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COMMITTEE ON FORESTRY

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URBAN AND PERI-URBAN FORESTRY

I. Introduction

1. Cities already host over half of the world's population and rapid urbanization is projected to add 2.5 billion people to those living in cities by 2050. Most of this growth will happen in mid-sized cities of less developed regions - notably Africa and Asia - that are less prepared to face the consequences of a rapid urban growth. Local administrators will have to cope with increasing poverty, hunger, and lack of resources, as well as with the effects of the environmental impact of urbanization, such as floods, water shortages and landslides.

2. The United Nations recognize sustainable urban development as a challenge to be addressed through more sustainable and equitable development. Sustainable Developments Goal (SDG) 11 of the 2030 Agenda for Sustainable Development calls for *Making cities and human settlements inclusive, safe, resilient and sustainable*, while the New Urban Agenda, approved at Habitat III in 2016, encourages urban actors to develop more sustainable and resilient models, including through special attention to green public spaces.

3. The role of urban and peri-urban forestry in helping achieve SDG 11 and 15 was also discussed during the five Regional Forestry Commissions and recommended as a priority item for COFO24.

4. FAO has supported member countries in urban forestry issues for a number of years. In addition to providing technical support, the Organization has played an active role in raising awareness of the importance of the sound management of forests and trees in and around cities. In 2016, FAO published the *Guidelines on Urban and Peri-urban Forestry*, aimed at providing guidance on the planning, design and management of urban and peri-urban forests and trees to national and local authorities.

5. FAO also fosters dialogue, collaboration and exchange through international fora and meetings. Two editions of the Asia-Pacific Urban Forestry Meeting were held in 2016 and 2017 in China and the Republic of Korea, respectively, while the first Latin America and Caribbean Urban Forestry Forum was held in 2017 in Peru. The *Silva Mediterranea* Working Group on Urban and Peri-urban Forestry has held nine meetings since 2013. Building upon these events, FAO is co-organizing

the first World Forum on Urban Forests that will be held in Mantova, Italy, in November 2018. The aims of the Forum are to strengthen existing international networks, support the implementation of the New Urban Agenda and promote the potential of urban forests in the achievement of SDGs.

II. The benefits of urban and peri-urban forests (UPF)

6. Well-managed UPF provide ecosystem goods and services and can help local administrations respond to the needs of growing urban populations. These multiple benefits can be clustered into provisioning, supporting, regulating and cultural, as well as additional socio-economic benefits.

Provisioning benefits

7. Growing urban populations require food and basic services, posing major infrastructural, social, environmental and economic challenges. Planting fruit-bearing street trees or establishing multifunctional public parks can contribute to food availability. In Delhi, India, jamun trees alongside roads yield about 500 tonnes of fruit each year, which is harvested and sold locally. In small and mid-sized cities in Africa, fruit-bearing trees are found around most urban and peri-urban houses. In Gulf countries street palm trees are specifically bred, grown and tended to produce dates for free public consumption. In Europe and North America, a growing number of *urban food forests* is being established to provide recreational opportunities, increase social cohesion and produce food.

8. UPF play a substantive role in supplying energy. Estimates presented in SOFO 2014, indicate that about 2.4 billion people cook with woodfuel, or about 40 percent of the population of less developed countries. In addition, 764 million of these people may also boil their water with wood. Wood energy accounts for 27 percent of total primary energy supply in Africa, 13 percent in Latin America and the Caribbean and 5 percent in Asia and Oceania. The creation and sustainable management of peri-urban forests for woodfuel production can help protect natural forests from overexploitation.

Supporting benefits

9. Urban and peri-urban forestry can help preserve local biodiversity and increase ecological connectivity, increasing the resilience of natural ecosystems to human pressure. Thanks to extraordinary urban greening and conservation programmes initiated over 50 years ago, the city-state of Singapore now has an incredibly high level of biodiversity attracting names such as “Garden City” or “City of Gardens and Waters”.

10. Trees contribute to soil formation, increase soil productivity and improve its permeability. By blocking winds and stabilizing soils, they can also prevent erosion and reduce soil compaction. Many cities, such as Ouarzazate, Morocco, use urban forests to prevent land degradation. In Peru, in 2015, the municipality of Independencia (Lima) launched a community programme to reforest the slopes around informal settlements in order to reduce the threat of natural disasters.

