

Towards a more sustainable Mediterranean Area: PRIMA initiative and the role of Agri-food businesses

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Agri-food Sector in the Mediterranean area: the main challenges

During recent years, agriculture and food have become two of the most debated themes within the field of sustainability research. Traditional agricultural paradigms¹, in fact, have proved to have devastating effects on natural environment, such as land degradation², water depletion, pollution, increased greenhouse gas emissions and biodiversity loss³. Moreover, environmental damage caused by agricultural practices made impossible for food systems to provide adequate nutrition to a large part of world population⁴.

Such debate has not spared the Mediterranean. And it could not be otherwise: the Mediterranean basin represents one of the most culturally significant areas in the world. There, many great empires and rich civilizations beginning in antiquity arose and lived their zenith, and for millennia the region has played a leading role in the diffusion of knowledge and world trade. Unfortunately, the Mediterranean region is also one of the most vulnerable areas in the world. Its almost unique range of natural environments, as well as its exceptional diversity of its endemic species are always more exposed to serious environmental and social threats, such as climate change, overexploitation and scarcity of natural resources and, more generally, unsustainable production and consumption patterns.

Such issues are particularly relevant for Agri-food sector, which represents a fundamental pillar of the majority of Mediterranean economies. Many are the challenges that the sector is called to face. Food systems and water resources, in particular, represent two of the most pressing socio-economic problems affecting the sector⁵. From a side, in fact, the degradation of ecosystems, climate change and the reduction in available farming land and water resources are showing to have serious repercussions on food production potential. From the opposite side, water scarcity, deteriorated water quality and overexploitation of resources often results in deficiency in food production, and increased pollution is threatening both terrestrial and coastal environment, potentially affecting health.

These issues, joint with discouraging demographic trends, strong socio-economic disparities, high vulnerability to markets stocks for the food commodities prices, lack of investments in agriculture and rural territories, as well as inefficiency of logistics systems and agro-food chains, are more than ever undermining the future of the entire area (PRIMA, 2014).

Given the extreme severity of the main trends of the sector, sustainable development should be the key objective to be pursued in order to guarantee a future not only to Agri-food sector, but also to the entire Mediterranean basin. Ensuring food and water security in an ecologically sustainable way, in fact, has the potential to guarantee long-term impact on human well-being, stable societies, job creation, good health and welfare in the area, building, ultimately, inclusive well-being and socio-economic development.

¹ The label 'traditional agricultural models' embraces both extensive lower-yield and intensive higher-yield agricultural systems.

² Land degradation directly affects 1.5 billion people globally; in other, an estimated 24 billion tonnes of fertile soil are lost each year (UN 2012)

³ According to UN (2012), some 75% of crop diversity has been lost from farmers' fields since 1900s.

⁴ According to FAO, WFP and IFAD (2012), there are about 870 million people who still lack sufficient caloric intake, 1 billion or more suffering from micronutrient deficiencies, and another 1.4 billion suffering from overweight or obesity.

⁵ As highlighted by UNEP - MAP - Plan Bleu (2008), during the second half of the 20th century water demand has doubled, reaching 280 km³/year in all riparian countries (2005), with an expected increase of a further 18% by 2025, especially in Southern (28%) and Eastern (33%) countries. Such trends in water demand may significantly hinder agricultural development and food production, considering that agriculture represents the main water-consuming sector (180 km³/year to irrigate 24 million hectares), accounting for 64% of total water demand (45% in the North and 82% in the South and East) (UNEP - MAP - Plan Bleu, 2008).

A sustainable development path for food systems requires significant transformative changes in technologies, policies and behavior of all actors along the whole food chain, with multiple and complex interventions that must be undertaken, from changing diets towards more healthy, less resource-intensive food to increasing of production on existing crop land by closing yield and efficiency gaps and thus utilizing water and natural resources more efficiently, meeting consumer demands for safe, high-quality food (SDSN, 2013). The effects of such kind of interventions, unfortunately, often represent the output of a slow and uneven process. Moreover, interventions cannot all be done at once and in every country.

