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EFFECTIVENESS OF COMMUNITY PARTICIPATION IN MINOR IRRIGATION REHABILITATION PROJECTS

BY

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"This dissertation was submitted to the Department of Civil Engineering of the University of Moratuwa in partial fulfillment of the requirements for the Master of Science in Construction Project Management"

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I hereby certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university to the best of my knowledge and believe it does not contain any material previously published, written or orally communicated by another person or myself except where due reference is made in the text.

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ABSTRACT

Participatory Irrigation Management (PIM) is the concept that farmers or irrigation water users participate with Irrigation Department or relevant irrigation management organization on decision making and conducting irrigation activities in aspects of construction and operation and maintenance as mutually agreed or determined.

Farmers or farmer organization can participate with irrigation department in four stages such as project planning stage, pre-contract stage, construction stage and operation and maintenance stage. In this research the focus is on how effective farmer participation is in miner irrigation construction

Literature Review in this research carried out according to the research objectives. Literature findings and discussion of direct involve officers in Provincial Irrigation Department, North Central Province, through developing a questionnaire. Here in data collection is aimed at three categories such as management staff, beneficiaries having successful projects and beneficiaries having unsuccessful projects. All beneficiaries covered six divisional secretaries.

The research concludes that there were many factors should improve for the successfulness of beneficiary participation projects in minor irrigation construction. The findings have emphasized on training programs for beneficiaries about construction principles. Farmer organization should be strengthening in financially and pay monthly bill. Communication should develop with farmers such as monthly site meetings, frequently site visits etc. Management staff should give continuous support to maintain the cash flow of FOs during the construction process and should be aware politician and policy makers.

Key words: Beneficiary Participation, Participatory Irrigation Management, Minor Irrigation Construction Projects,

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H. M. J. Herath

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ABBREVIATIONS AND ACRONYMS

DAC	-	District Agriculture Committee
DCs	-	Distributor Canals
FO	-	Farmer organization
PPP	-	Pilot Participatory Project
ILO	-	International Labour Organization
UN	-	United Nations
WB	-	World Bank
JICA	-	Japan International Cooperation
NGO	-	Non Government Organization
IFAD	-	International Fund for Agriculture Development
NCP	-	North Central Province
PID	-	Provincial Irrigation Department
CARE	-	Conflict Affected Regent Emergency
ENDRP	-	Emergency Natural Disaster Rehabilitation Project
CBO	-	Community Based Organizations
PIM	-	Participatory Irrigation Management
LSI	-	Large Scale Irrigation
JMC	-	Joint Management Committee
INMAS	-	Integrated Management Agricultural System

1. INTRODUCTION

1.1 Research background

Participatory Irrigation Management (PIM) has been the main strategy for the irrigation, agricultural and socioeconomic development in the world including Sri Lanka. Labour based method for irrigation construction is widely used in Sri Lanka in ancient time. The small irrigation systems like small tanks and anicut systems were originally constructed by people, as a reliable source of water of their agricultural needs which is completely depends on rainfall. Therefore, small irrigation systems can be regarded as farmer managed systems historically. Even the major irrigation systems constructed by ancient kings had certain farmer involved management systems. This is because water distribution in canals cannot be done without the participation of farmers. (Jinapala 2002)

The Rural Economy in Sri Lanka has revolved around paddy cultivation. Rice farming is not merely a livelihood; it is considered to be a way of life. With the advent of the colonial rule, the domestic agricultural sector, especially farming in the dry zone areas was neglected. The extent of land under paddy is estimated as 574,000 ha. About 240,000 ha which is nearly 50% of the total, falls into the category of minor irrigation systems. The minor irrigation schemes are categorized as schemes that cater to extents less than 80ha in a particular system. About 90% of the holdings under major and minor irrigation schemes are below 0.4 ha supporting about one million small-scale subsistence farm families. (Wijesekara, Chandrasena and Wanigasekara 1998)

All irrigation works were divided into major and minor work by Ordinance No. 32 of 1946. Minor work was those constructed by proprietors without government aid or with the aid of masonry work and sluices supplied free of charge by the government, which were maintained by the proprietors. The maintenance of all major irrigation works then became the total responsibility of the government (the Irrigation Department), and proprietors became liable to pay rates. While the cultivators in these major schemes still bad to undertake a measure of maintenance work in regard to their own distributor cannels and field channels, they were at the mercy of state officials

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for the proper maintenance not only of the headwork but also of structures (gates, sluices, etc.) and main channels. In this regard they had little control or say. Indeed the proprietors were even unaware of maintenance programs formulated by the Irrigation Department (ID). Seasonal paddy cultivation had to be done regardless if the maintenance work had been undertaken or had been carried out satisfactorily by the ID. This unsatisfactory position did not change with the definition of a major work by Ordinance No. 1 of 1951 as "an irrigation work constructed and maintained by or under the authority of the Director of Irrigation with money provided by Parliament." Inadequacy of funds and their misuse resulted in poor maintenance. While such is the position regarding major works, the maintenance of all other schemes (minor works) remained the total responsibility of the proprietors themselves. The Agrarian Services Act defined an irrigation work commanding less than 200 acres as a minor scheme. (Abeywicrema 1986) Under the thirteen amendment of the Sri Lankan constitutional in 1988, power of the miner and medium irrigation construction and rehabilitation imposed under the provincial council.

Historically, the minor tanks have played a vital role in cultivation of crops in the dry zone of Sri Lanka. Due to lack of maintenance of the head-works and distribution system, a good majority of these tanks are not in full functional capacity and require significant improvement or rehabilitation for them to again play a major role in the agricultural production for the nation. The present status of the farmers or land owners under minor irrigation systems prevents them from venturing in to the rehabilitation of such tanks due to financial limitations and as such the government interference in the interest of the nation is essential. The government of Sri Lanka and foreign agencies programmed from time to time had been extending support in this task. The approach commonly practiced had been where support is extended for both rehabilitation and maintenance. The biggest drawback of this approach had been the necessity of continuous government support to sustain these irrigation systems rather than developing self-reliant farming systems (Wijesekara, Chandrasena and Wanigasekara 1998)

It is very clear that government would require improve maintain and efficient use of capacity of miner irrigation system to increase the harvest and the upgrade living standard of the farming families. Government launched several foreign funded

projects also to improve the small (minor) tanks too in Northern Province and North Central Province such as Conflict Affected Regent Emergency (CARE) Project (2010-2013), Emergency Natural Disaster Rehabilitation Project (ENDRP) (2011 - 2013) and Pro-Economic Advancement and Community Enhancement (PEACE) Project (2007-2011). PEACE project attempts to increase the direct involvement of the beneficiaries, mainly in the construction works providing opportunities for learning and execution of rehabilitation activities.

