

ACT HUMAN



INTEGRATION INTO CLIMATE POLICIES

FROM EMPLOYMENT TO PRODUCTION

December 2021

Climate Crisis and Human Well-Being

None of them are far anymore. It was coming; we didn't notice, didn't understand, or didn't want to understand. We're together now.

When we talk about climate change and biodiversity, we realize that we are talking about our own lives.

It has become the standard topic of everyday conversation. We talk about how rains, seasons, and winds have changed.

Nature used to be in a balance, in which every living thing controlled the number of each other. The one who is different and spoils them all is the people of the anthropogenic age. The human intelligence or stupidity constantly interfered with the natural balance, continually triggering a process that would eventually risk its very existence.

Now the danger is within and around us.

The UNDP 2020 Human Development Report showed how close and dire the problem is. And that, the fight must become a part of everyone's daily life, and of every unit's.

I believe there is a need for a fundamental change of attitude in the background of the fight. The UNDP Human Development Report illustrates an example of cigarette consumption.

It exemplifies that smoking can evolve from an attitude where those who don't smoke in time are despised to a change in which those who smoke are considered "lame."

The most important background of the fight for biodiversity and against climate change is the redefinition of the relationship between the concept of good life and consumption and social status.

We must ensure the transformation about the assumptions that good life is not about consuming more, consuming more brands, consuming more expensive, and accordingly upgrading the status; and that that costly and excessive consumption is not something to be proud of and encouraged, but to be condemned. The media and the brand world should be able to create a new "charter" for themselves. We should be able to end communication that defines happiness with consumption and based on the promises to upgrade the status.

A consumption environment where all people are constantly focused on consuming more and more than 200 million companies are focused on continuous profitable growth will constantly pose danger to sustainability.

Implementation of the Paris Agreement and the European Green Deal show that fight against the climate crisis is now a permanent agenda for the world and Turkey. On the one hand, we must constantly strengthen the level of sincerity while closely following this permanent agenda. A lot of jokes were recently made about people coming to COP26 Climate Summit on their private jet-fueling aircraft and evaluating carbon emissions.

An essential issue in the fight against climate crisis is that the system that produces inequality in a terrifying way does not create a new area of inequality. All studies show that the people most vulnerable to climate change are the poorest in the World. Nor should there be a new area of inequality between developed countries and others. The fight against the climate crisis should not turn into a new understanding of the world, giving rise to a barrier between developed countries and the developing world. The development process of the developed countries and the globalization process of the global companies played a major role in bringing us to the crisis point of today.

In this respect, the European Green Deal is an initiative that should be followed carefully. Turkey makes 41.3 percent of its exports to the EU. The EU is increasingly turning to a strategy of less and less importing and meeting its needs within the EU. Green Deal stipulates the rules, making exports to the EU carbon neutral gradually.

This process should not be treated as a unilateral EU sanctions process, but as a transformation in line with the trade partners of the EU.

Compliance with Turkey's EU Green Deal is also a real economic necessity. It requires both high awareness and a high conversion cost. Support programs for SMEs in particular need to be improved.

We can realize this transformation with an inclusive and coordinated management approach as we repeat in every area. Particularly in cooperation with central government, local government, and civil society.

In the fourth of the ActHuman series, we elaborated the green economic transformation and EU harmonization process in cooperation with the Istanbul Policy Center (IPC), particularly in terms of its impacts on employment and business. General ideas on fighting the climate crisis are of course crucial. However, these general ideas should not limit the role that individuals and institutions have in themselves.

We can say general and nice words. We may also have useful advice on who needs to do what, but we should not forget to ask "what is my part" as an organization and person. There is a concept of "new patriotism" that Fuat Keyman repeats from time to time. This new patriotism, in which there is harmony in nature and the living world, is perhaps the key to the change in attitude about the "human well-being" I've mentioned.

Vural akır
President of INGEV

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EXECUTIVE SUMMARY

With the European Green Deal (EGD), presented by the European Union (EU) in December 2019, a comprehensive strategy, covering different sectors and policy areas, to achieve the EU's ambitious goal of reducing carbon emissions by 55 % compared to 1990 levels by 2030 and becoming a climate-neutral continent by 2050 has been submitted. The transition to a low-carbon and sustainable economy on a global scale will accelerate with the EGD, and the transition in countries which has intensive trade relations with the EU, such as Turkey, reveals the necessity of structural change in production.

Prepared in cooperation with INGEV and Sabanci University Istanbul Policy Center (IPC/İPM) under ActHuman IV, this study discusses Turkey's adaptation to the new period starting with the EGD, on the basis of employment. The recent signing of the Paris Climate Agreement and the acceptance of the 1,5-degree target adopting the net-zero target for 2053 have come to the fore as a positive development in Turkey's approach within the scope of adaptation to this process. On the other hand, employment strategies that need to be created parallel with climate policies must be consistent, interrelated, targeted, and simultaneously include different stakeholders (public, private sector, universities, trade unions, industry chambers).

The advisory committee meetings and the workshop held within the project's scope focused on designing necessary policies that help develop green employment in Turkey. Taking into consideration the evaluations received from academicians, public and local governments, private sector, press, and NGO representatives and the relevant literature, social policy recommendations to create employment

through green jobs in Turkey and how to include vulnerable groups in such employment were prepared. These recommendations are intended to lay the groundwork for the actions to be taken in the coming period.

The workshop outcomes are summarized under the following nine recommendations.

- 1. Raising awareness about the green transformation process:** Raising awareness about green transformation in every part of society is important in terms of preparing for this process and preserving competitiveness. It is necessary to raise awareness not only on the production side but also on consumers and unions, and cooperatives that have the potential to play an essential role in transformation.
- 2. Networking:** To share information, it is important to create networks that encourage different stakeholders to work together. Accordingly, using platforms involving social partners can realize more effective planning for the production and skill transformation needed by the relevant industries and regions.
- 3. Considering spatial and sectoral factors in policy design:** It is important that any changes in production or employment that occur as a result of the green transformation be planned by considering spatial and industrial dynamics. In this context, it is crucial to determine the target sectors and regions that can create employment, to estimate the workforce with the different skill levels that will be required in these sectors and/or regions, and to train the current workforce in line with these needs to achieve a fair transition.

