Market System Mapping and Measuring Workshop Report

USAID Uganda Feed the Future Market System Monitoring Activity

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Introduction

The USAID Uganda Feed the Future Market System Monitoring (MSM) activity held a workshop in Kampala on May 16, 2016. The goals were to communicate and receive feedback on mapping approaches, review and contribute to a market system map, and begin a discussion about how system maps will inform indicators of systemic change in the market system.

The MSM team from Massachusetts Institute of Technology (MIT) and George Washington University (GW) introduced the activity, team background, and mapping frameworks for two types of system maps. During most of the workshop, participants worked in small groups to revise and add to different parts of the maps. The group convened to share findings and ideas at the workshop's closing. This document serves as a brief report on the workshop and an introduction to the mapping approach.

Market System Monitoring Overview

Goals of the Market System Monitoring activity are to develop new approaches that assess the impact of market facilitation activities in the USAID/Uganda Feed the Future Value Chain (FTF-VC) project and to assess systemic change in markets in cooperation with the relevant partners. This effort should complement monitoring and evaluation efforts of individual activities with methods to assess how the combination of activities in the project portfolio is enabling systemic change in markets. The MIT-GW team brings a variety of systems engineering approaches to this problem.

To address the difficulty of monitoring outcomes for a portfolio of market facilitation activities, the team will conduct analysis on two levels: the entire market system and subsets of components in the market system (subsystems). At the *market system* level, we aim to identify, understand, and analyze the relationships among the system components. Based on this understanding, we can identify key parts of the system that may be measured to assess systemic changes. At the *market subsystem* level, we aim to analyze key dynamics, actors, supply chains, and other interacting components to refine the indicators identified at the market system level. To do so, we will develop subsystem models, using methodologies appropriate to the unique characteristics of each subsystem and aligned with the purpose of the analysis.

Our approach is to iterate between these two levels with methodological development, data acquisition, and analysis at each level (depicted in Figure 1). For example, we would begin at the market system level of analysis by developing a conceptual map of the market system and using it to identify potential systemic change indicators. Next, we would select some of these potential indicators for further study at the subsystem level of analysis. We would identify a subsystem for which indicator(s) have been proposed, and begin to study it more deeply. To do so, we would identify data that exist or can be collected, model the subsystem, and analyze the data and models in order to formalize methodologies for measuring change in the subsystem. In this manner, we would refine the proposed indicators and develop a method for measuring

them. Finally, the insights from this deeper study would be captured at the market system level of analysis, by updating the market system maps and the systemic change indicators. Further analysis at the market system level would enable identification of additional indicators and selection of additional subsystems. This iterative approach invites collaboration, learning and adaption across activities.

