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Sustainable Growth for All: Jobs, Water, and Energy

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Abstract:
Extreme poverty and environmental degradation are closely intertwined, particularly for populations reliant on natural resources for their livelihoods. Current economic models often neglect the ecological basis of these livelihoods, resulting in unsustainable growth and rising inequality. This paper advocates for an inclusive green economy that balances environmental sustainability with social equity. A significant portion of the poor derive income from ecosystem services, which are increasingly threatened by unsustainable development practices. As these services decline, vulnerable communities face both economic and ecological marginalization. Redefining poverty to include access to health, education, clean water, energy, and natural capital is vital for long-term development. Tools like the Inclusive Wealth Index (IWI) allow for a more accurate and multidimensional assessment of national well-being. Green jobs in sectors such as renewable energy, sustainable agriculture, and ecosystem restoration can create inclusive economic opportunities. Innovations like biomimicry and green chemistry further enhance the potential for environmentally sound employment. However, skill shortages persist in many green sectors, especially in developing countries. Addressing this requires vocational training and reskilling initiatives tailored to rural and urban labor markets. Public-private partnerships and educational reforms are necessary to bridge this gap and strengthen human capital. Broader economic reforms—such as correcting capital misallocations and integrating sustainability standards into corporate governance—can enhance the impact of green transitions. Ensuring equitable access to trade, resources, and infrastructure also plays a critical role. Social policies that promote access to education, justice, and healthcare are essential complements to environmental strategies. Together, these interventions pave the way for a resilient, inclusive economy that benefits both people and the planet
Keywords: Green Economy, Poverty Eradication, Renewable Energy, Water Sustainability

1. Introduction

Extreme poverty and environmental degradation are intricately connected. An estimated three billion of the world's poorest people live in rural areas, along coasts, or near forests, and depend heavily on the productive capacity of nature. Yet, these communities face the double burden of ecological loss and economic exclusion. Current policies often fail to reflect the true state of environmental depletion or account for the sustainability of economic growth. A fundamental rethinking of poverty, growth metrics, and economic investment is critical to transitioning towards a resilient, inclusive, and low-carbon future. An inclusive green economy that invests in people and natural capital can break the cycle of poverty and environmental degradation. Redefining economic success through multidimensional indices and sustainability principles ensures long-term prosperity. Integrated approaches to employment, water, and energy—combined with policy coherence and investment in skills—offer viable solutions for an equitable and sustainable world.

2. Green and Decent Employment for Poverty Eradication

A large proportion of the poor depend directly on environmental services for income and sustenance. In fact, ecosystem services and non-marketed environmental goods account for 47–89% of what has been described as the "GDP of the poor" [1]. However, rapid environmental degradation—often driven by unsustainable investment and resource extraction—erodes these livelihood foundations and exacerbates inequality. The inequality gap is stark. As of recent estimates, 8% of the global population earns half of the world's income, while the wealthiest 85 individuals hold as much wealth as the poorest half of humanity [2]. Moreover, more than two-thirds of the global population live in countries where income inequality has worsened since the 1980s [3]. Redefining poverty to include assets such as health, education, sanitation, energy, and natural capital—beyond mere income—is essential for sustainable development. Tools such as the Inclusive Wealth Index (IWI) provide a multidimensional assessment of national assets by incorporating human, natural, and manufactured capital [4]. Public and private investments in green jobs are essential. These include roles in sustainable agriculture, ecosystem restoration, energy-efficient infrastructure, and circular economy initiatives such as waste recycling [5]. For example, biomimicry, green chemistry, and innovations in resource productivity can reduce environmental hazards and create employment opportunities [6]. However, many fast-growing green sectors face skill shortages. Renewable energy and energy efficiency industries, for instance, suffer from a lack of skilled labour. Reskilling and vocational training tailored to rural and urban labour markets, especially in developing countries, are essential [7]. Public-private partnerships should be encouraged to promote sustainability commitments while supporting capacity-building through education reforms and teacher training [8]. At a broader level, green economy interventions at macro, meso, and microeconomic levels are required. These include correcting capital misallocation, improving access to trade opportunities for the poor, adopting sustainability standards across supply chains, integrating triple bottom line reporting in corporate governance, and incentivizing natural capital investments [9]. Complementary social policy tools—such as access to productive assets, justice, education, and healthcare—further reinforce inclusive development [10].

3. Water Sustainability for Equity and Resilience

Access to clean water and sanitation is a basic human right, yet around 2.5 billion people, including nearly 1 billion children, lack access to even basic sanitation facilities [11]. Poor water, sanitation, and hygiene (WASH) services cause one child death every 20 seconds due to preventable diseases [12]. Global water resources are under severe stress, with growing competition among agricultural, domestic, industrial, and ecological uses. Water pollution exacerbates scarcity, which, in turn, amplifies inequality. Around 90% of global natural disasters-such as floods and droughts-are water-related, imposing long-term economic and developmental burdens [13]. Climate change further intensifies water risks, leading to more frequent and severe hydrological events. Moreover, untreated wastewater releases methane and nitrous oxide, compounding environmental harm [14]. Integrated Water Resources Management (IWRM) is vital to address the entire water cycle holistically-from access and development to pollution control and risk management [15]. Sustainable water services must be designed to meet both current and future needs equitably. This necessitates investments in technologies that improve water-use efficiency, strengthen resource allocation systems and build resilience to climate variability. Capacity development at local, regional, national levels is essential to ensure the effectiveness of water governance systems [16].

