



Farmer field schools on integrated plant nutrient systems

Nepal: कृषक पाठशाला

Participatory and collaborative learning through the farmer field school approach

There are different ways of carrying out agricultural extension. Farmer field schools represent a participatory approach that directly reaches farmers and addresses their day-to-day problems. The concept of farmer field schools builds on the belief that farmers are the main source of knowledge and experience in carrying out farm operations, in contrast to conventional top-down approaches that place most value on scientists' findings.

The term 'farmer field schools' came from the Indonesian expression 'sekolah lapangan' which means 'field school'. It is a group based learning approach, which brings together concepts and method of agro-ecology, experiential education, and community development. The first field schools were established in 1989 in central Java when 50 plant protection officers tested and developed field training methods as part of an integrated pest management (IPM) training of trainers course. Two hundred field schools were established in that season involving 5,000 farmers. The following season, in 1990, an additional 45,000 farmers joined field schools run by 450 crop protection officers.

The same approach is being used in Nepal's integrated pest management programme. Several consultation meetings and workshops were held at national level to put the integrated nutrient management concept into practice. These meetings led to farmer field schools being recognised as an appropriate approach for putting this concept into practice. The approach was piloted in 2000 and 2001 and fully initiated in 2002 when 32 farmer field schools were run with support from SSMP. As far as SSMP knows, farmer field schools on integrated plant nutrient systems have been run since SSMP's involvement. The Government of Nepal's National Fertiliser Policy now recognises integrated plant nutrient systems as a concept to improve the efficient use of different nutrient inputs, and farmer field schools as an appropriate technology and extension approach for soil and plant nutrient management in Nepal.

So far some 226 farmer field schools have been run in Nepal on integrated plant nutrient systems reaching more than 5,000 households.

Left: Farmers observing a cauliflower plot during a regular farmer field school session (Steffen Schulz)

Right: Participants in a farmers' training of trainers-group work on nutrient calculation (Basu Dev Regmi)

The Sustainable Soil Management Programme (SSMP) implements its projects in several midhills districts of Nepal (dark green: previous working districts; light green: districts in 2007)



WOCAT database reference: QA NEP4

Location: Nepal

Land use: Cropland

Climate: Humid subtropical

Related technology: Improved cattle shed for urine collection (QT NEP1); Legume integration (QT NEP3); Organic pest management (QT NEP4); Improved compost preparation (QT NEP7); Better quality farmyard manure through improved decomposition (QT NEP8); Improved farmyard manure through sunlight, rain and runoff protection (QT NEP9); Cultivation of fodder and grasses (QT NEP23); Urine application through drip irrigation for bitter gourd production (QT NEP24)

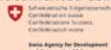
Compiled by: SSMP

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The Sustainable Soil Management Programme is implemented by Helvetas Nepal and Intercooperation in collaboration with the Government of Nepal and civil society actors. It is financed by the Swiss Agency for Development and Cooperation. The technology was documented using the WOCAT (www.wocat.org) tool.



helvetas Nepal



inter
cooperation

WOCAT

Problem, objectives and constraints

Problem

- Lack of effective and efficient ways of transferring technologies to farmers
- Conventional approach of technology transfer, where farmers are believed to have poor knowledge and skills
- Farmers are always perceived as a recipient of technology and knowledge

Objectives

- Transfer of technology to farmers on soil and plant nutrition management
- Empowerment of farmers
- Production of healthy crops without negative environmental effects

Constraints addressed

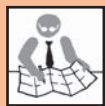
Extension	Top-down, technology-centred, not farmer-centred
Technical	Soil-fertility management, plant nutrient dynamics
Group	Unintegrated, less-organised group

Participation and decision making

Target groups



Land users



SWC specialists/
extensionists



Approach costs met by:

Development project	80%
Participants	20%
TOTAL	100%

Decisions on choice of the technology: In Nepal under the SSMP, farmer field schools have only been implemented to 'teach' integrated plant nutrient systems, there is no choice of technology