Certainly, growing awareness that agriculture and food will play a prominent role in the post-2015 agenda should guarantee that transformative changes in food and water systems for sustainable development would receive the deserved attention. From a side, in fact, events such as the introduction of Sustainable Development Goals (SDGs) and the following 21st Conference of Parties on Climate Change (COP21) to be held in Paris in December 2015 will help civil society, policy makers, communities and enterprises to better understand and define priorities and paths to tackle regional and local challenges. From the other side, however, it must be underlined that the effective tackling of sustainable development challenges of the Mediterranean region will necessarily have to pass through further and massive efforts in shifting from the identification of sustainable development key objectives and solutions to their practical implementation and adoption.

Alongside the individuation of proposals to sustainable development problems, in fact, a particular attention should be placed on how proposals become real solutions, as well as on how the process from research to innovation and to adoption of solutions by society could be facilitated. In this sense, SDGs and, more generally, post-2015 agenda will be able to foster such crucial transition only if it will be able to approach sustainable development in a more synergic way, by considering the interdependence between its three dimensions, as well as by putting at the center people and their needs. It is only through the full development of human ability to invent solutions, accumulate knowledge and practically implement it, in fact, that challenges of adaptation to change will be successfully addressed (Lacirignola and Abis, 2015).

Tackling Sustainable development challenges of the Mediterranean Agri-food sector: the key steps

In order to succeed in the tackling of Mediterranean Agri-food sustainable development challenges, many steps have to be taken. First of all, strengthening cooperation among Mediterranean Countries is crucial. A more cooperative approach to sustainable development, in fact, is the only way to identify relevant solutions to sustainable development problems of the area.

In this sense, institutions such as CIHEAM, representing the point of reference on Mediterranean agri-food research, could play a crucial role in fostering cooperation and discussion on sustainable development issues among Mediterranean countries and, more generally, among key actors of Mediterranean sustainable development.

Secondly, Joint Research initiatives should be at the basis of the development of solutions to sustainable development problems of Agri-food sector. Developing innovative solutions for improving sustainable development of Agri-food sector within the context of a more integrated framework of research cooperation among Countries, in fact, represents a *conditio sine qua non* for the effective tackling of Mediterranean sustainable development challenges. Within this context, universities must play a pivotal role in tackling Mediterranean Agri-Food sector challenges, not only through research and promotion of solutions, but also through education.

They should provide students with sustainable development knowledge and skills useful for promoting principles and tools of integrated sustainability, rising awareness on the meaning and role of SDGs and sustainable development research and execution. In this sense, for example, the United Nations Sustainable Development Solutions Network (hereafter SDSN) has recently introduced Massive Open Online Courses (MOOCs) on sustainable development to be delivered through its dedicated platform, aimed at educating young generations on key sustainability concepts and issues.

Thirdly, the induction of technological, social and organisational innovation must be finalized to the implementation, execution and management of effective solutions to sustainability problems. This last aspect is of particular importance for the Mediterranean Agri-food Businesses, which represent key actors of the transition towards more sustainable pathways, but which often suffer from a serious lack in expertise and knowledge on sustainable development principles and practices.

Implementing Sustainable Development in Mediterranean Agri-food businesses

It is always more recognized that sustainability represents a driver of development not only at system level, but also at single business one. As showed by a growing number of academics and practitioners, in fact, attention paid by businesses to sustainable development issues does not only represent a duty or ethical imperative which can contribute to the tackle of sustainable development challenges at a larger scale, but it may also constitute a possible source of competitive advantage in terms of, for example:

- Reduction of both reputational, operational and market risks;
- Internal efficiency;
- Business growth and size;
- Job creation;
- Improvement of quality of life of workers and citizens of businesses' operating areas.

With reference to Agri-food businesses, in particular, it has been pointed out that many can be the benefits of adopting sustainability initiatives at business level (Pulina, 2010):

- Better connection of business with local communities;
- Promotion of the multifunctional role assigned by society to the Agri-food sector;
- Strengthening of the relationships of trust with consumers;
- More equitable sharing mechanisms of earnings among operators along the supply chain;
- Triggering of control mechanisms over the supply chain;
- Reinforcement of both business' image and customer loyalty.