4. Universal Access to Sustainable Energy

Energy access is foundational to human development. However, more than 2.6 billion people still rely on traditional biomass for cooking, which contributes to household air pollution and increases the burden on women and children [17]. Fossil fuels still constitute about 85% of the global primary energy supply, making the current trajectory incompatible with environmental and economic sustainability goals [18]. Access to clean and modern energy for cooking and productive use offers multiple benefits, including improved health, gender equality, local economic development, and climate change mitigation. According to the World Health Organization, if half of global households using traditional stoves transitioned to clean energy, it would save $34 billion annually and generate $105 billion in economic returns over a decade [19]. Despite their potential, renewable energy sources contribute only about 19% of total global energy use. In many developing countries, the renewable energy sector remains underutilized due to limited infrastructure, finance, and policy support [20]. Nonetheless, the sector employed approximately 5.7 million people globally in 2012 and continues to grow [21]. Improving energy efficiency remains one of the most cost-effective strategies for reducing future energy demand. It is estimated that energy efficiency could account for 70% of the reduction in global energy demands by 2035 [22]. Buildings offer a significant opportunity for energy savings, especially when local materials are used, creating jobs and reducing import dependence [23]. Crucially, fossil fuel subsidies must be reformed to create a level playing field for renewable technologies. These subsidies not only distort markets but also delay the transition to sustainable energy systems. Eliminating inefficient fossil fuel subsidies can unlock capital for clean energy investment and encourage responsible consumption [24].

5. Summary

This article underscores the urgent need for a systemic shift toward inclusive green economies to eradicate extreme poverty, reduce inequality, and ensure environmental sustainability. The analysis reveals that traditional income-based metrics are insufficient to capture the multidimensional aspects of poverty, which include health, education, energy access, and environmental assets. Redefining economic growth through tools such as the Inclusive Wealth Index can more accurately represent a nation's long-term sustainability. Green and decent employment opportunities, particularly in sectors like renewable energy, sustainable agriculture, and waste management, offer viable pathways for economic inclusion. However, a major constraint is the shortage of skills required for such employment, emphasizing the need for education reform and vocational training. Water and energy are identified as critical enablers of development. Access to clean water and sanitation, along with universal access to modern sustainable energy services, is foundational for health, economic growth, and gender equity. Integrated resource management and the phasing out of fossil fuel subsidies are key to realizing these goals. By aligning macroeconomic reforms, social policy tools, and targeted investments, nations can simultaneously address poverty, inequality, and environmental degradation. The paper highlights that inclusive green economy measures are not only necessary for environmental integrity but are also economically viable and socially transformative.

6. Future Scope

Several future avenues for research, policy development, and implementation emerge from this study:

Development of Comprehensive Poverty Metrics: Future research should focus on refining multidimensional poverty indices that integrate environmental, health, education, and gender equity dimensions, allowing for more targeted policy interventions.

Green Skills Mapping and Education Policy: There is a pressing need to assess regional and sectoral skill gaps in green jobs. Future studies should guide the development of context-specific vocational and educational programs aligned with sustainability goals.

Scalability of Decentralized Energy Systems: Research into the scalability and affordability of decentralized renewable energy systems, especially in off-grid rural areas, could support more inclusive energy transitions.

Climate-Resilient Infrastructure Design: The future of sustainable development lies in infrastructure that is both environmentally sound and climate-resilient. Innovations in materials science, green building, and water-efficient systems should be further explored.

Policy Simulation and Scenario Analysis: Modelling the long-term economic and social impacts of green economy policies—such as removal of fossil fuel subsidies or investment in renewable energy—can help policymakers prioritize and scale interventions effectively.

Public-Private Financing Models: Future work should investigate financing mechanisms, such as green bonds, climate funds, and blended finance, to mobilize capital toward green economy initiatives, particularly in low- and middle-income countries.

Monitoring and Evaluation Frameworks: Developing robust, real-time systems for tracking progress in green economy initiatives and their social outcomes will be essential for accountability and iterative policy improvement.

7. Conclusion

The transition to an inclusive green economy is essential for tackling the interconnected challenges of poverty, inequality, and environmental degradation. Traditional growth models that overlook ecological systems and social equity are no longer viable. By redefining poverty to include access to health, education, clean water, energy, and natural capital, development policies can more accurately address the needs of vulnerable populations. The Inclusive Wealth Index offers a multidimensional perspective for evaluating sustainable national progress. Green jobs in renewable energy, ecosystem management, and sustainable agriculture present significant opportunities for poverty reduction. However, overcoming skill gaps through targeted vocational training and reskilling remains critical. Public-private partnerships and education system reforms are necessary to build a capable workforce for green sectors. At the systemic level, macroeconomic policies must align with sustainability goals by investing in natural capital and enforcing corporate accountability. Equitable access to trade and infrastructure, along with sustainability reporting standards, can help close development gaps. Integrated approaches to water, energy, and employment are central to this green transition. Policymakers must focus on cross-sectoral collaboration, subsidy reforms, and inclusive financing mechanisms. Ultimately, a just and inclusive green economy will not only restore ecosystems but also ensure lasting prosperity and dignity for all.

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