4. **Supporting groups affected by vulnerable conditions:** Information and training activities that will enable the participation of vulnerable groups in the transformation should be developed according to the specific needs of these groups, and necessary incentive mechanisms should be provided.
5. **Improving the image of vocational training and revising its content:** Awareness should be raised among the public on the necessity and importance of vocational training, and best practices should be disseminated in this field. It should be ensured that vocational training is a field that is preferable to different segments of society.
6. **Supporting innovation and entrepreneurship:** In the long term, innovation-focused business models are the key to technological transformation. During the green transformation process, it is essential to support innovation and entrepreneurship to spread environment-friendly business models such as adopting circular economy practices in particularly resource-intensive sectors and their supply chains.
7. **Providing information on the diversification of financing channels and financing opportunities:** The green transformation will not be possible unless sufficient financial resources are provided. In order to achieve this financing, it is crucial to provide information to SMEs on current facilities and planning and to diversify the financing channels.
8. **Incentive, inspection, and control mechanisms:** It is possible to accelerate the transition to green production processes with incentives and regulations. In addition, it is essential for the central government to strengthen the inspection and control mechanisms regarding existing policies by applying the regulations under strict and equal conditions. Incentive mechanisms need to be strengthened so that the cost pressures that environmental policies may create do not become an obstacle to employment.
9. **Data creation and sharing:** It is important to generate statistics on green jobs and green production processes for policy making and monitoring. In addition, it is possible to contribute to policy-making with data-oriented strategies by sharing data with local and central governments.

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1. INTRODUCTION

Green transformation is a new growth strategy that prevents climate change as well as a powerful tool to help emerging economies struggle with high unemployment. Reducing the vulnerabilities of countries, especially on the employment side, is only possible through a targeted and holistic policy design. The implementation of the right policies also helps to decrease unemployment rates, particularly in those groups affected by vulnerable conditions including young people, women and migrants. This report, prepared in cooperation with INGEV and Sabancı University Istanbul Policy Center (IPC), examines the green transformation in the context of labor markets and provides policy recommendations on how we should prepare for this process.

The COVID-19 pandemic is still ongoing as the fourth period of ActHuman continues. Although the economic recovery process that started in March last year accelerated with incentive packages and recovery plans implemented by both developed and developing countries, there is a slower recovery in employment markets. According to the ILO's projections, the world faces four times worse levels of unemployment than the last financial crisis of 2008-09 (European Training Foundation, 2021). Considering the fact that the COVID-19 pandemic also coincides with a period when we need to act on the fight against climate change, this is an important opportunity to increase green employment opportunities by shifting the growth strategy to green growth. On the other hand, it stands out that state subsidies that were made after the pandemic are not in line with the Sustainable Development Goals in both developing and developed countries. Only 2.5 percent of the total incentive and recovery expenditures of

countries in 2020 were made within the scope of sustainability (O'Callaghan, et al., 2020).

The impacts of green transformation on labor markets are examined in different studies and the impacts of this transformation are found to be differing between sectors. While green transformation refers to business opportunities in some sectors, it is expected to have a negative impact on the employment provided by the carbon intensive production and high resource consumption sectors. To control these negative impacts, it is important to create a fair transition mechanism for all stakeholders of the economy, including access to social protection, new skills and alternative employment and income opportunities. Through the Fair Transition Mechanism, introduced as part of the European Green Deal (EGD), it is aimed to achieve the transition to a climate-neutral economy without leaving anyone behind, focusing on the regions and sectors that have the potential to be most affected by this transformation process. On the one hand, the transition to low-carbon and climate-resilient activities is encouraged through the financing resources from the EU budget and the European Investment Bank; while on the other hand, it is planned to provide the vulnerable workforce and households with access to re-skilling programs, jobs in emerging sectors or housing with energy efficiency.

According to research conducted by ILO, 100 million new jobs are expected to be created and 80 million jobs will be damaged as sustainable energy and circular economy practices become widespread by 2030 (ILO, 2019). New skills will be required while green jobs are being developed. The structural changes that will occur with green transformation in all sectors, including energy, agriculture, manufactu-

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ring, transportation and construction, also require the adaptation of the skill level of the existing workforce. For this purpose, it is important to integrate the current workforce into the green economy through training programs aimed at the development of skills.

As part of the preparation for the Green Transformation process, the European Commission launched the Green Employment Initiative in 2014 (European Commission, 2014). The Green Employment Initiative offers a holistic approach, focusing on the labor market and skill policies to support the transition to a green, low-carbon and resource-efficient economy. In this initiative, the aim is to predict the skills needed for sectors and industries, improve data quality by providing financial support and training to national statistical offices, encourage social dialog between sectors, promote environmental management, energy and resource utilization, and support the participation of workers on issues related to risks at work to prepare the labor force for the anticipated structural change. Similarly, the International Labor Organization (ILO) has underlined that green transformation offers an important opportunity to overcome poverty and inequality by creating “decent” jobs. Under the Green Jobs Program, ILO aspires to contribute to the protection of the environment, promotion of a socially inclusive development

model and strengthening of economies through its technical advisory support for the creation of green jobs (ILO, 2016).

The notions of green economy and green jobs have been frequently discussed in Turkey recently. Our country that possesses various regulations and practices on the protection of environmental and natural resources needs a holistic policy design covering different areas such as production, employment, training, and financing to prepare for the transformation process that will accelerate with new mechanisms such as carbon border adjustment mechanism. The structural transformation process that has come with the EGD and the increasing disasters caused by climate change in the recent period require Turkey to take faster action, just as many other countries, and to prepare this transformation with the right policies along the labor markets axis.

The study focuses on designing necessary policies for the development of green jobs in Turkey. In the report, social policy recommendations were created by making use of the evaluations from the stakeholders and the relevant literature on how to create employment through green jobs in Turkey and how to include vulnerable groups in this employment.





2. METHOD

Within the scope of this report, firstly a literature review on the implications of green transformation on the labor markets has been provided. In this framework, the relationship between climate change and labor markets, the definition and scope of green jobs, the impacts of green job creation on employment opportunities, green jobs, and the skills required by these jobs are discussed using international reports and academic articles. Finally, there are policy recommendations on planning for green transformation on the axis of employment.

