

**Summary Report  
of  
Review and Planning Workshop  
on  
Sustainable Soil Management Program**

*Organized by*

**Soil Management Directorate  
and  
Program Support Unit of SSMP**

Held in Kathmandu, 8-9 June 2006

*Report editors:*

S.N. Mandal, S.S. Ghimire, C.P. Risai, K.H. Maskey and I.B. Oli

Government of Nepal  
Ministry of Agriculture and Co-operatives  
Department of Agriculture  
**Soil Management Directorate**

Hariharbhawan

June 2006

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## FOREWORD

This report reflects national workshop on the "Review and Planning of Sustainable Soil Management Programme" held on 8-9 June 2006, in Kathmandu, Nepal. This workshop was jointly organized by Soil Management Directorate and Sustainable Soil Management Programme (PMU), with the objective to review the on going sustainable soil management activities and planning for year to come. In the change political scenario of the country, the workshop provided a good forum for working together among the GOs and Local NGOs & CBOs to achieve the common goal of sustainable soil management for their agriculture production.

Altogether forty-seven representatives of different collaborated institutions were lively participated in the workshop. It was our privilege that middle & upper managerial level authority were actively participated in the workshop. The workshop critically analyzed the weakness & strength of on going SSM Program and came up with some very good suggestions.

To make the workshop success I would like to thanks all the invitee guests and participants for their lively participation and valuable comments. My thanks go to SSMP for their financial support and valuable participation. I express my thanks to Mr. Shiva Sundar Ghimire and staffs of SMD for organizing and making workshop success. I would also like to thanks Mr. Chandra Prasad Risal for preparing this report. Mr K.H. Maskey and I.B.Oli are also thanks for their valuable contribution in report preparation. At last but not least my thanks go to all who directly or indirectly contributed to make the workshop a grand success.

**Satya Narayan Mandal**  
**Act. Chief Soil Scientist**

## Background

Nepal is an agricultural country and soil is one of the important non-renewable natural resources of the country. It is a medium to support plant growth which provides food, fuel and fibre for human existence. People have exploited soil for the betterment of their livelihood from time immemorial. Early days before the introduction of chemical fertilizer when the population was low the agricultural system was sustainable. Food demand of population created more and more pressure on soil resources without taking enough care of it result the fertility declining of the soil. The wide gap between the removal of plant nutrients by the crops grown and their replenishment through various sources in this system in Nepalese agriculture always suffer chronic nutrients deficit.

Now plant caring capacity of soil is at a critical stage and sustainable soil management at friendly environmental ground become a major concern in agricultural development. The whole existing agricultural situation demands for a fresh look on the basis of multidimensional approaches like: locally available organic means, assessable inorganic means and microbial means of soil fertilization with a suitable crop rotation scheme. The situation formed the back ground to Integrated Plant Nutrient System (IPNS) in the field of Sustainable Soil Management. Treating the apparent negative trends as indications of soil fertility decline IPNS work on the identification and understanding of the factor contributing to them.

The Program Management Unit of Sustainable Soil Management Program (SSMP) is launching the "sustainable soil management program" since 1999. The Soil Management Directorate (SMD) is working as a partner institution of SSMP as Governmental representative. The program is being launched through both Government and Non-Government Organizations (GOs and NGOs) as Collaborating Institutions (CIs) in the Twelve mid-hill districts of the country. Involvement of GOs and NGOs as a partner in development work has been found to be quite effective, because of which HMG/N has already approved to involve NGOs in Government funded development works in policy level. Because of different organizational set up, administrative and financial mechanism, both GOs and NGOs have strong and weak points in their working pattern. Therefore, a national level workshop involving representatives of CIs, SSMP, SMD, and DOA was felt necessary for strong coordination between different stakeholders for reviewing ongoing programs and future planning and implementation of the sustainable soil management programs.

### Objectives of the workshop:

- Discuss among stakeholders working with SSMP the overall progress of the project and its relationship to governmental policy
- Analyze the activities and impact of overall SSM Programs (IPNS-FFS, F to F, FYM Improvement, Soil Test and Educational Campaign), and identify opportunities for improvement.
- Review the actions taken on the previous recommendations on SSM-Programs and discuss new recommendations
- Identify new SSM activities suitable for the concerned area for future planning.

**Workshop schedule:**

National workshop on:  
**Review and planning of SSM-Programs**

**Organizer: SMD, Hariharbhawan /SSM-P, Bakhundole**

Date: 2063/2/25 and 26 (June 8 & 9<sup>th</sup> 2006)

Time: 10:00 AM-5:00 PM

**Venue:** Meeting hall of Market Development Directorate/ DoA, Hariharbhawan (Lalitpur)

## Day-1

## First Session

Chair Person: Mr. Surath Babu Aryal, DDG/DoA.

**10:00 ~11:00**

## Registration of the participants/ Introduction

11:00 ~12:30

### Inaugural session

- Welcome and objectives of the workshop **Mr. S.N. Mandal** -Acting Chief/ SMD
- SSMP/PMU Perspectives **Mr Neeranjn P.Rajbhandari**-Team Leader SSMP (PMU)
- Chair person's remarks **Mr.Surath Babu Aryal** -DDG/DoA

12:30 ~13:00

### Tea-break

13:00 ~14:30

## Technical Paper Presentation Session

- Paper I: Issues of Scaling-up of SSM Technologies through the joint effort between GOs and NGOs
- Paper II: Current Fertility Status of Nepalese Soils, Soil Management Program Conducted under SMD and Farmer's Participation in SSM Practices

- Paper III: Over view of SSM Program in Nepal

- Chief/ SMD

-SSMP/PMU

14:30 ~15:00

### Tea-break

## **Second Session**

### **15:00 ~17:00 District Presentations**

**Chair Person:** Mr. S.L.Chaudhari, Program Manager, APPSP.

- Presentation from FWDR (DADO Baitadi, DADO Dadeldhura, RSTL Dhangadhi)
- Presentation from MWDR (EDS, Surkhet, DADO Surkhet and RSTL.Khajura)
- Presentation from WDR (SC Syangja, MILAN Myagdi, CYC Baglung, DADO Baglung, DADO Myagdi, DADO Syangja, RSTL Pokhara)

## **Second Day**

### **10:00 ~12:00 District Presentations (Contd...)**

- Presentation from CDR (AMCDCC Kavre, TASK Sindhu, CEEPARD Dolakha, ECARDS Dhading, DADO Kavre, DADO Dolakha, DADO Sindhu, DADO Dhading, RSTL, Hetauda)
- Presentation from EDR (STL Surunga and RSTL, Jhumka)

### **12:00 ~12:30 Tea break**

#### **First Session**

### **12:30 ~15:30 Group work/ Discussion**

Activities of this session (related to objective 2):

- Three working groups will be formed, as follows.
  - Group I : Representatives from NGO's
  - Group II : Representatives from DADO's
  - Group III : Representatives from RSTL's.
- Each working group discusses the overall SSM Programs and summarizes its discussion in the brown paper for presentation

### **15:30 ~16:00 Tea break / Facilities Distribution**

#### **Second Session**

#### **Closing Session**

**Chair Person:** Dr. Ganesh Raj Joshi, DDG/DoA.

### **16:00 ~16:30 Group work presentation**

- Each working group presents the outcome of the group work to the plenum.  
(Listing of new recommendations from each group, priority setting among these and preparation of key recommendations for overall SSMP-improvement)
- Vote of Thanks from SMD
- Chair Persons Remarks and Closing



## Workshop programme & participation

47 participants attended the workshop. Among them were extension officers from District Development Offices, Soil Scientists from Regional Soil Testing Laboratories, Development practitioners from various collaborating institutions, decision makers from DOA, staffs from SSMP and SMD. Details of participants are given in appendix I.

The programme included 2 days of deliberation divided into 4 technical sessions. Three invited papers each from DOA, SMD and SSMP (PMU) were presented in the very first opening session of the workshop. This session was chaired by Mr. Surath Babu Aryal (DDG, DOA). The invited papers are included in its original forms in the technical chapter for their wider circulation, and the major inferences that emerged during workshop are documented in discussion and recommendation chapter. Second session of the first day consisted the presentation of the progress report by respective CIs. Coordinating CIs (CCI) compiled all the progress report of the CIs in the district and presented in the forum. Whereas some CIs also presented their individual presentation. This session was chaired by Mr. S.L. Chaudhari, Program Manager, and APPSP. The details of the presentation have been presented in this report. The third session in the second day of the workshop completed in simultaneous discussion and presentations by 3 groups. The group division was done in such a way to help finding their common merits and demerits. The first group consisted all the representatives from NGOs, second group consisted all the representatives from DADOs and the third group consisted all the representatives from RSTLs. Session of group discussions took place on the basis of progress report made by the CIs on the second session. The major focus of the discussion was in the impact and weaknesses of the implemented SSM programs, area of improvement and the roles and responsibilities for the improvement. Each of the three groups, headed by a convenor. The group convenors presented group reports to the plenary meeting of the fourth session which was also the closing session of the two days workshop. This session was chaired by Dr. Ganesh Raj Joshi (DDG, DOA).

### **First Day, Inaugural Session:**

DDG, DOA chief guest of inaugurals session Mr. Surath Babu Aryal opened the workshop with enlightening the panas and a guidance note to all participants. He stressed that the workshop should be focussed in the technical discussions and not in the non technical formality. He also stressed the importance of discussion among GO and NGO to catch up the challenges, which arise when the project is finished. He addressed SMD, SSMP and NGO's are a good articulate to review the challenges and find out the options for sustainability of the programme. He remarked some challenges like :

- financial and administrative aspect
- research and extension linkage

Acting Chief soil scientist of SMD, Mr. Satya Narayan Mandal delivered the welcome speech to all of the representatives of the workshop. During his speech he stressed that the workshop fit into the perspective of SMD and SSMP role as a facilitator for enhancing development programs in sustainable soil management. He remarked some challenges like

decreasing bio-mass in the cropping system and the need of sustainable soil fertility management.

Mr. Ram Prasad Pulami (Sr. Agri. Economist, Planning section, DOA), was also one of the invitees to address the inaugural session. During his address he stated the importance of sustainable soil management activities and focussed on the relation between the agricultural production and environment protection as part of sustainable soil management aspect. He remarked some challenges like complexity of program implementing norms and the need to simplify it.

Dr. Neerajan P. Rajbhandari (Team Leader, PMU. SSMP), stated the importance of sustainable soil management activities and focussed on the successes of Sustainable Soil Management Program in a short period of time. He explained some evaluation of the program by donor agency and assured the extension of the program for the next term based upon the facts of achievements of the program. He remarked some of the important merits of the program like GO-NGO partnership and challenges like coordination for better program implementation.



## **Issues of Scaling-up of SSM Technologies through the Joint Effort of GOs and NGOs**

**Ram Prasad Pulami**  
**Sr. Agricultural Economist**  
**Planning & Human Resource Section, DoA.**

### **Brief History of SSM-Program:**

The Sustainable Soil Management Programme (SSMP), a bilateral project between The Government of Nepal and the Government of Switzerland, was initiated in 1999, with the objective of improving soil fertility, crop productivity and farm income in up-land farming systems of the mid-hills of Nepal. SSMP supports to implement activities in 14 mid hill districts i.e. Kavre, Dhading, Sindhupalchowk, Syangja, Parbat, Baglung, Surkhet, Dailekh, Achham, Doti, Baitadi, Dadeldhura, Dolakha, Okhaldhunga. A total of 77 Collaborating Institutions (CIs) implemented project activities in 2004. Of these, 22 were Governmental Organizations (GOs), 5 Community Based Organizations (CBOs), 40 local Non Governmental Organizations (NGOs), and 10 national NGOs. In 12 districts, a total of 302 Village Development Committees (VDCs) were covered; 2,910 Leader Farmers (54% women) were trained and supported by CI staff and 28,810 Group Farmers. The Farmer to Farmer (FTF) programme was implemented in 9 districts. So far, 147 additional farmers were trained to become Experienced Leader Farmers (ELF) thereby increasing the total number of ELF to 439 (32 % women). They provided services to 759 Demand Farmer Groups thereby reaching 16,345 Demand Farmers (58% women). 58 FFS on Integrated Plant Nutrient Systems were implemented, reaching some 1,250 farmers. The number of CI implementing ultra-poor activities increased to 32 in 8 districts and the number of beneficiary households increased to 1017.

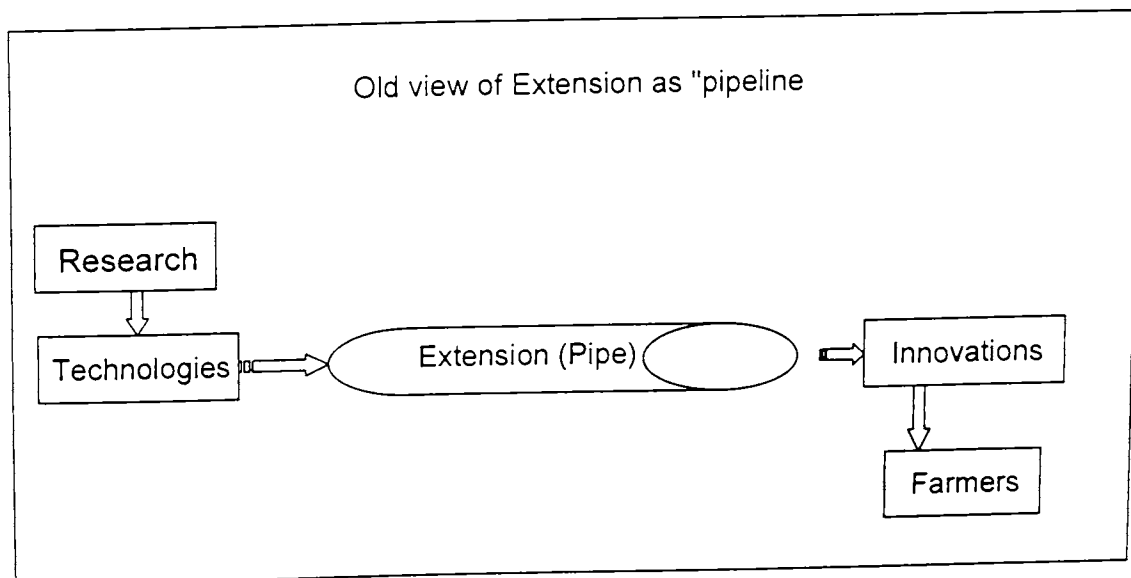
### **Introduction:**

In fact, the history of Nepalese agriculture shows that Nepal has been the testing ground for various approaches, methods and innovations. For the last few decades, various approaches in agricultural research and development have been tried in the country to boost up agricultural production. To cite a few examples, the Training and Visit, AERP, AERP Development, Block Production Program, Pocket Package Program, Bisheshwor with Poor and others were implemented in last three decades. Some of the programs and their approaches were successful but they could not continue. Sustainability of the successful program is the key for economic growth.