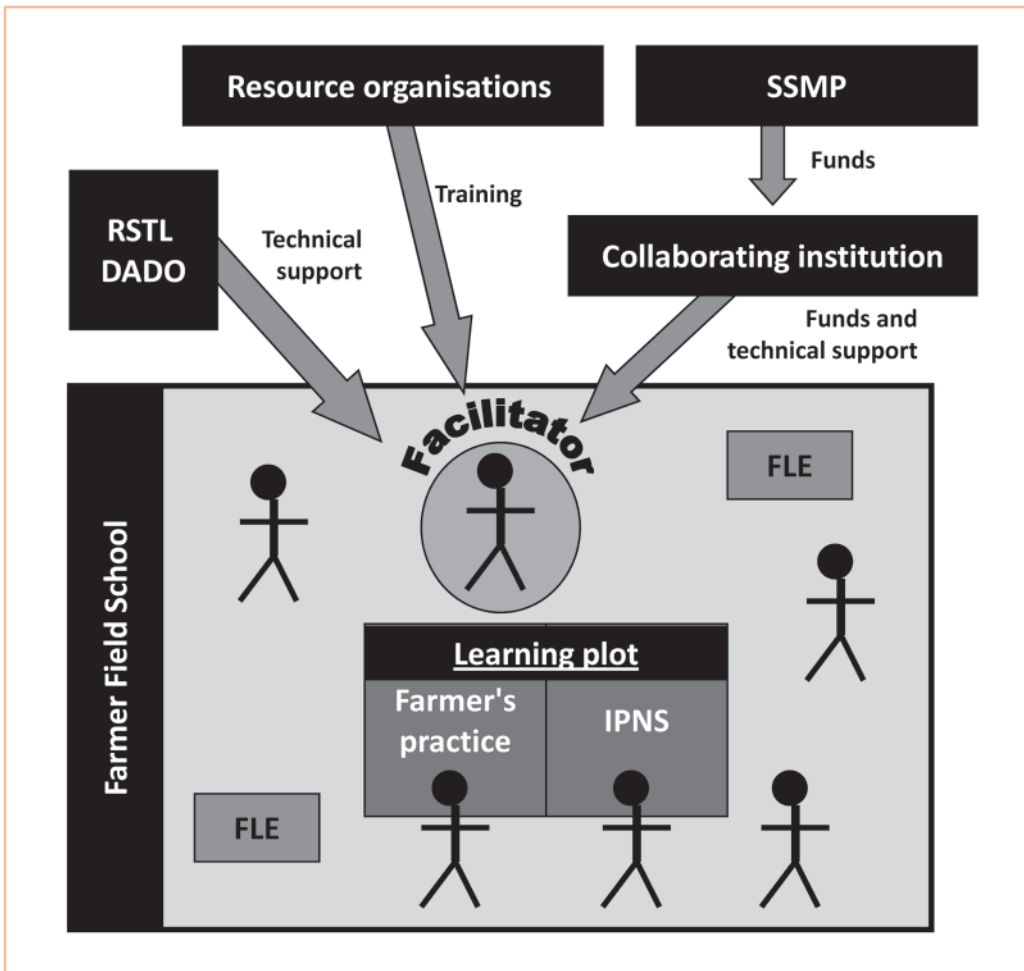
Decisions on method of implementing the technology: The curriculum for the farmer field school was developed by SSMP and the Government's Soil Management Directorate

Approach designed by: National and international specialists on soil and plant nutrient management

Community involvement

Phase	Involvement	Activities
Initiation	Interactive	Participatory approach: group discussions involving all local stakeholders
Planning	Interactive	Orientation workshop involving all stakeholders – farmers participation is crucial
Implementation	Interactive	Farmers are the key actors with trained staff of collaborating institutions (CI) facilitating the process
Monitoring/ evaluation	Interactive	Farmers evaluate and monitor jointly on a regular basis
Research	Adaptive research	Farmer-led experimentation based on local needs and context

Differences in participation of men and women: A majority of participants (>60%) were women farmers.



