AICEI Proceedings, Volume 6, Issue 1
DOI: 10.5281/zenodo.4499098

AICEI PROCEEDINGS



# Green Economics: Young Generations to Help Achieve Future Sustainability of Europe

Makedonka Dimitrova
Ilijana Petrovska
Marjan Bojadziev

Keywords: green, economy, young people, sustainability, Europe

*Abstract*

*This paper seeks an answer about the level of awareness of green economics/green jobs as a concept for sustainable growth among the young population in Europe. In order to provide a basis for sustainable growth we take into consideration the essential issues. Green economics is an emerging field of economics combining knowledge from the natural sciences and economy, thus offering unique insights into four areas: climate changes mitigation, businesses, political and moral. The conclusions refer to the future needs for building awareness and creating a solid base for knowledge sharing on sustainable development issues among the young population. In addition, recommendations for inclusive policy dialogue to facilitate such growth are part of the focus as well. The research group targeted 30 people from five European and one African country between 18 to 25 years of age. A method using qualitative research combined with exploratory research has been used for this survey and its analysis.*

*'If everyone used energy and resources the same way we do in the Western World, we would need three more earths at least. And we have only one.'*
*(Mona Sahlin,*
*former Minister for Sustainable Development, Sweden;*
*Institutionalizing Sustainable Development, 2008)*

## Introduction

The practice, research and ongoing debates on the links between sustainability on the one hand and green economics on the other have much in common. Green economic development is essential to what sustainability advocates. The effort is not to wait for green economics to become a priority topic as was the case with sustainable development which took over 20 years since the Brundtland Commission (96th Genaral Assembly Plenary Meeting Report, 1987 ) published its landmark report.

Given the time and capacity needed to change the current decision makers' domination, it will be more efficient to focus on the younger generations and their future responsible behavior. The EU education policy offers opportunities to work and educate young people and thus elevate their capacity to meet the growing demands of a comfortable life in line with the environmental challenges. In general, new concepts of various natures were always better accepted by the younger generations. Once a concept becomes a lifestyle it is already imbedded in the practice. In cultures that make use of the concept of green economics, green jobs and carriers, as well as green development the society has a solid basis for achieving a greater level of sustainability.

In particular, we consider green economics, an emerging field of economics combining knowledge from the natural sciences and economy and thus offering unique insights into four areas: climate changes mitigation, businesses, political and moral. The EU, reassuring the world of its leadership position in combating climate change (European Commission, 2008) is paving the way for other countries. But what shall Europe do to keep this leadership role?

## Approaching Sustainability

Sustainability in simple but precise terms may be measured and observed through the concept of the Ecological Footprint (Fiala, 2008) which provides an intuitive framework for understanding the ecological bottom-line of sustainability. The Ecological Footprint (EF) is directly related to green economics by stimulating an environmentally friendly approach both in the business and housing sector. The EF concept stimulates public debate, builds

common understanding and suggests a framework for action. The EF makes the sustainability challenge more transparent - decision makers have a physical criterion for ranking policies, project or technological options according to their ecological impacts (van den Bergh & Verbruggen, 1999). The EF indexing and formulas were changed, from the originals, in a way to better reflect an individual's attitude towards the environment as a direct result of the interest in this topics and the ongoing growth. Here, we may use green economics as a tool to achieve a lower EF which in turn supports sustainable behavior at many levels. That said, sustainability does not mean 'giving up' one's comfortable living habits.

Our 'Common Future' reported on many global realities and recommended urgent actions on eight key issues to ensure sustainable development, i.e. that it would satisfy 'the needs of the present without compromising the ability of future generations to meet their own needs' linking the economy, society and environment (Strange & Bayley, 2008). These eight issues incorporate population and human resources, industry, food security, species and ecosystems, urban challenge, managing the commonenergy supply as well as conflict and environmental degradation. Once completely integrated they represent a well balanced approach to sustainable growth, especially in an environmental sense.

There are numerous opportunities to approach sustainable growth. Speaking about younger generations, they can implement the lessons learnt from many sectors such as food security by finding a way to grow food where there is a difficult climate or poor soil, process waste to hinder soil pollution or knitting rural development into the urban practices etc.

Countries like Egypt may combine forces with EU in the area of green jobs transfer know-how and creating thousands of green posts as an initial result. Since January 2011, Kuraymat is hosting the first solar field of its kind in Egypt, or more precisely, the first modern one, as the world's very first parabolic trough was built in Egypt in 1912(Solar Millennium, 2010). The 130,000-m² solar field designed by Flagsol is part of a 150-megawatt hybrid power plant that will use both solar energy and natural gas to generate electricity. There are only three plants of its kind in the world, but the spillover effect has great potential for the EU.

