MORE ABOUT PARALLEL SESSION:

A TOOLOX FOR BUILDING RESILIENT SMALLHOLDER FARMING SYSTEMS – TOWARDS SUSTAINABLE NUTRITIONAL SECURITY

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10.30-10.35 Video introduction (FSE)
The video exemplifies how knowledge on the social complexity of family farm decisions in Ghana may be used to improve model-based agricultural support for the sustainable intensification of local smallholders. (MM)

10.35-10.45 Introduction (MC, FSE)
The introduction will outline resilience, the importance of building healthy and resilient smallholder farming systems, and how implemented actions might contribute to multiple SDGs. It will set the background for the parallel session that will introduce a toolbox of interventions – harmonized metrics, models, and concepts – to assess trade-offs and synergies and (re)design farming systems that; are resilient to a multiplicity of external shocks and stresses, deliver nutritional security, and are sustainable and regenerative in their natural resource management. (AM, RS)

Learning outcomes, participants will be able to:
- ✓ describe resilience and the guiding questions that help identify vulnerabilities and capacities to influence resilience strategies.
- ✓ describe the importance of building healthy and resilient smallholder farming systems and how actions contribute to multiple SDG's.
- ✓ recall a toolbox of interventions and how they contribute to building smallholder farming system resilience.

10.45-10.50 Explain World Café Style and move to desired first station (FSE)
There will be four different stations to which the participants can choose to go to, however only three 13-minute sessions, so participants will have to choose three of four stations. Times will have to be strictly adhered to, participants will be urged to move quickly between sessions. (RS)

10.50-11-03 World Café Session 1
11.03-11.05 Move to second station
11.05-11.18 World Café Session 2
11.18-11.20 Move to last stations
11.20-11.33 World Café Session 3

Station 1: Sustainable agriculture in action - Resilience Design in Smallholder Farming Systems
This station will explore Mercy Corps' Resilience Design in Smallholder Farming Systems Approach, and its application to program sites in DRC. Designed to work with and complement additional ecological, economic and social interventions, the RD approach encourages farmers to think differently about agricultural development and identify ways to work with natural systems rather than against them. In doing so, farmers can enhance natural resources and ecosystem services, increase energy efficiency, increase income, contribute to increased nutritional status, and strengthen their skill set, adaptability and confidence to observe, learn, and adapt over time. Applicable at different levels (garden, farm, community, and

watershed), the RD approach improves resilience to environmental and economic shocks and stresses. (AM, SC)

Learning outcomes, participants will be able to:
- ✓ describe a practical low-cost approach to garden/farm/landscape design that renders the space more resilient to shocks and stresses, and improves food security and nutrition.
- ✓ recall example development program sites in DRC.

Station 2: Metrics for Resilience – Relevant, Reliable and Comparable?
In this station, we will (in 3 separate stages/rounds) (i) unpack some current approaches to measuring resilience in social—ecological systems, (ii) examine the unique challenges of measuring resilience at the farm level in smallholder systems, and (iii) explore opportunities to develop relevant, reliable, and comparable metrics for resilience in these systems. (LD)

Learning outcomes, participants will be able to:
- ✓ illustrate and classify the characteristics of a prototypical resilient smallholder farm.
- ✓ formulate a list of proposed metrics (concepts and proxy indicators) for measuring resilience on smallholder farms.
- ✓ describe the unique challenges of quantifying resilience at the farm level.

Station 3: Stress testing for Resilience using the FarmDESIGN modelling Tool
At this station, the model FarmDESIGN will be showcased. We will show how the model's pareto-based evolutionary algorithm is used to demonstrate stress testing for a Kenyan case study. We will look at the trade-offs and synergies between three objectives: optimising nutritional system yield, household economic performance and labour demands. (CT)

Learning outcomes, participants will be able to:
- ✓ observe the functioning of FarmDESIGN.
- ✓ recognize the relevance of the model output for exploring trade-offs and synergies within farming systems.
- ✓ relate the output of FarmDESIGN to calculated metrics for resilience, vulnerability and adaptive and buffering capacity of modelled farming systems.

Station 4: Co-design of management for resilient, sustainable and nutritious foodscapes
At this station, the Augmented Reality (AR) platform developed by FSE will be showcased. We will be demonstrating its use for multi-actor foodscape management of a case study farm in Ireland. The holographic landscape (visible through the Hololens) will be able to be seen and used by participants. (PM, BvP)

Learning outcomes, participants will be able to:
- ✓ relate the concept of augmented reality to the context of sustainable foodscapes.
- ✓ recognize potential for applications of augmented reality to(re)design and manage sustainable foodscapes.

11.33-11.35 Prepare Mentimeter
Participants login to Mentimeter website with the provided access code. (BvP)

11.35-12.00 Final Plenary

In the final plenary each station will report back to main stage with their main conclusions.
Mentimeter, pre-prepared with stimulating questions will engage participants in discussion that will lead to agreement on the tools and metrics that need to be in a toolbox for resilience. (RS)

Learning outcomes, participants will be able to:

- ✓ discuss the unique challenges of achieving resilience, sustainability and nutritional security in smallholder farming systems.
- ✓ give examples of indicators of resilience that are appropriate, sensitive and relevant to smallholder farming systems.
- ✓ interpret stress-tests of the resilience of smallholder farming systems using models.
- ✓ recognise the role of AR in designing resilient, sustainable and nutritional foodscapes.
- ✓ reflect upon the potential for application of this toolbox across contrasting environments.

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