The Mediterranean region is one of the world's biodiversity hotspots. Its mosaic of forest landscapes contributes greatly to the outstanding biological richness and multiple values that attract the many tourists that visit the Mediterranean every year. These Mediterranean forest landscapes also contribute to poverty alleviation, the socio economic development of rural areas, food security of local people and the preservation of the multiple environmental services considered today by the international community as of global importance *(biodiversity, landscape quality, preservation of water resources and fight against land degradation ...)*.

Despite their apparent fragility, Mediterranean forest landscapes have been shaped by human activities and have demonstrated for several centuries their strong resilience to changes of anthropogenic origins.

However, today they are facing a threat of unprecedented magnitude which they will have to adapt to in the coming decades. Climate change is expected to have significant, if not severe, impacts on Mediterranean ecosystems while at the same time the population of the Mediterranean region will increase significantly by 2050. This raises crucial questions. What can be done to ensure that Mediterranean forest landscapes adapt to new social, economic, environmental and climate conditions so they can continue to provide goods and services on which people depend? How can regional cooperation in this area located at the crossroads of Africa, Europe and Asia help countries respond effectively to the new challenges posed by climate change ? How can *Silva Mediterranea*, FAO and key partners provide effective and sustained support for forest-based adaptation now and over the coming decades?

How can the Mediterranean region, which is particularly hard hit by global change, become in some ways a laboratory to develop, test and disseminate best practices to promote the *adaptation of forest ecosystems to climatic changes and other pressures* during the twenty-first century?

These are some of the questions that Newsletter 3 of *Silva Mediterranea* attempts to answer trough the presentation of some activities, studies and projects on forest adaptation to climate change in the Mediterranean including:

1) a brief summary of priority issues on adaptation of forest ecosystems to climate change, which will be discussed in April 2010 at FAO regional forestry commissions, as presented in a regional analysis of forests and climate change in the Near East;

2) a brief description of some concrete actions at regional level (Case of the Project ''Adaptation of Mediterranean forests to Climate Change'' - AIFM – FOR CLIMADAPT) and projects being launched or prepared by different partners of *Silva Mediterranea*.

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News of *Silva Mediterranea* partners:

The Directorate General of Forests (DGF Tunisia) will host the 19th session of the FAO Near East Forestry Commission and the 1st Near East forestry week, to be held in Hammamet, Tunisia on 5-9 April 2010.

For more information: http://www.fao.org/forestry/31112/en/

The First Mediterranean Forest week will be organized in Antalya on 12-16 avril 2010. Organized jointly by EFIMED, FAO / *Silva Mediterranea*, l'Association Internationale Forêts Méditerranéennes, Blue Plan and Turkish Authorities of Southwest Anatolia Forestry Research Institute (SAFRI), this week provides an opportunity for enhancing dialogue between the scientific community, forestry administrations representatives and civil society organizations

For more information: http://www.efimed.efi.int/portal/events/mfw_2010/

The Research Agenda for Mediterranean Forest is now available in French on websites of EFIMED and *Silva Mediterranea*. Translattion in French was undertaken jointly by FAO and EFIMED to promote wider dissemination of these strategic guidelines on forest research 2010 – 2020 among French speaking decision makers across Mediterranean countries.

To download the Research Agenda 2010 -2020 in French:
http://www.efimed.efi.int/files/attachments/efimed/mfra_french.pdf

An inter-academic conference will be organized in Alexandria (Bibliothèque Alexandrine) on 22-24 June 2010. A session will be focused on the biodiversity of Mediterranean trees and forest landscapes. FAO will be presenting at this conference a regional synthesis on Mediterranean forests based on the data compilation and analysis of Forest Resources Assessment 2010 *(FRA 2010)*.

For further information on the Alexandria conference, please contact Jean Paul LANLY at : jean-paul.lanly@noos.fr

Forests and climate change: a regional analysis in preparation for the Near East

Climate change brings new challenges and opportunities to the forest sector and to forest dependent people in the countries of the Near East region. In tackling the challenges, it is crucial that forest decision makers have access to the best information available on the impacts of and responses to climate change and have the opportunity to learn from experiences and approaches of other countries. In response to requests from Near East countries, FAO, with the collaboration of the University of Alexandria, Egypt, is carrying out a regional analysis of climate change impacts and possible mitigation and adaptation actions in the forestry sector.

While most countries have developed national climate change strategies and plans, few countries have developed comprehensive strategies for addressing climate change mitigation and adaptation in their forestry sector. It is important that climate change strategies be well embedded into countries' national forest programmes – i.e. the policy, legal, institutional and governance framework for forests. The primary audience of the analysis is therefore forestry policy-makers, climate change officials and regional bodies dealing with forests and climate change issues.

