Agricultural Development in Emerging Africa: Can Farming Systems Approach help in Planning and Priority Setting for Climate Smart Agriculture?

Fulgence Mishili, Thilak Mallawaarachchi, Judith Valerian, Christopher Auricht, Jean-Marc Boffa and John Dixon

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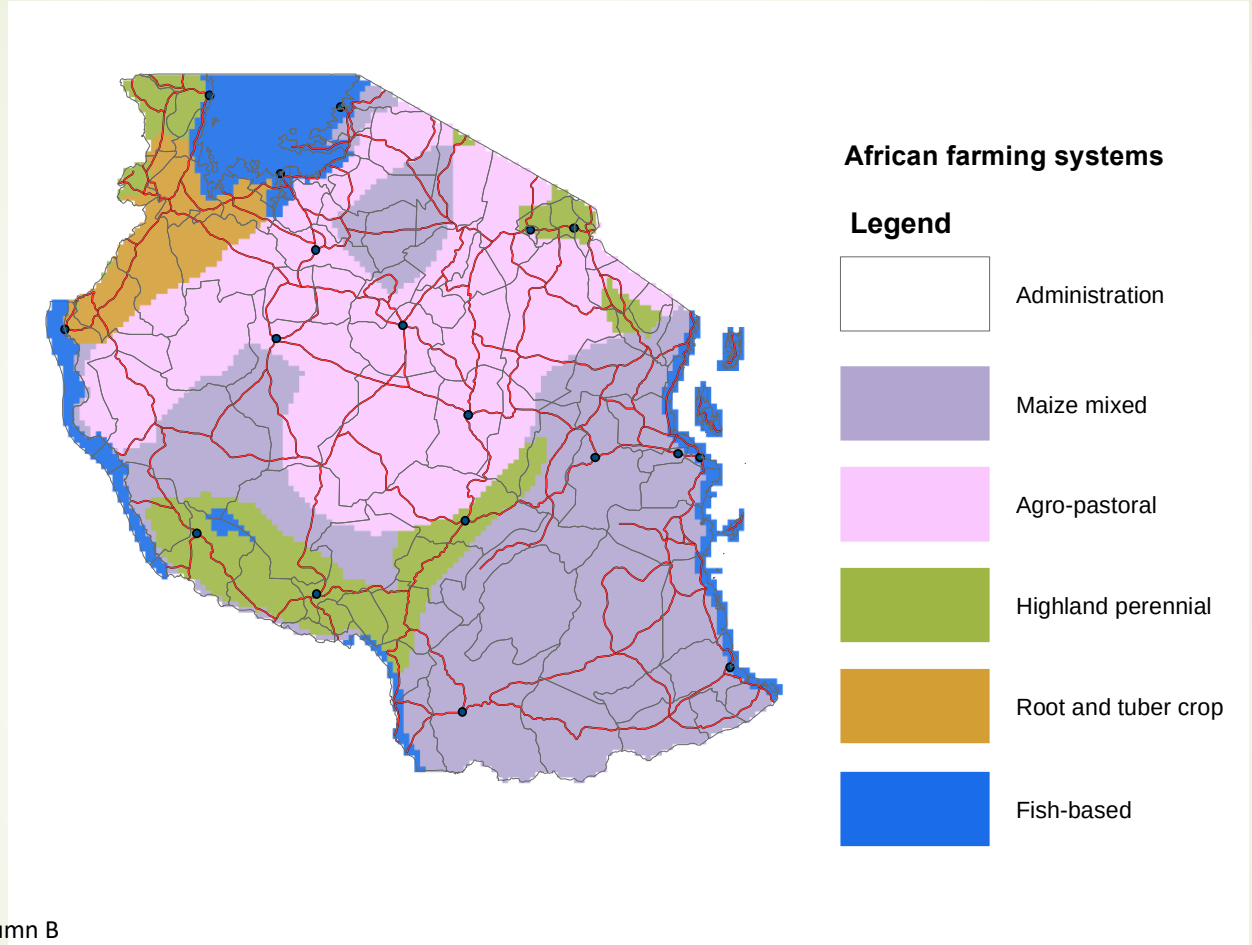
Farming Systems Approach to Agricultural Development

