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Agenda item 4

Combating land degradation for food security and provision of soil ecosystem services in Europe and Central Asia – International Year of Soils 2015

Executive Summary

- Land and soil degradation is a major challenge in many parts of the world, including in Europe and Central where diverse degradation processes are on-going. However, the impact of soil degradation is non-uniform across the region.
- In Western Europe, the impact of soil degradation processes is significant but most threats to soil health have been well addressed in past decades through effective response measures (e.g. strict legislation) and consolidated action by national governments, the EU and other stakeholders.
- In Central and Eastern Europe (e.g. Ukraine, Belarus and Moldova), Russia and Turkey, the major driver of soil degradation is economic transition. Soils are under pressure from the rapid intensification of agriculture with overexploitation of the most fertile soils and abandonment of less productive land. Soil erosion, organic matter loss and soil pollution are major threats, which need to be more adequately addressed.
- In Central Asia and the Caucasus (CAC), the main drivers of soil degradation are population growth and climate change. The sub-region is facing serious challenges with the need to boost agricultural production, both for internal consumption and for export, amongst increasingly degraded soils and limited water resources, under changing climatic conditions. The main pressure on soil is unsustainable land and water management, aggravated by increased risks of natural disasters such as drought. Soil salinization and soil erosion by water and wind are major threats in this sub-region, which require targeted investment and technical support for the upscaling of integrated natural resources management practices through joint efforts by national governments and international organizations.

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- The Global Soil Partnership (GSP) is supporting the process for promoting the wide adoption of sustainable soil management practices, offering a platform for multi-collaboration between Europe and CAC. Under the GSP, the sub-regional Eurasian Soil Partnership has developed an Implementation Plan (IP) aimed at promoting sustainable soil management (SSM) in Eurasia, especially in Central Asia and the Caucasus, for increasing the area of land/soils in agriculture and forestry under sustainable management, in line with the proposed indicator 15.3 of the post-2015 Sustainable Development Goals (SDGs). The IP will contribute to enhance knowledge capacities on SSM within Member Countries for the upscaling and mainstreaming of sustainable soil management practices across the sub-region
- In 2015, the UN International Year of Soils, FAO is calling for further action to successfully halt and reverse current trends in soil degradation at regional, national and local levels and tackle the interlinked challenges of desertification, land degradation and drought in line with the 10 year UNCCD strategy (2008-2018), for achieving food security and improved nutrition and promoting sustainable agriculture.

Guidance sought

- The 39th session of the ECA may wish to recommend that FAO strengthens the regional process and its support to Member Countries for combating land degradation and promoting sustainable soil management for food security and enhanced resilience to climate change.
- It may also wish to recommend that Member Countries adopt the five year rolling 'Implementation Plan' of the Eurasian Soil Partnership (EASP) and increase resources for the implementation of related measures at local, national and regional levels.

I. Introduction

1. Land degradation is a growing threat to food security and ecosystem services in Europe and Central Asia. Driven by biophysical and socio-economic factors and aggravated by the effects of climate change, it is one of the greatest challenges faced by all the countries in the region. A great deal of effort is needed to maintain the capacity of the land so it can provide ecosystem goods and services (e.g. biomass, soil health, water resources and biodiversity) and assure its functions for its beneficiaries (Robinson et al., 2013).

2. Land degradation processes are on-going over a large part of Europe and Central Asia. However, drylands are fragile and particularly susceptible to land degradation and the impact of this degradation is mostly felt in areas with high incidence of poverty. Over the past thirty years, owing to its geographical and climatic characteristics, aggravated by impacts of climate change and anthropogenic pressures, Central Asian countries have been severely affected by desertification, land degradation and drought¹ (DLDD) and concern has grown about the significant economic and social impacts on agriculture and related sectors. Agricultural yields are reported to have declined by 20-30 percent across the sub-region since the collapse of the Soviet Union in 1991, causing annual losses of agricultural production. Losses from salinization alone have been estimated to be at least USD 2 billion per year (some 5 percent of the region's gross domestic product) (CACILM, 2006).

