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Review

Sustainable innovation as a condition for sustainable development (Case of Albania)

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Dilemmas on economic growth and sustainable development continue to be part of contemporary economic debates mostly for economies of developing countries and for the economies of developed countries as well. Innovation and its management are considered as fundamental concepts to lead a country toward economic growth. Above all, innovation guarantees the sustainable and long term development. Global competitiveness fosters each state to give priority to R&D investment and innovation, whether technological or non-technological innovation. The current debate today is how to stimulate the economy of a country towards sustainable development? In analogy with this debate, another question is if any kind of innovation leads a country toward sustainable development or not? Many studies show that innovation in itself can lead to development but what leads to sustainable development is sustainable innovation. The aim of this paper is to analyze the relationship between sustainable development and sustainable innovation, focusing mainly on the essential role that this binomial plays to socio-economic progress in a developing country. The study is based on the case of Albania. Research question of this paper is: How oriented are science-society collaborations towards Sustainable Development and Innovation in Albania and how to strengthen such collaboration in the future? The main hypothesis is that current science-society collaborations are still in a moderate level oriented towards innovation and Sustainable Development. Some from the data of this study are collected for the 'CONSUS' project, whose purpose is the promotion of sustainable development and sustainable innovation in developing countries.

Keywords: Sustainable developments, innovation, sustainable innovation, triple “P”, science-society network

INTRODUCTION

Economic growth for Developing countries like Albania has priority. However, economic development, and furthermore sustainable development, cannot be considered as two concepts that are not necessary for developing countries. It is actually true that there is a gradual transition from economic growth to economic development and then to sustainable development. It is also true that sustainable development is mainly

characteristic for developed countries, but this does not mean that developing countries should not be go towards this aim. However, going towards sustainable development is a difficult process which requires innovative ways that guarantee the success of this process. Sustainable Innovation will be discussed below as an alternative route to move beyond economic growth towards sustainable development.

This paper is divided in two main parts. The first part explains the relationship between sustainable innovation and sustainable development. In order for this relationship to function, it is necessarily important to have strong cooperation between different stakeholders in the society. The beginning of this cooperation through science-society networks can be a very good indicator that helps us to understand the future of a country under the perspective of sustainable development. The second part of the paper is based on the interpretation of data collection, with the main aim assessing the current science-society collaborations and generating alternative ways to strengthen collaborations for sustainable innovation between them.

The purpuse and objectives of the study

The main purpose of this paper is to analyze the link between sustainable innovation and sustainable development. In this paper we try to analyze the importance of this relationship, especially for developing countries. Some of the objectives of the study are: first of all, to assess whether the collaboration between different stakeholders in Albania is realized taking into account the sustainable development of their country. Secondly, another important objective is the awareness of stakeholders on the importance of Sustainable Development, by encouraging them to be more oriented towards Sustainable innovation in their collaboration

METHOD AND METHODOLOGY

The methodology of this paper is divided in two important parts. The first part consists in a whole analysis of the theoretical framework regarding to sustainable innovation- sustainable development relationship. The second part of the paper is based on the interpretation of the data collected through interviews and questionnaires. These data are only a part of the total data collected within the project CONCUS (Connecting Science-Society Collaborations for Sustainability Innovations), because in this first phase of the project aim was to identify the current situation regarding collaborations between science and society in Albania.

Specifically, the main methods used in this paper are a) brainstorming and identification of indicators; b) comparison of all institutions/organizations with these indicators and selecting only some of them (these one that fulfill the pre-selection criteria); c) analyzing their website publications to identify their kind of projects or activities and d) Contacting them by telephone or e-mails and asking them about their collaborations.

