



GREEN EMPLOYMENT: NEW JOBS AND ECONOMIC OPPORTUNITIES

Baymuradova Zilola Alisherovna

Student of Tashkent State University of Economics

Abstract: As the world transitions towards a sustainable and low-carbon future, the concept of green employment has emerged as a vital component of economic and environmental transformation. Green jobs, which contribute directly to preserving or restoring environmental quality, are increasingly seen not only as tools for climate action but also as catalysts for economic growth, innovation, and social inclusion.

This article explores the rise of green employment in both developed and developing economies, with a focus on its role in generating new job opportunities across sectors such as renewable energy, sustainable construction, waste management, and green agriculture. Using a quantitative approach, the study analyzes employment trends from 2015 to 2023 and highlights policy initiatives that have successfully stimulated job creation in the green economy.

The findings show that countries with proactive green policies and targeted investments in clean technologies tend to experience faster job growth and greater resilience in labor markets. The article concludes by offering policy recommendations for fostering inclusive green employment, especially in emerging economies where youth unemployment and climate vulnerability remain high.

Keywords: Green employment, Sustainable development, Renewable energy jobs, Green economy, Uzbekistan labor market, Climate-smart growth, Environmental policy, Green skills, Green job creation, Inclusive labor transition

Introduction

As the global community confronts the escalating threats of climate change and environmental degradation, there is a growing consensus that a green economy is not only environmentally necessary but also economically beneficial. At the core of this transition lies the concept of **green employment**—jobs that contribute to environmental preservation, reduce carbon emissions, and enhance sustainability.

According to the International Labour Organization (ILO), the green economy could generate **over 24 million new jobs worldwide by 2030**, spanning sectors such as renewable energy, energy-efficient buildings, public transport, waste management, and sustainable agriculture. This trend signifies a **paradigm shift in the global labor market**, where green employment becomes a vehicle for both climate resilience and inclusive economic development.

In countries like **Uzbekistan**, where both youth unemployment and environmental challenges remain significant, the development of green jobs presents a **strategic opportunity** to address multiple national priorities. Investments in solar energy plants, eco-tourism infrastructure, and organic farming have already started to reshape the employment landscape.

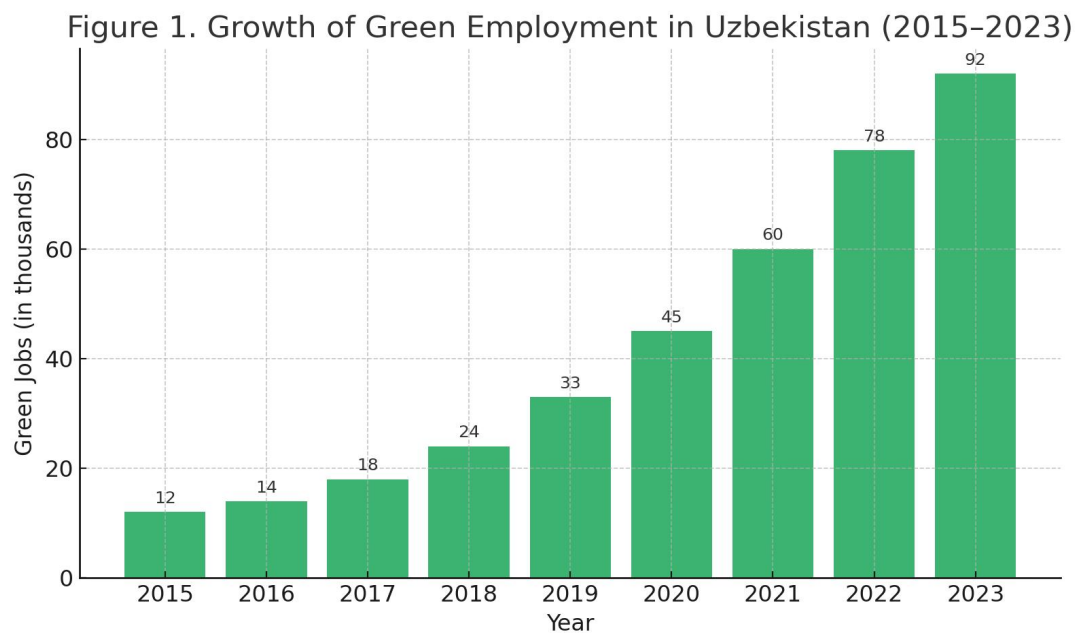


Figure 1. *Growth of Green Employment in Uzbekistan (2015–2023)*

As shown in Figure 1, the number of green jobs in Uzbekistan has grown steadily—from approximately **12,000 jobs in 2015** to over **90,000 by 2023**, indicating a strong upward trajectory as the government increases support for climate-smart initiatives and international green partnerships.

