

GREEN WORK PLACES AND THE NECESSITY OF MEASURING GREEN ECONOMY

Ghenadie CIOBANU,

PhD., National Scientific Research Institute For Labour and Social Protection, Bucharest, Romania, Gciobanu01@gmail.com

Florentina Olivia BĂLU

University of Geneva, Elvetia

Irina Elena PETRESCU

Lecturer Ph.D., Bucharest University of Economic Studies, Bucharest, Romania

ABSTRACT

In this article we presented the areas of intelligent specialization for the 2014-2020 strategic cycle, identified by their scientific and commercial potential, following an extensive consultation process, as being Bio-economy, information and communication technology, space and security; energy, environment and climate changes; eco-Nano-technologies and advanced materials. The concept of "green economy" has as general objective a shift towards an economy that is compatible with sustainable development and this new form of economic development should be seen as an adaptation of the economic system in the long run to the various crises it may face. This article presents the findings of a sociological research carried out with respect to the green work places with companies in Romania.

KEYWORDS

Green economy, bio-economy, eco nanotechnologies, green work places

1. STRATEGIC OBJECTIVES

"Within the National 2014-2020 CDI Strategy a special attention has been paid to intelligent specializations. We therefore note that *"Intelligent specialization supports the reorientation of CDI policies towards those research activities that deliver results of economic relevance. The areas of intelligent specialization areas for the 2014-2020 strategic cycle, identified based on their scientific and commercial potential, following an extensive process of consultation, are: (1) Bio-economy, information and communication technology, space and security. (2) Energy, Environment and Climate Changes.* The research conducted in the field of energy support the reduction of energetic dependence of Romania, through a higher use of fossil fuels, diversification of national sources (nuclear, renewable, clean), multifunctional transport ("smart grids"), increasing consumer efficiency (3) **Eco-Nano-technologies and advanced materials.** (The 2014-2020 National Strategy for Research Development and Innovation)

Transforming the entire world economy into a veritable **"green economy"** fostering growth and creating jobs, but preserving the planet, would be possible if annual investments of 2% of the world gross domestic product (GDP) would be made in ten key sectors, as stated in a report of the UN (United Nations). "Green Economy" is a model that allows for the conservation of natural resources and halting of gas emissions with greenhouse effects and at the same time, for a reduction of poverty, ensures the report of the United Nations Environment Programme (UNEP). The report, which refers to the 2011-2050 period, compares a scenario based on the current economic model with a "green" scenario, in which approximately 2% of the global GDP (1,300 billion US dollars) is invested annually in ten key sectors. Following this simulation, it was found that "green economy" would generate a short-term economic growth lower than the current model, but would be more efficient starting with 2020, both economically and socially and environmentally. The "green" scenario would immediately ensure more jobs in several sectors (agriculture, transport, construction, etc.), although in other sectors (e.g. fishing), the transition would mean a reduction of time needed to reconstruct the natural stocks. Although the causes of these crises vary, they all have basically a common feature: the poor division of capital. With over 3 million jobs across Europe, "green" economic activities are situated before polluting industries in terms of the number of employees. This is the overall conclusion of a study initiated by WWF, entitled *"Low carbon jobs for Europe"* («Jobs in the European economy with low carbon»). (Ghani-Eneland, M, et al, 2009)

The study shows that about 3.4 million jobs are directly related to the renewable energy sector that of sustainable transport and goods and services based on low energy consumption. Polluting industries, such as mining, gas, electricity, cement and metal processing, total 2.8 million jobs across Europe. The figures available in WWF study indicate 400,000 employees in the area of renewable energy, approximately 2.1 million in sustainable transport and 900,000 in goods and services industry are based on a small consumption of energy. These jobs include, for example, the production, installation and maintenance of wind turbines and solar panels or building activities for energy efficiency with existing buildings. All these activities show a considerable growth, especially those based on wind, photovoltaic cells and bioenergy. (Ghani-Eneland, M, et al, 2009)