In the interest of project sustainability, or to achieve certain specific social objectives, such as creating employment opportunities in the area it is desirable to call for the participation of local communities in the Procurement procedures. Subject to the above and on the recommendation of a committee comprising two nominees of the Head of Department and the Divisional Secretary of the location, the Procuring Entity may entrust construction works to approved direct contracting to Community Based Organizations (CBO) subject to the conditions. (NPAGuidelines 2006)

Final goal of Participatory Irrigation Management (PIM) implementation is participation in water management and irrigation activity implementation among farmers to achieve expected benefits as follows;

1. New irrigation structure construction and existing system rehabilitation will be in conform to both farmers' requirement and irrigation engineering principle.

2. Farmers and local administrative organizations have a sense of ownership of irrigation projects which is a significant key leading participation on operation and maintenance in concrete form and sustainable.

3. The efficiency and effectiveness of operation and maintenance is increased that water is allocated as required by farmers thoroughly, fairly and economically.

4. Irrigation systems are well maintained to perform perfectly and durable.

5. Farmers in irrigable area earn stable and more income.

6. Reduce conflict among farmers.

7. Reduce conflicts between people and the government sector.

8. Strengthen farmers and local organization.

9. Water management is as sustainable irrigation.

1.3 Objectives

Participatory Irrigation Management (PIM) is worldwide accepted and implementing process for infrastructure development. Involvement of beneficiaries is very important in PIM system. Legal provision also established for PIM in Sri Lanka. In minor irrigation system farmers' participation is very high in water management. The researcher is very interest in involvement of farmers to rehabilitation of minor irrigation projects. Hence, the following broad objectives were set for research.

1 To identify barriers for farmers' contribution of minor irrigation rehabilitation projects.
2 To make some suggestion to improve farmers' participation in minor irrigation rehabilitation projects.

1.4 Methodology

In this research qualitative approach is done to explore the research topic. Detailed Literature Review was carried out to determine the factors effecting on successful beneficiary participation projects and what are the legal provision for participatory irrigation management. It was reviewed after informal interviews with few management staff officers of directly involvement in minor irrigation rehabilitation projects. Finally, the questionnaire was prepared according to the factors identified in literature review and preliminary interviews.

Prepared questionnaire was distributed among the minor irrigation management staff and beneficiaries having successful completed projects and beneficiaries having unsuccessful projects which are identified earlier. Data was collected from three categories separately and analysis according to those categories.

1.5 Main findings

This study found that most of the questions in questionnaire are affected to effectiveness of beneficiary participation and some are not adverse situation. Experience of the beneficiaries about of minor irrigation construction projects is not accepted level. Financial capacities of farmer organizations are not sufficient to maintain the cash flow of the projects and payment procedure also long.

Communication with farmer organizations should be improved. Third party involvements also are there in construction projects.

1.6 Summary

In this section, I discuss the structure of the thesis. Thesis consists of five chapters. They are Introduction, Literature Review, Methodology, Data Analysis and Discussion and Conclusion and Recommendation.

Chapter one includes introduction to the study. It describes research background, problem definition, objectives of the research, methodology of the research, and main findings. Further, it included chapter summery summarizing all the chapters.

Chapter two illustrates the Literature Review of the focus study area of this research. This chapter broadens discusses about History of the Participatory Irrigation Management, benefits of PIM, beneficiary participation in rural development projects. Further, the chapter widely discussed building farmer organizations, farmer organization strength, and performance of the farmer organization. Finally the chapter describes institutional efforts at participatory management, government policy in PIM and strategies to promote community participation.

Chapter three describes Methodology of the research. It discusses interview survey of the staffs and beneficiaries identify possible parameters and questioner development. Further this chapter describes data collection and data analysis of the research.

Chapter four illustrates data analysis and discussion of the collected data for the research. The chapter aims to detail analysis of each questions of identified possible key parameters such that *Experience of the beneficiaries*, *Financial capacities*, *Resources*, *Communication with beneficiaries*, *Payment procedure*, *Time Management by the Beneficiaries*, *Third Party Involvement* and *Quality*. Finally, the results are discussed under each parameter.

Chapter five explains conclusion and recommendation the findings of the research in concise manner referring to the objectives defined in the first chapter. Moreover, the author attempts to made comprehensive conclusion on result and made some recommendation for effective beneficiary participation on minor irrigation

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construction projects. Finally, author discusses some potential extensions of this study that can be incorporated for any further research.

2 LITERATURE REVIEW

2.1 General

Beneficiary participation irrigation projects are defined by different authors in different angles. In this literature review found that following wordings closer meaning and supportive documents for the research topic.

- History of the participatory irrigation management.
- Benefits of the PIM.
- Farmer organization strength and building.
- Performance of the farmer organization.
- Institutional efforts of PIM.
- Government policy in participatory management and
- Strategies to promote participation.

In general, it was found that costs for community-contracted micro-projects were normally very close to being on target. The quality of infrastructure and service provision also tends to be superior to that envisioned by local government engineers. However, project duration generally exceeded the target, but was still comparable to conventional contracts. The overall performance of the community-partnered micro-projects was found to be comparable or better than the conventional micro-contracts; in addition, the performance of these projects in terms of socio-economic elements was likely to far exceed that of the conventional micro-projects (Sohil and Baldwin 2004).

Limited water resources, concerns regarding environmental quality and planning under potential climate change with its increasing variability and uncertainty, poses various kinds of challenges, by making the development process more complex. Integrated Water Resources Management for efficient, equitable and environmentally sustainable use of resources requires transparent and inclusive participation of all the

stakeholders to avoid potential conflicts as the demands grow and resources dwindle. Managing water efficiently and effectively requires that all the stakeholders cooperate in jointly operating, managing, and protecting a common water resource (Suresh and Avinash 2008)

Indigenous expertise in on-farm water management is widespread in the region. Most traditional and indigenous irrigation systems are characteristically single-source, single-user systems, in which the farmer is the sole user of his water source (which may be a small, open well, for example). Irrigation systems which exhibit the combined characteristics of sustained user benefits and high water use efficiencies are generally those in which the individual farmer has full control over access to water and the timing of applications. However, increasing water scarcity and unchecked population growth in the region will increasingly necessitate the use of shared water sources for irrigated production. Unfortunately for the region, traditional models of single-source, multiple-user systems (Norman 1997)

2.2 History of Participatory Irrigation Management

2.2.1 New Era of Participatory Irrigation Management

Between the period 16th Century to first half of the twentieth Century, and in the wake of development of large scale irrigation systems under the colonial governance, the onus of providing irrigation and ownership of infrastructure shifted to the governments. Even in the post-colonial periods in many countries, large number of public managed irrigation schemes built in the second half of the 20th century did not have their roots into the cultural and social perceptions of the people.

