

Building Social Capital in Women Farmer Groups through Contribution of Integrated Pest Management Farmer's Field School Program in Kavre District, Nepal



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ACRONYMS

AESA	Agro Eco System Analysis
AREP	Agricultural Research and Extension Project
CATC	Central Agricultural Training Center
CBS	Central Bureau of Statistics
CEAMP	Community Environmental Awareness & Management Project
CIPM	Community Integrated Pest Management
CTEVT	Council of Technical Education and Vocational Training
DADO	District Agriculture Development Office
DC	District Committee
DCO	District Cooperative Office
DFID	Department of Foreign International Development
DOA	Department of Agriculture
FAO	Food and Agriculture Organization
FFS	Farmers Field School
FG	Farmers Groups
GDP	Gross Domestic Product
HH	House Hold
IDM	Integrated Disease Management
INGO	International Non Governmental Organization
IPM	Integrated Pest management
IPNS	Integrated Plant Nutrient System
JT	Junior Technician
JTA	Junior Technical Assistance
MOA	Ministry of Agriculture
MOD	Management of Development
NGO	Non Governmental Organization
PESTEC	Political Economic Social Technological Environmental Cultural
PPD	Plant Protection Directorate
SIGAL	Social Inclusion Gender and Livelihood
SMS	Subject Matter Specialist
SNIP	Support to National IPM Program
TITAN	Trained IPM Trainers Association Nepal
TOT	Training of Trainers
UNDP	United Nations Development Program
VDC	Village Development Committee
WDO	Women Development Office

ABSTRACT

This research is about Social Capital building through Integrated Pest Management Farmers Field School intervention in farm community of Kavre district Nepal. Social capital in this view refers to the opportunity to mobilize social relations and networks for personal and group's benefits and support. The failure of IPM/FFS for social capital building in women groups is considered a major research problem. This issue is picked up for study because national agriculture policy focuses on women in relation to agriculture development, which, as professed in the policy commitment due to women's role in agriculture. Established as an important extension tool, it is important to analyze FFS contribution for building social entities in farm community. A total six IPM and Non IPM, mixed and women farmers' groups were invited for group discussion. Total twelve group members, including six group leaders and five IPM trainers were also interviewed for this study.

In Kavre, 62.8 % farmer groups formed by District Agriculture Development Office are claimed to be active, but there are many unreliable and inconsistent figures attributed for present such erroneous presentation of groups' records. Group leaders both men and women are enjoying more benefits (input support, exposure, visit, and training) than the members by making personal linkage with trainers and officials up to district level. 57% women are participated in community level groups but women number is considerably decrease in higher levels exposure. Very few only (3-12%) women are getting opportunity in national and regional level training, IPM, other farmer trainers and entrepreneurship etc.

IPM program in total, trained 138 officers, 76 junior technicians and 617 farmers as an IPM trainers. 41,871 farmers have been graduated from FFS program in Nepal to date 2007. It has led to improve the skills and capabilities of individual IPM graduates in farm decision and in community affairs as well. On the other hand IPM farmer trainers have found the job opportunities in NGOs and their skill is well recognized. Significant contribution of FFS for human capital building is one of the beauties of FFS approach in Kavre. As far as institutionalization of FFS is concerned; many FFS groups have been collapse after FFS training stops. Only very few numbers of IPM / FFS have been conducted in established farmer groups in real practice. Rather IPM facilitators are forming a new FFS groups based upon their own interest, which is by following the "picked up the members" approach. It is one of the main reason that failure FFS groups organization in community.

Empowered farmers from FFS expected more services and contact. When it fails due to less follow up program and inconsistent service flow there has been problem of trust between groups and trainers, which helped to further defunct the FFS groups. IPM district committee (DC) as a farmer's organization failed to make representation of 98 % of its members. It changed in to forum of some elite farmer leaders/trainers, and mostly male dominated. DC missed the opportunity of institutionalization at the time when there was project support, fund and their voice heard by others (donors and service providers). IPM programs highlighted the establishment of such organization as an important achievement of their projects but it is wrong to assume automatic sustainability of such organizations (like DC) without any strong further support for sometime.

Though FFS has very less organized efforts, many positive changes can be seen in society in terms of social capital formation. Women participation is increasing in socio economic affairs such as forming saving organizations. This is more than among man. As a result of empowerment, women are managing all the financial and management issues of their cooperatives without help of men. Women started to seek service providers and became more aware on personal as well as community development issues after participating in FFS.

CHAPTER ONE- INTRODUCTION

Introduction

This study has been conducted as an end-thesis research for the Management of Development (MOD), specialization Social Inclusion Gender and Livelihood at Van Hall Larenstein University of Applied Sciences in Wageningen. The aim of this research is to provide insight into the questions, aims and concepts which will play a central role in the proposed study area and, next to this, inform the reader detailed on the intended research topic.

This research is based on Social Capital building through IPMFFS intervention in farm community through IPM/FFS intervention in Kavre district Nepal. Chapter one of this study includes the background of study area and other contents such as research problem, justification of study, objectives and research questions are also explained. Chapter two gives overviews of conceptual ideas for the study. Bonding, bridging and linkage build up are important areas. Chapter three is about research methodology. Sampling farmers groups and individuals, data collection techniques and data analysis tools are described in this topic. Chapter four is about the results and findings from the field work, observation and secondary information. Chapter five is about discussion, how FFS contribute for individuals empowerment but failed in social capital building is discussed in this chapter. The last chapter is about conclusion and recommendation of the study.

1.1 Introduction of Study Area

Kavre District

Kavre district is one of the mid hill districts of Nepal lying within the lesser Himalayan Mahabharat mountain range. It is about 30 km east from capital city, Kathmandu. The total population of Kavre districts is 385,672 and total number of household (hh) is 70,509 and average family size is 5.47 person /hh. The population growth rate is 1.73% (Central Bureau of Statistics, 2003). 64% population is solely dependent upon on agriculture. The average land holding size per house hold is 0.8 ha (District Agriculture Development Office, 2007).

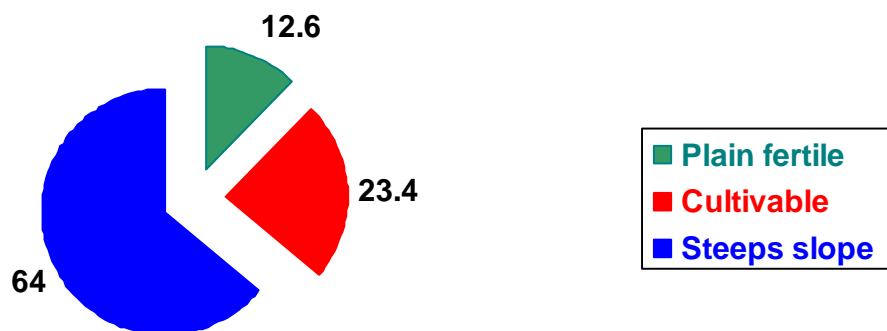


Fig: 1.1 Land Distributions in Kavre District

The total area of the district is 140,486 ha. Geographically 12.6% of land area comprises plain, fertile valleys; 23.4% cultivable but hilly terrain, and 64% land is steep slopes (see the map in Annex 4). The major crops grown in the district are maize, rice, potato, fresh vegetables and citrus. The farming system is integrated with livestock and crops. The nature of farming system is subsistence and semi commercial. Fresh vegetables, potato, citrus and milk are major cash earning commodities.

IPM in Nepal

Nepal is a Mountainous country situated between the Tibetan plateau in the north and Indian plains in the south, east and west. Total area of the country is 147,181 K.M². Administratively; it is divided in to 5 development regions, 14 Zones and 75 Districts. Its topographical features are stark verticality of the landscape that ranges from around 100 m above sea level to the high Himalayas. Basically, the country exhibits four major physiographic, climatic and ecological categories, very much dependent on the great contrast in elevation within a relatively short horizontal span.

- a. Himalayan range with tundra and arctic climate
- b. Hill region with a temperate climate
- C. Mid land zones and valleys with temperate to warm climate
- d. Terai region with a tropical climate.

It is predominantly agricultural country where 65.6% of the total population is engaged in agriculture on total area of cultivated land of around 1.4 million hectares. Agriculture contributes about 42% of the National GDP (CBS, 2003) Nepal has a diversified climate from tropical to temperate depending on the altitude, latitude and dominance of micro climate. Variation in Temperature and precipitation (high rain fall in eastern and low rain fall in western part of the country). Rice is main staple crop (accounting for about 50% of the total agricultural land area and production of the country). Because of variation in climate and rainfall, many kinds of vegetables, fruits, spices and cash crops are grown around the year for household consumption as well as for local market production.

Nepalese agriculture is gradually moving towards commercialization. In the quest for higher yield and profits, the 'progressive' farmers started to use various modern agricultural inputs and specially the pesticides in a rather indiscriminate manner. Some of them may have succeeded in achieving some short-term gains, but the majority is losing both financially and in terms of health because of the toxic food they are consuming. In addition, the indiscriminate and excessive use of pesticides has adversely affected on environment and on the whole ecosystem resulting in continuous degradation of biodiversity.

To combat the danger of other farmers copying those unsafe practices thus leading to an exacerbation of the problem, immediate measures were necessary to educate farmers of alternative choices and sustainable management practices. To address this issue, Integrated Pest Management based on agro ecological approach has been identified as an excellent alternative choice to combat the battle (Support to National IPM Project SNIP, 2007).

Both short term as well as long term agricultural development plans mention about plant protection strategy. Integrated Pest Management (IPM) has been established as a national plant protection strategy in the 10th Five Year Plan (2002-2007) and the Agricultural Perspective Plan (1995-2015) particularly emphasizes it as an appropriate strategy or

alternative to pesticide application to reduce pesticide use. The 9th Five-Year-Plan (1997-2001) had recognized IPM as a strategy for the development of sustainable agriculture.

From the project document of IPM program the vision and goal of the project are as follows:

Vision

IPM will be the main pillars of agriculture throughout the country for food security and livelihood of rural farmers.

Goals

- The ultimate goal of the National IPM Programme is to institutionalize IPM at the farmers' level. IPM trained farmers provide the foundation of sustainable agricultural sector. The core activities of "IPM by farmers" are planned and coordinated efforts by the National IPM Programme.
- Country wide IPM farmer training.
- Community IPM organizations
- Links between farmers' groups, research, rural development and educational organizations
- To empower farmers to increase production and productivity for food security, poverty alleviation and sustainable environmental protection this ultimately helps to make better of livelihood of Nepalese farmers. (IPM, Country Report, 2005).

IPM FFS in Kavre

The first Integrated Pest Management (IPM) Farmers Field School (FFS) was started in Kavre in 1998. There is no accurate record found of all IPM/FFS, the number is estimated more than 100 during 10 years. 24 VDCs are covered by the program out of 87 VDCs in Kavre. Out of 2650 farmers, 1536 (58%) of those graduated are women whereas men graduates number 1114 (42%). Rice, vegetables, coffee, potato is the crops on which IPM/FFS were conducted. In the year 2000, the IPM program organized Training of Trainers (TOT) training for farmer trainers. To date, 19 leader farmers have participated in the IPM TOT (DADO, 2007). These farmers' trainers are actively involved in conducting IPM/FFS in the district. Though there is not accurate compiled record found in the district, it is found from the discussion that more than 80 farmers' field schools have been conducted by farmers' trainers in the district. These trainers have key roles to expand IPM/FFS in community level.

1.2 Background of Study

Social capital is the "actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition. Social capital in this view refers to the opportunity to mobilize social relations and networks for personal benefits and support." (Bourdieu, 1997 cited by Westendorp and Biggs, 2000).

Farmer's field school is the farmers' field based program, where 20-25 farmers organized in a group and conduct regular weekly gathering in a particular crop field. They observe, discuss, plan and decide what, how and when to do their farm operation and crop

management. Farmers are the main owner, implementer and developer of IPM. Farmers determine their own needs and create solutions. They became active, independent and competent partners within agriculture development through IPM field schools (Westendorp and Biggs, 2000).

This research aims to explore the relation of farmers' field school intervention in the farmers' groups and the impacts upon the groups by building social capital. The main reason behind forming the farmer groups is to promote the "empowerment" of the farmers to act as a group. The groups build social capital as they learn together and develop as a group. The group members can support each other and make their group as an important social entity.

"In case of IPM/FFS groups after completing a full season of FFS training, farmers are encouraged to continue the empowerment processes started in the FFS. Institutionalization of FFSs has given rise to the establishment of FFS farmer groups that have continued to work together after the FFS has finished" (Westendorp and Biggs, 2000).

IPM and social capital in women farmer groups are chosen for this research because since last decade's women farmer groups are encouraged to participate in agriculture development. The Ninth five year plan of Nepal (1997-2000) emphasized that necessary programs would be implemented to increase agricultural productivity of women farmers. One of the major objectives of this plan was women's empowerment. "It had professed to involve women actively in different sectors of development for building egalitarian society" and to:

- i) Increase women participants in training program –up to one third.
- ii) Ensure women's access to production technology.

This provided the impetus to encourage the wide networking of women groups with development partners that they can establish their groups as an important social capital for their community.

"Feminization of agriculture practices" emphasizes the truth that the contribution of women has always been, but never recognized, in terms of their contribution to agriculture production. Women tend to work longer hours than men and their dependency is more as well in on farm business. In rice cultivation, women provide up to 90 % of the labor contribution (CATC, 2004). Rice is the major crop where more number of IPM/FFS has been conducted and more women have participated.

The tenth five years agricultural plan of Nepal (2002-2007) envisaged women's participation to rise to a level up to 60-65% in seed production, 60% in sericulture etc. Different programs have also targeted to increase women's access and control in resources, economic development and social empowerment. Likewise the national agriculture policy focuses on women in relation to agriculture development which, as professed in the policy commitment, states, "In all possible sector of agriculture program implementation there will be 50 % women participation. To make women access in training. Mobile training program will be conducted in the community. The data and statistics related to women would be made reliable (National agriculture policy, 2005)."

Farmers group (FG) approach has been an accepted extension approach of Department of Agriculture (DOA) since 1988/89 in Nepal. There are 15677 farmer groups that have been formed in the country. Out of them 3,555(23%) female, 3012 (19%) male and 9110(58%)

groups are mixed. A total of 297,705 farmers are involved in the groups out of which 166,764 (56%) male and 130,941(44%) female members. In Kavre district, total 261 farmers groups have been formed by the district agriculture offices. 10 men, 58 women and 193 mixed groups are existent. In these groups, 6618 members are involved. Out of them 3785 (57%) women and 2878(43%) men members are participating (Directorate of Extension, DOA, Nepal, 2007).

Since the last decade, IPM FFS has been taken as a most popular and powerful extension tool among Nepalese farm community for technology transfer and building up social networks .The first IPM farmer's field school was started in Kavre in the year 1998. Until the year 2007, 110 farmers' field schools have been conducted in different crops like rice, vegetable, coffee, potato etc in Kavre district alone. Development partners like government organizations, NGOs, Cooperatives, District government and local governments have been embracing IPMFFS in their program. Out of 87 VDCs in Kavre more than 24 are covered by the program. 2650 farmers have graduated from the farmer's field school. Out of them 1536 (58%) are women (DADO Kavre, 2006/2007).

1.3 Research Problem

IPM FFS has its priority to make farmers themselves empowered to make their own decisions (Yadav, 2005). Empowerment has both technical and social dimension. Different practices of crop management comprise its technical dimension, whereas support to strengthen farmer's group's institutionalization through the field school intervention comprises its social dimension. "The goal of this strategy is to institutionalize IPM at the local level. The three basic elements of Community IPM are learning, experimentation, and organizing, through organized groups and activities" (Fliert et al; 2002).

Organizations involved in IPM/FFS have claimed that, IPM/FFS is one of the successful approaches to build up social capital in farm communities. They led in many instances to local post-FFS self-development projects following the farmers' own interests. "Farmer alumni groups were formed in the villages the year after the conclusion of the schools, not only to continue experimenting on crop production methods but also to organize social activities for the benefit of other members of the community. The IPM/FFS sessions also became, in some cases, a space for women to express their views outside the house walls, and an opportunity for them to participate in large farmers' gatherings and in official meetings with policy makers " (Mancini,2006).

Though many efforts have been made to institutionalize IPM/FFS groups, there are also many evaluation reports indicating that IPMFFS has more technical impacts then social. "IPM program has catalyzed significant change in pest management; it should be given more attention to ensure further program in institutionalization of the program in different level (Sitaula et al; 2006)." IPM facilitators highlighted IPM as an eco-friendly technical tool for pest control rather than social. This perception led to IPM/FFS as a regular pest control program of their organizations rather than paid attention to building farmer groups and developed it as an opportunity for building social capital. Many farmers' groups in Kavre were formed but collapse due to weak program support before they became mature (Agriculture Research and Extension Project, 2001). Likewise the IPM/FFS groups are also being rendered inactive gradually and are not continuing to function well.

In Kavre, only 26 % farmer groups are found to be active (AREP,2001).It means there are 68 active farmers groups out of 261 formed by district agriculture development office. In the

list of active groups there are more than 20 commodity specific groups (e.g. mushroom, beekeeping, fruits farming etc) where IPM/FFS has not been conducted. At the end of year 2007, 50 farmer's field schools were conducted and the number of active farmer groups appears to be around 40 in the district. It is also doubtful if all 40 active groups were participated in FFS or not. These facts reveal that all FFS groups are not actively functioning after IPMFFS. All FFS groups are not succeeding to institutionalize and build social capital through IPMFFS intervention.