Regulating benefits

11. By shading and cooling the air, urban forests and trees help mitigate the *urban heat island effect* and support adaptation to climate change. Research in Dubai has shown that trees in urban areas can reduce temperatures by up to 8° C, improving the thermal comfort of urban dwellers. Similarly, studies conducted in Amman have shown that trees can reduce the cooling load of buildings by up to 35 percent. In Sahelian countries, for example Burkina Faso, trees are planted around houses and public institutions to mitigate the heat. Urban forests, trees and soils can also potentially increase carbon sequestration. Such potential depends on a number of variables, including the species and size of the trees. In the United States of America it was estimated that urban trees store 770 million tons of carbon.

12. Peri-urban trees protect watersheds and water reservoirs by combating erosion, limiting evapotranspiration and filtering pollution. Several Andean countries have introduced payments for ecosystem services to protect forested peri-urban watersheds and ensure the supply of quality water to their cities. By absorbing excess water and increasing infiltration, urban and peri-urban trees can mitigate the occurrence and impact of flooding events. Data from Philadelphia, USA, shows that a hectare of land that includes green infrastructure elements can soak up and filter over 250 000 litres of stormwater per year.

13. Trees intercept gaseous pollutants and particulates from urban activities and vehicular traffic, thus improving air quality. In Beijing, in 2002, the 2.4 million trees in city centre removed 1260 tons of pollutants from the air. In Medellin, Colombia, large trees represent only 1.3 percent of the urban forest but account for over 25 percent of the carbon sequestered by the urban forest. In drylands, trees are valued as physical barriers against wind and sand storms. For example, the Korea-Mongolia Greenbelt Plantation Project (2007-2016) successfully planted 3 000 hectares of trees in the Gobi Desert to mitigate the effects of dust and sand storms in urban areas.

Cultural benefits

14. Urban forests and trees contribute to increased social equity, promote a sense of community and help ensure the preservation of local spiritual and cultural values, which are essential components of place-making – the process of creating high-quality spaces (e.g. parks, squares and waterfronts) for people to visit and enjoy. In Kuala Lumpur, the Forest Research Institute of Malaysia attracts visitors who want to experience tropical rain forests without travelling too far. UPF are also ideal settings for environmental education programmes. The "Forest of Experiments" in Ljubljana, is an innovative environmental education centre which holds seminars for school teachers on how to boost creativity and innovation while learning about forests.

15. By beautifying both central and suburban areas, urban forests and trees help reduce social, environmental and housing inequities. The State of São Paulo, Brazil, has developed urban afforestation plans in 645 Municipalities to improve the quality of life of urban dwellers. Urban and peri-urban parks also provide local communities with open-air settings for activities and events, thus increasing social cohesion. A study conducted in Baltimore, United States of America, showed that a 10 percent increase in the urban tree canopy cover was directly linked to a 12 percent decrease in crime.

16. UPF and trees are often associated with cultural, social and religious values. In 2002, 261 heritage trees were surveyed in Bangkok, Thailand: their conservation was made possible by religious traditions prohibiting the felling of "holy" tree species (e.g. *Ficus religiosa*). The National Programme for Centennial Trees launched in Tunisia in 1993 aims at preserving the country's oldest trees, which are considered national cultural and natural heritage.

Additional socio-economic benefits

17. Urban and peri-urban forests provide direct and indirect socio-economic benefits and make significant contributions to local economy. In the US, the estimated 5.5 billion urban trees produce services for a total of USD 18.3 billion. Also in the US, studies have shown that the presence of mature trees can increase property values by up to 15 percent, with direct revenues for the government in terms of taxes. Urban forests also generate jobs related to the establishment, management and maintenance of green areas. In Niterói, Brazil, for instance, the newly established Eco-Social Programme will hire 400 young people from troubled communities to reforest 100 hectares of degraded land and maintain park facilities, with the additional aim to increase their employability. Urban greening also contributes to the branding of a city, attracting investment, business and tourism. In Nairobi, Kenya, the Karura Forest, previously a crime ridden area, is now a public park with over 16 000 visitors per month.