ActHuman IV Process

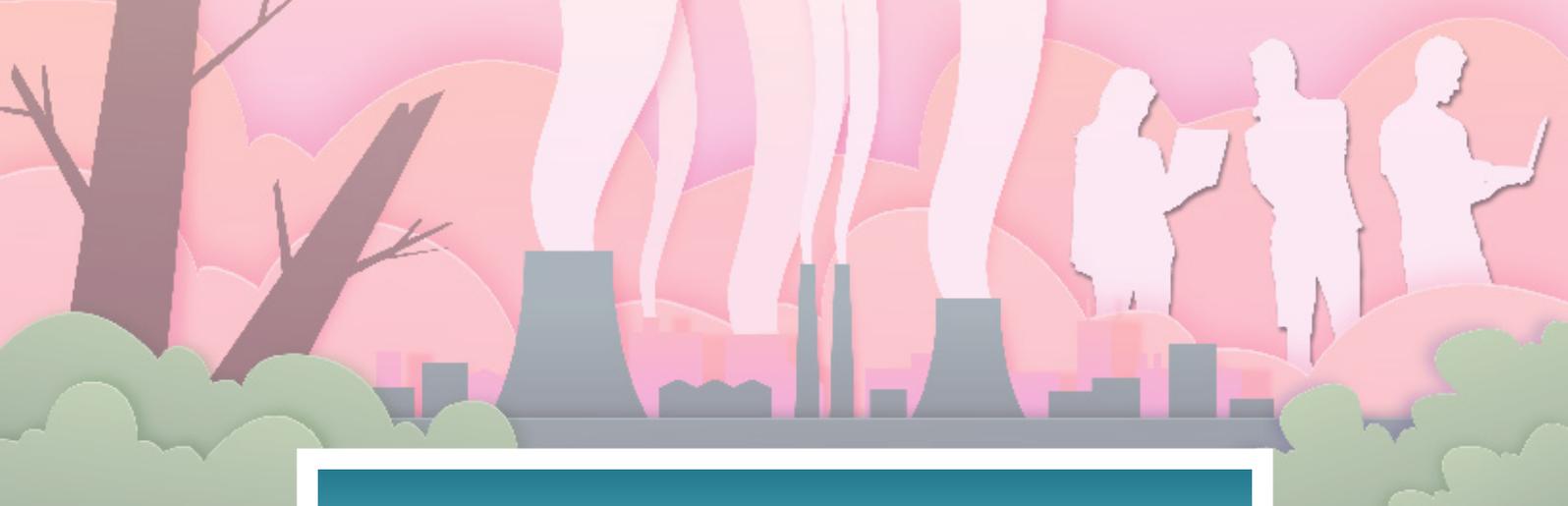
Formation of the Advisory Board: The participants in the Advisory Board, which consists of academicians, public, local government, private sector, press, and NGO representatives, have been determined by IPC and INGEV. At the Advisory Board meeting held on July 1, a preliminary study was submitted as part of the report, and it was aimed to get the participants' opinions and assessments on the topics in the study.

The first meeting of the Advisory Board: At the online meeting on 1 July 2021, a summary of the preliminary research was presented to the Advisory Board participants, and their opinions were gathered. Three main topics were submitted for discussion in the Advisory Board meeting. At the meeting, the initial aim was to assess the potential of creating green jobs within the scope of Turkey. Within this framework, key sectors that could create green employment and the steps to increase green employment in these sectors were discussed (Financing, regulations, training, awareness needs). The second topic focused on skills and training. Under this topic, the vocational

skills required for green works, the current workforce's adaptation to green jobs (balance of supply and demand), and the training needed for transforming the current workforce were discussed. The third topic included social policies. The role of different stakeholders (companies, NGOs, public, and private sectors) in increasing green employment within the scope of social policies, the potential challenges, and benefits of the expansion of green jobs, and the actions to reduce unemployment for vulnerable groups (e.g., SMEs and young unemployed persons) via green jobs were discussed.

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Workshop: The workshop organized under ActHuman IV was held online on September 22, 2021, with an event attended by stakeholder representatives. The project draft prepared after the Advisory Board meeting was shared with the participants before the workshop. In the first part of the workshop, the draft of the project, which was prepared considering the findings of the Advisory Board meeting, was shared with the participants. In the second part, participants' discussions were provided on three topics (Key Sectors and Skills for Green Business, Vulnerable Groups and the Green Economy, Networks and Collaborations for the Eco-System in Green Business). Later, the draft report was revised to include the feedback provided during the workshop and shared with the participants.



3. CLIMATE CHANGE AND EMPLOYMENT

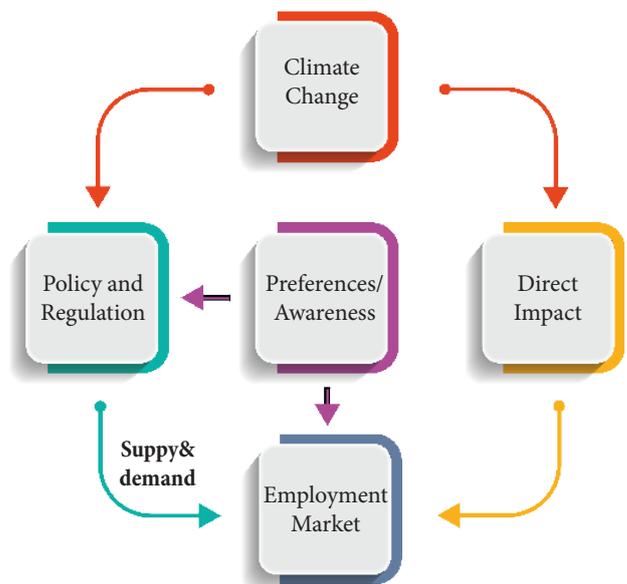
Direct and Indirect Impacts of Climate Change on Employment

To understand the impacts of climate change on labor markets, it is important to distinguish the different mechanisms that play a role in this process (OECD, 2010). A significant channel in the relationship between climate change and labor markets is the “direct” impacts that have an influence on the labor markets as a result of the increase in natural events related to climate change, such as floods, heatwaves, and decreases in precipitation levels. In particular, the agriculture, tourism, insurance, forestry, fishing, infrastructure, and energy sectors are vulnerable to the direct impacts of climate change. The direct impacts of climate change weaken jobs, growth, product efficiency, and operating conditions while negatively impacting workers’ health, income, productivity, food and fuel safety through the air, water, and soil pollution, and other negative environmental factors (ILO, 2018).

