

## Ecological Science and Ecological Awareness

When we talk about the environment, we must use the term “equity”, which defines the new challenge that emerges from the consequences of climate change and the destruction of nature. An initial examination of the subject reveals that the UN Human Development Report 2011 warns that the deterioration of the environment threatens global progress, particularly in the poorest countries. The inequalities in this field are manifest: thus, the inhabitant of a country with a very high Human Development Index (HDI) emits 30 times more carbon dioxide than an inhabitant of a country with a lower HDI. Such high emissions are the result of the energy use derived from driving vehicles, heating and air conditioning, as well as the consumption of processed and packaged foods. Therefore, very often economic growth goes hand in hand with environmental deterioration. The study *The World in 2050*, based on the projections of GDP per capita and population growth to present possible future scenarios, predicts that the energy demand is a difficult but feasible challenge with significant investments in energy efficiency and low carbon emission alternative energies. However, meeting the nutritional needs and access to sustainable resources for 9,000 million people in 2050, a population whose standard of living is predicted to be higher than today, involves numerous unknown elements. In 2050 it would be necessary to increase the agricultural production level by 70%, according to the United Nations Food and Agriculture Organisation (FAO), with the difficulties this entails for soil erosion and water source. The projections for 2025 indicate that two thirds of the world population – that is, 5,500 million people – will live in water scarcity areas.

This data is especially worrying for our Mediterranean region, which has an increasingly more fragile ecosystem, so the environment is one of the main challenges. The societies of the riparian countries must face great democratic challenges in which economics, culture and ecology are decisive in the present and will be even more so in the future. Access to water, air pollution, impoverishment of sea resources, contamination and waste water management, uncontrolled coastal urbanisation, the consequent disappearance and debilitation of fauna and flora, and the uncontrolled increase of modes of transport both by sea and land will have to be managed to avoid producing a collapse of capacities and achieve greater energy efficiency in the framework of sustainable development. This great objective will have to be considered by the diverse actors at all levels of society, in order to find solutions to problems that affect not only those of us currently living in these territories, but also future generations.

This current issue of *Quaderns de la Mediterrània*, entitled “Ecology and Culture”, is an interdisciplinary reflection by thinkers, writers, experts in diverse technical and

environmental disciplines to explore the important territorial, political and cultural challenges we are facing. Moreover, some examples of good practices are also provided. This is a question of finding the necessary balance between ecological science and ecological awareness. In this respect, the thinker Edgar Morin, in the interview in this issue, encourages us to develop ecologised thought in the 21st century, based on three points: first, the reintegration of our surroundings into our anthropological and social awareness; second, the ecosystem resurrection of the idea of nature; and third, the decisive contribution of the biosphere to our planetary awareness.

The space constraints imposed by the journal oblige us to choose those issues that seem most important in the field of ecology, as well as giving the floor to some actors from civil society who, with their reflections or experiences, can urge us to confront this great ecological challenge in our Mediterranean area. The authors, in general, call for an ecosystem vision to approach our surroundings in a just and global way, but taking into account the geographic and cultural diversity.

Thus, water is a priority issue, which we tackle from different angles. Based on global questions, Professor Pedro Arrojo argues the need to approach its distribution from an ethical point of view. In this respect, he warns us that the serious damage caused to the aquatic ecosystems over recent decades make necessary the application of the principle of sustainability in water management at a world level. Current water scarcity demands, in effect, the management of this resource as a universal citizen right. To this end, environmental policies used until very recently, characterised by inefficiency and irresponsibility, must change radically. For this reason, Arrojo defends adopting the principle of sustainability as the basis of water management, from the aforementioned ecosystem approach, while calling for the strengthening of public responsibility. For his part, the researcher Habib Ayeub, resident in Cairo, warns us how in southern Mediterranean countries water scarcity has worryingly been experienced for decades. Over the centuries, the physical and climate conditions of this area have forced the people who live there to come up with mechanisms to guarantee the agricultural production while respecting the vegetal biodiversity of the territory. The survival of small farmers and, in general, the entire population of the southern Mediterranean has always been based on the consideration of water as a valued and scarce good. However, in the last few years the traditional hydraulic infrastructures have been disappearing to give way, in the name of progress, to uncontrolled overexploitation of natural resources. For Ayeub, this overexploitation only benefits investors with economic interests in the area and those political actors linked to them.