In most developing countries, Large-Scale Irrigation (LSI) schemes have been managed by state bureaucracies and by formal irrigation institutions. Under such structures, system management often fails to respond to the needs of users, particularly of smallholders. Due to lack of resources allocated to running and maintenance of LSI and their consequent deteriorating conditions, one of the major institutional reforms introduced, especially by the financing agencies like the World Bank and Asian Development Bank in the eighties was "Participatory Irrigation Management" (PIM).

Participation is defined as a process through which stakeholders' influence and share control of development initiatives and of decisions and resources that affect them and PIM approach is expected to deliver a number of positive outcomes and impacts like empowering farmers, better system maintenance and service, reducing cost of irrigation to the government, and higher water productivity and profitable agriculture. The magnitude of such outcomes and impacts and the degree of PIM reform success and sustainability varied across settings and depended on a number of factors such as clarity and strength of institutional and legal framework, higher level political will and local level leadership, financial and technical resources, access to support services, incentive system, capacity building and training etc.

During last three four decades many countries especially Bangladesh, China, India, Indonesia, Iran, Mexico, Nepal, Pakistan, Philippines, Thailand, Turkey, Senegal, South Africa, Sri Lanka and Vietnam took initiative in introducing participatory irrigation management (PIM) approach with an intension of participatory managed LSI. However, in many cases the concept of participation by farmers is considered as alien to the culture and is introduced as one of the many imposed institutional reforms and strategies that were expected to improve the performance of the contemporary irrigation sector. (Suresh and Avinash 2008)

2.3 Benefits

The benefits of community participation particularly apply to routine maintenance, which suits the skill profile of farming communities and can be adapted to fit in with the agricultural calendar.

Participation will be dependent on the ability of the community council to enforce local labour -levy by-laws and organize works. Therefore, if people default on the work they have to pay a fine or carry out the work at a later date. For wealthy households they may decide to pay the fine or pay others to do the work. Unfortunately, in many rural communities these labour-levy by-laws are unpopular and are not enforced. (Wattam 1998)

2.3.1 Reduced Government Expenditure

One of the most noted effects is the reduction in government staff and expenditure requirements, due to farmer management and contributions of cash, labor and materials. Farmers' Associations have proved more effective collectors of user fees than government agencies. It is not unusual for farmers to be willing to pay more than the original user rates after transfer of the system to their control. However, increased collection of fees does not motivate farmer participation. Participation must also result in direct benefits to participants.

2.3.2 Sustainability

Building irrigation systems which are wanted, supported and owned by users themselves provides the best assurance of sustainability. Physical and fiscal sustainability of the irrigation system beyond the project is enhanced when operation and maintenance costs are met from user fees rather than high levels of government subsidy

2.3.3 Costs and Risks

Efforts to introduce participation are not without costs for mobilizing field staff, training and organizing farmers and carrying out socioeconomic research. Nevertheless, these additional costs are usually offset by subsequent savings in construction costs and higher loan repayment rates.

A bigger problem can be the additional time needed to establish a participatory approach and get the project off the ground, especially in the absence of existing local democratic institutions. Developing farmer organizations is often a slow process, less under the project's control than constructing dams or delivery structures. Once the Participatory Approach has been established, however, it is not unusual for participation actually to reduce the implementation period. The typical causes of delay in implementing non-participatory projects difficulties in negotiating rights of way, and obstruction by farmers or local politicians are eliminated by effective participatory processes. (Ruth and Richard 1995)

2.4 Beneficiary Participation in Rural Development Projects

According to the Bernard Heck *Guidelines on Beneficiary Participation in Agricultural and Rural Development*, in mid-seventies there was a growing awareness that various approaches for rural development like community development, integrated rural development and basic needs did not result in substantial rural poverty alleviation. Even subsequent efforts made in some countries such as rural works, concessional credit, rural employment programmes did not improve the plight of the poor on a sustained basis. Economic growth was insufficiently combined with equity or just distribution of benefits.

International, government and non-governmental agencies realized more and more that the main reason of many unsuccessful development projects was the lack of active, effective and lasting participation of the intended beneficiaries. Consequently, several agencies started to promote the participation of people, in particular disadvantaged women and men, in development through various programmes, mostly on a pilot basis.

In these Guidelines the vast literature and considerable experience which by now exist regarding popular participation and participatory rural development in general cannot, of course be reviewed: only some key notes mainly on beneficiary participation in projects are given here

(1) Encourage people to make them more responsive to development programmes and to encourage local initiatives and self-help

(2) Involving people as much as possible actively in the decision-making process which regards their development

(3) Organizing group action to give to excluded disadvantaged people control over resources, access to services and bargaining power

(4) Promoting the involvement of people in the planning and implementation of development efforts as well as in the sharing of their benefits

(5) In more general, descriptive terms: "the involvement of a significant number of persons in situations or actions which enhance their well-being, e.g. their income, security or self-esteem"

There is furthermore a wide range of approaches in development projects to bring participation into practice.

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2.4.1 Induced Involvement

The strategy, design and work plan of a project are predetermined and the intended beneficiaries are encouraged to participate in its activities and obtain certain benefits. In various projects people are invited to make contributions of labour and/or other resources which are also seen as a form of costs haring.

2.4.2 Group Formation

The project has a specific objective to help to create a new or strengthen existing self-formed and self-run groups and organizations through which the rural poor gain access to resources, inputs and services and participate actively in the project, also by means of self-proposed actions. This latter type of full participation leads also for empowering of the poor: through their groups and organizations they obtain not only access to resources, but also decision-making and bargaining power as well as a base for sustained self-development efforts.

In accordance the Bernard Heck on this key issue and on the basis of the foregoing considerations, by participation in an agricultural or rural development project or programme is meant in these Guidelines that the intended beneficiaries, in particular the rural disadvantaged people, contribute to the planning of a project or programme, participate actively in its implementation and evaluation and share fully in its benefits. There is by now overwhelming evidence that such participation cannot effectively take place on an individual basis, but needs a structure consisting of existing and/or new, self-created and self-managed groups or organizations. This implies of course the right of free association and also the full participation of women on an equal basis with men.