Regulations and policies implemented within the scope of climate change may also affect employment by leading to changes in production (supply side) and consumer habits (demand side). Tools used for this purpose are carbon pricing, green taxes, and green labeling to encourage consumers to choose low-carbon products and services. Another important mechanism within the scope of climate change’s impacts on labor markets is the channel of public awareness. Consumer choices for products and services through this channel have the power to affect both policies and regulations and labor markets.

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Figure 1: The Relationship between Climate Change and Employment



Source: ILO (2010)

European Green Deal

The transition to a globally low-carbon and sustainable economy will gain momentum through the European Green Deal (EGD). In this process, green jobs are emerging in different sectors of the economy as well as the creation of green jobs is expected to gain momentum in developed and developing countries in the coming period.

Carbon Border Adjustment Mechanism (CBAM), which is implemented as part of the Climate Action Plan as one of the policy areas of the EGD, aims to accelerate structural transformation in the economy through regulation. Details on the CBAM to prevent

carbon leakage were submitted under the proposal of the Fit For 55 package on July 14, 2021. The CBAM which can have significant effects on labor markets as a result of structural transformation, is designed to complement the Emissions Trading System implemented in the EU. Under the CBAM, EU importers are required to obtain carbon certificates for imported goods (the amount corresponding to the carbon price to be paid under the EU's carbon pricing rules). CBAM, which is planned to be implemented in 2026 as part of the draft and is planned to include the cement, electricity, fertilizer, iron and steel, aluminum industries in the beginning and to include other industries in the later periods. In the forthcoming period, additional costs resulting from CBAM are expected to be a significant cost element for the large-scale companies that export. In addition, SMEs operating alone or as part of value chains are likely to be adversely affected by the new practice if the necessary transformation is not achieved.

The circular economy strategy implemented within the scope of EGD has been designed with a focus on both digitalization and innovation. In this context, the production of climate-neutral and circular products is aimed. Herein, while the production of climate-neutral and circular products is targeted, the circular design of all products produced in resource-intensive sectors such as construction, plastics, textile, and electronics is planned under the sustainable product policy. Resource efficiency and circular economy policies aim to limit environmental impact by minimizing resource intensity and utilization throughout the economy. In addition to the environmental benefits provided by the circular economy practices, a structural change is possible in the economy as a result of the transition from resource-intensive activities to labor-intensive operations, increasing employment opportunities. While the transition to new business models can lead to job losses in primary production, on the other hand, it can support the creation of business models, for example, in repair and sharing in service sectors, and the emergence of new job opportunities in areas such as recycling¹.

The ongoing recovery process following the economic crisis caused by the Covid-19 pandemic also coincides with a time when we have to be active in the fight against climate change. The lockdown measures experienced during the pandemic have had a profound effect on employment, and unemployment rates have increased, especially for women and vulnerable groups in the informal economy. The current circumstances emphasize the importance of employment-oriented policies in terms of green transformation and economic recovery.

Even though the economic stimulus packages and recovery plans implemented by governments following the pandemic have the potential to create green and inclusive growth, when the expenditure dynamics are analyzed, there is a picture that no parallel approach is available in both developed and developing countries. In a study conducted by the Global Recovery Observatory, total expenditure on the 50 largest Covid-19 countries was \$14.6 trillion (16-17% of Global GDP), of which nearly 76% (\$11.1 trillion) was spent on short-term recovery funds (liquidity support, tax deduction) and 13% (\$1.9 trillion) on long-term growth-oriented (training, investment, industry incentives) expenditures (O'Callaghan et al. 2020). Only 2.5 percent of all expenditures were made within the scope of sustainability. In developed economies, while green expenditures spread to a variety of policy areas; in developing economies expenditures were limited to clean energy and natural infrastructure categories. Technological barriers, lack of infrastructure (for example, sufficient electricity grids for powering electric vehicles), insufficient innovation capacity in R&D, and under skilled workforce hinder diversification of investments in developing countries. In developed countries, although the investment range is wider (clean transportation infrastructure, electric vehicles, clean energy, buildings, green markets, R&D), despite the high global unemployment and the damage to human capital during the COVID-19 period, expenditures on worker retraining in 2020 are at very low levels.



¹ For example, employment in primary metal production may be substituted by secondary metal production jobs or recycling.



4. GREEN JOBS: DEFINITION, SCOPE, IMPACT

4.1. Definition and Scope

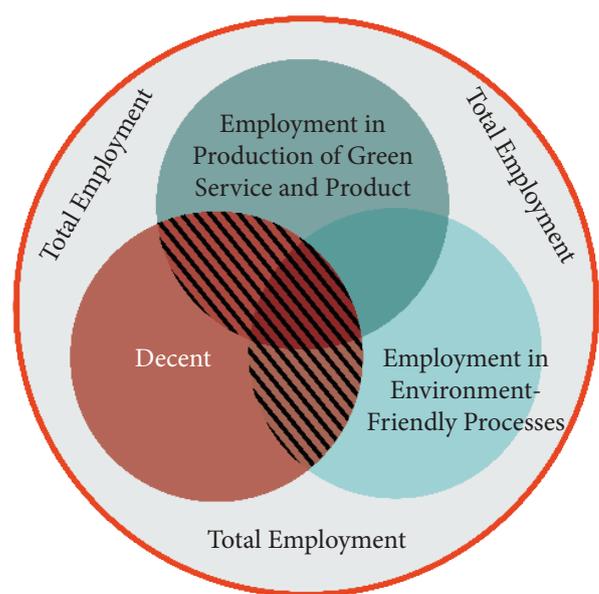
Although many international organizations define green jobs, there is no consensus in the literature on the definition of green jobs (Megersa, 2021). While some definitions of a green job consider the environmental characteristics of the final product produced by the company, some studies include employment at different stages of the supply chain related to the production of final green products and services.

Environmental goals and social development are considered two complementary areas for sustainable development. Therefore, any job related to an economic activity aimed only at environmental sustainability does not require this job to be classified as a green job. In order for a job to be categorized as a green job, it must also offer decent work conditions. For example, jobs involving low-wage or informal workers installing solar panels, workers in the recycling of electronic waste with insufficient occupational safety, or child labor but aiming at environmental sustainability are not categorized as green jobs. Therefore, while creating jobs in the context of maintaining environmental sustainability an integrated approach that aims to ensure both social inclusion and alleviation of poverty is required (ILO, 2013).

