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**FAO European Forestry Commission matters: Panel
discussion: “Emerging invasive species risk to European
forests”****Food and Agriculture Organization
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**Emerging invasive species risk to European and Central
Asian forests***Summary*

Emerging threats to forests in Europe and Central Asia caused by invasive species are aggregating at alarming levels. Increasing global trade, travel and impacts of climate change are prime reasons. Severe outbreaks of invasive species cause billions of dollars' worth of damage to forest productivity and the provision of ecosystem services in the region. Prevention and management of invasive species in the region require urgent changes to national forest health strategies. These include implementation of phytosanitary measures in forestry, both nationally and regionally, as well as enhanced community participation in the establishment of monitoring programs for early detection and action. This document provides background information for a panel which will discuss the multiple dimensions of the problem in the region.

Members may wish to provide guidance to the relevant work in the region by the member States and FAO.

Note by the Secretariat

I. Introduction

1. The forest cover in Europe is about 35 percent of the land area (190 million ha) whilst forest and other wooded land in Central Asia accounts for just 5.5 percent of the total land area of 545 million ha (FAO, 2010). The forests in the REU region provide timber, wood fuel, non-wood products and sources for many other forestry related activities such as hunting and grazing. In Europe, these forest activities have a turnover of almost € 500 billion, employing approximately 3.5 million people (EEA, 2018). In addition, forest also provide many ecosystem services such as watershed management and soil protection.

2. Forests in the REU region have been subjected to many forest pests and pathogens including several invasive organisms (e.g. plants, vertebrates, invertebrates and microorganisms). Forest Invasive Species (FIS) pose an increasing threat to the health, sustainability and productivity of natural and planted forests. The introduction and spread of FIS are closely associated with the ever-increasing global movement of goods and people, exacerbated by the impacts of climate change.

3. The estimation of full economic, environment and social impacts of forest invasive species is difficult as there are many components; impacts of invasive species on biodiversity, ecosystem functions, human health, social and cultural values as well as indirect costs such as the impacts of control measures to be considered. Globally, invasive species are now recognized as one of the major drivers of global biodiversity loss. In many countries in the region, forest ecosystems have been subject to severe outbreaks of invasive species causing billions of dollars' worth of damage to the economy, environment and sociocultural values. The overall economic impacts of invasive species in the region are estimated at more than EUR 12 billion per year and invasive terrestrial plants alone cause costs of at least 3.7 billion EUR per year (Kettunen et al., 2009).

II. Multi-dimensional risk and the need for cross sectoral action

4. There are nearly 1,800 invasive species in Europe's forests (EEA,2018). In the list of the 100 most invasive species in Europe there are several forest invasive species (DAISIE, 2018). Emerging pest threats in the region are caused by the spread of existing threats to new areas within the region as well as by the introduction of new threats. Invasive species can be introduced to new area intentionally when they are imported as a commodity, or they can arrive unintentionally as a contaminant of a commodity, with a transport vector, and disperse through infrastructure corridors such as roads and canals or unaided.

5. Below are some of the important forest invasive species with limited distribution in the REU region:

- Pine wood nematode (*Bursaphelenchus xylophilus*) on pines in Portugal and Spain
- Oak lace bug (*Corythucha arcuata*) on oaks across Europe and Asia Minor
- Box tree moth (*Cydalima perspectalis*) on various native and cultivated box trees across entire Europe and Caucasus
- Box tree blight (*Calonectria pseudonaviculata*)
- Ash dieback (*Hymenoscyphus fraxineus*) across Europe
- Emerald ash borer (*Agrilus planipennis*) expanding distribution from E-EUR to the West
- Sudden oak death (*Phytophthora ramorum*) in several European countries
- Citrus long-horned beetle (*Anoplophora chinensis*) (and other *Anoplophora* species) in several European countries
- Red palm weevil (*Rhynchophorus ferrugineus*) in Italy, Spain and spreading to Caucasus

- Tree of heaven (*Ailanthus altissima*)
- Japanese knotweed (*Fallopia japonica*)
- Boxelder maple (*Acer negundo*)
- Black locust (*Robinia pseudoacacia*)
- Chestnut blight (*Cryonectria parasitica*)

6. In addition, emerging forest invasive species include the Red turpentine beetle (*Dendroctonus valens*), which affects pine species, and the Polyphagous shot hole borer, which impacts many urban trees and avocado in the USA and South Africa, and pathogens such as the Brown needle blight of pines, which are likely to cause major impacts on natural and planted forests in Europe and Central Asia.

