Markets from a Complex Adaptive Systems Perspective

Webinar
Presented by Mary Morgan
Poll Questions

How did you start working in inclusive economic development? Check off the appropriate box:

• MED – Microenterprise Development
• BDS
• Value Chains
• M4P
Our field is one of constant change, and that is a good thing. If we were stuck with the same paradigm as rural development with a focus on income generating activities, we would not be achieving much impact. Change has occurred because we have learned through each evolutionary step of our field.

- **Rural Development** focused on agro-industrial development with an attempt to include the poor;
- This evolved into **Microenterprise Development & Income Generating Activities** in the late 1980’s which is when microcredit began
- **BDS** emerged in the late 1990’s as we recognized that MSEs and IGAs needed assistance in making their businesses more competitive – this focused on individual businesses
- The **Value Chain** approach entered our lexicon in 2004 adapting Michael Porter’s analysis tool
- **M4P** was also introduced in 2004 and taken up by DFID and SDC. This is a conceptual framework that has put the value chain and transactions as the core to a market system.
- Systems approach began to bubble up in our discussions in 2009– on MaFi Marcus Jenal who is at BEAM now was one of the initiators and innovators to introduce and encourage discussions to reflect on the linear ways of the VC and holistic way of Systems thinking
A system is defined by its function which is the process that transforms elements from one state to another.

Inputs – are energy or resources that are brought into the system’s boundary—like fertilizers in agriculture or cobalt for cell phones or external consultants to look at a project.

Process = transformation of the input into an output.

Any given system can only process a specific range of inputs – i.e. the dairy system the input of milk to transform into ice-cream, butter, yogurt, kefir, etc. while milk is not an input for the rice system—

Processes are not necessarily linear – they may be cyclical feeding back on each other with the output from one process being the input for another.

Output from a market systems perspective is the transformed input that then goes to the final consumer- which within systems talk is the end product passing out of the system’s boundary and into the environment that the system is operating.
System’s Boundary

- Establishes a limit to the system’s functions and internal processes: input – process – output
- What a system can and can’t process is a defining feature to its boundary that functions to filter inputs to the system
- Internal to the system’s boundary, the system has some degree of integrity meaning the parts are working together
- Integrity gives the system a degree of autonomy from other systems

The boundary separates the system of interest from its environment; the environment contains those elements and further systems that interact in some way with the system of interest.

The function of a system- input-process-output – defines the boundary of the system.

The boundary defines the integrity of the system which describes when the parts are all working together. In our work, the integrity of some market systems are nebulous because elements are not working together for instance smallholder farmers scattered and isolated or even buyers who have no idea how to access inputs produced by smallholders.
The boundary of a Market System includes not only the functions input-processing-output, it also includes processes that may seem to be outside of the actual market system yet we all know these processes and elements very much shape the integrity of the market system.

This graphic is from the M4P Operational Guide and illustrates very well the elements included in a market system: the supporting functions of the market, which include TA, information (flow and access), finance and infrastructure.

The rules or institutions that let us know how to behave in a market also shape the internal processes of a market—informal rules and norms, as well as formal rules like laws, regulations, standards and treaties. The market is not just about supply and demand, although that is very key to a market system.

The supporting functions and the rules provide supports for the system elements to work together efficiently.
The goal of the SDC/Mercy Corps Market Alliances Against Poverty programme in South Georgia is to increase household incomes for the rural poor. Increasing gender equality is one of the project’s cross cutting themes. Based on a feasibility study the livestock sector was selected for its potential of increasing participation of the poor. The dairy subsector sector was selected because of the high participation of women—they were able to target the poor and women in the dairy sector.
The Alliances investigated the underlying causes of the low quality of milk supplied by dairy farms (who were women) to cheese factories. It found that local government allocated village development funds based on the priorities of men, who participated in community and municipality meetings. Women hardly participated and did not voice their priorities which included having sufficient access to the running water they needed for their tasks in dairy farming and Kindergartens. They felt municipality matters were not their concern, and did not feel they had a right to access local government buildings, services or information. Municipalities did not encourage or invite them to participate in meetings.

Women were thus excluded from local decision making, which resulted in no funds being allocated to running water for farms, which contributed to low hygiene, low quality & quantity of milk production; this resulted in a loss of income and increased hh insecurity.

To address the need for improving women’s access to running water on dairy farms, and improve the functioning of the dairy market system, the Alliances project made use of an opportunity offered by new gender equality legislation. This obliged local authorities to include women in consultations on budget allocations and to introduce other gender sensitive measures. There was no enforcement of the legislation

The running water then made healthier cows, who produced more milk which in turn increased HH income and security. This has resulted in HH investing in livestock both for existing cattle in terms of breeding, nutrition and veterinary inputs, and in terms of retaining or buying more cattle.

As for systemic change in the market system, four cheese factories can source 900 HH, three cheese factories have crowded in, the consultancy firm that teaches the women about hygiene and provides TA directly to the women producers has been selected as an official government supplier of food safety and hygiene training to companies receiving govt. loans.

At the HH level of direct beneficiaries, they have a stable daily income. This case study illustrates how the
boundary of a market system goes way beyond pure transactions where supply and demand meet.
Leverage points are all about where do we intervene so that we can affect systemic change. We want to find the point where we can nudge the system and the nudge will influence change in the entire system. Finding the optimal leverage point to affect systemic change requires that we listen to the feedback which we will look at next.