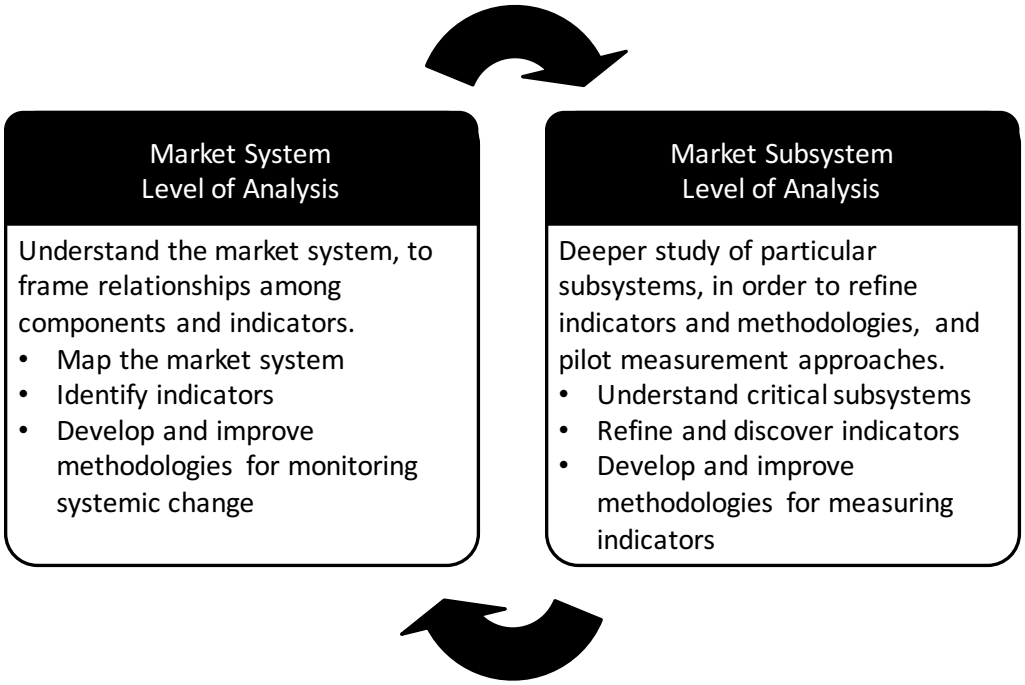

Figure 1: Approach to develop market system maps and system-level indicators

Market System Maps

The workshop launched this iterative approach by considering an initial version of the market system maps. These initial maps were a "strawman proposal" aimed to spark discussion and start the revision process. The MSM activity proposed two types of system maps as a starting point: a "supply chain flow" map and a "behaviors-relationships-conditions" map. The "supply chain flow" map depicts the key types of actors in the value chain and the main interconnections among them, including material, financial and information flows. This map is shown in Figure 2. This map also includes "swim lanes" that differentiate actor types (delineated by the horizontal spanning the map with labels on the far left).

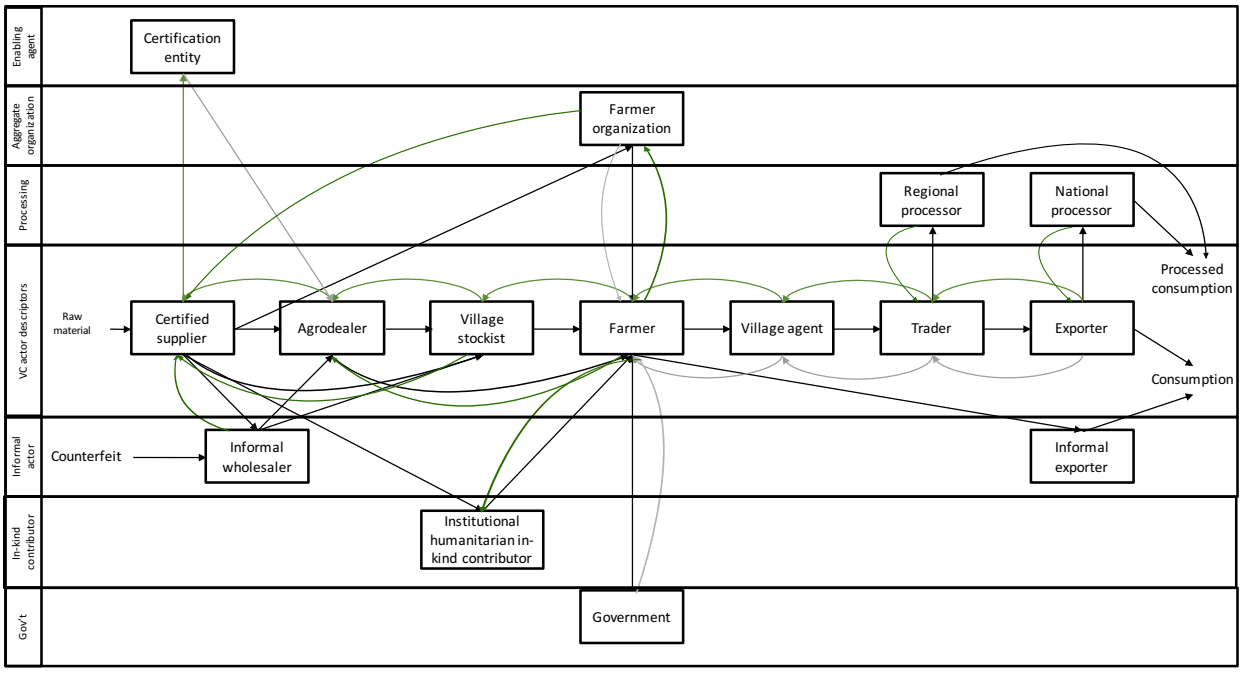

Figure 2: Supply chain flow map

The "behaviors-relationships-conditions" map depicts key concepts in market systems, including behavior changes by actors, relationship changes among actors, and enabling conditions. This map connects key concepts to each other by showing what enables what, without claiming causality. In other words, an arrow from A to B indicates that A enables B, even if A may not cause B.