In order to facilitate the process of stakeholder identification, first of all it is prepared a unified list of all potential stakeholders. This list divides stakeholders in two main categories: science and society. Science theme includes: 1- High education institution (public/private); Research institute (Network of Academy of Science and/ or Universities); NGO affiliated to Universities (NGO legally separated and with a different legal status from the HEI they are affiliated to.); Independent Think Tanks or NGO (including those Think Tanks which produce research in the sense of policy recommendations). 2- Society theme includes: NGO (Do not focus on research and scientific work); Networks established by NGOs, and alike (Operate in the field of Sustainable Development); Institutes (Engaged in programs and projects funded by domestic and international sources (nature of activities, type of collaboration within the society community and with science community); Enterprises (Operate in the field of Sustainable Development); Network of enterprises (Networks which constitute a legal entity); Listing Practitioners in the field (individuals); Initiatives (Undertaken in the field of sustainable development such as projects, etc.)

Taking into consideration the fact that sustainable development and sustainable innovation are very broad concepts, we have unified list of potential stakeholders in three large fields as follow:

1) Innovation and sustainability in the fields of social issues and economy
2) Innovation and sustainability in the field of environment
3) Innovation and sustainability in the field of agriculture

The general indicators for the three different fields have been the same, without neglecting the specific characteristics of each stakeholder in different fields. *In order to create a concrete list of stakeholders these fields, we have used three levels of selection. Firstly we have used pre-condition criteria; secondly we have used general indicators for all stakeholders; and thirdly we have used specific indicators for each category.*

Pre-conditions criteria:

- Collaboration must include at least one stakeholder from science and one from society.

The collaboration must target sustainable development, sustainability innovations and innovation networks

- The type of collaboration must be in the field of social science and economy

General Indicators

- The collaboration must target sustainable development, sustainability innovations and innovation networks and aim economic profitability with regard to the usage of natural resources
- The collaboration must target sustainable development, sustainability innovations and innovation networks in the field of social issues, economy, environment and agriculture.

Obstacles of the study

Realization of this study is not very easy for several reasons: First of all, there are very few existing studies regarding the development of innovation in Albania and furthermore, studies about the character of this innovation (if it is simple innovation or Sustainable Innovation). From this point of view it is really difficult to make a comparative study between the present and the past. Secondly, some of the data are considered confidential and accessing to them is often difficult, even impossible. Finally, data collection directly from business requires a high level of availability and cooperation from business part, which in the Albanian context remains difficult to achieve.

However, this study is not impossible as there are many international reports about the current level of innovation development in the country. Also, despite the fact that business executives are not always available for collaboration with academic researchers and scientists, perhaps alternative forms can be found to improve this cooperation. For example, official application to their organizations with specific projects, clarifying their benefits from this cooperation, can be a good opportunity. The same may be necessary to make the policy-makers of policies encouraging innovation and business sophistication.

Innovation, sustainability and sustainable innovation

Sustainable development is a long-term destination for most economies of the world. What we mean by Sustainable Development is "Development That Meets the Needs of the present without compromising the Ability of Future Generations to meet their own needs" (WCED 1987). On the other hand, innovation is the engine that ensures competitiveness and development. The dilemma in this case is to find a long-term and strong relationship between innovation on the one hand and sustainable development on the other one. Innovation has now become a key factor for any economy or business that claims to successfully withstand the harsh global competitiveness. The era of knowledge economy and rapid technological progress mean that innovation is not a matter of preference but a not negotiable necessity for developing and developed economies. Albanian economy as a whole, being part of the economies of developing countries, needs to develop in a sustainable manner and to become competitive. But what guarantees sustainable development is not classic innovation defined by Schumpeter or Rogers. What can guarantee sustainable development is the so-called Sustainable Innovation. What we mean by Sustainable innovation according to Jorna (2004) is “Innovation of/with more sustainable techniques, materials, less energy consumption, etc”.