The common ground of these definitions is that green jobs are both “environmental” and “decent jobs” (Megersa, 2021). According to the definition of ILO, green jobs are jobs that provide sustainable businesses and economies in environmental, economic, and social terms by mitigating negative environmental impacts. In line with this definition, green jobs are decent jobs that reduce energy and raw material

consumption, limit greenhouse gas emissions, minimize waste and pollution, protect and repair ecosystems².

Figure 2: Definition of Green Job



Source: ILO

4.2. Potential Impact of Green Growth on Employment

Different economic models analyze the impact of structural changes on sectoral employment that will take place as a result of fighting climate change. Within this framework, the main research question arises as to what impact a structural change will have on employment and how it will affect various sectors. It is estimated that employment in resour-

² (Green Jobs, n.d.)

ce- and carbon-intensive industries will decrease as a result of structural transformation, while new job opportunities will increase in sectors that target environmental sustainability and their supply chains. It is important to note that the estimation results of these studies are different because of the models and assumptions used in the analysis.

A study by OECD based on the ENV-Linkages model reveals that a well-designed emission trading system can allow the gross domestic product (GDP) to continue growing (although at a slightly lower rate) while sharply reducing greenhouse gas emissions (OECD, n.d.). OECD modeling, on the other hand, points out small net effects on total employment but emphasizes that greater gains can be made if the right policies are implemented. This suggests that green growth could be a powerful tool for helping developing economies tackle unemployment. In order to achieve this goal, training sessions that enable workers to easily move from the sectors where the employment will decrease, especially from the fossil fuel sectors to the renewable energy sectors where job opportunities are rapidly increasing are required.

Within the scope of green transformation, renewable energy sector is expected to offer a significant potential for employment. The International Renewable Energy Agency (IRENA) estimates that total energy sector employment could reach to 100 million by 2050, up from 58 million if all global renewables are used (IRENA, 2020). The International Energy Agency Sustainable Recovery Plan, published in June 2020, emphasized that approximately 4 million additional jobs can be created globally through public and private investments by taking further action targeting energy efficiency.

The potential of green transformation to create additional employment with the widespread use of circular economy practices has been frequently mentioned. For example, a recent study (Cambridge Econometrics, 2018) states that the implementation of circular economy principles in the EU economy has the potential to increase the EU GDP by 0.5 percent by 2030 and generate approximately 700.000 new jobs. According to a 2020 study by the OECD, which analyzed approximately 15 different modeling and 47 scenarios, it was emphasized that resource efficiency and circular economy policies could increase employment by 2 percent.

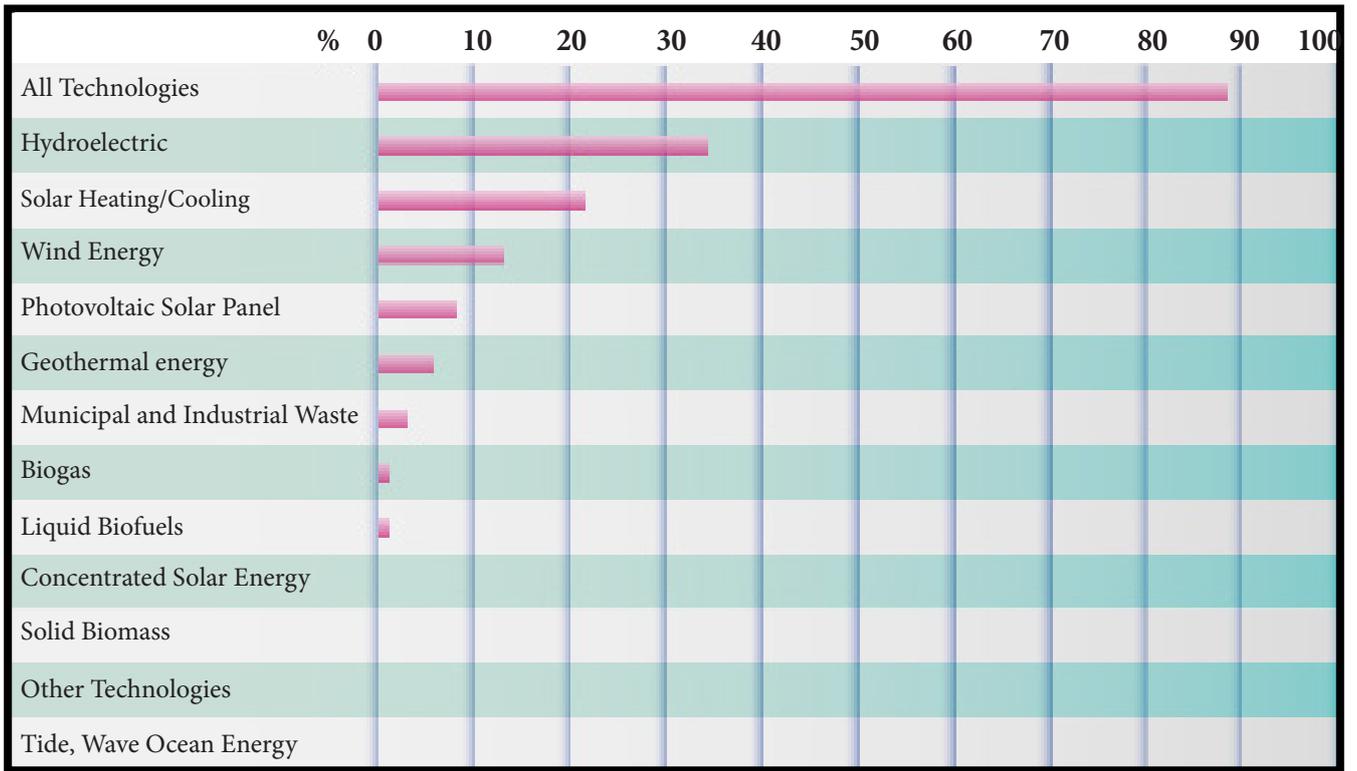
4.3. Key Sectors in Turkey

The workshop highlighted the potential of the impact of green transformation on production processes to affect employment in all sectors. The key sectors in creating green employment in Turkey were evaluated as energy, manufacturing, agriculture, construction, transportation, service, and waste management.