Despite agricultural technologies and favourable agro-climatic zones being available within the country, the promising agricultural technologies could not spread to larger geographic areas due to many constraints. As a result, most of the clients, especially the rural poor, could not benefit from those technologies. Some common approaches and methods are adopted by different programs and projects (both public and private) to make their outputs

known to users. The Sustainable Soil Management Program (SSMP), a bilateral project between Nepal Government and Swiss Government was initiated in 1999, with the objective of improving soil fertility, crop productivity and farm income in upland farming system of Nepal. The project approach and the outcomes seems to be quite satisfactory but one of the major limitation of this project realized to be the scaling-up and scaling-out issues for the wider dissemination of the successful SSM activities. Since the beginning of the project, its activities were limited to only 10-12 mid-hill districts of the country. Even the coverage within the program district is yet to be achieved. To meet the present need of increasing crop productivity, sustainable soil management programs are to be implemented massively through out the country. This will not only help for the sustainable fertility management of the soil but also for supporting the movement towards organic farming in the country.

Nepalese farmers still farm in a traditional way in some hilly and remote areas, irrespective of so many changes and modern technology diffusion. To meet the food security in general & hilly district in particular, augmented food production to cope up with the need of increasing population is a great challenge for us. Many efforts were done in the past but nevertheless problems were solved. The productivity decline is because of intensified agriculture mainly due to over mining & improper use of Farm Yard Manure (FYM)/Compost, Green Manures (GM) & other local resources as recycling of organic wastes.

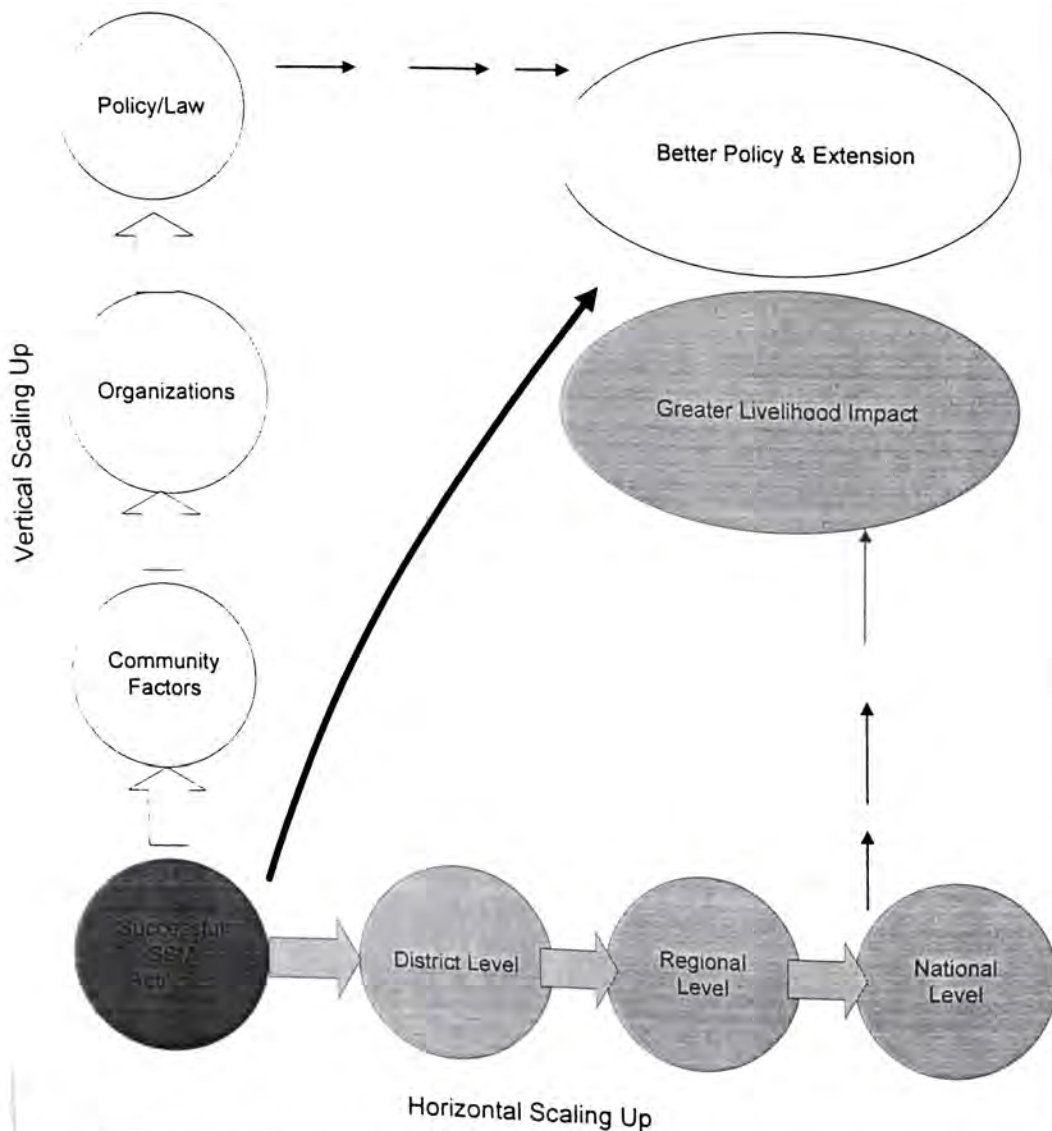


### Scaling-up Issues:

Scaling-up aims to provide more quality benefits to more people, over a wider geographical area, more quickly, more equitably and more sustainable (Gundel et al, 2001). Scaling-up can be a geographical expansion to more people and communities within the same sector or stakeholder group, as well as institutional, involving expansion to other stakeholder groups and sectors.

Scaling-up is seen as the final step in the process which starts with the development of a technology, moves on to an uptake of the technology by target groups and finally becomes large-scale adoption by users outside the immediate boundary of the initial intervention.

## Scaling Up of Successful Sustainable Soil Management Activities



From the early stages of project design and implementation, there should be clear definition of scaling-up in terms of

1. From whose perspectives? (Institutions or organization)
2. For whom? (Beneficiaries)
3. At what level? (Project level)
4. What time-frame? (How long period)

Experts on scaling-up identify key steps at the pre-project stage which are important to achieve scaling-up. Understanding and building development-oriented collaborations, into the project, as well as appropriate funding and review mechanisms have implications for

research design and funding from an early stage and negotiations and discussions between potential partners and stakeholders. The following pre-project steps were identified: - (1) Situation analysis, (2) Identifying target groups, objectives and outputs, (3) Collaboration, (4) Funding mechanism, and (5) Developing an M & E system. This then leads into the project implementations for which there are two scenarios: (1) Exit strategy and (2) Dissemination.

The scaling -up can be done in two ways: (1) Vertical scaling-up and (2) Horizontal scaling-up. Vertical scaling-up can be initiated by involving institutions that influence and produce policy changes. Where as , horizontal scaling up is possible through the geographical spread from local through regional, national to global application.

### **The Present situation:**

1. At the grass root level soil losses are high during pre-monsoon.
2. The exact area of the red soil is not known but are widely prevalent in low lying Tar areas in mid hills from east to west
3. Terracing in the mid hills is a very effective method of soil & water conservation.
4. Fertilizer use in the hills is constrained by inaccessibility; low purchasing capacity, lack of irrigation, and lack of transport facility.
5. Decreased biomass & organic matter supply
6. Various types cropping pattern still exist in traditional way without inclusion of legumes.

### **Necessity for sustainable soil management:**

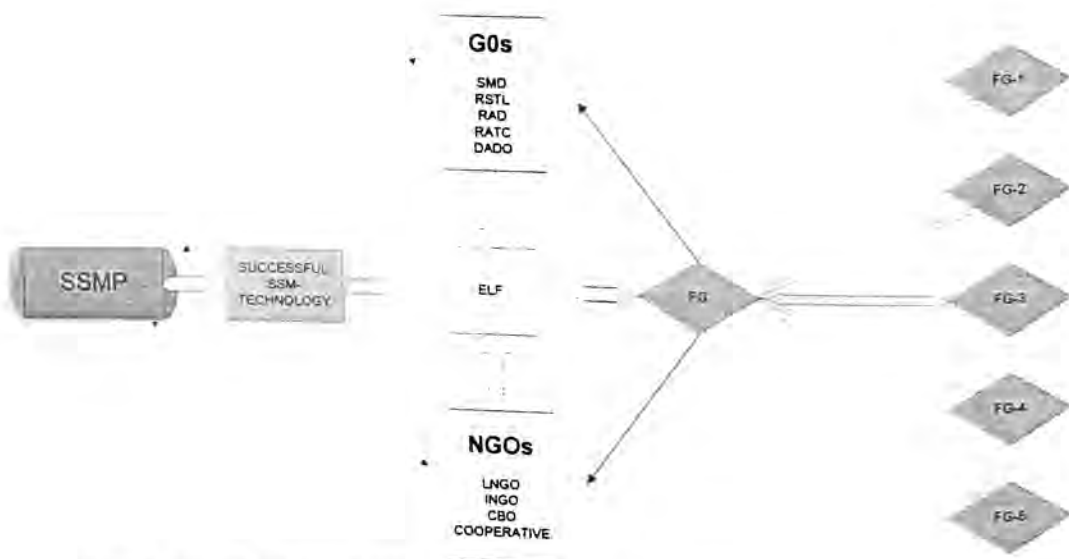
1. Land improvement, Soil conservation, soil fertility maintenance and contour farming in the hills is very crucial & critical.
2. Huge production of organic matter with improved technology.
3. Organic matter decomposition must receive topmost priority due to its significant role in replenishing the fertility of the soil but also in improving soil erosion control. Legumes should be an integral part of the cropping pattern.
4. Green manuring as legumes in crop rotation. The use of legumes and GM adds 40 to 50 kg N/ha in general through biological nitrogen fixation as BNF.
5. Multiple farming & cropping patterns practices. Mixed, inter and multiple cropping systems should be followed with various legumes favouring sustainable use and management of soils.
6. Comparative advantage situations as high value commodities. Cash crops, off-season vegetable, and seeds and low volume and high value crops can be grown
7. Tree plantations especially fast growing nitrogen fixing leguminous trees should be grown. These crop trees work both as fodder, litters and composting material serving nutrients and conservations of soils in general.
8. Ecologically viable fruit trees should be grown keeping the market access and demand driven.
9. Off-season vegetable production. Under micro hydro-irrigation projects as drip, sprinkler, rainwater harvest conditions, vegetables as highly income elastic and labor intensive in the production but it is environmental-friendly. It serves income as well as employment. Females are encouraged in this business in rural areas.
10. Research & better extension system should be developed.
11. Preparation and use of fertility maps should get priority.

## Weakness and Limitations.

1. Poor research & extension linkages.
2. Inadequate and supply driven of National Extension Strategy suitable to all categories of farmers.
3. Placement of manpower is not scientific which leads to less motivation.
4. Technicians are not oriented based on projectization & partnerships.
5. Resource constraints in sharing & implementations.
6. Norms not fully compatible based on present needs.
7. Administrative as well as financial act, by laws and regulations complicated to NGOs.
8. NGOs /INGOs & other organizations sometimes not fully participative in coordination /collaborations.

## Farmer to Farmer (FTF) Diffusion of Successful Technologies: -

This is an effective but not a new approach of horizontal scaling-up of the successful technologies. Farmers have been adopting this approach very earlier. Agriculture assistant appointed by Department of Agriculture (DOA) was also a concept of FTF. In this approach,



Model of scaling up of successful SSM - technology through FTF

a leader farmer is trained within the locality providing extensive training in agriculture. The trained leader farmer then acts as an Experienced Leader Farmer (ELF) for the extension of the successful technologies in the communities. The successes of the FTF mostly rely upon the activities of the ELF.

### Strength

- Promising means of effective scaling-up of successful technologies.
- Both, the service provider (ELF) and Demand Farmers Groups (DFG) are farmers; therefore this program directly benefits farmers.