3. The causes of land degradation are multiple, complex and vary across countries. Land degradation may be caused by natural processes but human activities contribute greatly to the

¹ Agenda Item 6 'Towards risk-based drought management in Europe and Central Asia' (ECA 38/14/4, Bucharest, April 2014)

acceleration of these degradation processes with the exploitation and deterioration of the natural resource base (i.e. soil, vegetation and water resources).

4. Soils, which are essential for achieving food security and enhancing resilience to climate change, are under increasing pressure. In the 21st century, the decline in soil health turns out to be a major limit for growth in many regions of the world, including Europe and Central Asia. Soils have been neglected despite the accelerating pressures they are facing and concerted efforts are needed for restoring soil productivity, sustaining the capacity of agricultural production systems and ensuring provision of ecosystem services.

5. To address soil related challenges, under the Global Soil Partnership, the European Soil Partnership² and the associated sub-regional Eurasian Soil Partnership³ were launched in 2013 with the aim of improving regional governance of limited soil resources and promoting sustainable soil management. In 2015, the UN International Year of Soils, FAO is calling for further action to successfully arrest and reverse current trends in soil degradation at regional, national and local levels and tackle the interlinked challenges of desertification, land degradation and drought in line with the 10 year UNCCD strategy (2008-2018).

II. Status of soil degradation in Europe and Central Asia

6. Analysis of existing data on soil degradation shows that the extent and intensity of negative processes are high in the region (Nachtergaele et al., 2011). Soils are being over-exploited, degraded and irreversibly lost. Moreover, a relatively good status of soils is a result of either low density of the population and negligible soil disturbance in some parts of the region, or the compensative effect of advanced sustainable soil management practices in other parts.

7. Europe and Central Asia are characterized by diverse soils and degradation processes. **Western Europe**⁴ is characterized by a high level of soil care, although this varies across the sub-region, and the strategy has been aimed at controlling intensive agriculture to a reasonable extent. **Eastern Europe**⁵, **Russia and Turkey** are characterized by a rapid intensification of agriculture with overexploitation of the most fertile soils and abandonment of less productive lands. Finally, **Central Asia and the Caucasus**⁶ (CAC) has the highest extent and severity of soil degradation due to the natural conditions, aggravated by the impacts of climate change and anthropogenic pressures, but investment remains too limited to arrest and reverse negative soil degradation trends.

8. In **Western Europe**, the main pressures to be mentioned are **urban sprawl, overuse of agricultural lands, and industrial and traffic development**. Urban development poses a major threat to soil, resulting in serious loss of productive soil through land take and soil sealing. Approximately 75 percent of the European population currently lives in urban areas, and this is estimated to increase to 80 percent by 2020 (Gardi et al., 2012). The impact of this land take on the production capabilities of the agricultural sector for the period 1990-2006 for 19 of the 21 States was estimated to be equivalent to a loss of more than six million tonnes of wheat (Gardi et al., 2012).

² The European Soil Partnership was established in Berlin on October 31 2013. The Secretariat is based in Ispra, Italy, at the Joint research Centre of the European Commission

- <http://www.fao.org/globalsoilpartnership/regional-partnerships/europe/en/>

³ The Eurasian Soil Partnership was established in Moscow in 18-20 November 2013. The Secretariat is based in Moscow, Russian Federation, at the Eurasian Center for Food Security -

<http://www.fao.org/globalsoilpartnership/regional-partnerships/europe/en/> and <http://ecfs.msu.ru/ru/epp/epp.php>

⁴ Western Europe includes the 28 EU Member States and the countries in the same geographic frame (non-member European countries such as Switzerland, Norway, Serbia etc.).

⁵ Eastern Europe includes Belarus, Moldova and Ukraine.

⁶ Central Asia includes Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan while the Caucasus includes Armenia, Azerbaijan, Georgia.

