strategic partnership, with a recent pivot towards sustainable development and green jobs.

Green Job Initiatives in India: It highlights India's commitment to sustainable growth, exemplified by initiatives like the Smart Meter and Green Hydrogen Missions, and the critical need for a skilled workforce to realize these ambitions.

EU's Role in Green Jobs Promotion: The EU's leadership in environmental sustainability, as seen in the European Green Deal, provides a framework for green job promotion, integrating policy, stakeholder collaboration, and VET.

Vocational Education and Training (VET): The significance of VET in preparing a workforce for the green sector is emphasized, focusing on hands-on training, industry alignment, and continuous skill upgrading.

Knowledge and Technical Transfer: Potential areas for EU-India collaboration in sectors like renewable energy, sustainable agriculture, green construction, and waste management are discussed.

Economic, Diplomatic, and Environmental Benefits: The paper argues that EU-India collaboration in green jobs offers economic opportunities, strengthens diplomatic ties, and contributes to global environmental efforts.

Recommendations for Collaboration Enhancement: Suggestions include expanding the EU-India Clean Energy and Climate Partnership and establishing a joint VET framework, along with curriculum development, faculty exchange programs, and policy harmonization. Challenges and Global Implications: It acknowledges the challenges in realizing this collaboration and concludes with the global significance of the EU-India partnership in leading a sustainable future.

Highlighted Quotes

"The confluence of the EU's experience in VET and India's developmental aspirations presents a unique opportunity for fostering a skilled workforce ready to lead the green revolution."

"By leveraging the EU's expertise in VET and aligning it with India's green job initiatives, both entities can mutually benefit, paving the way for a sustainable and skilled workforce."

"Specific EU-India collaborations in the realm of green jobs and VET can serve as catalysts for further cooperation, enhancing skill development and driving innovation in sustainable practices."

1. Introduction

The European Union (EU) and India, two significant powerhouses in the global arena, have historically shared multifaceted relations spanning various sectors. Their collaboration, rooted in mutual respect and shared values, [has evolved over the years](#) to address contemporary global challenges. One such pressing challenge is the global shift towards sustainable development and the increasing emphasis on green jobs. These jobs, often defined as [positions in businesses that contribute to preserving or restoring environmental quality](#), are pivotal in the transition to a sustainable economy.

As the world grapples with the dual challenges of environmental degradation and economic development, the role of green jobs becomes even more critical. They not only offer a pathway to address environmental concerns but also present opportunities for economic growth and employment. However, the realization of this potential hinges on the availability of a skilled workforce, proficient in the nuances of the green economy. This is where Vocational Education and Training (VET) plays an indispensable role. VET, with its focus on imparting practical skills and knowledge, [can act as the bridge](#) connecting potential employees with the burgeoning green job market.

In this context, the cooperation between the EU and India in the realm of VET, specifically targeting the green job sector, assumes paramount importance. While both entities have made individual strides in promoting green jobs and sustainable practices, a collaborative approach can amplify their efforts and lead to more significant outcomes. This paper aims to explore the existing landscape of EU-India VET cooperation, emphasizing the green job sector. By examining ongoing collaborations, understanding their successes and limitations, and suggesting avenues for enhancement, this research presents a fresh perspective on strengthening EU-India relations through VET. The subsequent sections will delve deeper into the historical context of EU-India relations, the current state of green jobs in both regions, the role of VET in bridging the skill gap, and the potential benefits and challenges of enhanced cooperation. Through this exploration, the paper seeks to offer actionable insights for policymakers, educators, and industry stakeholders invested in the future of green jobs and sustainable development.