The analysis will give a thorough summary of the observed and expected impacts of climate change on forests and other related sectors in the Near East region. The study will furthermore examine the major issues and developments related to forests and climate change responses in the region. It will examine international, regional and national developments and highlight opportunities for national and regional action to address gaps and needs.

The analysis will feed into a process for identifying opportunities for regional collaboration on forests and climate change, especially on adaptation, which will be initiated during the Near East Regional Forestry Commission in Hammamet, Tunisia, in April 2010. The final report is due to be completed by October 2010.

For more information on the report and FAO's work on Forest and Climate Change please visit the home page www.fao.org/forestry/climatechange .

Jesper TRANBERG/Susan BRAATZ

Predicted impacts of Climate Change

The IPCC's Fourth Assessment Report (2007) predicts a possible increase in temperature in the Near East and North Africa of up to 2 degrees Celsius in the next 15-20 years, and over 4 degrees Celsius by end of the century. The combined effect of higher temperature and reduced precipitation will increase the occurrence of droughts: an impact already evident in the Maghreb.

Changes in annual and seasonal precipitation patterns and in the frequency of extreme events, such as droughts, are severely impairing the production, quality and stability of agricultural systems, forests and natural ecosystems in the region. Climatic variations have consequences for the availability of water resources in the region, incidence of pests and diseases as well as extent of desertification.

These are and will continue to impact forests.

The aridity of the region and the low forest cover coupled with the high deforestation rates in some countries make forests, other natural ecosystems and agricultural land more vulnerable to the negative consequences of climate changes.

An example of concrete actions for the adaptation of Mediterranean woodland areas to the effects of climate change: the project FOR CLIMADAPT (2010-2013)

The International Association for Mediterranean Forests (AIFM: for more information refer to the association website http://aifm.org/) is the only NGO dedicated only to forestry issues throughout the Mediterranean. Based in Marseille (France) since its creation in 1996, its mission is to facilitate exchanges of experiences and knowledge among the different stakeholders in the Mediterranean about major problems affecting forest ecosystems: integrated management, climate change adaptation, biodiversity conservation, rural development, resource development, governance, knowledge transfer, promotion, etc. ... The AIFM brings together a network of over 3,000 experts in the Mediterranean. In this context, the AIFM developed and coordinated two European projects (2002-2007): "Problematic of the Mediterranean Forest" (Interreg IIC) and RECOFORME "Networking and cooperation activities in the Mediterranean forests" (Interreg IIIB, www.aifm.org/recoforme/).

The project QUALIGOUV (MED) which is currently under implementation (2009-2012) tackles issues related to governance and assessment of the quality of forest management in protected areas (www.qualigouv.eu). In this special issue of the Newsletter of *Silva Mediterranea* on adaptation of Mediterranean forests to climate change we felt it more appropriate to introduce a project currently under evaluation: **the Project FOR CLIMADAPT**.

Origins: Most often, the Mediterranean manager remains perplexed in front of climate change effects already visible: testing in the emergency, reacting in common sense, waiting ? The phenomenon is very complex and involves different factors. **Three types of efforts must be undertaken to meet the challenge: transferring scientific knowledge to management, improving of observation and monitoring system and cooperation between stakeholders at the regional level and between the Mediterranean countries.** Based on the compilation of results and lessons from projects implemented by the association between 2002 and 2007 AIFM organized four preparatory workshops that led to the development of an experienced partnership around the project FOR CLIMADAPT that represents diverse contexts of the Mediterranean.

Objectives: The overall objective is to improve adaptation capacity of Mediterranean forest ecosystems to climate change risks, especially erosion, fire and dieback through four complementary approaches:

- Development of observation and monitoring of changes that occur in ecosystem;
- Development of a new forestry by promoting natural capacity of ecosystems to adapt (mixed and irregular stands, use of local or Mediterranean species adapted to Mediterranean conditions);
- Development of methods for ecological restoration and reforestation of degraded lands;
- Information, awareness raising and the development of broader consultation to improve governance.

Concrete Actions: The project's focus is on developing concrete measures for adaptation, through pilot projects which, besides their own local utility, can be taken as a model for developing future initiatives.

Experiments will be developed on the following pilot sites:

- National Park of Vesuvius (Italy), leader of the project;
- Umbria Region (Italy): Mountain Community "Valnerina";
- Region of Murcia (Spain): Regional Park of Sierra Espuña;
- National Forest Office (France): a forest of silver fir dieback in the Aude and a reforested area (Atlas Cedar) in the Alpes-Maritimes;
- North Aegean Region (Greece): burned areas of Lesbos island;
- Association for Heritage Protection of Mertola (ADPM - Portugal): Natural Park of Vale do Guadiana.

