

Background document

Contribution of forests and other wooded lands to food security in the Mediterranean

This “background paper” was prepared by a panel of experts in the context of the Enlarged Executive Committee of Silva Mediterranea during the first Mediterranean Forest Week, held from 13-16 April 2010 in Antalya, Turkey. The panel of experts comprised representatives of member countries of the Silva Mediterranea Committee, research organizations and networks, landowner associations and non-governmental organizations active in the Mediterranean.

During the Mediterranean Forest Week organised by the FAO and the EFIMED, numerous experts from neighbouring countries and international organisations met in Antalya on 14 - 15 April 2010. After highlighting the principal features of the institutional, environmental, social and economic contexts in which Mediterranean forests and other wooded lands currently evolve, they draw up proposals to be submitted to the Union for the Mediterranean (UPM) with the aim of better integration of the sustainable management of Mediterranean forests and other wooded lands among the Union programme priorities to ensure food security and the sustainable development of the Union's rural areas.

Institutional context

Since its creation on 13 July 2008, the Union for the Mediterranean has continuously expressed its commitment to the sustainable social, economic and environmental development of rural areas, and especially to food security. Forests and other natural and wooded land constitute an integral part of these areas. A meeting of the Ministers for Agriculture of the UPM will take place in Cairo in June 2010¹.

The Committee on Mediterranean Forestry Questions “**Silva Mediterranea**”, a statutory body of the **FAO**, was officially established in 1948, under the auspices of three FAO Forestry Commissions relevant to the Mediterranean (European Forestry Commission, Near

1 - This meeting was put back, a first time, from 15-16 June 2010 to November 2010 (and one more time, postponed until another date)

East Forestry Commission and the African Forestry and Wildlife Commission). The *Silva Mediterranea* involves 27 member countries whose territories are situated wholly or partly in the Mediterranean basin or whose forest, agricultural, or grazing economies are intimately associated with those of the Mediterranean Region. It has always sought to develop cooperation between the countries around the Mediterranean Rim to address priority issues such as forest fires, climate change adaptation and sustainable forest management.

The European Forest Institute (EFI), through its Mediterranean branch **EFIMED**, works to address the need for science-based information in decision-taking and policy-making which requires advancing the existing forest research capacities in the Mediterranean region. EFIMED through a wide consultation process has prepared a “Mediterranean Forest Research Agenda” (MFRA) for the 2010-2020, which presents a joint vision, by more than 100 experts from 15 Mediterranean countries, on the emerging challenges for Mediterranean forests and forestry as well as the main strategic research priorities to address such challenges.

The **Blue Plan** for the Environment and Development in the Mediterranean, a regional activity centre of the Mediterranean Action Plan (MAP) of the UNEP, integrates the issues involving woodland territories in its programme of future studies and in monitoring the Mediterranean Strategy for Sustainable Development.

Picture 1:
The participants of the 1st
Mediterranean Forest
Week at Antalya



The International Association for Mediterranean Forests (**AIFM**), established in 1996, gathers people from nearly all the Mediterranean countries in order to develop shared vision and pilot experiments on the sustainable management of forests, woodlands and other natural areas. The AIFM is developing a network of collaborations. Among others, the AIFM has led the project “Problems of the Mediterranean forest” (2000-2002, Interreg IIC) that generated the Declaration of Marseilles. Then, this NGO is disseminating knowledge and results of shared initiatives within the Mediterranean, facilitating exchanges and fostering advocacy on regional, national, European and Mediterranean levels.

Founded in 1962, the International Centre for Advanced Mediterranean Agronomic Studies (**CIHEAM**) is an intergovernmental organisation comprising thirteen member countries from the Mediterranean Basin (Albania, Algeria, Egypt, Spain, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Tunisia and Turkey). CIHEAM is made up of a General Secretariat based in Paris and four Mediterranean Agronomic Institutes located in Bari (Italy), Chania (Greece), Montpellier (France) and Zaragoza (Spain). In pursuing its three central missions (education, research and cooperation) CIHEAM has come to be recognised as an authority in its fields of activity: Mediterranean agriculture, food and sustainable rural development.