2. Background

The EU-India relationship, established in the early 1960s, has witnessed a [dynamic evolution](#), transitioning from trade-centric interactions to comprehensive strategic partnerships. Over the decades, both entities have recognized the potential of their collaboration, leading to numerous dialogues, agreements, and joint initiatives. This partnership has been underpinned by shared democratic values, mutual economic interests, and a commitment to addressing global challenges collaboratively. In recent years, the focus of this partnership [has shifted](#)

towards sustainable development, recognizing the global urgency to combat climate change and its repercussions. The green jobs sector, which encompasses roles that contribute to environmental preservation and restoration, has emerged as a focal point in this context. The EU, with its Green Deal and commitment to becoming the first climate-neutral continent by 2050, has been at the [forefront of promoting green jobs](#). India, on the other hand, with its vast population and developmental aspirations, [sees green jobs as a conduit](#) to sustainable growth, aligning with initiatives like the International Solar Alliance and further attesting to India's 'co-benefits' approach, which marries decarbonization with development..

Vocational Education and Training (VET) has been identified as a critical tool in realizing the potential of the green job sector. The EU's experience in VET, with entities like the European Centre for the Development of Vocational Training (Cedefop), [offers valuable insights](#) into developing a skilled workforce for green industries. India, with its Skill India mission, recognizes the importance of VET but grapples with challenges like [outdated curricula and a lack of industry alignment](#). The confluence of the EU's experience and India's aspirations presents a unique opportunity. By leveraging the EU's expertise in VET and aligning it with India's developmental goals, both entities can foster a skilled workforce ready to lead the green revolution. This paper aims to explore this potential, examining existing collaborations and suggesting ways to enhance them for mutual benefit.

3. The Current State of Green Jobs in India

India, with its burgeoning population and rapidly growing economy, stands at a pivotal juncture in its developmental trajectory. The nation's commitment to sustainable growth is evident in its [Nationally Determined Contributions \(NDCs\)](#) under the Paris Agreement. These NDCs, which outline India's ambitious targets up to 2030, emphasize the creation of green jobs as a means to achieve sustainable economic growth while addressing environmental concerns.

One of the flagship initiatives under India's NDCs is the [Smart Meter Mission](#). This mission aims to replace conventional energy meters with smart meters, facilitating real-time energy consumption tracking and promoting energy efficiency. The implementation of this mission is expected to create numerous employment opportunities in manufacturing, installation, maintenance, and data analytics. These roles, inherently green, will play a crucial role in reducing India's carbon footprint and enhancing energy efficiency. Another promising avenue for green job creation is India's [Green Hydrogen Mission](#). As the world moves towards cleaner energy sources, hydrogen, especially green hydrogen produced using renewable energy, has emerged as a viable alternative. India's mission focuses on establishing a green hydrogen value chain, encompassing production, storage, transport, and utilization. This mission, once fully operational, can revolutionize sectors like transportation, industry, and power generation, creating a plethora of green jobs in the process. These are two among the

plethora of sustainability driven initiatives taken by the government of India to achieve its Net-Zero target by 2070.

However, the realization of these green job opportunities hinges on the availability of a skilled workforce. This is where the role of Vocational Education and Training (VET) becomes paramount. While India has made significant strides in promoting green initiatives, there [exists a palpable skill gap](#). Bridging this gap requires a concerted effort, encompassing curriculum development, industry alignment, and international collaboration.

The EU, with its rich experience in VET and green job promotion, can offer valuable insights to India. By collaborating on initiatives like curriculum development, faculty training, and industry partnerships, both entities can mutually benefit. The EU can tap into India's vast market potential, while India can leverage the EU's expertise to fast-track its green job creation efforts. In essence, green jobs, as envisioned in India's NDCs, present a unique opportunity for sustainable growth. By aligning these initiatives with robust VET programs and fostering international collaboration, India can position itself as a global leader in the green economy.

4. The Role of the EU in Promoting Green Jobs

The European Union (EU), as a collective entity, has consistently demonstrated its commitment to environmental sustainability and the promotion of green jobs. This commitment is not merely a response to global environmental challenges but is [deeply embedded in the EU's strategic vision](#) for a sustainable future. Central to this vision is the [European Green Deal](#), which is more than just a policy document; it's a comprehensive action plan. The Green Deal aims to transform the EU into a fair and prosperous society with a modern, resource-efficient, and competitive economy. One of its primary objectives is to ensure that there are no net emissions of greenhouse gases by 2050. Achieving this requires a significant shift in the job market, emphasizing roles that contribute directly to this goal.