DADO annual progress report (2006, p.107.) accepts that large number of farmers groups are inactive in the district. The record of department of agriculture also shows that fifty six percent general farmers' groups are still passive and their passiveness is increasing in the country. Pretty et al; in the journal "Social Capital and Environment 2000" stated "Even among IPM graduates only 25-50 percent remains in the groups" This comparison shows the failure of IPMFFS groups is also common like the other ordinary farmers groups. All the records indicate that IPMFFS have failed to build up the social capital in women farmers groups in Kavre.

The failure of IPM/FFS for social capital formation in women groups is considered a major research problem. This research is intended to verify these problems through field research.

1.4 Justification

Nepalese agricultural policies and present extension system have focused over the IPM/FFS approach to bring about a positive change in rural farmers' livelihood. "Farmer field schools are regarded as the best extension technology by government, local authorities, and technicians as well as by farmers (Adhikari, 2000)." IPM FFS is for empower farmers to increase production and productivity efficiently while protecting environment, conserving biodiversity and avoiding health hazards for betterment of their livelihood ((Sitaula et al; 2006).

The tenth five years agricultural plan of Nepal (2002-2007) has considered IPM farmers' field school as a strategic program for environmental sustainability, food security and farmer's empowerment." To increase crop production IPM, Integrated disease management (IDM) and integrated plant nutrients management system (IPNS) programs would be merged as a single package and attempts will be made to institutionalize the approach". The other focus of tenth five year plan is prioritized to change the farmer groups into cooperatives to promote rural commercialization (UNDP, 2002).

These policy statements realize the importance of social capital strengthening in farmer groups, where IPMFFS is considered as a tool for molding them. In order to ensure sustainable agricultural development, there is need of strong farmers' organizations to support the government's role in agriculture extension service. For effective service delivery, the government always has problem of adequate staffing and money. Those groups, which are continuously backed up by season long FFS intervention could be developed as a social capital and could share services, inputs, technology and contribute for collective decision in many other social sphere.

Lots of money and many years have been spent on FFS to make it institutionalized through around 1400 farmers' field schools. The failure of the IPMFFS approach for building social capital in farmer groups is considered as a major research problem needing verification through field research.

1.5 Objective

To contribute to improve the IPM/ FFS approach in Nepal by analyzing the contribution of this program to buildup the women farmers' groups as a social capital in farm communities of Kavre District. This research helps to evaluate IPMFFS as an important extension strategy for empowering the farmers towards the institutionalization of farmers' groups in the agriculture system of Nepal.

1.6 Main Research Questions

- 1) To what extent do the IPM farmer's field schools contribute to buildup the social capital in women farmers' groups in Kavre?
- 2) To what extent does IPM FFS practiced in women groups contribute to individual benefits?

1.7 Research Sub Questions

1. How do IPM/ FFS make farmers' groups successful (in terms of recognitions, decision making, participation, leadership and promotion of saving organizations) as compared with non- IPM farmers' groups?
2. How do women and men IPM FFS groups perform differently for social capital building in farmers' groups in Kavre?
3. What are the diverse experiences of farmers' group members and leaders regarding the successful outcome of social capital from IPM/FFS?
4. How do IPM/FFS contribute to bonding, bridging and linking women's groups?
5. What are the other activities of women farmers' groups in society after they have enriched their capacity from IPM/FFS?
6. How do IPM trainers agree that there is contribution of IPM/FFS to social capital strengthen in women farmers groups?
- 7) How can IPM/FFS contribute to equal benefit for group's members from social capital building in women farmers' groups?

CHAPTER TWO – CONCEPTUAL FRAMEWORK

This chapter explains about conceptual framework for this study. Farmers groups, IPM farmers' field school approach, FFS contribution for social capital building, and different meaning of social capital for women and men are taken as the major concepts for study.

2.1 Farmer Groups

Farmers have been working in groups ever since farming started, varying from cooperation in harvesting and threshing, joint storage of produce and collaborative grazing and management of animals (Heemskerk and Wennin, 2004). Still in many villages of Nepal, the system of informal farmer groups exists in one or another form. These groups are more informal (without formal membership), natural and based on personal relations amongst themselves for cooperating mainly at the community level.

The development approach defines farmers' groups entirely different from the groups formed in natural setting. Farmers' groups for this study are farmers' organizations primarily involved in the production and marketing of the products. Ministry of agriculture Nepal considers farmers' group "as two or more farmers with sufficient common interest to work on one or more activities provided at least one of these activities falls within district Agricultural Development Office(DADO) mandate to provide assistance " (National Agriculture Policy,2005).

The ministry applies the farmers' group approach as a major extension approach in Nepal because "A group or collective action approach has proved to be an effective way of enhancing empowerment of farmers in the innovation system. Collective action may be aimed at different purposes and functions (generating, spreading, sharing, utilizing and applying knowledge and information) and different types of groups have developed in farmer-led research and extension " (Heemskerk and Wennin,2004).

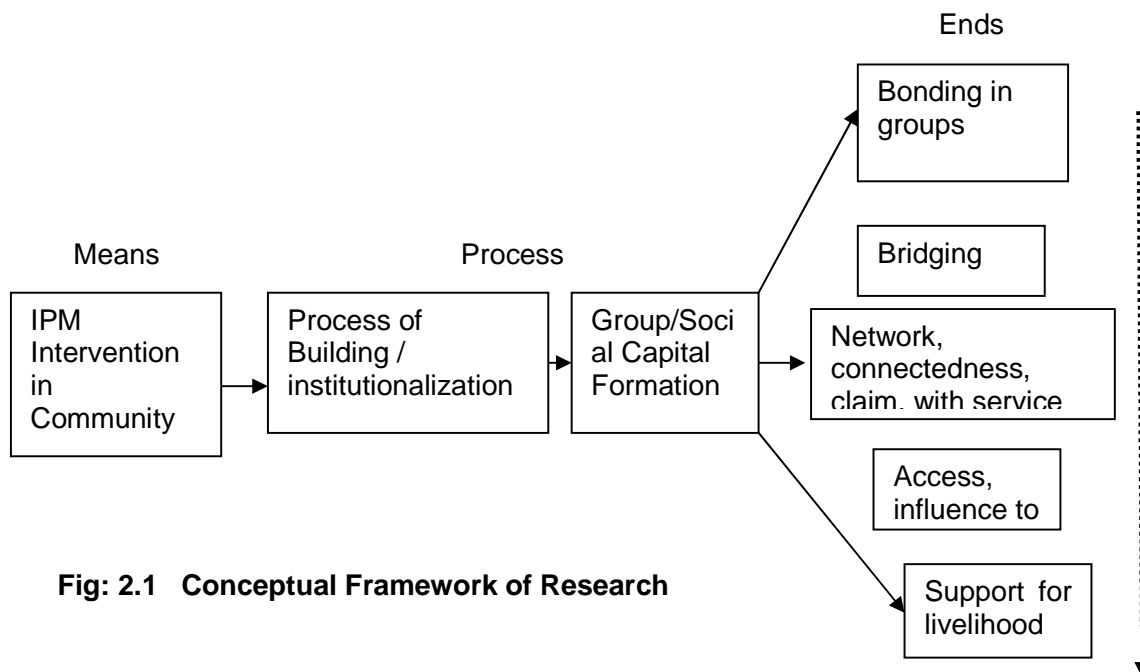


Fig: 2.1 Conceptual Framework of Research

“Group approach further promotes local participation in one hand and demands higher quality of extension services on the other hand. Effectively functioning groups can be recognized by a set of desirable characteristics such as recognition of common needs, decision making, active participation of members, effective leadership, regular meeting, promotion and use of internal resources and saving activities ” (Agriculture Research and Extension Project,2002).

Therefore groups require capacity development for the three dimensions of their social capital i.e. bonding, bridging and linking. This relation within the groups, among the groups and with all key stakeholders is basically for the equal access of all members in services and opportunities for a better livelihood. Different service providers such as DADO, line agencies, local government, NGO/INGOs, private organizations provide input (both knowledge based and materials based) for the institutionalization of farmers' groups. For example, Farmer Field Schools (FFS) focus on joint learning with agricultural research, extension and/or education organizations (Heemskerk and Wennink, 2004). Under the influence of outside forces such as (IPM/FFS) or knowledge and information development, farmers have organized as specific or as community groups. This finally helps the groups to built social capital in the community.

2.2 IPM Farmers Field School:

The farmers' field school was designed in the late 1980s by the Food and Agriculture Organization's (FAO) technical assistance team. Integrated Pest Management (IPM) programme, as a training approach for pest management in rice. The FFS has become the first step in a strategy known as Community IPM. To stimulate learning, enhance group coherence and encourage collective decision making and action, farmers are engaged in group dynamics exercises.

Typically, a field school session lasts for about four hours and depending on the growth duration of the crop under study; a field school might be made up of weekly one session and continue for 14-16 sessions .Community IPM, using a wide variety of activities including farmer experimentation, goes beyond pest management issues with the intention of sustainable enhancing the lives and communities of farmers.

FFS emphasizes experiential, discovery based learning. Opportunities for this type of learning are created through a series of field activities and experiments in the FFS curriculum in which farmers observe and prove to themselves, through hands-on activities, how ecological processes work. In this way, farmers generate knowledge, which helps them make better cultivation decisions.

Throughout a growing season, farmers meet regularly in a collective learning field where they manage an IPM plot, make informed decisions based on their thorough observation of the crop and its environment. IPM is a very ambitious goal requiring both qualitative change relating to farmers' capacities, practices, collective action and support systems. The goal of this strategy is to institutionalize IPM at the local level. The three basic elements of community IPM are learning, experimentation, organize groups and activities.

2.3 Social Capital

Social capital is the reciprocity within communities and between households based on trust deriving from social ties (Moser, 1998). Social capital is made up of both of networks of

inscriptive and elective relationship between individuals ,which may be vertical as in authority relationship ,or horizontal as in voluntary organizations and of the trust and expectations which flow within those networks (Ellis,2000).

It reflects the relationships of trust, reciprocity and exchange that facilitate co-operation, reduce transaction costs and may provide the basis for informal safety nets amongst the poor. Membership of groups and associations can extend people's access to and influence over other institutions .Likewise, trust is likely to develop amongst people who are connected through kinship relations or otherwise .Social capital is a product of these structures and processes, though this over simplifies the relationship. Structure and processes might themselves be the product of social capital; the relation goes two ways. Social capital, like other types of capital, can also be valued as a good in itself. It can make a particularly important contribution to people's sense of wellbeing through identity, honor and belonging (DFID, 1999).

“The commonly understood meaning of social capital is as the social cement generated by associational life and by citizens’ networks of trust and solidarity; social capital appears to have the potential to increase productivity, to provide support against poverty, to create stronger democracies, to help reconstruct war torn communities, and to enhance mental and physical well being. The current interest in social capital reflects a growing awareness that the realm of social life matters not only for individual well being but forms of co-operation to achieve common goals. Citizens can not only enhance their quality of life but also make policy initiatives more accountable and effective” (W.A.I.T.S, 2005).

"Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions. It is the glue that holds them together." (World Bank, 2003). There are many other definitions of social capitals but my research defines it as resources derived from social relations such as networks, bonding, bridging and linkage created by IPMFFS.” Specifically, the study aims to identify the effectiveness IPM/FFS for building social capital in FFS groups that facilitates farmer organized as an organizational member, combined effort and for better livelihood.

Harris said that the strong social capital starts from neighborhood. Weakening of respect and less recognition of neighbor makes community life complex. Even informal interactions at local level affect people s relationships positively and help to improve life of the community (Harris, 2006).

Social capital entails the development of networks and connectivity women farmers' groups with different service providers and local development partners. It develops ability to work together and expand their access to wider institutions. Steps of social capital formation bonding (within the groups, bridging (between the different groups in the community) and linking with other external service providers are the main conceptual area used in this research.

2.4 IPM Farmers' Field School Groups and Social Capital Formation

The reason for creating groups is to promote the “empowerment” of farmers to act as a group. After completing a full season of FFS training, farmers are encouraged to continue the empowerment processes started in the FFS. Institutionalization of FFS has given rise to

the establishment of FFS farmer groups that have continued to work together after the FFS has finished. The FFS gives farmers an introduction to experimenting, participatory training and non-formal education methods based on ecological principles. Once this foundation is laid, farmers typically move on to take initiatives, make decisions, experiment and communicate for the development of their community.

The move to "Community" in IPM emphasizes a strategy to institutionalize IPM at the community level. However, the IPM program has broader objectives, such as bringing about sustainable changes in the overall agricultural and natural resources innovation system. It seeks to change the way people think about crop management issues and the behavior of institutions in different parts of the agricultural and natural resources innovation system. Thus, this is not only about changing agricultural productivity and reducing producer and consumer health risks. This is about institutional linkages and social capital development. (Westendorp, and Biggs, 2000.)

2.5 Contribution

Three types of institutional agents exist in agricultural development. First, the public sector agents such as local governments, sectoral departments; second the private sector agents, such as NGOs, farmers' groups, farmer and trade organizations; and, third, community-based organizations with farmers groups (FGs), village development committees (VDCs), water user associations, community forestry groups, dairy cooperatives etc. These three kinds of groups provide the institutional framework at local level.

(i) Bonding Social Capital (Micro link)

It is the horizontal network between individual and household level within the groups. What is the ideal group size and how members unite for common goal? IPM/FFS contribution for achieving group objectives, membership size, leadership, group norms, mobilization and benefits taken by the groups members are taken in to consideration. This is the micro level relationship between the group members.

Criteria	Change before and after FFS (Indicators)
Bonding of the Groups	Group objectives, membership size, leadership, group norms, mobilization, benefits in groups

(ii) Bridging Social Capital (Meso link)

Meso-level link comprises both horizontal and vertical networks, forums, platforms among the groups and networks at the village /community level. What is necessary for FGs to link up at meso level into federations and networks and multi-tiered farmer organizations without losing the group level strengths? Can national farmers' organizations involved in innovation be truly linked to community-based social capital? How can relationship across groups be strengthened? Important issues at stake in relation to up-scaling are representation and upward and downward accountability in farmer organizations (Heemskerk and Wennin, 2004).

Criteria	Change before and after FFS (Indicators)
Bridging of the groups	Linking, Networking, Mutual help, Connecting with different organisations with other groups in community level,

iii) Linking Social Capital

Can farmer groups be truly empowered and become full partners in all phases of service receiving process? When do FGs get involved in other agricultural extension programs? How can these groups remain independent from public extension service, while being trained and supported by IMP program? How can the role of farmer organizations in the innovation system as well as scaling up be affected? (Heemskerk and Wennin.2004).

Criteria	Change before and after FFS (Indicators)
Building Social capital (Linkage)	Level of participation in development activities. Diversity of membership, Contacts with extension workers and other organizations, Collective action, own initiatives for a diversity of activities.

2.6 Social Capital from Gender Perspective

Social capital operates differently for men and women in society. The needs and roles of social capital between women farmers' groups and men are different. The value of Women's social capital should be such that women can make change for themselves, their communities and their families.

"Women play in creating and maintaining social life through their own networks and forms of solidarity. Yet across the world, women are active in a wide variety of voluntary and community work, whether for charities, religious works, kin groups, neighborhoods or clubs. Women frequently have the strongest local and kin ties; they network and engage in reciprocal supportive relations, and they are often among the most active supporters of community activities and participants in local forms of associational life. They are to be found more involved in health, education or neighborhood food and housing programmes, cultural associations, barter groups, child minding circles and safe houses for abused or marginalized women. These kinds of ties can be important in helping to overcome social exclusion, domestic violence and provide safe spaces for women."(W.A.I.T.S, 2005)

Men's networks are typically associated with the public world of work and politics, while women's networks and ties are typically closer to home.

Women's social capital generally:

- is based close to home, in the locality rather than in the public world of work;
- involves exchanges of time and skills rather than money;
- includes a significant proportion of voluntary and caring work and

Often involves affective or ethical issues, a degree of altruism, and frequently mobilizes sentiments associated with motherhood, can bridge across community divisions but is often 'bonding' rather than 'bridging' (W.A.I.T.S, 2005).

IPM/FFS might have triggered in some process of self-realization of the social boundaries on women that had restricted them for social exposure. Attending the schools might be an opportunity to gain recognition of their personal skills and abilities. Women might have more influence in their house hold decision, more access and control over household economic activities and recognition of her ideas inside the family and feel less subordinate position

prior to attending an IPMFFS. It might be because of her more involvement in social activities and leadership development after attending IPM FFS. Not only in household recognition but that of her role in the community is also equally important.

IPM/FFS and social capital might have made a significant contribution for men by providing knowledge of pesticides use, access to financial organization, approach to political power centers and government organization. Power, influence and access might be increased. According to DFID, empowerment can be understood in terms of individuals and groups securing greater influence over or satisfaction of one or more of the five capitals.

Comparison between men and women groups can give some differences regarding women's innovation and willingness to learn and use the opportunity more effectively in comparison to men. The comparative efficiency of social capital formation is another interesting area of this research. The non IPM farmer groups on the other hand are a kind of control groups to separate the net IPM/FFS intervention for group empowerment and initiation for social capital building.

This research concerns women's social capital that enables women to identify their different issues within groups in contrast with men. That issues might be small scale saving and credit, burrowing from each other, developing personal property, connectivity with other groups for improved seeds or goats and lobbying with service providers for kitchen gardening programs etc. The concepts of livelihood are important for this research because FFS trainings for establishing farmers' organizations and linking them to stakeholders contribute to changing the means for empowerment. Empowerment helps to make their own decisions and determine their actions to cope with stress and shock for better livelihood.