2. THE CONCEPT OF "GREEN ECONOMY"

The concept of "Green Economy" debated initially in specialized environments with reference to environmental economics, penetrated more and more the international debate on sustainable development and in the political discourses on Environment and Development. We see it in the speeches of heads of state, finance ministers, in G20 communiqués, in the work of international organizations (OECD, ILO, IMF, World Bank, EBRD, EIB) being discussed in the context of sustainable development and poverty eradication. The recent concern for a green economy has been fuelled by disillusionment caused by the malfunctioning of markets, the multiple crises arising in the first decade of the new millennium, particularly economic and financial crisis of 2008. "The challenges of climate and resource require drastic actions. Strong dependence on fossil fuels such as oil and inefficient use of raw materials expose our consumers and businesses to harmful and costly price shocks, threatening our economic security and contributing to climate changes. Increasing world population from 6 to 9 billion will intensify global competition for natural resources and put pressure on the environment. The Europe 2020 strategy should focus on three priorities: - Smart growth - developing an

economy based on knowledge and innovation; - Sustainable growth - promoting a more efficient economy in terms of resource use, greener and more competitive; - a favourable growth of inclusion - promoting a more efficient economy with a high rate of employment, able to ensure economic, social and territorial cohesion. These three priorities are mutually reinforcing and provide an overview of the European social market economy for the twenty-first century. " (Communication from the Europe 2020 Commission)

3. THE OBJECTIVES OF BUILDING A GREEN ECONOMY FOR DEVELOPING COUNTRIES

The transition to "green economy" - is the most important prerequisite for reducing chronic poverty - the most visible manifestation of social injustice caused by unequal access to education and health services, the expansion of credits and unequal income and respect for property rights protection. The key feature of the "green economy" is that it creates opportunities for economic development and poverty reduction and not for the eradication and destruction of the natural heritage of the country.

According to the National Strategy for Sustainable Development of Romania 2013-2030 "To reduce the negative impact of human activities on the environment, the EU Action Plan on sustainable consumption and production will begin during the reference period by employing a systematic and permanent dialogue with employers' associations and with social partners in view of agreeing on environmental and social performance targets for key products and processes. Implementation of the measures contained in the ETAP action plan, introducing green technologies and eco-innovation by applying stimulating a national road map, will bolster the demand and production of equipment and procedures for this purpose in all companies and sectors of the economy." (National Strategy for Sustainable Development of Romania 2013-2030)

According to the Green Economy Study in the context of sustainable development and poverty eradication all stakeholders should realize that *Green economy aims generally to shift towards an economy that is compatible with sustainable development and this new form of economic development should be seen as an adaptation of the economic system on long term to the various crises they may face.* (http://beta.ier.ro/documente/arhiva_evenimente_2011/Economia_verde_in_contextul_DD_si_ES.pdf)

4. STUDYING THE METHODOLOGY FOR MEASURING GREEN ECONOMY AND GREEN JOBS

In the study of the International Labour Organisation "Proposals for the statistical definition and measurement of green jobs" measuring production and employment in the green sector of the economy was also strongly requested by political and legal departments who need reliable statistics harmonized internationally with regards to green jobs to facilitate (i) a better understanding of the impact in terms of "greening the economy" on the labour market, and (ii) ensuring that effective measures and policy instruments are formulated to respond to this shift towards a green economy. The request for statistics on green jobs is growing proportionally with the challenges of managing the environment. Climate changes, biodiversity loss and natural resource demand are on a list of environmental issues on which decisions must be taken. (http://www.ilo.org/wcmsp5/groups/public/---dgreports/-stat/documents/event/wcms_195698.pdf)

4.1. Objectives and uses of statistics on green jobs. General requirements and types of users

The statistics on green jobs could be of interest to a wide variety of users including, but not limited to the general public, the media and civil society, decision and policy makers concerned with policies on economic growth, job creation employment, environmental protection, climate change and sustainable development, as well as analysts, experts and advisers, academics, training institutions, government officials and international agencies.

4.2. Groups of indicators

Before analysing what needs to be understood "the concept of green jobs", it is useful to consider related terms such as "green economy". Although the exact definition of "green jobs" varies between organizations, however there are more similarities than differences in what is considered a green economy. For products and services, most definitions include: (1) ecological approaches and strengthening green products and services; (2.) Renewable energy products and transport services; (3) Fuels; (4) Green Buildings. Some definitions also include the processes by which these products are produced and services. These include: I) Manufacturing, distribution and energy efficient construction; II.) Reduction of energy, materials, and water consumption through high efficiency strategies; III.) According to the ILO, green jobs should also be decent jobs.