At present there is a widespread consensus chat effective beneficiary participation is practically indispensable to render a project successful. However, relatively a few projects have an explicit design to attain effective participation. In fact, the existing development projects dealing with rural people can broadly be divided in two categories. They are Conventional Projects and Participatory Projects.

2.4.3 Conventional Projects

These include objectives and components for productive and other activities such as training, extension, credit, irrigation and try to involve the intended beneficiaries in these activities in order to achieve the project objectives. The projects of this category have pre-designed project frameworks (objectives, action plans, inputs, outputs and time schedules) mainly based upon top-down planning. Many of them are large-scale, capital-intensive and heavily staffed. The projects are meant for all people in a certain area who are mostly not consulted beforehand on their needs and desires. As the projects focus moreover more on macro-economic than on social aspects and the poorer people's necessities, they yield mainly benefits to the better-off locals.

2.4.4 Participatory Projects

These deliberately promote participation which consequently is explicitly incorporated in their objectives, approach and methodology.

The distinction between these two types of projects results mainly from the fact that in practice participation is basically conceived either as a means or as an end and in some cases in both ways.

Conventional Projects which by and large still prevail are predominantly production-oriented and participation, when considered in the project design, is regarded as a means to achieve certain productive objectives which are pre-determined by an outside agency.

In a number of less conventional projects there are graduations of a partial participatory approach: the rural poor may have been consulted on their needs, aspirations, potentials and willingness, and may also be involved somehow in project implementation. Basically, they are expected to participate, however, to varying extents in project benefits. These partial participatory approaches are certainly very useful and may help to avoid project failure; it may also lead to increased participation in the future.

How is participation as an end in concrete expressed in the objectives of participatory projects? The common essential elements in the overall objectives are the following: to raise the family income and standards of living of low income rural people; to Identify and apply for this purpose a sub-village development approach for and with

the intended beneficiaries by actively involving them in development through the promotion of economic and social need-fulfilling group activities.

The common essential elements in the specific objectives are:

- To help identify, plan and implement employment and income generating and other group activities for small farmers, tenants, fishermen and/or labourers;
- To assist the beneficiaries to organize themselves into self-run groups and organizations in such ways that firstly they have (increased) access to programmes of training, credit, inputs, marketing and processing as well as education, health and sanitation and, secondly, they can more and more satisfy their economic and social needs and become eventually self-reliant;
- To assist line departments and other agencies including banks and NGOs to increase their effectiveness to better serve the rural weak, to develop innovative farm and also off-farm income-raising activities, and to encourage self-development efforts;
- To develop a strategy for expanding the successful features of the project in the country.

The important elements found in the practice of participatory development projects are the following:

1) Process instead of project approach: Conventional Projects are usually planned too much in detail over a too short time span to obtain tangible results and spread effects. A participatory project can substantially contribute to solve these problems by replacing or at least complementing the standard project approach by the process approach and to conceive a project as the first phase of a longer process enacted and sustained by a rolling programme. The project design must accordingly be more flexible and such that it can be expanded and replicated in similar areas with minimal outside assistance and recurrent costs.

2) The target group is predominantly or exclusively formed by the rural disadvantaged people. However, also non-poor or better-off rural people as well as government and NGO officials are to be actively involved in various project actions, in particular to improve the delivery of services and facilities to the target group and to learn from each other.

3) Education for participation which is given in addition to the teacher-student types of training provided in conventional projects to transfer technical know-how. A major objective of the educational process is poor will gradually become critically aware of their economic and social conditions, the causes of their deprivation and dependency syndrome as well as their potentials to change their plight through joint efforts by clustering into small action groups. Participatory Education attempts to develop capabilities among the beneficiaries to strive for full participation as well as self-development particularly when the project is over.

4) The structuring of the target group by means of group formation and group action. This entails strengthening of existing groups or organizations and/or the promotion of new, self-created and self-managed ones. The existing groups may be traditional groupings, farmer associations, cooperatives, women's, youth and village groups and/or trade unions. The groups and organizations which may later on somehow federate form the basis for sustained participation and can be regarded also as a "receiving system" through which the poorer people can mobilize their own resources and be "reached" effectively by any development agency.

5) Resource Mobilization by group members which includes pooling of know-how, ideas, assets, savings and/or labour as well as obtaining services and facilities like training and credit. This is done in a gradual learning process.

6) Economic and Social Activities. Starting with small, low-risk, well-known income-raising and socio-cultural group activities of any feasible type, the groups will undertake gradually larger, more complex ones, also on an inter-group basis.

7) The Inclusion of Group Promoters in or attached to the project staff with the following two main roles: a) to help develop the economic and other activities of project groups and facilitate their access to resources and services; b) to help develop adequate participatory education and training activities for, with and between beneficiaries in order to increase critical awareness and stimulate meaningful and increasingly independent group actions. The above roles could best be performed by specific change agents who work exclusively and directly with the beneficiaries and their groups to enhance participation. In projects which unfortunately have no arrangements and/or funds to recruit group promoters, the roles of the latter could be performed in part by ad-hoc trained technical project staff.

8) Promotion of Self-reliance and Self-development. The relationships between supporting government, NGO and project staff and the intended beneficiaries is deliberately shaped in such ways that self-reliance and self-development are encouraged amongst the target group and dependence on project inputs is gradually reduced. Project staff members encourage the beneficiary groups to identify themselves problems and seek adequate solutions and actions. Self-reliant groups are the main indicator for a successful participatory project.

9) The Development of Coordination and Cooperation Mechanisms which enable the beneficiaries to participate actively in as many project actions as possible. The latter include identification of needs and potentials, setting of project objectives, planning and carrying out of activities as well as monitoring and evaluation. The project avoids thus by all means to become just only a delivery vehicle.

The above are all important elements in any project design to attain full participation: they are, however, not all indispensable for certain forms of "minor" or partial participation. (Heck 2003)

2.5 Building Effective Farmers' Organizations

Teams of trained specialists acting as community organizers have proved to be the most successful catalysts in participatory irrigation projects. Wherever possible, existing organizational capacity should be built upon. In cases of very hierarchical social structure and it may be unrealistic to expect fully democratic local organizations. To control vested interests, the varying incentives of different categories of farmers should be identified and accounted for in project design, along with the resulting problems of achieving collective action.