Besides the practical approaches, the EU policy is strict and binding, offering alteration to a certain extent, i.e. the EU integrated energy and climate change policy demonstrates its global leadership in tackling climate changes while increasing the security of supply and strengthening its

competitiveness. New jobs and careers integrating the environmental aspects complement the policy (European Union, 2007). In additions, the EU's '20-20-20 obligations' to cut on greenhouse emission gases facilitated creation of green careers such as energy auditor (Business Dictionary, 2009), thermal solar installer, photovoltaic engineer/installer and etc. These new trends also reflected on a cross sector level. The linguists had to add new words and explanations to the dictionaries that did not list such terminology at all or offered poor descriptions. This was the case with one of the world's most renowned dictionaries for ex. solar panel - solar panel is a device that changes energy from the Sun into electricity (Cambridge Advanced Learner's Dictionary, 2003)

Green economics may be observed by the aspects of advanced economies and economies in transition. The more developed countries like UK, Ireland, Germany, Sweden etc., have the possibility and the resources to impose stronger legislative framework to further influence the green jobs development. On the other hand, the countries in transition may take the possibility for regional development and the cluster approach to strengthen their sustainability prospective. In particular, Macedonia may combine its resources with Albania, Serbia, Montenegro and more developed countries such as Greece and Bulgaria in the region to achieve a more competitive economy in line with the environmental goals. In order to back up the approach, we will focus on a green job, more precisely that of solar thermal systems installer in the Balkans. The sun radiation in the region is similar and the culture towards implementing new technologies is alike while the main difference is the level of income and purchasing power. The issues may be overcome by a transfer of best practices and policy changes occurring in the countries in the region that already have a high rate of installations including know-how, taxation mechanisms, educational modifications, and state subsidies. The skills needed are the same across the region and offer a venue for frequent cooperation as the Macedonian market in legging behind Bulgaria and Greece but they are better off in comparison to Kosovo, Albania, Serbia and Bosnia and Herzegovina. The adopted skills then may be transferred to the above mentioned countries. Similar to this one there are a number of opportunities waiting to be promoted and to contribute to the sustainable development of the nations across the globe, yet there is no culture, social aspect or morale when it comes to environmental protection. The further development seeks a more comprehensive approach to meet aspects of sustainability.

## Green Jobs to Support Sustainable Growth

As social justice is one way to achieve sustainability through higher employment rates (OECD, 2003), it's being addressed through the involvement of low-skilled as well as high-skilled workers that could therefore play a key social function in addressing Europe's unemployment crisis (Euroactive, 2010).

The development of green jobs in the fields of wind power, solar power, organic farming, natural building, mass transit, hydropower, holistic medicine, green engineering, geothermal power, green automobiles, environmental science, conservation, clean energy, cellulosic biofuels, carbon/ CO2 emissions, building and retrofitting represents a proper approach to climate changes mitigation. The support to build upon these careers is more than expected from the European governments and finding schemes.

A good practice to stimulate interest in green jobs is certainly the recently published book on 'Green Carrier for Dummies' (McClelland, 2010). The book gives a new light to the green jobs quest and the US experience may be quickly adopted and adjusted to the European setting.

The USA set a good example to other nation, i.e. US Department of Energy was awarding $2B in loan guarantees to two solar companies allowing them to scale up their business. This governmental policy is expected to create 5,000 new green jobs as announced by President Barack Obama at the end of 2010.What is not obvious but very important for Europe in this act is that the technological support behind one of the deals was a Spanish leader on the market (Safani, 2010). This activity points to the great importance of continued European Union support to its member countries in technology development. That said, there is a moderate utilization of EU funding schemes for research, demonstration projects and best practices replication by the businesses and research institutions across Europe.

## Empirical Findings

For the purpose of this paper, we have used a method of research combining both qualitative and exploratory research. A nine day behavioral and social observation of the group, followed up by ten closed end questions were set as a base for the research. The sample group included young people participating in a recent EC Directorate General for Education 'Youth

in Action Program' organized by the Green Economics Institute based in Reading, United Kingdom (UK). Students' average age was 22 years. Five European and one African country: Egypt, Macedonia, Malta, Italy, Ireland, and the UK were represented.

The countries mentioned above are at different developmental stages ranging from highly developed to poor and transitional countries. This may result in contradictory answers that unfortunately, due to the research method could not be grouped by countries and grow into deeper research. As the group was small in size, it also affected the research findings and there are still open issues to be considered in future research. We have taken into account the shortcoming of the research method when discussing the results as well.