Two other partners complement this partnership, being responsible for the project promotion and capitalization: AIFM and French Association *Forêt Méditerranéenne*. The French Forest Office and the region of Murcia will experiment new forest management practices favouring variability at the genetic, species, age of trees...levels. The Park of Vesuvius, the North-Aegean region, the region of Murcia and the *Association of Mertola* aim at improving bioengineering techniques for soil conservation and afforestation techniques in degraded land. The Umbria Region and the Association of Mertola will involve stakeholders to improve the prevention strategy against fire and will organize training and information sessions for locals. The association *Forêt Méditerranéenne* will initiate the creation of a platform in order to transfer validated knowledge in the French Mediterranean and will assist partner countries in developing such an approach.

Validated solutions at the Mediterranean level: Moreover, within the partnership, the solutions tested against the erosion at Vesuvius and in North-Aegean territories will benefit, for example, Alentejo and Murcia. The project results will be validated at regional level through the seminars. A peer group, composed of one representative of each partner and chaired by the AIFM, will analyze, identify good practices then try to endorse them for all the Mediterranean territories. AIFM will facilitate the dissemination of information through its Mediterranean network, its communication tools and new tools: website, newsletters, progress booklets... In this context, AIFM wants to bring together all the initiatives, launched and implemented, in the Mediterranean *(Silva Mediterranea Committee, EFIMED, Blue Plan, WWF, etc…).*

For further information please contact David GASC at AIFM : david.gasc@aifm.org.

David GASC/Jean BONNIER

Strengthening conservation and management of forest genetic resources (FGR): a key issue for adaptation of Mediterranean forests to environmental changes (EUR-MedFGR).

As part of activities of the Forest Genetic Resources Working Group of Silva Mediterranea (WG4), CIHEAM, the INRGREF and FAO organized from 10 to 12 March 2010 a regional workshop in Tunis to prepare a project proposal entitled **''Strengthening conservation and management of forest genetic resources (RGF): a key issue for the adaptation of Mediterranean forests to environmental changes (EUR-MedFGR)".**

The Tunis workshop, planned in accordance with the recommendations of the last meeting in Chania (Crete - Greece) in November 2009 (See Newsletter 2) was held at the ''Institut National de la Recherche en Génie Rural, Eaux et Forêts'' (INRGREF) of Tunis (Tunisia). Fifteen people attended the event, representing four countries of the Southern Mediterranean (Morocco, Lebanon, Tunisia and Turkey), four European countries (Italy, Spain, France and Portugal) and two regional institutions (CIHEAM and the Secretariat of *Silva Mediterranea*, FAO). Discussions have been held to permit, first, presenting the priorities of the partners of the future regional project and several working sessions were then used to prepare the proposal pursuant to the tender form of a COST project *(financing instrument for networking research activities of the European Union).*

The proposal, submitted March 26, 2010, will involve many partners in Europe and South Mediterranean if it is actually selected by the committee of European experts in charge of the evaluation of COST Actions.

Abstract of the project EUR-MedFGR :

Mediterranean climatic conditions will probably shift northwards into other European areas in the near future. FAO *Silva Mediterranea* identified conservation and management of Forest Genetic Resources as crucial for adaptation of Mediterranean ecosystems to climate change.

Although many trials have been carried out on Mediterranean forest species, research and information are fragmented and not sufficiently available for developing strategies for adaptation and mitigation. It is of mutual interest for Europe and Mediterranean countries to develop an efficient network to deal with this issue.

The project proposal prepared during Tunis workshop addresses this topic with: (i) compiling information on climate change impacts on Mediterranean Forest Genetic Resources (FGR) and forest ecosystems, (ii) making information available on these gene resources for preparing adaptation strategies and other programmes and (iii) selecting criteria, methods and protocols for monitoring and conservation of Forest Genetic Resources (particularly in rare and endangered species), and for their use to reduce vulnerability.

The main goal of this COST proposal is to generate relevant knowledge on the role and use of Forest Genetic Resources in the adaptation of Mediterranean ecosystems to climate change, using a multidisciplinary approach and creating a Mediterranean network to help achieve this objective.

The main expected impacts of this future Euro-Mediterranean project are:

1. Knowledge: genetic data made available through an open access FGR database, sharing scientific information to reduce fragmentation and gaps in knowledge and research.
2. Capacity building: standardized methods and protocols provide common methodology for conservation, training of scientists and practitioners.
3. Social impact: preserve multifunctional forests and goods and services they provide to local populations, safeguard precious genetic resources, transfer of knowledge to policy makers.