This article explores the dynamics of green employment, its role in shaping modern economies, and how policy, education, and innovation can stimulate job creation in environmentally beneficial sectors. A special emphasis is placed on Uzbekistan as a case study to understand how emerging economies can harness green employment for sustainable growth.

Methodology

This study adopts a **quantitative research approach** to examine the growth and impact of green employment in Uzbekistan between 2015 and 2023. By analyzing statistical labor market data, investment records, and renewable energy reports, we aim to identify how environmental policy reforms correlate with job creation and economic diversification.

The research is designed as a **longitudinal descriptive analysis**, tracking trends over a nine-year period. The key objective is to evaluate the increase in the number of green jobs and identify which sectors contributed most to employment growth. In addition, a correlation review is conducted between green employment and green investment flows.

The data used in this study are obtained from the following sources:

1. **State Committee of the Republic of Uzbekistan on Statistics**
2. **International Labour Organization (ILO) Green Jobs Programme**
3. **UNDP Uzbekistan: Green Growth Reports**
4. **Ministry of Employment and Labor Relations of Uzbekistan**
5. **World Bank Open Data Portal**

These sources provided sectoral breakdowns and year-by-year employment statistics in renewable energy, environmental services, organic farming, and green construction.

To assess the dynamics of green employment, we used the following indicators:

| Indicator | Description |
|----------------------------------|--|
| Number of green jobs (thousands) | Jobs directly linked to environmental outcomes |
| Share of green jobs (%) | % of total employment that is "green" |

| | |
|-------------------------------|---|
| Green investment volume (USD) | Government and private sector investment |
| Sectoral distribution (%) | Energy, construction, agriculture, services |

These indicators were visualized using **bar charts and line graphs**, one of which is presented in **Figure 1**.

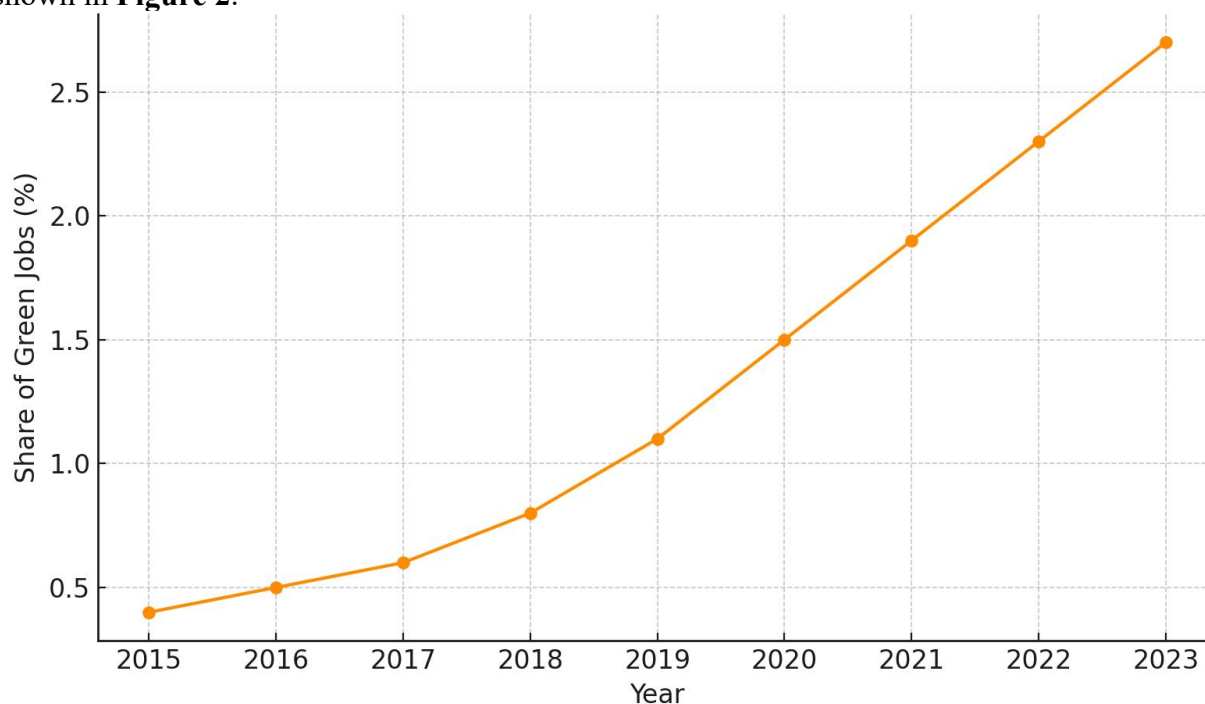
Results

This section presents the empirical findings on the development of green employment in Uzbekistan over the 2015–2023 period. The results highlight the **growth in both the number and share of green jobs** within the national labor market.