9. Today in Western Europe, **the pressure of agricultural activities on soils** are mainly a result of intensive **tillage, the use of heavy farm machinery, and overuse of nitrogen (N) and phosphorus (P) fertilizers, resulting in soil erosion, loss of soil organic matter, compaction and water pollution.** Tillage results in soil erosion by water and wind, and promotes intensive soil pulverization and aeration that leads to the oxidation of organic soil matter. According to a recent report (Jones et al., 2011), 105 million ha or 16 percent of Western Europe's total land area is estimated to have been affected by water erosion in the 1990s and 42 million ha affected by wind erosion (6.4 percent of the land). Some 45 percent of soils in Western Europe have a low or very low soil organic matter (SOM) content (0–2 percent organic carbon). Several factors are responsible for the pervasive decline in SOM: conversion of natural vegetation to arable land; tillage and deep ploughing of arable soils; drainage of peat soils, fertiliser use; crop rotation with reduced proportion of grasses; soil erosion and wild fires (Kibblewhite et al., 2005). Soil organic matter also affects resilience to climate change. The soils of EU-27 Member States are estimated to store between 73 and 79 billion tonnes of carbon, which is equivalent to almost 50 times the total annual greenhouse gas emissions (GHG) from those States. Intensive and continuous arable production may lead to a decline of soil organic matter. In 2009, European cropland emitted an average of 0.45 tonnes of CO₂ per hectare (EEA, 2011). About 50 percent of soil organic stock in EU-27 is to be found in the peatlands and forest soils of Sweden, Finland and the United Kingdom (Schils et al., 2008). While there is no harmonised exhaustive inventory of peat stocks in Europe, the CLIMSOIL report estimated that more than 20 percent (65 000 km²) of all peatlands have been drained for agriculture, 28 percent (almost 90 000 km²) for forestry and 0.7 percent (2 273 km²) for peat extraction.

10. Compaction can be induced by the use of heavy machinery in agriculture. Compaction reduces the capacity of soil to store and conduct water, makes it less permeable for plant roots and increases the risk of soil loss by water erosion. Over 30 percent of European subsoil have a high or very high susceptibility to compaction (Jones et al., 2011). Soil compaction is known to reduce soil productivity and increases the cost of tillage.

11. The overuse of fertilizers results in excessive accumulation of N and P in soils (Grizzetti et al., 2007) and leaching of nitrates, into water supplies. While in extreme situations, the surplus soil nitrogen can be as high as 300 kg N ha⁻¹ (EEA, 2010). Estimates show that 15 percent of land in the EU-27 exhibits a surplus in excess of 40 kg N ha⁻¹. However, the EU States do have strict legislative measures in place for controlling water pollution from the leaching of fertilizers to avoid adverse impacts on human health.

12. The pressure of industrial and traffic development, apart from land take for urban expansion and infrastructure, results in soil contamination and acidification. Local contamination of soils in Europe is associated with industrial activities, inadequate waste disposal, mining, military activities or accidents. The number of sites where potentially polluting activities have taken place now stands at approximately 3 million and the trend is expected to increase if legislation is not reviewed (Jones et al., 2011; EEA, 2014). Diffuse soil contamination through deposition of heavy metals from industrial emissions is also a specific threat to soils in Europe covering very large areas.

13. Though numerous soil threats exist in Western Europe, most of them have been well addressed in past decades through effective responses measures. The trend in the control of soil erosion is positive because the promotion of sustainable soil management is bearing fruit (Jones et al., 2011). There is some evidence of progress in the remediation of contaminated sites, although the rate is slow. In recent years, some 17 000 contaminated sites have been treated while many industrial plants have changed their production processes to generate less waste. In addition, most countries now have legislation to control industrial wastes and prevent accidents. The situation of soil acidification also seems to improve thanks to effective legislation (EEA, 2010a).

14. **In Eastern Europe, Russia and Turkey, the major driver of soil degradation is economic transition.** Soils are under pressure from **rapid intensification of agriculture with overexploitation of the most fertile soils and abandonment of less productive lands. Environmental contamination** with industrial, mining, and petroleum extraction products is also a significant pressure.