The EU's approach to green jobs is multifaceted. On one hand, there's a policy focus on green jobs through endorsements from EU member states like the [Osnabrück Declaration 2020](#). On the other hand, there's a robust funding structure for VET systems through the Erasmus+ and European Social Fund Plus that catalyses the advancement of the sector at large. Through initiatives like the "[Skills Agenda for Europe](#)", the EU has identified the specific skill sets required for green jobs and has worked towards integrating them into curricula. [Sector Skills Alliances](#), for instance, bring together VET institutions, public authorities, and businesses to design and deliver joint curricula tailored to specific sectors, including the green economy. This proactive approach ensures that as the green job market expands, there's a ready pool of

skilled professionals to tap into. Furthermore, the EU has fostered public-private partnerships in VET, recognizing that industry involvement is crucial for curriculum relevance and job placements.

India can draw several lessons from the EU's approach. The integration of research, policy-making, and skill development in the EU offers a blueprint for a holistic approach to green job promotion. Moreover, the EU's emphasis on stakeholder collaboration – involving governments, industries, educational institutions, and civil society – underscores the importance of a collective effort. Specific EU-India collaborations in the realm of green jobs and VET can serve as catalysts for further cooperation. For instance, the [EU-India Clean Energy and Climate Partnership](#) aims to reinforce cooperation between the two entities in the fields of energy efficiency, renewable energy, and climate change. Such partnerships can be expanded to focus on skill development for green jobs, leveraging the EU's expertise in VET.

5. Vocational Education and Training: A Bridge to Green Jobs

Vocational Education and Training (VET) has long been recognized as a potent tool in equipping individuals with practical skills and knowledge tailored to specific industries. In the context of green jobs, VET assumes even greater significance. As countries worldwide, including India, pivot towards sustainable development, the demand for professionals skilled in [green technologies and practices is on the rise](#). The green job sector is diverse, encompassing roles in renewable energy, sustainable agriculture, green construction, and more. Each of these areas requires a unique set of skills, often not covered in traditional education systems. For instance, a technician working on solar panel installations needs to understand not just the technical aspects of the job but also the environmental and economic implications. Similarly, a professional in sustainable agriculture must be well-versed in organic farming techniques, soil conservation, and water management.

VET programs, with their focus on hands-on training and industry alignment, are ideally suited to address these skill requirements. By offering courses tailored to specific green job roles, VET institutions can ensure that [graduates are job-ready and equipped](#) to contribute effectively from day one. However, the success of VET in promoting green jobs hinges on several factors. Firstly, there needs to be a strong collaboration between VET institutions, industry stakeholders, and policymakers. This ensures that the curriculum is relevant, up-to-date, and aligned with industry needs. Secondly, VET programs must be flexible, allowing for the incorporation of new technologies and practices as the green job sector evolves. Lastly, there needs to be a focus on lifelong learning, [ensuring that professionals can continually upgrade](#) their skills as they progress in their careers.

6. Knowledge and Technical Transfer: A Catalyst for Change in VET and Green Jobs

The symbiotic relationship between Vocational Education and Training (VET) and the green job sector is undeniable. As the world pivots towards sustainable practices, the demand for skilled professionals in green industries is on the rise. India's climate action investments from 2022 to 2030 will total [USD 1.01 trillion](#), an average of USD 112 billion annually, and there would be a requirement for an abundance of skilled professionals to actualise the benefits of this investment. The European Union, with its leadership in green initiatives and robust VET systems, is uniquely positioned to collaborate with India in this endeavour.

Renewable Energy Technologies: India's ambition is to achieve [450 GW of renewable energy capacity by 2030](#). The EU, with its advanced VET programs in renewable energy and home to leading renewable energy companies, [can offer tailored training modules](#). Such programs can equip Indian professionals with the skills required for this sector, bridging the gap between demand and supply of skilled labour.