- Why a FS approach
- Investing in Agriculture for Growth
  - **Impressive growth performance under difficult conditions**
  - **Prospects contingent upon well managed agriculture**
  - **Agrarian systems dominates the rural economy where most people live and work**
  - **Need to intensify agriculture, but contain externality costs – SIA**
  - **Implementation of SIA requires a better understanding of the context**
  - **Institutional setting not favourable for growth**
  - **Find ways to influence the operating context where appropriate**

FS approach to Investing in Agriculture for Growth

- Growth accompanies changes in economies and livelihoods.
- Creating economic opportunities and addressing inequity are crucial for broad-based growth and transformation
  - This will requires system-wide increases in productivity
  - Productivity growth hampered by slow adoption, poor market integration and inadequate policy settings
  - Enhance cross sectoral linkages, including upstream and downstream activities influencing growth
  - Targeting and priority setting can help manage scarce resources

Main Farming Systems in Tanzania



Hchoice Area Stats 2000 (ha)
Note: column C + column D = Column B

LEV_1_DESC	Sum of AREA_TOTAL	Land_Area	Sum of AREA_WBODY	Cultivagted Land	Sum of AREA_IRR2
1 Maize mixed	38,828,937	38,608,801	220,129	1,965,359	57,683
2 Agro-pastoral	31,879,423	31,583,889	295,540	1,726,219	38,810
3 Highland perennial	10,652,449	10,229,236	423,219	818,707	82,893
4 Root and tuber crop	4,833,087	4,794,113	38,974	462,819	2,931
9 Fish-based	8,347,921	3,154,720	5,193,144	178,166	1,043
Grand Total	94,541,817	88,370,759	6,171,006	5,151,270	183,360

Growth challenges

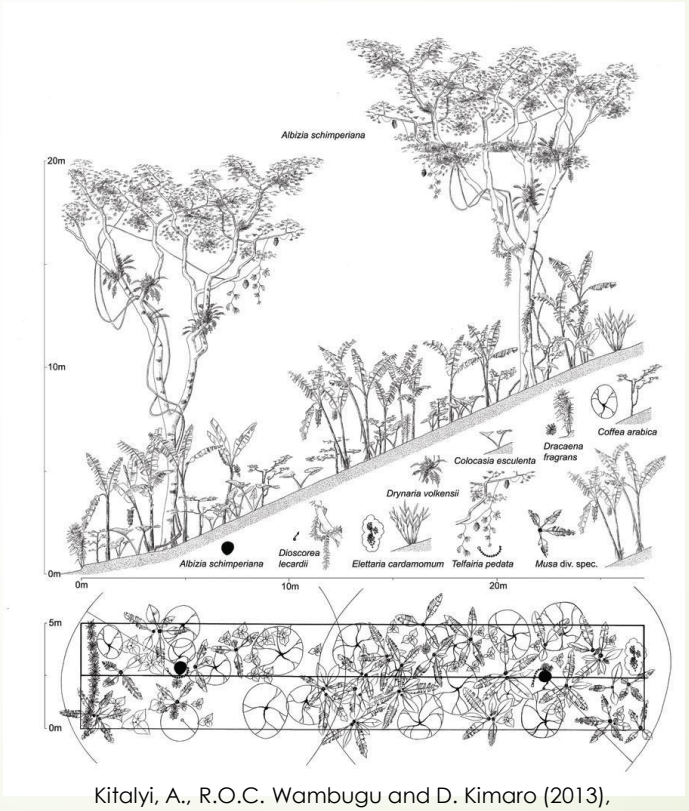
- Rural endowments
- Capital – issues of inequity and inadequate management
- Rural-urban migration
- Declining capacity of natural resources – degradation
- Assisting to build rural capacity to adapt
- Micro-level information for planning and priority setting
- Better understanding regional capabilities and constraints in a planning context