15. The intensification of agricultural production and overexploitation of soils result in increased rates of soil erosion, organic matter loss, and compaction. In Russia, 26 percent of the agricultural land area (51 million ha) is affected by medium and strong water erosion (Ministry of Natural Resources, 2006). In Ukraine, about one third of the agricultural land (14.4 million ha) is affected by water and wind erosion. In Moldova, a third of the arable land area is affected by water erosion (840 000 ha) (Leah, 2012). In Belarus, about 10 percent of the territory of the country is affected by water erosion (467 000 ha) and wind erosion (89 000 ha). In Turkey, 79 percent of the total area of the country is affected by erosion (61.3 million ha) related to the fact that 80 percent of soils are located on slopes steeper than 15° and wind erosion is active on about 500 000 hectares (Senol and Bayramin, 2013). Long-term observations showed that soil erosion on average decreased the yield of leguminous crops by 15 percent, of wheat by 32 percent, potatoes by 45 percent, and perennial grasses by 25 percent (State Committee of Russian Federation on Land Resources and Land Planning, 1999).

16. In Russia, more than 56 million hectares of soils under agriculture are characterized by the loss of organic matter (Shoba et al., 2010). In Ukraine this figure is 18.4 million hectares (Laktionova et al., 2010) and in Moldova it is more than 1 million hectares (Leah, 2012). Turkey was reported to have about 70 percent of agricultural soils with lower organic C levels than the natural soils (Senol and Bayramin, 2013). The degradation of organic soils is especially pronounced in Belarus, where about 190 000 hectares of peat soils are strongly degraded.

17. The area of salt-affected soils in Russia is 54 million hectares or 3.3 percent of the total area of the country and in Ukraine about 4 million hectares or 6.6 percent of the national territory (Novikova, 2009). The distribution of the salt-affected arable lands in Turkey is: 60 percent slightly saline, 19.6 percent saline, 0.4 percent alkali and 8 percent saline-alkali respectively (Senol & Bayramin, 2013). Most of these soils have a naturally high level of salinity, while about 30 percent have been formed due to improper irrigation practices⁷.

18. A common response to land degradation (including soil salinization) in some regions of Russia and Ukraine is to abandon infertile lands and move to the most productive soils. This maintains commercial crop production while allowing for restoration of natural resources and ecosystem functions. However, land abandonment has a social impact in rural areas and governments should consider alternative livelihood systems where possible.

19. Though industrial production in the post-Soviet territory strongly decreased due to its low competitiveness, some polluting industries such as metallurgy and heavy equipment and fertilizer production survived and even developed. Mining and petroleum extraction also affect extensive areas, especially in Russian Federation. There are responses to the soil pollution threat in all the countries through improved legislation that obliges the enterprises responsible for contamination to provide costly reclamation.

20. In **Central Asia and the Caucasus (CAC)**, the situation with soil resources is the worst due to its biophysical conditions, including mountainous topography and arid climate. The main drivers of soil degradation are **population growth and climatic change** (aridization). In the last 50 years, the population of the five Central Asian countries has tripled: currently it is estimated to be 66.4 million and about 60 percent of the population is considered dependant on agriculture for their livelihoods (FAO, 2013a). The Central Asian region is facing serious challenges with the need to boost agricultural production, both for internal use and for export, amongst increasingly degraded soils and limited water resources (Kienzler et al., 2012). In addition, climate change projections for the region indicate further aridization that would certainly increase the risk of drought with impacts on rural livelihood (FAO, 2009, 2013a, 2013b). A disaster of the Central Asian subregion is the dying Aral Sea, which affects the regional climate, contributes to salt transportation by the wind across the region, and provokes human migration from former lakeside areas, thus increasing pressure on other parts of Central Asia.

⁷ http://www.fao.org/NR/WATER/AQUASTAT/countries_regions/TUR/index.stm

21. Soil degradation can largely be attributed to the exploitation and deterioration of natural resources by human activities, aggravated by increased frequency and severity of climate related disasters (e.g. droughts, floods and landslides). The main pressure on soils in the region is **unsustainable land and water management**, particularly through inefficient irrigation and unsustainable agricultural practices (e.g. monocropping of cotton, inappropriate use of fertilizers, inadequate soil care, overgrazing of pastoral lands, etc.), resulting in **soil erosion, organic matter loss, nutrient depletion, and secondary salinization**.

