Assessing impact of R4D initiatives employing Innovation Systems Perspectives:

Lessons from a Fodder Innovation Project

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300 million poor Asians rely on livestock for their livelihoods

Of these, about 70% are women
Drivers of and Changes in Livestock systems

Evolving challenges and opportunities
Huge implications for livestock dependent poor
And therefore, to R&D organizations

- Climate change
- Markets (food quality, safety, supply)
- Economic (demand, production)
- Emerging infectious diseases
- Population growth
- Urbanization
Change in research paradigm

- New and increasingly complex agricultural development challenges – also new opportunities
- Need for research outputs to deliver development outcomes
- Ineffectiveness of linear technology transfer model
- Research/knowledge generation provides just one piece of the puzzle
Innovation – a social process

- “a process where knowledge is created and used in new ways, in different contexts, to enhance the livelihoods of livestock-dependent poor”

- occurs in a system mediated by the actors and their interactions, facilitated (or constrained) by institutions and policies
Features of new approaches for R4D

- It is about change or “innovation” as an outcome, not just about information, knowledge or technology as a product.
- It places “research”, as one of the components contributing to the development process, rather than its pivotal point.
- It focuses on processes and performance rather than just products (technologies, policies).
R4D initiatives – the new genre

- designing and implementing active and prospective research to improve the current system
- not just to improve understanding of the livestock issues, but being able to influence actions
- address technical, institutional and policy changes in a systemic manner – *innovation systems*
- intervention logic evolves through learning by doing
- impact taking priority over mere knowledge generation
IS - Complex Adaptive Systems

- Evolutionary economics and bounded rationality
- Complex – dynamic networks of interactions and relationships
- Adaptive – individual and collective behaviour change as a result of experience
Nested Complex Adaptive Systems

- Feedback loops
- Emergent
- Self-organising
- Co-evolve
- Nested
- Variety
- At the edge of chaos
- Sub-optimal
- Connectivity

At the edge of chaos
The Fodder Innovation Project

**Challenge:** Addressing feed scarcity in mixed crop-livestock systems to improve livelihoods of poor

**Means:** Building networks for enhancing innovation capacity of the system
Action Research Themes

- **Ahmednagar, Maharashtra, India** - An experiment in developing a mechanism to negotiate improved fodder access in public (wastelands and forest areas) and private grazing areas for poor livestock keepers.

- **Bhilwara, Rajasthan, India** - An experiment in developing a mechanism to coordinate complimentary technical (including fodder) and institutional support in order to upgrade smallholder dairy systems.

- **Puducherry, India** - An experiment in establishing an integrated fodder production and marketing system based on farmer fodder entrepreneurs.

- **Ikire, Osun State, Nigeria** - An experiment in connecting and coordinating existing systems (markets, religious / ethic groups, technical support, policy and traditional institutions) to facilitate the transition from subsistence to commercial goat production.

- **Dambatta, Makoda and Rogo, Kano state, Nigeria** - An experiment in connecting and coordinating existing systems (markets, religious / ethic groups, technical support, policy and traditional institutions) in order to address seasonal fodder shortages in mixed crop livestock systems.
Interventions

- Breed
- Feed
- Access to markets
- Health
- Institutional arrangements
- Community organization
- Capacity building
<table>
<thead>
<tr>
<th>Location</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Ahmednagar</td>
<td>Fodder production and use from forest areas</td>
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<tr>
<td>Bhilwara</td>
<td>Vaccination camps</td>
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<tr>
<td>Puducherry</td>
<td>Fodder production on private lands</td>
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<td>Ikire</td>
<td>Linking goat farmers to markets</td>
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<td>Dambatta</td>
<td>Accessing credit for input purchase</td>
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<td>Rogo</td>
<td>Harmonizing extension services</td>
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Immediate outcomes

- Enhanced access to fodder
- Enhanced access to inputs and services
- Enhanced access to markets
- Enhanced capacities
Challenges in assessing impact

- Production + institutional impacts
- Cannot predict institutional and policy change
- Uncertainties associated with innovation
- Social change is emergent, non-linear and unpredictable
- Changes in behaviours, attitudes, knowledge, skills and practices influence impacts
- Impacts are geographically and socially dispersed
- Unanticipated and unintended outcomes/impacts
Challenges in assessing impact

- Counterfactual?
  - With – Without Vs Before – After
  - Not sole attribution

- Understanding of processes or pathways influencing uptake of research products

- Changes in habits and attitudes

- Multiple impacts
  - poverty, social, process, policy
Moving forward..

**urgent need for new methods and tools**

- Theory Based Impact evaluation
  - Explain why, not just what
- Identify the causal chain - plausible causal relations
- Identify which range of factors could have influenced outcomes and impacts
- Analyse whether the project outputs have any effect on causal factors
- Different approaches needed for analysing different parts of the causal chain
- Analysis of attribution
Innovation networks

- New or improved linkages among organizations/actors
  - Enhanced knowledge and information sharing
  - Changes in actor behaviours, attitudes, skills and practices
  - Demand for new knowledge articulated
  - New collaborations
  - Enhanced innovation capacity

- Joint action
  - Institutional changes
    - Improved governance and better delivery of services and inputs
    - Improved access of producers to services and inputs (vet, extension, agro-inputs, credit)
  - Mainstreaming approach in other programs

- Negotiated technical interventions
  - Enhanced technical capacities
  - Use of/access to technologies
  - Enhanced access to and use of fodder
  - Improved governance and better delivery of services and inputs
  - Improved access to markets (fodder, meat, milk)
  - Improved livestock production and productivity
  - Increased income
  - Reduced poverty
  - Socio-economic change
Moving forward..

**urgent need for new methods and tools**

- Combinations of qualitative and quantitative indicators – processes, outcomes and impacts
- Mix of methods
- Account for the heterogeneity and context!
ILRI is creating and integrating knowledge to enable diverse partners to find innovative solutions to make livestock a sustainable pathway out of poverty