WWF, the World Wide Fund for Nature active in the Mediterranean through its Mediterranean programme office based in Rome its network of 5 national offices in France, Italy, Spain, Greece and Turkey developed a Mediterranean Initiative. WWF with its partners contributes to the conservation, sustainable management and restoration of forest/ terrestrial landscapes while addressing markets, policy and capacity building issues and needs. WWF has organized in collaboration with IUCN a conference in Athens, Greece, in April 2008 that resulted in the Athens declaration and a joint publication with FAO on “Adapting to Global Change Mediterranean Forests”

ARCMED (2007), the Private Forest Owners Association of the Mediterranean, gathers regional and national forest owners association from the North of the Mediterranean (Spain, France, Italy and

Greece) and works in close cooperation with the Confederation of European Private Forest Owners (CEPF) to defend and promote the interests and values of private property ownership, to develop training and education, to promote and support sustainable forest management, to structure the private forestry sector in the north of the Mediterranean Basin, to boost capacity building through the promotion and support of private forest owners associations, and to foster collaboration among goal related organizations and institutions.

The **Mediterranean Model Forest Network** (MMFN) is a group of governance organizations that from 2008 aims at applying the Model Forest concept in the Mediterranean. Since this concept is a proofed tool that has been previously used in nearly all regions of the world for the integration of different values and uses of forest territories and since it applies innovative governance skills for the building of the common vision and the adaptive use of the best knowledge available, the territories involved in the MMFN provide the obvious test arenas for this needed new approaches.

The **forestry and environmental administrations and agencies** of many states, regions or provinces bordering the Mediterranean have for a long time been expressing major concern about the integration of forests and terrestrial ecosystems within a sustainable land use and management systems of their territories. A regional forum: Forestry sector and sustainable development in the Mediterranean - challenges, policies and governance was held in Rabat, on 24 - 26 November 2005 organised, by the government of the Kingdom of Morocco and the FAO with the support of the Blue Plan and the AIFM. Most of its conclusions were considered and integrated in this document.

Environmental, social and economic context

Over thousands of year, Mediterranean forests and other wooded lands have evolved under the combined impact of the natural environmental factors such as relief, soils, climate and the activities of human society. The civilisations that have succeeded each other around the Mediterranean Rim have

List of supporting organizations

The panel of experts which has prepared this "background paper" comprised :

- Members of the FAO - Silva Mediterranea Enlarged Executive Committee (FAO's statutory body), including representatives from member states (Bulgaria, France, Morocco, Turkey) and coordinators of thematic working groups (Italy, Portugal, Morocco and Bulgaria)
- FAO - Silva Mediterranea Secretariat
- Blue Plan for the Environment and the Development in the Mediterranean (UNEP/MAP)
- EFIMED, Mediterranean branch of the European Forest Institute (EFI)
- International Association for Mediterranean Forests (AIFM)
- International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)
- WWF (World Wide Fund for Nature) Mediterranean Programme Office and WWF Turkey
- ARCMED, Private Forest Owners Association of the Mediterranean and CEPF (Confederation of European Forest Owners)
- GTZ, German Technical Cooperation Agency for the Development
- Mediterranean Model Forest Network (MMFN)

transformed and shaped all the components of their territories, including the forests and other wooded lands.

Since Antiquity, these lands have provided multiple resources (foodstuffs from hunting and gathering, fodder and grazing for herds, firewood, timber, cattle, cork...) not only for the local rural populations but, also, to the cities to trade and to industry. Stereotype images of "virgin" forest or, in complete contrast, of forest as a "machine for producing wood" are completely unsuited to the Mediterranean. Indeed, the multiple uses are one of the defining characteristics of the Mediterranean forests. A particularly important aspect is the role of herds: in traditional agrarian systems, the livestock grazes a major part of its food in the forest and on other natural land (Mediterranean *saltus*), and fertilising the cultivated land with the nitrogen and the phosphorus content of their excrement.

