USING SYSTEM MAPS FOR CLA

APPLYING SYSTEMS APPROACHES TO INTERNATIONAL DEVELOPMENT

INTRODUCTION

The USAID/Uganda Feed the Future Market System Monitoring Activity (MSM) is a partnership between the Humanitarian Supply Chain Lab at the Massachusetts Institute of Technology (MIT) and The George Washington University (GW). Our objective is to enable development practitioners to apply systems thinking to their development work. Our tools and approaches are particularly well suited for Collaboration, Learning, and Adaptation (CLA). Here we provide a brief overview of how system mapping and measurement framework can be used for CLA – more details are available on each of the applications we describe.

OUR METHODOLOGIES

Our team has developed two flagship methodologies for practitioners to learn and apply: the **System Pathways Mapping Toolkit** and the **System Pathways Measurement Toolkit**. The Systems Pathways Mapping Toolkit guides stakeholders to develop a system map and analyze the many interconnecting pathways that enable system change. The Systems Pathways Measurement Toolkit uses a system map as the basis to identify and evaluate indicators of systemic change, enabling the assessment of system health, diagnosis of barriers to change, and identification of positive spillover effects. These methodologies have been field-tested with diverse groups of stakeholders and refined through deep-dive research studies into particular sectors.

These toolkits have been adapted for use by international development practitioners, and they are well-suited for use in CLA applications. Our systems approach is scalable both in terms of group size and scope. We have worked with nearly two dozen activities and groups of stakeholders, of varying sizes, backgrounds, and levels of familiarity with systems approaches, and we have hosted workshops with fewer than 10 up to more than 150 participants. In addition to bringing together diverse groups across donors, government, and the private sector, these approaches are also useful for internal discussions among USAID personnel and activities.

The scope of the system maps themselves is also flexible, and can be scaled up and down depending on how they will be used. For example, we have created a system map of the entire Ugandan agricultural market system, as well as focused maps looking at particular sectors or supply chains, such as a map of the iron-rich beans value chain in a particular district in Uganda (discussed further below).

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Our framework was specifically developed to be easily implemented by activities. As mentioned above, the toolkits were designed to be accessible to practitioners and to correspond to existing frameworks (such as results chains). The approaches can be implemented by one or two trained facilitators on a team. The level of effort required will vary according to how the maps will be used (i.e. holding annual workshops or monthly monitoring of system indicators).

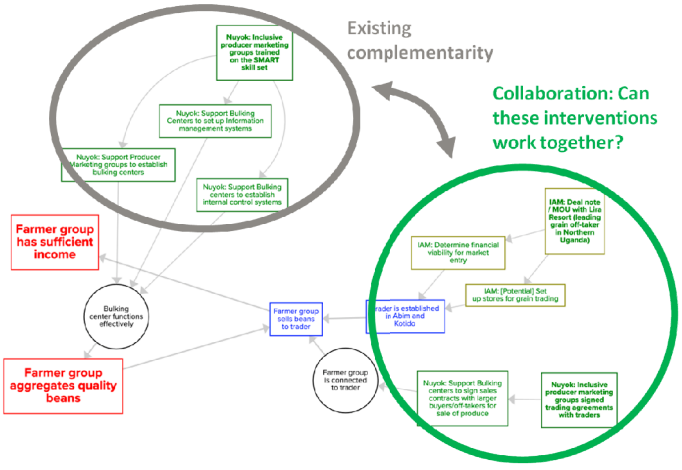
COLLABORATION

A systems approach can be leveraged to develop a common understanding of a system, and to easily identify opportunities for collaboration. Here are a few ways our toolkits can be used to support collaboration:

Build a map collaboratively	Develop a common understanding of the system across stakeholders by creating a system map that reflects the collective knowledge of all stakeholders.
Identify Opportunities for Collaboration and Complementarity	Identify new ways of working and collaboration opportunities across stakeholders, activities, or projects, by identifying interventions that are on the same pathway or on complementary pathways.
Communicate with Other Stakeholders	Communicate your understanding of the system or dynamic theories of system change with other stakeholders and receive feedback.

Case Example: Enabling Collaboration in Karamoja

Our team was engaged by USAID/Uganda to develop two market system maps for the Karamoja Cluster, a group of activities working to promote household resilience and sustainable livelihoods in the Karamoja region. We created two "zoomed-in" maps, one of which focuses on the supply chain for iron-rich beans in two districts. We added the Cluster's interventions to this map (shown in green in the figure). The map was then used by the activities to identify overlaps in scope and find opportunities for layering and collaboration, based on which activities are working on the same or adjacent elements.



