Sustainable Intensification of Mixed Farming Systems (SI-MFS)

Francis Muthoni
on behalf of WP1 team
Outline

- Introduction to MFS
- Geographical focus
- Objectives
- Research questions
- Linkages with other WP’s & OneCG Initiatives
- Outputs and deliverables
- Implementation plans
- Key messages from pre-inception meetings
Introduction to MFS

- MFS involves growing crops and rearing livestock.
- MFS can be classified into broad groups based on ecology and production orientation.

Dynamics of MFS largely driven by:
  - Climate change & variability
  - Land degradation
  - Population explosion
  - Economic development & shocks
  - Access to markets
  - Improved agri-technologies

Dixon et al 2020
Selected MFS in SI-MFS

- Highland mixed (Ethiopia)
- Maize-mixed (Malawi)
- Rice-mixed (Bangladesh)
- Highland mixed (Nepal)
- Upland intensive mixed and Highland extensive mixed (Laos)
- Cereal-root mixed (Ghana)
Selected MFS in SI-MFS

- Highland mixed ESA (Ethiopia)
- Highland mixed SA (Nepal)
- Rice mixed SA (Bangladesh)
- Cereal-root mixed CWA (Ghana)
- Maize mixed ESA (Malawi)
- Upland intensive mixed SEA (Laos)
- Highland extensive mixed SEA (Laos)

- 6 countries in different MFS
WP Objectives

- Characterize the status, trends and future dynamics of the main MFS
- Identify present socio-economic and environmental context at different scales
WP1 Objectives

- Identify drivers of change, constrains and opportunities in MFS
  - Climate, population pressure, consumer behaviour, e.t.c

Trends of rainfall onset Ghana
WP1 Objectives

- Identify entry points for socio-technical SI innovations to mitigate impacts of change

Source: BMGF Digital Farmer Services Strategy
WP1 Objectives

- Identify gender-transformative SI strategies and approaches that enhance equity and social inclusion within MFS

(Adapted from IGWG 2017 in Fischer 2022)
WP Research Questions

- What is the current status of MFS in different CGIAR regions?
  - Environmental, socio-economic, geographic distribution e.t.c

- What novel trends can be projected in these MFS given past, existing, and emerging drivers of change?
  - Intensification, extensification, diversification, specialization, socio-economic and environmental changes

- What affordable entry points can be identified for transition of MFS towards sustainably intensified systems that mitigate any negative impact and harness opportunities presented by the drivers of change?

- What lessons do current and past interventions hold for innovative strategies to make SI gender-transformative and
## WP1 Outputs, activities and deliverables

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<thead>
<tr>
<th>Output</th>
<th>Activities</th>
<th>Entity / Partners</th>
<th>System/ Country</th>
<th>Deliverables</th>
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<tbody>
<tr>
<td>1.1. Synthesis of status of MFS and grand challenges with scientifically credible and independent up-to-date assessments of available knowledge for informed decision making at the national, regional, and global levels</td>
<td>Geospatial mapping of major MFS around the global South using a set of criteria that characterize their status</td>
<td>IITA</td>
<td>Africa/Asia</td>
<td>D1.1 Synthesis report on status of MFS published and data embedded in existing repository</td>
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<td>Literature review and secondary data analysis</td>
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<td>Focus Group Discussions and key informant interviews</td>
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<td>Report development and publication</td>
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<td>1.2. A repository of information embedded in existing global databases</td>
<td>Processing of data from geospatial mapping, literature review and FGD;</td>
<td>IITA</td>
<td>Africa/Asia</td>
<td>D1.2 Preliminary (a) and final (b) case study reports on drivers of change and their impact on MFS published</td>
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<td>Database development and linkage to existing repositories</td>
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<td>1.3. Case studies in major MFS on direct and indirect drivers of change</td>
<td>Literature review and secondary data analysis</td>
<td>IITA</td>
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<td>D1.2 Preliminary (a) and final (b) case study reports on drivers of change and their impact on MFS published</td>
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<td>and their impact on the future role, relevance, and performance of MFS to inform their optimization</td>
<td>Geospatial mapping and foresight analysis of land cover and land use change</td>
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<td></td>
<td>Identification of past, current and future direct and indirect drivers of change in major MFS in the global South</td>
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<td>Africa/Asia</td>
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<td>Focus Group Discussions and key informant interviews</td>
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<td>Modelling of impact scenarios</td>
<td>ABC</td>
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<td>Preparation and publication of case study reports</td>
<td>ALL</td>
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<td>1.4. Data catalogue and adaptive database of key drivers influencing change in MFS at global and regional levels</td>
<td>Preparation and publication of catalogue with past, current, and future key drivers of change for MFS</td>
<td>IITA</td>
<td>Global</td>
<td>D1.3 Catalogue of past, current and future key drivers of change for MFS</td>
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<td>Development of global adaptive database on key drivers of change in MFS of the global South</td>
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<td>D1.4 Preliminary (a) and final (b) versions of a global adaptive database on key drivers of change in MFS for the global South</td>
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<td>1.5.</td>
<td>Stakeholder consultations globally and in regions to identify and document entry points for SI</td>
<td>ABC</td>
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<td>D1.5 Atlas with socio-technical entry points for equitable and inclusive SI of MFS published</td>
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<td>Entry point scenario modelling and assessment at different scales</td>
<td>ABC</td>
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<td>Development and publication of E-Atlas</td>
<td>ABC</td>
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<td>1.6.</td>
<td>Literature review and secondary data analysis</td>
<td>IITA, IRRI, IWMI</td>
<td>Africa/Asia</td>
<td>D1.6 Compendium of strategies and approaches that build equity and social inclusion in MFS</td>
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<td>Key informant interviews with implementers of Interventions identified in the literature review</td>
<td>IITA, IRRI, IWMI</td>
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<td>Compilation and Publication of Compendium</td>
<td>IITA, IRRI, IWMI</td>
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Implementation dynamics

- Discussions in the inception meeting aim to identify or clarify on:
  - Shared roles between Entities and partners
  - Priority deliverables: short (2022) and long-term (2023-24)
  - Geographical distribution and scale of interventions
  - Data needs, sources, standardization, methods and tools
  - Implementation partners
  - Linkages with existing resources to leverage on e.g. other Initiatives and projects
Potential Linkages with other Initiatives

- **WP1** will provide empirical settings, demand specification and data for devt. and application of M&T in **WP2**
- **WP1** will apply methods and tools (M&T) developed in **WP2** to characterization and foresight of MFS
- Evidence generated by **WP1** on system drivers, constrains and opportunities in MFS’s, will be applied for context-specific targeting of SI bundles in **WP3** and to guide scaling of SI innovations in **WP4**.
- Knowledge gaps identified in **WP1** will be help assessment of capacity development needs for global actors and guide their investment in capacity building on MFS in **WP5**
Key messages from Pre-inception meetings

- **Entity contribution to WP1 outputs:**
  - Entities to allocate roles to staff with clear timelines
  - Prioritize deliverables and geographies for 2022

- **Communication and coordination:**
  - To facilitate efficient communication and coordination, each Entity and cross-cutting team to appoint a focal point to WP1

- **Scale of mapping MFS:**
  - Entire global south is appropriate scale for mapping MFS

- **Leveraging existing resources and initiatives:**
  - Map existing resources to leverage on (data, tools, OneCG Initiatives, bilateral projects and partnerships)

- **Linkages and sequencing activities between WPs in SI-MFS:**
  - Need to sequence activities between WPs to promote efficiency and avoid duplication of effort
Thank You