In modern time, there has been massive development of urbanisation industrialisation long-distance low-cost transport and market competition between all the regions of the world. These changes in land-use have caused series of ruptures in the uses of Mediterranean forests and other wooded lands and in the nature of goods and services expected of them.

In the countries of the northern Rim, traditional rural uses have by and large disap-

peared. Because of the natural dynamics of woody vegetation, forests and “matorrals” have reconquered large tracts of abandoned agricultural or grazing land. As a consequence, the massive development of the scrub and undergrowth combined with lack of management, heat waves and drought during summers increased enormously the risk of fire.

In the countries of the southern and eastern Rim, in contrast, numerous poor rural populations in their struggle to survive, must continue to maintain excessively high pressure on woodlands, ploughing up marginal or erodible land for farming, overexploiting firewood and over-grazing. Such activities bring with them high risks of degradation of plant cover, erosion, desertification and loss of biodiversity. The most effective means of combating these risks is by reducing poverty.

In the north, as in the south and in the east, permanent resident city dwellers and tourists now make new demands on forest and natural land: congenial landscape, leisure in a natural environment, or clearing for urbanisation and infrastructure. Such demands are often the sources of conflicts between either non-compatible users or with landowners. Thus, a clear need has emerged for making changes in property rights and uses as well as for designing new procedures of governance.

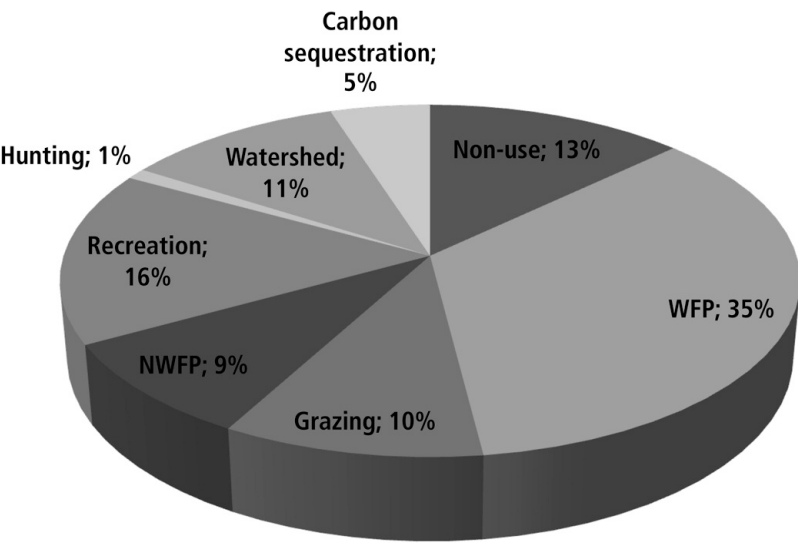
For a long time, “ecological services” provided by woodlands (soil and water protection, biological diversity of flora and fauna, climatic buffer) were regarded as normal consequences of wise forestry management. Moreover, the forestry administrations in various Mediterranean countries have already undertaken specific action for reforestation, soil protection, reclaiming landscape, fighting erosion and desertification, watershed management and the protection of rare or endangered species. But it is only quite recently that awareness was raised on the economic value of these services, and of the need to manage them sustainably as such, in particular under the aegis of international conventions for combating desertification (UNCCD) and for the conservation of biodiversity (UNCBD).

Concerning the total economic value of Mediterranean woodlands, it is important to point out that the production of commercial, non-commercial and self-consumable goods, as well as the management and protection of the capability for delivering environmental services, equate to providing employment (Box 1). Such “jobs” result in direct income (marketable goods and services), shadow remuneration (self-consumption), indirect income through connected products (tourism services, increase values of houses...), or be financed through taxes or fiscal measures whose importance is growing in many urban areas.