Economic growth, economic development and sustainable development

Economic growth, economic development, economic growth models and economic development models or sustainable economic development? Despite the fact that these terms often cause confusion to the reader, one thing is already clear: All countries aim towards sustainable economic development. But such a result can not be immediately claimed. If we refer to the earlier classification of countries as developed countries, developing countries and less developed countries, sustainable economic development usually claimed by the first category of these countries. The second and the third categories are initially more inclined towards economic growth and subsequently towards a sustainable economic development. However, all the above categories of countries are dependent on the model of economic growth that have applied or continue to apply.

By definition, economic growth usually refers to the "rate of growth of output or gross income per capita of a country". On the other hand, economic development refers to "economic growth which is accompanied by changes in production distribution and changes in the economic structure of the country" (Nafziger 2006, p 15). Regarding sustainable economic development, this term was brought to the attention in 1987 by the former Norwegian Prime Minister Brundtland, during a meeting of the United Nations Commission on Environment and Development, chaired by him. According to Brundtland, "Sustainable development means the progress that meets the needs of the present without compromising the ability of future generations to meet their own needs" (ibid, p 413). And in this case, the term 'sustainable' in his opinion, means not only the survival of the human species but also to maintain the productivity of natural resources and assets from one generation to the next generation.

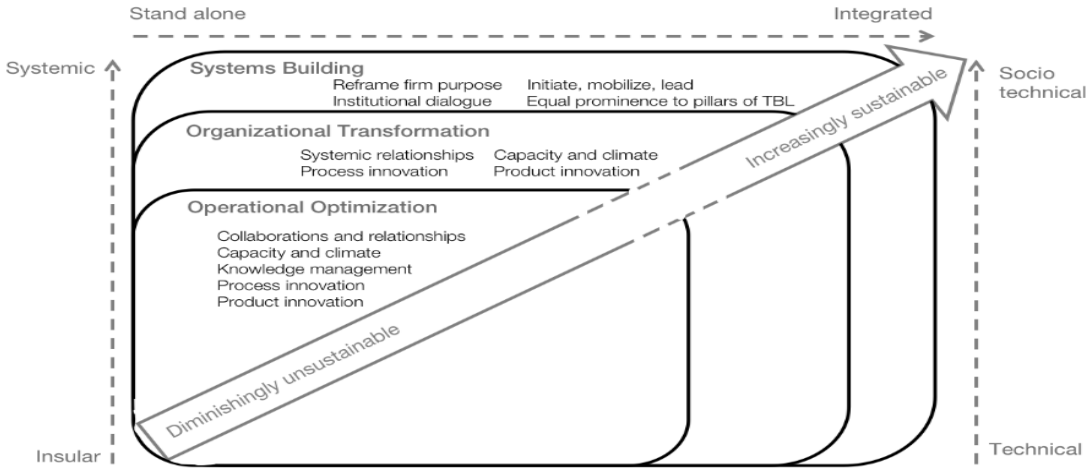

Figure 1. Categorise of innovation activity in the three contexts of sustainability-oriented innovation
Source: Adams et al. (2012, p. 17)

Sustainability innovotion for sustainability development

According to UNWCED (1987) sustainable development means "to meet the needs of the present without compromising the ability of future generations to meet their own needs" (Soubbotina 2004, p. 9). National Research Council of USA (1999) has divided sustainable development in two main categories: to be sustained and to be developed. The first categorie 'to be sustained' includes: nature (earth, biodiversity, ecosystems), life support (ecosystem services, resources, environment) and community (cultures, groups, places). On the other hand, the second categorie 'to be developed' includes: people (child survival, life expectansy, education, equity, equal opportunity), economy (wealth, productive sectors, consumption) and society (institutions, social captial, states, regions). (Kates, Parris & Leiserowitz 2005, p. 11). Sustainablity development in this case is accomplished by generating new forms that guarantee the sustainability of categories that must developed.