However, we can also find many innovative good practices that are gaining ground, especially thanks to the initiative of an active civil society in favour of the environment and the revision of the development model of the region. Latifa Almou presents to us a good water management practice by the associations and cooperatives in the southern area of Morocco. In many of the arid areas of the southern Mediterranean access to drinking water in rural areas is sporadic or even non-existent, conditioning the everyday life of these communities, which is already harsh. To confront this situation, cooperation projects

have been implemented, which attempt to ensure access for some rural populations to drinking water through the use of a community management system. Since 1994, the Tichka Association, to which Almou belongs, has worked in different programmes for the water supply in southern Morocco. These projects, which embrace technical as well as social and educational aspects have largely managed to improve living conditions and local governance in the area they have been implemented.

Another major theme linked to sea resources, specifically fishery, is examined by the researcher Jordi Lleonart, who explains that the fishery tradition in the Mediterranean is currently experiencing a highly precarious situation owing to overexploitation of resources in recent decades. The difficulties of management shared between distinct countries that have territorial waters in the basin, as well as the increasing demand for caught species, make clear the inefficacy of the current fishery model. Other factors that contribute to exhausting resources must be added to this, such as the degradation of the ecosystems, the advancing climate change or the price competition brought about by globalisation. This all means that the future of fishery involves a series of decisions to guarantee the preservation of species and end the policies for attaining short-term economic profits. Subsidies are a factor of special impact in this respect. Lleonart argues that public money can be useful to guide fishery towards a more rational and respectful activity, avoid over-fishing and recover resources; however, it is usually used in the opposite sense and tends to strengthen overexploitation, often under the guise of national interests.

Moreover, for millennia the Mediterranean landscape has been shaped by its civilisations. The socio-ecologist Ramon Folch states that the socio-economically advanced territories, also called developed, are always territories that have suffered a great transformation but, however intense this anthropic transformation, that is, originated by human beings, we cannot overlook the prior reality of the base matrix. This is elementary proof that is all too frequently forgotten. The knowledge and recognition of the possibilities and limitations of the biophysical matrix, as well as the environmental matrix from which it derives, is a major component of sustainable territorial management. In accordance with this appraisal, but from another point of view, Luis Díaz Viana and Gianluca Solera rethink the landscape and take it to the world of knowledge itself, the former to stress social sciences and the latter to emphasise diverse examples of good practices of civil society both in the north and south and east of the Mediterranean.

For the anthropologist Luis Díaz Viana, with the development of the cities and the exodus of the rural population to urban zones centuries ago, a phenomenon began of seeking nature and the return to the rural world that, since then, has accompanied human beings. In this return, in addition to practical and economic reasons, there is without doubt a psychological aspect: returning to the country is a dream pursued, a desire to rediscover the places and times of our childhood. Therefore, memory plays a fundamental role in this phenomenon of return to the rural world that, in some countries of the West, is becoming quite a common practice. This is why the dynamics of population redistribution, observed from a multidisciplinary perspective, can answer the great questions posed by social sci-

ences. For Gianluca Solera, network Coordinator of the Euro-Mediterranean Anna Lindh Foundation for the Dialogue between Cultures, to talk of conserving the known landscape is no longer simply a question of protecting certain spaces from uncontrolled urbanisation and industrialisation. The author admits that it is also about this and says: “My country, Italy, boasts the sad distinction of having the highest level of cement production and land consumption in Europe, together with Spain.” But he basically underlines the loss of territorial identity, the loss of memory of places, the simplification of biological diversity and the superimposition of different cultural and ethnic communities. Today, says Solera, it is necessary to work to recover biological diversity by valuing cultural diversity, which is enriched day after day with migratory movements and flows, some of which are caused by the ecological crisis or climatic disturbances.

