Scaling up of sustainable soil management practices: some lessons from the hills of Nepal[1]

Hari Neupane and Hemant Ojha,

ForestAction Email: forestaction@wlink.com.np

Chris Garforth,

The University of Reading Email: c.j.garforth@reading.ac.uk

A study was conducted to assess the scaling up processes of soil management practices under maize based farming systems in Panchkhal and Sanga areas of Kavre district. The key objectives of the study are to analyze the scaling up processes and pathways of soil management practices in the case study areas and identify factors related to scaling up at different levels. Three principal questions guiding the analysis were: a) what are the positive aspects of scaling up processes and how can these be built on? b) What are the problems being experienced and how can these be overcome? c) What is the influence of people's livelihood strategies and assets on the processes?

Kavre is one of the 10 districts where Sustainable soil Management Programme (SSMP) of Helvetas has helped local people in the adoption of innovative soil management practices integrated with various cash and subsistence crops. With SMP support and advice, services to farmers in these areas create awareness and build their institutions (CIs) provide extension services to farmers in these areas create awareness and build their institutional capacity on adopting innovative soil management practices. The goal of the project is to improve livelihoods of resource poor farmers.

Data for the study were gathered from 29 households through interviews, two workshops with key informants at the community level and a workshop with CIs at district levels, and review of SSMP and partners' documented information on the subject. The research team also made transect visits through the area, and interviewed several staff of the collaborating institutions. Qualitative analysis (in terms of perceptions of respondents) as well as quantitative analysis of data was done at household, community and institutional levels.

Process and pathways

There are four types of institution engaged in the process of scaling up: a) donor institution (SDC), b) leading institution (Helvetas/ Intercooperation) which manages the program at central level, and supports collaborating institutions financially and technically, c) collaborating institution (CI) who provides services to the farmers, and d) other institutions, which are not directly linked to the program. The project has a strategy of creating a network of leader farmers spread through the project areas, so that they can inform, demonstrate, and facilitate other farmers in adopting the innovative technologies.

After piloting and demonstrating of new technologies by leader farmers, the successful technologies are selected for wider dissemination. The successful technology is measured in terms of the response of group farmers, who are in close contact with the leader farmers and the CI. The leader farmers or innovators are the focal point of the scaling up process.

Status of scaling up

Although the farmer-to-farmer (FTF) extension has contributed to the dissemination of technologies to some extent, there is still a problem of diffusion of SSM technologies widely. Out of the four different component technologies being promoted (vegetables, coffee, compost, cereal crops), the most commonly adopted new technology is compost management in both the sites.

Key strengths of the project's approach perceived by the institutions involved are: providing scope for farmer led experimentation and adaptation, package of multiple technologies being addressed, involvement of local agencies, promotion of farmer cooperatives, building on the existing technologies and indigenous knowledge of farmers, facilitating interaction among government and non- government organizations (with a possibility of vertical scaling up too), and gender consideration (although women participation is as low as one-fifth).

Factors

Different livelihoods assets of the adopters influenced the process of adoption decisions. Social capital relevant to the adoption process includes linkage with various groups of people, local institutional processes (such as those favoring interaction between leader farmers and prospective adopters), ethnic structure of adopter groups, and gender differences, Human capital such as education and awareness were also found to contribute to decisions on adoption. Likewise, natural capital assets (such as quality of land, availability of leaf-litter needed for the application of innovations), financial capital, and physical capital (such as irrigation and transportation facilities) were also found to be associated with the transfer of technologies being addressed.

The innovators and adopters are from the families with higher incomes and relatively more access to productive resources. They are also more educated than the non-adopters. Several adopters and innovators indicated that their decisions and actins were influenced by their own and others' observations, rather than by personal counseling or motivation by extension staff. Their decisions were driven by an attraction for added cash and other benefits.

The attributes of the technologies associated with the adoption process were also analyzed. Relevant technological attributes include: the origin of the technology (local/traditional or imported, connection to indigenous ideas and technologies); simplicity and ease of adoption; use of local resources; scope for adaptation; level of investment required in terms of money, labor and time; demonstrated success of technology; guarantee/risks; preference of adopters; gestation and productivity compared to close competitor technologies; potential for multiple benefits - soil conservation, greenery, inter-cropping; scope of application - in terms of type of land and range of ecological conditions to which the technology is suitable; and availability of integrated multiple technologies.

Extension inputs that influenced adoption include capacity and commitment of CI including staff enthusiasm and motivation; extent of support from experienced leader farmer (ELF) engaged in the process; coordination among service providers; appropriate training modules for ELF and leader farmers; extent of information sharing among leader farmers, and between leader farmers and other farmers; subsidies; diversity of communication media; adequacy of information required for technology application; and capacity of local institutions.

In addition, policy and market related factors were also identified as key factors in the adoption of new SSM technologies. Policy factors that affect adoption include marketing regulations; access to loans; access to land; and speed of budget delivery through donor-government-CI. Relevant market factors include demand for the product generated through the innovative technologies; and availability and prices of substitutes.

Challenges

Key challenges faced by the institutions include: limited research back-up, inadequate technical capacity building opportunities for service providers lack of timely availability of agricultural inputs, inadequate project attention to the resource poor farmers, inadequate technological options, and focus on accessible area of the study district.

In agricultural technology research and development, particularly in complex agro-ecological and farming system contexts, active participation by farmers alongside research scientists and

extension professionals has the potential to generate locally adapted technologies and a more rapid uptake among the poorer farmers.

Several farmers indicated their ignorance on the potential of coffee as a cash crop, and this means that there is still scope for further awareness raising. The rural communities are culturally complex and geographically scattered. This complicates the working of both the 'demand' (farmer) and the 'supply' (service provider) side of innovation related services, with the result that the farmers are unable to get adequate information regarding improved knowledge and needed technologies that range from cultivation to marketing.

The study identified that despite expansion of improved soil management and farming practices through FTF extension, the resource poor farmers and women could not benefit as expected. The process has been accessible to large landholders and rich people who can afford the risk of trying new things, and manage additional inputs needed to shift to a new practice. An implication of this is that extension organizations should select and target poorer households for promotion of soil management and farming technologies that enhance the livelihoods opportunities of these groups.

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