Fulvio DUCCI/Christophe BESACIER

Adapting forest policy conditions to climate change in the MENA region (Funded by BMZ)

Region / Countries: Mediterranean North Africa (Morocco, Algeria, Tunisia) and Middle East (Turkey, Syria, Lebanon)

Project proposed by GTZ in collaboration with national and regional partners in the Mediterranean.

National partners: Moroccan High Commissariat for Water, Forests and Combating against Desertification (HCEFLCD), National forest administrations, administrations of closely related sectors and non-governmental organisations of the participating countries Morocco, Algeria, Tunisia, Turkey, Syria and Lebanon

Duration of the project support by GTZ: 4 years (July 2010 to July 2014)

Background of the project: The Mediterranean basin is considered as one of the most vulnerable regions to the foreseen impacts of climate change. It is expected that the countries of the Southern and Eastern rims of the Mediterranean are likely to be the most severely hit. Climate projections indicate a continuous rise in average temperature and a decreasing annual precipitation. The frequency and intensity of extreme weather events and the risk of droughts, floods, forest fires and landslides are expected to increase. Climate change impacts on the Mediterranean environment will relate particularly to alterations in the water cylce, the degradation of agricultural land and the erosion of biological diversity. A large part of the population of the Maghreb and Mashreq countries live in rural areas mainly from agriculture, livestock husbandry and the use and commercialization of natural resources. Rural poverty and high youth unemployment are widespread. The overuse of natural resources and forests, overgrazing and competing forms of land use endanger forest functions and their environmental services. Climate change will exacerbate these problems and directly affect the livelihoods of the rural population. It will indirectly also affect the income situation of large parts of the entire population of the countries of the Mediterranean rim which could increase social and political, national and trans boundary tensions. The relevant countries are aware of these interlinked problems and are undertaking efforts to create suitable framework conditions, governance structures and practical examples by means of which the sustainable management of forest ecosystems and the maintenance of their environmental services in the context of climate change can effectively be combined with poverty reduction and socio-economic development.

Description of this project: Against this background, the German Federal Ministry for Economic Cooperation and Development (BMZ) has approved this regional project by the end of December 2009. The aim of this project is to improve the political frame conditions for the sustainable management of forest ecosystems in order to preserve forest-related environmental services in the context of climate change in selected countries of the MENA region which have sizable forest areas (Morocco, Algeria, Tunisia, Turkey, Syria and Lebanon).

The project is designed with three components:

1) Strengthening of the capacities in the selected partner countries for sustainable forest management in the context of climate change;
2) Improvement of communication and public relations related to climate change and the value of Mediterranean forests for stakeholders;
3) Mobilization of external support and partnerships for sustainable forest management in the context of climate change.

In line with this three-pillar strategy, the activities of the project will focus on capacity development of governmental and non-governmental actors who influence forest-related political decisions, including the media. Through regional training courses it will strengthen the competence and service orientation of forest administrations, promote inter-institutional and inter-sectoral learning processes, and help closely related sectors understand the linkages between forest environmental services, adaptation to climate change and poverty reduction. In addition, the participating countries will be assisted to position themselves better in international forest and climate negotiations and to mobilize external funding.

The project will be implemented in coordination with different partners, including the national forest administrations, administrations of closely related sectors and non-governmental agencies in the participating countries. The project office will be located in Morocco and the institution responsible for the coordination of the 'Forests and Climate' working group of the *Silva Mediterranea* network, the Moroccan High Commissariat for Water, Forests and Combating Desertification (HCEFLCD) will act as the local partner. The project will work in close consultation with the secretariat of the *Silva Mediterranea* network, managed by FAO in Rome. In order to ensure harmonization and complementarities, close coordination is also planned with the Blue Plan, the French Ministry for Food, Agriculture and Fisheries, and other regional partners such as the Mediterranean Regional Offices of EFIMED, IUCN and WWF.

Expected impact of the project support by GTZ

- Forest policies of selected participating countries consider the potential impacts of climate change and place greater emphasis on the value of environmental services provided by forest ecosystems and their advantages for other sectors.
- Selected sector policies and programmes of governmental and non-governmental actors outside the forestry sector take account of the value of environmental services of forest ecosystems in the context of climate change and integrate forest-related adaptation measures.
- The media (press, radio, TV) increases information and reports on the expected impacts of climate change and the socioeconomic importance of the environmental services provided by forest ecosystems.
- The forest sector of the participating countries receives more international attention and support.

Next steps for implementation of this project support by GTZ

- Organization of an inception workshop including operational planning with representatives of partners;
- Preparation of alliances between the different partners;
- Support of existing regional processes which contribute to the objective of the project support by GTZ;
- Planning and preparation of communications activities for the Year of Forests 2011.
- Preparation of concepts for national projects with potential to increase the resilience of forest ecosystems.

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