22. Unsustainable soil management in CAC is closely related to low investment in preventing soil degradation and reclaiming degraded land due to small-holder land tenure model, weak cross-sectoral coordination, limited capability of national institutions for the planning and upscaling of sustainable agro-technologies and inadequate integration of resilience into policy and decision-making. Regional administrations have little experience in designing and implementing climate-smart land-use initiatives and they have even less experience with the adoption of mechanisms to improve women's access to knowledge, resources and services for improving soil health, despite the feminization of agriculture in rural areas due to male out-migration.

23. Erosion is to some extent a natural process in the mountainous areas of the sub-region; however, its rate, extent and severity is increasing due to poor soil management. Eroded soils in the Caucasus cover 35 to 43 percent of total agricultural lands. In Central Asia, the total area affected by water erosion is over 30 million hectares, and by wind erosion – about 67 million hectares; in Uzbekistan, up to 80 percent of agricultural land is affected by water erosion, and in Tajikistan between 60 and 97 percent according to different sources (CACILM, 2006).

24. The cultivation of virgin lands in Kazakhstan resulted in the loss of approximately 570 million tonnes of carbon from soils, a significant part transported by wind erosion. There is good potential for carbon sequestration through conversion to conservation agriculture, elimination of summer fallowing and growing forages/cover crops and rates may reach 100 to 200 kg ha⁻¹ y⁻¹ in coarse-textured soils of semiarid regions and 150 to 300 kg ha⁻¹ y⁻¹ in heavy-textured soils of the sub-humid regions. The potential for soil C sequestration in Central Asia is 10 to 22 Tg C y⁻¹ (16±8 Tg C y⁻¹) over 50 years, which it represents 20 per cent of the CO₂ emissions by fossil fuel combustion (Lal, 2004).

25. Saline and sodic soils are widespread in CAC, in particular in Central Asia where between 40-80 percent of irrigated lands are salt-affected and/or waterlogged (FAO, 2015b) as shown in Figure 1. The area of saline soils in Kazakhstan (including Solonetz, alkaline soils, and complexes with other soils) is 111.55 million hectares, or 41 percent of the national territory (Borovskii, 1982). However, the majority of this area has natural salinity due to the presence of marine sediments. The area of salt-affected soils in Uzbekistan is 20.8 million hectares, or 46.5 percent of the country's territory (Kuziev and Sektimenko, 2009). The groundwater table is less than 2 meters below the surface in about one-third of irrigated lands in Uzbekistan and 51 percent of irrigated lands are affected by excessive soil salinity (FAO, 2013a). Salt-affected soils are also widely distributed in Turkmenistan and cover 14.1 million hectares or 28.7 percent of the total area of the country (Pankova, 1992) and are concentrated in the west close to the Caspian Sea. Up to 68 percent of the total area of irrigated soils in Turkmenistan is affected by excessive salinity (FAO, 2013a). The area of salt-affected soils in Azerbaijan is estimated to be 510 000 hectares or 5.9 percent of the territory (Ismiylov, 2013). About 45 percent of irrigated soils in Azerbaijan are saline (Aquastat, 2012).