Climate change will affect ecosystems and societies around the Mediterranean basin in a more drastic way than in the rest of the world. Temperature is expected to increase more than the global average (especially in summer) and rainfall is expected to decrease around 20% by the end of the century. Already nowadays, 7% of the world population is located in the Mediterranean area that has access to only 3% of the world’s water resources. This region is home to 60% of the global water-poor countries, which have less than 1000 m³/cap/year. Furthermore, science based predictions estimate that by 2025 up to 63 million people in the Mediterranean countries will be in the need of water (with less than 500 m³/cap/year).

In this context, Mediterranean forests are the most important ecological infrastructure in the region, home to 25 000 plant species of which 50% are endemic, playing a key role in its resilience and adaptability as they affect

Box 1:
Composition of the Total
Economic Value of
Mediterranean Forests
Source: Merlo & Croitoru
2005
NWFP: non-wood forest
products;
WFP: wood forest
products;
non-use: bequest
and existence value.



the availability of the two most scarce resources of the region: water and soil, as well as provide multiple goods and services crucial for the sustainability and well being of Mediterranean societies.

The threats from global climatic change have put a radically new set of constraints on the activities affecting woodlands. Until recently, one could rely on the remarkable resilience of Mediterranean ecosystems which enabled them to regenerate themselves, often after periods of severe degradation, and on the experience and wisdom of public or private forest managers. In the various scenarios presented by the IPCC, the Mediterranean region is confronted with a great increase in the aridity of its climate. The response of the ecosystems remains difficult to anticipate but there will certainly be a considerable increase in the threat of wild-fire, desertification and loss of biodiversity. Furthermore, new constraints threaten farmers, in particular the scarcity of water resources. The management of forestry and natural land will have to be all the more careful as we do not know where to situate the ecosystems' thresholds of resilience beyond which irreversible deterioration could occur.

It is increasingly accepted that sustainable land management must be grounded on good governance, implementing guiding principles of: subsidiarity, devolution of authority, evaluation *ex ante* and *ex post*, responsibility and accountability, participation of all stakeholders and all publics concerned or involved. These principles are relatively simple to state, but they are not so easy to put into practice: there are often numerous administrative, legal and even psychological and sociological obstacles that hinder their implementation.

Effective implementation requires research, innovation, development, training and information. Because of the Mediterranean region's social and economic characteristics and the nature of the difficulties encountered, the region is often in advance of other regions of the world in the field of sustainable management of its territories, including forests. Moreover, concerning such questions, some countries of the southern Rim are in advance of those on the northern Rim. The interest of international cooperation in this area is thus strengthened.

Principles of action

An action plan within the framework of the UPM's programmes could be proposed in order to develop the sustainable management of forests and other wooded lands, as an integral part of the sustainable management of rural territories in the Mediterranean countries. Such planned action will encompass several dimensions at different levels.

The environmental, social and economic dimensions constitute the three traditional pillars of sustainable development, and it is particularly important to integrate them effectively into all action undertaken not only because of the current state of these lands but also in regard to the foreseeable evolution of them that will be the result of the combined effects of natural factors and human activity.

The different levels concerned by this action plan are those of research and development, capacity building and knowledge / information sharing.

At the level of research, knowledge gaps are still considerable regarding the ways in which the forests and other wooded lands "eco-socio-systems" normally function, and are even greater regarding the ways in which they react and adapt (or not adapt) when faced with relatively rapid change in their environment, be it climatic, social or economic. But while more fundamental research remains essential, the urgency of many questions makes it impossible to wait until all requisite answers have been obtained. The Mediterranean Forest Research Agenda 2010-2020 (MFRA) is giving a fair statement of the current situation and needs about research.