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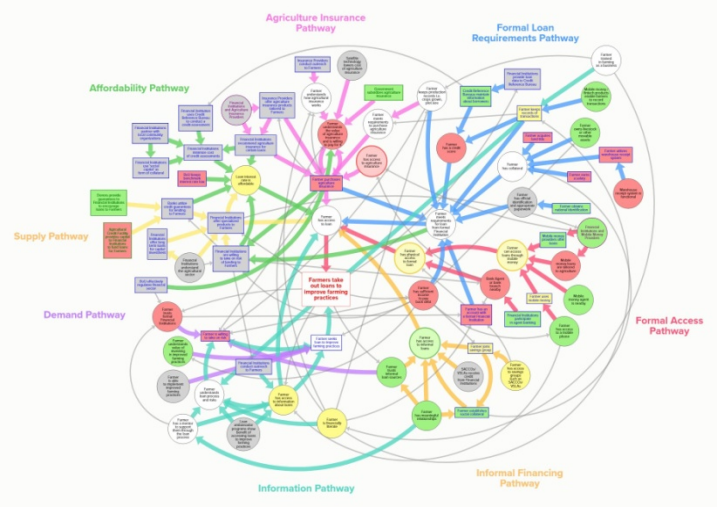
LEARNING

Our toolkits can also be used to support learning about a system, including monitoring system change and developing a learning agenda:

Learn how a system works	The map provides a straightforward way for practitioners to visualize the components of a system, how they are organized, and the dynamics that drive change in the system.
Identify gaps in understanding of the system or in available data	You can use maps to uncover what is still unknown about how the system works and to identify gaps in available data.
Develop a learning agenda	The maps enable practitioners to prioritize which knowledge or data gaps should be addressed first, based on how essential they are to understanding system change.
Monitor system change	Once data is added to a system map, it can be used to track change in the system over time, and assess whether the anticipated changes are occurring.

Case Example: Understanding smallholder access to finance



Our team conducted a deep-dive study on access to agricultural financing for smallholder farmers using the system map we developed of the agricultural finance sector (seen at right). The map was developed in consultation with stakeholders from donors and the private sector. The system map is organized into pathways, each of which is highlighted in a different color. Once the map was constructed, our team added publicly available data to the map for two time periods, 2013-14 and 2017-18, with red indicating low adoption of desired changes, yellow indicating moderate adoption, and green indicating broad adoption. The inclusion of data enabled us to assess the status of the system, identify changes over time, and locate the barriers to change in the system, one of which (demand/capacity for loans) is underrepresented in the broader development literature.

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ADAPTATION

Finally, system maps are invaluable tools to support adaptation in complex environments. The maps help to identify barriers to change and opportunities to adapt, as well as to evaluate the impact of a shock to a system and assess system resilience. Here are some of the ways that our approaches enable efficient adaptation:

Test theories of change

A system map can be used to locate results chains in the system and identify key pathways to change. If data is added, the map can be used to track system changes over time, and analyze whether change is occurring as expected as well as which key reinforcing loops are driving results.

Identify barriers to system change or drivers of unexpected results

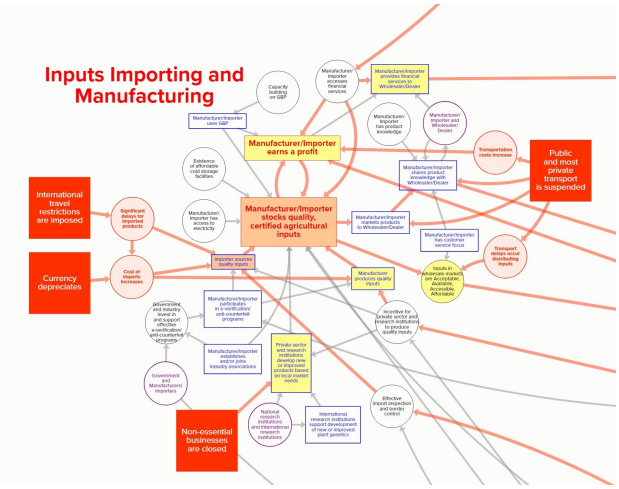
If analysis of the map shows that change has stalled, it can be used to troubleshoot and diagnose where there are barriers to progress or unexpected levels of change. Once barriers have been identified, the map can be used to identify and prioritize alternative change pathways, if they exist.

Rapidly evaluate the impact of a shock

A system map can be used to assess the impact of a shock to the system and the resilience of the system to a shock. This information can be used to identify specific and timely opportunities to respond, such as adaptive behavior changes that promote resilience.

Case Example: Anticipating the impact of COVID-19 on the market system

USAID/Uganda asked our team to use our existing map of the agricultural market system to conduct a rapid assessment of the likely impacts of COVID-19 restrictions on the system. Our team added COVID-19 shock elements (seen in red) and actively cataloged and incorporated emerging data from more than 250 sources, including public data, articles, reports, and targeted key informant interviews. The map effectively organized the information that was constantly being updated and informed insights by visualizing how pandemic shocks propagated through the system. Decision-makers were able to frame the situation, act dynamically, and anticipate how the system would change over time.



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LEARN MORE

This document provides a brief introduction into how system maps can be used for CLA. There are many other potential applications of our system mapping tools. In particular, the maps are extremely valuable for assessing system "health" or status, identifying and measuring indicators of systemic change, analyzing the impact of interventions using diagnostic indicators, identifying spillover effects of market facilitation initiatives, and developing and prioritizing an M&E plan. System maps can also be used to support planning and activity design, by finding key pathways to change and reinforcing feedback loops, and identifying and prioritizing leverage points that are opportunities for intervention.

System maps (and systems thinking in general) are an invaluable tool for development practitioners. If you are interested in applying systems thinking to your work, or learning more about the Ugandan agricultural market system, please reach out to our team at **msm.uganda@mit.edu**. You can also visit our website at **https://humanitarian.mit.edu/project/feed-the-future-uganda-market-systems-monitoring/** to access our previous work.