Other highlights of the workshop include:

1. **Circular Economy / Entrepreneurship:** It is crucial to create new design-focused business models with an interdisciplinary approach -by not remaining limited with the waste management- through the circular economy. Circular economy practices targeting resource-intensive industries such as electronic, plastic, and textile construction bring new business opportunities and entrepreneurship areas.
2. **Digitalization and Green Transformation:** Enterprises that simultaneously support digitalization and green transformation have the potential to play a significant role in green transformation.
3. **Supply Chain Channel:** The role of the supply chain is crucial in the green transformation process. The workshop at which the e-commerce industry was discussed in particular, assessed the potential that the implementation of solutions such as electric transportation and green transportation alternatives in the supply and delivery chain, which make the biggest carbon emissions in these sectors, could contribute to employment in this field.
4. **Potential for Renewable Energy:** The workshop underlined the positive impacts of increasing renewable energy sources on employment and emphasized potential of Turkey in this field. According to current data, the renewable energy sector employs 88.000 people. The Future Skills and Job Creation through Renewable Energy in Turkey report estimates that it is possible to create 61k full time equivalent jobs in solar energy and 148k full time equivalent in wind energy by 2028 (IASS-Potsdam & Sabancı University-IPC, 2019).

Figure 3: Employment in the Renewable Energy Sector (2020) (Per thousand)



Source: IRENA





5. VULNERABLE GROUPS: SME, WOMEN, AND YOUNG UNEMPLOYED PEOPLE

SMEs are a major driver of green transformation in terms of their capacity for the creation of employment. In Turkey, there are 3.2 million SMEs operating in sectors excluding agriculture, compared to approximately 7,000 large companies. While SMEs accounted for nearly 72.4 percent of total employment in 2019, SMEs with 50 or less employees provided approximately half of the registered employment increase in the 2009-2019 period.

The innovative and dynamic structures of SMEs encourage eco-innovation and offer the opportunity to create new business models that aim to limit environmental impacts.

SMEs, on the other hand, are hesitant to act on climate change (Flash EuroBarometer 456). A significant portion of SMEs lacks sufficient information and awareness about the positive impact of actions taken to limit environmental impacts on costs. When we look at the obstacles faced by SMEs on sustainability, the most important of all are the concern that action for sustainability will not be profitable, the lack of financial resources, and the lack of consumer demand (Flash EuroBarometer 486).

In the green transformation process that has gained momentum with the European Green Deal, the transition to production structures aiming at limiting environmental impacts is not a preference but an obligation for maintaining competitiveness. Therefore, it is crucial to raise awareness in SMEs that the investments made in the green transformation process will have a positive impact on their profitability in the long term. Although the costs associated with CBAM are expected to cause additional expenditures to the large and medium-sized exporters in the first phase, small-scale enterprises that are suppliers

of large companies will face the risk of losing their competitive capacity due to the impact the transformation will have on the supply decisions.

Circular economy practices create significant potential for SME-based jobs. The new SME strategy submitted under the European Green Deal also stresses the importance of the circular economy for SMEs. Within the scope of the European Resource Efficiency Knowledge Center and Enterprise Europe Network, it is aimed to promote information transfer and circular industrial collaborations aiming training and consultancy among SMEs.

Besides their significant roles in the creation of new jobs, SMEs also have the potential to create inclusive business models. For example, by integrating certain segments of the population into their business models, SMEs can take on an inclusive role aiming at women, youth, and regional disparities. Regardless of their business model, SMEs also function in local markets where large companies are not interested, helping to increase inclusiveness in these regions. Supporting SME- and women-oriented policies is important, particularly in the tourism, food, and health sectors, where women are intensively employed.

Women's workforce participation rate (15+ years), which had increased to 35 percent in the pre-pandemic period, decreased below the 30 percent level during the pandemic period. When we consider the international comparisons, Turkey has the lowest workforce participation rate of women among OECD countries. The workforce participation rate of women aged 15-64, which is 63.8 percent on average in OECD countries, has reached 35 percent in Turkey as of 2020. Turkey is also in the last place among OECD countries, considering the percentage

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of women in the 20-24 age group who are neither in employment nor in education. According to the 2021 Gender Equality Report of the World Economic Forum (WEF), Turkey ranks 133rd in the ranking of 156 countries.

The policies adopted to increase women's participation in the workforce should take into account the sectoral differences. Particularly, the emergence of some new green work opportunities in men-dominated industries (renewable energy, production, and construction) could negatively affect women employment. For example, in Bangladesh, there is a picture of the growth of green employment that was created as part of the rural electrification system as a result of the increase in the number of solar energy household systems installed. In this example, it is aimed to strengthen women's employment through vocational trainings that include women in particular.³

When we look at the youth, another vulnerable group, the unemployment rate among the young population (15-24 years old) is 25.1% as of the end of 2020, well above the OECD average of 15%. The ratio of young people (aged 20-24) who are neither in education nor in employment, in the total youth is 33.3 percent in Turkey, whereas the OECD average is 15 percent. Inadequate level of technical skills, lack of education and training opportunities,

and skills mismatch stand out as the main problems young people face in labor markets (TSKB, 2021).

Industries such as agriculture, energy, construction, tourism, and environmental services have great potential as part of green jobs for young people. Young people are also more likely to gain new skills and competencies required by employers in a green economy. To meet the requirements of regional or national labor markets and to establish vocational training programs, platforms involving the private sector, public sector, and other stakeholders must be created.

Demographic changes must be taken into consideration when creating green employment policies. The population aged 65 and over, which is considered the elderly population, increased by 22.5% (between 2015-2020) and reached approximately 8 million in 2020 (TÜİK, 2021). The fact that 64.7 percent of the working elderly population is in the agricultural sector underlines the need for policies that will channel the young population to the agricultural sector.

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³ Training was provided on configuration and positioning of solar heating systems, installation procedures, maintenance and troubleshooting.



6. GREEN JOBS AND SKILLS

Green transformation is expected to change the demands for professions in different sectors. As a result, it is estimated that new job definitions will emerge, existing job descriptions will change, and some jobs will disappear. In line with these new demands, the skills and training levels of the existing workforce need to be suitable for newly created jobs. Research shows that new jobs' skill and talent requirements created during the transition to a low-carbon economy are not significantly different from existing jobs and that skills required by new jobs can often be acquired through on-the-job training programs. (Bowen et al. 2018).

On the other hand, there will also be a need for a high-skilled workforce emerging within the scope of green jobs, especially within the scope of new occupations (such as climate change specialists; energy inspectors, energy consultants; carbon trade analysts). For example, an analysis of the employment skill distribution needed until 2028 in the renewable energy sector reveals that the rate of employment in jobs requiring high skills is 24 percent in the solar energy sector and 30 percent in the wind energy sector. In this respect, it should be noted that besides vocational training, the steps taken to keep the general level of training high will contribute to the development of an adaptable workforce.