Sustainable Agriculture: With over [40% of India's workforce engaged in agriculture](#), there's a pressing need for sustainable farming practices. The EU, where over [12% of agricultural land is dedicated to organic farming](#), has VET programs that focus on sustainable agriculture. Collaborative initiatives can help Indian farmers acquire the skills needed for organic and sustainable farming.

Green Construction: The rapid urban development in India necessitates green building practices. The EU's VET programs, influenced by its [Energy Performance of Buildings Directive \(EPBD\)](#) and [nearly zero-energy building \(NZEB\) standards](#), can guide India's professionals in adopting and implementing energy-efficient construction practices.

Waste Management: Efficient waste management is a challenge for India. The EU, with its [Circular Economy Action Plan](#) and a recycling rate of over [55% for municipal waste](#), has VET programs tailored for waste management. Collaborative training initiatives can equip Indian professionals with the skills to manage and recycle waste sustainably.

7. Case for EU-India Collaboration in Green Jobs

The collaboration in the realm of green jobs between the European Union and India presents a wide array of advantages, extending beyond the two regions to benefit the global community at large. The potential positive impacts span across economic, diplomatic, and environmental spheres.

Economically, both regions stand to gain significantly. Initiatives in the green sectors borne out of this collaboration are poised to generate numerous job opportunities. As India navigates its green transition, a surge in demand for skilled professionals in fields such as renewable energy, electric vehicle manufacturing, sustainable agriculture & food systems, and waste management is anticipated. Here, the EU, with its sophisticated Vocational Education and Training (VET) systems, could play a crucial role in fulfilling this demand. This enhanced collaboration is also likely to catalyze increased trade and investment prospects. With the EU being a nexus of green technologies and solutions, it could find an expansive market in India, while India could leverage the EU's technological acumen and best practices. Furthermore, joint ventures in research and innovation hubs could drive breakthroughs in green technologies, promising economic benefits for both regions.

Environmentally, the collective efforts of the EU and India in championing green jobs could make a substantial contribution to the global efforts against climate change. Joint ventures in sustainable agriculture and forestry could play a part in biodiversity conservation, addressing a pressing global issue. Additionally, collaborative endeavours in sectors like waste management and the circular economy could pave the way for efficient resource utilization, tackling the global dilemma of resource depletion. Through these collaborative efforts, the EU and India are not just setting a precedent for regional cooperation but are also making strides towards alleviating global environmental challenges.

8. Recommendations for Enhancing EU-India VET Collaboration for Green Jobs

Expanding the realm of EU-India Clean Energy and Climate Partnership

The EU-India Clean Energy and Climate Partnership has been a cornerstone in fostering collaboration between the European Union and India in addressing climate change and promoting clean energy solutions. An expansion of this partnership to include Vocational Education and Training (VET) and Skill Development in the field of green skills could be a

monumental stride towards creating a green workforce ready to tackle the environmental challenges of the future. By integrating VET and Skill Development into this partnership, a structured pathway could be established for imparting essential skills and knowledge required in green sectors such as renewable energy, waste management, and sustainable agriculture. This expansion could enable a harmonized approach in developing curricula, standardizing certifications, and fostering industry partnerships, thereby ensuring that the workforce is well-equipped to meet the demands of the green economy. Moreover, it could facilitate the exchange of best practices, technical knowledge, and innovative solutions between the EU and India, enhancing the overall effectiveness and impact of the partnership.

Establishment of a Joint Vocational Education and Training Framework:

Establishing a Joint Vocational Education and Training (VET) Framework between the EU and India is a foundational step towards bridging the skills gap pertinent to green jobs. A comprehensive framework, rooted in collaborative effort, can provide a structured approach to understanding and addressing the diverse skill requirements essential for green jobs. This collaborative framework could serve as a conduit for technical exchanges and strategic implementation of VET principles and objectives tailored for green jobs. Drawing inspiration from the European Education Area Working Group on VET and the Green Transition could serve as a robust model for this collaborative framework, focusing on aligning technical education standards and practices between the EU and India.

