联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

NEAR EAST FORESTRY AND RANGE COMMISSION

TWENTY-THIRD SESSION

Beirut, Lebanon, 11 - 14 December 2017

FOREST HEALTH IN THE NEAR EAST AND NORTH AFRICA REGION

I. INTRODUCTION

1. Based on FRA 2015 data, NENA forest cover is significantly small, estimated at 42 million hectares (3.0 percent of region's land area) while Other Wooded Land (OWL) is estimated at 35.4 million hectares. In total both forests and OWL represents 5.4 percent of the land area of the region.

2. The forests in the NENA region are used for timber, wood fuel and many other forest related uses: grazing, agriculture, and as a source of non-wood products which are an integral part of the livelihood of the rural population. In addition to the socio-economic functions, these forests provide ecosystem services such as watershed management, soil protection and combatting desertification.

3. The increasing number of forest pest outbreaks in the NENA region is threatening the health and vitality of the forest cover. There are a number of factors that lead to pest outbreaks; increased travel and trade together with climate change impacts trigger pest introduction, establishment and rapid colonization events (FAO, 2009). Although the direct effects of climate on the population dynamics of forest insect pests and other biotic disturbance agents remain poorly understood, the common implicated causal factor for widespread decline of many tree species in multiple forest types is considered to be elevated temperatures and/or water stress.

4. Forest decline diseases are complex and involve interacting factors (Ceisla, 2011). Predisposing factors are long-term, static or slowly changing factors, such as soil moisture regime (a site factor), stand density (a stand factor) and precipitation (a climate factor). Inciting factors are short-term, such as defoliating insects or drought, which cause acute stress. Contributing factors are usually secondary pathogens or insects that kill trees already affected by predisposing and inciting factors.

5. The NENA region is particularly vulnerable to climate change. According to the Intergovernmental Panel on Climate Change (IPCC) assessment, the climate is predicted to become hotter and drier (above the global average), in most of the NENA region (IPCC,1997). Higher temperatures and reduced precipitation will increase the occurrence of droughts. In addition, forests in the NENA region are seriously impacted by the absence of adequate management and the

unsustainable use of their natural resources such as overgrazing, illegal logging and the irrational collection of fuelwood and forage wood, with severe negative effect on the natural forests and rangelands. In recent years there have been many pest and disease outbreaks in the NENA region and have accelerated the associated tree dieback and decline in natural and planted forests cover.

II. STATUS OF FOREST HEALTH IN THE NENA REGION

6. The forest and woodlands in the NENA region have been subjected to many forest insect pests, pathogens and invasive plant species. The most serious insect pests on pine forests in the region are: *Thaumetopoea pityocampa* and *Thaumetopoea wilkinsoni*; and *Tomicus destruens*, which is associated with decline and dieback of coniferes in Algeria and Lebanon. Western Conifer Seed Bug (*Leptoglosus occidentalis*) is reported on Pinus in Tunisia and Lebanon. In North African countries, cork oak forest (Quercus suber) are affected by Lepidoptera species such as *Tortrix viridana* and *Erannis defoliaria*. The Eucalyptus plantations in the region are affected by invasive species such as *Leptocybe invasa* and *Ophelemus maskelli*.

7. The dieback of forest trees due to diseases is exacerbated by low soil moisture and other anthropogenic factors affecting conifers in mixed mountain forests; *Cedrus atlantica* in Algeria and Morocco, *Cedrus libani* and *Abies cilicica* in Lebanon, *Juniperus procera* in Saudi Arabia and *Quercus* spp and *Buxus hyrcana* in Iran.

8. Previously, FAO has provided technical assistance through Technical Cooperation Projects to Algeria, Lebanon, Iran, Morocco to combat forest invasive species.

9. In the late 1990s, one of the largest of the remaining 12 cedar stands in Lebanon, the cedar forest of Tannourine, became severely infested by a new insect species, a sawfly, recently identified as *Cephalcia tannourinensis*. The neighbouring countries of Cyprus, Syria and Turkey expressed justifiable concern about transboundary spread of the new insect pest. FAO assistance for protection and preservation of health and vitality of scarce and precious forest resources included, but were not limited to: development of methodology of monitoring insect populations; utilization of pheromones in monitoring and mass trapping; introduction of an integrated pest management programme (IPM) against the insect.