CHAPTER THREE-METHODOLOGY

This research has been conducted in Kavre District of Nepal as a case study. IPMFFS conducted under District Agriculture Offices Kavre and its impacts on women's' farmers groups for social capital formation is major focuses of this study. This district was selected because of my experience working in the neighbouring district of Kavre for four years .The two districts have similar geography, agricultural pattern, social and cultural practices . Another advantage is that Kavre is my home district. I am familiar with different agricultural programmes, farmers, and other service providers. I could get different manpower and logistic supports from family members, friends and different organisations to complete my research.

For secondary data collection, books, publications of Plant Protection Directorate, District Agriculture Office, Division Cooperative Office, Women Development Office, Publications of different NGOs, related leaflets, magazines and grey documents of farmers' groups have been used. The internet source is an extra advantage to look for some relevant materials.

For the primary data collection observation of the FFS group, focus groups discussion and semi structured interview were conducted with the groups, group's members and leaders. Some more interviews were conducted with IPM facilitators (farmer trainers) both from government and NGOs sector to know their perceptions on social capital formation and their contribution. This information is useful to triangulate the findings from different perspective.

3.1 Sampling Farmer Groups and Individuals

Farmers groups were purposively sampled from the accessible commercial cropping areas of the district because very few IPMFFS have been conducted in remote and non-commercial agricultural areas. Another reason for resorting to purposive sampling was the time limitation for the field work.

Farmers' groups were selected from 6 different villages where government and NGOs have been working. The 3 major categories of farmers' groups were selected for study as follows

- i. IPM/ FFS women farmers groups
- ii. IPM /FFS men leading mix groups
- iii. Non IPM women farmers groups

Table 3.1: Farmer groups and members selection for study

Groups selection	Women Farmer groups	Men/men lead mix Farmers groups	Total Groups	Individuals (1 leader and 1 member from each groups)	IPM facilitators and district IPM coordinator
IPM	2	2	4	8	5
Non IPM	2	0	2	4	-
Total	4	2	6	12	5

A total six farmers' groups were invited to participate for the focus group discussion. Two IPM/FFS women's groups and two men leading mix IPM/ FFS groups and two non IPM women's groups were taken as samples for the study. One active and one inactive group according to DADO's record were purposively selected in each category.

Women IPM/FFS groups are major target groups of this study and it is intended to find out about the building of social capital in women's groups. According to statistics, women (58%) are involved in IPM FFS in Kavre (DADO, 2007). Being in commercial vegetable growing areas, women are more involved than men in IPM FFS and other agricultural trainings in this district. Another reason for selecting women's groups for study is that this district is close to the capital city. So, men go out from village for non farm business.

The ideas behind this sampling are that members of particular groups survived external shocks better than others? Why do people seek to become members of certain groupings? Is it to make a positive contribution to their livelihoods, or to resist injustice or the adverse effects of power relationships? Do members of groups (e.g. pest management groups) perform better than those operating alone (DFID, 1999)? Two men leading mix groups were taken to compare the gender perspective of social capital and comparison with women groups. This comparison helps to find out the different needs and capacity of social capital of men and women in community. The different capacities of men and women groups to form social capital by the same program intervention are also another area of analysis.

The non IPM women farmers groups were taken far from the IPM villages because there might be possibilities of diffusion of the effect of IPM/ FFS. All together 12 individual (1 leader and 1 member in each groups) group members will be interviewed to find out the different understanding of leaders and members about realization and benefits of social capital formation. Participants were free to express themselves and no incentives were provided.

Besides group discussions, one leader and one member is picked up from each group for individual interviews to explore their individual ideas which might not came out from the group discussion. Total six leaders and six general farmers (group members) were interviewed. The individual interviews gave overview of different perception of leaders and members in social capital building and other daily practices of the farmers group. 5 IPM/FFS facilitators including district IPM coordinator of Kavre were also interviewed to verify the findings. These interviews helped to understand the IPM program implementation policies and their contribution as an IPM facilitator to build the social capital in FFS groups.

3.2 Data Analysis

Analysis of change after intervention (Rating of social capital before and after IPM /FFS). Involves both qualitative and quantitative analysis. Group quality has been considered as more important than numbers of members in the groups. The trend of the groups is another important checklist to determine whether they are becoming better or worse. Change in scope of the groups with respect in micro, meso relations and linkage with different service providers are the major focus of the research.

Farmers' organizational strengthening, membership, leadership, participatory activities, and organizational dynamics were also explored through key informants' (group's leaders and IPM facilitators) interviews and gathering of secondary data. The practice of farmers to

organized in FFS initiated organization was explored through interviews using a semi-structured questionnaire and meeting observations.

Mainly 'bonding' (within groups), 'bridging' (between groups) and 'linking' i.e. with agencies concerned with Agricultural extension, credits and many others in the base year and at the present situation were compared. Building human and financial resources, groups records etc were taken into consideration for analysis of the change of the groups as a social capital. The year just before conducting IPM/FFS has been considered as base year. Non IPM groups are other controls (bench marks) taken to judge the impacts of IPM/FFS intervention specifically.

3.3 Tools Used

To analyse the strengths and weaknesses of IPM/FFS approach, different qualitative logics has been used .It shows the positive and negative contribution of IPM/FFS in women farmers' group. PESTEC is frequently used to analyse political, economic, social, technological, and cultural influence of development approach in women farmers' groups. Harvard gender analytical tools were used to analysis women participation, access and control within the group's .Besides these tools, simple percentage, graphs, figures and comparative tables are the other tools use for data analysis and interpretation of the findings.

My personal experience of working with the farmers' groups for ten years as an agriculture extension worker has also been utilised. My knowledge and experience gained through training at Larenstein University has been one of the important resources for this research. Personal discussions with many other professional master level students in Larenstein University, who have field experience with group approach, were also used.

3.4 Limitations of the Study

- i. Because of very limited time for field works, only six groups and twelve farmers and four IPM farmer trainers and one DADO official were taken as the study sample. The result has been interpreted only on the basis of these informants. It would have been better if the sample size were wider/bigger than this.
- ii. VDCs and farmers' groups were purposively sampled because of limited time. It would have been better to have sampled them randomly.
- iii. Since the study involved single period field work, it has not possible to adequately capture all information. Moreover, virtual non- existence of base line data considerably constrained the comparison of the impact before and after the intervention.

CHAPTER FOUR-RESULTS AND FINDINGS

This chapter explains details about status of farmers' groups in Kavre. The findings about establishment of women cooperatives as an existing social capital in rural farm community is highlighted. Two major IPM projects and their working strategies for institutionalization of FFS and major achievements have been discussed. Some claims that IMP programs have made regarding achievement on social aspects of FFS are listed. To test those claims, I am preceding my discussion in the next chapter five.

4.1 Status of Farmer Groups in Kavre

This study wants to see the group's empowerment through IPMFFS approach. So it is logical to start the results and discussion by analyzing group's status in the district. Realizing the vast number of farmers requiring extension services and the shortfall of extension workers, the Government of Nepal in 1993 made a policy decision to adopt formally the group approach as the preferred extension approach. The formation of farmers' groups was initiated in Kavre since the beginning of implementation of the 9th five years plan (1997-2002).



Fig 4.1: Status of Farmer Groups in Kavre

Record of DADO shows 261 farmers' groups in the district. DADO annual report 2007 claims that 62.8 % farmers groups are active and 37.2 % farmers groups are partially (DADO has not defined in the report what are the indicators for partially active groups) active in the district. Out of 261 groups, 74% are mixed, 22% are women's and 4% are men's groups. 57% women and 43% men members are involved in the groups. As far as leadership position in groups is concerned, the representation is almost similar i.e. women constitute 31.5% of executive committee positions and men, 29.2%. It indicates that women outnumber men and are more active in group formation at community level. However, it is ironical that men should be dominant at the leadership level. District Agriculture Development Office (DADO) claimed that 164 (62.8%) groups are active in the district. (DADO, 2007),

4.2 Women Cooperatives as a Social Capital

In this topic we discussed how women farmers groups are functioning. The new practices of rural women cooperative formation are also discussed. In group discussion, women farmers are appreciating group approach because they know that service providers are seeking a

group for service delivery. Besides this saving credit facilities and access to information are other reasons. There are many kinds of women farmer groups exists in community like crop production groups, fruits farming groups, goat keeping groups, grass cultivation groups, women development groups, Local governance program (LGP), District Development Committee groups, community forestry groups etc. The same men/ women are involved in many groups. Women often tend to forgot the name of the groups, where they do not have saving.

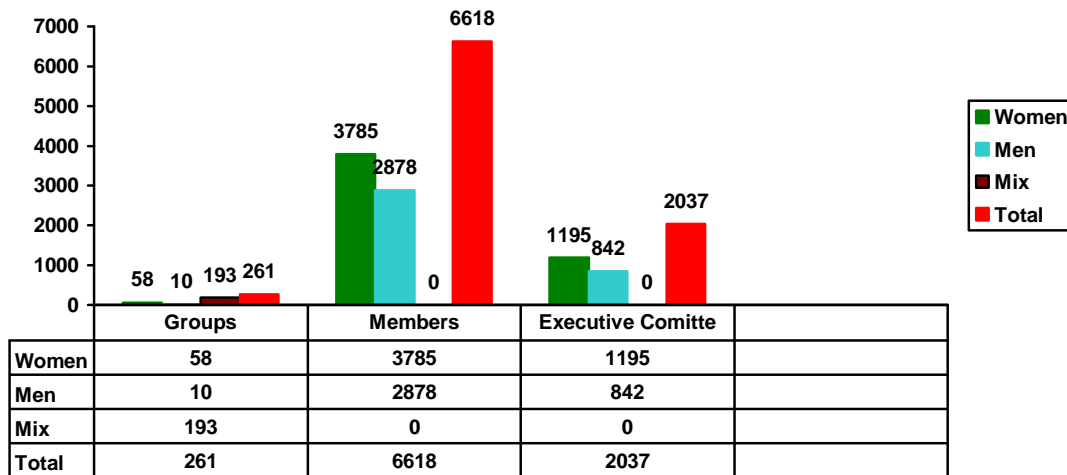


Fig 4.2: Participation and Leadership in Groups

One encouraging practice found in Kavre, that women have a big and common cooperative in each of the sampled VDCs, where they collect their saving. These cooperatives are developing as microfinance organizations in rural area of Kavre, where majorities of women are involved. These institutions have contributed to diversification of economic activities of women farmers. In the socio cultural environment in which women are generally prohibited from participating in off- home activities, they have been able to pool their individual saving as a means of acquiring credit for production as well as consumption purposes. Women have access to credit in these cooperative without collateral and very low interest rates. Saving is a strong binding factor in such cooperatives.

Other small groups, which do not have saving, aren't active at all because other binding factors are very weak. An organization is viable when the members should have common mission, objectives and commitment. All members participate and contribute the organization's functions according to a set of rules, and rules should be respected.

Formal groups it should be legally registered, which means that it should be:

- Be formed under specific legislation
- Be annually audited
- Fulfill certain conditions for cancellation (Wennink, et al.,2007)

The organization mobilizes and manages human and financial resources (Debrah et al., 2002 cited in Access of the poor to Agriculture Services, 2007). In this regards, almost all

the existing farmers' groups in Kavre can be considered as very informal groups often more flexible, conduct unobstructed self-help activities, without any written code of conduct except the records of saving. Though there is regular meeting in some groups, they only minute the saving collection and investment record because there is no other program and agendas in the groups for discuss and minute.

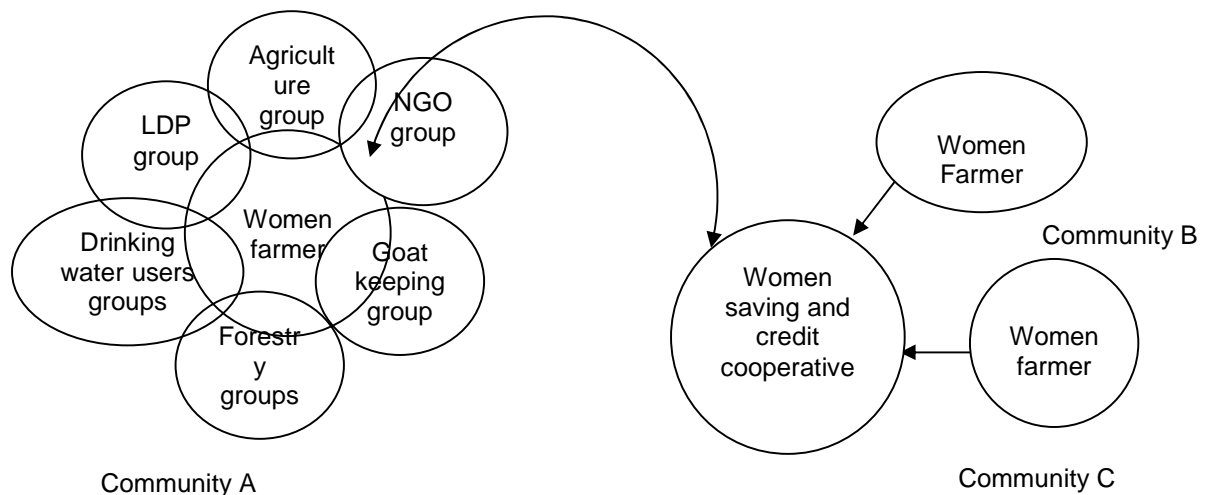


Figure 4.3 Patterns of Women Farmers Uniting into VDC Level Cooperatives.

FGs at the community and village level (as micro level social capital) represent the building blocks of any real farmer organizations. Empowerment of these groups into farmer organizations and platforms, which can become networks or federations to make their voices heard, is essential (Heemskerk and Wennink, 2004). These cooperatives can be said as an important micro level social capital but it is intended only to rising their saving and credit rather than other activities. It can be concluded that saving (money) is most strong binding factors in women cooperatives. Such social capital which are based on monetary transaction are also well sustain in community although there are very weak other bindings ties among the members. Farmers join farmers' organization for variety of reasons: whereas farmers often used access to market, inputs or credit facilities (Winnink et al., 2007). These groups are sustaining because of individual interest on getting loan and financial benefits but have limited scopes in other social aspects such as collective actions, better opportunity and communication.

Three core elements of social capital like, relations of trust, reciprocity and exchanges between individuals, common rules, norms and sanctions mutually agreed connectedness, networks and groups, including access to wider institutions (DFID Sheet). The scope of social capital can be at micro- or local level (horizontal networks of individuals and households), meso-level (both horizontal and vertical networks, fora, platforms and regional groups and networks) and at macro-level (e.g. national farmer organizations (Heemskerk and Wennink, 2004).

It is found that micro level social capital in ward, VDC, community and neighborhood level are functioning in case of agriculture and community development. Farmers empowerment, understand the poverty, self initiation to address the poverty by forming self-help groups,

sharing each other in common problem, attempts to protect the local resource (forest, water) ,building saving cooperatives etc . Approach to education for children, sharing health problem each other (women and child health) are other advantaged that women are sharing through micro link.

One of the common problems found in the group is that external actors are using the groups as a platform to promote their own objectives. Once they complete their mission, they overlook the groups. "In many cases the external actors are dominant and farmers' organizations are encouraged to adapt to their environment. For example Farmers groups being experimental and learning platform like IPM FFS" (Wennink, et al., 2007).

Table 4. 1: Characteristics Analysis of Sampled Farmer Groups in Kavre

Characteristics	IPMFFS women groups		IPMFFS men leading mix groups		Non IPM women groups	
	Setidevi women groups, Sanga- 3	Srijansil women group, Methinkot-3	Keraghari IPMFFS Panchkhal -3	Hariyali farmers groups Jyamdi -4	Kalidevi women group Jyamdi -9	Chandeswori women group Mahedrajyoti -1
Origin	2004	2004	2002	2002	2002	2003
Triggers	Locally initiated (Farmer trainer's backup)	LGP (DDC) initiated	DADO initiated	Locally initiated (Farmer trainer's backup)	WDO initiated	LGP (DDC) initiated
Legal status	Registered in DADO	Registered in DDC	Not registered	Registered in DADO	Registered in WDO	Registered in DDC
Members	23	29	12 ♀ 17 ♂ Men	21 ♀ 4 ♂	15	30
Commercial Crop base	Vegetable little bit	Not specific	Vegetable	Vegetable	Not specific	Not specific
Purpose	To conduct FFS	Social mobilization	To conduct FFS	To conduct FFS	Women empowerment	Social mobilization
Agri. services	FFS leader farmers based	Contact to service center	Agro-vet based	Agro vet + FFS leader farmer	Not any	Not any
Saving	Yes Rs.25/month And also in cooperative	Yes Yes Rs.20/month also in cooperative	No	Yes Rs .20 but not regular	Yes Rs.50/month only in cooperative	Yes, in 4 organizations
Record keeping	Not regular only record of saving	Yes ,well maintain	No	Yes but no agendas	Yes only saving records	Yes only saving records
Other social activities	Community home	Community home, social conflict	No	Drinking water tank	Bridge, school and child center	Irrigation, school
Current status	Progressing because of NGO support	Active, because of self motivation and linkage with some other service providers	Passive /collapsed	Constant progress No support	Constant progress, Though there is support from NGO	Progressing because they have strong economic base.