Over 60% of the respondents' educational background is in economics meaning they might not be fully aware of the pros and cons of climate change. However, we assume that most of them are aware of the implication of climate changes on the local and global ecosystems, thus affecting the domestic economies. The recent Japanese catastrophic developments as a result of 'force major' which had a major impact on the power system and economic damage to the country may have increased the awareness among the respondents in the meantime.

The program offered exposure to green communal living and urban lifestyles on a parallel. The way our lives are structured, it is more likely that they prefer the comfortable lifestyle having in mind the behavior alteration and adjustment required for going fully green. Therefore, the questionnaire focused mostly on student's perception of green economics and sustainable development reflected in simple and closed ended questions. Below we outline the questions and important insights to better justify the conclusions and recommendations for improvements towards sustainable working and living.

The first question focused on the perception of the concept of green economics. The UK program, offered an introduction to a great range of green lifestyles including communal living providing a good starting point for differentiation of the lifestyles. The responses indicated that participants still tend to relate the concept of green economics to sustainable living and working; 90% of the group thought in this manner. (Chart 1, Annex 1).

On the question 'what the green economic is?' (Chart 2, Annex 1), half of the respondents said that it is only a tool to achieve sustainability, and thirty-five percent answered that it is a way to implement good environmental

practice at the workplace. Only five percent from the respondents have answered that it is actually going back to the roots, to nature and growing your own food. The results from the first and second choice narrow down to sustainable development but also reflect a misconception or poor conception of sustainability issues, which is another challenge for the young people to communicate both in their own countries and regionally.

The following question (Chart 3, Annex 1), makes clear that young people think that economic development is the main reason for climate change, seventy-six percent agree and fourteen percent disagree. The remainder was not decisive, probably as consequence of low awareness and knowledge of the particular issue. This is a good indication, even though a majority of the respondents have an economic, legal, or social education background, they are still aware of climate changes impacts. This may help to build upon basic knowledge and implement green practices in their current or future careers. Moreover, they don't believe that the current economic science shall be rewritten and as presented in the Chart 4 (Annex 1), but most of them (71%) are looking for changes. Twenty-four percent from the young people do not have enough knowledge to answer the posed question.

In fact, this outcome was not our expectation at the beginning of the research, as the current economic science focuses on profit as a means for social welfare and a comfortable life, but the observations reveal that huge differences in the economic development of the countries may be the cause for this opinion. Also, the human development indexes point to a similar status (McGillivray, 1993). People in general believe that if one starts all over, the new outcome may be different while the core remains the same, only the surface changes. Therefore, there is no need to reshape the current economic practices, just use less resources to implement green practices leading to greater sustainability of the countries.

As presented in the Chart 5 (Annex 1), half of the respondents know and are aware about their personal carbon footprint while thirty –three percent are not aware and fourteen percent don't know what it is about. This is indicating a negative tendency that might be caused by the complexity of the carbon footprint calculations. Half of the young respondents are not aware of their behavior or how their own lifestyle reflects their surrounding, so it suggests an immediate action to tackle the issues.

The sixth question emphasizes the level of willingness for making changes and improvements in their lives towards a greener world or willingness to make changes in the way they use natural resources in

everyday life. Chart 6 (Annex 1) is crucial to this research and the positive results that show a high level of motivation among young people justifies the need to continue developing programs and support schemes for a younger population.

In the next question (Chart 7, Annex 1) we are going back to the main research question, but taking a deeper look at their perception of green economics. Half of respondents look at green economics as a set of new jobs and careers and the other half as modifications to current practices. A very small percentage of the respondents think that they are related to urban or rural living.

The last question regarding 'What kind of countries could implement the green economics?' is answered with equal percentages, which means that there is no clear and unified opinion on the topic. A major misconception among the respondents is that all countries have similar possibilities regardless of the level of development which does not reflect the reality at all.

The upper findings indicate that there is a possibility for green economics to make an alteration and improvements on the new way of working and living.

## Conclusions

In summary, the strong economies have better options, power and tools to support the sustainable development through generation of new jobs and greening the existing careers while the others have only limited choices, mostly related to behavioral aspects. However, some strong economies, in lack of natural resources, invest in research and development and sell the know-how to keep up pace with the others (the case of Austria vs. Macedonia in utilization of solar irradiation and export of solar thermal collectors' know-how). All responses have a tight relationship with green economics concepts indicating that rural living is underestimated by the new generation. If it were not for the rural areas our food supply would suffer and as a consequence the urban living would be influenced adversely with respect to technical advancement.