If we delve into the terrain of culture, the concept of Mediterranean diet is developed in the article by Sandro Dernini. For the coordinator of the Forum on Mediterranean Food Cultures, it is a concept that goes beyond food and rather defines a lifestyle based on tradition, sustainability and wellbeing. In this way, the consumption of local seasonal products, the preparation of dishes following traditional recipes and respect for biodiversity of the environment are the pillars of such a varied diet, recognised as one of the healthiest in the world. Moreover, Dernini argues that following the Mediterranean diet ensures the conservation of the territory and the development of traditional activities characteristic of each community faced with the changes brought about by globalisation. The diet thus represents the collective “memory” of the diverse communities that live in the Mediterranean, which since Antiquity has been a crossroads of diverse peoples who have developed civilisations, languages, religions, and distinct food traditions and practices. The concepts of seasonality, local production and variety of colours for fruit and vegetables were introduced together with those of frugality, the main meals of the days, a happy environment and physical activity. For Dernini, this is the model that characterises sustainable diets, in which nutrition, local food production, biodiversity and culture are strongly interconnected, with a low impact on the environment.

While Ramon Folch maintains that territorial destructuring and environmental deterioration result from spatial occupation without planning guidelines, Henri-Luc Thibault, Director of the Plan Bleu, and Habib El Andaloussi, responsible for the Plan Bleu energy programme, remind us through a forward-looking study that, despite the alarms sounded since 1992 in international conferences that aimed to slow down global warming, and despite the prospects of reduced fossil energy resources that advise moderated consumption, the fact is that few actions or measures have been taken to affect energy demand. However, there are very specific measures than can have significant repercussions in this field, so the authors offer us various scenarios. This is the case of everything related with improving energy efficiency in construction, unstoppable because of demographic expansion. Based on the work carried out in the framework of the Plan Bleu, these analysts have designed a scenario of rupture for 2030 in the field of energy for southern and eastern Mediterranean countries. In it, Thibault and El Andaloussi emphasise the importance

of construction in regional energy consumption and the different instruments that could be used to reduce it.

As the Director General of the IEMed, Andreu Bassols, writes in the presentation of this issue of *Quaderns de la Mediterrània*, all these aspects lead us to a key question: the urgency of encouraging a management, a regional governance of the Mediterranean. Without the collaboration of all countries and all actors, the Mediterranean might not be sustainable. We need this regional cooperation to approach all the issues with a transnational dimension together.

The political context of the Union for the Mediterranean (UfM), despite the difficulties that the integration project is currently experiencing, should be a space of action and reflection for the implementation of elements of social, economic and cultural development, where ecology is not a trivial factor, but quite the contrary. Gianluca Solera warns that the UfM's mission is focused on some specific ambits, including the environment, so it needs a global political vision with views to sustainability at a time of heavy demands for jobs. Despite the strictly intergovernmental nature of the institutions, it is desirable that organised civil society can "interfere" in the choice of some of the investments carried out by some governments. The meeting held in June 2011 in Barcelona between around forty NGOs in defence of the environment and the Secretariat of the UfM has made it possible to implement the idea of creating a permanent coordination group that can carry out lobbying, consultation and training functions for the UfM agencies, so that investments in the fields of de-pollution, biodiversity and energy have ecological sustainability as the objective.

However, this is a task that concerns us all and involves our transformation from simple consumers into agents that mediate with nature, with other peoples and with ourselves. In this respect, together with the work of the specialists and of diverse actors in the association world, *Quaderns de la Mediterrània* includes the reflections of two renowned intellectuals, one from the West and the other from the East, who set out for us their ethical vision of ecological science and ecological awareness. The first, cited earlier, is the thinker Edgar Morin, who proposes the development of an "ecologised" thought in all disciplines, with the aim of eliminating fragmented visions. The second is the writer Haruki Murakami, who explains the recent and devastating catastrophe suffered in Japan and finishes with an optimistic call: "We cannot be afraid of dreaming. We should not let ourselves be trapped by the disaster dogs that present themselves with the names 'efficiency' and 'convenience'. We need to be 'unrealistic dreamers' that move forward with a resolute step. Humans die and disappear. But humanity lives on. It is something that is inherited indefinitely. But above all else, we have to believe in the power of humanity."

The dialogue to ensure that our countries are more united and respectful of human rights and citizen participation is the basis to innovate and realise dreams together in our Euro-Mediterranean space.

**Maria-Àngels Roque**

Editor-in-Chief of *Quaderns de la Mediterrània*