- The technology providers are directly accountable to the farmers unlike extension workers of GO and NGOs, which are accountable to their respective institutions.
- Feeling of more ownership of group farmers about the technology adoption
- Cost effectiveness for wider dissemination than other system of extension (DADO,NGO)
- Builds on farmers field experience with the technology not on extension messages
- Builds on farmer local communication skills
- Commitment from both demand and supply sides are better realized to fulfil their responsibilities
- More effective in heterogeneous environments and illiterate farm communities
- Technologies adopted from ELF services are likely to be more effective and sustainable. because they only disseminate successful technology

### **Challenges**

- Very small project agreements, wide scattered geographic area coverage, many proposals and difficulties in financial management and monitoring
- The success of programme depend mainly on quality of ELF, but selection of ELF is difficult task
- The facilitation from CI for this process is important, but CI are reluctant to do this since the institutions do not financially benefit from this process
- The effective ELF are reluctant in paper work like filling agreement proposal form, maintaining diary and preparing lesson plans in the training
- Difficulties in seeking demand groups according to the expertise of ELF
- Farmers interest is mainly on short term profitable technologies, less on long term SSM
- There are only limited of successful cases available for wider dissemination

### **Opportunities**

- Forming district level FTF committee or federation to handle the process at the district level
- Explore opportunities of collaborating with NARDF and APP-SP under Ministry of Agriculture & Co-operatives, and Local Development Fund under District Development Committees
- Demand driven approach and activities are based on the priority of the demand farmers groups
- Opportunity of involving women and other disadvantaged group of people in the sustainable soil management process
- Opportunity of capacity building of farmer organizations
- Shifting accountability of service providers towards community
- Recognized by agriculture extension policy in 10th five year plan (NPC, 2003)

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# **Current Fertility Status of Nepalese Soils, Soil Management Program Conducted Under SMD and Farmer's Participation in SSM Practices**

**-S.N.Mandal**

**Soil Management Directorate**

## **Introduction**

The landscape of Nepal is the result of on going collision between two massive continental plates that is India to the south and Asia to the north. Due to diversified geomorphology Nepal is divided in to High Himalayas, Middle Mountain, Siwaliks and Tarai physiographic regions/zones. Geology, climate and hydrological characteristics of each zones is different thus resulted formation of various type of soils. The land use within these zones is also significantly different. Thus soil fertility status and soil fertility management must be considered within the context of the agro ecological and production system based.

## **Soil Fertility Status on Agro-ecological Basis**

Agricultural scientists, agricultural extension workers and even farmers themselves widely support the view that decline soil fertility is a major problem in Nepalese agriculture. Households from hilly reasons reported fertility decline 67% on Bari and 61% on Khet. Tarai may have the similar or worse situation. Soil erosion is regarded as the major factor responsible for fertility decline in hills of Nepal. Soil erosion may be resulted by geological process as well as due to human influence. Geological process play the main role increase soil erosion in hills, where as in valley bottom and Terai reduction in FYM/Compost. unbalanced use of chemical fertilizer and intensified cultivation are considered important for the decline in soil fertility.

## **Soil Fertility Status on Production System Basis**

### **Khet**

Rice is the major grain crop of country. Rice is grown whatever arable land below 1800m can be serviced by irrigation. Rice cultivation is unique and soil fertility management is quite distinct from upland soil management. During the rice growing period water is kept on the surface as much as possible. Standing water in rice fields inhibits weed growth, while at the same time encouraging the growth of azolla and blue green algae. both are nitrogen-fixing species and also surface soils are least subject to erosion. That is the fact that in the past, the traditional rice grower did not need to rely heavily fertilization. With the heavy intensification of the cropping system on irrigated land, Chemical fertilizers are being used in ever increasing amount of unbalanced manner, causing declining the productivity of agricultural lands.

### **Bari**

Mainly Bari and pakho occur in hills, where maize is the dominant crop. The fertility management of Bari lands is different from that of irrigated khet lands. As the upland agriculture system developed FYM has been practicing to supply the nutrient requirement for upland cultivation. With increased cultivation of wheat and case crops. the traditional soil

fertility management is under considerable strain and use of chemical fertilization increased. Scarcity of FYM and unbalanced use of chemical fertilizers induced soil degradation. As the result soil fertility declines, harvest became scantier and rate of soil erosion increase, resulted reduce soil fertility to such as extent farmers willing not to cultivate such marginal lands, at least temporarily.

### Natural Grazing Production System (Forest)

About 43% of the total land areas of the country are under natural grazing production system. Area of natural grazing production system seems to be public properties and is heavily utilized for firewood, fodder, litter and timber; where as its use in Terai is more intense. Unfortunately, due to lack of assured tenure and interest in improvement of management of soil area, the area is shrinking gradually and also the fertility of this area is heavily declining.

### Soils of forest, upland and khet

Soil criteria	Forest	Upland	Khet
PH	4.2	4.5	4.9
C (g/kg)	4.5	11.4	10.9
N (g/kg)	0.45	1.21	0.98
P (mg/kg)	1.4	6.4	8.6
K (cmol/kg)	0.25	0.52	0.3
Ca (cmol/kg)	1.47	2.63	2.49
Mg (cmol/kg)	0.55	1.28	1.77
CEC (cmol/kg)	15.18	12.03	11.74
BS (%)	16.1	37.6	40.3

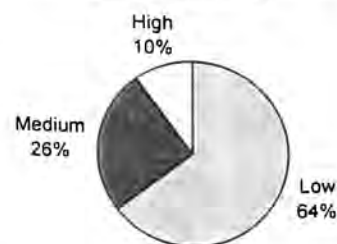
Source: Tripathi, 1999.

### Soil fertility status on soil test basis

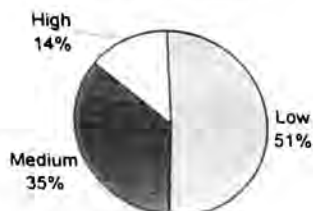
**pH status of FY 061/62**  
(2990 soil samples)



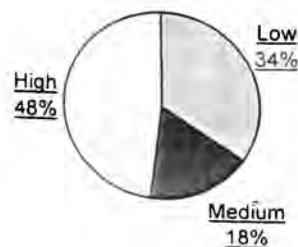
**Organic Matter status of FY 061/62**  
(2604 soil samples)

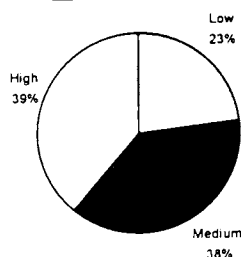


**Nitrogen status of FY 061/62**  
(2715 soil samples)



**Phosphorus status of FY 061/62**  
(2587 soil samples)





### Organic Matter Status of Hills and Terai

Besides the very crucial role of soil organic matter in agricultural production system, most of the Nepalese soils are very low-to-low in organic matter content. Soils of most parts of Sunsari, Bardiya, Banke, Kanchanpur and Kailali districts content very low to low organic matter, where as soils of Nuwakot district have organic matter of medium range except soils of river sides. (STSS, 2056 BS.) Soil organic matter status of some of mid-hills and terai districts are given here.

District	Soil organic matter status			
	High	Medium	Low	Total
Okhaldhunga	81	181	30	192
Kavre	2	32	156	190
Syangja	15	153	86	254
Parbet	31	130	61	222
Hills	129 (13.5%)	496 (52%)	333 (34.91%)	958
Chitwan	6	41	145	192
Mahottary	17	78	370	465
Parsa	2	23	281	306
Terai	25 (2.5%)	142 (15 %)	796 (82.51%)	963
Total	154 (8%)	638 (33%)	1129 (59%)	1921

Source: Soil Management Directorate, Hariharbhawan.

The above table revealed that soils of Nepal in hills contained medium to low organic matter content. About 35% Soils showed low in organic matter where as most of the Terai Soils (about 83%) are low in organic matter. It is clear that the soils of Terai "The granary belt of Nepal" content less organic matter compared to hills and needs special care for sustainable agricultural production.

**Chemical fertilizer situation for the FY 2061/062****Imported**

(Unit: MT)

Fertilizer	Last year's Stock	Import	2KR	Total supply	Distribution	Stock
Urea	24839.00	22530.70	7097.18	54466.88	47836.33	2671.00
DAP	2606.00	40040.85	17086.70	59733.55	32602.55	22981.60
MOP	3235.00	144.00	66.00	3445.00	2744.00	701.00
AS	4043.00	2352.00		6395.00	2953.60	3441.40

**Nepalese Production**

Fertilizer	Last year's Stock	Production	Total supply	Distribution	Stock
Puranchal (20:20:0)	104.00	5257.00	5361.00	5240.00	121.00
Bagmati (20:20:0)	60.00	5686.00	5746.00	5335.00	411.00
Bagmati (20:20:10)	29.00	2450.00	2479.00	2217.00	262.00
Pathibara (20:20:0)	-	120.50	120.50	95.00	25.50
Pathibara (20:20:10)	-	29.00	29.00	25.00	4.00

**Soil Management Program under SMD****Central Level**

- Soil analysis and fertilizers recommendation.
- Manure and fertilizer analysis.
- Soil fertility monitoring and soil fertility mapping.
- Promote soil campaign (SIBIR).
- Study and support soil management activities.
- Production and demonstration of microbial fertilizers.
- Planning and execution of soil management program.
- Net working of stakeholders, who involve in soil management activities.
- Promotion of IPNS-FFS.
- Human resource development.

**Regional Level**

- Soil analysis and fertilizers recommendation.
- Manure and fertilizer analysis.
- Soil fertility monitoring and soil fertility mapping.
- Conduct soil campaign.
- Study and support soil management activities.
- Monitoring and evaluation of soil management program.
- HRD
- IPNS-FFS.

## District Level

- Demonstration on SM activities.
- Technology promotion (Minikit).
- Exhibition.
- Farmers' tour.
- Farmers' day.
- FtF Program.
- HRD.

## Major SSM activities conducted by RSTLs (061/062)

Activities\RSTLs	Unit	Surunga	Jhumka	Hetauda	Pokhara	Nepalgunj	Dhangadhi	Total
Capacity Building Training for CIs	Number	-	1	1	1	1	1	5
IPNS-FFS	Times	1	1	6	4	-	1	13
Follow-up Capacity Building Training	Times	4	-	4	3	3	6	20
Farmer's Tour	Times	1	-	-	-	-	1	2
Soil Fertility Mapping	Number	-	-	-	-	1	-	1
Follow-up Soil Management Educational Campaign	Times	-	2	2	5	1	3	13
Follow-up Soil Campaign	Times	-	2	-	-	2	3	7
FYM Improvement	Times	10	5	3	10	-	5	33

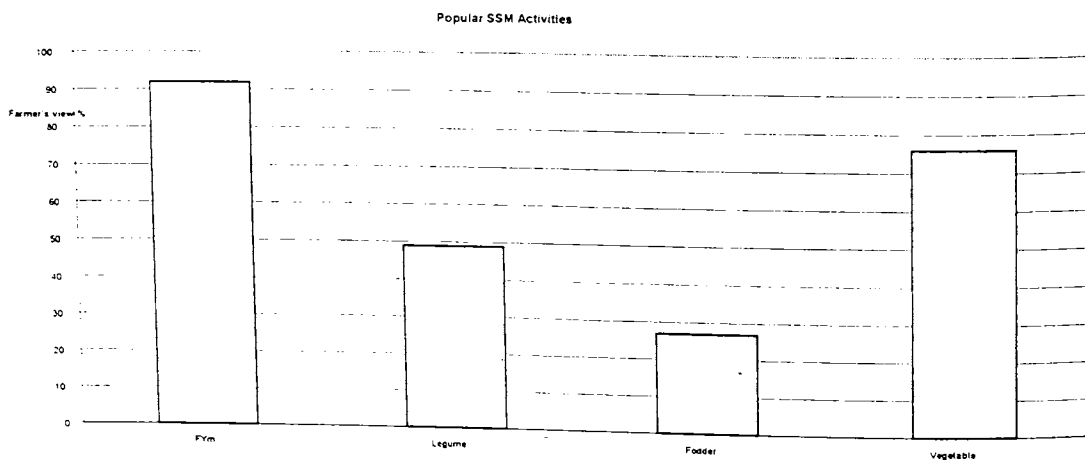
## Farmer's participation in SSM Activities (cases from Nasika and Batase of Kavre)

Four technologies from SSM approach such as FYM/Compost management, intercropping with legume, Fodder/Forage and vegetable production were studied in the area. Although farmers involvement in these activities were quite encouraging i.e. 89% in vegetable production, 81% in FYM management, 73% in legume intercropping and 43% in fodder production.(Table 4) Among those FYM/Compost management and vegetable production seem to be more effective in improving the soil condition and vegetable production. Maximum HH were found to involve in vegetable production but still they have giving more popularity to FYM/compost management.

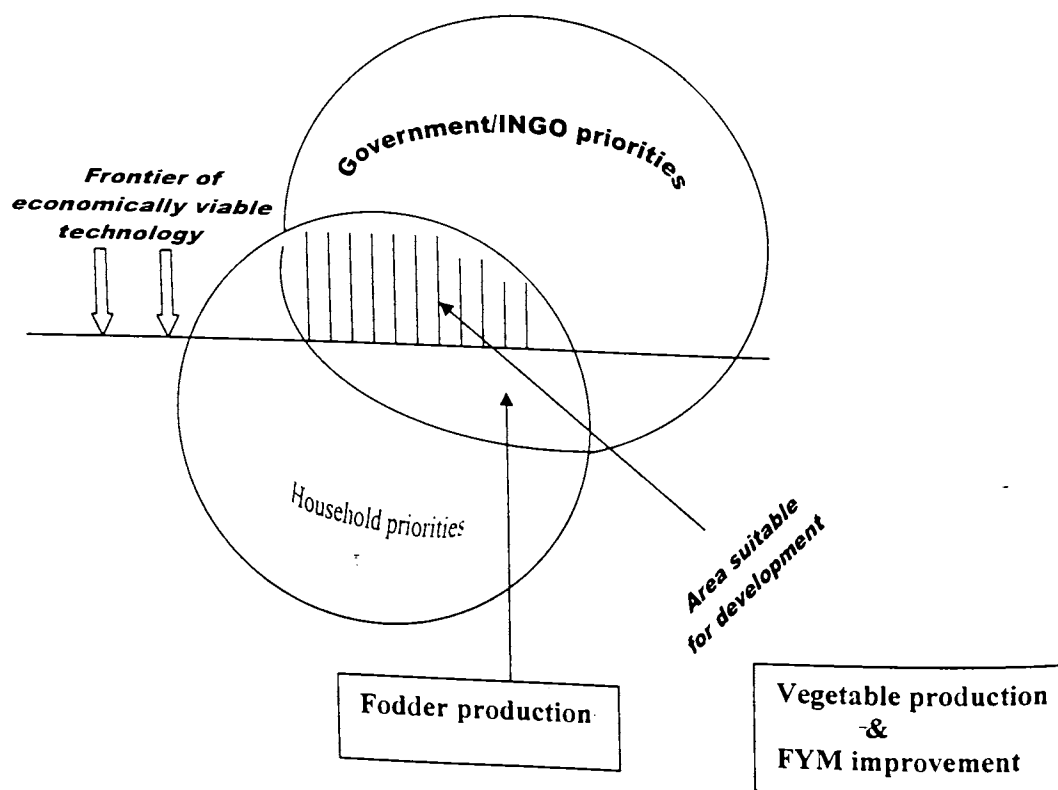
## Farmers involved in SSM activities

VDC	HH	SSM Activities			
		FYM	Legume	Fodder	Vegetable
Batase	21	20	19	12	19
Sanga	16	10	8	4	14
Total	37	30 (81)	27 (73)	16 (43)	33 (89)

## Popular SSM activities



## Technology Adoptive Factors



## **Factors influencing SSM practices**

Farmer's participation in sustainable soil management itself is a vague, interrelated phenomenon among various factors (variables) existing in the community, which influenced SSM practices, is experienced and discussed as:

- **Biophysical factors**
  - Land holding
  - Cropping diversity
- **Institutional factors**
  - Cultural organization
  - Managerial capacity of farmers for SSMP
  - Co-ordination of other stakeholders
- **Attitudinal factors**
  - Perception of environment
  - Attitude towards SSM
  - Knowledge and skill on SSM
- **Socio-economic factors**
  - Diversity of ethnicity
  - Role of women/men
  - Economic status of family

## **Challenges**

- Lack of agricultural workers in rural areas.
- Agriculture considered less prestigious profession, thus soil management is always in shadow.
- Farmer's interest is mainly on the technology of immediate fruit, less on long term SSM.
- Policentricity approach of SSM, often create problem with resource distribution.
- Slow technology dissemination process, limited of successful cases.
- Risk of duplication of work.