The leverage point in the Georgia project with the cheese market system, was shifting the paradigm shaped by informal rules that dictates that women do not belong in the public realm and part of the decision making process at the community level. Starting with advocacy and assisting the authorities to implement the gender equality law that was not being enforced, which in turn then shifted world views to include women in decision making at the local government level.
Feedback

• ‘Feedback’ exists between two parts when each affects the other (Ashby, p. 53)
• In complex systems, where most of our work occurs, several parts affect each other, and it is not possible to isolate the feedback between two parts—one can only look at the whole and start to map out the feedback loops
• 2 types of feedback loops—Reinforcing Feedback loop which is destabilising and Balancing Feedback loop which is stabilizing.

Feedback is one of the main concepts in systems thinking. Feedback exists between 2 parts when each affects the other. This has been called causal loops.

Complex systems have many feedback loops and we cannot isolate feedback only between two parts—as there are many parts that are affecting each other and giving us feedback. We have to look at the whole and map out all the feedback loops.

There are 2 kinds of feedback loops—reinforcing and balancing which we will look at now.
As is the title, the reinforcing loop is when actions reinforce other actions and there is more of the same.

Reinforcing loops always end up in growth that becomes decline because it is not sustainable to maintain constant growth.

Things always change right?
This reinforcing feedback loop is an example from Fintrac that Adam Keats shared on the SEEP blog post.

Output buyers won’t invest in rural procurement or extension if the supply cannot meet their quality or quantity standards; but, farmers cannot meet output market standards without improved inputs, and farmers won’t invest in inputs if output market opportunities are limited.

Input suppliers won’t invest in rural distribution or farmer training if there is no perceived demand for their products; but, farmers won’t consistently invest in improved inputs if they cannot maximize returns from the inputs they do buy.

Financial providers won’t extend credit if farmers are incapable of repayment; but, farmers cannot invest in new inputs without access to credit, and they cannot repay loans without access to output markets.
Poll Question

Where do you think the leverage point/s are that will influence systemic change in the Fintrac case study?
1. Working with input suppliers in a distribution and TA
2. Working with output buyers to extend procurement to rural areas
3. Working with local Partners to design and offer appropriate financial products

While we are waiting for the tally let’s go on to balancing feedback loops
Balancing Feedback Loop

- A balancing loop attempts to move some current state (the way things are) to a desired state (goal or objective of activity or program) though some action (facilitated intervention to achieve the goal).
- A balancing loop is representative of any situation where there is a goal or an objective and action is taken to achieve that goal or objective.

A balancing loop is an action that emerges or is an intervention impedes the runaway action of a reinforcing feedback loop.

It is important to ensure there is an explicit well understood and agreed upon definition of the desired state. If you don't know where you're trying to get to then any action will take you somewhere.

It is the relation between the desired state and the current state that forms the basis for planning and subsequent action. If the planning is flawed there is a good chance the resultant action will be inappropriate to move the current state to the desired state.

The poll results are .......

Let’s look at an example of a balancing loop and see how your responses to the poll are illustrated
The desired state that we are looking for as MD professionals in the little case study here is to improve incomes, which in this case requires improved production in order to meet buyers needs.

I am proposing that the actions required are threefold.

The first would be to facilitate the development of a financial product that is appropriate and accessible. With this the farmers can then purchase the inputs needed. This could be buyer credit or savings groups or an agricultural loan product from a MFI.

Once the farmers are able to purchase the inputs on a regular basis we could then facilitate rural distribution of inputs with existing input suppliers, the incentive being that they would have access to a market, which is not being served.

Accessing quality input supplies will improve the quality and quantity of the commodity being produced, although there would be a delay in this, the delay being marked by the double line on the arrow, because the buyers would need the evidence that the farmers could produce to the quality standards and volume needs of the buyers.

These three corrective steps in a properly sequenced manner could influence systemic change. The context and factors like political stability, level of corruption, strange weather patterns being a few, would affect this feedback loop and would require that we illustrate the feedback flows differently than what is presented.
What the Course Looks Like
Learning Objectives

• Module 1: Introduction (June 15- 26th)
  • Learning Management System (Canvas)
  • Introductions of each other- peer learning community

• Module 2: Market as a System
  • Explain the components of a market system
  • Distinguish elements of a system
  • Produce a market systems map
  • Describe the difference between a value chain approach and a systems approach
  • Formulate a problem to investigate
What the Course Looks Like
Learning Objectives

• Module 3: Markets as Complex Adaptive Market Systems
  • Differentiate between a simple, complicated and complex market system
  • Understand the concept of emergence & self organization
  • Explain the dynamics of a complex adaptive system
  • Present research problematic and methods

• Module 4: Learning from Market Systems
  • Develop processes to track feedback
  • Interpret behaviour change in economic actors
  • Collect and analyze data
What the Course Looks Like
Learning Objectives

• Module 5: Adapting to what has emerged
  • Articulate emergent patterns in market system
  • Formulate an adaptive response to what has emerged
  • Synthesize findings from research into a report

• Module 6 : Evaluation & Wrap up
Assessment

- 40% for participation in discussions
- 60% for research assignment:
  - Assignment 1: Determining the Research Problematic 10%
  - Assignment 2: Research Problematic & Methods 15%
  - Assignment 3: Market Boundary & Data Collection Tools 15%
  - Assignment 4: Action Research Final Report 20%
# Online vs. Face to Face

**Online**
- Asynchronous - reflective, permanent, less intimidating, reasoned, rigorous, and usually written
- Practical inquiry experience
- Learners embedded in their community and workplaces
- Have to be disciplined to carve out time to do the work

**Face to Face**
- Synchronous - spontaneous, peer influenced, spoken dialogue
- Practice or simulation exercise
- Learners are outside of their workplaces and home
- Are in a dedicated learning space
Where to Get More Information

https://carsey.unh.edu/smdp/online

Hope you join us for this learning journey!

Thanks!
References


References

