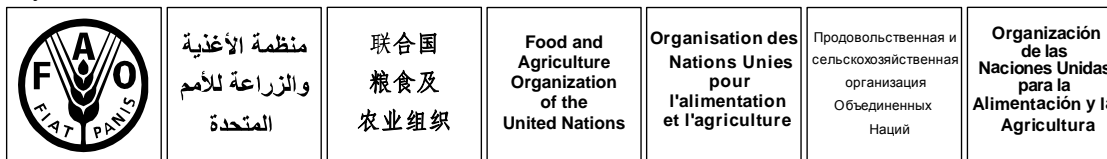


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CONTRIBUTION OF NATURAL RESOURCES IN FORESTS AND RANGES IN FOOD SECURITY: PROGRAMMES, POLICIES AND GOOD GOVERNANCE

I. Background

The Near East Countries are endowed with a vast variety of natural resources, including forests, grazing land and wildlife. Forest and range lands are the “invisible” backbone of the people’s food security in the Near East. Their products, including food, fodder and household items, and the income generated by them are quite significant to the food security of local communities throughout the Near East. However, their exploitation has resulted in severe land and environmental degradation in most countries. A number of environmental problems characterize the Region such as deforestation and overgrazing, depletion of biodiversity, soil erosion, river and dam siltation, desertification, and decreasing soil fertility. These have negatively impacted food security in the Region.

To address the trend of degradation, some countries established a number of initiatives for the management and protection of the natural resources to ensure their sustainable utilization. Several countries developed new policies, strategies and principles emphasizing protective and environmental aspects as well as partnership and participatory approaches.

At local level, natural resources management has always been important to communities and the poor. The traditional system of land management, i.e. cultivation on terraced steep slopes, water resources conservation, water harvesting and grazing systems as well as laws to organize grazing lands are well known to promote natural resources management. However, introduction of new concepts and approaches in forest and rangeland management, improved data and information management, provision of adequate financial resources, good governance of the forest and rangeland sectors need more attention.

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II. Forests and Rangelands in the Near East Countries

A.State of the resources

Forests cover less than 6% of the region, with an estimated 120 million hectares in 2010 (about 3% of the world forest area) - of which 11 million ha are planted (8 M ha for production and 3 M ha for protection). Other woodland areas cover an additional surface of about 60 million ha.

All forests in the Gulf countries - Bahrain, Kuwait, Oman, Qatar, the United Arab Emirates- Egypt and Libya are manmade. Plantations also represent a significant component of the total forest cover in Syria (57.3%), Jordan (47.6%) and Tunisia (47.2%)¹

Forests and rangelands are pillars of food security due to the wide range of products and services they provide.

Overgrazing, illegal logging and the uncontrolled collection of fuelwood, forage and wood due to inadequate management practices, excessive livestock numbers and sedentarisation of nomadic people in mountain areas are a major cause of land resources degradation across the region.

The abandonment of traditional rangeland conservation and rotation systems like the *hamiyaat* in West Asia and sedentarisation of nomadic people has led to increased grazing pressure.

The dieback of trees is a sign of forest degradation in many countries of the Near East. It affects especially conifers in mixed mountain forests in Algeria and Morocco; and pine forests in Turkey; juniper forests in Lebanon, Saudi Arabia, Oman and Yemen. Moreover, stands of relic forests and unique tree species, like the relic cypress trees in Morocco and Algeria are increasingly becoming over-mature with little regeneration.

Overgrazing and collection of fodder have strongly reduced the overall productivity and species diversity of natural pastures leading to significant soil erosion and land degradation.

The intense use of fire as a management practice in agriculture and rangelands, and the increased incidence of neglect and arson due to land use changes and conflicts, often caused uncontrolled fires, which burn significant areas of forestland every year.

Reports from countries in the Near East show increase in fire frequency and severity. The little forest that remains in Syria - 2.4% of total land area - is being further degraded due to recurrent fires that increased from 199 annual fires in 1990 to 364 in 2005. In Lebanon, more than 300 fires were declared in less than 24 hours on 3 October 2007, destroying thousands of ha of forests and other wooded lands².

Abandonment of traditional agriculture systems, like mountain terraces, has caused significant problems of soil erosion and hydrologic disruption in many mountain forest areas (i.e. the High Atlas; Southern Anatolian ranges; Mount Lebanon; mountains of Yemen).

The combination of high population growth, poverty and rapid urbanization is putting enormous pressure on the forests and ranges of the Near East. In 2006, the population of the Near East countries was about 485 million people, with relatively high annual growth rates.