## **Opportunities**

- SSM program is recognized by agriculture development policy from couple of 5 years plan, but progress in this aspect is slow.
- Participatory approach.
- Pluralism in the delivery of services.
- Synergy among partnering members establishes the grounds for a sustainable sharing of knowledge and resources.
- Capacity building of local resource person and shifting accountability of service providers towards community.

## **Recommendation**

### **Recommendation for institutionalization of approach**

- Farmer Field School approach has proven effective in the area that has brought certain changed in soil management and vegetable production. Considering the soil management aspect it is high time to scale up the programme in wider areas in the district

### **Recommendation for SSM practices**

- The training on the specific SSM technologies should be more practical on specific topics and additional training has been recommended for maximum number of farmers with seriousness of the use of the technologies.
- In fodder production there is need of fodder species that give less shade to the main crops and the trees should be terrace side of the land.



## **SUMMARY OF ACTIVITIES OF SSMP IN 2005**

**B. D. Regmi, N. P. Rajbhandari C. L. Paudel, B. K. Dhital and N. Hada,**

### **Introduction**

This summary report describes Sustainable Soil Management Programme (SSMP) - supported activities implemented by the Collaborating Institutions (CI), the Directorate of Soil Management (DoSM) under the Department of Agriculture, and the Programme Management Unit (PMU)/SSM-P during 2005. The implementation of this Work Plan was done under an increasingly difficult conflict situation in most districts. CI and farmers showed a high degree of flexibility and dedication to adjust to the situation and to do additional efforts to keep the activities going. Local organizations had least problems to continue their activities as long as they remained strictly independent and dedicated to the need of the local people. National organizations had difficulties to maintain their field offices and field staff in the conflict areas. Some of them had to withdraw their technical staff into headquarters or neighboring districts. Activities of social mobilization and larger group meetings were difficult in conflict areas.

**The specific goals for the year 2005/2006 may be summarized as follows:**

1. Result- and impact oriented activities will be given high priority.
2. In close collaboration with CIs, additional efforts will be made to generate some quantitative information on the performance of SSM technologies and their impact.
3. Parbat will be explored for the gradual handing-over of project activities to NARDF or other suitable actors in some SSM experienced districts
4. Conflict sensitive programme management (CSPM) and security response guidelines while working in and around the conflict context.
5. Work in close collaboration and with synergy among the helvetas and SDC or/ supported projects

### **Assessment of progress in 2005 against the goals for 2005/06:**

- Additional emphasis is being given to the identification of successful SSM technologies for their wider dissemination so as to achieve tangible short-term impact e.g. Vegetable production with SSM.
- Simplified formats for the monitoring of outcomes of group activities were developed and distributed to all CIs. The recorded results are compiled at CI-level and at district-level so as to feed into district-level planning processes and to facilitate the identification of popular and effective SSM technologies.
- The management of the competitive grant system in Parbat started to be handed-over to NARDF from 2005 onwards as a pilot basis.

## Activities and Achievements up to Dec 2005

- *Working Area*

SSMP supports activities in 12 mid hill districts i.e. Kavre, Sindhupalchowk, Dhading, Syangja, Myagdi, Baglung, Surkhet, Dadeldhura, Doti, Baitadi, Dolakha, and Okhaldhunga.

- *Collaborating Institutions (CI)*

A total of 73 CIs implemented projects in 12 mid hill districts. Of these, 22 were GOs, 6 CBOs, 41 local NGOs, and 4 national NGOs.

- *Support Areas (SA)*

Of the 293 Activity Proposals, 16 fell under SA 1 (on-farm research), 55 under SA 2 (Leader Farmer formation and Farmer-led experimentation), 141 under SA 3 (diffusion), 60 under SA 4 (human resource development, staff training), and 21 under SA 5 (networking).

- *CI Pilot Projects*

In 12 districts, a total of 208 VDCs were covered; 2,293 Leader Farmers (54% women) were trained and supported by CI staff and 25,243 Group Farmers (52% women) were trained and supported by Leader Farmers. A total of 714 farmer-led experiments and 2,420 field demonstrations were carried out. 122 CI staff (25% women) were trained on SSM and 45 CI staff (35% women) were trained on methodological aspects (gender, PPME, FLE, diffusion).

- *Farmer-to-Farmer diffusion (FtF)*

The FtF programme was implemented in 9 districts. So far, 140 additional farmers were trained to become Experienced Leader Farmers (ELF) thereby increasing the total number of ELF to 56 (45% women). They provided services to Demand Farmer Groups thereby reaching 12,350 Demand Farmers (63% women).

- *Farmer Field Schools (FFS)*

32 FFS on Integrated Plant Nutrient Systems were implemented, reaching some 641 farmers.

- *Ultra-poor Activities*

The number of CI implementing ultra-poor activities is 21 in 9 districts and the number of beneficiary households increased to 542.

**Table 1. Progress achieved with regard to area of intervention and participating farmers in projects implemented by CI up to Dec 2005**

Area / Participants	Planned for 2005 / 06	Progress achieved 2005
No. of Districts with CI-pilot projects	12	12
No. of Districts with IPNS learning sites	12	12
No. of VDCs with CI-pilot projects	302	208
No. of directly participating Leader Farmers (HH)	2293	2293
Women as LF (%)	> 51%	53%
No. of indirectly participating Group Farmers (HH)	28,000 (>55% women)	25,243 (54% women)
No. of farmers supported through FTF-diffusion	12850 (>50% women)	12530 (63% women)

**Table 2. Number of projects covering major SSM topic and sub-topic areas in 2005**

Topic Area - Sub-topic area	Projects' main topic/sub-topic areas	
	Projects	Main activities 2005
<b>Organic matter management</b> <i>Total</i>	<b>134</b>	- Adoption of urine management practices for improved manure management and as liquid fertilizer is spreading.
- Manure management	57	
- Tillage systems	0	
- Organic crop production systems	18	
- Biomass and compost management	23	- 36 IPNS Farmer Field Schools implemented
- Integrated Plant Nutrient Systems (IPNS)	36	
<b>Cropping systems for SSM</b> <i>Total</i>	<b>30</b>	- Integration of vegetable, ginger, legumes into annual or tree crop-systems; farmer-led experimentation as important approach
- Improved annual crop systems	28	
- Improved tree crop systems	2	
<b>Fodder promotion, stall feeding, nutrient recycling</b> <i>Total</i>	<b>86</b>	- Linkage of fodder production with common land management to be strengthened
- Fodder tree promotion	30	
- Forage grasses promotion	31	- Improved cattle sheds essential for urine collection, however cemented floor too expensive
- Improved cattle sheds	25	
<b>Legume integration</b> <i>Total</i>	<b>71</b>	- Four-season bean and pea adoption as food and cash crop
- Food legumes (pea, lentil, bean, soybean...)	47	- Fodder legumes with limited success so far
- Fodder legumes (stylo, ...)		
- Soil improving legumes, no food/fodder value	24	- No success on green manure legumes
<b>Minor high value crops contributing to SSM</b> <i>Total</i>	<b>57</b>	- Tea cultivation improvement through FFS
- Coffee / tea	1	
- Ginger	30	- Ginger spreading quickly in several districts; seed ginger, local processing and marketing are becoming main challenges
- other (potato, cardamom, turmeric, etc.)	26	
<b>Complementary irrigation</b> <i>Total</i>	<b>16</b>	- Drip irrigation demonstration attracts interest by farmers but cost-benefit analysis needed, local adaptations of the technology essential
- Drip irrigation	9	
- Water harvesting	7	

Topic Area - <i>Sub-topic area</i>	Projects' main topic/sub-topic areas	
	Projects	Main activities 2005
<b><i>Vegetable cultivation with SSM Total</i></b>	<b>69</b>	- Short term benefits (income) associated with vegetable cultivation enhances adoption.
- Vegetable cultivation	49	- About 20 farmers' experiences with organic pest management practices documented
- Organic pest management	20	
<b><i>Fruit cultivation with SSM Total</i></b>	<b>15</b>	- Fruit cultivation improvement by legume intercropping, pruning, and micronutrient use
- Citrus cultivation	11	
- Other fruit crops	4	
<b><i>Others (wider dissemination, etc.) Total</i></b>	<b>3</b>	- Wall newsletter, video on SSM - Community newspaper (UKALI)

**Table 3. Progress in focal activities of the PMU in support of CI and the overall programme in 2005/06**

Topic	Focal activity	Progress in implementation in 2005
Technical training to CI-staff	<ul style="list-style-type: none"> <li>- Support for various technical trainings to CIs-staff</li> <li>- Support for development of field guides on different IPNS-domains (PMU-07-05)</li> <li>- Support for manual development on vegetable &amp; SSM (PMU-07-05)</li> <li>- Technical support through field visits by DoSM/RPs/ROs</li> <li>- Linkage to regional research stations (PMU-07-05)</li> </ul>	<ul style="list-style-type: none"> <li>- FLE manual was revised</li> <li>- Legume, FtF, Diffusion manuals were revised and reprinted</li> <li>- Development of IPNS field guides has been postponed to 2005/06 to allow for a revision of procedures as suggested by the MTR</li> <li>- Links with ARS Doti, RARS Lumle, RARS Nepalganj and HCRP Kavre have been strengthened</li> </ul>
Participatory Planning, Monitoring, Evaluation	<ul style="list-style-type: none"> <li>- Support for LRPs development (see PMU-09-02)</li> <li>- APRPM with LFs and PPME by groups through training support to CIs staff</li> </ul>	<ul style="list-style-type: none"> <li>- Support to 8 PPME LRPs continued</li> <li>- PPME promoted through training / workshop &amp; LRP support</li> <li>- 2 PPME trainings for CI staff held</li> <li>- Study on SSM adoption and impact on livelihood completed (SSMP Doc. 116)</li> </ul>
Wider	- Support Experienced Leader	- 625 DFGs (12521 HH) supported by

Topic	Focal activity	Progress in implementation in 2005
diffusion of SSM-practices	<ul style="list-style-type: none"> <li>Farmer (ELF) training (PMU-08-06)</li> <li>- Support to FTF district committee formation and functioning (PMU-08-06)</li> <li>- LRPs development for training of ELF</li> <li>- Synthesis of best practices of farmers in leaflets</li> <li>- Support to demand group identification for FTF</li> </ul>	<ul style="list-style-type: none"> <li>ELFs</li> <li>- 57 new ELFs (36 women) selected and trained in 9 districts</li> <li>- 9 FtF committees supported</li> <li>- LRPs received training and backstopping by National Resource Person</li> </ul>
Farmer-led experimentation	<ul style="list-style-type: none"> <li>- Support to local facilitators development (PMU-08-05)</li> <li>- Facilitate linkage to research stations</li> <li>- Support for summarizing documents on experiences (PMU-08-05)</li> </ul>	<ul style="list-style-type: none"> <li>- 40 facilitators from 20 CIs were trained</li> <li>- Links established with ARS Doti, RARS Nepalganj, RARS Lumle, and HCRP Kavre.</li> <li>- SSD, CDECF, and RDTA supported for documenting of FLE results and poster preparation</li> </ul>
Social and economic equity	<ul style="list-style-type: none"> <li>- Support to local promoters development</li> <li>- Support to CIs for specific gender equity actions in groups (see PMU-11-04, PMU-11-03)</li> <li>- Explore with CIs approaches and activities for improvement in the livelihood of poor through SSM (and beyond SSM) (see PMU-11-03)</li> <li>- Explore with CIs on opportunities for linkage with community forests</li> </ul>	<ul style="list-style-type: none"> <li>- 10 Gender LRPs identified and trained</li> <li>- District / regional teams were formed in Dolakha, Sindupalchowk, Surkhet, Baglung, and Parbat to monitor ultra-poor activities.</li> <li>- Many ultra-poor groups have been given access to community forest (0.25 ha to 78 ha) for their use. In Dolakha, the FUG provided in addition to land funds to purchase goats for 7 poor HH.</li> </ul>
Market linkage support	<ul style="list-style-type: none"> <li>- Piloting of improved vegetable marketing strategies provided to selected farmer groups</li> </ul>	<ul style="list-style-type: none"> <li>- Formation of farmer network in Kavre for vegetable marketing in Kalimati market</li> </ul>
Organic pest management	<ul style="list-style-type: none"> <li>- Support the group on exploration of opportunities in research and</li> </ul>	<ul style="list-style-type: none"> <li>- Effectiveness of botanical pesticides assessed in cauliflower and brinjal.</li> </ul>

Topic	Focal activity	Progress in implementation in 2005
	extension (see PMU-10-02) - Training to CIs staff in district level - Documentation in collaboration with other organizations	results available soon - Botanical pesticides promoted through discussions and trainings at local level - A training manual on pest & disease management, including OPM, in vegetable almost completed

• **Challenges:**

At present, the conflict constitutes the greatest challenge to successful programme implementation. A drastic increase in bandhs, strikes and blockades has seriously hampered the mobility of all involved and negatively affected the implementation and monitoring of programme activities. A considerable amount of time and energy is now being absorbed by monitoring the security situation in SSMP working areas and by the constant rescheduling of planned programme activities. Most importantly, the pressure on CIs to register with local insurgents continues to increase and needs to be resolved if the programme is to continue activities at the current level.