Environmental activities. Accounting System in the Centre for Economic Environment adopted by the Statistical Commission of the United Nations Session 43 in 2012, defines the environment activities in which these economic activities whose primary purpose is to reduce or eliminate environmental pressures in order to make more efficient use of natural resources. The environmental protection activities are defined in the SEEA where the main aim is to prevent, reduce and eliminate pollution and other forms of environmental degradation. Producers of goods and environmental services. (http://www.ilo.org/wcmsp5/groups/public/---dgreports/-stat/documents/event/wcms_195698.pdf)

According to the OECD study (2014) "OECD Green Growth Studies, Green Growth Indicators 2014" the Measurement Framework has identified between 25 and 30 indicators in four main categories: productivity of the environment and of the resources of the economy based on natural active environmental dimension of quality of life and economic opportunities and policy responses green growth. The indicators describing the socio-economic context and characteristics of growth completes the picture. The set proposed is neither exhaustive nor final. It was kept sufficiently flexible so that countries can adapt to different national contexts. The set will be developed further as new data becomes available and evolving concepts, but also because it is receiving feedback from applications of policy indicators. Groups of indicators and topics covered: 1. Productivity environmental and resource productivity include resource productivity economy; (Carbon and Energy: materials, nutrients, water, and multi-factor productivity); 2. Basis of natural assets (Inventory renewable non-renewable Stocks: mineral resources, biodiversity and ecosystems); 3. The size of the environment and quality of life (health risks, environmental services and environmental facilities) 4. Economic Opportunities and policy responses (Technology and innovation, goods and services, international financial flows, rates and transfers, skills and training, regulations and

environmental management, growth characteristics, economic growth and structural, productivity and trade socio-economic; Models; socio-demographic labour market).

The monitoring indicators of environmental productivity and economy resources.

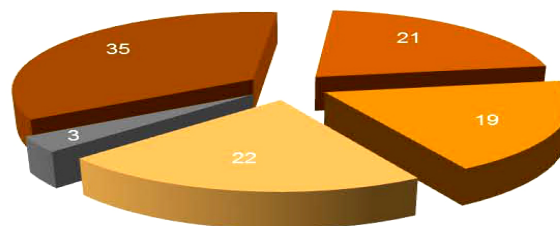
The indicators of effective monitoring of economic activities - are both production and consumption - use of energy, natural resources and other environmental services from natural capital. The indicators in this group reflect key aspects of the transition towards an efficient economy of low carbon resources and focuses on: - Carbon and energy productivity - economic output generated per unit of CO₂, or total primary energy supplied. - Resource productivity - the economic output generated per unit of natural resources or materials used. - Multifactor productivity adjusted for using the environment and natural resources. Increased productivity through efficient use of natural resources and ecological services can create opportunities for new markets and jobs. Most indicators of environmental and resource productivity are based on production; they are the direct environmental flows "used" or "generated" by domestic production and final consumption later.

5. SOME RESULTS OF THE SOCIOLOGICAL STUDY DEVELOPED WITHIN THE PROJECT

The quantitative research report was conducted by IMAS Marketing and Polls in the project PN 420 124 - Assessment of the potential to generate green work places of the Romanian economy, Bucharest, November 2015. (The interviews were distributed by geographic regions, taking into account the same criteria above. Thus, for region 1, Transylvania, 55 interviews were allotted, for region 2, Muntenia 52 interviews were allotted, for region 3 Moldova, and 22 interviews were allotted and for Bucharest were allotted the remaining 21 interviews. Since the sample was designed by quotas, the resulting structure after completion of the field corresponds to the structure projected. Given the high rate of refusal for such studies, and the likelihood that some of them cannot be contacted (outdated data) it was necessary to select for interview approximately 800 companies.