Such benefits regard not only large Agri-food businesses. On the contrary, also Small and Medium Enterprises (SMEs) could significantly benefit from effective attention to sustainability issues, and therefore should be included among the key subjects of the process of transformational change towards more sustainable patterns of consumption and production. SMEs, in fact, have proved to have enormous potential in terms of (Altieri, 2008):

- Greater production and efficiency levels;
- Greater natural resource conservation and lesser negative environmental impact;
- Greater capability to maintain specificities of landscapes and territories in which activities are carried out;
- Greater capability to satisfy changing needs of consumers, who are increasingly attentive to the quality and healthiness of goods.

In the light of considerations just exposed, it is clear that Mediterranean Agri-food businesses have a crucial role in the tackling of sustainable development challenges. As above mentioned, recent data and statistics highlighted once again the leading role of the Agri-food sector in Mediterranean economies, as well as on employment⁶.

⁶ Rural population in the Mediterranean region represents from 5% to 42% of total population in the countries of northern shore, from 27% to 57% in those of the southern one, and from 13% to 44% in those of the eastern one (www.worldbank.org). Number of agricultural workers remains high, ranging from 1% to 42% of total employment in the countries of northern shore, from 12% to 40% in those of southern shore, and from 2% to 24% in those of the eastern shore (<http://faostat.fao.org/>). Agriculture makes a considerable contribution to the national economies of the Mediterranean countries. The share of agriculture in Gross Domestic Product (GDP) ranges from 2% to 20% in the Northern countries, while in southern and eastern shores it ranges, respectively, from 8% to 15% and from 3% to 10% (<http://faostat.fao.org/>). Agricultural products account for from 4% to 16% of total imports in the Northern countries, for from 0, 5% to 17% in the Southern countries and for from 10 to 11% in the eastern countries. Agricultural exports are also of strategic importance to the national economies of many countries, ranging from 11% to 18% of total exports in northern countries and, respectively, from 7% to 16% and from 14% to 24% in eastern and southern countries (www.wto.org).

Moreover, Mediterranean Agri-food sector is still dominated by SMEs⁷. Therefore, relying on sustainable development of SMEs to foster sustainable development of Mediterranean agri-food sector should represent the key to promote and achieve more sustainable patterns of consumption and production at a system level.

It is important to underline, however, that despite it is always more recognized that sustainable development can provide businesses (especially SMEs) with significant opportunities, benefits deriving from attention paid to sustainable development aspects represent just mere potentialities, which are not readily obtainable, but that constitute a mediated consequence of the ways in which sustainable development solutions and initiatives are concretely operationalized and managed within organizations as a whole. In other words, the extent to which businesses will transform potential benefits of sustainable development in concrete advantages will depend on their ability in concretely implement sustainable development initiatives into the core business of organization (*Sustainability Execution*).

Sustainability Execution, in turn, lies in the adoption of radically different approach of businesses to sustainability. Businesses, in particular, should learn to approach sustainability in a more strategic and structured way, and not only through the unwitting adoption of activities often inspired by philanthropic reasons or simply as a moral obligation. An effective execution of sustainability at business level must necessarily pass through the clear definition of specific sustainability goals, management mechanisms, operative procedures and internal measurement and reporting systems, as well as new governance systems and even business models capable to embed sustainable development aspects within all the organizational levels, encouraging, at the same time, the adoption of more responsible purchasing behaviors among consumers.

Alongside the need for a more factual approach to sustainability issue, in fact, the crisis of traditional agricultural archetypes made emerge the necessity for businesses operating in the agro-food sector to radically change their business models in order to respond effectively to sustainability challenges (Jolink and Niesten, 2013) by modifying both the principles according to which economic activities are carried out and the logic underpinning value generation (Stubbs and Cocklin, 2008; Wells, 2008). Such transformations, of course, should take place within a context of profound changes in public policies, which must be properly designed in order to promote the adoption of sustainability business practices, as well as to sensitize citizens and consumers on the importance of pursuing sustainable production and consumption patterns.

⁷ CIHEAM (2009)

In a more formalized way, three are the dimensions according to which sustainability execution should be carried out, which are strictly related among them:

- Technological (regarding products / services or business processes);
- Organizational (related to strategies, organizational structures, business models, operational mechanisms and accounting tools);
- Cultural (tending to identify more and new learning processes and organizational change).