**Recommendations produced by the Mid-Term Review**

The Project Document envisaged the organization of a mid-term review of SSMP in 2005. However, due to the changed and increasingly complex implementation environment in Nepal and to provide sufficient time for the implementation of the resultant recommendations during the remaining time of the second phase until 2007, it was decided to bring the review forward to November 2004.

1. **Programme management.**

- Limit the geographical and thematic boundary.
- Improves its learning and knowledge management by creating a sound knowledge and management system and by gathering more qualitative and outcome-oriented information and results.
- Improve training for CI staff, providing more intense technical backstopping.

2. **Conflict-related recommendations.**

- Ensure the safety of the programme's operations.
- Reiterate the importance of the "Do No Harm" rule.
- Continue with the programme's poverty alleviation and gender equity orientation.

3. **Gender equity.**

- SSMP should make gender equity a central component of all SSM activities, rather than as a separate activity and continue to promote labour-saving devices: these are having a significant impact.

4. **Poverty alleviation and social equity.**

- SSMP should improve the orientation of its main SSM technologies and focus on including the disadvantaged castes and poorest farmers in all its activities.

5. **Technological issues.**

- Putting more emphasis on searching for indigenous innovations and on low input technologies.
- Implementing the thematic boundaries.

6. **The competitive grant system.**

- Increase the rates paid to CIs.
- Intensify the development of local resource persons capable of capacity building and technical backstopping.
- Encourage CIs to strengthen the capacity of the Leader Farmers to make them sustainable resource persons for their community.
- Continue to work with existing farmer groups, rather than investing substantially in institution building of new farmer groups.
- Implementing the pilot collaboration with NARDF as planned.
- Go ahead with the planned collaboration with APPSP in the next year. We believe that APPSP has excellent potential as a useful mechanism for the institutionalization of SSMP activities.
- Analyze the results of these collaborations in terms of commitment, funding and ideology and then decide the next steps.
- Do not force decisions on collaboration or integration until the future shape of the competitive grant landscape in Nepal becomes clearer.

7. **Farmer to farmer approach.**

- Develop and adapt the FtF approach further in view of its future institutionalization as a tool in the country's formal extension system. In doing so, we strongly discourage the increase of financial support to FtF clients but instead encourage tapping local funding sources.
- Clarify the rate of attrition for trained ELF's, and explore the different reasons for non-active ELF's in order to get a better understanding of the system.
- Further develop the skills and expertise of motivated ELF's.
- Adjust the rates for ELF services to at least the level of skilled labourers.
- Allow DFGs to apply for ELF services for more than just for one season and distribute the promised certificates quickly.

8. **Second generation issues.**

- Continue efforts for developing more profitable marketing (e.g. with training, coaching, exposure to markets, building linkages and studies) in ways that are well adapted to local circumstances.



- Support collaborators in building linkages and setting up information mechanisms which result in sustainable access to quality seed and other inputs. We strongly advise the programme against seed production activities of its own.
- Analyze which broad spectrum organic pesticides should be used in what conditions and advise the CIs accordingly.
- Discontinue the financial support to supplementary irrigation schemes and support supplementary irrigation only through technical support and demonstrations of low-cost solutions.

#### **Progress Report Presentation:**

In the first day technical session 18 CIs presented the progress report. Some CIs presented their individual progress report and some CIs presented the compiled progress report of the whole district SSM program as a Co-ordinating CI.

List of the Presentators of progress report in the first day technical session were as follows.

S.N.	Name	Organization	Presentation
1.	Mr. Bam Dev Paneru	RSTL, Dhangadhi	RSTL presentation
2.	Mr. Kiran Basnet	EDS, Surkhet	District compilation
3.	Mr. Bharat Mani Adhikari	RSTL, Khajura	RSTL presentation
4.	Mr. Govinda Prasad Sharma	SC, Syangja	District compilation
5.	Ms. Durga Karki	MILAN, Myagdi	District compilation
6.	Mr. Yam Kumar Shrestha	DADO, Baglung	District compilation
7.	Mr. Rohini Raj Ghimire	DADO, Myagdi	DADO, Presentation
8.	Mr. Tej Bahadur Subedi	RSTL, Pokhara	RSTL presentation
9.	Mr. Rajan Parajuli	AMCDCC, Kavre	District compilation
10.	Mr. Madhav Paudel	TASK, Sindhupalchok	District compilation
11.	Mr. Navaraj Neupane	CEEPARD, Dolakha	District compilation
12.	Mr. Krishna Bhandari	ECARDS, Dhading	District compilation
13.	Mr. Naresh Chandra Ghimire	DADO, Kavre	DADO, Presentation
14.	Mr. Ishwor Prasad Rijal	DADO, Dolakha	DADO, Presentation
15.	Mr. Mahendra Pd. Chaudhary	DADO, Sindhupalchok	DADO, Presentation
16.	Mr. Tank Bahadur Karki	RSTL, Hetauda	RSTL presentation
17.	Mr. Nunu Lal Uranw	RSTL, Jhumka	RSTL presentation
18.	Mr. Ram Ashis Yadav	STL, Surunga	STL presentation

Report presentation made by the above mentioned presentors are compiled here for the purpose of wider dissemination. Due to the reason of repeated presentations in case of some districts (Dolakha, Kavre, Sindhupalchok), their presentations are not mentioned here separately. Their presentation has been merged with the respective district's CCI's presentation.

## Compilation of the district progress report presentation:

1. Presentation from RSTL, Dhangadhi.  
Presenter: Mr. Bam Dev Paneru, RSTL, Dhangadhi.

Table 1. Information about promoted SSM practices and coverage.

SN	Activity	Venue	Participating CIs	Participating Farmers	Male	Female
1	Soil Testing and Educational Campaign	Dehimandu	RDSC-3, AYC-4, DSCO-4, WDO-4, SADA-4	19	10	9
		Silgadhi	EDC-6, SSD-6, SBSK-6	18	8	10
		Silgadhi	EDC-7, SSD-6, DSCO-6	19	6	13
2	Demonstration of improved FYM	Gholtada-2 Samajji-3		5	2	3
3	Capacity build up training to CI Staffs on soil management and kit box handling	Dhangadi (Baitadi, Doti)		14	13	1
4	IPNS -FFS (monitoring)	Baitadi (Takulya, Sankarpur, Silitto)		32	10	22
5	Soil testing and educational campaign (monitoring)	Doti, Baitadi		72	18	54
6	Participation on Review & Planning workshop	Doti, Baitadi		2	2	0

**Table 2. Program implication and lesson learnt.**

SN	Activity	Results	Problems	Identified Solution	Lesson Learnt
1	Soil Testing and Educational Campaign	-105 Soil samples analyzed for pH,N,P,K. -56 farmers trained on soil management	-Low in nutrient status. -Time is limited	Use manure and fertilizer as per recommendation	Balance use of manure & fertilizer.
2	Demonstration of improved FYM	Completion of 5 cattle shed improvement	Less budget	Beneficial to crops	Urine can be used as nutrient & pesticide.
3	Capacity build up training to CI staffs on soil management and kit box handling	Increase in knowledge of CI staffs in soil mgt & kit box handling	Less budget Time is limited	Budget increment from PMU	Effective program
4	Monitoring of IPNS-FFS	Balance use of fertilizer	Time is limited	Better use of local organic materials	First priority to organic sources & remaining through chemicals
5	Soil Testing and Education Campaign (Monitoring)	Helped to improve weakness on the field	Low availability of OM for composting & letter	Increase Biomass	Organic manure improved the soil
6	Participation on Review & Planning workshop	Increase in knowledge & skill	No timely informed	Correction of weakness for better planning	Helpful to planning and correction of weakness.

**Table 3. Soil Testing and Educational Campaign program review**

SN	Date	Venue	Participant CIs	Participant			Total Sample	pH			Nitrogen			Phosphorous			Potassium		
				Total	M	F		Ac	N	Al	L	M	H	L	M	H	L	M	H
1	2062.9.25-26	Dehimandu	RDSC-3 AYC-4 DSCO-4 WDO-4 SADA-4	19	10	9	39	3	17	19	23	8	8	26	9	4	-	14	25
2	2062.11.8-9	Silgadhi	EDC-6 SSD-6 SBSK-6	18	8	10	32	5	11	16	10	12	10	3	8	21	4	6	22
3	2062.11.12-13	Silgadhi	EDC-7 SSD-6 DSCO-6	19	6	13	34	1	15	18	13	15	6	12	16	6	5	7	22
			Total	56	24	32	105	9	43	53	46	35	24	41	33	31	9	27	69

**2. Presentation from Surkhhet District.**  
**Presenter: Mr. Kiran Basnet, EDS, Surkhhet (CCI).**  
**Table:1. Promoted practices and coverage.**

S.N	CI Name	Working area	Promoted Practices	Total HH Covered	Leader Farmers	
					F	M
1.	EDS	Jarbuta, Ratu Garpan, Abalching, Birendranagar	FYM Improvement, Legume promotion, Vegetable farming, IPNS-FFS, OPM.	297	16	14
2.	DPMKS	Latikoili	FYM Improvement, Legume promotion, Vegetable farming, OPM, Poverty reduction program (Goat keeping, Pig keeping)	420	19	19
3	BNA	Bidhyapur, Tatopani, Salkot, Babiyachaur, Ghatgaun	FYM Improvement, Legume promotion, Vegetable farming, OPM, Poverty reduction program (Goat keeping, Pig keeping)	611	5	14
4.	WEEDS	Dasharathpur, Kalyan, Neta, Ramghat, Lekhpursha	FYM Improvement, Legume promotion, Vegetable farming, OPM, Poverty reduction program (Goat keeping, Pig keeping), IPNS-FFS	403	23	17
5.	JSS	Dharapani	Starting from this year			
6.	CEPREAD	Chhinchhu, Malarani, Mehalkuna, Maintada, Shahare	Starting from this year			
			Total	1731	63	64

**Table:2. Program implications and lesson learnt.**

S. N.	Promoted Practices	Results	Problems	Identified solutions	Learning
1.	FYM improvement	More than 70 % FYM improved. Knowledge and skill of farmer increased. Improved cattle-shed with proper use of urine. 26% decrease in chemical fertilizer consumption. 9% productivity increased.	Difficult to change the traditional belief of farmers. Difficult to manage the resource to improve cattle-shed as per the demand of farmers.	Training, Demonstration of improved cattle-shed, Inter group field visit etc.	Cattle-shed improvement is important for Urine utilization and for preparing organic pesticides.
2.	Legume promotion	Additional earning of Rs. 526924 from 226.8 Ropani land.	Problem of technical manpower	No change in the cropping system. New variety tested.	Some additional income to farmers + soil improvement.
3.	Vegetable farming.	Additional earning of NRs. 2853874. (Both from seasonal and off-season vegetable farming. 10-15% production increased	Less confidence of farmers over urine and organic pesticides.	-Farmer led experimentation (FLE) conducted. Suggested to apply systemic pesticides in the case of failure of organic pesticides.	-The price and the market facilities for organic vegetable should be different.
4.	IPNS-FFS	Knowledge and skill of farmer toward soil management increased. Production of rice increased by 22% and that of wheat increased by 32%	-Adverse climatic condition and lack of irrigation facilities.		-Effective for farmers to change their habit of using chemical fertilizers and chemical pesticides.
5.	Radio program	SSM technologies have been broadcasted to 23 districts. 917 farmers organized in 96 radio listeners club. Coordination with stakeholders.	Lack of fund to provide training and materials to the listeners club. Unstable policy of Radio Nepal.	Publication of the CI timely circulated to the clubs.	-Effective program for wider technology transfer with minimum input.
6.	Poverty alleviation program	Increased food security for three more months with the increased income from goat and pig keeping program.	-Consumed by themselves. -Increased workload to women.	Regular monitoring by farmers monitoring committee formed by themselves.	-Pig keeping is not so suitable for poor farmers.

**Table 3: Farmer to Farmer diffusion program.**

S.N.	Subject	No. of Experienced Leader Farmer (ELF)	No. of demand group		Total no. of farmers benefitted
			Demand group	Support group	
1.	Vegetable farming	34	137	110	2177
2.	Ginger farming	5	40	30	745
	Total	39	177	140	2922

**3. Presentation from RSTL, Khajura.**

**Presenter: Mr. Bharat Mani Adhikari, RSTL, Khajura.**

**Table 1. Information about promoted SSM practices and coverage.**

SN	CI Name	Working area	Promoted SSM practices	Total III covered	Leader farmers	
					Male	Female
1	RSTL, Khajura (Banke)	14 (VDC/Muni.)	<ul style="list-style-type: none"> <li>o Improved composting</li> <li>o Soil Management Techniques</li> <li>o Soil erosion and conservation</li> <li>o Method &amp; time of manure/fertilizer application</li> <li>o Importance and utilization of urine</li> </ul>	44	11	33
	Total			44	11	33

**Table 2. Program implication and lesson learnt.**

SN	Activity	Results	Problems	Identified Solution	Lesson Learnt
1	<ul style="list-style-type: none"> <li>o Improved composting</li> <li>o Soil Management Techniques</li> <li>o Soil erosion and conservation</li> <li>o Method &amp; time of manure/fertilizer application</li> <li>o Importance and utilization of urine</li> </ul>	-Farmers became aware about sustainable soil management practices	-Lack of composting materials -tedious process.	Use of high dose of Organic matter and optimum dose of chemical fertilizer.	Sustainable crop production through IPNS methods.