4.3 Present State of IPM

The IPM program in Nepal started in 1997 to address national concerns in crop protection for the improvement of the country's agricultural production. IPM Farmers Field Schools have proven to be a good approach for farmer's training and improving crop management in Nepal. The participatory and discovery learning approach fits the Nepalese farming systems and has received an enthusiastic response from the rural community. Hence, increasingly, District Agriculture Development Offices of the Department of Agriculture are involved in organizing different IPM activities for and with farmers. However, the IPM-FFS claims that through the participatory approach has enhanced the self confidence of farmers; improved their knowledge and skills, changed attitude and empowered them. Farmers' empowerment, the conservation of biodiversity, food security, community education, the protection of human health and policy reform have all been explicit part of IPM programme.

Two major IPM programs are the key corners to bring IPM as a backbone of national plant protection program (PPD, 2007).

- FAO-TPC project followed by Community IPM program, 1998-2002 (Supported by Norway)
- National IPM program, 2003-2007 (Supported by Norway)

IPM Programme is managed by the Directorate of Plant Protection of Dept. of Agriculture, in collaboration with a number of NGOs. With a focus on building the skills and assets of rural women to contribute to a sustainable broad-based poverty alleviation and food security while contributing to environmental protection" (PPD, 2007). IPM Programme in Nepal is supported by government of Norway. Food and Agriculture Organization of the United Nations (FAO) is providing technical assistance services.

Structure

1. Formation of farmers groups, revitalization of existing groups.
2. Networking among farmers groups for knowledge sharing and support.
3. New farmer driver forms for interaction with local and national government agencies. (re-technical, funding and policy issues)
4. Creation of new alliances between farmers' groups, consumer group, NGO other organization with common interest (IPM country report, 2005)

Working Strategy

1. The concept of IPM will be the central point of plant protection program. It will be implemented through the farmers' groups (PPD, 2006:P.4).
2. Develop IPM network throughout the country.
3. To developed the IPM groups as a pressure groups for agriculture development and environment protection (PPD, 2006).

Achievement (1997-2007)

Two IPM projects have been completed in Nepal but compile records of both projects together is not found in terms of achievement. For this study, I tried to compile the major achievements of both projects in a sheet. I felt it difficult to compile such records because the data are not consistently presented in the referred reports. The data sources are, progress reports of IPM program, publications of plant protection directorate and different reports presented in seminars .Till date, there are 138 officer level IPM facilitators form

government and NGOs, 76 JT/JTA level facilitators and 617 farmer facilitators. A total 41871 (Male 20309 and Female 21562) of 62 districts have undergone IPM training. There are altogether 1448 Farmer Field Schools have been conducted (PPD, 2007).

Table 4. 3. Major Achievements from IPM Program in Nepal

Program	Major Objective	Major Achievements						
		Officers level trainers	Farmer trainers	JT/JTA level	Total no. of FFS	Total farmers trained		
						Male	Female	Total
Community IPM Project (FAO-TPC Norway 1997/98-2002)	Institutionalization of IPM at farmers level with major focus to women farmers	104	381	34	633	9684	6782	16466
National IPM Program (Norway) 2003-2007	Organizational empowerment, networking sustainability and livelihood support	34	236	42	947	10625	14780	25405
Total		138	617	76	1580	20309	21562	41871

Source (PPD, 2007: p.99 and, FAO)

Besides this achievement of human capital development, both IPM programs are also intended for institutionalization of IPM FFS or in other words social capital formation in farm community. The major claims of the programs are mentioned below. This study would test, argue, appreciate, comment and discussed on those claims that IMP programs made regarding achievement on social aspects of FFS. These claims are made on the project documents and progress reports of the programs. Out of six, four of them are tested in this study. 6000 farmers groups will be strengthened by the program (SNIP, 2005: p.9)

- Developed community feeling among IPMFFS farmers.
- Establishment of IPM network in district level including all concern individuals and organization.
- Helped for mainstreaming gender in agriculture development and developed women leadership. (PPD, 2007: p.99)
- To conduct IPM program effectively, essential institutional arrangement would be made in different level (PPD, 2007: p.94)
- IPM will be the main strategic pillars of agriculture. The responsibility of this program would gradually transfer to the farmers' groups and the network of such groups would be promoted up to national level. Such networks would be developed as pressure groups for agriculture development in the country (PPD, 2007: p.105).

CHAPTER FIVE- ANALYSIS AND DISCUSSION

This chapter is divided into three major parts to discuss the findings of this study. First part is discussed about DADO's claims about successfulness of farmers' groups and critical analysis about women access, participation and empowerment through groups approach in Kavre. Discussion is started from group's status because the concern of this study is to see the institutionalization of groups and social capital building through FFS intervention.

Part two deals with impacts of IPMFFS approach in different levels. Individual level, groups' level and FFS farmer organizations level impacts are discussed in details. To study the individual level impacts, it is again divided into three micro levels like group members, leaders and IPM Training of trainers (TOT) trained farmer's level. Different impacts on men and women farmers have also been considered in this part. Lower viability of FFS farmer groups and IPM farmers organizations (DC) are the key findings discussed. We found that individuals are empowered and contribute in the groups but the FFS groups by itself does not sustain. In order to acknowledge the benefits for the individuals, mainly in terms of human capital. I also elaborate on the impacts of IPM FFS on this aspect.

Very few FFS organizations are found to be sustained in Kavre, even though the program has influence in farm communities from different perspectives. Influence of FFS and comparative study of social capital building in men and women groups, FFS and non FFS women groups, leaders and member farmers has been separately discussed in the last part.

5.1 Farmer Groups in Kavre

As we mentioned in chapter four, report of DADO Kavre claims that 62.8 % farmers groups are active in the district but the records appear to contradict one another. On page no. 92 of a particular report, it is written that the majority of farmers' groups are inactive in the district (DADO, 2007:p.92). Agriculture Research and Extension Project (AREP) final report, 2001 shows that there were 450 farmer groups in Kavre and only 118 (26.2%) groups were active then (AREP, 2002: p.9). The DADO record (2006) itself is also contradictory regarding the total number of groups. Annual report 2006 shows that there were only 234 farmer groups in the district. This report (DADO, 2006) appears to be silent on the performance of the groups, whether they are active or inactive.

The latest report (2007) has done a commendable job in depicting the status of farmers' groups; whether they are active or partially active. But only one indicator i.e. groups' saving is not enough to categories the groups as active or passive. The groups build social capital as they learn together and develop as a group but all the following social components are missing from the report.

- Acquisition of a high level of personal self-confidence by individual members and a high level of interpersonal skills, including leadership skills;
- Getting to 'know' each other as individuals (history and future aspirations), developing shared values and trust;
- Coming to regard each other as credible sources of support and advice; and
- Commitment to fellow members, or being prepared to help each other out (Kilpatrick, 2000).

On the other hand, many unreliable figures can be seen in the report, which can be attributed to an erroneous presentation of the groups' records.

Example: In S.N. 38 (page 101) of DADO report 2007, there is mention of a group named Budathoki Danda vegetable growers group. It was established before 3 years with 28 members. This group is considered as an active group because it has Rs. 2000 saving. Calculation shows there is less than Rs. 2 saving per month by each member. Such a small saving does not appear to be compatible with an active group. There are many such examples that provide further space to say that, DADO has to work more and should give some other reliable indicators to justify the claim that 62.8% of the groups are active in Kavre.

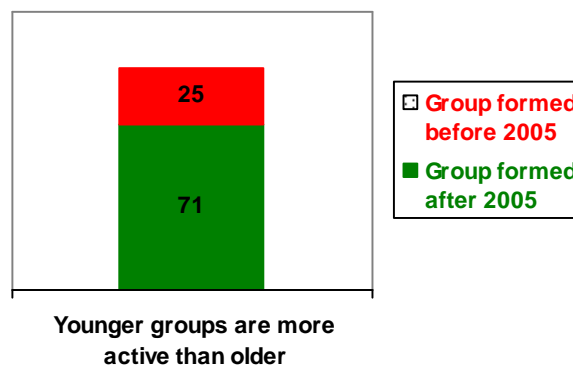


Fig 5.1 Activeness of Younger and Older Groups

Another observation is that younger groups appear to be more active than the older groups. Fig 5.1 explains, out of 164 active groups 117 (71%) active groups were formed within 3 years. New groups are active because there is continuous motivation, inputs support and regular visits by technicians. This raises a serious question from this analysis about the older groups. Where have the older groups gone, the ones that were formed before 2004?

The groups were unable to run when the supports were withdrawn (AREP, 2001) and gradually collapsed. Most of the older groups went defunct as extension agents stopped visiting them (AREP, 2001:p.6). It indicates the unsustainable trend of group development. The older the groups, the more the failure rate signifies that the groups have not been successful in following sustainable practices, and they failed to build social capital from the agricultural intervention. On the other hand, three years' duration is a very short time to judge the groups' maturity.

Of course, FFS is one of the possible initiating conditions to establish social entities like farmers' groups to address constraints and exploit opportunities but to be a formal groups it should be legally registered, which means that it should be :

- Be formed under specific legislation
- Be annually audited
- Fulfill certain conditions for cancellation (Wennink, et al.,2007)

An organization is viable when the members should have common mission, objectives and commitment. All members participate and contribute the organization's functions according to a set of rules, and rules should be respected. The organization mobilizes and manages

human and financial resources (Debrah et al., 2002 cited in Access of the poor to Agriculture Services, 2007). In this regards, almost all the existing farmers' groups in Kavre can be considered as very informal groups often more flexible, conduct unobstructed self-help activities, without any written code of conduct except the records of saving. Though there is regular meeting in some groups, they only minute the saving collection and investment record because there is no more program and agendas for the groups for minute.

5.2 Women's Access and Control in Groups

In fig 5.2, it can be seen that when there are more opportunity for income or status or training men have more chances. This figure is based on the data of DADO office Kavre. It shows that the higher the level of exposure to training, the lower the women's participation. The number of women is very low in higher level training and also leadership and agricultural entrepreneurship i.e. only 3 to 12%, where as for men it is vice versa. Training opportunities of longer duration and training tours abroad are mostly grabbed by influential men in the group because of men's domination in society; and also because women are less mobile. So, very few women have utilized training in village animal health worker /village agriculture worker in the form of occupations by running agro vets shops (UNDP, 2002).

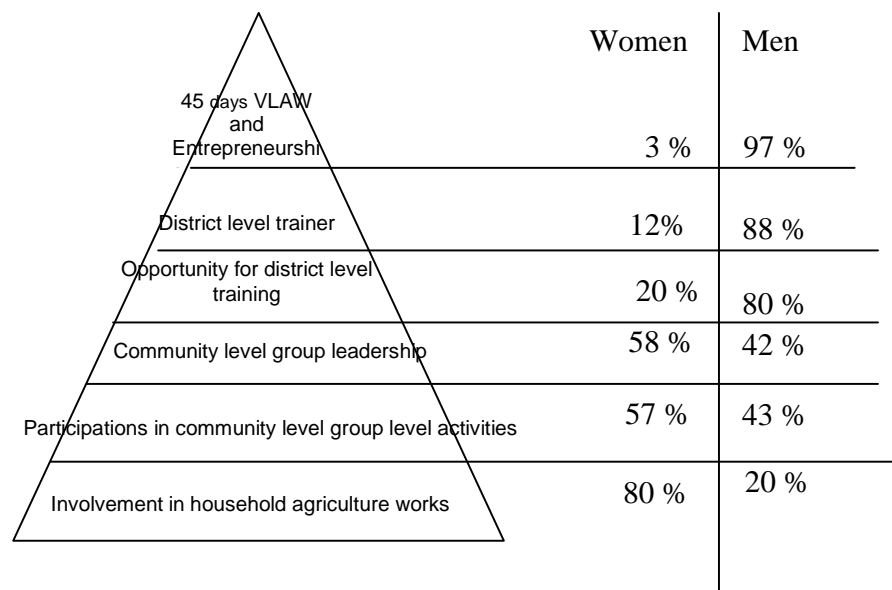


Fig 5.2 Women and Their Positions

Women farmers' involvement in family level agricultural is estimated more than 80% where as men's participation is estimated around 20-30 %. Women farmers make up the majority of the total farming labor force (63 % versus 27%). Women work 10.8 hours /day versus men 7.5 hours/day in agriculture. For the total activities in agricultural production, men spend about 3 person days, while women spend 22 person days per family plot (FAO, 2000). It is because men are not interested in agriculture, rather they are looking for other alternative paid jobs.

Table 5.1 Access and Control of Men and Women in Groups

Indicators	Access		Control		Men and women in %
	Women	Men	Women	Men	
Women entrepreneurship (Agro vet)	*	*****	*	*****	3 ♀ 97 ♂
Women farmer trainers in district level	**	*****	**	*****	12 ♀ 88 ♂
Opportunity in regional level training	**	*****	**	*****	20 ♀ 80 ♂
Leadership position in Farmer groups	*****	*****	*****	*****	58 ♀ 42 ♂
Participations in community level groups activities	*****	*****	*****	*****	57 ♀ 43 ♂
Participation in community groups	*****	*****	*****	****	57 ♀ 43 ♂

Source: DADO annual report (2007) (Note: each* represents ten units out of hundred)

5.3 Women Cooperatives

There are many groups or small organizations or committees in a ward but they are not united. They are not forming a cooperative in their own village. They form a cooperative jointly with other communities outside their wards with external assistance. These cooperatives are the common forum of individually inspired women which are very important social capital for women to raise their family income. These cooperatives are formed due to combined efforts of many organizations like Women development office, LGP, NGOs etc rather than DADO's program intervention. Continuous follow-up, monitoring and motivation are the major clues for social capital formation rather than seasonal program intervention.

The financial agenda is the main agenda in all groups and cooperatives. Women feel a sense of financial security and their recognition within the household because of their saving. Most of the women farmers are realizing that they are progressing and also empowered because of their saving. One of the most appreciating outputs of this saving system is that people are saved from the exploitative practices of traditional village money lenders (UNDP, 2002:p.47).

As a social capital these cooperatives have also other social dimensions. Biggs and Gurung (2004), wrote that these micro level social capitals stimulated the large social movement like; Claim for services, empowerment, to redress social inequalities and to understand and address poverty, rights of Dalits, Indigenous Peoples, Women, Children, Kamaiya (ex-bonded servants), in relation to (for example) indigenous legal rights, land rights, water rights etc. Several national, regional and global initiatives have stimulated concern for using group-oriented development to address poverty and social disadvantage (Biggs and Gurung, 2004).

Indeed those are social development but our concern is what these movements contribute for the wellbeing of poor farmers at national or district level. It can be said, because there are no any farmers organizations established only for farmer's wellbeing yet in Nepal. In this sense, such saving cooperatives are effective micro level social capital is working but meso and macro level social capitals are often ineffective.

The other smaller community groups are surviving in one or another form if they started saving from the beginning of their formation. If there is no saving started, there are no groups. So, it can be concluded from the table 3 that IPMFFS is not the strong drive to build social capital but economic activities are important.

One interesting result is "DADOs agricultural program has aimed for women's empowerment using economic empowerment as the entry point through group approach (UNDP, 2002)". DADO s groups however, are often weak in micro level economic activities like saving and resource mobilization. On the other hand women development office, Local governance program (LGP, DDC) groups are systematic in this regards. In the other words they have driven the groups in the direction of economic line, whereas DADO program emphasis on technical (agricultural) support for income generation and food security.

It can be conclude from this result that sustaining base of above mentioned social capitals in rural Kavre is mainly the economic activities. Due to lack of other stronger social capital indicators groups are not developed themselves as a recognized social entities in community. The other social capital indicators will be discussed in the topics below.

5.4 Impacts of IPM FFS at Different Level

This study found that IPM FFS has varous impacts in different level such as Individual empowerment, impacts on groups level and impacts on organization level .

Individual Level

We analyzed the achievement of IPM/FFS in table:5.2 and status of IPMFFS in Kavre. IPM FFS has contribution for different levels of empowerment. In this topic we focus on the community level empowerment both individual and groups aspects.

Through the IPM programme, trained farmer became more closely involved in what was really happening at the farm. IPM-FFS methodology used in farmers' training has empowered farmers to be rational and more independent in decision making over their activities. Through FFS, farmers were encouraged to solve their own problems by conducting farmers' field investigation on their own farm. This has motivated farmers to be experts in their own farm (PPD, 2007). Regular field observations have made the farmers to reduce the use of chemical pesticide application in the farm results the reduction of pesticide cost significantly. IPM-farmer trainers have conducted FFS at their own villages. These social benefits motivated the majority of IPM-farmers to sustain and disseminate IPM program. This commitment was visualized by the establishment of IPM-farmers network at district level though it is not on the way of sustaining much longer.

Table 5.2 FFS and Individual Empowerment

Position of farmers	General features	Empowerment
1.Group members	General participants, followers of their group leaders. Less benefited from training & inputs support, often less educated and weak in accessing resources. More women than men involved.	Becoming more aware and empowered after FFS than in the past. Technically better .Less confident to approach with service providers, dependent on their leaders.
2.Group leaders	Comparatively forward. Interested in new technology and improved agricultural practices. Willing to share with each other. Men and women are almost equally in the position.	Participated in FFS actively, can speak and share openly with outsiders. Getting some exposure, training & inputs then other general members. Can unite people for community work. Women are also active as men in community.
3. IPM Farmer Trainers	These are higher status farmers than above two groups. These are socially elite, educated and innovative farmers. They have trained in many training (Community agricultural worker, IPM TOT, FFS etc) and perceive themselves as an agriculture technician as well as a farmer. Mostly men and very few women in this status.	Community level IPM trainer, have good communication and motivation skill. Individually have good linkage with district level and sometimes national level service providers. They are leading almost all programs and have a dominant role in the community. Front line community level development workers. They are more focused on working with district office and not interested in initiating actively in own village .They act as deputy government IPM trainer.