10. In 2008, FAO provided support to Morocco with the development of a national strategy for the monitoring and follow-up on forest health - pilot case in the Moyen Atlas region. The assistance led to the development of a national forest health monitoring system.

11. Most recently FAO, through a Technical Cooperation Project, supported the Ministry of Agriculture (MoA) of Lebanon to identify the causes and extent of pine conelet losses within the country. It was identified that main causes for the pine nut yield reductions as Western Conifer Seed Bug, which is an invasive species, and dry cone syndrome, which is associated with prolonged drought. FAO, in collaboration with the MoA, developed guidelines for sustainable forest management of stone pine forests for forest practitioners and local community groups whose livelihood depend on pine nut production.

12. Decline and dieback of forest trees is a very common phenomenon in the region. In 2014, FAO initiated a project to support the forestry authorities of Islamic Republic of Iran to combat the decline and dieback of oak forests and boxwood natural stands of Caspian forests, where prolonged drought and lack of sustainable forest management practices has caused the spread of charcoal disease and decline of oak forest and invasive species. The disease box wood blight and box wood moth have affected 80 000 ha of natural stands of *Buxus hyrcana* trees in Iran. There is mounting evidence that the threats of forest invasive species are likely to be accentuated with the impact of climate change and other human activities. Due to the transboundary nature of forest invasive species, it is necessary to take a coordinated approach to pest management activities and enhance the resilience of forest for biotic and abiotic stresses.

13. Implementation of effective adaptation strategies are necessary to increase the capacity of management to cope with adverse events such as pest outbreaks and low soil moisture capacity. This means building in resilience and redundancy, as well as encouraging the adoption of robust biological solutions to pest problems where possible, strengthening of rapid response capabilities and to design sustainable forests that are resilient to spatial and temporal climate variation.

III. TECHNICAL AND INSTITUTIONAL FOREST HEALTH CAPACITIES OF COUNTRIES

14. With the exception of Morocco, in the NENA Region there are a lack of institutions and departments in charge of forest health and invasive species. However, some isolated success on management of invasive species is reported in some NENA countries. The National Forest Monitoring and Assessments (NFMA) can provide valuable contributions to improve tracking and monitoring of forest health conditions and change, as well as highlighting causes behind these processes (FAO,2009). In the NENA Region, the National Forest Monitoring and Assessments is not well developed and needs to be enhanced, following Morocco's lead.

15. In order to prevent and mitigate the negative impacts of biotic, abiotic or human induced damages to forests, it is essential to collect sound, reliable, comparable and up-to-date information on pests and the multiple causes of forest dieback. Monitoring and detection activities at national level are often informal although there are some isolated activities on targeted pests. Standardisation of the monitoring network in the NENA region through regional cooperation would allow these countries to protect the forest from pests, pathogens and invasive species and maximise the use of their limited resources.

16. There is no consistent approach for implementation of quarantine and forest hygiene which needs to be addressed. There is also a need for regional and/or global support to countries that lack sufficient resources to implement effective phytosanitary systems in forestry, especially conducting risk assessments and implementing quarantine measures.

17. The Near East Network on Forest Health and Invasive Species (NENFHIS) was established in 2007 to foster integrated and dynamic forest pest management in the region and provide decision-makers with baseline data for making informed decisions. Improved communication and collaboration in the region will help member countries address and manage the increased threats to forest health from forest pests and diseases, invasive plant species, climate change and abiotic disturbances.

IV. POINTS FOR CONSIDERATION

18. The Commission may wish to encourage countries to strengthen their participation at the Near East Network on Forest Health and Invasive Species (NENFHIS) and contribute to the activities of this network to strengthen regional collaboration in relation to forest health and control of forest invasive species in the region.

19. The Commission may wish to:

- Request FAO to continue supporting the Near East Network on Forest Health and Invasive Species in implementation of its activities;
- Urge FAO to support cross sectoral plant protection measures to contribute to biodiversity conservation, and climate change adaptation and mitigation.