4. Presentation from Syangja District.  
Presenter: Mr. Govinda Prasad Sharma, SC, Syangja.  
Table: I. Promoted practices and coverage.

S.N	CI Name	Working area	Promoted Practices	Total HH Covered	Leader Farmers	
					F	M
1.	Suryodaya Club, Syangja (SC, Syangja)	Thuladihi, Pouwegoude, Putalibazar-1,2,3,4,5.	FYM improvement Sustainable vegetable farming Pig keeping for ultra poor	528	20	20
2.	DADO, Syangja	Bahakot, Rangbhang, Jagat Bhanjyang, Pougoude, Tulasi Bhanjyang, Nagephadke, Putalibazar-10,13.	FYM improvement Sustainable vegetable farming	391	20	25
3	ASK, Syangja	Bangsing, Bichari chautara	Fodder / forage promotion FYM improvement Sustainable vegetable farming Goat keeping for ultra poor	445	26	14
4.	CDRC, Syangja	Bhatkhola, Phedikhola, Setidovan, Aarukharka	Fodder / forage promotion FYM improvement Sustainable vegetable farming Poverty reduction program Networking and upscaling of ability of farmers group	604	26	24
5.	AACDC, Syangja	Chilaunebas, Rangbhang, Biruwa archale, Dahathum, Chhang Chhangdi, Putalibazar-8,9,10,11,12,13.	FYM improvement Sustainable vegetable farming Legume promotion	881	44	40
6.	NLRC, Rakpur (Syangja) (NARC)	Chilaunebas, Phaparhum, Srikrishnagandaki	Legume seed production Legume varietal trial	138	17	33
			Total	2987	153	157

**Table:2. Program implications and lesson learnt.**

S.N.	Program	Promoted practices	Results	Problems	Learning
1.	FYM improvement	<ul style="list-style-type: none"> <li>-Pit improvement.</li> <li>-Drainage management.</li> <li>-Urine collection and utilization</li> <li>-Timely incorporation of FYM in the field</li> </ul>	<ul style="list-style-type: none"> <li>-78% farmer adopted pit improvement &amp; protection from sun.</li> <li>-84% farmer adopted FYM improvement by drain management.</li> <li>-91% farmer adopted Urine collection and utilization</li> <li>-91% farmer adopted the timely incorporation of FYM in the field.</li> <li>-Crop production increased by 15%.</li> <li>-Chemical fertilizer consumption decreased by 30%.</li> </ul>		<ul style="list-style-type: none"> <li>-Timely ripening of the crop in case of using improved FYM.</li> <li>-Leaves and stem of the crop remain green for longer period in the case of using improved FYM.</li> </ul>
2.	Sustainable soil management oriented commercial vegetable farming	<ul style="list-style-type: none"> <li>-Group formation</li> <li>-Off season vegetable farming</li> <li>-Nursery management support</li> <li>-FLE</li> </ul>	<ul style="list-style-type: none"> <li>-Increased annual income of NRs 4147100 by 2567 farmers from 595 ropani of land.</li> <li>-Off season tomato cultivation.</li> <li>-Farmers managing three collection centres.</li> </ul>	<ul style="list-style-type: none"> <li>-Difficulty to follow the existing crop calendar.</li> <li>-Lack of training support to farmers.</li> <li>-Delayed approval of program and budget.</li> </ul>	<ul style="list-style-type: none"> <li>-Organic pesticide (Bannara, Sisnu, Lasun, Piro khursani, Sayapatri) could control red ant.</li> <li>-Bee keeping program could be helpful.</li> </ul>
3.	Fodder / forage promotion	<ul style="list-style-type: none"> <li>-Group formation</li> <li>-Providing seed and sapling</li> <li>-Workshop and training</li> </ul>	<ul style="list-style-type: none"> <li>-34105 more fodder tree grown by 843 farmers.</li> <li>-167 ha more land covered with forage by 843 farmers.</li> <li>-5095 bhari of forage produced from last years planting.</li> </ul>	<ul style="list-style-type: none"> <li>-Seed purchased from outside the district were not germinated (Rye, Unyu, Newaro etc.)</li> </ul>	<ul style="list-style-type: none"> <li>-In the slope land, small pits filled with the rain flood will be best suitable for fodder sapling plantation</li> </ul>
4.	Legume promotion	<ul style="list-style-type: none"> <li>-Group formation</li> <li>-Meeting, workshop and training</li> <li>-FLE</li> </ul>	<ul style="list-style-type: none"> <li>-Rs. 75560/- income by 244 farmers from 42 ropani land (Simi, Bhatmas, Bodi, Kerau etc.)</li> <li>-420 kg seed of soyabean and 50 kg seed of cowpea produced.</li> </ul>		

5.	<b>Income for generation poor resource poor</b> <b>-Vegetable farming</b> <b>-Pig keeping</b> <b>-Goat keeping</b>	-Group formation -Meeting, workshop and training -Seed support  -Group formation -Meeting, workshop, training and pig support -Group formation -Meeting, workshop and training -Goat support	-47 kids (goat) distributed to 47 families. Additional income of 2349/ per family achieved. -27 piglets (pig) distributed to 27 families. Additional income of 4025/ per family achieved. -4000 to 6000 income per farm family through vegetable farming	-4 goats died.	-Insurance policy of animal is beneficial. -Activities which provide daily income will address the demand of poor.
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**Table 3: Farmer to Farmer diffusion program.**

S.N.	Subject	No. of Experienced Leader Farmer (ELF)	No. of demand group	Total no. of farmers benefited
1.	FYM improvement and soil fertility management	16	25	535
2.	SSM oriented Commercial vegetable farming	14	35	750
3.	Organic coffee production	4	3	64
4.	Citrus management	3	9	192
	Total	37	72	1541

Note: Among 1541 farmers (Male 482 and Female 1059) 460 were from Dalit and Janajati community.

### 5. Presentation from Baglung District.

Presenter: Mr. Yam Kumar Shrestha, DADO, Baglung.

Table:1. Promoted practices and coverage.

S.N	CI Name	Working area	Promoted Practices	Total IIII Covered	Leader Farmers	
					F	M
1.	DADO	Baglung Municipality -5,6	FYM Improvement, Cattle shed / Compost Management, Urine Collection, Legume & Cash Crop Promotion, Commercial Vegetable Farming	40'	2	2
		Hatiya -4,8	FYM Improvement, Cattle shed / Compost Management, Urine Collection, Legume & Cash Crop Promotion, Commercial Vegetable Farming	48	2	2
		Harichaur -9	FYM Improvement, Cattle shed / Compost Management, Urine Collection, Legume & Cash Crop Promotion, Commercial Vegetable Farming	55	2	2
		Narethanti -5	FYM Improvement, Cattle shed / Compost Management, Urine Collection, Legume & Cash Crop Promotion, Commercial Vegetable Farming	50	2	2
			Total	193	8	8

**Table:2. Program implications and lesson learnt.**

S.N.	Promoted Practices	Results	Problems	Identified Solutions	Lesson Learnt	Remarks
1.	Cattle shed improvement	<ul style="list-style-type: none"> <li>Utilization of urine</li> <li>Quality increase of FYM</li> </ul>	<ul style="list-style-type: none"> <li>Less budget in norms</li> </ul>	Budget should be sufficient.	A permanent cattle shed is better.	
2.	Urine collection in plastic drum and cemented tank.	<ul style="list-style-type: none"> <li>Utilization of urine</li> </ul>	<ul style="list-style-type: none"> <li>Difficult of cement availability</li> <li>Less budget in norms</li> </ul>	Provision of transport-ation budget	Plastic drum is better in remote areas	Need of improved shed in combined
3.	FYM/compost improvement by covering black plastic	<ul style="list-style-type: none"> <li>Quality compost and FYM</li> </ul>			It is very much effective and easily adopted	
4.	FYM heap/pit improvement by thatching.	<ul style="list-style-type: none"> <li>Quality increase of FYM</li> </ul>				
5.	Use of gitimal in certain composition	<ul style="list-style-type: none"> <li>Insect pest management</li> <li>Increase in production</li> </ul>	Plant ingredient composition and ratio with urine	Adaptive study on locally available herbs	1kg of each Banamara, Asuro, Simali and ketuki with 5-10 liter urine has good result	
6.	Legume integration with cereal	<ul style="list-style-type: none"> <li>Soil nutrient status improvement</li> </ul>				
7	Tomato in plastic house	<ul style="list-style-type: none"> <li>Efficient use of FYM</li> <li>Income generation</li> </ul>	Root nematode attack	<ul style="list-style-type: none"> <li>Hot water treatment of soil</li> <li>Marigold planting in alternate rows</li> </ul>		
8.	Commercial Legume vegetable farming	<ul style="list-style-type: none"> <li>Soil nutrient improvement</li> <li>Income generation</li> </ul>	<ul style="list-style-type: none"> <li>Insect pest and disease</li> </ul>	Regular spray of urine (Gitimal)	Market facility should be considered	
9.	IPNS	<ul style="list-style-type: none"> <li>Awareness of SSM practices among farmers</li> </ul>	Trained manpower	Regular training to technician		

**6. Presentation from RSTL, Pokhara.**

**Presenter: Mr. Tej Bahadur Subedi, RSTL, Pokhara.**

**Table 1. Information about promoted SSM practices and coverage.**

<b>S.No.</b>	<b>Activity</b>	<b>Venue</b>	<b>Participating farmers</b>	<b>Remarks</b>
1	Soil Testing and Education Campaign (Organized by RSTL and supported by local CI)	Syangja (Galyang, Putali Bazar)	50	Supported by CDRC and DADO
		Baglung (Baglung, Harichour)	47	Supported by DADO
		Myagdi (Beni)	25	Supported by DADO & Milan
2	Support for soil testing campaign (Organized by DADO)	Tanahun (Damauli)	25	Supported by DADO
		Palpa (Arya Bhanjyang)	25	Supported by DADO
		Syangja – 4		
		Myagdi – 3		
3	IPNS-FFS	Baglung –1		
		Tanahun -1 (Jamune- 9 Bakhre)	25	
		Kaski – 1 (Bhalam –9, Bhalam)	28	

S.No.	Activity	Venue	Participating farmers	Remarks
4	Demonstration for Cow shed improvement	Tanahun -3 (Jamune-2, Damauli-1)	3	
		Kaski -3 (Bhaham-2, Nirmal Pokhari-1)	3	
		Palpa -4 (Chirtungdhara)	4	
5	Back up support to local CI for IPNS-FFS and Soil & FYM analysis. (Soil Testing, Nutrient Balance)	Syangja (SC, DADO, CDRC)		
		Baglung (CYC, CEDEPC, DADO, DIRDC)		
		Myagdi (DADO, DSCO, MILAN)		
6	Study for Quality FYM production using Saliniral	Baglung (Ratamata)		Supported by SSB
7	Capacity builds up training to CI staffs	Myagdi, baglung, Syangja, Palpa & Kaski		

**Table:2. Program implications.**

S. N.	Activity	Results	Problems	Identified solutions	Lesson learnt
1	Soil Testing and Education Campaign (Organized by RSTL and supported by local CI)	<ul style="list-style-type: none"> <li>•381 soil samples analyzed for pH and NPK</li> <li>•172 farmers trained on different aspect of soil and nutrient management.</li> </ul>	<ul style="list-style-type: none"> <li>•Only leader farmers get opportunity.</li> </ul>	Local CI should organize similar training at local level	CI Staffs should be encouraged to utilize their skill for handling of soil kit box analyzing soil and provide soil management training to group farmers
2	Support for soil testing campaign (Organized by DADO)	<ul style="list-style-type: none"> <li>•381 soil samples analyzed for pH and NPK through 9 soil testing campaign.</li> <li>•Farmers had opportunity to see how soil is tested.</li> </ul>	No time for interaction with farmers.	Service Centre level training on soil management can be organized together with soil campaign	Effective to create awareness among group farmers for soil testing and nutrient management.
3	IPNS-FFS	<ul style="list-style-type: none"> <li>•Season long FFS make farmers understand overall crop management along with the soil and nutrient management.</li> <li>•People/ Women empowerment.</li> </ul>	Irregular attendance of participants.	<ul style="list-style-type: none"> <li>•improve Group mobilization skill of facilitator</li> <li>Let participants feel it is their programme</li> </ul>	Can be a successful tool not only for Nutrient balance and crop management but also for social empowerment.
4	Demonstration for Cow shed improvement	Completion of 10 cowshed Neighbouring farmers have started	Sometime more demand than RSTL can support.	Convince the farmer that it is only a demonstration	Urine collection is highly appreciated
5	Back up support to local CI	Helpful for nutrient balance and design of IPNS-FFS.	Less demand from CIs	Self initiative for coordination and technical support	CIs still feel monitoring means finding weakness
6	Study for Quality FYM production using Sallipiral.	Sallipiral produces acidity during decomposition			<ul style="list-style-type: none"> <li>• Farmers practice of using Sallipiral as bedding hastens decomposition.</li> </ul>
7	Capacity build up training on soil management and kit box handling	Increase in knowledge of CI staff on Soil Management.	Little or no effort for use of kit box and testing soil.	Encourage the participants /trainees to use soil test kit box.	Back up support from RSTL is needed to use kit box.