Such dimensions, and more generally sustainability execution, acquire particular relevance with reference to SMEs. Despite, as above mentioned, SMEs have both and they have a significant weight in the Mediterranean economies (not only with reference to Agri-food sector) and a great sustainability potential, they often suffer serious lack of profitability, which made impossible for them to survive over time them and, as a consequence, to turn their potential into effective contribution to social and environmental sustainability at a system level. Therefore, a more strategic and formalized approach to sustainability may represent the chance for SMEs to increase their profitability and give their contribution to the struggle of sustainability issues improving, at the same time, the sustainability of territories and communities in which they operate.

Conclusions

During recent years, agriculture and food have become two of the most debated themes within the field of sustainability research, also with reference to Mediterranean basin, one of the most vulnerable areas in the world from a social and environmental point of view. The Mediterranean Agri-food sector, in particular, is severely affected by socio-economic problems related to food systems and water resources.

Given the potential repercussions of such issues on the future of the sector and the entire area, sustainable development of Mediterranean Agri-food sector should be put at the center of political and institutional agenda, with complex transformations and interventions to be carried out. Such transformations, however, are far from being easily achievable. Despite events of 2015 (first of all the launch of SDGs and the COP21) should guarantee that transformative changes in food and water systems for sustainable development will receive the deserved attention, in fact, greater efforts in shifting from the identification of sustainable development solutions to their practical adoption (*Sustainability Execution*) will have to be carried out.

Sustainability Execution is of particular relevance for SMEs, which have enormous potential in terms of sustainability, but that often lack in that profitability needed to survive over time and turn their potential into effective contribution to sustainable development at a system level.

Sustainability Execution, of course, should be undertaken within the context of a strong cooperation among Mediterranean Countries, based on Joint Research initiatives. A more cooperative approach to sustainable development, in fact, is the only way to identify relevant solutions to sustainable development problems of the area and, in turn, to effectively tackle Mediterranean sustainable development challenges. Many initiatives have recognized the importance to reinforce cooperation in the Mediterranean, focus on food and water issues and rely on a radical change in how businesses relate to sustainability.

Among the others, the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) represents an integrated programme on food systems and water resources aimed at the development of *"innovative solutions and promote their adoption for improving the efficiency and sustainability of food productions and water provision, in order to support an inclusive well-being and socio-economic development in the Mediterranean Area, within the framework of a reinforced Euro-Mediterranean co-operation"* (PRIMA, 2014, p. 34).

The initiative underlines an aspect already highlighted during recent years also at EU Commission level⁸, i.e. the importance of shifting from the individuation of solutions to sustainability problems to their effective implementation within a context of strengthen cooperation. In doing this, however, it recognizes that diversity in cultures characterizing the Mediterranean area represents is a great resource to sustainable development. By sharing a common history and a common future, in fact, Mediterranean cultures offer proper solutions to tackle sustainability challenges of Mediterranean Agriculture and Food systems, promoting peculiarities of different geographical areas and integrating different perspectives with sustainable development values.

In this sense, the PRIMA initiative can represent a powerful means to strengthen long-term euro-Mediterranean cooperation. Research and innovation on which PRIMA focuses, in fact, constitute the key elements of a shared process able to foster political dialogue, economic cooperation and cultural exchanges, as well as to promote the so called *scientific diplomacy*. Such process can also enable the development of human capital, facilitating the creation of scientific collaborations based on a common language that overcomes cultural and geographical differences among countries (Rossetti di Valdalbero et al. 2013).

⁸ European Commission (2010) "Euro-Med 2030: Long term challenges for the Mediterranean area - Report of an Expert Group -"

Moreover, given the peculiar strong integration among participating countries characterizing it, the PRIMA initiative is in no way a competitor or a repetition of several other EU initiatives of research and innovation concerning food and water. On the contrary, it opens important spaces for creating fruitful synergies among EU initiatives able to furtherly reinforce cooperation among Mediterranean countries.

With such considerations, we are not trying to argue that the PRIMA initiative and, more generally, research and innovation will solve all the problems of the Mediterranean region. Rather, we would like to underline that in the year of the celebration of 20th anniversary of the Barcelona declaration, the Mediterranean region has the chance to lay the bases for that process of change aimed at the overcoming the socio-political crisis affecting it, and research and innovation can represent the cornerstone of such process.

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