Skill Set #5: Sustainable Production and Natural Resource Management Skills

Description and importance

What are natural resource management skills?

Sustainable production and natural resource management skills are the knowledge and skills that enable farmers to sustain the soil, water, fauna and vegetation upon which their agricultural livelihoods depend. Natural resources may be managed individually or collectively. The skills needed to manage natural resources require the understanding that changes in the environment depend on the way natural forces and agricultural practices interact (like soil erosion and grazing for example), as well as on how individuals and communities interact (like water users at the head and tail of an irrigation channel, for example).

Why is natural resource management important for agroenterprise?

Often, the natural resources upon which poor farm families depend are degrading. Soil is eroding, its fertility is being exhausted, vegetation is being removed and water tables are dropping. Gains in income via agroenterprise development will be short lived unless the natural resource base for farm production is protected or improved. Investments in natural resource management are necessary to ensure positive and sustainable enterprise results and poverty alleviation. Since the returns on immediate investments in sustaining natural resources often happen in the future, it is often unattractive for poor farmers to devote scarce resources to natural resource management. At the same time, wise investments in natural resource management can improve the productive potential of the environment. Therefore, teaching the skills for natural resource management together with agroenterprise activities and supporting this with some smart subsidies is very important.

Tips for facilitators

➤ *Build farmers understanding of the ecosystem*

Support farmers to acquire a basic understanding of how land, water, plant and animal resources are interlinked using ecosystem concepts (see Resources for natural resources management below).

➤ *Assist farmers to develop the skills for simple mapping of the landscape that matters for their farming and to maintain an inventory of its natural resources*

First, ensure that farmer groups identify the landscape, such as a watershed, that matters for the sustainability of their farms (see Resources for natural resources management below). Next, facilitate groups to inventory resources in this area. This increases awareness and enables farmers to track important changes. Support them to carry out simple agro ecosystem analyses that evaluate the nutrients, soil loss and water cycle in the local ecosystem (see simple tracking techniques in Resources for natural resources management below).

➤ *Assist farmer groups to develop the skills for understanding how changes in the way natural resources are managed can affect various interest groups inside and outside their communities*

Many solutions to problems of sustainable production and resource degradation require farmers to work together. For example, integrated pest management and reducing pesticide abuse requires coordinated management among neighbors. Reforestation and recuperation of water sources often requires communities in lower and upper watersheds to negotiate and then enforce agreements. So it is important that farmer groups have the skills to assess who is likely to favor or oppose a proposed change in management.

➤ *Promote broad participation in resource management*

Encourage all farmer groups in the landscape of mutual importance, such as a watershed, to get together and take active roles in planning how to manage natural resources–for example, how to recuperate and protect degraded land or forest. This may involve federating farmer groups so they can work together at the larger scale required by their landscape. Active participation in natural resource inventorying and management should include consideration of the environmental effect of changing land use or adoption of new agricultural technologies that may be occurring as farmers engage in markets.

➤ *Phase in natural resource management interventions over time rather than all at once*

This will help farmer groups to adapt to new ways of doing things and increase the chances for success.

➤ *Promote the participation of farmer groups along with other groups in monitoring natural resource management interventions*

Farmer groups need to develop and then apply skills for monitoring and evaluation on a number of fronts.

➤ *Link resource management to agroenterprise development*

Make sure that farmer groups understand that the planning, monitoring and evaluation of the environmental effect of their farming practices and natural resource management interventions should be an integral part of their agroenterprise development. They need to visualize negative consequences of mining poor soils, running out of raw materials harvested from forests, degradation of grazing lands and loss of water resources as potential threats to the viability of their future income from agroenterprise development. Sustaining income from natural resources is a tangible motivation for communities to preserve and manage them well.

➤ *Meet minimum standards of environmental management*

Do bring in enough expertise to help groups understand and meet the minimum standards for managing natural resources. In particular:

- Assist communities to ensure that individuals receive fair compensation if they lose land because of community decisions about natural resource management.
- Encourage farmers to avoid the overexploitation of natural resources.

➤ *Be careful when using subsidies*

Consider providing subsidies only for those natural resource investments with a delayed return. The subsidy may be needed to make the investments attractive to poor farmers.

Ensure subsidies are not excessive or open-ended in order to discourage dependency.

Do not consider a subsidy without ensuring community participation, commitment and contribution. Groups and communities should know the purpose of the subsidy and be ready to assume their responsibility when the subsidy ends.

Tracking progress in the development of natural resource management skills

Box 5 provides four characteristics you should be able to observe in a farmer group that is successfully developing its skills for sustainable production and natural resource management.

Box 5. Sustainable production and natural resource management skills

Farmer groups have good natural resource management skills when they:

- Have the capacity to visualize the interconnections between their own farms and the landscape
- Have the capacity to interact and negotiate with other households and communities about natural resource use
- Design and implement effective rehabilitation plans for natural resources
- Have collective rules to efficiently and fairly manage their natural resources. Efficient and fair management of natural resources means to:
    a. Manage crops to decrease erosion and the loss of soil fertility
    b. Optimize the capture, use and protection of water sources
    c. Avoid overexploitation and promote the diversity of flora and fauna

Resources for natural resource management skills

How to do stakeholder analysis. 2003. EDAIS (DFID). http://www.enterprise-impact.org.uk/informationresources/toolbox/stakeholderanalysis.shtml

Building Environmental Impact Assessment for Small and Large Enterprises. 2003. EDAIS (DFID). http://www.enterprise-impact.org.uk/informationresources/application/EnvironmentalIAGuidelines.shtml

Sustainable Agriculture and Rural Development (SARD). http://www.fao.org/SARD/en/init/970/1589/index.html