7. Presentation from Kavre District.  
 Presenter: Mr. Naresh Chandra Ghimire, DADO, Kavre.  
 Mr. Rajan Parajuli, AMCDCC, Kavre.  
 Table:1. Promoted practices and coverage.

S.N	CI Name	VDCs	Promoted Practices	Total HH Covered	Leader Farmers	
					F	M
1.	DADO	Khanalthok, Mathurapati, Paachkhal	FYM / Compost Improvement Vegetable Cultivation IPNS/FFS	140	11	2
2.	WACN	Ugrachandi Nala, Ugratara Janagal, Tukucha Nala	FYM / Compost Improvement Vegetable Cultivation Fodder/Forage promotion Organic pest management	198	16	16
3	AMCDCC	Chandeni, Jaisithok	FYM / Compost Improvement Vegetable Cultivation Agro-forestry management Legume promotion	426	30	10
4.	SSD, NARC	Anaikot, Paachkhal, Ilkse	Crop productivity research	153	4	7

**Table 2: Program implications.**

S.N.	Program	Promoted practices	Results	Problem	Identified solutions
1.	FYM Improvement	-Heap method -Urine utilization -Use of leguminous materials -Prevention from drying	-Well decomposed within 30-35 days. -Compost ready within 40-45 days -60 % FYM improved	-Plastic cover	-Cover with mud, rugs or litters
2.	IPNS/FFS	-Farmer group decision -Crop calendar implemented -Soil testing done -IPNS calculator implemented	-70% compost/FYM improved -20-25% soil fertility increased -Crop production increased by 25-30%	-Unavailability of improved seeds	-Co-ordination between NARC and Different Farm Centres.
3.	Vegetable promotion	-Pocket area strategy -Off-season vegetable farming	-Pocket area expanded by 20-30% -650 farm families increased 25 % of their earnings	-Unavailability of improved seeds in some areas	-Co-ordination with line agencies
4.	Agro-forestry and forage/fodder management	-Pocket area strategy -Forage seed distribution -Fodder sapling distribution -Sample collection and analysis	-Soil fertility improved with low external input -Increased cattle and FYM production	-Unavailability of sufficient forage seeds for all interested members.	-Co-ordination with line agencies
5.	Soil sample analysis	-Area selection and crop cutting	-Soil fertility status identified		
6.	Crop cutting	-Area selection and crop cutting	- Productivity estimated	-Guideline	
7.	Pocket area training	-Group training -Different subject	-Knowledge increased		

**Table 3: Farmer to Farmer Agriculture Extension Program.**

S.N.	Subject	No. of Experienced Leader Farmer (ELF)	No. of demand group	Total no. of farmers benefited
1.	FYM / Compost Improvement	54	130	3375
2.	OPM			
3.	Vegetable farming			
4.	Legume promotion			
5.	Citrus promotion			

**8. Presentation from Sindhupalchok District.**  
**Presenter: Mr. Mahendra Prasad Chaudhary, DADO, Sindhupalchok.**  
**Mr. Madhav Poudel, TASK, Sindhupalchok.**

**Table 1: Promoted practices and coverage.**

S.N	CI Name	VDCs	Promoted Practices	Total IIIH Covered	Leader Farmers	
					F	M
1.	TASK	12	FYM/ Compost management, IPNS-FFS, Seed production, Vegetable farming, Poverty reduction, Legume promotion	1286	61	84
2.	CDECF	6	FYM/ Compost management, IPNS-FFS, Vegetable farming, Poverty reduction	1003	96	16
3	PSSS	2	FYM/ Compost management, IPNS-FFS, Vegetable farming, Poverty reduction, Cash crop promotion	312	24	6
4.	MUSK	2	FYM/ Compost management, Vegetable farming	500	40	0
5.	DADO	5	FYM/ Compost management, IPNS-FFS, Vegetable farming	261	15	16
6.	DSCO	3	FYM/ Compost management, Vegetable farming	400	5	14
7.	NAF/DCPA	3	Coffee-FFS	90	35	35
8.	FTF	26	FYM/ Compost management, Vegetable farming, Organic Pest	3023	23	23

**Table 2: Farmer to Farmer agriculture extension program.**

S.N.	CI's name	Subject	No. of Experienced Leader Farmer (ELF)	No. of demand group	Total no. of farmers benefited
1.	TASK	Vegetable, FYM/Compost Compost management	13	39	
2.	CDECF	Vegetable, FYM/Compost Compost	12	39	

		management			
3.	PSSS	Vegetable, management	FYM/Compost	Compost	4
4.	DADO	Vegetable, management	FYM/Compost	Compost	13
5.	MUSK	Vegetable, management	FYM/Compost	Compost	2
6.	DSCO	Vegetable, management	FYM/Compost	Compost	2
<b>Total</b>					46
					129
					2023

### 9. Presentation from Dolakha District.

Presenter: Mr. Ishwor Prasad Rijal, DADO, Dolakha  
Mr. Navaraj Neupane, CEEPARD, Dolakha.

Table: I. Promoted practices and coverage.

S.N	CI Name	Working area	Promoted Practices	Total HH Covered	Leader Farmers	
					F	M
1.	DADO	Bhimeshwar, Boach	FYM/ Compost improvement, Vegetable production (Cauli, cabbage)	237	9	7
2.	DISCO	Boach, Lakuridada, Magapauwa, UNIP	Pasture / Fodder promotion	164	10	10
3	CEEPARD	Sunkhai, Bhimeshwar	Fodder promotion, Legume integration, Goat raising promotion for ultra poor, FYM promotion, Vegetable promotion	507	24	20
4.	ECARDS	Namdu, Chhetrapa	Goat distribution, Vegetable production, Fodder / pasture promotion, FYM improvement	433	10	10
5.	RDTA	Pawati, Phasku, Bhedpu, Jiri, Lamidada, Jhyakur	Shed improvement, Broom grass, Napier promotion, Maize varieties trial, Goat distribution	1128	42	57
<b>Total</b>				2469	95	104

Table:2. Program implications.					
Promoted practices		Results	Problem	Identified solutions	Lesson learnt
S.					
N.					
A. Commercial Vegetable promotion program					
1.	Demonstration Activities	<ul style="list-style-type: none"><li>○ Farmers encouraged to grow peas on separate field</li><li>○ Majoring prepared practically</li><li>○ Farmers happy to exhibit their products.</li></ul>	<ul style="list-style-type: none"><li>○ Lack of training materials</li><li>○ Difficult to motivate few members</li></ul>	<ul style="list-style-type: none"><li>○ Supply of training materials centrally</li><li>○ Complete practical training</li></ul>	<ul style="list-style-type: none"><li>○ Farmer's attitude, behaviour &amp; skills changed if program is need based.</li><li>○ Encouraged in market led production</li><li>○ Farmers happy to exhibit their products.</li></ul>
	1.1 Production demonstration (cauli+peas)				
	1.2 Micronutrient demonstration				
	1.3 Production demonstration (cauli)				
	1.4 Potato production demonstration (ROSITA Tuber)				
	1.5 Farmers group training				
	1.6 Agri. fair exhibition				
B. Compost and vermi-compost promotion program					
1.	Demonstration Activities	<ul style="list-style-type: none"><li>○ Farmers motivated for preservation of urine for preparing compost</li><li>○ Farmers became aware about the plant nutrients in urine</li><li>○ Improved quality compost and soil.</li></ul>	<ul style="list-style-type: none"><li>○ Tedious to prepare compost</li><li>○ Difficult to motivate few farmers</li></ul>	<ul style="list-style-type: none"><li>○ Supply of training materials centrally</li><li>○ Complete practical training</li></ul>	<ul style="list-style-type: none"><li>○ Farmers to be need based</li><li>○ Commercial farmers are appropriate.</li><li>○ Improved shed minimizes disease and pests.</li></ul>
	1.1 Urea Vs urine				
	1.2 Vermi-compost Vs Improved FYM				
	1.3 Vermi-compost demonstration				
	1.4 Application of EM				
	1.5 Improved compost Vs indigenous compost				
	1.6 Cattle shed improvement program				
C. Potato and maize promotion program					
1.	Potato production through TPS	<ul style="list-style-type: none"><li>○ Farmers familiarized with TPS and organic pesticides</li></ul>	<ul style="list-style-type: none"><li>○ Lack of teaching materials</li><li>○ Costly</li></ul>	<ul style="list-style-type: none"><li>○ Supply of training materials centrally</li><li>○ To be cost effective</li></ul>	<ul style="list-style-type: none"><li>○ Minimized environment pollution &amp; preserved useful insects in the soil</li></ul>
2.	Farmers Group training				
D. Training program					
1.	Soil ecology module training	<ul style="list-style-type: none"><li>○ Manpower trained</li></ul>			
2.	IPNS training				

Table 3: Farmer to Farmer Agriculture Extension Program.

S.N.	Subject	No. of Experienced Leader Farmer (ELF)	No. of demand group	Total no. of farmers benefited
1.	Cowshed improvement, Compost management, Vegetable production (Cauli, cabbage, garlic, onion, potato)	19	117	1023 (M) 1816 (F)

# 10. Presentation from Dhading District.

Presenter: Mr. Krishna Bhandari, ECARDS, Dhading.

Table:1. Promoted practices and coverage.

S.N	CI Name	VDCs	Promoted Practices	Total IIII Covered	Leader Farmers	
					F	M
1.	FOCUS, Nepal	Salang , Nalang	Cattle shed Improvement	23	12	11
			Legume promotion for poor farmers	50	3	3
			FLE and demonstration on improved FYM Vs traditional	20	12	11
			FLE and demonstration on legumes	20	12	11
			Adoption of FYM improvement measures	164	12	11
2.	CIRDS	Khalte , Sunaulaba zar	SSM oriented vegetable production	73	12	11
			Legume promotion	295	12	11
			Cattle shed Improvement	23	12	11
			Legume promotion for poor farmers	50	3	3
			FLE and demonstration on improved FYM Vs traditional	20	12	11
3	WAC	Dhola , Maidi and Khari	FLE and demonstration on legumes	20	12	11
			Adoption of FYM improvement measures	164	12	11
			SSM oriented vegetable production	73	12	11
			Legume promotion	295	12	11
			Cattle shed Improvement	9	32	-
4.	Prayas, Nepal	Nilakanth , Sankosh	FLE on ginger (Traditional Vs improved practices)	10	32	-
			FLE on groundnut (Traditional Vs improved practices)	10	32	-
			Adoption of FYM improvement measures	299	32	-
			SSM oriented vegetable production	406	32	-
			Legume promotion	406	32	-
			Cattle shed Improvement	35	12	11
			Ginger promotion	60	12	11
			Adoption of FYM improvement measures	103	12	11
			SSM oriented vegetable production	17	12	11
			Legume promotion	183	12	11

5.	HDRMAN	Chainpur , Jyamrung	Cattle shed Improvement Legume promotion for poor farmers Drum distribution for urine collection Adoption of FYM improvement measures	30 281 24 281	12 12 12 12
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**Table:2. Program Implications.**

S.N.	Program	Results	Problem	Identified solutions	Lesson learnt
1.	<b>FYM Improvement</b>	-Out of 1369 farmers, 980 improving FYM -21.36% FYM improved	-Difficult to convince FYM to protect from rainfall and sun exposure.	-Demonstration by the leader farmer will be effective	-Exposure visit of the demonstration area will be convincing
2.	<b>Cattle shed improvement</b>	127 (120 target) cattle shed improved	-Difficult to manage Rs. 3000/- -Difficult in transportation of ingredients individually -Crop production increased by 25-30%	-In some cases, group farmers manage Rs 3000/- themselves	-Will be effective if Rs 3000/- manage by GI's themselves. -Materials transportation should be managed by CIs.
3.	<b>Legume promotion</b>	-Cow pea, Gheu simi and Pea (Arkel) introduced -Cutting legumes at harvest (not uprooting) -109.5 ropami area expanded	-	-	-Farmers realized better soil structure if they cut legumes at the time of harvesting.
4.	<b>SSM oriented vegetable production</b>	-Farmers cultivating vegetable and replacing traditional cereals and reducing chemicals.	-Lack of knowledge regarding OPM and use of urine in vegetable.	-CIs staffs were backstopped in networking meeting by SSMP and ECARDS regarding OPM	-Will be effective if more orientation to CIs staff and farmers regarding OPM
5.	<b>FLE</b>	1. Farmers became able to produce sett 2. Farmers liked Arkel than Sikkim local 3. More production and better taste of TD bean than Four season bean	-CIs staff realized difficulties regarding FLE process  - Lack of technical knowledge  - Lack of technical knowledge	Backstopped during monthly technical meeting Regular technical backstopping Regular technical backstopping	Will be effective if oriented by SSMP regarding FLE  Farmers can select suitable technology with comparison

**11. Presentation from RSTL, Hetauda.**  
**Presenter: Mr. Tank Bahadur Karki, RSTL, Hetauda.**  
**Table:1. Promoted practices and coverage.**

S.N	Promoted activities	SSM	VDCs	Total HH Covered	Leader Farmers		Remarks
					F	M	
1.	Soil testing & educational campaign		Gajuri & Naubise (Dhading) Bhakundebesi (Kavre) Bhimeshwor (Dolakha)	100	70	30	
2.	FYM Demonstration		Belkot (Nuwakot), Basamadi (Makawanpur)	5	4	1	
3	IPNS/FFS		Basamadi (Makawanpur)	25	12	13	
4.	Monitoring of activities	SSM	In the aforementioned areas	130	86	44	

**Table:2. Program implications and lesson learnt.**

S.N.	Program	Results	Problem	Identified solutions	Lesson learnt
1.	Soil testing & educational campaign	-Build up soil testing capacity of CI staffs and I.F.s. -Use of manures and fertilizers based on recommendation	-Low level of literacy is making difficult to understand. -Unavailability of Agri. lime.	-Participants with uniform level of literacy	-Participants with uniform level of literacy should be selected
2.	FYM Demonstration	- Quality improvement of FYM	-Farmers deny to turn over the FYM	-Semi-pit method covering with black plastic.	-In upland hip covering with black plastic is good
3.	IPNS/FFS	-Awareness in balance use of manures and fertilizers	-Need more follow up -Unbalanced use of plant nutrients -Difficulty for farmers to understand IPNS calculations	Integrated use of organic and inorganic fertilizers	General farmers have less understanding and are less aware of IPNS
4.	Monitoring of SSM activities	-Increased efficiency of the implemented program	-Difficulty to reach in each and every field..	-Interviewing to the field staff/ farmers.	-Monitoring is the measuring rod of the program.