The framework used for the "behaviors-relationships-conditions" map is depicted in Figure 3. This is based on a theory that facilitative interventions by activities enable existence of conditions within the market system that further enable behavior changes by and relationships among actors. When behavior and relationship changes occur together at some scale, system level results are affected that result in project impact. Feedback arrows exist from system level results to relationship and behavior changes, as well as to conditions. A feedback arrow also exists from relationships and behavior changes to conditions. Feedback means that the enabling can occur in either direction.

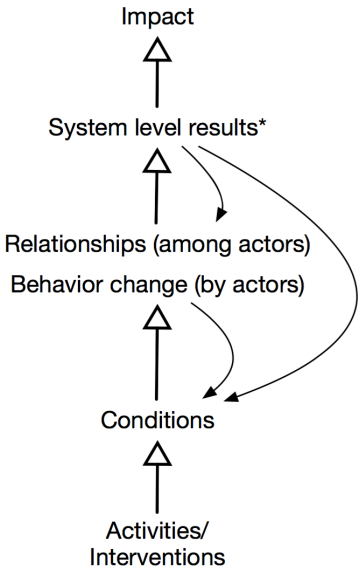

Figure 3: Behaviors-relationships-conditions mapping framework

Figure 4 demonstrates how the above framework becomes a map. Magenta circles represent relationships, blue squares represent behavior changes, items in black letters with no shape outline are enabling conditions, and green ovals represent interventions by activities. In this case, an intervention enables two conditions, each of which in turn enables a behavior change. In addition, a relationship between actors enables a behavior change of one actor to affect the behavior of the other.

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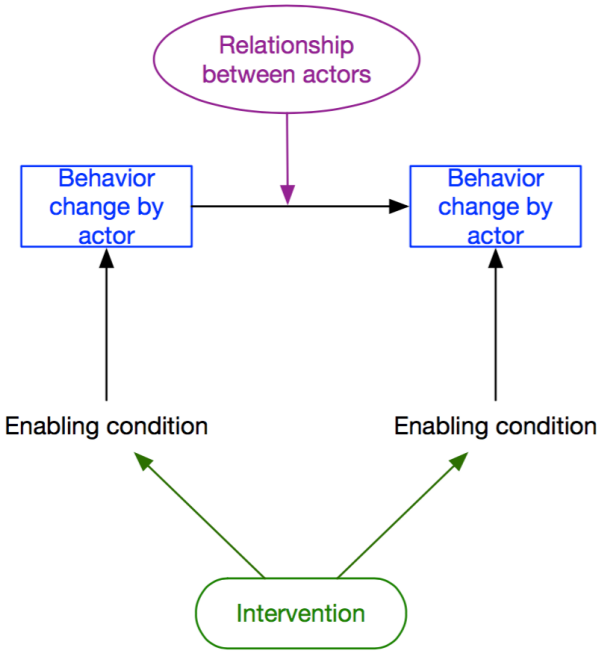

Figure 4: Behaviors-relationships-conditions map

An example of the above mapping approach is shown in Figure 5. A rolex is a food item sold on the street in Uganda. Different vendors use different types of packaging. Starting at the top of the map, a relationship between a newspaper and a rolex vendor enables a condition: a newspaper is less expensive than a plastic bag. This, along with no customer preference for the type of bag, enables a behavior change: the rolex vendor uses fewer plastic bags. The cloud enabling this behavior change represents many other things going on in the market system that also enable the behavior change.

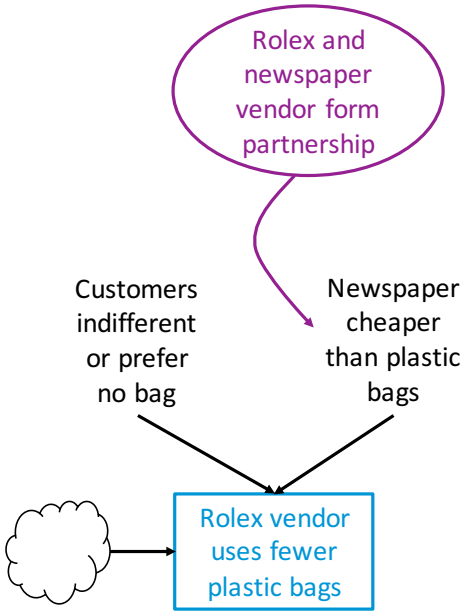

Figure 5: Behaviors-relationships-conditions mapping example

Workshop Summary

The primary goal of this workshop was to evaluate and confirm a mapping approach that will enable development of system maps and indicators. The following actions were outlined for the workshop, in order to achieve that goal:

1. Explain the system mapping approach, and get feedback and buy-in from participants
2. Work with workshop participants to revise the system map
    - The map presented is a "strawman proposal", designed to spark team discussion
    - The goal is to discuss what needs to change and what is missing
    - All input should be captured on paper
    - Consensus is not required
3. Begin the discussion of system-wide indicators based on system maps

The workshop focused on the "behaviors-relationships-conditions" map, which contained nine subsystems. Participants worked in groups of approximately four people per group, with no two people from the same organization in the same group, to consider and revise a particular subsystem. Groups used scratch paper, white boards, post-it notes and colorful markers to

revise subsystem maps. Some began with what the team had started and built on it; others started from scratch and created their own subsystem maps. The pictures in the appendix show the revised maps at the end of the breakout session.

The mapping framework and approach resonated with workshop participants. After a brief time internalizing the approach, participants had an effective mechanism to discuss concepts and begin redefining subsystems. Below we highlight two examples of the discussions and types of changes made to subsystems:

- The seed subsystem was changed in a few ways. The "strawman" version focused on availability of quality seed for farmers, but the breakout group shifted the focus to production of quality seed and availability of seed in the market to stockists. The group drew a new subsystem for distribution of seed to the farmer. This group created the two subsystems by cutting and pasting shapes to depict subsystems and using post-it notes to illustrate behavior changes and enabling conditions; the group added other subsystems to show connections to other conditions and behavior changes throughout the market system.
- The extension subsystem was expanded to highlight the role of the public sector in shaping curricula and training, so the resulting map shows a more complete landscape of the options for extension services from the public and private sectors. Additional changes were made, such as the addition of links to the HR subsystem.

The breakout experience also yielded several important insights to improve the mapping approach going forward. One challenge was deciding at what level the maps should be drawn. For example, the government subsystem group began at a high level and when probed about specific details, initially did not agree about what level of detail mattered. The group decided if they had begun with more specific behavior changes, the rest of the map would have followed more specifically; so, it may be very important to guide the level of detail by beginning with an appropriate level in behavior changes.

Another challenge was determining where to start mapping. Some groups experienced a "chicken and egg" situation where, after drawing a series of enabling arrows, they could not determine the catalyst for the enabling steps. For example, the output subsystem group started with the behavior of farmers producing quality products. This was enabled by traders paying a quality-differentiated price, which is a behavior based on the condition of a market having high quality products. This condition is enabled by farmers producing quality products. Such situations may need to be mapped as loops.

As expected, additional subsystems will be needed to develop a broader, more accurate depiction of the market system. For example, the group that worked on the seed subsystem indicated there should be an additional subsystem between seeds and farmer practices: a distribution subsystem. In addition, subsystem scopes may need to be widened. The group that worked on the human resources subsystem found the scope of HR in the current map to be too narrow.

Finally, language needs to be further developed and standardized for system mapping. For example, actor roles may need more definition. Some terms were too general, such as "private sector." Other terms may not reflect the same definition depending on the subsystem in which it was used, such as the "village agent" engaged in both the seed subsystem and commodity output subsystem.

The group reconvened in plenary at the end to brainstorm some potential indicators of systemic change based on their mapping experience. The discussion generated a number of ideas, some of which are listed below:

- Behavior changes by farmers and stockists
- Trust (measured by transactions)
- Product traceability
- Financial flow into different subsystems and sectors
- Number of youth who see careers in agriculture as viable options

Next Steps

The group accomplished the goals set for the workshop: participants confirmed that the mapping approach was effective and began building a more systemic perspective that spans the FTF-VC activities. In the days that followed, several participants commented that the workshop gave sparked ideas about how to approach their own work and provided an important perspective about how their activity relates to the wider market system. Some quotes following the workshop include:

> *It was an eye-opener on how to relate different actors.*
>
> *I immediately applied it to my afternoon assignment.*
>
> *We came back buzzing and rolled it into our current effort identifying indicators.*

The MSM team learned from participants and will incorporate workshop outputs into further releases of system maps and indicators. The workshop feedback will also contribute to definition of subsystem studies that will be conducted in the second half of 2016.