Appropriate incentives are needed if farmers are actively to support the users' associations which are essential channels for participation, and to assume the additional costs in time, materials and fees. The most important of these incentives are improved irrigation services, and a voice in management decisions through a users' organization which is fully accountable to its members. The support of farmers is most likely to be sustained, and organizational capacity developed, when they are involved from the beginning in decisions on system design, and when their

organization has full ownership and management control of the system. It is essential, for example, that specialized staff be selected by and accountable to the farmers' organization, even if they have been trained by government agencies.

To be successful, farmer organizations must interact constructively with government agencies and technical experts. This relationship work best when uniform rules are established, and supported by government regulation, for the turnover of responsibility throughout the project. Building the necessary organizational capacity for this turnover involves training farmers for a variety of new functions, from basic literacy, accounting, how to hold meetings, how to deal with agencies, to legal regulations, and even computer applications, as well as water management and operation of equipment.

Fundamental in meeting all these conditions, a strong and transparent legal framework for the organization is needed from the outset, providing farmers with rights and benefits as well as duties and responsibilities. This framework should also be flexible enough to allow farmers to evolve their own organizational structure, and to permit the organization's responsibilities to grow in line with its capacity (Ruth and Richard 1995)

2.6 Farmer Organization (FOs) Strength

A FO as an organization was established to support implementing Irrigation Management activities, and is assessed under farmer organization strength. Most of the FOs have been established under constitutions provided by the Irrigation Management agencies. The strength of FOs is measured through:

- Membership of Farmers in FOs
- Leadership
- Income for FOs
- Financial Management
- Internal Communication

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The participation of individual farmers as members and their active involvement of the farmer organization are essential factors for FOs to survive and function as effective organizations.

2.6.1 FO Leadership

Finding leaders committed and also acceptable to most of the farmer members is a difficult task according to the qualitative information collected in the study. Therefore, the farmer members tend to be satisfied with the available leaders who are prepared to work on a voluntary basis. Although most of the farmers have certain personal opinions in the survey they have expressed that they are satisfied with the voluntary leaders of FOs.

2.6.2 FO Financial Management

According to the Jinapala's *Managing Irrigation Jointly with Farmers*, most of the FOs except a few organizations in the Mahaweli Scheme had small FO funds. It was discovered that in all the schemes, there was always a considerable percentage of FOs that had no funds in their bank accounts. The average funds available in the FOs of irrigation schemes in the three programs ranged from Rs. 5,000 to Rs. 40,000. Nearly 80 % or more of the FOs collected membership fees. But only less than 50 % of the FOs earned money from the construction contracts that were undertaken. Majority of general farmers expressed in the survey that they are satisfied with the method applied for managing funds. This high-level of satisfaction is due to two reasons: the money that each individual farmer contributes for the FO fund is small, and they appreciate the volunteer work done by their fellow farmers. More than 80% of the individual farmers mentioned that their organizations keep books and follow other rules of financial management.

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2.6.3 Internal Communication

Further, Jinapala (*Managing Irrigation Jointly with Farmers-2002*) says that the INMAS and Mahaweli systems more than 75 % of the Farmer Organizations held monthly meetings with their committee members, while 47 % did so in the MANIS system. Most of the farmer leaders reported that they have a lower number of general farmer meetings. The general farmer meetings are held when there is a conflict between farmers. Only about 10 % to 32 % of farmer leaders mentioned that they hold general meetings. In the MANIS system, only about 15 % or less hold their general meetings.

2.6.4 FO Performance in Water Distribution

Farmer Organizations play a critical role in water distribution at the DC level of all the irrigation schemes. The results of the study indicate that the farmer involvement is much more relevant and essential in irrigation schemes where water is a scarce resource. The water distribution problems are due to five different reasons according to the study.

Farmer Organizations as an institution established by Irrigation Managers with the willingness of the farmers have become an essential element for water distribution. Nearly 74 % of irrigation officers who were interviewed in sample irrigation schemes categorically mentioned that farmer organizations are essential to manage water in irrigation schemes. However, there are some problems with the water distribution performance of the Farmer Organizations. This is due to the varying levels of performance of the FOs.

2.6.5 FO Irrigation Infrastructure Maintenance Performance

The FO performance of irrigation infrastructure maintenance in general is poor according to the information. Maintenance is difficult to organize with the voluntary participation of the farmers. If the canal becomes really constrained to take water to the agriculture fields, farmers are tempted to attend to the maintenance. Where such a critical stage has not been reached, it needs repeated attempts to mobilize farmers at least to clean the distributor canals (DCs). Mahaweli officers indicated that they were satisfied with farmer participation in DC maintenance, but this may have been mainly due to Mahaweli Authority involvement in such maintenance.

Lack of farmer participation is a common phenomenon observed in DC maintenance. It is difficult to get 100 % farmer involvement in any event organized by the farmer organizations for DC maintenance activities

It was observed that jungle cleaning and de-silting of distributory canals are performed by FOs with the participation of the individual farmers, but minor repairs of the DCs are done by the FOs with the annual operation and maintenance funds provided by the government to each FO. There are some performance differences in de-silting and jungle cleaning, but it is at a satisfactory level according to the survey (Jinapala 2002).

2.6.6 FO Performance in Non-O&M Activities

It was observed that FO performance in business activities to earn funds for FOs is at a poor level. Most of the FOs are involved in agriculture input sales to their members and also undertake operation and maintenance contracts from the government. The results of the survey on the performance of FOs are undertaking non-O&M fund earning activities.

2.6.7 Turnover

Under the Participatory Management policy of the government, it is intended to turnover some of the system management responsibilities at and below the DC level to farmers. Before this became government policy, some attempts had been made to implement this policy informally in certain schemes such as Kimbulwanaoya and Minipe, through the efforts of a few enthusiastic irrigation officials. The cabinet paper

adopting this policy specially stated that those farmers who accept responsibility for the turnover under O&M for DCs will be exempted from paying of irrigation fees. The amended Irrigation Ordinance authorizes FOs to take over the O&M of their areas and in return they are exempted from paying irrigation fees.

Turnover has occurred in the three study programs at various levels and in different forms. In the sample irrigation schemes that were studied, several categories of turnover have taken place under operation and maintenance. Operation of FC and DC gates and other main system level canals have taken place under operations and DC jungle clearing, de-silting, minor repairs, greasing and painting of structures and main canal level cleaning and de-silting have taken place under the maintenance category. (Jinapala 2002).