The Prosperous Highlands

- Sources of prosperity
  - Traditional systems of multi-storey cropping -- Chagga Home Garden System -
  - Key features
    - CHG System -- especially shade coffee, in four Districts
    - Coffee- banana humid highlands system, which covers Kilimanjaro, (Same district) and Lushoto district (Tanga region).
    - Poor quality and availability of data is an ongoing constraint to achieving a comprehensive understanding of development possibilities.
    - Agricultural Routine Data System (ARDS)
  - Potential to incorporate such data in a GIS-based system, together with other contextual data, such as that being introduced in this project will therefore catalyse more effective development planning, monitoring and evaluation.

Heritage farming systems and livelihoods

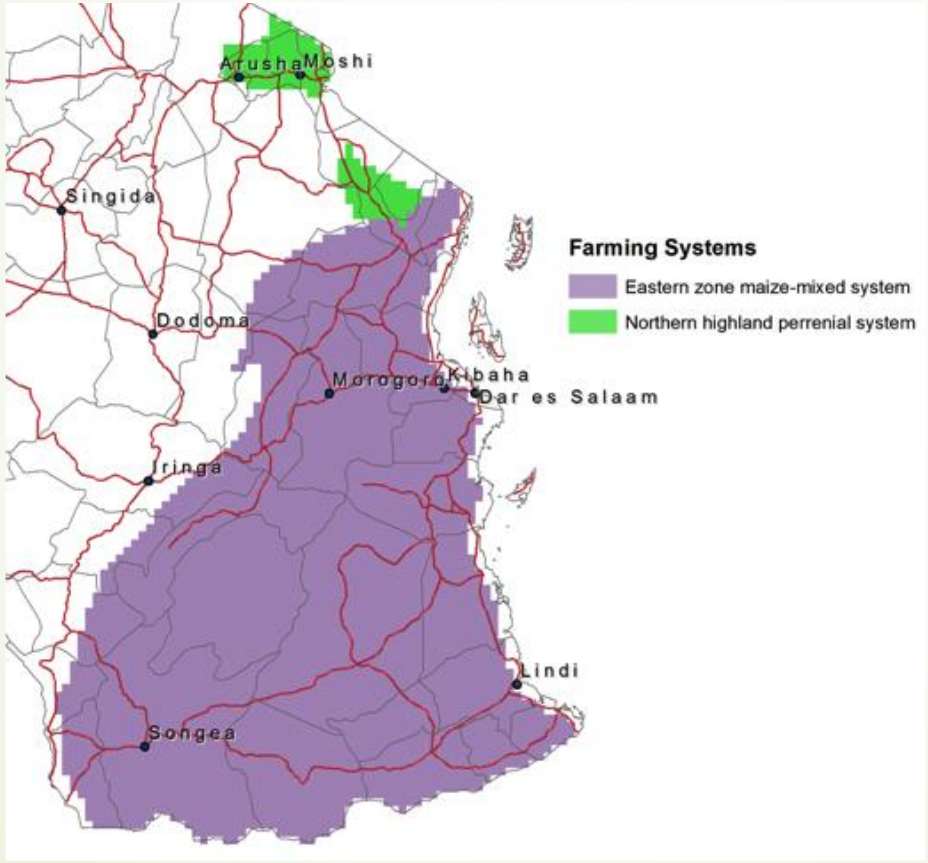
Photo credit: Foodwewant.org



Kitalyi, A., R.O.C. Wambugu and D. Kimaro (2013),

The challenging lowlands

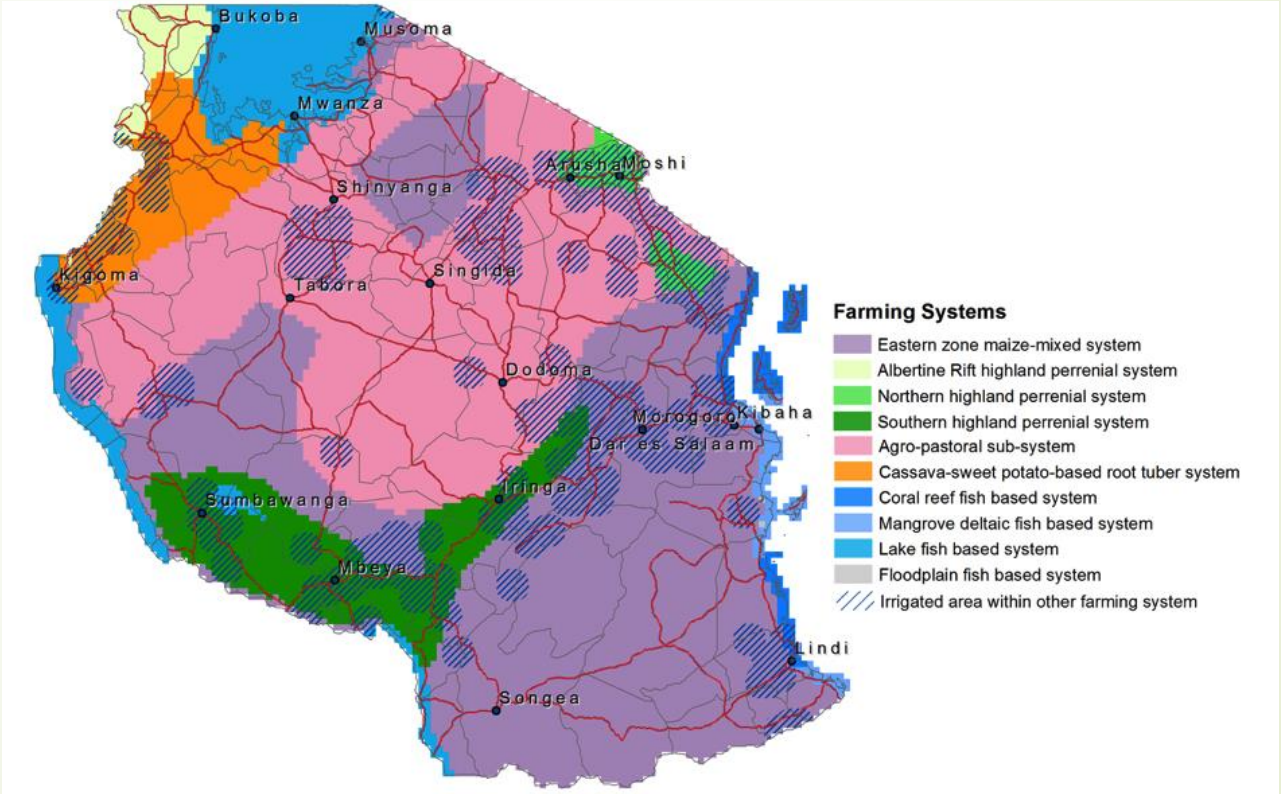
- The Eastern Zone Maize-mixed system



Common challenges

- Poor market access
- Access to improved inputs
- Low productivity owing to limitations in the soil, management and other aspects of poor agronomy.
- Poor farm incomes and inability to invest on technological change being presented
- Reduce pressure on Natural Resources, and consider future climate change

Identified farming systems for planning and priority setting



Modelling Farming Systems Change and Evolution

- Retrospective assessment
- Prospective analysis and scenario evaluation
- Farm to village level data
- Policy interactions to guide supportive institutions, information and incentives
  - Needs longer tem involvement
  - Capacity building in younger staff who are keen and receptive to learning
  - Good prospects, but need a supportive environment

Ongoing concerns

- Addressing significant nutritional problems
- Both in farming systems associated with poor smallholder and those who are increasingly leaving rural areas in search of economic opportunities in urban areas.
- illustrative analysis to highlight the use of micro-level data along with other contextual information to derive policy-relevant information that can aid development planning.
- Seeking further opportunities to maintain the dialogue and impart skills