18. Wood and non-wood forest products (e.g. timber, woodfuel, fruits, nuts, berries, mushrooms and medicinal plants) provided by UPF contribute to local incomes and improve communities' economic resilience. UPF also provide indirect economic benefits through savings on public costs. By sheltering buildings, they reduce heating and cooling costs; it is estimated that in London, UK trees help save GBP 260 million every year. By improving physical and mental health, cooling the environment and reducing pollution, UPF attenuate the frequency of some non-communicable diseases, indirectly reducing public health costs. Japan and Scandinavia are among countries that are using green public spaces to reduce stress and improve their citizens' health and well-being.

III. Towards improved governance of urban and peri-urban forests and trees

19. Rapidly-growing cities have little time to adjust to changing circumstances and increasing pressure generated by uncontrolled urbanization. To provide the benefits listed above, urban forests require adequate governance through policies, clear norms and sound planning. The proper implementation of these tools depends on a number of factors.

20. The governance of UPF requires planning departments to have adequate mechanisms to acquire the technical skills and knowledge needed to include urban forestry aspects in the overall planning processes or to mobilize national forest services to provide the necessary technical inputs.

21. Fragmentation of responsibilities for the development of policy and planning documents across levels of government should be reduced. Efficient governance requires the involvement and the active participation of various stakeholders such as national forest services, municipalities, government offices, community organizations and urban residents in the decision-making process. The involvement of citizens in planning, design and management processes can bring many positive benefits such as public support for planning decisions, the avoidance of protracted conflicts and costly delays, an increased trust among institutions and the public.

22. Increased awareness of the goods and services provided by UPF could help address the lack of public funds for urban greening programmes. Wherever possible, funding strategies should aim for a mix of public and private funding. Cities often also rely on local volunteers, not only to raise funds, but also to provide programme leadership and labour. Income-generating activities linked to recreation and/or ecosystem goods and services derived from UPF could also be considered.

23. Looking beyond the boundaries of the cities, we should not forget that many goods and services that are essential for the functioning of our cities, such as construction material, water and energy come from forests. So, when planning for sustainable cities, we should also consider how the cities themselves can contribute to development of rural areas. Financial flows from urban to rural areas such as payment for ecosystem services (PES), environmental taxes and/or subsidies can also play an important role in promoting more equitable development models and the sustainable management of natural resources. Of course, whenever fees or other forms of service payments are introduced, it is important to give due consideration to social equity aspects.

24. However, while forests within the city limits are normally managed by municipal authorities, peri-urban and rural forest may frequently be managed by other entities, e.g. national forest services. Thus, effective governance requires policies and/or legislation aimed at harmonizing the range of interests and strengthening urban-rural linkages through adequate investments in infrastructure, particularly transportation, to improve rural productivity while allowing access to markets, jobs and public services.

25. Finally, research also plays an important role in the establishment of well-adapted urban forests and trees. Priority topics include species selection, impacts on air pollution, adaptation to climate change, as well as studies of public preferences and evolving demands for urban forestry services, among others.

IV. Points for consideration

26. Based on the outcomes of the discussions by the regional forestry commissions (Asia Pacific, Near East and North America) the Committee may wish to:

a) Recognize that sustainable management of urban and peri-urban forests and trees and their integration in urban planning, is essential for achieving the SDGs, ensuring people's health and well-being and tackling climate change.

b) Invite members countries to:

- increase knowledge transfer and exchange on urban and peri-urban forestry through active participation in regional technical networks; and
- foster inter-sectoral coordination among the various levels of governments (national, regional, local) on development of policies, norms and urban planning approaches addressed to fully exploit the contribution of urban and peri-urban forestry to SDG 11 and 15.
- encourage participation of national professionals in the 1st World Forum on Urban Forestry.

c) Request FAO to support countries by:

- continuing to develop planning and management tools for urban and peri-urban forests, including through the implementation, collection and dissemination of case studies and good practices;
- developing capacity building programmes on urban forestry in collaboration with national and regional centres of excellences;
- providing policy and technical support on the planning, design and management of urban and peri-urban forests.