7. Climate change has a heavy influence on native pest and pathogens as well as invasive species, especially on their biology (e.g. faster development), behaviour (e.g. host preference) and pathogenicity. Higher temperatures and drought stress result in reduced fitness of the trees, making them vulnerable to invasive species threats. Many of the European countries have institutions and departments dedicated to forest health and invasive species. Regional organisations such as European Alien Species Information Network (EASIN), European Environment Agency, European Food Safety Authority's Panel on Plant Health are active with invasive species issues in Europe. In addition, the European Plant Protection Organisation (EPPO)'s mandate covers countries beyond the European region. The EPPO Panel on Quarantine Pests for Forestry Issues maintains alert lists for EPPO region. Many aspects of invasive species have already been addressed through a variety of existing EU laws. The EU regulation on the Prevention and Management of the Introduction and Spread of Invasive Alien Species provides the backbone for national strategies.

8. However, efforts laid by individual countries to prevent and manage forest invasive species vary significantly. While the concept of free movement has many positive outcomes for European economies, the lack of implementation of phytosanitary measures pre-export and on arrival at borders, together with poor surveillance, increase the spread of invasive species within the region. Most of the actions taken by individual countries are reactive to contain the spread of forest invasive species. These measures on transboundary invasive species can only be successful through cooperation of neighbouring countries in surveillance and early response. Currently not all countries in the region have appropriate forest health strategies to support cross border responses. In particular, the countries in Eastern Europe and Central Asian require enhanced implementation of forest health strategies to reduce the movement of invasive species.

9. Implementation of effective adaptation strategies is necessary to increase the management capacity to cope with adverse events such as pest outbreaks and extreme weather conditions. This means building resilience and redundancy, as well as encouraging the adoption of robust biological solutions to pest problems where possible, strengthening of rapid response capabilities and creating sustainable forests that are resilient to spatial and temporal climate variations.

III. FAO REU on-going and planned activities on the subject

10. Through technical cooperation programs FAO provides technical support to countries in the region including Albania, Belarus, Georgia, Turkey and Ukraine. Although many projects are reactive in nature, the overall aim for the technical supports is to build forests that are resilient to threats of invasive species and native pest outbreaks.

11. The transboundary nature of invasive species requires institutions, countries and regions to collaborate in prevention and management of forest invasive species. Understanding the need for mass collaboration in the management of forest invasive species, the FAO Forestry Department is facilitating five regional forest invasive species networks in Asia Pacific, Africa, Near East, Europe and Central Asia and South Cone Countries, covering nearly 100 countries worldwide. These networks enable exchange of

critical pest information and capacity building activities, focused on prevention and management of forest invasive species within and between these regions. To reduce pest introductions through trade, the networks are also actively promoting the implementation of phytosanitary standards in forestry in collaboration with the International Plant Protection Convention (IPPC) and regional partners.

12. In 2017, FAO supported the establishment of the Forest Invasive Species Network for Europe and Central Asia (REUFIS), which currently have focal points from 24 countries across the REU region. The network fosters integrated and dynamic forest pest management in the region. Improved communication and collaboration in the region will help member countries address and manage the increased threats to forest health, invasive species, native pest outbreaks and climate change. In 2017, FAO through the network facilitated a capacity building workshop on identification of invasive bark and ambrosia beetles, and in 2018 another workshop was conducted to raise awareness of importance of implementation of regional and national legislations for prevention and management of forest invasive pathogens in the REU region and the role of nurseries. In 2019, FAO is planning to conduct a capacity building workshop on sustainable management of invasive species of Chest nut trees and woody invasive plants. In addition, a survey is in progress among the REUFIS member countries to analyse current state of FIS and identify fields for joint activities for 2020-2021.

IV. Points for consideration

13. The Commission may wish to encourage countries in the region to strengthen their participation at Forest Invasive Species Network for Europe and Central Asia 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.

14. The Commission may wish to request FAO to:

- (a) Continue supporting the Forest Invasive Species Network for Europe and Central Asia in the implementation of its activities;
 - (b) Support cross-sectoral forest protection measures to contribute to biodiversity conservation, and climate change adaptation and mitigation.
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