2.7 Performance of the Farmer Organizations

In almost all the sample irrigation schemes studied by IMMI it was found that the farmers have been mobilized into Farmer Organizations. The structure prescribed by PIM (FC groups, DC groups, System-level FOs) has not been followed exactly in some of the irrigation schemes of MANIS. This was mainly due to the lack of inputs needed for Management of Irrigation Systems (MANIS) schemes to help farmers organize in to FOs. The Integrated Management of Major Irrigation Settlement Schemes (INMAS) and Mahaweli irrigation schemes have separate organization units to deal with farmer organization whereas Management of Irrigation Systems (MANIS) schemes are managed by technical assistants of the ID without other additional assistance. Even in the Mahaweli scheme, system-level farmer organizations have not been established, perhaps because such higher level organization do not require farmer organization given that the system level needs of farmers are handled by the system level joint committees. This may be the reason for INMAS irrigation schemes also neglected to organize farmers into system level organizations (Jinapala 2002).

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2.7.1 Performance outcomes

The involvement of farmers in irrigation schemes may have its own inherent value in building social capital or empowering local people. However, farmers and governments are less likely to be interested in participation as an end in itself, than as a means to improve the performance of irrigation systems. The evidence on how much participation contributes to system performance is fragmentary, and often does not distinguish between the contribution of participation and accompanying changes such as physical rehabilitation of systems or withdrawal of other subsidies The most readily apparent effect of farmers' involvement in irrigation is the reduction in government costs. These savings primarily come from reduced administrative costs as the number of field staff decreases. Government costs can also go down as farmers become involved because of better project design, increases in fee collection, and decreases in the destruction of facilities.

There is less information on total costs of irrigation management, including costs borne by farmers. Efficiency gains from local management have been observed through improved supervision of construction and staff, substitution of local materials, and lower salaries or fringe benefits for irrigation staff and labor.

In practice, farmers' costs usually increase with participation. For example, irrigation fees in Mexico and Senegal increased by 4 to 6 times when farmers took over and had to cover full O&M costs. In most cases, cash payments do not reflect the full costs to farmers because they do not include labor and in-kind contributions, nor farmers' non-quantified "transactions costs" of attending meetings, settling disputes, or other aspects of participation. More careful examination of total costs is therefore required in order to assess the overall economic performance impact of farmer involvement. Perhaps the best test of the performance outcome of farmer participation is whether farmers continue to participate. More than any other single factor, the initial success and long-run sustainability of Participatory Irrigation Management is dependent upon sufficient incentives for farmers. These must be great enough to offset the substantial costs of participation – both in terms of increased fees as well as time and transactions costs. Physical improvements to the system provide short-term incentives for participation, but unless farmers see longer-term gains, they will not continue to be active. Having a "seat at the table" in determining water allocation between systems and between sectors has become an important issue to farmers as water scarcity

increases in many parts of the world. Greater control over water supplies, which may come from ownership of infrastructure or water rights, or from involvement in decision-making and operations, provides a strong incentive for farmers to participate (Ruth 1997).

2.8 Institutional Efforts at Participatory 'Management

2.8.1 Participatory Management

Over a period of five to six decades, one could observe that, while the best features of the customary law and rules relating to participation were retained in the planning, restoration, maintenance and management of minor irrigation works, there were major departures in policy, consciously or otherwise, when it came to the planning and management of major irrigation works. Here it may be possible to classify some of the medium work; with the former, as they did retain the traditional character, depending on the extent to which the local community was associated with the system. There were many factors which led to this departure. First, the village systems were planned and developed for the local community, invariably in consultation with them at village level and at the level of the District Agricultural Committee (DAC); second, the larger systems, particularly those related to settlements, were planned from the centre for a set of people who due to logistical reasons could not participate in the planning or development. Therefore, participatory principles of management could not develop at the outset.

The structure of the system itself, the size of the scheme, the procedure for the selection of beneficiary settlers and their background, the physical planning and the settlement patterns, and the objectives of government, combined to make any kind of participatory management in the major projects extremely difficult.

While the farmers were not associated with the planning and were unacquainted with the operation of the system, their participation in maintenance and management was minimal. Many factors contributed to this situation.

Although government invested large sums of money in major irrigation, land policy was directed towards the social welfare objective and the major schemes ended up with a large number of small even subsistence level, farmers.

The economic return on this heavy investment was low. The quality of agriculture itself was not a great improvement on the traditional rice-based farming. The economic objectives of reaching self-sufficiency in rice production through the irrigation schemes induced the government to follow policies that sustained the physical and social system without a major dislocation.

Since the economic return was low, the State was compelled to provide direct and indirect assistance, a major component of which was meeting the cost of operation and maintenance. this policy got so extended that when farmers failed to contribute their share in maintenance, the State stepped in to undertake a restoration or major rehabilitation of the system. The State also committed substantial amounts of money each year to maintain these systems, especially to the larger schemes which were becoming much more expensive than the village systems. This policy of State intervention in maintenance and rehabilitation continues today.

In the area of operation and maintenance and water management, there are three technical reasons which make participatory management in major schemes difficult and different from the village systems:

1) The maintenance of the head works can be handled only by trained professionals.

2) Management of the main system, at least down to D-Channels and in many cases down to the field Channel/turnout, requires the services of many paid officers.

3) Management below the field channel level by farmers is possible only if the main system functions at optimum level.

For these and other reasons, it is safe to assume that there was no evidence of a conscious and positive effort to promote participatory management even in the area of operation and maintenance. The only visible effort is the institution of the *kanna* meeting at which the proprietors (tenants included later) were given an opportunity to participate in decision-making. It must be emphasized that even the kanna meeting

did not go beyond the operations of a cultivation season especially in the major schemes.

The upshot of the above situation was that the State from time to time considered it necessary, for economic as well as political reasons, to intervene with an injection of capital for maintenance and rehabilitation, even in village works, where conditions were more conducive to participatory management. (Abeywicrema 1986)

Successive governments have from time to time, established institutions to promote the management of these systems, although not confined to irrigation management. The Cultivation Committees formed under the Paddy Lands Act of 1958, and the recognition of the tenant farmer in the irrigation system, was an attempt to induce the participation of the farmers in the management of the total agricultural system. Similarly, Multipurpose Co-operative Societies (MPCS) were expected to play a major role in assisting in the agricultural activities. Although well conceived, the cultivation committees eventually failed to satisfy the aspirations of either the planners or the farmers due to excessive politicization and an inability to identify the leadership. The Agricultural Productivity Committees that succeeded the cultivation committees with a nominated membership were a total failure as participatory management was concerned.

These developments bring us to the logical question:

- What in fact, is the government's long term policy perspective on participatory management?
- It was pointed out earlier, that all the ingredients of participatory management are found in village systems. If so, was it part of conscious government policy?
- Did this policy extend to the medium and major systems?
- Is it possible to extend the same principles and policies?