However, it is obvious that these young people perceive sustainable living and working as green economics. They have limited understanding of the people that have decided to commit to rural living and working. They individually prefer more commodity and urban culture. In this respect, more collectivist countries such as Macedonia, Egypt, Italy and Malta tend to urban

and technologically progressive living. This is a good starting point for jobs diversification and new professions development in order to better suit life expectations. From a social perspective, it is quite possible that the personal agenda of many European countries and the exposure to new lifestyles may have played a role in enabling an environment which helps people to better understand other people's lifestyle preferences such as the UK and Ireland. That said, European institutions should try to diminish the differences both in economic and social aspects of living and work on a joint ground for sustainable development.

Referring to the ecological footprint, there was a misconception observed during the conversations and debates between participants during their stay in the UK. The superficial knowledge on the matter contributes to a narrow understanding of the interrelation of various indicators including economic efficiency, spatial equity, and environmental sustainability as a part of the concept. This may be the reason for understanding sustainability as isolated and not a cross border, regional or global effort.

The increased attention to sustainable growth allowed improvements in a few green economic concepts among which are the emerging of green procurement procedures in the public sectors, introduction of new standards to better reflect the production, and service industry commitments to clean growth (recently introduced ISO 500001 Energy Management). The human development was directed towards adjustments in the education sector. New courses and specialized training schemes for green jobs and related certification schemes were offered mostly in the more developed EU countries. The spillover effect towards the poorer countries in transition is already being supported through the EU in particular country specific granting schemes. The 'Youth Pass' or 'Youth in Action' program (Eduaction and Culture DG - Youth in Action Program) has also contributed to an exchange of ideas among young people in multicultural settings during the project realization in the UK and continued afterwards facilitated by the social media. Moreover, there is a need for a systematic approach to address the current and future green jobs and carriers. The sectors of renewable and environmental protection are only to start with as there is an environmental dimension related to all jobs.

Only starting from the domestic behavior and younger generations moving on to continuous educational programs we may create leaders, policy and decision makers prepared to support the scientific progress without conditions for political compromises between countries. There has to be a

mechanism developed to facilitate the sharing of social welfare and advanced knowledge of environmentally friendly growth between the countries in transition and/or poor countries. The green growth of countries with scarcity of natural resources shall be innovatively supported with other available tools for sustainable development. In the process of overcoming the differences between nations we shall allow the emerging green jobs and career developments to lead the way towards investments in the infrastructure and human capital needed for a sustainable economy. This requires a 'Green new deal' but the results must be resilient and adaptable to change.

Progressive economics would say that there is a need to practice economy that allows us to prosper while encouraging other countries to adopt sustainable economic policies and to enter into effective international agreements where the economic policies will fit a foreign policy designed to advance the vital national interests (Greeham, Johnson, Meadway, Seaford, & Wallis, 2011).

## Policy Recommendations

Generally speaking, there is a need for policy restructuring to better reflect the needs for sustainable growth of each country. The EU officials emphase that even the high skilled workers of various professions demand further training and skill building to better adapt to the market demands in light of environmentally friendly growth. Along with this, green jobs also mean millions of low-skilled jobs but we all need further education as to how to recognize them. The combination of the empirical findings and the conclusions of this paper identified a few policy recommendations among which are the following:

- Well structured education program on green jobs and possibilities to advance in these careers offered by pioneers in the field, with support from the Directorate General for Education (accompanied with realistic feedback from the beneficiaries),
- Cross border platform to allow newly skilled workers to transfer their knowledge and hinder the work force migration to stronger economies,
- Cross-sector research and development support to reduce the brain-drain from weak economies or economies in transition,
- Social inclusion and justice to ensure all nations and people are treated equally as a base for further human capital development,
- Extension of the EU financial supporting schemes to all players with a proven record of implemented best practices, and

- Wider outreach, cross border public education campaigns on the emerging jobs and behavioral change required for achieving greater sustainability both al local and regional level.

If realized, the recommendations above will enable tools to measure the sustainable development by nations (Moran, Wackernagel, Kitzes, Goldfinger, & Boutaud, 2008) and allow for additional support to the countries with a low level of development.