The MSM team welcomes feedback on this document and invites others to use the mapping approach. We will gladly share materials and offer support, and we would appreciate your feedback in return. Please send comments, questions, and requests for materials and support to *msm.uganda@mit.com*.

Acknowledgments

The MSM team is very grateful to the workshop participants, who devoted their time and energy to understanding and applying the mapping and measuring approaches during the workshop. We are also grateful to our partners at USAID who helped conceive and organize the

details of the workshop. Finally, we thank the Learning Contract, at QED, for hosting and contributing to the workshop.

Appendix – Workshop Participants

USAID
- Andrew McKim
- Gaudensia Kenyangi
- Peter Birigenda
- May Mwaka
- Martin Fowler
- Simon Byabagambi
- Kevin Namulembwa
- Oceng Apell
- Tatiana Pulido

AgInputs
- Rita LakerOjok
- Lois Nantayi

CPM
- Thomas Emeetai

YLA
- Marcos Moreno
- Mwesigwa Bikie Isharaza
- Lilian Likicho

QED
- Stuart Belle
- Augustine Wandera
- Musoke George

Alur Highlands Coffee Alliance (AHCA), CARANA
- Andrew Ebil

Uganda Value Added Maize Alliance
- Sylvia Senyonga
- Charles Mulagwe

Beans research group (NARO)
- Paul Asete

MIT-GW Team
- Jarrod Goentzel
- Erica Gralla
- Megan Peters
- Tim Russell

Appendix – Subsystem Map Revisions from Breakout Groups

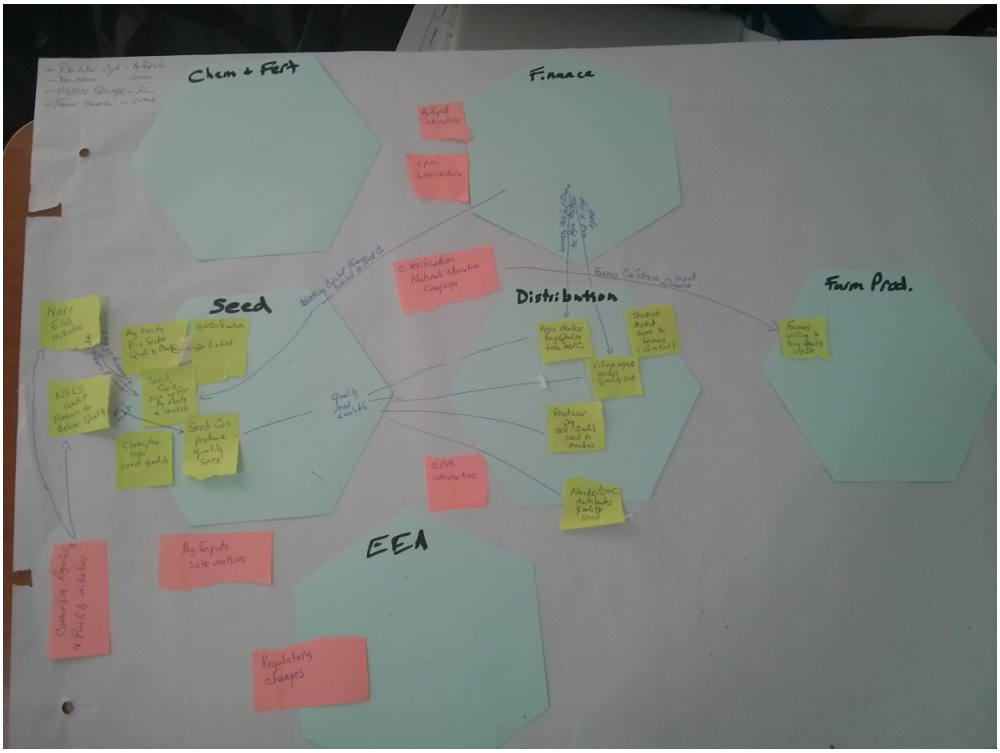

Figure 6: Seed subsystem map