Aspects to be examined in this regard are:

- Whether participatory management is all feasible
  (a) In medium scale works.
  (b) In major irrigation systems.
- Whether such participation would extend to

(a) Planning and Designing.

(b) Water Management/Operation and Maintenance.

(c) Rehabilitation.

The Kimhulvana experience clearly brings out that with a sustained effort and an enlightened leadership. it is feasible to develop a participatory management programme in a medium scale irrigation system. This development will he demonstrated over time. With regard to major irrigation systems it has not yet been demonstrated beyond doubt that a participatory management programme encompassing the en tire system is feasible.

Regarding areas and activities to which such participation could extend to. the following are fairly clear. (Abeywicrema 1986)

2.8.2 Public Meeting

Hold public meetings prior to the start of the project to explain the construction timeline, work plan, and address residents concerns. However, one meeting is not enough. Continue to hold regular meetings throughout the project timeline on a regularly scheduled basis even if there are few issues for a particular meeting. It is easier to cancel a regular meeting than to schedule one in the middle of a controversy. Choose meeting locations and times that are convenient for residents. List the start and end times for meetings.

Public meetings should be scheduled and the agenda developed collaboratively. Representatives of the community and the project managers should have meaningful input into the scope, timing, duration, and content of public meetings to address community concerns. There are often multiple agencies and even multiple levels of government involved in a project. When planning a meeting, efforts should be taken to ensure all participating agencies will be represented.

Coordinate meeting announcements to avoid unrealistic or polarizing expectations: Meeting notices should be consistent with the agreed upon goals for the meeting. Community advocates should resist the temptation to craft provocative notices that will attract attention but prime participants for a fight.

Consider using neutral facilitators who can help turn a potentially explosive meeting into a productive session: Simply inviting all of the stakeholders to sit down together without a realistic plan for how to manage the discussion can do more harm than good. The assistance of skilled neutral facilitators or mediators will enhance the

likelihood that an angry and frustrated community, stressed project managers who feel under attack, and other public officials or agency representatives with their own agendas, will be able to have a constructive exchange. (Green New Haven CARE project 2009)

2.8.3 Planning and Design.

In the planning and designing of large irrigation schemes, particularly as they involve land settlement, participation of the farmers at the initial stage is extremely difficult. Given the composition of the farmers who would become beneficiaries under these schemes, it would be naïve to expect such persons to have the perception and ability to comprehend the design and operational features of a large irrigation system. It 'is doubtful whether the operation of the system at the: field level/turn out level is fully appreciated by the farmers individually at the outset of a major scheme. It is well known that all head works, the main system as well as the downstream development of all major systems, were planned by trained professionals.

Unless there are major changes in Government policy on such areas as the size of irrigation scheme, size of holding, the selection criteria of settlers, and the responsibilities for their financing and management, it is unlikely in the foreseeable future that any active participation of farmers, in the planning and designing of major irrigation works, could be expected.

With regard to medium scale works, degree of participation at the planning and design stage can be promoted where the beneficiaries are drawn from the local community: at least in isolated instances this process due take place. Government policy itself encourages this process through the system of selection of irrigation works for restoration and rehabilitation (Abeywicrema 1986)

2.8.4 Water Management.

Abeywicrema (*Government Policy on Participatory Irrigation Management 1986*) says that, the medium scale works lend fairly easy than the large scale work of Participatory Management. The *kanna* meeting institution itself is effective, even if moderately in involving the farmers in the process of water management decisions. In the major irrigation systems, it is not easy to achieve the same degree of participation from a large number of farmers, spread over a very large system.

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In the first place the technical problems of ensuring equity in water distribution will continue to dominate most of the major systems. The inability of a large group of small farmers to identify themselves with a large system, over which the community has no control, is a major institutional problem. However, several attempts have been made to obtain the participation of farmers at least at the tertiary and secondary levels of the distribution systems. These are evident in the experiments carried out at Minipe, Galoya, and under the INMAS programme. While a fair measure of success has been achieved in the seasonal operations and the inter-seasonal maintenance, the sustainability of these experiments and the feasibility of extending them to cover the entire system has to be watched over a long time frame. While it is sufficiently clear that farmer participation in management at the field channel/turn out level is feasible and analogous to conditions operating in a village system, the feasibility of moving this responsibility up to the D-channel level is one which merits consideration and experimentation.

2.8.5 Rehabilitation.

Since rehabilitation of a large number of irrigation systems restored during the past 50 years is a major government programme at the present moment, the feasibility of promoting farmer participation in this activity would be an appropriate area for study. Recent experience shows that in some major systems farmers have not been associated at all in the rehabilitation process. But in gal Oya conscious effort was made to involve the farmers in the rehabilitation process. It would appear that in large settlement irrigation schemes, where farmers have been associated with irrigated agriculture for several decades, the rehabilitation stage would be an ideal opportunity to involve the farmers actively in the planning, and redesigning of the systems and in all matters relating to irrigation management. The development of institutions to enable representative participation should be a high priority in this area. (Abeywicrema 1986)

2.8.6 Limits of participation

It is often claimed that farmers can manage small schemes but not large ones. But there are many examples of farmer managed systems, each covering thousands of hectares in Colombia, Argentina, Mexico, and even Nepal, which demonstrate that farmers can hire their own engineering expertise and operate large areas themselves.

In Nepal, traditional farmer managed schemes frequently cover several thousand hectares, without government involvement in construction, maintenance or management. (Ruth and Richard 1995)

2.8.7 Cost Recovery and Farmer Participation.

One other area closely related to government policy is the recovery of operation and maintenance costs from farmers. This is a highly sensitive area politically, and fraught with serious implementation problems.

The policy adopted by government to recover a minimum of 50% of the operation and maintenance costs and increase, it progressively to cover full costs is a bold and progressive move. It is important at this stage to examine the best policy to promote active farmer participation in operation and maintenance on a continuing basis.

According to the Abeywicrema (*1986*), Giritale has clearly, shown that farmers appreciate good operation and maintenance and are willing to participate both financially and manually. Apart from promoting farmer participation in operation and maintenance and in the decision-making process, this has the salutary effect of farmers gaining a deeper understanding of how their irrigation system operates. These steps therefore help to prepare the farmers, especially the second generation, to accept greater responsibility for the management of the total system.

