

PARALLEL SESSION 2

Environmental challenges in a changing climate - innovative approaches in farming and food systems



Climate variability (rainfall and seasonality) and extremes (droughts, floods, storms and heat waves) are key drivers behind the recent rise in global hunger and one of the leading causes of severe food crises. We must take urgent action now so that agriculture and food sectors transform from being a main risk driver to becoming the engine for climate and environmental solution.

Concerted actions are needed in promoting environmental integrity and climate resilient farming and food system at all levels, addressing the root causes of environmental (including soil, water and biodiversity resources and ecosystems services) and climate vulnerabilities. A shift in the agricultural system towards regenerative agricultural practices has the huge potential to address many of the most pressing challenges facing the world today, especially those faced by small-scale farmers, herders, fishers and tree dependent communities who contribute to more than half the world's agricultural production (and over 80 percent in developing countries).

Background

Climate-related disasters are expected to intensify due to climate change, coupled with current trends of increasing population and natural resources degradation. In October 2018, the Intergovernmental Panel on Climate Change called for urgent action to avert the disastrous consequences of global warming and concertedly respond to the existential threat that predominantly faces poor rural populations in developing countries. The agriculture sector – soils, forests and oceans – has the great potential to offer emissions efficiency gains, absolute reductions and carbon sinks, while supporting resilient and socio-economic development.

Aggravated by climate change, pressures on renewable and non-renewable natural resources continue to increase. Despite the fact that healthy and biodiverse ecosystems provide the goods and services needed for human well-being and for resilient and sustainable agri-food systems, many of these are in decline, such as for example the provision of fresh water, marine fisheries, cleansing of atmospheric pollutants, protection from natural hazards, pollination of our crops and pest control. Natural ecosystem loss - especially from the conversion of wild lands to agriculture and agro - silvo - pastoral land degradation create the biggest single source of pressure on biodiversity worldwide as well as a large portion of carbon emissions. Knowing that smallholders are the custodians of healthy ecosystems and biodiversity – and paradoxically, they are often among the world's poorest and most food insecure. They must be massively supported to fight hunger, combat climate change, land degradation, desertification and ocean collapse with nature-based solutions, for present and future generations.

Structure

The session consists of two panels.

Chair of the session and panels:

Adriana Dinu, Deputy Director, Bureau of Policy and Programme Support, United Nations Development Programme.

Evidence

87% ¹ of all natural disasters are climate-related disasters

26% ² of all damages and losses caused by medium- or large-scale climate related disasters are absorbed by agriculture sub - sectors

80% ² of droughts are absorbed by agriculture sectors

24% ³ of global greenhouse gas emissions come from agriculture sub - sectors

1.5°C ³ rise in Global temperature above pre-industrial levels

¹ - UNISDR, (https://www.unisdr.org/files/42862_2015no05.pdf)

² - AO The impact of disasters and crises 2017 on agriculture and food security, (<http://www.fao.org/3/I8656EN/I8656en.pdf>)

³ - Special Report, "Global Warming of 1.5°C", Intergovernmental Panel on Climate Change (IPCC), October 2018, (<https://www.ipcc.ch/sr15/>)

Panel 3: The end of normal: landscape and agriculture transition for preventing food crises in a changing world - a global perspective

Land conversion to agriculture and land degradation are at the heart of the problem, with cascading spirals of ever-decreasing soil fertility, requiring ever-increasing inputs. Resulting biodiversity and the unsustainable intensification and simplification of agricultural landscapes has led to the decline of ecosystem services other than food production and the consequent increase of conflicting trade-offs among multiple services. At the same time, the resilience and sustainability of our agriculture and food systems is threatened by climate change variability and related disasters. The panel will review these global challenges for both developed and developing countries with the following topics:

- Investments and incentives for resilient and sustainable farm intensification practices together with halting land degradation and the conversion of wild lands to agriculture as an accelerator for transforming our agri-food systems worldwide.
- The coexistence of different food production models (agro-ecology, green revolution, etc.), combining economic, environmental, and climate benefit.
- The focus of innovation for environmental and climate resilience and sustainability of agri-food systems, including technological, institutional, organizational, financial, and risk-management (including landscape approaches and nature based solutions), bringing the land-water-energy nexus together with the safeguard of terrestrial and marine biodiversity at ecosystem, species and gene levels.
- The profound and systemic changes required, with a focus on environmental and climate elements together with socio-economics for transformative changes of our agri-food systems from farm to fork.

Panel 4: Making ends meet: transforming agriculture to respond to climate and local challenges

Increasing the climate resilience of agri-food systems encompasses major and systemic transformation and a recognition that agriculture and food systems are not just part of the problem, but that they have the ability to change climate in the future through the implementation of climate resilient and sustainable production and consumption practices. Among many priorities, we urgently need transformational shifts to regenerative agricultural practices at scale. Doing so, and coupled with reducing environmental, climate and waste footprint of foods, will have profound climate and societal benefits. In this context the panel will focus on local approaches to agri-food adaptive transformations in the face of environmental and climate constraints and local socio-economic challenges, while also addressing the following topics:

- The various roles of the public and private sector in relation to farmers, including ways to secure equitable access to renewable and non-renewable natural resources (land, water, tree, and energy).
- The promotion of good practices and innovations based on local, indigenous and scientific knowledge for the equitable, resilient and sustainable transformation of their local agri-food systems, with emphasis on the role of healthy soils and nature-based solutions managed by local actors at plot, farm and landscape levels.
- The different, complementary and collaborative initiatives from different geographical agri-food systems, including the perspectives of community, private and public actors from production to consumption.

Panel 3: The end of normal: landscape and agriculture transition for preventing food crises in a changing world - a global perspective

Presenter:

- **Adriana Dinu**
Deputy Director, Bureau of Policy and Programme Support, United Nations Development Programme

Panelists:

- **Manuel Barange**
Director Fisheries and Aquaculture, Food and Agriculture Organization of the United Nations
- **Maria Heubuch**
Member of European Union Parliament
- **Pascal Martínez**
Senior Climate Change Specialist, Global Environment Facility
- **Abdalah Mokssit**
Secretary of the Intergovernmental Panel on Climate Change
- **Elizabeth Nsimadala**
Eastern Africa Farmer Federation
- **Astrid Zwick**
Head of InSuResilience Global Partnership Secretariat

Panel 4: Making ends meet: transforming agriculture to respond to climate and local challenges

Presenter:

- **Eric Bani**
Cocoa Health and Extension Division, Ghana Cocoa Board

Panelists:

- **Margarita Astralaga**
Director of Environment, Climate, Gender and Social Inclusion, International Fund for Agricultural Development
- **Jorge Ernesto Quezada Díaz**
Director General de Ecosistemas y Vida Silvestre, Ministerio de Medio Ambiente y Recursos Naturales, El Salvador
- **Hindou Oumarou Ibrahim**
Coordinator, Association of Fula Women and Autochthonous Peoples of Chad
- **Thomas Magnusson**
President, General Committee for Agricultural Cooperation in the European Union
- **Carla Montesi**
Director for Planet and Prosperity, Directorate-General for International Cooperation and Development, European Commission
- **Alain Peeters**
Secretary, Agroecology Europe
- **Sinare Sinare**
Southern Africa Confederation of Agricultural Unions