Forests and rangelands continue to decline due to overuse and environmental degradation

The increase of the population has forced people to convert forest and rangelands into cultivated land, urban areas and to overuse wood and plants as fuel for household cooking and heating.

B.Main Functions of Forest and Rangelands

The main designated functions of the Near East forests are protection, multiple use and production. Protection forests represent 40% to 100% of the total forest area in countries like Algeria, Egypt, Bahrain, Kuwait, Iraq and Jordan. Production forests make up more than 75% of the total forest area

¹ FRA 2010

² Asmar *et al.* 2009

in Oman, Lebanon and Turkey. Multiple use forests occupy 30%-100% of the total forest area in West Asian countries like Saudi Arabia, Yemen, Syria, Jordan and Iran³.

Forests and trees provide subsistence for the local populations and are deeply integrated into the economies of rural societies in the Near East. A wide range of wood and non-wood forest products (NWFP) support the livelihoods of millions of people and constitute the basis for small-scale enterprises, which provide income and employment to rural people, especially women. In arid zone countries with low forest cover, trees and shrubs contribute to the economies of the local population, enhance the productivity of agricultural and livestock systems and, at the same time, provide multiple environmental services, which contribute to sustainable rural development.

Livestock plays an important role in the economies of the Near East countries, especially sheep, goats and cattle. They account for 30–40 percent of the value of agriculture output in these countries. Demand for livestock products has increased in the last decades and will continue to rise in the region due to the high population growth and increase in the standard of living in some countries. These factors together are leading to rapid expansion in demand for livestock products which exceed the small annual increase in the livestock population. The result of such expansion is more pressure on the already widely degraded rangelands in the absence of concrete measures for their sustainable management and hence loss of biodiversity and land fertility.

Fuelwood is the main energy source for cooking, heating houses, small industries (bakeries, potteries and food processing) in most developing countries. The lack of fuel and alternative energy sources has significantly increased fuelwood consumption in many forest regions of North Africa, Northern Anatolia and Iran. In these countries an estimated 86 percent of all the wood consumed annually is used as fuel. Despite the scarcity of the resources, the wood consumption for energy amounts to 55 million m³ in North Africa (0.5 m³/capita) and 13 million m³ in Near East (0.15 m³/capita)⁴.

C. Institutional Capacities and Governance

Forest and Range Policies

Countries are increasingly recognizing the important role of forest policy and legislation in the conservation and management of forests, trees outside forests, other wooded lands and rangelands. In the Near East, there are considerable differences in the evolution of the forest policies among countries, depending on the importance of forest cover, capacity of the forestry institutions and awareness of the importance of the forest resources.

Some countries of the Region have gained significant experience in the process of forest policy development within the context of the national forest program (NFP) and have a forest policy statement expressing the country's vision, strategy for implementation and commitment to sustainable forest management. Since 2000, 10 countries⁵ have taken action to review, adapt or new formulate their policies with the support by FAO or other international organizations. However, implementation of forest policy in some countries is often jeopardized by weak institutional setting, lack of financial resources and low interest by decision makers to the forest sector.

Legislation

The national legal framework related to forests constitutes a fundamental basis for sustainable forest management and is a key instrument to support the national forest policy. However, the present forestry legislation in many countries in the Region dates back to colonial times, sometimes even to the early 20th century. They are, in most cases, repressive, outdated and emphasize the strict conservation of forests. The regulations focus mainly on prohibitions, limitations and sanctions and do not consider the different roles and

Forest policy development and implementation are often jeopardized by weak institutional capacity, lack of financial resources and low interest by decision makers in the forestry sector.

³ FRA 2010

⁴ Unasylva Nr. 118

⁵ FAO FRA 2010

responsibilities of the administration, the private sector, communities and NGOs in forest management and development.

Since 1990, 11 countries have taken action to revise and update their forest laws and regulations and to introduce amendments giving emphasis to environmental and socio-economic dimensions of the resources as well to involvement of the local communities and the private sector. Turkey's forest law has been in force since 1956 and the Government is currently preparing a complete reform package. Iran's forest law has also been in place for a long time (since 1968) and has been amended several times since. In the Gulf countries, forestry legislation is limited to general environmental protection laws, and grazing, fuelwood collection, charcoal production regulations. The forestry legislation in Tunisia was amended twice during the last two decades. The last revision introduced a forest concession system to encourage private investment in forest resources management.