## References

96th Genaral Assembly Plenary Meeting Report. (1987 ). 42/187. Report of the World Commission on Environment and Development. Zeneva: United Nations Department of Economic and Social Affairs (DESA).
Bergh, V.D., Verbruggen, H., & Jeroen, C. (1999). Spatial Sustainability, Trade and Indicators: an Evaluation of the "Ecological Footprint". Ecological Economics, 29 (1) , 61–72.
Business Dictionary. (2009). Retrieved from www.businessdictionary.com
Cambridge Advanced Learner's Dictionary (Third Edition). (2003). Cambrige: Press Syndicate of the University of Cambridge.
Eduaction and Culture DG - Youth in Action Program. Youth Pass. Retrieved from https://www.youthpass.eu/en/youthpass/youthpass/
Euroactive. (2010, June 11). EU promotes green jobs: Way out of crisis. Retrieved from http://www.euractiv.com/en/climate-change/eu-promotes-green-jobs-way-out-crisis-news-495118
European Commission. (2008). Combating Climate Change - The EU leads the way. Luxembourgh: Eropean Communities.
European Union. (2011, January 15). Climate Changes Action 2007. Brusseles, Belgium.
Fiala, N. (2008). Measuring Sustainability: Why the Ecological Footprint is Bad Economics and Bad Environmental Science. Ecological Economics, 67(4), 519-525.
Greeham, T., Johnson, V., Meadway, J., Seaford, C., & Wallis, S. (2011). New Economics. Retrieved May 6, 2011 from The new jobs plan: A new approach to industrial strategy: http://www.neweconomics.org/sites/neweconomics.org/files/The_Good_Jobs_Plan_0.pdf
McClelland, C. (2010). Green Careers For Dummies. Indianapolis: Wiley Publishing.
McGillivray, M. A. (1993). Measuring Development? - Human Development . Zeneva: UNDP.
Moran, D. D., Wackernagel, M., Kitzes, J. A., Goldfinger, S. H., & Boutaud, A. (2008). Measuring Sustainable Development – Nation by Nation. Ecological Economics, 64 (3), 470–4.
OECD. (2003). OECD Employment Outlook 2010: Towards More and Better Jobs. OECD Publishing.

Safani, B. (2010). 5,000 New Green Jobs. Retrieved from http://jobs.aol.com/articles/2010/07/20/green-jobs/
Solar Millennium. (2010). Retrieved from http://www.solarmillennium.de/upload/Download/Unternehmen/Unternehmensprofil_Solar_Millennium_engl.pdf
Strange, T., & Bayley, A. (2008). Sustainable Development. Paris: OECD.
Van den Bergh, J. C., & Verbruggen, H. (1999). Spatial sustainability, trade and indicators: an evaluation of the 'ecological footprint. Ecological Economics , 29(1), 61-72.

## Annex 1

**Chart 1. Question 1 - The concept of green economics relates to green lifestyle or sustainable living and working?**

| The concept of green economics relates to | | | |
|---|---|---|---|
| | | Response Percent | Response Count |
| green lifestyle | | 10% | 2 |
| sustainable living and working | | 90% | 19 |

**Chart 2, Question 2 – What is green economics?**

| Would you say that green economics is | | | |
|---|---|---|---|
| | | Percent | Count |
| tool to achieve sustainability | | 50% | 10 |
| way to implement good environmental practice at the workplace | | 35% | 7 |
| going back to the nature and growing your own food | | 5% | 1 |
| Other (please specify) | | | 2 |

**Chart 3 – Question 3**

| Would you agree that economic development is one of the reasons for climate changes? | | | |
|---|---|---|---|
| yes | | 76% | 16 |
| no | | 14% | 3 |
| I do not know | | 10% | 2 |

**Chart 4 – Question 4**

| Do you think we need to rewrite the economic science to better respond the current situation? | | | |
|---|---|---|---|
| yes | | 71% | 15 |
| no | | 5% | 1 |
| I do not know | | 24% | 5 |

**Chart 5 – Question 5**

| Are you aware of your personal carbon footprint? | | | |
|---|---|---|---|
| | | Percent | Count |
| yes | | 52% | 11 |
| no | | 33% | 7 |
| I do not know | | 14% | 3 |

**Chart 6 – Question 6**

| Are you willing to change the way you use electricity/gas/ etc., collect waste, at home/work? | | | |
|---|---|---|---|
| | | Percent | Count |
| yes | | 100% | 21 |
| no | | 0% | 0 |
| maybe | | 0% | 0 |

**Chart 7 – Question 7**

| Green economics is about? | | | |
|---|---|---|---|
| new jobs and carriers | | 45% | 9 |
| modifications to current practices | | 45% | 9 |
| urban living | | 5% | 1 |
| rural living | | 5% | 1 |

**Chart 8 – Question 8**

| What kind of countries may afford sustainable development? | | | |
|---|---|---|---|
| poor | | 20% | 4 |
| countries in transition | | 15% | 3 |
| rich | | 30% | 6 |
| hi-tech countries | | 25% | 5 |
| countries with abundance of natural resources | | 10% | 2 |