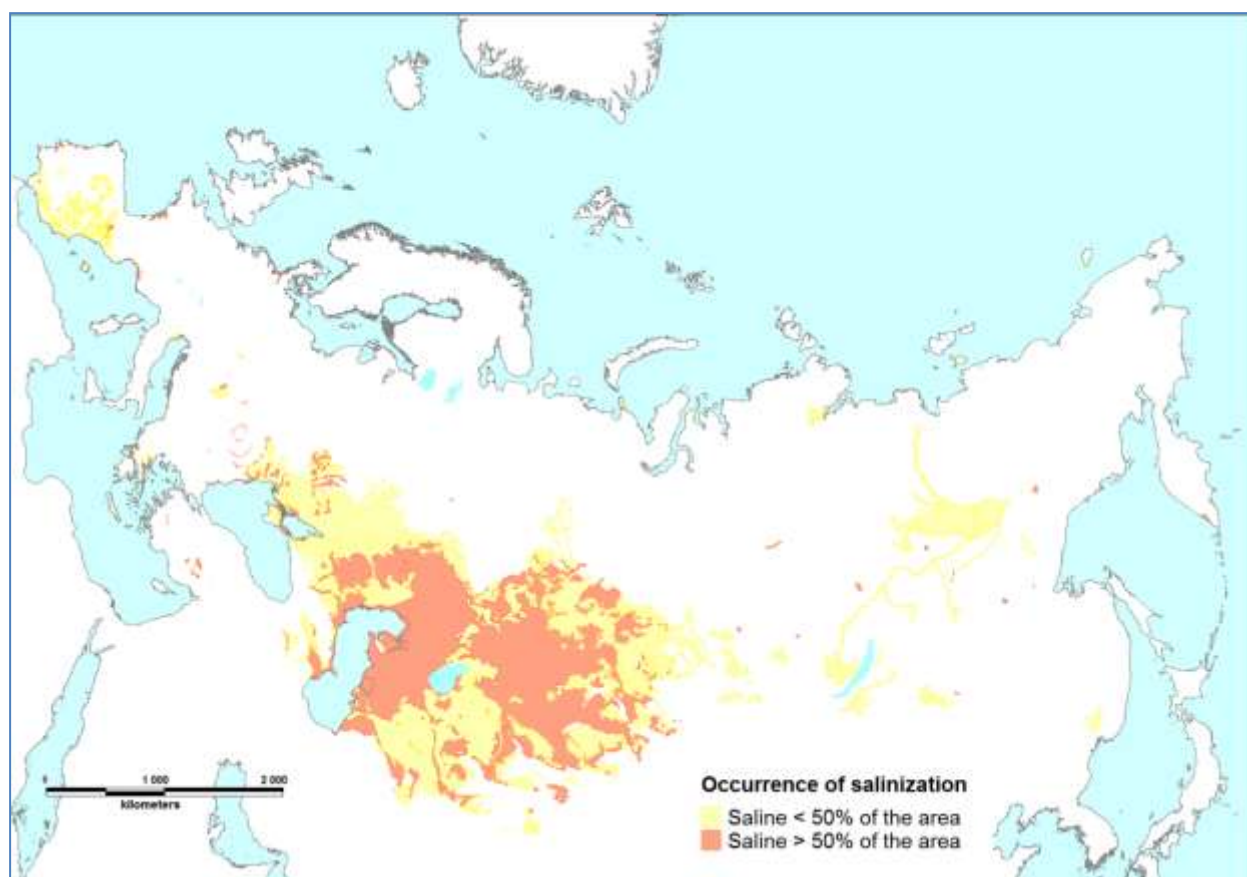


Figure 1. The distribution of salt-affected soils in Europe and Central Asia (FAO, 2015b)

26. The responses of the land users, local authorities and governments are a comprehensive set of policy, legal, institutional, economic and technical measures. Within the UNCCD context, during the period 2006-2010, a Sub-Regional Action Programme to Combat Desertification (SRAP/CD, 2003) was developed and a 10 year multi-country programme “Central Asian Countries Initiative on Land Management” (CACILM1) was implemented. Recognizing the importance and relevance of this programme for combating land degradation, the Governments of Central Asian countries and Turkey agreed to make a commitment to support the next phase with a particular focus on salinity management and drought preparedness considering their massive environmental, social and economic impacts. However, despite the efforts of national governments and international donors, mobilization of financial resources to scaling up sustainable soil management remains a priority. Most suitable practices such as minimum till and no-till, stabilization of moving sands, crop diversification, water saving, pasture improvement, etc., demonstrated locally at pilot/experimental farms, need to be more widely disseminated and adopted for reducing the rate of soil degradation in the sub-region.

III. Towards sustainable soil management in Europe and Central Asia

A. FAO's role

27. Under the reviewed Strategic Framework 2010-2019, FAO is strengthening its role in contributing towards "Increased and improved provision of goods and services from agriculture, forestry and fisheries in a sustainable manner" (Strategic Objective 2) to help the world's most vulnerable people achieve food and nutrition security, by applying an inter-disciplinary and programmatic approach. As laid out in the Strategic Framework, the Organization is increasing its support to Member Countries with the aim of improving governance of limited soil resources and promoting sustainable soil management at the local, national, regional, and global levels, based on specific countries' needs and priorities.

