
Skill Set #4: Innovation and Experimentation Skills



Description and importance

What are innovation and experimentation skills?

Innovation and experimentation skills enable farmers to access, test and adapt new technical options to improve production, processing, marketing and the natural resource base on which productivity depends. For example, a women's group in the Dominican Republic needed a way to store tomatoes before sending them to market. Using experimentation skills, they compared storing tomatoes in a box (the usual storage) with tomatoes wrapped individually in newspaper alone and with the addition of wood ash. Their objective was to see which storage method increased the shelf life of tomatoes without refrigeration judged by the time before spoilage.

Why are innovation and experimentation important for agroenterprise?

Environmental, marketing and growing conditions change over time. These can be especially volatile for the poor who tend to be more vulnerable to changing markets, environmental degradation and volatile weather conditions. In a changing environment,

experimentation and innovation enable farmers to adapt to change and thus to manage risk. Experimentation is also important because it helps farmer groups respond to markets by changing or improving what they already produce, as well as their costs of production, and so make a profit more quickly.

Tips for facilitators

- *Allow the farmers to decide the purpose and scope of the innovation*

Work with farmers to develop their visioning and diagnostic skills as a group (see Guidelines for Functional Groups above). The goal of visioning and diagnosis is to identify a problem to solve or an innovation to pursue through experimentation.

- *Encourage experimentation*

Experimentation should be a habit. Encourage farmer groups to search for and test out new ways to improve profitability, competitiveness and sustainable use of natural resources. The group should not wait passively for outsiders to suggest ways to make improvements or only experiment in reaction to a change or crisis in the market.

Encourage experimentation to create market opportunities. Organic production requires special skills and knowledge, experimentation can help develop these skills in the group and with that create a new market opportunity.

Do not limit experimentation and innovation only to times of crisis. Be proactive trying to anticipate market changes or trying to take advantage of the existing resources (water, soil and climate)

➤ *Keep experiments simple*

Simplicity means designing experiments that change only one aspect at a time. The facilitator can assist one group or several groups to compare many similar technologies or practices at the same time but only under the same conditions and management. For example, numerous different varieties might be compared but they all should be managed in the same way. This includes testing them all in the same field and applying the same practices to the whole field.

Do not encourage groups to compare only one “best bet” alternative with the current practice or technology—be open to several options that may be suggested by local people as well as by outsiders. Promote consultation by the group with neighbors, local research institutions and other sources of ideas.

Do not encourage groups to adopt an untested new practice on a full commercial scale without experimenting with it first on a small scale and then progressively increasing the size of their investment in it. This will enable them to adjust it and fix problems along the way.

➤ *Evaluate experiments and move forward*

Ensure the group keeps track of what is being learnt from experimentation—this will speed up innovation. Promote participatory monitoring and evaluation of the experiment as it is happening so that the learning is captured and shared quickly.

➤ *Have the group test whether an innovation works well in different conditions*

The usefulness of the innovation will be made more evident if the group experiments with it under different conditions. For example, test how an innovation works in different types of fields, processing facilities or forms of transportation.

➤ *Make sure the experimentation includes different points of view*

Help groups realistically judge the success of an experiment by including the points of view of all the people likely to interact with the innovation. For example, include the growers, traders and consumers of a new product in the evaluation.

Do not stop experimenting after you have one successful innovation. Encourage the group to take the experience and apply its lessons to new experiments. Experimentation should be part of the group’s development plan.

Do not forget the usefulness of the experimental results depends on the cost of implementing it. Teach the group to apply simple cost-benefit analysis to each experiment (see resources below).

➤ *Help groups manage the risk of experimentation*

Do recognize that experimentation itself is risky—it involves investments of time and money that may or may not yield an improvement. Help the group to develop ways to decrease this risk, especially in terms of its consequences for the poorer farmers.

➤ *Learn from past mistakes*

Encourage the group to gather information about the experience of other farmers with similar experiments in order to learn from past mistakes.

➤ *Start small*

Start experimentation on a small scale and then build up progressively to a larger scale in order to minimize the risk of losses.

➤ *Spread the financial risk of experimentation among group members*

One way to do this is to help the group develop an agreement for sharing the labor and cash costs, as well as the losses or profits that may result.

➤ *Find “risk takers”*

Not everyone in a farmer group can afford to devote time or other resources to experimentation. Identify a few farmers that have the desire and resources to take on the role of a “risk taker” to develop specific new technologies, such as seed varieties [see Resources section below]. Ensuring that the “risk takers” always share the results of their experimentation with the whole group is vital.

➤ *Share the results and lessons of experimentation widely*

Ensure that the results of experimentation are shared among all the people who need to know them. Those who “need to know” will vary by the context of the farmer group, the community and the experiment. They may include other farmers, traders, transporters and credit suppliers. Develop a routine with the farmer group for sharing experimental results in the community and with other interested parties (service providers, buyers, government institutions, seed companies, local traders, researchers, etc.)

Tracking progress in the development of the innovation and experimentation skill set

Box 4 provides six characteristics you should be able to observe in a farmer group that is successfully developing its skills for innovation and experimentation.

Box 4. Experimentation and innovation skills

Farmer groups with good experimentation and innovation skills:

- Can experiment using simple comparisons
- Keep a register of important data about the experiments
- Involve other people in the experiment who have knowledge or experience useful for evaluating an innovation
- Create market opportunities rather than simply reacting to them
- Share the results of an experiment among all people who need to know them
- Are proactive in seeking new ideas



Resources for innovation and experimentation skills

CIALs at a Glance. Centro Internacional de Agricultura Tropical (CIAT). <http://www.ciat.cgiar.org/ipra/ing/glance.htm>

Gallagher, K. 2003. **Fundamental Elements of a Farmer Field School.** LEISA Magazine, pg. 5. http://www.farmerfieldschool.net/document_en/05_06.pdf

Mayoux, L. 2003. **Empowering Enquiry.** EDAIS (DFID). <http://www.enterprise-impact.org.uk/word-files/EmpoweringEnquiry.doc>

Frankenberger, T. R. and M. K. McCaston. 1999. **The household livelihood security concept.** In English, Spanish and French. <http://www.fao.org/DOCREP/X0051T/X0051T05.HTM>

Honeybee newsletter: grassroots innovation. SHRISTI. <http://www.sristi.org/honeybee.html>

Honeybee Innovation Database. SHRISTI. http://knownetgrin.honeybee.org/innovation_database.asp

Participatory Technology Evaluation Guide. CIAT. [http://www.ciat.cgiar.org/ipra/pdf/Instructio\(ARV\).pdf](http://www.ciat.cgiar.org/ipra/pdf/Instructio(ARV).pdf)

CIAL Innovation Database. http://www.ciat.cgiar.org/ipra/db_cial_lista_pais.htm

Handbooks for Local Agricultural Research Committees. http://www.ciat.cgiar.org/ipra/ing/cial_primers.htm