Group Members/ Leaders

FFS approach has led to improvement of skills and capabilities of individual people in community. Those individuals who were trained in IPM FFS became more closely involved in what was really happening at the farm. It empowered them and make some how independent in decision making in farm activities. Farmers encouraged to solve their problem by investigation on their own farm.It has motivated some farmers to be an experts in their own farm. Learning from FFS made them able to reduce the use of chemical pesticide. Reduction of pesticides result saving of money and environment. Farmers realized in the improvement of farm level pest management skills, improved management of other farm production activities. Farmers continued learning and experimenting after the end of the FFS and have applied discovery-learning techniques in some crops in some extent.

For example: In Keraghari, farmers able to select bacterial wilt resistant variety of tomato for their area. Another similar example, farmers know and adopt rainy season (off season) cultivation of cauliflower in Jyamdi. Farmers developed the new practice of relaying cauliflower with maize. This new practice was first initiated in FFS in that village. These two practices have been one of the important income sources even after six years of IPM FFS in those areas. It is also important that farmers get some input (seed) and short term training support during and after FFS, which helped them to increase food production by 15-20% (PPD,2006). Besides farming practices, non farm rural livelihoods activities such as bee

keeping, agri- business, entrepreneurship, post harvest storage, and marketing activities have also been promoted with the changing cropping system. These practices have contributed to food security and livelihood improvement of rural farmers in some extent.

These are some examples found in study groups of this thesis. There might be many such examples in the districts. Indeed IPM has significantly contributed for technological intervention which leads changes in the cropping patterns, varieties selection, balanced use of fertilizers, judicious use of chemicals etc. This is because of different experimental practices followed in FFS. This is the beauty of FFS in Kavre that IPM farmers are increasing their performance to adopt such improved practices to change their traditional agricultural system.

Leader Farmers Level (IPM, TOT trained)

IPM farmer trainers have found the job opportunities in NGOs (personal communication, 2008 and this researcher has worked with some of them together as NGOs employee) and their skill is recognized by Council for Technical Education and Vocational Training as Level 1 and 2 agriculture technicians (see certificates in Annex 3). In Kavre 11 IPM farmers' trainers out of 19 are getting such recognition from CTEVT. Their skills are in demand in different organizations especially in NGOs as trainers for vegetable cultivation, seed production, construct plastic tunnels, saving credit, social mobilization etc. It is an appreciable change that IPM FFS made in human capital development in individual level.

Change in Knowledge and Skill

Specifically IPM/FFS has contributed to provide the following specific knowledge and skills to men and women farmers in Kavre.

1. Knowledge about soil fertility and acidity.
2. Knowledge and skill to prepare compost and balance use of chemical fertilizer.
3. Prepare botanical pesticide, urine collection and use.
4. Identify different plant diseases and conducive environment for disease outbreak.
5. Identify pest and predators "*satru jib*" "*mitru jib*" and estimate their damage on the basis of population. Life cycle of some major pests.
6. Crop rotation; inter cropping and different management practices.
7. Seed treatment and seedbed treatment.
8. Varieties selection and technology verification by experiment.
9. Post harvest management.

IPM farmers field school is successful/ approach for technical empowerment of women/men farmers. Its individual aspects of empowerment can be observed at the following three micro-levels.

5.5 Individual Level Impacts with Gender Perspective

Participation

More women have participated in field based agriculture programs than men. It can be said because 58% women are participated in FFS in Kavre. This data coinciding with the national FFS record as well. In another program similar to IPM/FFS called IPNS (Integrated plant nutrient management system), 73% of women had participated (DADO, 2006: p.82). In the

process of data collection two contradictory versions of men and women farmers proved that women's willingness to participate in FFS is higher than that of man.

"Men don't prefer to work hard in farm and expected concrete benefit immediately from development approach." IPM farmer trainer R.K Dhakal's experience.

Dalits (so called "downtrodden" and previously known as so called "untouchable" and Janajatis (indigenous ethnic groups) women are also involved in FFS though their number is very limited in many villages. Their involvement can be considered positive attempts for bonding practices among community members. This gives a bonding relation between different casts and helps to reduce discrimination. This is a positive attempt for social capital building in Nepalese communities. But still their number is limited and their involvement is not purposively. They are somehow automatically involved in the swing of development.

"We are always busy, though we allocated our time for FFS. In the FFS day, we used to wake up one hour earlier to manage household works and collect grass for the cattle a day before. It was my contribution for learning. I want to involve in such a program again. Kanchhi Ojha, a Women farmer in Methinkot VDC expressed her constraints due to time management for participating in IPM/FFS. "I will support what I can, but I don't take part in IPM/FFS again". Dhurba Sapkota, a farmer in Keraghari expressed his pessimistic ideas because he expected a lot progress and benefits from FFS, which could not be achieved.

Leadership Development in Women

In above topics we discussed about women participation in FFS. In this topic I would analyze women in leadership position in FFS and impacts of FFS to women farmers. It is also very effective in empowering farmers and developing transparent leadership by a program intervention (Kit, Faida, IIRR, 2006). From the sample of 30 IPM groups (see Annex1). It is found that 56% women are leading IPM/FFS in Kavre. FFS is giving, exposure, expression and organization capacity to women in the community level. Not only national IPM program, but also the 9th and 10th five years agricultural plans have also clearly focused on contributing to increased women's participation in agriculture.

Though women's involvement is quite good in community level participation and leadership, the IPM program discriminates against them in providing the opportunity to participate in higher level exposure activities (e.g. district level committee, TOT etc). In this sense, IPM has also in vogue some unfair practices like minimal involvement of women in other general agriculture extension program as discussed in "access and control of men and women in groups" topic. An example of this unfair opportunity is that, only 3 (out of 20 people) women have been participating in IPM TOT in the district (DADO, 2007:p.6). Whereas progress report of IPM program claims "the National IPM Program in Nepal is committed to provide women and men equal access to their training" (SNIP, 2005).

Participation is also another thing than involvement. It is qualitative achievement like knowledge building empowerment and human resource development. Participation is a process through which stakeholders influence and share, control over development initiatives and the decisions and resources which affect them (World bank, 2001 cited in

Leeuwis, 2006). 10th plan clearly stated that "lower level agricultural manpower will develop from farmer's community through their empowerment" (10th plan report, 2003). IPM/FFS in Kavre have been sufficiently contributed for local level women involvement but FFS has been contributed very less to real empowerment and leadership development among women farmers.

In this regard 10th plan target is seems successful in participation (involvement) but it is failed in women leadership development and empowerment (UNDP, 2002:p.35). Although the proportion of women farmers in different agricultural training is increasing, the achievement is far short in the target set in the plans. Education, lack of personal approach with DADO office, lack of information, men domination, and family restriction are the constrains to developed women leadership in district level agricultural program (UNDP, 2002: p 35). On the other hand the members who trained in FFS are often leading community level groups and cooperatives in Kavre (It might be possible that those relatively forward women participated in IPM/FFS).

Example: IPM farmers' field day is an opportunity for the farmers to know, Introduce & building linkages with different district level service providers because they are invited in FFS to observe field, listen to and reorganization of the farmers' learning. Using these limited opportunities, the women became capable of expressing their feelings, face outsiders and know the service providers, in stark contrast with their non FFS counterparts. This intervention enabled them to develop linkages and widen their horizon in comparison with their non FFS colleagues. It ultimately helped them to developed local level leadership in groups and cooperatives.

"My husband encouraged me to participate in FFS, now I have no hesitation to attending training, tours and community meeting, but there is less opportunity for such programs." Neelam Shrestha a women farmer in Sanga, sharing her feeling.

Improving Decision Making Power in the Household

Women who were trained in IPM FFS had clear feeling that their decision making power inside the household had increased by a considerable extent. A significant change had come about in the attitude of the men towards women due to women's' participation in FFS. In commercial vegetable growing areas of Kavre, IPM women are consulted about pesticide, plant spacing and variety selection. This agricultural decision making has also permeated across other matters of family concern in respect of household affairs and economic activities. For example: marketing, buying and selling of animals, investment of money, taking membership of different organizations etc.

Recognition of Women in Community

Women IPM farmers have obtained special recognition in community as trained persons. The women IPM farmer is definitely some steps ahead pf her other colleague in matters of daily agricultural practices. The family members consult her before embarking on any major agricultural decision. Prior to the cropping season, neighboring families except to be provided with some high yielding variety from her groups. Neighbors tend to consult her about disease and insects that prey upon standing and stored crops. This recognition empowers her indirectly to participate in other community affairs even outside the domain of agriculture.

Resources Development

Women learn to use natural resources like local herbs, animal urine, compost etc for increasing agricultural production and pest management. They are Knowledgeable in matters of pests and predators relationship, farm ecology, agro ecosystem analysis etc. They are somehow able to know influence of the environment in crop production. These practices have instilled in them ideas on natural resources management and it's interrelation with farming. Farmers learn to use accurate doses of fertilizer and pesticide. It saved them from unnecessary expenses. The judicious use of plant numbers, seed rates and labor results in prevention of economic losses and energy as well. Thus human resources development at different levels is an important output of IPM/FFS in Kavre.

5.6 Impacts of FFS on Groups

In above topic we analyze FFS impacts in individual level . women participation , leadership and different aspcts of capacity building in individual level were analyzed. This topic analyze IPMFFS impacts on groups and organizational level .

Institutionalization IPM FFS Groups

The IPM/FFS implementation strategy clearly mentions that IPM/FFS will be implemented in already existed farmer groups (PPD, 2006: p.82)." The IPM trainer, subject matter specialist (SMS) from DADO, service center staff and community leaders visit to the pocket area and select an already formed farmer group. They can reform it, if necessary for IPM/FFS implementation (PPD, 2007:p.39). The strategy further says that groups when empowered after FFS intervention would change into pressure groups for agriculture development. In practice, very few numbers of IPM /FFS have been conducted in such established farmer groups. In reality SMS, service center's staffs and community leaders or farmers trainers call for a general meeting and formed a new FFS group as mentioned in fig no.5.3. After FFS when the members dispersed such groups would be collapsed. Facilitators are forming new IPM groups according to their own interest which is against the guideline of FFS. This is the root cause of failure institutionalization of FFS in grass root level.

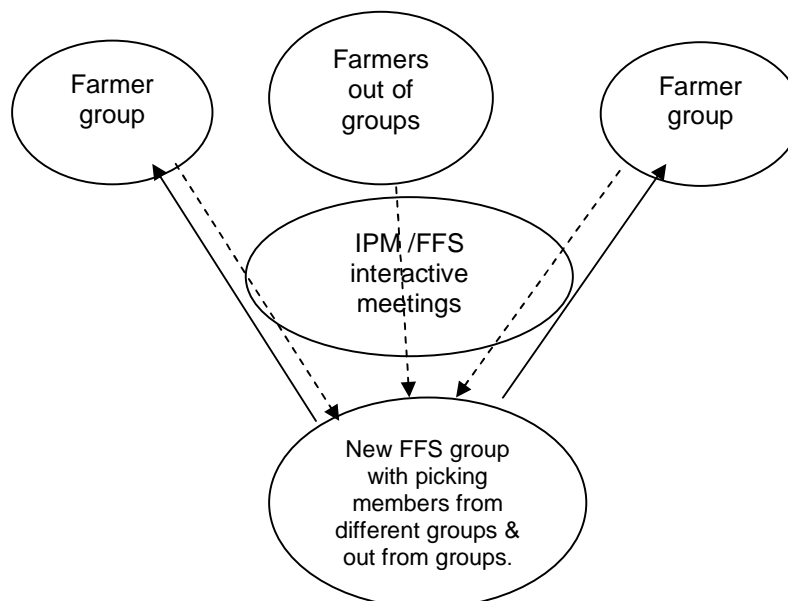


Fig 5.3 : Most Common Model of IPM FFS Group Formation

Fig no.5.4, explains the process of new groups formation in the interactive meeting, where all men and women farmers gathered from different groups and non groups. Then a new group is formed, not considering the already existing farmers group. After FFS the FFS members return to their earlier groups or positions and the FFS group falls apart.

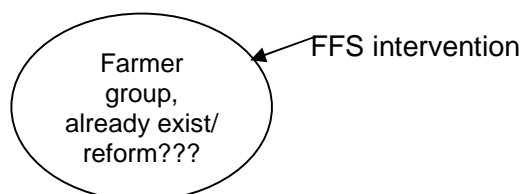


Fig 5.4: FFS Rarely Practiced in Already Existed Groups

Fig no.5.4, is the widely accepted model of seeking already existed farmers' groups for FFS conduction. The guideline of IPMFFS also emphasises this model (PPD, 2006: p.82).

Literature mentioned that "It is widely agreed that more and better results can be achieved if existing organizational forms taken into account as much as possible, it is effective to use their already bonding relation to gain social capital (Wennink et al., 2007)"

IPM district coordinator, farmers' trainers and farmers are fully agreed that there is the trend of picked up the farmers for IPM FFS group formation because:

1. The first priority of the program is to complete the FFS successfully. So, the people are taking it as a first challenge for them.
2. Due to late information or late release of program budget, almost all FFSs are organised at the last moment, in a rush. This leads to randomly picking up the people from different groups rather than seeking, reforming and motivating the established groups.
3. In comparison to technical part, the social side of group strengthening is weak. This part is often rarely dealt with during FFS completely neglected after FFS. "Trainers and farmers think that IPM means only to conduct FFS" (PPD, 2007: p.84).

Of course, trainers have some logical reasoning behind the pick up approach. FFS is not easy training, it requires a long intensive process of preparation and support. The first priority and challenge for the facilitators is to make IPM FFS successful in order to exhibit their better performance in front of DADO, donors and other stakeholders. Besides this, it is found that there is some complicated exercise involved in FFS, such as, Agro ecosystem analysis (AESA), complicated drawing (insects, plants relation), trails, simulation, field observation and notice problems for change, analytical presentation etc. It is easy to communicate with such educated people than the illiterate farmers. IPM is more complex process than laying and spraying of pesticides. It requires a high level of human capital in the form of analytical skill and understanding of agro-ecological principles (Pretty et al., 2002). FFSs were originally developed for complicated farm management topics such as Integrated Pest Management, Integrated Soil Fertility Management (Heemskerk and Wennink, 2004). Indeed these difficult exercises compel them to follow pick up approach to show good job.

The facilitators also prefer picked up such active farmers from the first meeting. It is also found that often high school students were also selected specially because they can easily understand AESA, can easily write and draw pictures and are not shy to do presentation and all complicated exercise in FFS. These students had not be involved in any groups before. After FFS, they abandoned the community to pursue their study, job and the girls married and went away. On the other hand, FFS itself is time consuming . The training takes 6-7 hours of full participation. In some cases, less dedicated farmers (who have leisure time because of their lower dedication in own farm) were also involved, who could not contribute further for the groups' sustainability.

It is also agreed that there are very few supporting programs in FFS groups . After compleing IPM FFS, the IPM /FFS groups started to collapse from the very next day following the IPM field day celebration. Once farmers are members of a farmer organization, important issues are the division of functions between members and leaders (Wennink, 2007). Lacking this, the members dispersed from the FFS groups because of the lack of cementing factors binding them as a group. It is vey easy for such new and loose groups to collapse.

After FFS, the empowered farmers expected more services and contact. It is also found that during FFS, some relations between farmers and trainers have been built as a developement partners or those trainers becamers friends of the village. Unknowingly some commitments are made for further support to their groups during FFS. But there is no way to fulfill such expectations from the farmers trainers. The DADO can provide some inputs and training support for those groups from it's regular program but what can the farmers' trainers do? They don't possess any authencity, budget and program to support the FFS. The interesting point is that 80% (87 FFS out of 110) of FFSs in Kavre are facilitated by the farmers' trainers. In this situation, eventhough FFS can be effectively completed but farmers' groups can't sustain in long run. Now it is easy to count the number of FFS in the district but difficult to find them as IPM FFS groups. In fact, a chain of development should be started from FFS but the whole story ended after farmers field day celebration, in pratice.

It is found that FFS farmers wanted to continue meeting, experiment and interacting after FFS. They wanted to improve their knowledge, skills and connnectedness with each other. IPM program havee been planned to continue FFS sprit through the following follow up workshops:

- Training of farmers' trainers
- Science by farmers' workshop
- Participatory planning workshop

Science by farmers and participatory planning are technical as well as social components that help to institutionalize FFS. Discontinuation of these programs limits the scope of FFS after FFS. Very limited numbers of such programs can be observed from the DADO record (DADO, 2007: p.76). In the absence of a project, the DADO can allocate some money for plant protection activities from its regular program but can not continue the ambition of an IPM mission. So it can be said that once the project is gone, everything will be gone as many agricultural projects have met a similar fate before.

In some African country like Kenya and Uganda FFS approach was used to help the farmers for production, post harvest handling , processing, marketing, credit , network and extension. FFS has intervene in complete chain activities of a commodity. A small farmer

group was accepted as a farmer field school and at first followed FAO's field school approach. It morphed in to commercial farming association with linkage with multiple chain partners .Participatory approach and collective action are the keys for promote group's ability. In the process of building such social capital takes long time (10 years). It has included support from various service providers (KIT, Faida and IIRR, 2006).