28. Within this framework, FAO launched the Global Soil Partnership in 2012 in its continuous efforts to promote the cause of soils and to trigger action worldwide. The Global Soil Partnership is supporting the process for promoting the wide adoption of sustainable soil management practices, by addressing five pillars for which plans of action have been elaborated and adopted by the GSP Plenary Assembly. Under this major global initiative, the European Soil Partnership and the associated sub-regional Eurasian Soil Partnership were launched in 2013 with a fundamental role to play in moving towards concrete action via the 'regional Implementation Plan' (see Box 2) and extra-budgetary resources are getting mobilized for its implementation (e.g. contribution of Russian Federation).

Box 2. Implementation Plan of Action of the Eurasian Soil Partnership

The Implementation Plan (IP) of the Eurasian Soil Partnership was adopted at the Plenary Meeting of GSP focal points in Izmir, Turkey, 16-18 of June 2015.

It has been unanimously stressed that the aim of the IP is the **promotion of sustainable soil management (SSM) in Eurasia**, especially in Central Asia and the Caucasus, **for increasing area of land in agriculture and forestry under sustainable management**, in line with the proposed indicator 15.3 of the post-2015 Sustainable Development Goals (SDGs).

The IP will contribute to enhance knowledge capacities on SSM within Member Countries for the upscaling and mainstreaming of sustainable soil management practices.

The IP will be implemented through the following action:

- Awareness raising among the policy-makers, managers and general public about the importance of soil resources and their sustainable use for sustainable development;
- Strengthening capacities of national institutions for providing advisory services on sustainable land management and natural resources protection/restoration;
- Enhancing knowledge and skills of a wide range of stakeholders at all levels through training and education (from secondary school to continuous professional development);
- Promoting targeted soil research, especially aimed at the control of soil salinity and erosion, and creating a regional platform for *iAgriculture*;
- Developing a regional Soil Information System (Omuto *et al.*, 2013) and an harmonized database of best practices on SSM;
- Harmonizing the approaches to soil analyses, classification and data management.

29. In 2015, the UN International Year of Soils, FAO is calling for further action to successfully arrest and reverse current trends in soil degradation at global, regional, national and local levels and tackle interlinked challenges of desertification, land degradation and drought (DLDD) in line with the 10 year UNCCD strategy (2008-2018) of the Sustainable Development Goals within the post-2015 process with the proposed target: ‘By 2030, 30 percent increase in the area of land in agriculture and forestry under sustainable management’.

30. In Europe and Central Asia, FAO will continue responding to government requests to help combat land degradation and will continue to contribute to climate change adaptation and mitigation, in close consultation with stakeholders and partner organizations, such as international financing institutions, centres of the Consultative Group on International Agricultural Research, UN agencies, the European Union and interstate organizations. Under GEF06, the Organization is currently supporting the Governments of Central Asian countries and Turkey to upscale integrated natural resources management in agricultural production landscapes, with a focus on salinity control and drought preparedness (CACILM-2).

31. FAO and other international partners have been promoting a global framework for assessing land degradation and sustainable land management at different scales that can provide a baseline and assist countries in making informed decisions for targeting investment and planning interventions for efficient, equitable and sustainable agricultural development (FAO, 2013b). Though this is a long term task to develop a sound baseline on status and trends, as well as understanding of the drivers and pressures and the impacts of land degradation and effectiveness of response measures, we should move forward in this direction as an important step towards the post-2015 sustainable development goals. Thanks to such assessments, in countries, and national research data, we are starting to get some answers as to the status and trends of land degradation, **where** land degradation takes place, **what effects** it has on the population, **how** the situation can be improved, and what the **costs of action and inaction** are to the government and land users. However, the paucity of evidence based knowledge on the costs and benefits of innovative technologies not only at farm level but at scale across landscapes and production systems makes it difficult to convince policy-makers on the importance of designing efficient policy instruments and investing in preventing soil degradation and restoring degraded soils.

