Session 1: Soil and water recourses

Soil and water resources: Old and new challenges with urgent need of solutions in view of global warming and climatic changes

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The natural resource base continues to be very fragile and under threats from various pressures, such as unsustainable practices, increasing population and climate change. Over the years societies have adapted farming practices to cope with environmental change and climate variability, but the present rates and intensity of climate change is challenging the capacity of agricultural sector to adapt in all regions, particularly in developing countries.

Soil degradation is still a major threat and large areas of agricultural land are taken out of production or have less productivity. Water erosion is the biggest single cause of the land degradation and more extreme weather situations in the future will most probably make the situation even worse. The challenge is how to produce more food with less land per capita under more unfavourable climatic conditions.

Too little water or too much water has historically been a challenge for farmers. Irrigation and drainage have been the techniques for managing water in the field, but the implementation is still problematic in terms of efficiency in the use of the water resources and environmental impact. More extreme weather situation is calling for additional improvement but at the same time we need to be aware of that to some of the events we do not have technical or economical capacities to prevent.

Increase productivity and mitigation of the impact of climate change can be possible, but it will require significant investments in capacity for bringing knowledge into practices. Investments in capacity for optimizing soil and water management systems are needed all the way from national strategies to farmers. We also need to search for better alignments between land limitations and their use, as for example some areas are only suitable for forest and conversion of those areas to agriculture land may implied large need for soil conservation but despite of those investments soil erosion may increase. In addition, selection of crops needs a more carefully analyses in term of water productivity, i.e. producing rice versus maize, potato or cassava.

Food production is directly related to three of the 17 sustainable development goals (zero hunger, climate actions and life on land) but is also impacted by or will impact other development goals. Many of the decision will most probably will be taken within national or regional context, given priorities to some aspects and less to others. Therefore, decisions makers at different levels need tools for better assessments of the trade-off between different goals in order to take more proper decisions, such as what will be the impact of converting forest land into agriculture land in term of long-term productivity and biodiversity.

Many of the constraints that agriculture is facing today are not new, some have partially been improved but some remain even today. Climate change is making the situation even more problematic and the need of solutions are urgent.