In comparison to African approach Nepalese FFS seems specific only up to production objective with ecological perspectives. It has left many other possible areas of relative benefits for the farmers. There is ten years support from service providers to morphed a small groups into potential social capital in Africa rather it is very short (4-12 months) intervention in Nepal. It might be exaggeration, to claim a complete farmer's institution from such limited supports. Because of FFS intervening in whole chain, focus on many organizational network FFS approach seems successful in some African country. In our case it is true that" Maintenance of social capital is costly by time and labor. Who bears the main burden? (DFID, 1999)"

Westendorp and Biggs in their article "Strengthening Social Capital in Agricultural and Natural Resources Innovation Systems: Community IPM Farmer Field Schools (FFSs) in Nepal 2000" are also agreed that "while the training and other activities of the CIPM/FFS program were not designed to promote specific institutional group level developments at the village level".

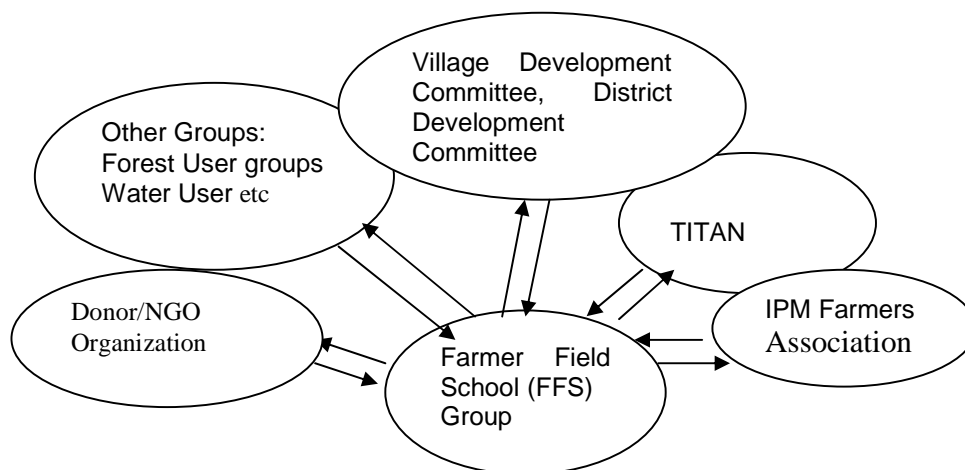


Fig: 5.5 Relationships of Groups with Other Actors (Westendrop and Biggs, 2000)

Though it was not expected, farmer groups or associations that have come from FFSs are now actively pursuing development in their communities through interaction with other institutions. It has been observed that many IPM /FFS groups continue to conduct meetings after the FFS is over (Westendorp et al., 2000: p.39)".

The finding of this research is contradicting with their claims of such automatic development in farmer groups. It might be possible that, the article referred to was written when the Community IPM project was at its peak point in year 2002. There was much excitement and ambitious euphoria then towards this new approach in Nepal. In the swing of this project

many such organizations formed and tried to be functional and finally failed with the termination of project support.

Some other claims have also been made regarding institutionalization of farmers groups without strong arguments like - "One of the major achievement of IPM FFS is organisational capacity of farmers groups, decision making power, we feeling, promotion of group activities etc (PPD, 2007: p.122)." Support to the National IPM program targeted to strengthen 6000 farmer groups claimed that it has achieved a major outcomes (SNIP,2007:p.9). In the same page,upon persuing the list of its program activities, there appears to have been no specific program related to group strengthening,in contrast to this claim.

5.7 Impact on Farmers' Organization (IPM District Committee, DC) Level

Westendorp and Biggs in their article (2000), argue that establishment of different IPM committee are social capital. For example IPM Farmers District Committee (DC), Trained IPM trainers association Nepal TITAN etc.

Off course many district, regional and national committee was formed to institutionalization of FFS approach. This study also found the establishment of some such committees in Kavre. In this topic we analyze how these organizations are working and surviving.

It is encouraging to establish such organizations at the self initiation by farmers. The IPM program has also a clear vision to make these networks effective and gradually handover the IPM/FFS to these farmers organizations (PPD, 2006:p. 91).This research attempts to explore the IPM DC and analyze it's different dimensions as a social capital. The IPM program has clear implementation approach towards the institutionalization of IPM activities at community and district level through the formation and strengthening of various coordination committee and IPM farmers' groups associations. The establishment of IPM farmer's association is an important output of national IPM program in Nepal (IPM program report, 2005).

5.8 DC as a Social Capital

It stands for district committee of IPM farmers. IPM /DC was established in Kavre in the year 2000.It is the organization of those farmers who have been graduated after under going 16 weeks of FFS. The objectives of the DC were to strengthen IPM farmer's network in the district and institutionalize the IPM program. DC Kavre is registered in district Administration office in the year 2003 as an NGO, under the NGO Act of Nepal.

In Kenya most of the IPM FFS networks act as intermediary or apex organizations linking farmers to service providers, markets and information. It created ties to extension and research to test new technology with commercial potential. The field schools networks have been linking farmers to suppliers of good quality seeds and fertilizers with low- cost, (at below the market price) quality, in small packs that farmers can use and afford (KIT, Faida and IIRR, 2006). In comparison of Kenya Nepalese IPM farmers association can compare as:

There are only 53 life members in DC out of 2650 IPM graduates in the district. It means there are 2% of the graduated farmers involved. In fact, it is a forum of some elite, high caste, farmer leaders/trainers, and mostly male (only one active woman trainers out of twenty) dominated, where only 8-10 IPM farmers trainers are playing around this organization as forum to grab opportunity. These educated and active farmers' leaders are

using IPM DC as a step to establish linkage with district level service providers. It can be said that the elite leaders are united in IPM organizations like the DC. DC as a so called grassroots level IPM farmer's organization, has no plan, linkage and attempts to hear the voice of 98 % IPM farmers and farmer groups. Who cares those organizations, which doesn't have the capacity to raised the voice of poor farmers and have no capacity to get involved in service provision?

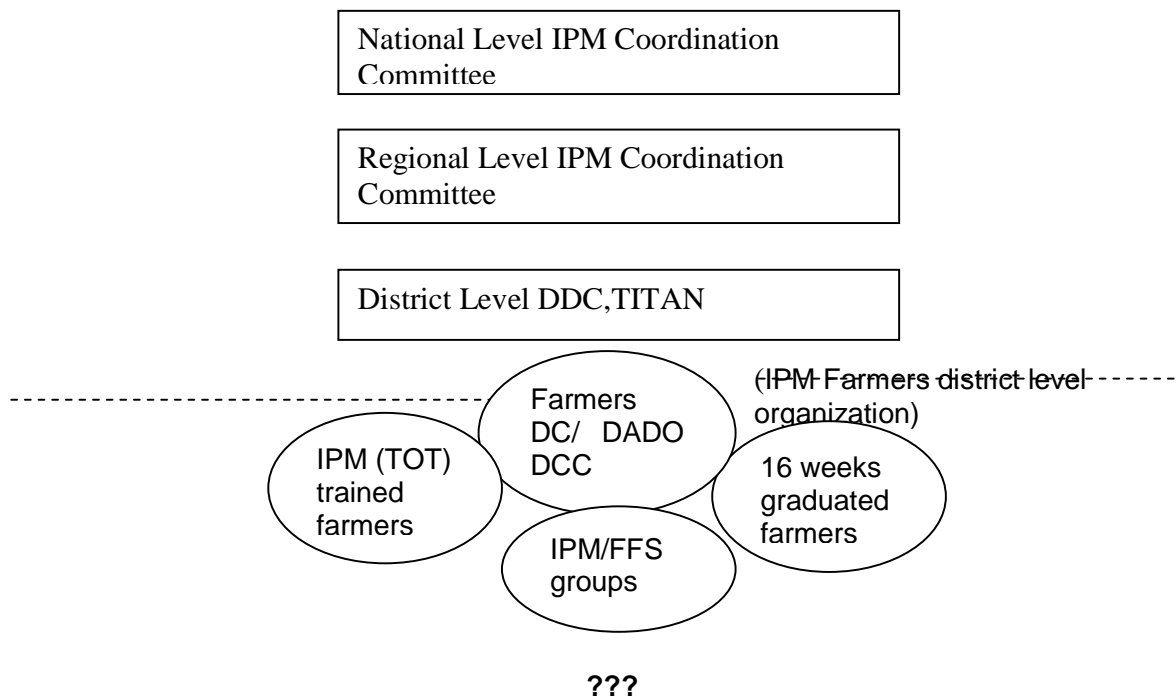


Figure 5.6: Committee Formed for Institutionalization of IPM in Nepal

There is regular interaction between the DC executive members at the monthly meeting. The agenda of this meeting is based on DADOs FFS program allocation to them. They do not have their own program, action plan and budget. Though DC executives members have been conducting 80% FFS, they didn't contribute themselves to the DC fund.

The Farmers trainers formed DC as a networking organization in their own initiations. They were the key players to expand this program in community level. When there was project they have had work, money and voice heard by others. They should make some foundation for sustainability of their organization in that period. Now, the train has been left and the DC is looking in horizon for another, which is uncertain to come.

"In fact we have problem of money even for renewing this organization." Ganesh Shrestha, DC secretary said in an interview. From where would the money come? That DC is not conducting any program except DADO allocated FFS in its 8 years of life. DC members conducted those FFSs as a personal program rather than considering the sustainability of DC.

Bonding, Bridging and Linkage:

Though the DC is surviving as a very weak organization, the personal relation among some DC executive member is effective. As a community level agriculture experts, these farmers' trainers are communicating, helping and coordinating with each other on the basis of their personal relation. Their vertical relation with the district level organization is stronger than the horizontal relation with farmers' groups. Though they established the DC for the welfare of the community, there is as yet no FFS farmers' networking organization in the community level. It can be concluded that, it is unable to create bonding among other IPM graduates and farmers' groups.

Bridging is very weak part of the IPM DC. As a farmers' organization, it has tried to established a relationship with the same district level Go's and NGOs. It tried to submit some proposal for funding for IPMFFS but was not successful. In fact, the DC is an organization of farmer experts who have good capacity in organizing FFS and institutionalization of groups in the district. The DC is almost ineffective to get and program and money for FFS because of poor bridging with district level partners.

Like bonding and bridging, the DC has very weak linkages with other organizations; but individually, the DC members have excellent linkage with almost all service providers in the district. Many DC executive committee members are getting jobs in other organizations (e.g. CEAMP, World Vision) etc. 11 out of 19 IPM farmer trainers have been tested their skill (level 1,2) in CTEVT and managed to gain recognition for themselves as vocational professionals. By using their personal linkage, they are involved in many agricultural activities of different GOs and NGOs, but they have failed to strengthen DC itself as a social capital.

DC Failed to Build Social Capital

In above topic, we explained, IPM farmer trainers are personally competent, their organization has failed to change as social capital. In this topic, we analyze reasons of failure of DC as a farmer's organization /social capital.

It is mention in the guideline of plant protection program for district level that, IPM program has to be established in district level through FFS federation. These federations would be, developed in to cooperatives and all responsibilities of IPM FFS would handover to this unit (PPD, 2006: p.93) .But there are problems to change the writings in to practice as follow.

1.Over dependency of the DC on the DADO hinders its capacity. The DADO even sometimes hesitates to handover FFSs to the DC. It interferes, by passes and distributes FFSs to individual trainers. There seems to be an indirect problem of trust between the DC and DADO.

Example: Some of the farmer trainers said that because of problem with DADO, they are not interested to conduct the DADO's FFS. In the individual interview farmer trainers further explained that they are recommending the FFS to the new farmer's trainers because they want to escape it. The reason behind this frustration is, low remuneration. i.e. R.s. 150/ day (PPD, 2007), problem of timely payment, complicated reporting systems, official bureaucracy and formalities.

2. DC rarely efforts to gets any program from other organizations (local government, NGOs, GOs, Donors etc).

3. Selfishness of DC committee members: Example- when the DC members get a program from some organizations, they don't want to conduct it through DC. They grab it personally.

4. Unclear roles and rules in DC. There are 53 FFS farmers involved in DC as a life members, but they do not know what the DC is doing. They are not even in contact with it even a single time. They paid Rs. 500 to take a membership and are now regretting the waste of that money. Why do people seek to become members of certain groupings? (e.g. is it to make a positive contribution to their livelihoods, or to resist injustice or the adverse effects of power relationships (DFID). In this case members themselves are facing discrimination by their own organization. DC executive committee member also agree that they involved the farmers in the DC to create the impression of a big organization size for the purpose of gathering funds. They themselves appear to be unclear to the role of those life members in DC.

"Individually DC executive members are getting good jobs but DC is not getting a single one yet. It is really a testimony to failure of sustainable institutionalization of FFS approach in Nepal. The organizations are still rudimentary even though another four years of National IPM support project (2003-2007) has been completed recently. Farmer leaders have gained capacity and relation with other organizations and more importantly, have developed networks and skills to mobilizes resources (Wennink,2007).But these leaders are more program based and dependent to others rather than trying to get opportunity .They are waiting for the support in their place rather than struggling. In another way they are expecting spoon feeding from others.

As we mention above, farmers have very easy reasoning of failure of FFS groups is "We have not seen our IPM trainers again after field day"and trainers have again easy question in the same problem is"Who will support (pay) us to visit our FFS?" IPM district coordinator also agreed with both of them that "There is no any follow up program to meet again with those FFS farmers". In line with the above mentioned statement, Plant protection directorate (the national level leading organization on IPM project) said "Off course, there is different coordination committees formed under the national IPM program at different levels. There has not been a single meeting conducted due to absenteeism of the members because of no allowances. So the coordination and monitoring is not enough and effective" (PPD, 2007: p.33).

The Agriculture research and extension project (1998-2002) wrote in its final evaluation report, "The weak point of such project specific committees is their dependency to get help, inability to run more programs and becoming inactive once supports are withdrawn. Other problem in groups is not having specific action plan and from the service providers "Done and forgotten" approach" (AREP, 2002: p.44).

The higher level committees, where IPM professionals and responsible bureaucrats involved are not functioning because of allowance, how it can be expected the automatic sustainability and institutionalization of lower level organizations like DC? Indeed district level IPM organizations are endangered. They didn't develop DC as powerful organization when there was money and projects for them. This missing of IPM leader's network finally hampered FFS group's sustainability and process of socially capitalized.

It is very easy to establish an organization. Many reports highlight it as a major achievement of the program but there are several challenges for sustainability. Rarely does any program have further projects to support such organizations? What next for sustainability of those public capitals? The implausible and untenable answer leads the organizations to the verge of collapse.

5.9 Inconsistent Service Flow

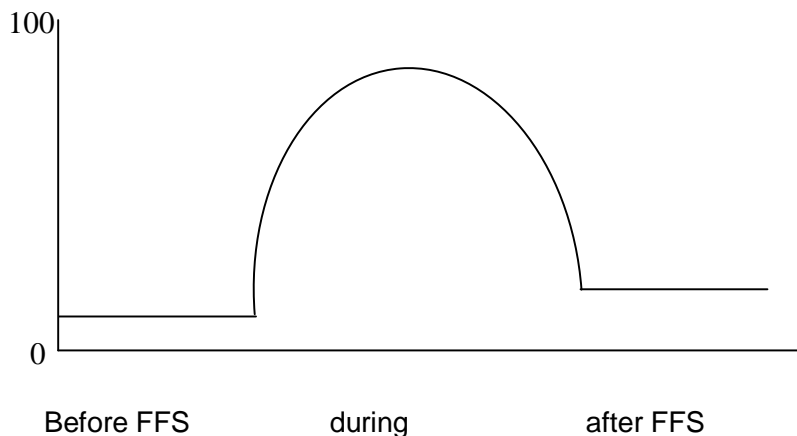


Fig 5.7: Service Flow Before, During and After FFS

As mentioned in fig.5.7, women farmers realized that the IPM/FFS program has very inconsistent support approach in groups. During FFS there are continual visit and monitoring by different individuals and organizations from district to center level. IPM FFS groups act with different stakeholders like local government, TITAN, IPM association, Donors & other groups. These organizations provide different kinds of supports. But next day after farmer's field day, it decreases tremendously. Such inconsistent support is another reason that hinders capitalization of FFS groups.

5.10 Individuals' Contribution to Social Capital:

We have already discussed the impacts of FFS on different individual and organizational level. Results show that FFS approach is effective to empowered individual then organizations. This study would be unfair if, we do not count FFS graduates individual contributions for social capital formation. To what extent the FFS graduates contributing when they go back to their original groups? "In the analysis of group development, it is sometimes difficult to determine if changes are due to "individuals" being more "empowered", "confident"? On this point, the findings of this research indicate in the affirmative: "yes" people are empowered. Significant changes can be seen to FFS graduates but it is difficult to qualify the extent of change contributing to such social solidarity in community, and all levels of stakeholders.

Farmer trainers are the most empowered farmers from FFS program. They benefit most from FFS due to allowances, training, exposure, linkage and quickly adopting of technology. They can contribute effectively to develop social capital by mobilization of IPM graduates in the community. When interviews commenced with them for this research, they wake up and realized that they had really overlooked this part in FFS. It was not given such priority even in their own training (TOT).

District IPM program coordinator agreed with farmer trainers and added that this, modality of FFS is good for technical input dissemination. For groups strengthening and building community level social capital, there should be another program. Year round supporting programs like participatory planning and farmers and science are needed. In contradicting with their ideas, report claims that, one of the major objectives of IPM FFS is institutionalization of program (PPD, 2006:p.86). This seems clearly failed in IPM FFS approach.

