

Group discussions: Scaling and Scale

What are the underlying issues in this cluster and your experience?

1. **Livelihood systems:** Our focus is to **improve livelihood systems** (that depend to some extent but often not entirely on agricultural practices) not agricultural systems per se
2. **Different livelihood options:** Contrary to assumptions inherent in the sustainable livelihoods approach, in dryland contexts, **livelihoods may not always manifest system properties at household level** but different livelihoods may be interlocked, so that change in one affects others, and the system boundary is around the interlocking set of livelihoods.
3. **Interactions between livelihood systems:** Resources used differently by people with **one type of livelihood may impact on those with another type of livelihood** and so understanding power and the dynamics of autonomy (a system property describing control of the flow of information and material, into, out of, and within a system) are essential.
4. **Equity:** Meeting CGIAR goals (SLOs) **requires improvement of equity** (a system property describing distribution of inputs, outputs and control of flows) making this an essential system property for us to consider.
5. **Non-linear approach:** We are not starting at the beginning and working sequentially from start to finish with the dryland systems programme, but **intervening in multiple ways, and at multiple points**, in a dynamic innovation system with many feedback loops (non-linear, complex systems).
6. **Scale of impact:** Unlike commodity programmes, our **systems research operates largely at the scale of impact**, by embedding research within development practice, which is the only way to bring sufficient resources to bear to explore systems research at scale. This can only be done through partnership with development organisations.

What do we really want to achieve in scaling up/out and in integrating Scales

7. **Scaling up of processes and not technologies?** Working at the scale of impact, requires re-introduction of formal systems methods to complement participatory action research. Historically participation has replaced systems methods, implicitly on the grounds that the 'farmer' provides the systems integration. This creates a scaling problem – **the assumption is that following intensive participatory research with particular farmers or communities, successful innovations can be scaled up and out to other farmers and communities**. This is often not the case because context varies at fine scale so that other farmers and communities need different innovations or the innovations to be adapted to the local context. Sometimes **the 'innovation process' can be replicated**, but this alone is very expensive and if outputs of participatory research are to be relevant to millions of farmers, then it needs to be organized at this scale, taking account of variation in context. The **output is understanding what options (innovations or interventions to enhance local innovation) work in what contexts** (such understanding is generally applicable).

8. **Systems research is site specific.** That is, it focuses on improving systems in a particular geography. While it generates generally applicable understanding of what options are relevant in different contexts that can be scaled out (see 7), this is achieved bottom up at each action site, rather than top down through comparative analysis across action sites. This means that **globally relevant results should be emergent properties of the research complex across sites** (that have sufficient commonality of method and reporting to enable this), rather than the subject of a deliberative process to generate them.

How to go about it: Strategies and actions?

9. **Scaling domain:** We use the term innovation system to refer to the constellation of actors (institutions and individuals), their knowledge, and their interactions, that generates and tests options to improve livelihood systems. This leads us to define a key scale of operation for the dryland systems programme at the administrative unit (usually a district in Africa, that we refer to as the scaling domain) at which agricultural innovation can occur and can be fostered. These scaling domains comprise heterogeneity. We use the term, innovation platform to refer to the mechanism for injecting systems methods into the innovation system, which will require capacity and institutional development amongst actors to cope with application of systems methods at scale. This can be pragmatically envisioned as a co-learning cycle.
10. **Operational domains:** The primary focus of our place-based research is the Action Site. This may have a number of operational scaling domains within it at which innovation platforms are established. Action sites (transects in WAS&DS) deliberately comprise a range in context. Scaling up involves spreading adoption within the site, scaling out involves adoption of outputs from the action site to relevant contexts beyond the site itself.

How can we harmonize the way we work at scales across the regions?

1. What scale research should operate and integrate
2. Scaling up and out

What scale research should operate and integrate

- Variability in biophysical and socio-economic environments
- Representativeness of the target area or similarity of environmental units
- Type of intervention/process e.g., large agro-pastoral systems or farms or market chains
- Target an area where farm typology remains constant or ecology starts changing
- Number of households covered
- Relevance to local conditions e.g., district in India is different from district in Jordan
 - Community scale to watershed level for which the DS research is relevant
 - District- intermediary scale
 - Flagship region
 - Political constituencies

Scaling up and out –Action site

- Not scaling the technology but methodology

- Requires consideration of policies, institutions
- Leveraging on developmental expenditure is crucial to reach the targets
- Time and scale factors
- Minimum criteria for dissemination
- Direct/indirect applicability of solutions
- Domain-varies from one innovation to the other
- Create visible impacts
- Cost efficiency/potential for reaching targets- essentially at action site level

Science of scaling - Issues

- Probably need research on scaling strategy?
 - Spatially explicit Integrated models to predict impacts
 - How to understand and deal with heterogeneity?
 - Linkage between scales for operationalizing the scaling up