The main aim of the study was to capture the perceptions and attitudes of employers with regards to green economy and to gather information and recommendations thereof for generating green work places, given the need to align our country to the European strategy "Europe 2020 - a European strategy for smart, sustainable and inclusive growth". In other words, the study sought to identify through a nationally representative investigation type research based on a questionnaire, within companies, the potential for development of 'green' products and services and production processes in Romania and associated to them, the development of specific jobs, adapted and / or associated to such products, services or production processes, i.e. "green work places". To that end, "green" jobs were defined as jobs involved in the production of goods / services that contribute to reducing or maintaining the current level of emissions of any kind, make "ecological" type products, provide specific ecological services or introduce ecologic technologies or that are part of production processes defined as "green", "natural", "traditional" or which by itself contributes directly or indirectly to the reduction of polluting emissions, overall energy consumption (source: INCSMPS). According to Eurostat definition, green jobs require that "at least 50% of their working time to be allocated to producing a product or providing a service whose purpose is environmental protection and natural resource management"(source: www.epp.eurostat.ec.europa.eu).

The concept of "green economy" is associated spontaneously by 24% of respondents to aspects of protecting and preserving the environment and by 21% of respondents with ideas of efficient use of resources and use of alternative energy sources. In addition, one-fifth of those surveyed associate green economy with the lack of pollution and 15% of mentions establish a link between green economy and ecology or nature. Only 4% of those surveyed could not mention spontaneously, nothing related to the term "green economy".



(Source: Ghinararu ,C., 2016)

Figure 1. The employment situation in green companies - distribution of the entire sample

Yes, we have employees allotting over 50% of their time to environmental protection - 21.9

Yes, we have employees who allot more than 50% of the time for environmental protection - 25

No, but we are considering establishing such work places - 28.1

No, and there are no plans to set up such work places

I do not know

Yes, we have employees allotting over 50% of their time for environmental protection

Yes, we have employees allotting more than 50% of the time for environmental protection

No, but we are considering establishing such stations

No, and we have no plans to set up such work places

I do not know

About a third of respondents who work in companies where there are green work places state that in the company in which they work there are more than 10 employees working in "green" positions. Depending on the activity, respondents who report a greater number of employees working on green jobs positions are more likely employees engaged in the distribution of water and sanitation. Thus, 38% of those who were interviewed say that the state can give financial support to encourage the creation of green work places, 20% think that taxes can be reduced and more than 10% say it is within the powers of the state to adapt the regulatory framework in accordance with new requirements.

Information campaigns seem to be another support tool for companies - almost 10% of the interviewed employers seem to feel the need for information from the state with regards to the area discussed here, information which aim to deepen knowledge on the green jobs (definition of concepts, legal provisions, and benefits for the employer).

When asked **Which of the following could cause your company to take measures to create green jobs?** (Multiple answers) **What were in your opinion, the main reasons that led the company to take measures to create green jobs?** (Multiple answers) Participants in the study who work in companies where there are no green jobs identify as the main motivator government support (60%), criterion followed by aligning European strategies for the environment sector (48%).

In comparison, respondents who work in companies **where there are such positions** pay greater importance to aligning to the legislation (66%) and to a better management of environmental issues (65%). Thus, declaratively, the motivation of companies with green jobs is not linked to financial subsidies, only 13% of employees of these companies mentioning this criterion.

"Green" jobs -present or future

To questions **How did the number of "green" jobs in your company evolve in the last 5 years?** (Single answer) **How do you think the number of green jobs will evolve in your company over the next 5 years?** (Single answer) Much of the respondents said that the number of jobs in their company remained unchanged during the last 5 years, but a large percentage believes that in the future this number will increase. Almost a quarter of respondents believe that in the company they work in there have been changes for the good - the number of green jobs has increased in the last 5 years.

Existing "green" jobs (I)

Distribution by size of company

To the question **How has the number of "green" jobs in your company evolved in the last 5 years?** (Single answer) More than 35% of respondents working in a small company claim that no green work places have existed in their company so far and only 9% stated that the number of green jobs has increased in the last 5 years. The situation is different for large companies: here approximatively 12% say that green work places did not exist until now in the company and 41% say that their number has increased in recent years.