Sustainability innovation in this case is a must for each company, leader or policy-maker because it showes the innovative ways to use recourses, in order to have sustainable development and not only development. What is known as "Triple P" (people-planet-profit) or "Triple Bottom Line" (Elkington 1997, cited by Adams et al. 2012, p 8) in fact

Attemps to guarantee a balance between business tendency to be profit from one side, and his necessity to be more social in its entirety to the environment and society in general, from the other side. There was a last attempt to add the Forth 'P' (person) with the claim that the individual is at the center of everything and that everything starts from him. Sustainability innovation somehow is a backlash against excessive individualism that shows capitalism. It tries to create an individual with human beings and less individualistic and selfish character (Seebode, 2011, p. 24). Each stakeholder have an important role in this proccess: "Governments can drive the right market conditions through regulation and incentives; businesses can make it easier for people to live in balance with the planet by enabling sustainable lifestyles" (ibid, p 28).

There are two main approaches closely related with sustainable innovation. The first one is step-by-step changes toward sustainability-oriented innovation, known as Operational Optimization approach. The second one is radical transformation toward sustainability-oriented innovation, known as Systems Building approach (Adams et al, 2012).

Many organizational factors possitively affect the sustainability-oriented innovation (SOI). Firts of all sustainable innovation needs strong relationships and cooporation, not only inside the organization but beyond it. This approach is closely related with the principles of Open innovation Model (Chesbrough 2006). Other factors are: Enable sustainable lifestyles; Create multi-stakeholder value; Use resources responsibly etc. (Seebode, 2011, p 44). The proccess of 'Triple P' balancing is so important in order to move toward sustainability-oriented innovation. Also, involving and engaging external stakeholders is a crucial condition for those organizations that pretend to move toward sustainable innovation.

There are some crucial sustainable strategies that enable the sustainability-oriented innovation. New concept development (known as strategy 0) means

Table 1. Twelve pillars of Global Competitiveness Index (Albania)

Institutions	Infrastructure	Macroeconomic environment	Health & primary Education	Higher Education & Training	Good market Efficiency	Labor market efficiency	Financial market development	Technology Readiness	Market size	Business sophistication	Innovation
188	99	94	56	78	97	67	128	92	107	122	119

Source: Global Competitiveness Report 2013-2014

dematerialization, Shared use of the product, functions integration and functional optimization. Selection of Low-Impact Materials (strategy 1) means the use of cleaner materials, Renewable materials, Recycled materials and Recyclable materials. The second strategy is Reduction of Material Usage which means Reduction of weight and reduction in transported volume. The third one is Optimization of Production Techniques which conisist on Alternative production techniques, Fewer production steps, Lower/cleaner energy consumption, Less production waste and Fewer cleaner production consumables. Another strategy is Optimization of the Distribution System, closely related with the minimization of the

impacts associated with product packaging, Energy-efficient transport mode and Energy-efficient logistics. Reduction of Impact During Use, Optimization of Initial Lifetime and Optimization of End-of-life System are other important strategies which directly or indyrectly affect the level of sustainability-oriented innovation (Colby 2011).

Innovation in Albania: some statistics

The Global Competitiveness Report has published every year, in a systematic way, the results of Global Competitiveness Index for 142 cauntries of the World, among them is Albania. According to the general results of this report for 2011-2012, Albania is ranked 78/142 while in 2013-2014 is ranked 93/148. In more details, in terms of innovation sub-index results and business sophistication, Albania is ranked 102/142 (according to 2011-2012 report) while in the 2013-2014 report Albania is ranked 119/148. Progress in the innovation pillar (as one of the 12 pillars of the report) ranks Albania 132/142 in 2011-2012, instead of 119/148 for the year 2013-2014 (World Economic Forum 2011-2014 Reports).

These results are not very promising for the future of the business in Albania, in terms of global competitiveness which is extremely tough and flexible and therefore it is important to have concrete steps to improve innovation in business because nowadays innovation is not just a contemporary 'trend', but a necessity of the future. Innovation in this case will not be considered something totally new which appears for the first time in the Albanian industry, but mostly an innovation that has been applied previously in foreign businesses but not applied before in Albanian SMEs.