It appears essential, therefore, to push forward at the level of research and development whose activities can take various forms: pilot operations, regional workshop, area-based projects, territorial forecast studies... The principal characteristics of such actions are first, to be firmly anchored in a given territory (a territory being the whole formed by an area's land and the people who live, work or have inputs there) and, second, to adopt a participative approach to doing things in order to involve stakeholders and all other concerned people in the construction of a commonly-held vision of the territory and its problems and in setting up and

managing shared projects. During such a process, basic questions concerning such vision, projects or territories may arise and have to be reformulated as questions for fundamental science, requiring a scientific approach and procedures. The results of these undertakings will be collectivised as the mutually-shared capital of accumulate knowledge.

Indeed, in order to build up shared knowledge from such research and development operations, it is necessary that suitable procedures be established to permit, in the first place, joint review and analysis of the various experience acquired and, subsequently, the diffusion of all conclusions via publications, forums, congresses, information platforms, databases, technical references, guidelines for good practices, technical or higher training courses...

Proposals for action

The proposals that appear in the following subparagraphs correspond to topics that have already been highlighted, in various forms, in several documents, in particular those established by the FAO, EFIMED, the Blue Plan and the AIFM (see the bibliography).

The first challenge is to develop an integrated strategy for sustainable management of forests and other wooded lands as part of the sustainable development of rural areas in the Mediterranean and within the context of climate change. To achieve it, it is necessary to mobilize all concerned stakeholders in the Mediterranean. Therefore, a high level conference on Mediterranean forests and other wooded lands must be organized, involving such stakeholders from different sectors. The other action field is to contribute to the implementation of the MFRA through an ERA-NET¹ scheme.

The potential reaction of the woodland ecosystems faced with major climate change is very poorly understood. It is often admitted that a rise of 1°C in the mean annual temperature could cause a movement of the distribution patterns of many plants 200 kilometres northwards, or correspondingly, 200 metres higher in altitude. But such an assessment is very rough and in reality multiple factors will come into play. In order to

help the best possible adaptation of the ecosystems, in particular by appropriate forestry, it is crucial to greatly enhance our knowledge of a range of fields from plant physiology to landscape ecology, through fundamental research and systematic observation. European networks for the observation of the health and ecology of forests have been functioning for a number of years. They have started to be implemented in some Mediterranean countries and it would be most advantageous to strengthen and generalise them in every Mediterranean country.

Around the whole Mediterranean Rim, the agents of forestry administrations are increasingly aware that, beside their traditional roles in technical activities (forestry management, reforestation, soil reclamation, watershed management...) and in enforcing forestry laws and regulations, they have to play new roles as facilitators, of developers, and even territorial mediators, helping all those involved to build a common vision for the future of their territory, along with shared territorial projects. But the initial training of these agents has seldom prepared them for their new roles. Participating in pilot operations and sharing knowledge in networks all around the Mediterranean are good ways for developing the overall capacity of forestry agents and also, of local territorial development officers, in order to make them effective actors in the integration of forests and natural ecosystems into the sustainable development of territories.

The central themes of these research and development operations will vary widely according to the regions. In the north, they will often be turned mainly towards "environmental services" and the expectations of city dwellers. In the south and in the east, primary themes include rural and agricultural development, food security and alleviating poverty. In all cases, the most important aspects include the economic assessment of uses, goods and services, both commercial and non-commercial and, in some cases, the legal aspects, particularly in relation to the precise delimitation of property and user rights. Predominant preoccupations will often concern good governance, i.e. the adoption of procedures enabling all the stakeholders to take part in the definition of overall strategy and specific projects as well as in their financing, management and evaluation.

1 - The objective of the ERA-NET scheme under the 7th Research Framework Programme of the European Commission is to develop and strengthen the coordination of national and regional research programmes through the provision of a framework for actors implementing public research programmes to coordinate their activities e.g. by developing joint activities or by mutually supporting joint calls for trans-national proposals. Under the ERA-NET scheme, national and regional authorities identify research programmes they wish to coordinate or open up mutually.