Existing "green" jobs (II)

Distribution by field of activity

To the question **How has the number of "green" jobs in your company evolved in the last 5 years?** (Single answer) Nearly 40% of those who work in agriculture mention that in their sector, there were no places green jobs so far and almost a third of those working in the field of water distribution, sanitation and waste management state that the number of green jobs has increased in the last 5 years.

Future 'green' jobs

(I) Distribution by size of company

To the question **How do you think the number of «green» jobs will evolve in your company over the next 5 years?** (Single answer). In general, representatives of the companies included in the sample expect the number of green work places to increase in the future. This view is significantly more popular among those from large companies. Less than 6% of respondents say they expect the number of green jobs, in their field, to reduce in the next 5 years.

To the question **How do you think the number of "green" jobs will evolve in your company over the next 5 years?** (Single answer). Perhaps as expected, representatives of **agricultural areas and water distribution, sanitation and waste management** foresee an increase in the number of green work places to their areas. But opinions are divided as regards the manufacturing sector: a third of respondents in this field believe that green work places will remain the same as today, while another 38% say that their number will grow.

Evolution of the number of "green" jobs in the company: argumentation of opinion

To the question **How do you think the number of green jobs will evolve in your company over the next 5 years?** (Single answer) The analysis of responses obtained under quantitative data collection allows the formulation of several conclusions and recommendations:

- There is still a significant percentage of employers (rather companies under 50 employees), 5 years after the formulation of the Europe 2020 strategy, who encounter difficulties with defining the concept of "green economy" and thus that of "green work places" and there is still a high proportion of those who have not heard lately discussions on the subject.
- In the same register, readdressing the appearance of awareness campaigns, we emphasize the need to differentiate them according to three main target groups. Thus, one category is concerned with environmental employers, who would invest with green work places because they want to protect nature and create a better future - they could be exposed to messages that address this issue.
- Lack of qualified staff seems to be another difficulty encountered by employers in the creation of green work places. Thus, 10% of respondents said that this is the main problematic issue that they faced during the process and about the same number believes that the state could intervene to improve the human resource, providing training courses or indirectly investing in professional schools.
- In large companies, where green work places have already been generated comes a new phenomenon - industrialization - which can in time lead to a decrease in the number of people employed in green jobs. Some of those interviewed stated that the number of

green work places have not increased within their company in the last 5 years precisely because human resource was gradually replaced with new technology.

CONCLUSIONS

1. The areas of intelligent specialization for the 2014-2020 strategic cycle, identified based on their scientific and commercial potential, following an extensive process of consultation are (1) Bio-economy, information and communication technology, space and security. (2) Energy, Environment and Climate Change. (3) Eco-Nano-technologies and advanced materials. Transforming the entire world economy into a veritable "green economy" to foster growth and create jobs. "Green Economy" is a model that would conserve natural resources and halt gas emissions with greenhouse effects and at the same time, reduce poverty, ensures the report of the United Nations Environment Programme (UNEP).
2. The concept of "Green Economy" debated initially specialized in environments with reference to environmental economics, penetrated more and more the international debates related to sustainable development and the political speeches on Environment and Development.
3. Green Economy has as a main objective the shift towards an economy that is compatible with sustainable development and this new form of economic development should be seen as an adaptation of the economic system in the long run to the various crises it may face.
4. The statistics on green work places could be of interest to a wide variety of users including, but not limited to the general public, the media and civil society, decision and policy makers concerned with policies on economic growth, employment, environmental protection, climate changes and sustainable development, as well as analysts, experts and advisers, academics, training institutions, government officials and international agencies.
5. There is still a significant percentage of employers (rather companies under 50 employees), in the case of which, 5 years after the formulation of the Europe 2020 strategy, the appearance information campaigns, we can emphasize the need to differentiate them according to three main target groups. Thus, one category is concerned with environmental employers, who would invest in green jobs because they want to protect nature and create a better future - they could be exposed to messages that address this issue.
6. The lack of qualified staff seems to be another difficulty encountered by employers in the creation of green jobs. Thus, 10% of respondents said that this is the main problematic issue that they faced in the process.
7. In large companies, where green jobs have already been generated, a new phenomenon has occurred - industrialization - which can lead in time to a decrease in the number of people employed in green jobs.

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