Organogram

Farmer field schools are usually facilitated by a field staff member of a collaborating institution and funded by SSMP. The facilitators are supported technically by the regional soil testing laboratories, district agricultural development offices, and the collaborating institution responsible for running the school. The facilitators are trained by a resource organisation.

A farmer field school is based on a learning plot divided into an area managed according to a typical farmer's practice and a plot managed according to the principles of integrated plant nutrient systems. Occasionally farmer-led experiments are run to evaluate different options.

SSMP = Sustainable Soil Management Programme
 RSTL = regional soil testing laboratory, DADO = district agricultural development office, FLE = farmer led experimentation, IPNS = integrated plant nutrient system

Extension and promotion

Training: A training of trainers course is provided to selected staff from the collaborating institutions who have been involved substantially in agriculture development and farming practices activities. Seven days basic training on integrated plant nutrient systems and farmer field schools is provided. There is provision for a sharing forum at district level based on the demand of staff involved in conducting the farmer field schools. At these meetings, staff exchange their learning and experiences amongst each other and with the district agricultural development offices and the regional soil testing laboratories, These two organisations provide backstopping for technical matters.

Learning plot or extension: Learning plots (demonstration plots) are established in consultation and agreement with participating farmers. These plots are divided into two with the local farmer's practice on one side and the integrated plant nutrient system practice on the other. Farmers meet regularly and observe and analyse the differences between the two sides of the plots, identify problems that arise, and propose solutions. In this way, farmers learn in a participatory way and, as a result, are more likely to adopt what they learn in their fields.

Component trial/farmer led experiment: It is difficult to compare results if many treatments are applied at the same time in a plot. Therefore, it is always advised that component trials are run for different treatments. Such trials make for easier understanding of the different treatments and enable farmers to see the effects of particular treatments.

Support of local institutions: Local level organisations are involved in carrying out the farmer field schools. Local institutions are supported financially and technically by SSMP. The major aim of this approach is to build local level capacity.

Long-term impact of incentives: Building the capacity of farmers on healthy crop production and environment conservation, soil and crop productivity is enhanced through judicious use of local and external resources.

Monitoring and evaluation

Monitored aspects	Methods and indicators
Biophysical	measurements (nitrate, nitrogen, pH, organic matter, P and K), crop measurements including yield
Technical	regular observations
Socio-cultural	regular observations of status
Economic/production	regular observations of cash income
No. of land users involved	20-30 farmers
Management of approach	participatory

Impacts of the approach

Capacity building of farmers: Through regular meetings and participatory discussions, farmers become used to speaking with other farmers about what they have learned. Regular observations and record keeping enhance farmers' analytical capabilities. Post evaluations of farmer field schools show that most farmers learn much from the schools including learning about group dynamics and developing presentation skills.

Improved soil and crop productivity: Attendance at farmer field schools has led to many farmers adopting practices that have improved the fertility status of their soils and have increased crop productivity. Most of these farmers have realised the need for the judicious use of local and external resources to increase crop production and conserve the environment.

Sustainability: Capacity remains at the local level so that farmers are able to run farmer field schools themselves.

Concluding statements

Strengths and →how to sustain/improve

Farmers are the source of knowledge; farmers adopt technologies based on their context → Involve farmers in a more participatory way

Participatory approach

Farmers decide the pace of implementation and what should be done

The schools stress the importance of using local resources to reduce dependency on external resources

Increased efficiency and effectiveness of local resources use

Weaknesses and →how to overcome

Farmer field schools need time and their costs are higher than other similar approaches

Non-technical staff are often involved in carrying out farmer field schools

→ Ensure capacity building and regular sharing forums

Key reference(s): Paudel, C.L.; Regmi, B.D.; Schulz, S. (2005) 'Participatory Innovation Development – Experiences of the Sustainable Soil Management Programme in Nepal.' In Kolff, A.; van Veldhuizen, L.; Wettasinha, C. (eds) *Farmer Centred Innovation Development – Experiences and Challenges from South Asia*, pp. 109-126. Bern: Intercooperation ■ SSMP (2003) *Introduction to Integrated Plant Nutrient Systems* (in Nepali). Kathmandu: Sustainable Soil Management Programme

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