In spite of such barriers, this manpower is developed as potential human resources in Kavre. It is very easy to cash on their expertise to developed social capital in the district. These reserve force is foundation to promote farmers to farmer's extension. Though there are very few resources available, the trainers do cherish some dream in context to FFS as below.

Regular group meeting to discuss on group activities, saving and saving mobilization, season and off season crops/vegetable in each member's field, drums of botanical pesticides, animals urine in the field. Daily income from agriculture and farming planning for next season.

Of course, some active graduates are contributing for the groups but "It is difficult to determine if changes all due to "Individuals" being more "Empowered" therefore participate more actively influence and changing the social context in which they live (Westendorp et al., 2002)." In the topic, Impacts of FFS in the groups it is discussed that school students, young girls and leisure farmers have very less contribution in their groups. Hugh Ward in his journal "Social Capital and Environment 2000, stated that "even among IPM graduates only 25-50 percent remains in the groups".

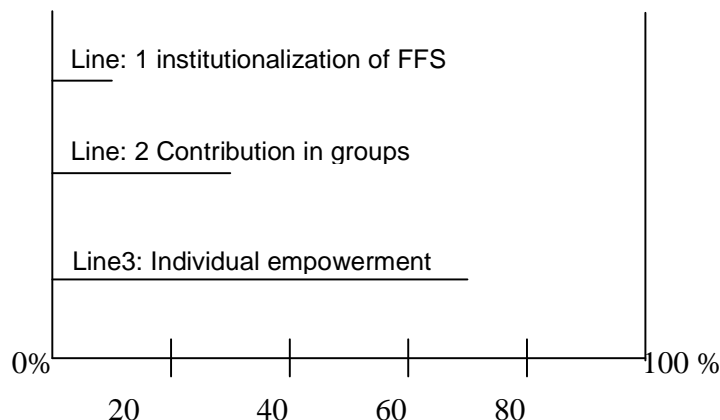


Fig 5.8 Farmers/ trainers rating of different level of empowerment

This figure explains farmers' and farmer trainers' appreciation on IPM FFS approach as a new and different practice for their wellbeing. In a rough paper they made a three steps contribution of FFS as motioned in fig 5.8. Line one is tentative % of FFS contribution for Institutionalization of groups or organizations. Line 2 is for direct or indirect contribution in a groups and line 3 is for individual empowerment according to their experiences.

Men and Women

Almost all the women who participated in IPM/FFS are found to be involved in many other groups and cooperatives. These social entities were developed at their own initiation and with the triggers of external service providers. For example, the local level women cooperatives (as discussed in Fig: 4.3 in page 19 of this report) are crucial social capital for women welfare.

But IPM/FFS men have rarely initiated to open such cooperative or groups as a social property. Some attempts were made but failed soon because of little trust among members. Men are more involved in those social organizations where their membership is obligatory. Example: Community forestry users' groups, drinking water user groups, school management committee, construction and repairing committee of road, school, bridge, health post etc. Men are weaker in initiating long term organizations than women, it is found from the comparative interview in men and women farmer's groups that;

1. Lack of mutual trust between one another, less transparency in program opportunity and money matters.
2. Men are not willing to save such a small amount like Rs. 20 per month.
3. Men are not punctual and sincere to pay the loan on time.
4. Men are not strict in observing the rules and regulations of the groups and do not respect the group norms.
5. Almost all men have a common story and bitter experiences in groups that some members have got more benefits and misused the fund before by fraudulent means.
6. Men are more involved in personal, community, political and social conflict has an ego problem in relation to one another.
7. Men are looking for the option of off farm work like: business, job and entrepreneurship.
8. Alcoholism, playing cards etc hinder their social interest.
9. High expectation and less trust to development agencies. Lower belief in gradual development.
10. Not interested to participate in trainings without incentives; it resulted in reduced motivation to join such organizations.
11. Those men, who have not committed themselves to the group approach, would remain in leadership position. They were will nominated as group leaders because of their reputation and domination in society. Once they are leaders, the position has never been changed, ultimately leads a group towards failure.

The Scenario has been gradually changing over the years because of education and exposure. Women have become bolder and self confident than before. The change can be perceived in that the women themselves are managing all the financial matters (saving credit, interest and rules) independently through cooperatives. A few years back, the men were managers/ treasures in women groups. Many development interventions including FFS might have influenced to buildup such confidence in women. Women farmer groups are more successful than men's' and mixed groups because they are sincere, committed and fell responsible to their families and groups (UNDP and AREP, 2002).

Though women are involved in saving and saving mobilization, men farmers think that it is men's money because women use the loan for vegetable cultivation, buffalo and goat rearing, treatment of sick family members and other common household interests rather than personal use. One male farmer in Mahendrajyoti said,

"They (women) save the money because we are giving them; ultimately it's our own money".

It is found that most of the women are earning themselves for their saving by selling vegetable, chickens, goats (Pewa) working for wages (Jyala), alcohol making and sometimes obtaining as gift from relatives from the natal family (*maiti, mawali*). Though the women are doing the wise job, men are sharing the benefits for their family welfare as well. Bonding relationship amongst women through their cooperatives is better than in the case of men. They have constant linking relationship with their trigger organizations. Sometimes women cooperatives got training, visit and cash support from such service providers. The major sources of social capital identified among Filipino farmers are kin networks, house neighborhood, farm neighborhood, and membership in a farmer's association. One cultural avenue in the building of social capital in the Philippines in relation to technology sharing and learning is through a group of two or more people holding a conversation or informal discussion. It is common scene where you often see people just sitting outside the house in a bamboo bench or under a tree talking, laughing, and sometimes playing cards, or drinking as depicted (Florencia et al., 2002).

This is also very common in Nepal among men farmers to discuss about the new technologies introduced, increased price of fertilizers and experiments they conduct in IPM FFS. Tea shops, public places and farm work are the place for sharing; but it is not leading farmers towards group actions. It is a part of informal gossip that can create curiosity among the other non IPM farmers but can't contribute for organizational strengthening and sustainable social capital formation as this study discovered.

Women Only Groups

After the establishment of democracy (1990) in Nepal, social awareness has been increased among women. It might be the reason that women, ethnic groups and *Dalits* are also involved in different groups. This inclusiveness is in the raising trend. The daily relationship among group members and out group members is not changed because they are more neighbors than group members. Women have equal social relations with other neighbors even though they may not be in the group. Only the visible difference is that, the group members have access in their saving, training and agriculture input received by the group.

Generally there is no discrimination in loan disbursement to members within the group, but sometimes the poor and *Dalit* members get less than their demand because women seem more conscious while investing their money tends to avoid risk. According to them, the poor cannot pay the loan on time. Because of more loans, they might leave the groups. So, control is necessary in respect of such members.

So far as bridging is concerned, one women of the household may be a member of many groups in the community. It is difficult to separate bridging relation of the groups and members as well as to isolate IPM apart from those groups. So far as the bridging relation with the neighboring village group is concerned, it is very weak. One group of this village is completely unknown about the activities of another group of the next village.

After FFS the women started to talk about the performance of certain crops and pest problems in casual meeting. Still there is no any formal forum which enables their bonding /bridging. Women said that, FFS was a good forum for them to meet and share with

neighboring groups. They were routinely gathered in FFS and had been managed their time to go out from the village.

Example of this lack of bridging can be witnessed in Sanga-3. There is a seed production groups and this group is popular among the concerned line agencies in the district. But a farmers' group of next ward does not know about this popular seed production group.

But during FFS they do not pay attention to visiting other FFS or successful groups or service organizations because of the unwillingness of the IPM facilitators, the farmers lose this chance of bridging among other IPM/FFS groups; share their experiences to know each others activities and get benefits.

Women started to visit agriculture service centers after FFS. Some times they used to visit the DADO in the district, but the activity could not continue much longer for lack of positive response from the office. So, the women queried "Why to go there? They always tell us to come again next time and claim that all the programs have been finished now." This experience of a women farmer in Jyamdi is true. Of course, the DADO has very limited programs and they often conduct in new groups as we discussed under topic farmers' groups in Kavre. This example of disappointing is one of the reasons that women groups are failure to made linkage with development organizations. Besides this, there is very limited linkage with other organizations.

IPM and non IPM Women Groups

In data collection, when IPM women knew that I am working in agriculture office and wanted to discuss with them about IPM/FFS, they seemed very eager to discuss with me in many agriculture related issues. They started the discussion with questioning, what next is to follow FFS for them? Why nobody came back again to their village to review the FFS and the progress made by the farmers after? I observed that women were really emotionally involved with FFS and they spill out their bitterness because now they are missing this forum of combined interest.

Gradually women started to open in discussion and explained, how effective was the pheromone trap (which was given in IPM FFS) to control the fruit fly and tomato fruit borer. What response did they get and disappointed with the DADO office and service center when they once visited to them to look for such trap again because these pests are still problem for them and they do not have access to such effective trap. How the variety (they were tested in IPM field) is still yielding money. How their group became winner in the FFS by constructing nice cage and successfully rearing the larvae, which finally changed into beautiful as well as harmful butterfly. Why the government isn't controlling duplicate pesticides and fertilizes import; what was the effectiveness of the botanical pesticide that they have made; how they are suffering from cutworms, white grub and red ants; how they control certain pests in their crop and resist their husband's decision to purchase pesticide etc. This evidence proved the willingness and technical empowerment of FFS women.

On the other hand, non -IPM women groups don't have such issues to discuss. They rather ask what input (especially vegetable seeds) am I going to give them? They think that I am the person who can give them improve seeds, sapling and training sooner or later. The non IPM women farmers' groups have focused more towards the saving, health, informal adult education than the IPM groups. When we talked about their interest on IPM FFS, they related about the many other trainings which have been conducted in their villages before. This comparison may give some room to claim that IPM/FFS has a direct impact to mpower women to build human capital rather than social capital in the community. Though the individual empowerment is satisfactory, the functional relations among group members and groups are not seen as effective.

Apart from technical and agricultural issues, other activities are similar between the IPM/FFS and non IPM groups. To contribute for school building, community building, a temporary bridge over the stream, drinking water improvement, pond for buffalo bathing, temple construction, participation NGOs program, political rally, exchange among other villagers outside the groups, offering help to the neighbor in religious work, cultural ceremonies (birth, death, marriage, worship) seem similar between both categories.

5.11 Group Leaders and Members Perception to Social Capital

Women group members are agreed that like other capital (with land and animals) the group is also a capital for them. They gave the example of their cooperative from where they are getting money when it is needed.

On the other hand, if the group would have progressed well, it would have helped to produce more and that production would also be some capital for them. Women are aware that if they have an active group, more service providers will come to them with different development program.

Group leaders perceived group as a platform for development. They agreed that group gives them opportunity to link with different organizations. Group members are also agree that group leaders are getting more opportunities in district level meetings, trainings and visit. This practice is found more in men leading FFS groups than women groups, because women are more responsive to share these opportunities and raised such cases in groups meetings. In men led groups, the leaders do not want to disclose this opportunity to the group.

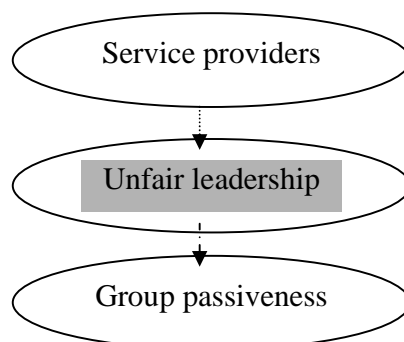


Fig 5.9 Opportunity Captured by Group Leader

They gradually isolate the group from the benefit that only they manage to get access to, even though other group members are still looking up to them for such chances. Because of their comparative advantage of education and expression capacity they quickly influence the resource person and find access to district level programs and other benefits. Training other than basic ones i.e. technical, long term and income generating seem to be confined to a limited number of people having certain level of education. Various training opportunities have been repeatedly confined to a few influential people in the groups (UNDP, 2002).

The basic motivation of the farmers to join groups and networks is the fact that collective action more profitable than individual undertakings. Lack of transparency honesty, opportunity, inputs and lack support in FFS groups became gradually inactive and 'break away' organizations, finally couldn't changed as a social capital (Wennink,2007) .

Group leaders are appointed at the time of group formation. Usually educated, forward and community leader has appointed as a group leader and they are rarely changed in the groups. Members show their unwillingness to be a leader because of lack of time, less approach for development organizations, less educated, and they don't want to bother with that responsibility. Unwillingness of member's and poor democratic exercise inside the groups for leadership selection and opportunity sharing produce a monopoly leadership that does not work for the group's sustainability.

CHAPTER- SIX: CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

This chapter concludes the outcome of the case study on contribution of Integrated Pest Management Farmers Field School's for social capital formation in women's farmer groups in Kavre district Nepal. For the study, I generally considered the concept of social capital as institutions, relationships, and norms that shape the quality and quantity of a society's or social interactions. Networks, bonding, bridging and linkage created by IPMFFS are social capital. Specifically the role of IPM/FFS as the glue that holds farmer organized as an organizational member, institution formulation and combined effort for better livelihood.

IPMFFS and women groups are taken as the issues for study because "Feminization of agriculture practices" that woman provide up to 90 % of the labor contribution for agriculture production. The national agriculture policy focuses on women's empowerment through groups strengthening in relation to agriculture development which, as professed many times in the policy commitment.

Since the last decade, IPM FFS has been taken as a most popular and powerful extension tool among Nepalese farm community for technology transfer and build up social networks in different levels.

A total of six farmer groups were invited to participate for the focus group discussion. Two IPM/FFS women groups and two men leading mix IPM/ FFS groups and two non IPM women groups were taken as samples for the study. Besides group discussions, one leader and one member is picked up from each group for individual interviews to explore their individual ideas which might not came out from the group discussion. Five IPM/FFS facilitators including district IPM coordinator of Kavre were also interviewed for triangular verification of the findings.

Before analyzing the impacts of FFS in groups, I tried to explore the existing status of farmer groups in Kavre. It is found that there are 261 farmer groups recorded in the District Agriculture Development Office. Out of 261 groups, 74% are mixed, 22% are women's and 4% are men's groups. 57% women and 43% men members are involved in the groups. 62.8 % farmers groups are active and 37.2 % farmers groups are partially active in the district. The farmer groups are registered in DADO's record but this registration does not have any serious meaning for group's wellbeing .Younger groups appear to be more active and older found to be gradually defunct. There are many unreliable and inconsistent figures attributed to an erroneous presentation of groups' records.

As far as participation in concerns 57% women are participated in community level groups but when there are more opportunities for income or status or training or entrepreneurship or district level leadership only very few (3-12%) women are getting chances. As a new practice many new women cooperatives are developing as microfinance organizations in rural areas of Kavre, where majorities of rural women are involved. Women have access to credit in these cooperative. Men are often weak in cooperative formation and saving practices than women farmers because of lack of trust among each other, overlooking small saving amount and out from home for earning.

Two major IPM programs which have been completed in Nepal are taken into consideration to study their contribution in social capital formation as below:

- FAO-TPC project followed by Community IPM program, 1998-2002 (Supported by Norway)
- National IPM program, 2003-2007 (Supported by Norway)

The major achievement of those programs as, Trained 138 officers, 76 farmers and 617 farmers as an IPM trainers 36419 farmers have been graduated.

Besides this human resource development IPMFFS has some major claims regarding social capital formation. These claims are made on the project documents and progress reports of the programs which were tested in this study.

- 6000 farmers groups will be strengthened by the program and developed community feeling among IPMFFS farmers.
- Establishment of IPM network in district level including all concern individuals and organization. Such networks would be developed as pressure groups for agriculture development in the country.
- Developed women leadership for agriculture development.
- To conduct IPM program effectively, essential institutional arrangement would be made in different level.

FFS approach has visible impacts for building social capitals at different level such as individual level (group member's level, group leader level and IPM trainer's level) impacts on farmer group's level and organizational level. FFS approach has led to improvement of skills and capabilities of individual people in community. Those individuals who were trained in IPM FFS became more knowledgeable and closely involved in what was really happening at the farm. It empowered them and make some how independent in decision making in farm activities. Farmers realized this in the improvement of farm level pest management skills, improved management of other farm production activities. Reduction of pesticides resulted in saving of money and conserving the environment to some extent.

Group's leaders are enjoying more benefits (input support, exposure, visit, and training) by making personal linkage with FFS trainers and organizations. IPM farmer trainers have found the job opportunities in NGOs and their skill is recognized by CTEVT as an agriculture technician. Further such skills are in demand in different organizations especially in NGOs as a community level trainer.

Against the FFS strategies' claims, very few numbers of IPM /FFS have resulted in established farmer groups in practice. In reality facilitators are forming a new FFS group on their own interest by followed "picked up the members" approach, which is in contrast with the guidelines given to FFS trainers to build upon or make use of already existing groups. When the picked up members dispersed after, the FFS groups would be collapsed itself. It is the root cause of failure of institutionalization of FFS in community level.

After FFS, the empowered farmers expected more services and contact. During FFS, some relations between farmers and trainers have been built and the trainers became friends of the village. Unknowingly some commitments are made for further support to their groups. But there is no way to fulfill such expectations from the farmers' trainers because they don't possess any authority, budget and program to further support the FFS. Finally such good relation has been changed into mistrust over the program as such.