Many profitable organizations have problems neither with the identification of these innovations already existing, nor with the decision to adopt an innovation in business, but with the effective implementation of this innovation in the organization. Of course, the implementation of an innovation to different organizations in different places not necessarily brings the same benefit to each of them in which this innovation applies. Analysis of the outcome becomes a crucial factor to explain the success of innovation case by case. However, main obstacle to the successful implementation of an innovative idea or technology into an organization are: financial resources available for innovation, leadership support in organization, different policies and institutional practices, qualified human resources, organizational environment, consumer resistance, the positive outcome of innovation, etc.

Albania has poor performance for most of global competitiveness indicators, and in particular for innovation indicator. Most problematic factors for doing business in Albania are: corruption, government bureaucracy, tax schemes, crime, inflation, political

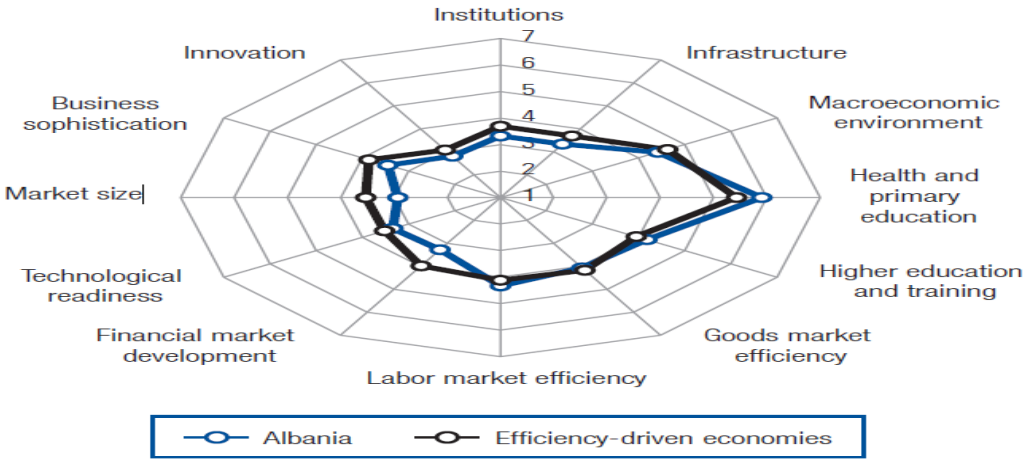

Figure. 2: Source: Global Competitiveness Report 2013-2014(pg. 100)

instability, infrastructure, the lack of innovative capacity etc.. The latter one, which is also one of the 12 pillars of Global Competitiveness Index can be specified in many sub-index such as innovation capacity, the quality of scientific research institutions, companies' expenditures on R & D, business - university cooperation on R&D, government procurement for advanced technological products, the number and availability of scientists and engineers, number of patents etc.

On the other hand, Report on the Global Innovation Index 2013 (GII 2013) is calculated by taking into account two main sub-indices, the input sub-index that includes institutions, human capital and research, infrastructure, market sophistication and business sophistication, and output sub-index, which includes outputs of knowledge and technology, creative outputs. Global Innovation Index is calculated as a simple average of these two sub-indexes. Meanwhile, the ratio of the innovation efficiency is calculated as the ratio of: output sub-indices / input sub-indices.

Science-sociaty collaboration for sustainable innovation and development

The analysis of current sustainability collaborations and expertise which means identifying regional stakeholders in the field of higher education, research and practice for sustainable development helps us to understand the real situation, to identify specific problems and to elaborate possible solutions for them. Establishing a science-society network nowadays is not a sufficient condition but is an essential one for sustainability innovations. By identifying experienced stakeholders and those which are new to innovation, we try to understand they role in sustainability and also to increase their impact, to share information and to enhance sustainability.