It is expected that traditional labor-intensive work processes will be replaced by automation-based production techniques, especially in the agriculture and manufacturing industry, with technologies such as artificial intelligence, automation, and robotics, within the scope of the future of jobs, which is one of the critical topics of today. This change will result in eliminating some labor-intensive jobs, the emergence of new jobs, and changes in job descriptions in existing professions. In this process, the need for basic cognitive skills, manual and physical skills will decrease, while the demand for technological, social, emotional, and higher cognitive skills will increase (McKinsey, 2021). Therefore, it is also important to evaluate to what extent green jobs, which are a subset of the jobs of the future, overlap with the skill-

ls required by today's professions.

Although skills development programs facilitate the transition to a green economy, they are not yet sufficiently present in policy discussions. Skills development programs are crucial for a fair transition. 193 countries submitted national commitments to limit greenhouse gas emissions under the Paris Agreement as of October 2021. According to research within the scope of Nationally Determined Contributions, approximately two-thirds of countries acknowledge the importance of capacity building and awareness on climate change in these statements. On the other hand, less than forty percent of these countries incorporate skill development and training actions to support these practices, whereas 20 percent do not plan any educational activities (ILO, 2019).

Platforms with the participation of social partners are required to identify skill gaps, and it is important to use these platforms to create roadmaps, especially for some sectors directly involved in the transition (such as renewable energy and waste management). National environmental regulations of countries also refer to skill-building; however, sectoral (particularly energy) or regional provisions for the determination of skill requirements are minimal, especially for target groups (e.g., young people). There is no consensus on skill requirements in many countries on adaptation to green growth, and the provision of relevant data is limited for such definition. As a result, skills improvement policies designed within the scope of green transformation have a short-term and non-holistic approach. To identify skill requirements and formulate the necessary training programs in line with labor market needs, it is required to accelerate the efforts carried out in this context by providing more awareness of environmental issues (ILO, 2019).



7. POLICY RECOMMENDATIONS

Policy recommendations were submitted under four headings: awareness, training, incentives/regulation/inspection, and financing, by using the evaluations from the participants and the relevant literature on green jobs.

7.1. Awareness

There is a lack of awareness in Turkey regarding the green transformation process and its impacts on labor markets. Raising awareness not only on the production side but also on the consumer side has the potential to transform production models through demand and creating new employment opportunities. The policy recommendations to raise awareness made as part of the workshop are listed below.

Public Awareness

1. Raising awareness of individuals on reducing their carbon footprints by teaching environmental awareness through the formal education system (e.g., adding green transformation to the curricula in high schools and universities).
2. Ensuring environmental awareness in society through platforms with different stakeholders (e.g. Wind energy training given to university students by Izmir Development Agency, BE-TAM, and Çankaya Municipality preschool teachers training).

Awareness in Companies

3. Increasing awareness of green transformation processes in SMEs (e.g., circular economy, resource, energy efficiency, waste management).

4. Developing platforms to learn from the best practices that have been successful in the field of industrial symbiosis and encouraging different stakeholders, including SMEs, to work together to increase the number of industrial symbioses.

Awareness in Labor Unions and Cooperatives

5. To ensure fair transition and to raise awareness on the impact of green transformation on labor markets, incorporate labor unions in the process by raising awareness at presidential level; determine good practices by obtaining information on these processes adopted in other international labor unions.
6. Considering cooperatives as key partners within the scope of green transformation and employment, taking into account their potential role in the social, economic, and ecological change in providing green employment.

7.2. Training

Green transformation is expected to result in gains and losses of jobs in different sectors of the economy. The creation of new jobs may not necessarily co-occur as the job loss, and there is a possibility that new jobs may not be created in geographical regions where job losses emerge. In addition, the skills of lost employment may not match the skills required for new jobs. To ensure a fair transition, it is important to train the employees in the lost sectors in line with the new jobs and establish a suitable workforce for the new jobs. Policy recommendations to be developed as part of the training are as follows:

1. Identifying target sectors with the potential to create green employment, taking into account dynamics at regional and sectoral levels.
 2. Creating industry (such as renewable energy and waste management) roadmaps to identify skill gaps through platforms involving social partners (local organizations, professional organizations, labor unions, educational institutions, the public) and predicting the low, medium, and high skills workforce needed in related sectors.
 3. Designing training programs by recognizing skill gaps in the target sector and expanding the training programs for vulnerable groups.
 - Creating training programs to provide energy efficiency, resource efficiency, and waste management services, especially for SMEs in the manufacturing sector.
 - Widespread training programs in companies operating in the tourism, food, and health industries with high women's employment rates.
 - Contributing to the reduction of unemployment through skill development programs by including vulnerable groups, especially young people, to potential job opportunities that may arise due to demographic transformation, particularly in the agricultural sector.
 4. Revising the content of the vocational and undergraduate education.
 - Revising the content of vocational training and improving its image: In this context, revising vocational and technical training curricula for employment in industries that have the potential to create green employment (such as Hotel Management and Tourism Vocational High Schools and Agriculture Vocational High Schools) by taking the opinions of platforms that contain different stakeholders (municipalities, chambers of commerce and industry, OIZs) with the required skills. (eg.; Cooperation between the Union of Chambers and Commodity Exchanges of Turkey (TOBB) and the Ministry of National Education (MEB) on shaping the curriculum of the vocational high schools and their staff)⁴.
- Undergraduate and graduate education: Revising the curricula of departments that have a close relationship with this process, such as environmental engineering, agricultural engineering, geography (climatology), to support the interdisciplinary approach required in the green transformation process; adding additional courses to the curricula of other departments such as economics and business (e.g., circular economy), although their relevance may seem weak. Making the recruitment process more practical through company-school matching projects (example of Military Electronics Industries (ASELSAN)-Ankara Science High School).

7.3. Incentives, Regulations, and Inspections

It is essential to determine the required standards and establish regulations and inspection mechanisms in creating an ecosystem that supports the creation of green jobs. In order to prevent cost pressures caused by environmental policies from being an obstacle to employment, incentive mechanisms must be strengthened as well. The assessments submitted in this context are listed below.