Curriculum Development and Standardization:

The development of a tailored curriculum is crucial for addressing the specific skill requirements of green jobs. Continuous dialogue and collaboration between educational experts, industry stakeholders, and policy makers from both the EU and India are essential for crafting a curriculum that is both relevant and adaptable to the evolving needs of the green job market. The "Skills Agenda for Europe" initiative, which identifies skill sets and integrates them into curricula, could serve as a significant model for developing a standardized curriculum for green jobs. This initiative underscores the importance of a well-rounded curriculum that encapsulates the technical, practical, and theoretical aspects requisite for excelling in green jobs.

Faculty Exchange and Training Programs:

Faculty exchange and joint training programs are pivotal for the cross-pollination of ideas, methodologies, and best practices in VET for green jobs. Such programs can foster a culture of continuous learning and improvement among educators, thereby enhancing the overall quality of VET. Drawing parallels from the technical exchanges enabled by the European Education Area Working Group on VET, EU and India can organize joint training programs and faculty exchanges that focus on the latest advancements in green technologies and sustainable practices.

Industry Partnerships and Internship Programs:

Establishing strong partnerships with industries and organizing internship programs are imperative for ensuring the relevance and applicability of VET programs. These partnerships can provide practical exposure to students, thereby making them job-ready. The Sector Skills Alliances in Europe, which bring together VET institutions, public authorities, and businesses for curriculum development and delivery tailored to specific sectors, including the green economy, serves as an exemplary model. Such alliances ensure that the curriculum remains aligned with industry needs, and students receive hands-on training, preparing them for the demands of green jobs.

Investment in Advanced Training Infrastructure:

Investing in state-of-the-art training facilities, digital platforms, and cutting-edge technologies is crucial for delivering high-quality VET for green jobs. These investments can combat the challenges arising from cultural and linguistic differences between the two regions, significantly enhance the learning experience, making it more engaging and effective. The EU's investment in advanced training infrastructure through various funding structures like Erasmus+ and European Social Fund Plus could serve as models for similar investments in India. These funding structures have facilitated the development of modern, well-equipped training centres that are instrumental in imparting the requisite skills for green jobs.

Policy Harmonization and Mutual Recognition of Qualifications:

Harmonizing policies and establishing a system for mutual recognition of qualifications are essential steps for facilitating the mobility of the skilled workforce between the EU and India. A harmonized policy framework can provide a structured approach to recognizing and validating the skills and qualifications acquired through VET, thereby enhancing the employability of individuals in green jobs. The frameworks established under the European Qualifications Framework (EQF) could be explored for mutual recognition of qualifications, providing a pathway for professionals trained under one system to have their skills recognized under the other.

9. Conclusion

The collaboration between the European Union (EU) and India in the realm of Vocational Education and Training (VET) for green jobs presents a unique opportunity to address some of the most pressing challenges of our times. As the world grapples with the dual imperatives

of sustainable development and economic growth, the synergy between the EU's advanced VET systems and India's burgeoning green job market can pave the way for a brighter, greener future. The potential benefits of this collaboration are manifold. Economically, it promises job creation, trade and investment opportunities, and innovation in green technologies. Diplomatically, it strengthens the ties between two significant global players, fostering mutual respect and understanding. Environmentally, it offers a collaborative approach to address global challenges like climate change, resource depletion, and biodiversity conservation.

However, realizing this potential is not without its challenges. Diverse educational systems, regulatory hurdles, cultural and linguistic differences, infrastructural gaps, and the need for industry alignment are some of the obstacles that need to be navigated. Yet, with targeted recommendations such as establishing bilateral frameworks, fostering industry partnerships, leveraging digital platforms, and engaging stakeholders effectively, these challenges can be addressed.

The EU, with its leadership in green initiatives and robust VET systems, and India, with its ambitious green goals and vast workforce, are poised to lead the global transition to a sustainable future. Their collaboration in VET for green jobs is not just beneficial for both regions but is a beacon of hope for the global community. In essence, the EU-India collaboration in VET for green jobs is a testament to the power of international cooperation in driving positive change. It underscores the idea that when two regions come together with a shared vision and purpose, they can create a ripple effect that benefits the entire world.