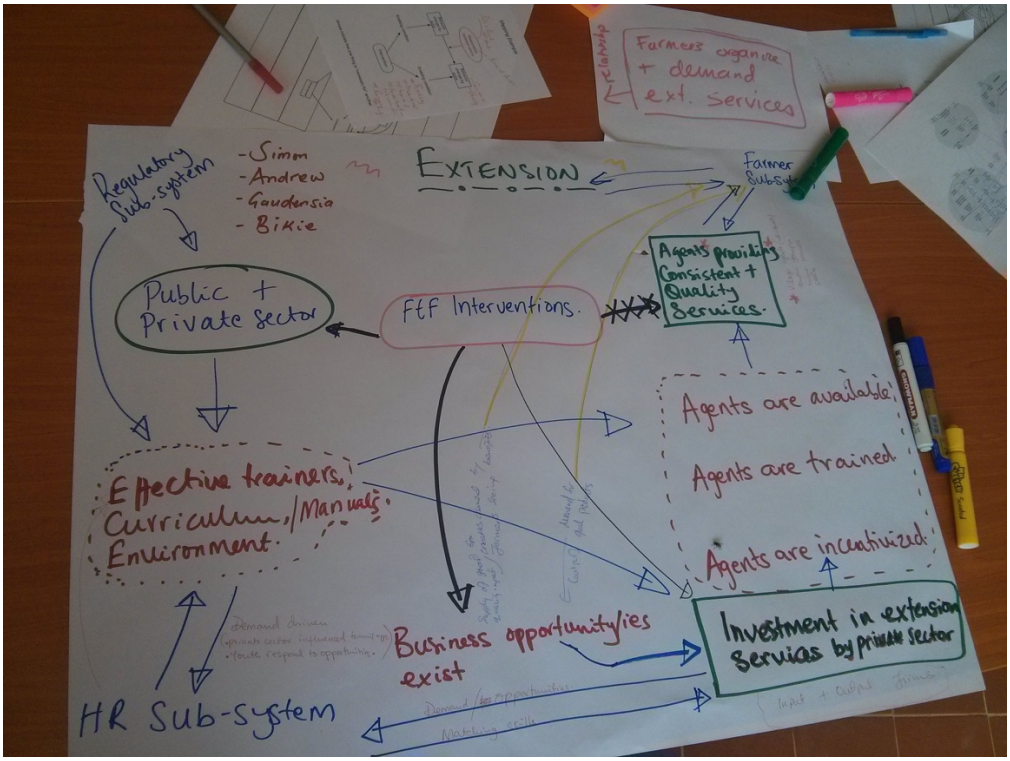

Figure 7: Extension subsystem map

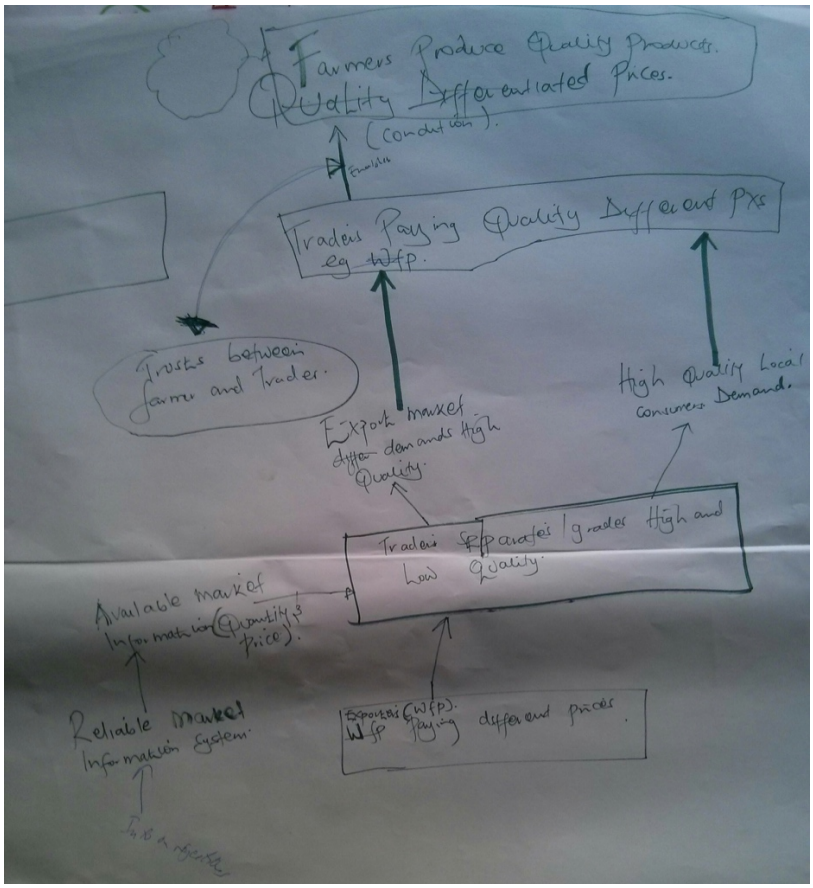

Figure 8: Output subsystem map

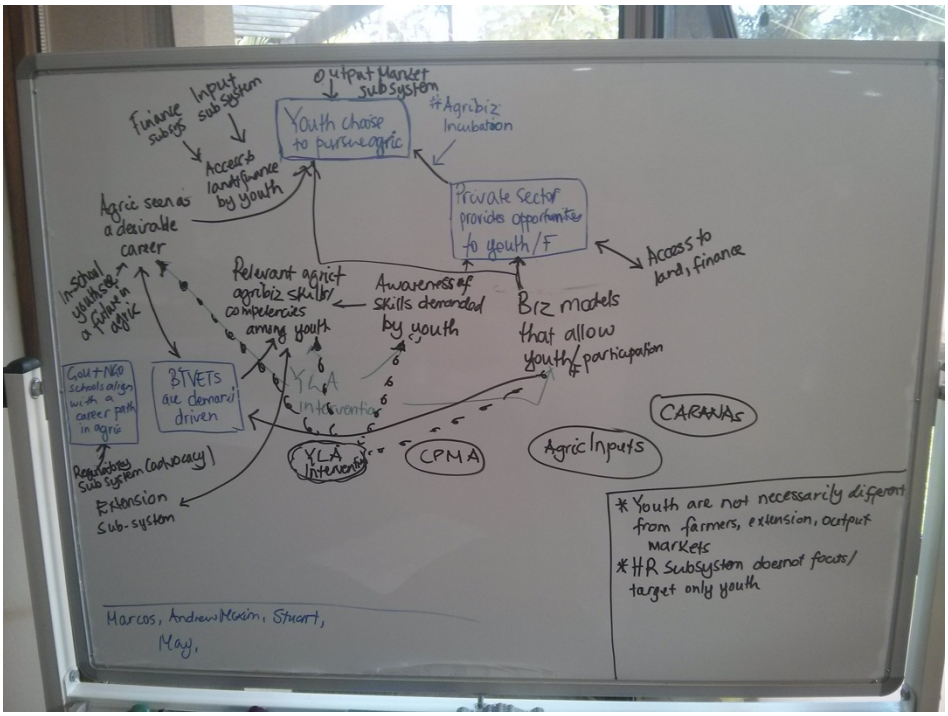

Figure 9: Human resources subsystem map

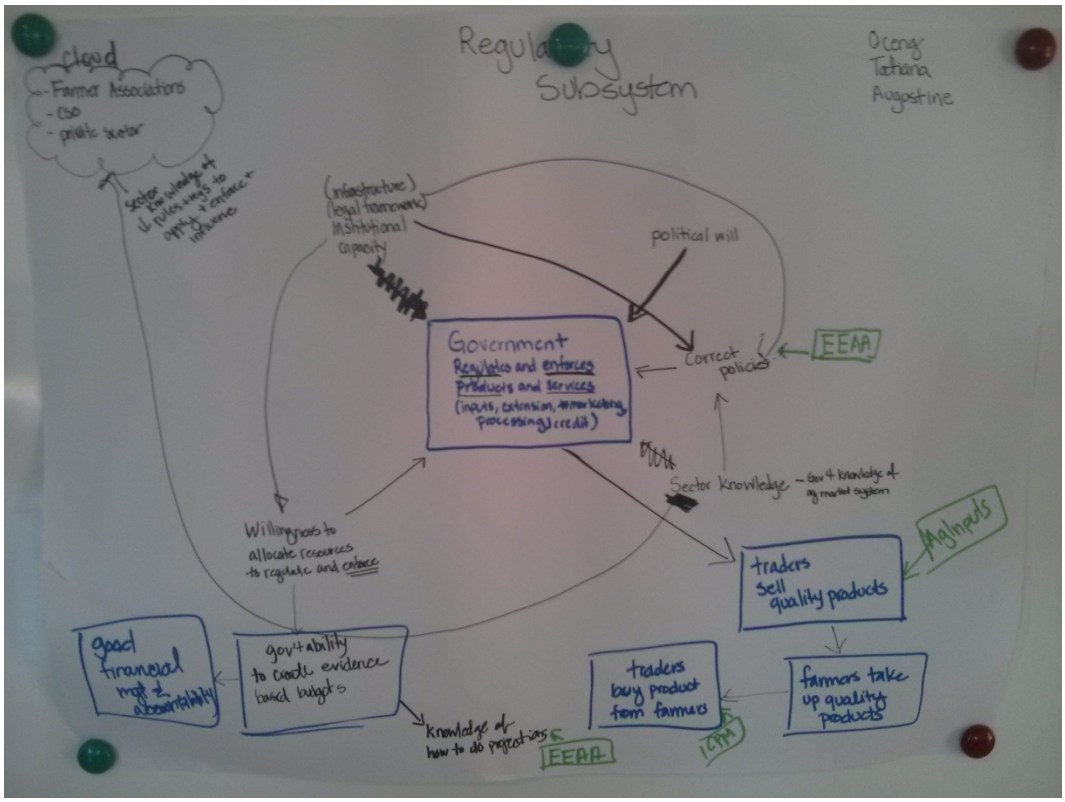

Figure 10: Regulatory subsystem map

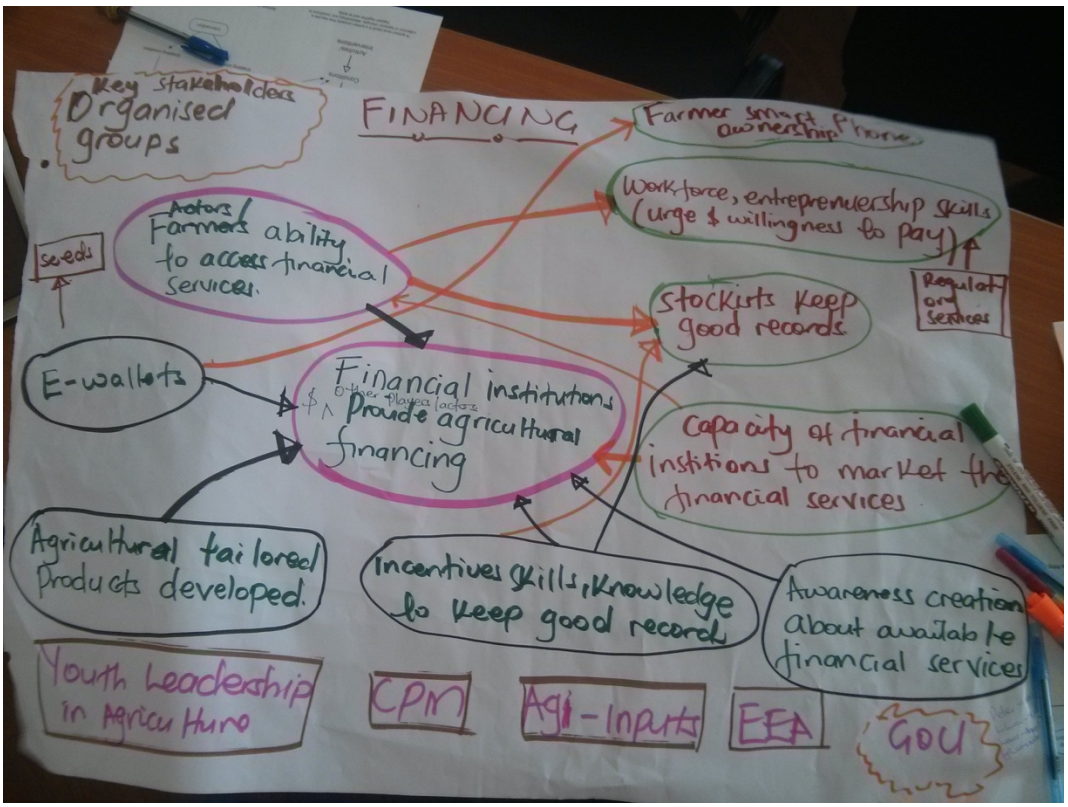

Figure 11: Financing subsystem map

Attachments

- Market System Mapping and Measuring Workshop Slides
- Behaviors-Relationships-Conditions Map v0.2