Financial Resources

In the view of the economic difficulties in many countries of the region and considering the low recognition of the importance of forests and rangelands to the national economy, financial resources required for long-term strategic planning, development, large scale rehabilitation measures of forests are seriously lacking. Weak institutions and insufficient allocation of budget characterizes the Forestry Administrations in most countries. In many countries, development and management activities in the forest sector depend entirely on international cooperation.

The financial restrictions for the forest sector are not necessarily specific to the poorer countries. Even the wealthier ones, because of the low priority level assigned to their forest sector, allocate financial resources far below the real needs.

Governance

Poor forest and range sector governance is often behind forest degradation, absence/unsustainable forest management and loss of biodiversity in the Near East region. This includes:

lack of adequate human and financial resources at all levels to ensure compliance with forest policies and legislation; weak institutional capacity at the level of government agencies, including inadequate manpower, skills, equipment and financial resources to implement and enforce laws; inadequate intra and inter-agency coordination and collaboration; lack of forestry and rangelands information, knowledge and inadequate data/information management.

The forest sector alone contributes US\$ 6.8 billion to the gross domestic product of the countries in the region. This remains part of the real contribution, since large quantities of NWFP used by the local populations for their daily subsistence are not accounted for in the national economies.

III. Benefits to Food Security from Forests and Rangelands

A. Importance of Non-Wood Forest Products (NWFPs)

Food from forests, trees outside forests and rangelands constitutes an important component of household food supply. They include a wide range of NWFPs and animal products found in markets in both rural and urban areas. In many villages and small towns, the contribution of forests and trees to food supply is essential for food security, as they provide a number of micro-nutrients that staple crops do not provide adequately. In some cases, NWFP also contribute to the national economies. In countries like Yemen and Iran, the revenues from the exports of NWFP exceed those from wood products exports. Some examples of NWFP with high economic value are:

Cork (*Quercus suber*) in the Maghreb countries generates 7% of the total economic value of the forest sector in Tunisia with a benefit of about €200/ha, and provides an annual income of approximately €10m to rural communities in Morocco, representing 30% of the total income from forest products (Merlo & Croitoru 2005).

Argan (*Argania spinosa*) woodlands cover an area of approximately 820,000 ha in southwest Morocco; they are managed for oil production, pasture and fuelwood. They ensure the subsistence of 2 million rural Moroccans while also being an important export product.

Medicinal and aromatic plants: Important medicinal and aromatic herbs include *Rhus cariaia* (Elm-Leaved Sumach), *Thymus seryllum* (Wild thyme), *Rosmainus officinalis* (Rosemary), *Salvia officinalis* (Sage or Garden Sage), *Nepeta cataria* (Catmint or Catnip) and *Cistus aurifolius* (Rock rose). Among these, *Rhus cariaia* and *pistacia terebinthus* (terebinth or turpentine tree) seeds are collected in large amounts and have a market value.

Turkey exports approximately 28,000 tones of medicinal and aromatic plants per year, the equivalent to \$US 50 million in foreign currency and is ranked as the third largest exporter of medicinal plants of wild origin, after China and India⁶.

The large array of other products includes food products (e.g. chestnut, walnuts, stone pine nuts, Aleppo pine seeds, carob pods, edible mushrooms, honey, desert truffle, capre, etc); essential oils (rosemary, Myrtus comminus, etc), Arabic gum, fodder, etc. These products have significant market value in the local as well as in the international trade.

B. Employment in forest and range sectors

Forests in some countries in the Near East are an important source of income and employment. The employment and incomes associated with forest management, afforestation/reforestation, NWFP processing (essential oil and gums), charcoal production, exports of forest products particularly NWFP and tourism based on game and wildlife resources, although not sufficiently recognized, are significant. Employment generated by the forest sector for example in Algeria,

Egypt, Morocco, Tunisia and Turkey amounts to 332,000 (FTE)⁷. Employment in Sudan, which has the most important forest cover in the region is unknown.

Traditionally, women are heavily involved in agriculture, pasturage, fuelwood collection, and the harvesting of NWFPs in most of the Near East countries. They are the main labor force in forest nurseries and afforestation activities and their role in forestry and agriculture is expected to grow further due to population increase, environmental changes, and internal and international male migration. Yet, the growing role of women in food security, agriculture and forestry, and more generally in the overall economy of the Near East, is still broadly under-recognized.