A broad list of regional stakeholders in the field of higher education, research and practice for sustainable development is identified. According to the division based on the field of expertise of the partners, it is evident that the major part of the stakeholders has collaborations in sustainability with focus on socio-economy.

This list divides stakeholders in two main categories: science and society. Considering two aspects, the content and the form of collaboration, usually the collaboration is formed by not more than two or three partners, for the purpose of each project. Although it creates the basis for future cooperation it is not a clear network in most of the cases and its continuation is questioned.

Most of the organizations that have been analyzed in this first phase have been chosen with the criteria set from the beginning, being in the field of environment so to be able to evidence with sustainability topics, which was a basic criterion to be in the collaborations. The survey has been conducted through internet search, direct contacts and interviews and existing knowledge through past collaborations. The criteria for the following evaluation are the ones in the attached questionnaire.

The fact is that most of the CSO's analyzed are dealing with environmental topics. All of them are interested in the sustainable development or innovation and are involved through participation or also developing projects in this topic. They mostly deal with organizing several raising awareness campaigns throughout the country. The organizations have brought together national and regional organizations and government bodies in different occasions by organizing seminars,

trainings, workshops and conferences, which led the way for many years in strengthening the role of civil society and creating a network in order for the latter to be more able to advocate for the environmental problems the country faced.

Although most of these organization are organizing events where is sought the transfer of knowledge in sustainability, we evaluate that just one third of them have the real capacities and can really be institutions that can transfer knowledge (this also because a large number of this organizations is establish by young and not very experienced experts, and are acting more at creating awareness in the society).

What is noticed, is the fact that CSO's are quite always not connected/collaborating institutionally to Universities or Research Institutes (Science) and just in one case (from our list) is directly affiliated to a University and Research Institute. As probably might result in many cases, Private Institutions of Higher Education could also be a product of a kind of spin off of CSO's which during their development wanted to influence the education in their field of expertise, or the opposite.

Half of the CSO's have periodical collaborations with Universities or Research Institutes, especially, and often informally (without formal contracts), in cases of public events, conferences, seminars, or awareness creation initiative. An important fact to mention is that many of the founders or related persons to these organizations are connected or engaged in the academic process of the universities, so in a way there is always an exchange among science and society. Not having a direct connection between the CSO's and Universities, often are lacking as outputs dedicated publications, policies and scientific research that could profit from both experiences and which are of a particular importance for a sustainable development.

In any case, usually all the collaborations among science and society (in the case of CSO's dealing with environment and urban development) are usually targeting the sustainable development, but it was not evident an institutionalized science-society network in sustainability innovations among the organizations we have been analyzing. Despite this, it is clear that there is a strong collaboration among the society organizations, and quite all of them are part of institutionalized networks (national and regional level).

In any case it is clear the leading role of some organizations in this networks and we evaluate that in many cases the collaborations and contribution of "smaller " actors are not constant and are mainly collaborating during financed project of external donors which has to make us reflect on how we can succeed in building up a sustainable network.

The outputs of these collaborations are quite diversified, mainly public events, conferences, seminars, training, etc., but not important dedicated publications (which are usually as reports or simple articles) and although in many cases it is supposed that scientific research and education (HE) should be an important task and mission, we can easily say that it is still lacking. Most of the times CSOs are invited by the state institutions and vice versa as a consultant body on different processes that they are about to start as: establishment of a waste recycling center; promotion of different sustainable alternatives to inhabited abandoned areas; public participation in decision making processes; seminars and trainings on different environmental issues, presentation of new draft laws and laws; several public initiatives on promoting and advocating practices on environmental protection and conservation of protected areas; etc.