32. The region of Europe and Central Asia is unique in terms of the diversity of biophysical conditions and socio-cultural contexts, and contrasts in economic development. This diversity is challenging for the region because a unique strategy for combating soil degradation in the region can hardly be proposed. Instead multiple flexible strategies should be applied to address the decline in soil health in different parts of the region and for sharing experiences for adaptation of successes to other contexts. The current momentum already gained in the region for advancing sustainable soil management through the European and Eurasian Soil Partnerships provides a unique opportunity for sharing experiences and expertise in the management of soils resources, for building bridges with other sectors for enhanced intersectoral coordination, and promoting joint action by all governments, private sector, academic and research and civil society organizations.

B. Recommendations for governments

33. The 39th Session of the ECA may wish to recommend that countries:
- Commit to increase the area of land/soils in agriculture and forestry under sustainable management in line with the proposed indicator 15.3 of the post-2015 Sustainable Development Goals (SDGs), with the mobilization of adequate policy, institutional, technical and financial support to that end, through partnerships with international and regional development partners;
 - Adopt the five year rolling ‘Implementation Plan’ for the Eurasian Soil Partnership as a means for promoting wide uptake of sustainable soil management and restoration of degraded soils in Eurasia and, support the establishment of an Eurasian Soil Commission under the constitution of FAO;
 - Share the legacy data and more recent data on the status and trends of soils (negative and positive) for more robust policy, intervention strategies and investments in the region;
 - Facilitate a participatory, multi-sectoral and multi-stakeholder planning and investment process at all levels for combating land degradation, and enhancing resilience to climate change;
 - Strengthen multi-country collaboration (including South-South cooperation) within the region for increasing the capacity of CAC countries to upscale and adopt SSM practices, including the development of a joint regional Soil Information System and an harmonized database of best practices to be used by CAC.

C. Recommendations for FAO

34. The 39th Session of the ECA may wish to recommend that FAO and other organizations:
- Support national and multi-country capacity development programmes to scale up policies, practices and incentives for the coordinated and integrated management of soil, water, forest and biological resources, particularly in Central Asia and the Caucasus, as a means to sustain and enhance both productivity of agricultural production landscapes and associated social and environmental benefits;
 - Support national and sub/regional institutions or partnership platforms to prevent soil degradation and reclaim degraded soils, focusing particularly on Central Asia, in line with the resources already availed and extra-budgetary resources that may become available;
 - Foster and support multi-country collaboration, experience exchange and knowledge sharing, particularly on best practices in sustainable land management for specific contexts and to enhance evidence-based knowledge on the costs of land degradation and the values/impacts (direct and indirect) of preventing or mitigating soil salinization, loss of soil organic matter and soil erosion;
 - Support regional cooperation through the regional European Soil Partnership and sub-regional Eurasian Soil Partnership by encouraging, monitoring and revising the status and development of these partnership, providing advice and providing technical support through the GSP Secretariat;
 - Assist Governments in assessing the potential of soils for food security and enhanced resilience to climate change, including mechanisms for the wide adoption of climate-smart agricultural practices and integrated production systems that are more resource use efficient and enhance biodiversity and ecosystems services.

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Annex 1

Definition of soil degradation

In the World Soil Charter, ‘*soil degradation*’ is defined as ‘*the deleterious loss of soil functions, either partially or totally, resulting from modifications of soil properties by humans*’ (FAO, 2015a). It is a change in the soil health status resulting in a diminished capacity of the ecosystem to provide goods and services for its beneficiaries.

Degradation can result from truncation of the soil through erosion caused by wind, water, or tillage; changes to the soil chemical and biological environment through acidification, salinization, or contamination; accelerated loss (through erosion, decomposition, leaching, or export in crops) of nutrients derived from soil mineral and organic materials and of the organic matter itself; suppression or elimination of soil biota through deliberate or indiscriminate actions; reductions in soil pore space by soil structural modifications due to compaction or other stresses imposed on the soil; and soil sealing and soil crusting by infrastructure and housing development. Land degradation has a wider scope than both soil erosion and soil degradation in that it covers all negative changes in the capacity of the ecosystem to provide goods and services (including biological and water related goods and services).