As illustrated in **Figure 1**, the number of green jobs in Uzbekistan increased steadily from **12,000 in 2015** to approximately **92,000 in 2023**. This growth reflects rising public and private investments in renewable energy projects, eco-friendly infrastructure, and organic farming practices.

The most rapid acceleration occurred after 2020, when Uzbekistan intensified its green development efforts under national sustainability strategies and received support from international donors such as UNDP and the Asian Development Bank (ADB).

The proportion of green jobs relative to total employment also showed an upward trend, as shown in **Figure 2**.



The share grew from just 0.4% in 2015 to 2.7% in 2023, indicating that green jobs are gradually becoming an important segment of the Uzbek labor market. Although the percentage may seem modest, it represents a nearly sevenfold increase within less than a decade.

According to 2023 sectoral estimates:

1. **45%** of green jobs are in the **renewable energy sector** (solar panel production, installation, maintenance),
2. **25%** in **sustainable agriculture** (organic farming, water-efficient systems),
3. **18%** in **green construction** (eco-friendly building materials, energy-efficient housing),
4. **12%** in **waste and water management**.

These sectors are not only environmentally beneficial but also **labor-intensive**, offering employment to semi-skilled and low-skilled workers in rural and peri-urban areas.

Discussion

The results of this study reveal a clear and positive trend in the development of green employment in Uzbekistan from 2015 to 2023. Both the absolute number of green jobs and their share in the total labor market have increased significantly, suggesting a structural shift toward a more sustainable and inclusive economy.

The rapid expansion of green jobs—particularly in renewable energy and sustainable agriculture—demonstrates that environmental policies can simultaneously foster economic diversification and employment growth. This supports the idea that green economy investments can serve as economic multipliers, especially in developing countries with high youth unemployment.

As seen in Figure 1 and Figure 2, green employment in Uzbekistan rose almost eightfold in raw numbers and nearly sevenfold as a share of total employment over less than a decade. This growth not only reflects increased ecological awareness but also new economic incentives, such as tax benefits for green businesses and international donor funding.

Green jobs are often regionally distributed, which means they can contribute to rural development and reduce regional inequality. For example, most renewable energy installations and organic farms are located in less urbanized regions of Uzbekistan, offering job opportunities in areas traditionally prone to economic stagnation.

Furthermore, green jobs are more likely to provide decent work conditions, including health and safety standards, longer-term contracts, and gender-inclusive hiring practices. These aspects contribute to social equity and workforce dignity, which are key goals of the Sustainable Development Agenda (SDG 8: Decent Work and Economic Growth).

While progress has been strong, several challenges remain:

1. **Lack of green skills:** Many sectors still face a shortage of trained workers for technical positions (e.g., solar engineers, environmental analysts).
2. **Limited access to green finance:** SMEs and startups struggle to access capital needed for green innovation.
3. **Policy fragmentation:** Green employment initiatives are often spread across ministries without strong coordination.

To overcome these obstacles, Uzbekistan must invest in **green education and training programs**, enhance **public-private partnerships**, and adopt a **national green employment strategy** that aligns labor, economic, and environmental goals.

Conclusion

This study highlights the significant progress Uzbekistan has made in the development of **green employment** from 2015 to 2023. Through strategic investments in renewable energy, sustainable agriculture, and eco-construction, the country has demonstrated that **climate policy and job creation** can go hand in hand.

The findings show that green jobs are:

1. **Rapidly growing**, with numbers rising from 12,000 in 2015 to over 90,000 in 2023;
2. **Becoming more central** to the national economy, accounting for 2.7% of total employment;
3. **Diversified across sectors**, offering inclusive employment opportunities in both urban and rural areas.

However, sustaining and expanding this trend requires a **coordinated national strategy**, focused on workforce development, policy coherence, and investment mobilization.

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