In fact, coming to the Governmental Organizations, it seems that the institutionalized collaborations with Science actors is stronger, especially in the last developments in the country is more evident this will to collaborate. To mention the Ministry of Urban Development and Tourism, Ministry of Energy and Industry, Ministry of Culture, Ministry of Environment, Ministry of Social Welfare and Youth, etc. Although Governmental Organizations have institutionalized collaborations with Science and Society organizations, often they do not necessarily work all together rather than single collaborations, and due to probably the legal position of the governmental organizations, we cannot speak about real networks. Also in these collaborations, usually outputs are not directly related to scientific research or education, except particular, often EU financed projects. In fact a major role in Albania in developing projects, partnerships, collaborations (science-society) and networks in the fields of sustainable development is the one of International Agencies/Organizations (USAID, SOROS, GIZ, SCD, EACEA, etc.).

Even in the agriculture field the networks created are not stable, in most of the cases due to the fact that there is not strong connection of universities with the related industries and services from universities are required only when there are acute problems to resolve. Related businesses mainly are not directed toward innovation. An attempt to upgrade the laboratories up to certification units can strengthen the connection with the industry.

CONCLUSIONS

From the analyses of the current sustainability collaborations and expertise of regional stakeholders in the field of higher education, research and practice for sustainable development it is concluded that the main stakeholders that are operating in Albania the last 20 years of transition, have included in different forms

elements of sustainability in their program and activities. Forms of cooperation don't always consist on stable networks, but mainly in collaboration for the purpose of the specific projects, which question the long term sustainability and the impact of these initiatives. Although sporadic initiatives to create collaboration are many, related to environmental issues and social problems, and first incentives of green economy, the problem which bring the lack of cooperation between the stakeholders, belong to the fact of un-coordination of development policies, still a centralized society, and immature non-profit and civil society, lack of exchange of information and lack of inter-disciplinary approach to the solutions.

There are attempts of High Education Institutions to collaborate with society and business, influenced by the global trends, and in the framework of European Integration requirements. From the examples, it is noticed that private universities are more flexible in achieving this. The public universities structures are more rigid to intervene with other actors of society due to more bureaucratic procedures. As the country is ending a long transition process and as we see form analyses there is a considerable long list of consolidated stakeholders connected to Sustainability, a more comprehensive approach and coordination between them is crucial element, in order these stakeholders to actively anticipate the fast chaotic and unplanned development development, with severe consequences by now.

In Universities and Research Institutes, the collaboration depends very much on the fields. Quite all of the HEI have partnerships and collaborations with other HEI, International Agencies, Governmental Institutions, NGO's, etc, but most of them are on a project base and not within networks (except of the educational networks). As a result, there are good examples of science-society collaborations, but the majority of collaborations and networks in sustainable development are between CSO's. There are very good potentials in strengthening the science-society collaborations, but there is the need of a well-structured methodology in binding them together in an active way within larger networks.

In the framework of this project, the division of stakeholders according to the expertise of partners as analyzed on the fields of Socio-economy, Environment and Agriculture, reflects the understanding and the elaboration of sustainability in the last decades in Albania, where a strong stress is putted on the environment pillar without always a specific coordination with socio-economy. Although all examples contribute to the sustainability arena a better understanding and embracement of the balance of three elements is needed.

On the government level Albania has signed many declaration related to environmental protection and damage preventions. Strategies of the Government embrace sustainability elements, of the environment, social and green economy, and energy will be the priority of the government for the upcoming years. The laws are being adapted and drafted based on the EU requirements due to AC Communitarie agreement and the preparatory process of joining the EU.

The influence and the role that HEI-s can play in collaboration with other actors remains a challenge. It is related to the questions if HEI-s in Albania has the required expertise and are up to the level to anticipate the technologic development, and if are being able to transfer the knowledge to businesses and society. These instructions have challenges in competing and enforcing themselves as any other sectors of the country, but allowing flexibility on Institutional level, on creating new structures and platforms, despite financial problems, can contribute to blurring the division of action and responsibilities. On the other hand the informal cooperation is rather stronger but it loses the sight until is formalized and institutionalized.

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