1. Implementation of regulations by the central administration on strict and equal terms; strengthening the inspection and control mechanisms related to the existing policies (e.g., tourism industry waste management).
2. Identifying and aligning sustainability standards regarding the transition process.
3. Creating independent inspection mechanisms on sustainability and evaluating the role of stakeholders of international companies in this context.
4. Strengthening incentives regarding the green transformation process.
 - Developing the incentives for domestic production in the public procurement legislation within the framework of green transformation.
 - Training and consultancy incentives: Providing incentive mechanisms for companies to receive consultancy on vocational training and the transition to green production processes.

⁴ TOBB. (n.d.).

- Considering the positive relationship between the minimum wage and the informal economy when creating green jobs; reducing the tax burden on the minimum wage, which is above the OECD average, as part of the minimization of informal unemployment.
- Re-evaluating insurance premium incentives applied in different segments of the workforce within the scope of green jobs in order to reduce labor costs.

7.4. Financing

The realization of the green transformation will only be possible when adequate financing is provided. The financing channel, which is an important catalyst of the transformation, is vital for SMEs, which consider the lack of financial resources as one of the most important issues in terms of sustainability. In addition, the entrepreneurship ecosystem should be supported to create new business models. The following are the assessments that have been developed within the scope of the workshop and other research on financing.

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1. Supporting the innovation environment and entrepreneurship.
 - Supporting entrepreneurship to create new business models within the circular economy.
2. Diversification of financing channels (e.g.: establishing a central fund and coordination mechanism for energy transformation in the public sector , expanding impact investments and fintech enterprises),
3. Promoting different financial solutions for SMEs (e.g., matching platforms between impact investment enterprises, climate investors, and SMEs, providing technical assistance to the local financial sector on financing and valuation of climate projects (ITC, 2021)).
4. Providing consultancy services on financing opportunities and financial planning by eliminating the financial difficulties in SMEs.
5. Organizing training programs for non-governmental organizations and social cooperatives on climate change and access to finance.



⁵ (“Türkiye’nin Enerji Dönüşümünde İklim Finansmanı Önemli Rol Oynuyor,” 2020)



CONCLUSION: 9 RECOMMENDATIONS IN THE GREEN TRANSFORMATION PROCESS

The green transformation process, which will continue to be the main topic in the upcoming period, is expected to bring along significant changes in both production and employment markets. Targeted and holistic policy design to prepare for this transformation plays a key role in ensuring a fair transition and fighting the unemployment problem in vulnerable groups. With the participation of stakeholders in the ActHuman IV Social Inclusion Initiative, the integration of climate change from employment to production in the green transformation process in Turkey was addressed; and necessary policy recommendations were emphasized in preparation for this process.

The workshop outcomes are summarized under the following nine recommendations.

- 1. Raising awareness about the green transformation process:** Raising awareness about green transformation in every part of society is vital in terms of preparing for this process and preserving competitiveness. It is necessary to raise awareness not only on the production side but also among consumers and labor unions and cooperatives that have the potential to play an essential role in transformation.
- 2. Networking:** It is essential to create networks that encourage different stakeholders to work together to share information. Accordingly, using platforms involving social partners can realize more effective planning for the production and skill transformation needed by the relevant industries and regions. Through these platforms, it will be possible to contribute to the public vision regarding employment policies. In networking, labor unions, regional development agencies (especially in the agricultural sector), coopera-

tives, municipalities, international institutions, universities, NGOs and ministries are important stakeholders. The industrial, commercial and agricultural chambers as well as KOSGEB (Small and Medium Industry Development Organization) play a key role in SME networks. It is important to create platforms that can learn from the best practices that have been successful in the field of industrial symbiosis and encourage different stakeholders (particularly OIZs), including SMEs, to work together in order to increase the number of industrial symbioses. In the agriculture sector, the formation of networks, including agriculture and farmer associations, can serve as an example of spreading good practices.

- 3. Considering spatial and sectoral factors in policy design:** It is important that any changes in production or employment that occur as a result of the green transformation be planned by considering spatial and industrial dynamics. In this context, it is crucial to determine the target sectors and regions that can create employment, to estimate the workforce with the different skill levels that will be required in these sectors and/or regions, and to train the current workforce in line with these needs to achieve a fair transition.
- 4. Supporting vulnerable groups:** Information and training activities that will enable the participation of vulnerable groups in the transformation should be developed according to the specific needs of these groups and required incentive mechanisms should be provided. Possible activities under this topic are listed as follows:
 - Conducting trainings on energy efficiency, resource efficiency, and waste management for SMEs.

- Expanding training programs in transition to a green economy in tourism, food, and health industries with high share of women employment.
 - Including youth to potential job opportunities in the agricultural sector through skills development programs.
5. **Improving the image of vocational training and revising its content:** Awareness should be raised among the public on the necessity and importance of vocational training, and good examples should be shared in this field. It should be ensured that vocational training is a field that is preferable to different segments of society. It is essential to revise the vocational and technical training curricula that provide employment in sectors with the potential to provide green employment in a way that includes the necessary skills by taking the opinions of different stakeholders (Municipalities, Chambers of Commerce and Industry, OIZs).
 6. **Supporting innovation and entrepreneurship:** In the long term, innovation-focused business models are the key to technological transformation. During the green transformation process, it is essential to support innovation and entrepreneurship to spread environment-friendly business models such as adopting circular economy practices in particularly resource-intensive sectors and their supply chains.
 7. **Providing information on the diversification of financing channels and financing opportunities:** The green transformation process will not be possible unless sufficient financial resources are provided. In order to achieve this financing, it is crucial to provide information to SMEs on current facilities and planning and to diversify the financing channels. Promoting different financial solutions for SMEs (e.g., matching platforms between impact investment enterprises, climate investors, and SMEs, providing technical assistance to the local financial sector on financing and valuation of climate projects) (ITC, 2021) plays a vital role in this process.
 8. **Incentive, inspection, and control mechanisms:** It is possible to accelerate the transition to green production processes with incentives and regulations. In addition, the central government needs to strengthen the inspection and control mechanisms regarding existing policies by applying the regulations under strict and equal conditions. Incentive mechanisms need to be strengthened so that the cost pressures that environmental policies may create do not become an obstacle to employment.
 9. **Data creation and sharing:** It is important to generate statistics on green jobs and green production processes for policy making and monitoring. In addition, it is possible to contribute to policy-making with data-oriented strategies by sharing data with local and central governments.

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APPENENDIX - 1

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INTEGRATION INTO CLIMATE POLICIES

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