## 12. Presentation from RSTL, Jhumka.

Presenter: Mr. Nunu Lal Uranw, RSTL, Jhumka.

**Table: 1. Information about CIs, Promoted SSM practices and coverage in the district.**

S.N.	CI Name	Working area (VDC/Mini.)	Promoted SSM practice	Total HH covered	Leader Farmers	
					F	M
1	RSTL Jhumka	Dhankuta, Vedetar - 7,	Soil Testing Educational Campaign	25	25	-
2	RSTL Jhumka	" "	FYM/Cattle Shed mgmt.	5	3	2
3	RSTL Jhumka	" "	IPNS- FFS	25	25	-
Total				55	53	2

**Table: 2. Program implications and lesson learnt.**

S.N.	Promoted practices	Results	Problems	Identified solutions	Lesson learnt	Remarks
1	Soil Testing Educational Campaign	Skilled Manpower development	-	-	- Knew status of soil fertility. - Able to handle soil kit.	
2	FYM/Urine mgmt.	Increased quality FYM	-	-	- Utilization of Urine. - Control of insects.	
3	IPNS- FFS	-Farmers are willing to use local resources and minimize chemical fertilizer.	IPNS Calculator	Understood able Calculator	- Minimize of fertilizer dose. - Maintenance of soil fertility	

### 13. Presentation from STL, Surunga.

Presenter: Mr. Nunu Lal Uranw, STL, Surunga.

**Table: 1. Information about CIs, Promoted SSM practices and coverage in the district.**

S.N.	CI Name	Working area (VDC/Mini.)	Promoted SSM practice	Total III covered	Leader Farmers	
					F	M
1	STL Surunga	Panchakanya-4 & Phikkal -5 (Ilam)	Demonstration of FYM Improvement	10	2	8
2	STL Surunga	Gorkhe (Ilam)	Soil Testing Educational Campaign	25	4	21
<b>Total</b>				<b>35</b>	<b>6</b>	<b>29</b>

**Table: 2. Program implications and lesson learnt.**

S.N.	Promoted practices	Results <sup>II</sup>	Problems	Identified solutions	Lesson learnt	Remarks
1	Demonstration of FYM Improvement through urine utilization effectively	Use of Urine and improved FYM by the farmers in their field	Lack of stall feeding system	-Fodder management program necessary -Awareness about animal grazing	Preservation and utilization of urine	
2	Soil Testing and Educational Campaign	Skilled Manpower development	Lack of knowledge about indigenous botanicals	Identification, collection and utilization of indigenous botanicals	Soil management and use of chemical fertilizers should be done on the basis of soil test results	

## Compilation of Group report presentation

### Group 1 (DADO representatives):

#### Group member:

Ishwor P. Rijal	SADO, Dolakha
Mahendra Chaudhary	SADO, Sindhupalchok
Rohini Raj Ghimire	AEO, Myagdi
Nareesh C. Ghimire	AEO, Kavre
Kashi Raj Hamal	AEO, Dhading
Biplab Adhikari	AEO, Syangja
Yam K. Shrestha	PPO, Baglung

<i>SSM activities:</i> - <i>What was adopted?</i>	<i>Important activities, which stimulated adoption by farmers:</i> - <i>What stimulated adoption?</i>	<i>Recommendations for wider diffusion of the success:</i> - <i>What is needed for wider diffusion?</i>
<ul style="list-style-type: none"> <li>-Use of balanced fertilizer after soil testing (as per recommendation)</li> <li>-Variety selection (Opportunity)</li> <li>-Cattle shed/ compost/ FYM improvement</li> <li>-Urine collection and use.</li> <li>-Bio-mass utilization</li> <li>-Vermi-compost/ EM / Giti mal</li> <li>-Legume integration</li> </ul>	<ul style="list-style-type: none"> <li>-Increase in production (Increased income)</li> <li>-Off season production (increased income)</li> <li>-Use of local resources</li> <li>-Ease of cultural operation</li> <li>-Soil improvement (Physical, biological properties)</li> <li>-Soil amendment and balanced nutrient supply</li> <li>-Environment friendly</li> <li>Identification of nutritional and pesticidal value of the locally available plants.</li> </ul>	<ul style="list-style-type: none"> <li>-Training and visit</li> <li>-Availability of varieties.</li> <li>-Amendments in NORMS</li> <li>-Awareness</li> <li>-Monitoring</li> <li>-Availability / Training</li> </ul>
<i>Difficulties and deficiencies in adoption:</i> - <i>What was not adopted?</i>	<i>Reasons for non-adoption:</i> - <i>Why it was not adopted?</i>	<i>Recommendations for improvement:</i> - <i>What can be done to stimulate adoption?</i>
<ul style="list-style-type: none"> <li>-Budget very less</li> <li>-Staff motivation neglected</li> <li>-Program focussed to the poor, Dalit.</li> <li>-Tidious and neglected nature of the job (Compost, FYM )</li> </ul>	<ul style="list-style-type: none"> <li>-Lacking need based selection</li> <li>-Conflict situation</li> </ul>	<ul style="list-style-type: none"> <li>-Norms to be revised.</li> <li>-Capacity builds up of staffs.</li> <li>-Continuous follow up</li> <li>-Timely approval of the program to meet the governmental planning</li> </ul>

***What are the important SSM activities possible to be launched in the future?***

- F to F extension
- IPNS-FFS
- Vermi-compost
- Cattle shed improvement
- Legume integration
- Bio-fertilizer promotion
- High value crop (Veg, Zinger etc)
- Small irrigation support
- Inter/ Intra district group visit.
- Participatory Study on locally available organic pesticides

**Group 2 (NGO representatives):**

**Group member:**

Kiran Basnet	EDS, Surkhet
Govinda Pd Sharma	SC, Syanja
Durga Karki	MILAN, Myagdi
Rajan Parajuli	AMCDCC, Sindupalchok
Madhav Paudel	TASK, Sindupalchok
Chandi Pd. Sharma	CYC, Baglung
Damodar Timalisina	RDTA, Dolkha
Navaraj Neupane	CEEPAARD, Dolkha
Krishna Bhandari	ECARDS, Dhading

<b><i>SSM activities:</i></b> - <i>What was adopted?</i>	<b><i>Important activities, which stimulated adoption by farmers:</i></b> - <i>What stimulated adoption?</i>	<b><i>Recommendations for wider diffusion of the success:</i></b> - <i>What is needed for wider diffusion?</i>
1. FYM / Compost	1.-Training /exposure visit. -Demonstration -Group competition -Posting/ Pumphleting -Radio program -Audio-visual	-Advanced training for staffs/ Leader farmers / Experienced leader farmers
2. Vegetable farming	2.-Market management. -Networking -Quality seed distribution -FLE	-Exposure visit to SSM success areas for farmers and staffs.
3. Legume promotion	3.-Short duration crop. -Market demanded cash crop -Soil structure improved	-More demonstrations.

4. IPNS-FFS 5. FLE  6. Fodder / Forage - promotion 7. Micro-irrigation 8. Poor support program   9. F to F diffusion	-Waste land use -Less fertilizer required -Hygienic crop(Protein source) 4.-Learning place. -More practical -More Participatory -Learning of soil fertility 6.-Easily available. -Multi-purpose use -Soil conservation 8.-Livelihood improved. -Access to other resources -Develop linkage with stake holders. -Network established -Empowerment 9.-Low cost. -Wider and effective diffusion -Ownership feeling -Practical oriented -Individual seed support	-Developing Modal SSM areas (Research oriented)  -Staff support for CIs -Monitoring  -Including SSM contents in Government curriculum
<b>Difficulties and deficiencies in adoption:</b> - What was not adopted?	<b>Reasons for non-adoption:</b> - Why it was not adopted?	<b>Recommendations for improvement:</b> - What can be done to stimulate adoption?
Farmers want Hybrid rather than improved variety	-Less production -Time consuming -Insects affected (Veg. / cereal less quality)	-Better to discourage hybrid seeds -Encourage improved seeds

*What are the important SSM activities possible to be launched in the future?*

- Shed improvement / FYM
- Commercial veg. production
- Organic Pest Management
- IPNS- FFS
- Legume promotion
- Fodder and Forage
- Market management (OPM)
- Soil campaign and soil testing.
- SSM literacy class.

### Group 3 (RSTL representatives):

#### Group member:

Bamdev Paneru RSTL, Dhangadhi  
 Bharat Mani Adhikari RSTL, Khajura  
 Tej Bahadur Subedi RSTL, Pokhara  
 Tank Bahadur Karki RSTL, Hetauda  
 Nunu Lal Uranw RSTL, Jhumka  
 Ram Ashish Yadav STL, Surunga

S.No.	SSM activities: - What was adopted?	Important activities, which stimulated adoption by farmers: - What stimulated adoption?	Recommendations for wider diffusion of the success: - What is needed for wider diffusion?
1	Soil Testing and education campaign.	Usual soil test campaign is a single day activity but this educational campaign is attached with group farmers training. Therefore farmers get chance to know the fertility status and the knowledge on soil management as well	<ul style="list-style-type: none"> <li>At present only leader farmers have got chance, but more soil test and Education campaign should be organized by local CIs</li> </ul>
2	Capacity building training of CI staffs	Knowledge on SSM was very important to CI staffs especially for those who have no agricultural background.	<ul style="list-style-type: none"> <li>Kit box handling and sol test service should reach to group farmers</li> <li>Refresher training for Kit box handling</li> </ul>
3	IPNS-FFS	<ul style="list-style-type: none"> <li>Season long training makes farmers understand overall crop management and nutrient balance.</li> <li>Integrated and balanced use of manure and fertilizer increase crop yield and soil fertility as well.</li> </ul>	<ul style="list-style-type: none"> <li>Simplification of IPNS calculator.</li> <li>Group dynamics and FFS approach should be given more emphasis.</li> <li>Follow up activity (F to F, FLE like Farmers and Science in IPM)</li> </ul>

4	Cow shed improvement programme	Urine collection Improvement in quality of FYM	<ul style="list-style-type: none"> <li>• Inclusion in regular programme of DOA</li> <li>• Prioritize in SMD activity</li> <li>• More fund from PMU/SSMP.</li> </ul>
5	Back up support to local CI	<ul style="list-style-type: none"> <li>• Technical support to local CI</li> <li>• Improvement in quality of activity/programme implemented by local CIs</li> </ul>	<ul style="list-style-type: none"> <li>• Consider RSTLs as regional resource centre for SSM activity.</li> <li>• Increased coordination between RSTL and CIs</li> <li>• Financial procedure should be improved</li> </ul>

**What are the important SSM activities possible to be launched in the future?**

- Increase biomass production. Agro forestry (Grass and fodder production).
- Green Manuring and composting of agricultural waste and forest litter.
- Stall feeding of cattle.
- Promotion of legume crop in rotation and cropping system.

**Participants in National Review and Planning Workshop at  
Hariharbhawan. (2006/6/8-9)**

S.N.	Name of Participant	Designation	Agency/Institution/Office
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5	Gynandra Paudel	Admin/Acc	DOA
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7	Neerajan P.Rajbhandari	Team Leader	SSMP(PMU)
8	Iswar Rijal	SN. ADO	DADO, Dolkha
9	Nunu Lal Uranw	Soil Scientist	RSTL, Sunsari
10	Tanka Bahadur Karki	Soil Scientist	RSTL, Hetauda
11	Tej Bahadur Subedi	Soil Scientist	RSTL, Pokhara
12	Bharat Mani Adrikari	Soil Scientist	RSTL, Nepalganj
13	Bam Dev Adrikari	Soil Scientist	RSTL, Dhangadi
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40	Indra Bdr. Oli	Soil Scientist	SMD
41	Bhim Sen Puri	JT	SMD
42	Sudhir Poudel	JT	SMD
43	Krishna Deo Mandal	JTA	SMD
44	Kalpana Karki	JTA	SMD
45	Shree Ram Acharya	Accountant	SMD
46	Yadav Silwal	Admin.	SMD
47	Bal Bahadur Thapa	Admin.	SMD

**THANK YOU**

## Summary of the Recommendation

Amendment of norms of some programs, building proper monitoring system and capacity build up training for the staffs are some of the recommendations for improvement raised by the DADO group. These recommendations can be addressed by the joint effort of SMD and SSMP with proper coordination of DADO of program districts.

Similarly, development of modal SSM areas, advanced training for staffs, exposure visit to SSM success areas for farmers and the need of staff support for CIS is some of the recommendations made by NGO group. These recommendations seem to be essential for the improved implementation of the SSM-program, and these recommendations can be addressed by the good effort of PMU-SSMP.

Inclusion of SSM-Program in the regular program of DOA and consideration of RSTL's as a regional resource centre of SSM-activity are two strong recommendations made by RSTL group. These two recommendations also seem to be essential for improvement of SSM-Program and could be addressed by the co-ordinated effort of SMD, DOA, RSTL and SSMP.

There is extreme difficulty during program planning of CIS of governmental organizations due to the late approval of the program through SSMP procedure. Hence approval of the programs of CIS (GOs) earlier to meet the governmental planning process is utmost necessary. Similarly, establishment of secretariat office of SSM-Program at SMD to co-ordinate the planning, implementation and monitoring of SSM-Program, with necessary logistic and office maintenance support from SSMP is also felt necessary for the improvement of the Co-ordination between SMD and SSMP. Being secretariat of the program SMD should be a member in the technical committee.