In this situation, FFS can be effectively completed but farmers' groups can't be sustain in long run. Now it is easy to count the number of FFS held in the district but difficult to find them as IPM FFS groups. In fact, a chain of development should be started from FFS but the whole story ended after farmers field day celebration, in practice.

IPM DC as a farmers organization failed to make representation of 98 % of its life members. It converted into the forum of some elite farmer leaders/trainers, and mostly male (only one active women trainers out of twenty) dominated. Only 8-10 IPM farmer's trainers are playing around this organization as forum to grab opportunity. DC as an organization does not have any plan, agenda and budget to support the FFS groups. It is quietly dependent to the DADO allocated FFS. DC missed the opportunity of institutionalization because: when there was project they have had work, money and voice heard by others (donors and service providers). They should make some foundation for sustainability of their organization in that period. Now, the train has been left and the DC is looking in horizon for another, which is uncertain to come.

IPM programs highlighted the establishment of an organization like DC as an important achievement of their projects but it is wrong to assume automatic sustainability of such organizations without further strong support for sometime.

Though FFS has very less organized efforts, some positive change can be seen in society in terms of human capital formation. Women participation is increasing in social affairs like forming a saving organizations then man, leadership development in community level, increasing dealing capacity, improve in household level agricultural decision making can be clearly seen in FFS women. As a result of empowerment women are managing all the financial and management issues of their cooperatives without help of men these days. Women started to visit agriculture service centers and paid more interest on development after participating in FFS. Comparison to their non FFS colleague they have wide vision of agriculture to discuss and deal with agro vets and service providers.

6.2 RECOMMENDATIONS

Summarizing the above proposed strategies, I make the following recommendations,

1. It is suggested to develop IPMFFS as a multidimensional tool of agriculture extension. FFS should be fit in whole chain of a commodity and can be bringing out from its confined scope of pest management.
2. Developed and implement the follow up strategy for the IPMFFS which have been conducted in the district.

This can be done by proper planning during FFS. The plan should show what next after FFS and for how long. Such plan should be participatory and the role of FFS farmers, IPM

trainers and support organization should be clear. After the whole package the groups should be sustained longer.

3. FFS should be defined as technical as well as Social development approach and social components such as groups strengthening, binding, bridging and linkage, sustainability etc need to be added in the FFS curriculum in all level.

This can be done by simple revision of FFS curriculum. Some meetings with line agencies, exposure visits, interaction among groups, access to inputs resource center can be introduced as the wider scope of FFS.

4. Indeed women participation is happening at community level program but it should be focus for their real empowerment, especially for not well educated, very poor and vulnerable women.

It could be promote by providing them opportunity in all level of program with significant involvement by providing support to their groups and cooperatives. Of course women farmers are less educated and have weak bargaining power but appropriate program can be developed by assessing their practical strengths.

5. Before forming many committees, union and organization the way of sustainability after termination of the project support should be declared. To improve the chances for sustainability it is good to use existing organization, rather than newly formed and follows the picked up approach. Program should have clear vision for the farmer's organization like DC for financial and institutional support.

6. Farmer trainers, what do they need to make their FFS groups sustainable as their dream. Groups leaders and trainers are working for their own benefit, how to make them contribute to social capital building in community? The program and concern stakeholders should have to work on it.

7. Different organizations, NGOs and local government bodies are also allocating resources for FFS. There should be coordinating approach among such organizations.

8. Proper record keeping, taking responsibilities of the program and impacts level monitoring system is needed. Monitoring should be based on program guidelines rather than superficial and target based.

9. This study further shows the need to conduct detail study/research with bigger sample size to judge the institutionalization and social capital building effects of FFS approach in Nepal.

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Annex: 1

Name list of Some IPMFFS & Address

S.N	Name of FFS	Address	Total member			Trainers	Position
			Fem ale	Male	Total		
1.	Sarada Devi IPM FFS	Sarada Batase -4	14	10	24	Bimal Narayan Napit	Farmer Trainer
2.	Milijuli IPM FFS	Nashikasthan-6,	19	9	28	RamKrishna Dhakal,	Farmer Trainer
3.	Seti Devi IPM FFS	Nashikasthan-2,	20	4	24	Bimal Narayan Napit	Farmer Trainer
4.	Samudai addeyan IPM FFS	Madhindrajyoti -4,	23	5	28	Bimal Narayan Napit	Farmer Trainer
5.	Evergreen Vegetable FFS	Ugratara V.D.C.-4	7	22	29	Bimal Narayan Napit	Farmer Trainer
6.	Shanku Jagriti IPM FFS	Shankupati chaur	24	7	31	Not given	Farmer Trainer
7.	Budhathokigaun IPM FFS	Nashikasthan-2,	25	2	27	Bimal Narayan Napit	Farmer Trainer
8.	Bagdevi IPM FFS	Jyamdi V.D.C-8,	7	19	26	Bimal Narayan Napit	Farmer Trainer
9.	Shidhi Ganes IPM FFS	Mahindrajyoti-1,	17	8	25	Bimal Narayan Napit	Farmer Trainer
10.	Nashika IPM FFS	Nashikasthan	17	14	31	Bimal Narayan Napit	Farmer Trainer
11.	Keraghari Vegetable FFS	Panchakhal-3,	16	11	27	Rajendra Sapkota	Farmer Trainer
12.	Gyanodaya IPM FFS	Birtadeurali-2,	11	14	15	Laxman Bajgai	Farmer Trainer
13.	Sunkoshi IPM FFS	Chaukhabesi	4	21	25	Govinda Parajuli	Farmer Trainer
14.	Khaharebesi FFS	Birtadeurali -5	14	11	25	Govinda Parajuli	Farmer Trainer
15.	Shree Balkumari FFS	Mahindrajyoti-2	21	3	24	Shova Humagain	Farmer Trainer
16.	Shree Dhami gaun IPM FFS	Kalati Bhumidada-9	12	16	28	Ganesh Shrestha	Farmer Trainer
17.	Shree Dipjyoti IPM FFS	Rayale -9,	11	14	25	Laxman Humagain	Farmer Trainer
18.	Sarada Chowk IPM FFS	Panauti Municipality	10	11	21	Harichandra K.C.	Farmer Trainer
19.	Shree Pragatishil IPM FFS	Sarada Batase-4	22	3	25	Shova Humagain	Farmer Trainer
20.	Abiral IPM FFS	Sanga-6, Kavre	23	10	33	Ramkrishna Dhakal	Farmer Trainer
21.	Aashi khola IPM FFS	Mahadevsthan 1,2	17	8	25	Ram Mani Paudyal	Farmer Trainer
22.	Bhawanipur IPM FFS	Deupur-9	9	8	17	Ram Mani Paudyal	Farmer Trainer
23.	Sunguthi IPM FFS	Mahadevsthan 1	25	-	25	Ram Mani Paudyal	Farmer Trainer
24.	Dovan IPM FFS	Mahadevsthan -1	25	-	25	Ram Mani Paudyal	Farmer Trainer
25.	Anpghari IPM FFS	Baluwa, 3	25	-	25	Ram Mani Paudyal	Farmer Trainer
26.	Bumesthan IPM FFS	Chandeni-8, Jyamire	24	-	24	Ram Mani Paudyal	Farmer Trainer
27.	Shree Kopila IPM FFS	Fulbari -6	34	-	34	DADO managed	DADO trainer
28.	Jagriti farmers field school	Patlekhet-8	17	8	25	DADO managed	DADO trainer
29.	Shankhu Awareness IPM FFS	Sarada Batashe-2	20	5	25	DADO managed	DADO trainer
30.	Pragatishil IPM FFS	Sarada Batashe-2	20	4	24	DADO managed	DADO trainer

Annex: 2

Discussion Checklists for IPM Groups

Background Information:

1. Name of the IPM FFS
2. Nature of the farmers groups? a. Women b. Men c. Mix (women /Men leading
3. Established Date of group.....Date of IPM FFS conducted
4. Who initiated to form this group? A. Government B.NGO C. Others

Total numberMaleFemale

BraminsChettri.....Janajati.....Dalits

5. Do you think a group approach is good? Yes/no

Why?

A. Groups Management:

6. Is this group registered? Yes/ NO
If yes where.....If no Why
7. Is there regular group meeting? Yes/NO
If yes when? A. once in a month b. Twice in a month c. As per need and agenda.
8. What are the main agenda for discussion in group meeting
8. Who raise the issues groups leaders/members/all
9. How is leader appointed? Elected or nominated?
10. Do you want to be leader? Why/ Why not?
11. Is leadership ever changed in your groups?
12. Is there saving in the group? Yes/No
13. If yes how it is collected and mobilized
14. How far the system is fair to get equal chances to borrow money from the group?
15. Is there any written constitution/rules and regulations in the groups? Yes /No
If yes how it is implemented /followed
16. How are the rules determined?
17. What are the planned activities of your group for this year.....?
a. Agricultural.....
B. Non agricultural (plantation, road construction, drinking water/ canal repairing
18. What was the purpose of the group, when it was established?
19. How far you group is successful / failure to meet this purpose? How

B. Bonding/ Bridging/Linkage

20. Who are the members in your group?

a. People from same caste/different caste b. same neighborhood / different neighborhood

c. Same family relation /Different family relation d. age e. Education f. Income level

.....

21. What kind of relations do the group members have, different than out group's members?

Labor exchange

Borrow money

Cooperation in marketing

Others

22. What kind of relation you have with other groups?

a. Dairy groups.....

b. Community forestry.....

c. Women development groups etc.....

d. Irrigation groups

E. others

23. Is this relation different before and after IPM/FFS?

24. What kind of relations your groups have with different service providers?

Local NGOs.....

VDC.....

District level office.....

a. DDC

b. DADO

c. Mahila bikash

d. Veterinary

e. Others (Cooperatives /banks).....

25. is it improved before and IPM FFS or is it helpful to increase relation?

26. How do you appreciate the IPM FFS?

.....

.....

.....

27. What change has you realize in your groups after and before IPM/FFS? (Leaders / Members)

a. Knowledge and skills developed.....

b. Women's decision power in HH

c. Group recognition and value

d. Manpower developed for service providing

e. Leadership development

f. Groups management

g. Bonding.....

h. Bridging

i. Linkage

j. Other activities (social, economic,

k. Women confident to speak

l. Mutual trust

28. How you (leaders) recognize value of your groups has been increased after IPM/FFS?

-
-
- a. How networking is increased with the service providers after IPM/FFS?
.....
- b. What you appreciate of IPM/ FFS intervention?

29. How you (members) recognize value of your groups has been increased after IPMFFS?

-
-
- a. How networking is increased with the service providers after IPM/FFS?
.....
- b. How decision making process improved after IPM/ FFS intervention?

9. What do you mean by social capital?

C. Service Delivery

1. What are the differences do you feel between other training and IPM farmers field school

-
-
- a. What they learn in the field school?

I. Technical.....

ii. Social.....

2. What services is provided in the groups before IPM, during IPM and after IMP

Before

During

After.....

3. How the organization continuing its services in your groups after FFS?

.....

4. How they encourage your groups to keep relation with different service providers?

.....

5. How did the IPM/FFS facilitators helps to make the group stronger? What is his /her role?

6. What action does your group take to improve service delivery?

Discussion checklists for non IPM groups

Name of the group

Established Date

Who initiated to form this group? a. Governmentb.NGO
C. Others.....

Total membersmalefemale

Braminschettri.....Janajati.....Dalits

A. Groups Management

1. Is this groups registered? Yes/ NO
If yes where.....If no Why
.....
2. Is there regular group meeting? Yes/NO
If yes in how many days
- What are the main agenda of discussion in group meeting
.....
Who raise the issues groups' leaders/members/all?
3. Is there saving in the group? Yes/no
If yes how it is collected and mobilized
.....
- Is it fair that all are getting equal chances to use the money
4. Is there any written rules and regulations inside the groups? Yes /No
If yes how it is implemented /followed
- 4.1 Who made /how developed?
5. What are the main activities of your groups?
5.1 Who decides activities?
6. What was the purpose of the group when it was
established.....
7. What are the major services getting by these groups from service providers?
.....
8. How far you group is success/failure to meet the purpose? How?
.....
9. What are the other social activities perform by this group in village?

10. What are the reasons of success or failure of this group?

.....
11. Why you didn't take part in IPM /FFS?

B. Bonding/ bridging/Linkage

1. Who are the members in your group? People from same caste/different caste
Same neighborhood / different neighborhood.....
Same family relation /Different family relation

2. What kind of relation you have with the group members different than out group's members?

Labor exchange
Burrow money
Cooperation in marketing
Others

3. What kind of relation you have with other groups?

- a. Dairy groups
- b. Community forestry
- c. Women development groups etc

.....
.....

4. What kind of relations your groups have with different service providers?

Local NGOs
VDC
District level office
Others

Discussion Checklists for Trainers/Organization

Name:

Organization:

Responsibilities in FFS: Trainer/ organization Chief

Number of FFS conducted in Kavre?

Numbers of groups after FFS still active?

1. How many groups are registered in the district? How many are IPM groups?

2. How do you regard IPM/ FFS field school approach?

Technology transfer/ Extension

Research.....

Groups training

Tools for group building

3. How it is contributing to strengthen women farmers groups?

-Group management

- Bonding among members

- Bridging among groups

- Linkage with service providers

4. How about continuity of extension service in those groups after IPM /FFS?

.....

5. How IPM/FFS are contributing to society as a social capital after FFS intervention?

Access to service providers

Knowledge sharing/ Human capital development.....

Marketing network.....

Other social activities.....

6. What about effectiveness of follow up activities after FFS in women farmer groups?

.....

.....

7. What are the indicators of successful social capital?

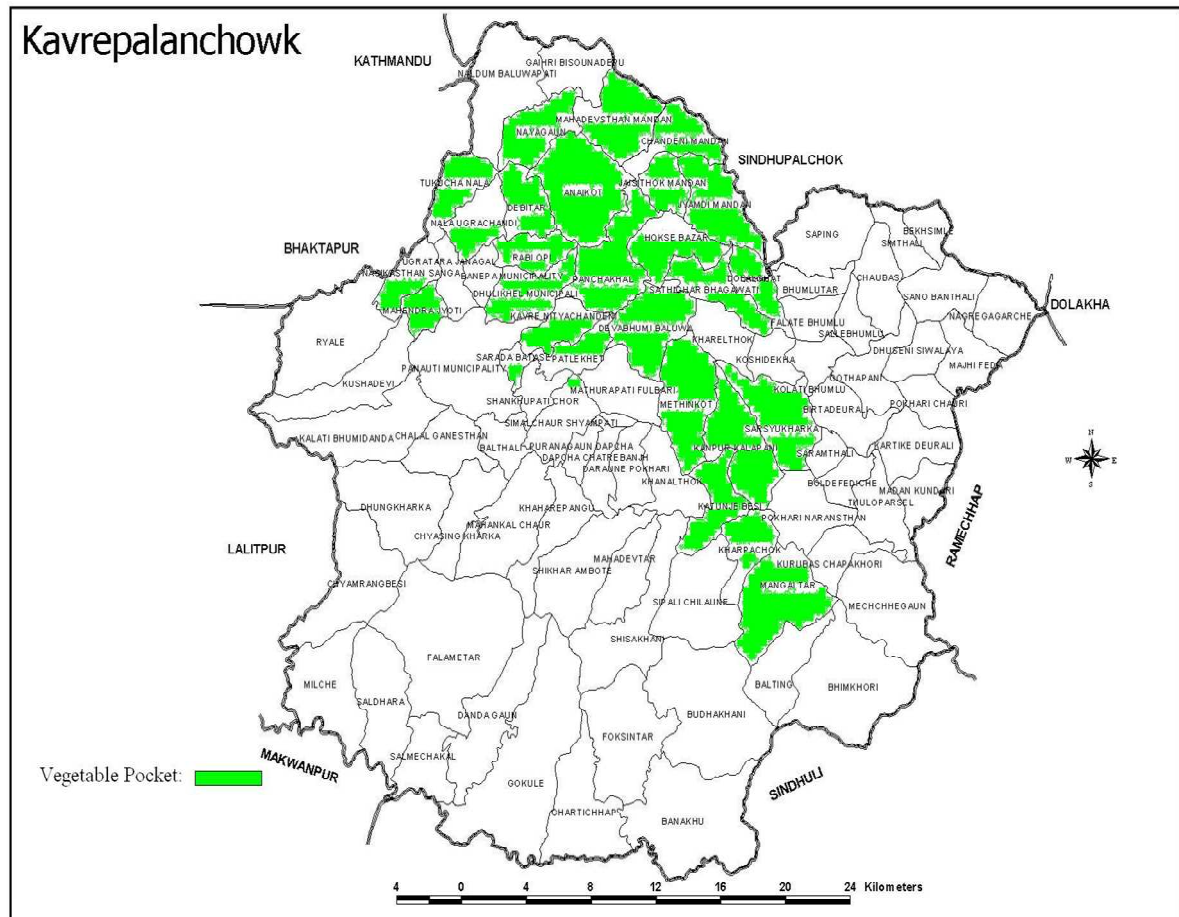
8. What is your contribution as an IPM facilitator for bonding, bridging and linking the groups?

CTEVT Recognition of IPM Farmer Trainers Skill

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Annex 4.

Map of Kavre District



Map of Kavre district

Annex: 5

Pictures



Pic 1: Common Geography of Kavre District



Pic 2: Women in Farm work



Pic 3: Women Managed Rural Cooperative



**Pic 4: Guests Observing Women's Innovation in IPM
Farmers Field Day in Kavre**