Agri-sylvi-pastoral equilibrium constitutes a particularly important issue: Mediterranean forests and other wooded lands have played a major role for thousands of years in the feeding of livestock herds. It seems that currently, where this role continues, it has undergone radical transformation. The size of the herds has increased, often greatly, but only a small part of their food still comes from natural vegetation (very variable according to the region, perhaps between 10-50%); the major share is made up of agricultural residues and purchased food, often imported. At the same time, strong social differentiation has often developed strikingly, with rich “capitalists”, often urban owners of very large herds, and poor rural shepherds or livestock farmers. These new livestock raising systems have generally replaced the traditional nomadic way of life and often result in the abandonment of the old practices of pastoral management, with subsequent lack of regeneration and increasing desertification. These situations are often poorly understood, and should be given priority in research and development activity. Studies should cover not only the management of pastureland and natural resources but, also, the channels of production and marketing of plant and animal products (wood and non wood forest products) as well as territorial development in areas which are often among the poorest.

New more research topics will certainly emerge from the questions raised by research and development schemes. Thus, the conservation of biodiversity (maintenance of the diversity of forest genetic resources, protection of rare or threatened species, enhancement of the mosaic of landscape) is a fundamental subject due to the fact that the Mediterranean is a hotspot for the planet's biodiversity. It is a fact that certain uses can favour biodiversity if they remain moderate but become catastrophic when excessive. This is the case, for example, for grazing in forest or harvesting forest biomass for energy purposes: if these uses remain moderate, they can contribute to wildfire prevention, to the opening up of landscapes and to the creation of animal-friendly habitats. But if these uses are overdone, they can provoke degeneration of the plant cover, soils erosion and the loss of biodiversity. In fact, research and development action must maintain a continuous interchange and it is essential that international



cooperation create the conditions for organising and optimising this dialogue.

In the sphere of operational activities, investing in forest fires prevention measures can offer a major opportunity for cooperation. The risk of such fires will probably increase due to global climate change. Very positive experience of collaboration in the prevention of and the fight against wildfire has already been acquired, mainly between neighbouring countries or regions. Such collaboration could be extended within the framework of UPM programmes and go as far as the constitution of a common fleet for mechanised intervention, particularly airborne (water bombers, helicopters), implemented with commonly-agreed interchangeable procedures, or the pooling of training facilities for fire fighting and more specifically for wildfire management and prevention.

Picture 2:

The *Pinus brutia* forest visited during the field trip of the Mediterranean Forest Week of Antalya
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Position paper¹

Contribution of forests and other wooded lands to food security in the Mediterranean

Mediterranean forest and other wooded lands contribute significantly to poverty alleviation and food security through the provision of multiple goods and services such as water supply, soil protection, rangeland use, biodiversity conservation, energy supply and wood and non wood forest products.

In the context of climate change and other increasing human pressures, investment in avoiding deforestation and in sustainable forest management are key issues for the provision of these goods and services threatened by drought, wildfires, erosion, desertification, emerging pests and diseases.

A better intersectoral and inter-institutional coordination with participation of local communities and other stakeholders is needed to foster the integration of agriculture, pastoralism, forestry, water, energy and other land-use sectors at policy, management and research levels.

Based on the outcomes of the Ministerial Meeting on climate change and food security held in Istanbul on 8 of March 2010 and recommendations of the Mediterranean Forest Week held in Antalya on 13-16 of April 2010, which gathered the experts and the international organisations of the region,

We, Ministers, recommend to:

- develop an integrated strategy for sustainable management of Mediterranean forests and other wooded lands to ensure the provision of goods and environmental services relevant to food security,
- implement the Mediterranean Forest Research Agenda 2010-2020 (MFRA) by developing an ERA-NET scheme,
- organise a high level Mediterranean conference with all relevant stakeholders in 2012 to develop a shared vision on this regional integrated strategy.

1 - Position paper to be submitted to the Ministerial Conference of the Union for the Mediterranean on Food security, Agriculture and Rural Development, that had to take place, 15-16 June 2010, at Cairo, Egypt.