C. Environmental Benefits

The role forests and trees in the region is important in land stabilization, watershed protection, desertification control, improve air quality and in regulation of the climate. The region is mostly characterized by water scarcity and soils susceptible to erosion, floods and landslides. In such extreme environments, forests play a particularly important role in protecting water resources and water supplies, purifying water, and regulating water flows. Forests improve the quality of water and help regulate flow, reducing the risks of extreme flooding events or the drying up of rivers during the dry season. This has important implications for food security, enabling farmers downstream to undertake agricultural production with less risk.

Trees outside forests in agro forestry systems and rangelands such as shelterbelts and windbreaks protect lands

Estimated value of NWFP, 2001 (000US\$)					
Algeria	Egypt	Lebano n	Morocco	Tunisia	Turkey
299,770	103,740	94,969	419,650	142,173	443,855
Source: Valuing Mediterranean forests: towards total economic value					

⁶ Data from Lange & Schippmann (1997)

⁷ FRA 2010. FTE means Full-time equivalent, a measurement equal to one person working full-time during specified reference period

and improve agricultural crop production through decreased evaporation and a reduction of wind speed, and improved soil moisture conditions.

Recreation and landscape quality have always been remarkable benefits of Near East forests. Their importance has increased significantly over the last decades as a result of the population growth, expansion of urban areas and increased demand for tourism, recreation, protected areas and national parks. Tourism and recreation activity provides employment and generate income for forest dependent peoples and consequently contribute to poverty reduction and food security improvement. The Near East forests and rangelands and other wooded lands constitute a habitat for rich species composition. They maintain the diverse biological life in the natural terrestrial ecosystems which is essential for their fertility and hence for sustaining their productive, protective and social functions directly linked to food security. These ecosystems have high levels of plant diversity and endemism. Mammals and birds contribute to the richness of the biological diversity of the region.

Despite the low forest cover and scattered range vegetation, forest and range ecosystems have important role in storing carbon in soil and forest biomass. However, in the Near East countries, many forest areas are sources of carbon rather than sinks due to the combination of slow forest growth and strong human pressure, resulting in serious forest degradation.

D. Forest Degradation and Food Security

Unsustainable land-use practices cause important erosion problems and prevent forest regeneration in large areas. Forest degradation leads to wildlife habitat loss which is a major threat to the biodiversity in several countries in Arabian Peninsula, Iran and Maghreb countries where original mountain conifer and juniper forests are nowadays reduced to scattered isolated trees.

Forests and rangelands degradation which involves the loss of ground cover exposes soil to rainfall and can result in increased erosion, the loss of nutrient-rich topsoil and consequently in significant decreases in agricultural productivity.

Forest degradation also influences food security through its impact on supplies of fuelwood, which is a major source of income to many poor households.

Climate change and increasing temperatures are likely to have a severe effect on forests, rangelands and vegetation covers in general and consequently on food security because forests have a major role in soil protection, fertility improvement, and water flows regulation, providing shade and windbreaks and consequently the sustainability of agricultural production systems.

However, despite the variety, importance and richness of food from forests and trees, progress has been very slow in designing and implementing measures to increase the contribution of wild plants and animals to food production and food security. The actual and potential contribution of forests and trees to food security and sustainable livelihoods tends to be overlooked by decision and policy makers. This situation is due to a predominance of information on crops and livestock in the agriculture sector and/or a narrow vision on the role of forest sector.

IV. Recommendations

The Near East Forestry and Range Commission have considered many of these issues at its last session in early February 2012 which also celebrated the 2nd Near East Forestry Week. Based on the outcome of its deliberations other recommendations of the Commission are brought to the attention of the Conference in separate paper.

A. To Countries of the Region

Countries are encouraged to carry out inventories to determine the sustainability of wood and non wood forest products' supply and to define the nature of small- scale industries to be developed.

Countries are encouraged to develop adequate incentives and credit schemes to promote afforestation and/or management of the forest and rangeland resources and the development of small- scale industries.

Countries are encouraged to make greater efforts to promote the processing and utilization of wood and non wood forest products.

Countries are invited to integrate data on forests and rangelands in national data collection systems and develop databases including on fuelwood, NWFPs, conservation areas, environmental services such water protection.

Countries are invited to strengthen and encourage the participation of the private sector, NGOs and civil society to develop activities generating incomes and improving food security in the forest sector.

B. To FAO

Provide advice to the member countries to promote the sustainable use of NWFPs, studies of important NWFP species including determining sustainable harvest levels.

Assist member countries to assess the contribution made by NWFPs to food security and the livelihood

Provide technical assistance, where requested by the countries of the region, on issues of climate change and landscape restoration to prevent further loss of the forest genetic resources - specially those of endangered species.

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