2.9 Government Policy in Participation and Management.

Having examined the feasibility of Participatory Management in the different systems and at different stages the question that has to be examined is whether there is a conscious policy on the part of Government towards participatory management. Since large irrigation schemes, linked to land settlement and based on heavy social welfare objectives, dominated the irrigation development scene for decades, and since this basic policy remains, it is doubtful whether the Government can have a rigid, long-ranging policy on promoting participatory management at the different stages.

Government's main interest is to construct irrigation schemes, to settle farmers, and to maintain them in such a way that the economic and equity considerations are met. Government policy also is still heavily weighted towards farmer dependence on Government to manage the systems. There are some reasons for this. First, for technical reasons, the safety of the entire system has to be a concern of the

Government. Second, for reasons of equity, the distribution system has to be operated and maintained by an agency of government. The main interest of the Government in this operation will be to reduce or contain the cost of maintenance and to minimize grievances of the farmers.

Experience has shown that, in the context of a large number of small farmers, Government agencies have faired poorly in achieving either of the above objectives. Governments therefore realize that involving farmers in irrigation management would be the best available alternative. How this is to tic achieved has not been made clear to policy makers.

In the absence of well developed institutions at the field level and failure of previous institutions sponsored by Government, the field has remained open and lacking in direction of an explicit policy. Both planners and policy makers have shown concern about setting up stereo typed institutions, for fear of these institutions developing into centers of power and excessive politicization.

In a sense, this situation offers an opportunity to professionals, particularly to the social scientists, to experiment with different forms of participation in Irrigation Management and in rehabilitation. Any Government would be interested in Participatory Management if it could be demonstrated that such measures would help reduce government commitmerits for maintenance and rehabilitation, and more importantly if it would reduce: grievances within the farming community, leave alone the government's desire to see a prosperous community (Abeywicrema 1986)

2.10 Why Participation and What are the Obstacles?

2.10.1 Group and Individual Development Approach

Participatory projects include one or more components or elements of group formation and action but not exclusively; many development activities will continue to emerge from individual initiatives and incentives, in the areas of such projects. Group formation/action is thus not the exclusive solution or panacea for achieving certain development objectives. Groups can be instruments to better meet certain but not all needs to better perform certain functions. Group formation should of course never be compulsory or a sine-qua-non condition, but spontaneous and voluntary.

Freely formed, well performing groups are "contagious" and have a beneficial spread effect.

In sum, unusual types of involvement in project formulation and implementation can work satisfactorily in various instances. However, it is by now well realized, that only through group approaches the large numbers of marginalized rural people can be participated effectively by government and other organizations. There is also overwhelming evidence that the predominantly "individualistic" approaches largely applied by conventional development agencies, bring benefits mostly to the better-off-people.

A problem occasionally raised is how "individualistic" people and societies can be motivated for group-wise development efforts. It is erroneously observed that the propensity for group action amongst disadvantaged rural people is significant for social but not for economic development purposes, unless there is a strong and evident incentive. However, firstly the economic and social actions of the rural poor are mostly still very much interwoven and less compartmentalized as in modern societies. Secondly, the participatory approach builds wherever possible, upon numerous traditional and other forms of cooperation and groupings found amongst the rural poor including those living in so-called "individualistic" societies. For example, individual profit making makes less sense in traditional societies where profits are to be shared by larger kinship groups. Finally, the activities of group members can take the form of group or individual production or a combination of these: individual operation but sharing of common facilities, joint input purchasing and/or marketing.

Although the participatory approach has certainly not a narrow focus, it is specifically meant for the economic and social development of the rural poor and thus does not cover in a strict sense wider forms of people's participation such as community participation. The latter refer to the involvement of the entire population of a village or community in the planning and implementation of a project and is thus not target-group specific. Such "holistic" forms of people's participation are certainly required for area-based operations which affect all inhabitants like environmental protection, soil and water conservation, provision of physical, economic and social infrastructures (civil works) and irrigation, sanitation and health schemes. It is also clear that the groups formed under the participatory project approach can considerably facilitate and widen community participation (Heck 2003).

2.10.2 Arguments for Beneficiary Participation

Various foregoing points highlight that the participatory approach gives advantages to the rural poor as well as to the agencies which implement or support a project. The main reasons are the following:

- **Coverage**: to reach and involve on a wider scale the disadvantaged rural people through institution building, that is the creation of adequate "receiving" systems at grass root level as well as of corresponding "delivery" systems
- **Efficiency**: to obtain a cost-efficient design and implementation of a project. The beneficiaries will contribute more in project planning and implementation by providing ideas, manpower, labour and/or other resources (cost-sharing). Consequently project resources are used more efficiently
- **Effectiveness**: the people involved obtain a say in the determination of objectives and actions, and assist in various operations like project administration, monitoring and evaluation. They obtain also more opportunities to contribute their indigenous knowledge of the local conditions to the project and thus facilitate the diagnosis of environmental, social and institutional constraints as well as the search for viable solutions
- **Adoption of innovations**: the beneficiaries can develop greater responsiveness to new methods of production, technologies as well as services offered
- **Production**: higher production levels can be achieved while ensuring more equitable distribution of benefits
- **Successful results**: more and better outputs and impact are obtained in a project and thus longer-term viability and more solid sustainability. By stressing decentralization, democratic processes of decision-making and self-help, various key problems can be better solved, including recurrent costs, cost-sharing with beneficiaries as well as operation and maintenance
- **Self-reliance**: this broad, ultimate objective embraces all the positive effects of genuine participation by rural people. Self-reliance demolishes their over-dependency attitudes, enhances awareness, confidence and self-initiative. It also increases people's control over resources and development efforts, enables them to plan and implement and also to participate in development efforts at levels beyond their community (Heck 2003).

2.10.3 Constraints of Participation

According to the Heeck 2003 main constrains of participation are following

1) **The political conditions and power structures of the country and project area.** These may vary in different forms and degrees from a decentralized, laissez-faire and/or free enterprise system to a fully centralized, strongly planned and/or controlled one. They may vary furthermore in regard to their degree of stability. Accordingly, widely differing situations can be found ranging from full support of the central and/or local government to participation of the poor to indifference and hostility versus this approach.
In fact, in a number of countries the urban and rural elites, particularly the latifundists and landlords, influence the political and administrative structures to such an extent that any policy to encourage genuine participation of rural people is either inexistent, or strongly opposed, and/or by various means neutralized or strained.

2) **Legislative obstacles.** In various countries freedom of association either does not exist or only formally; in other ones where the right of association, including of small farmers, labourers, etc., is recognized in the laws, the labour legislation is inadequate and/or scarcely applied in practice. Under the influence of vested interest groups the laws might further be interpreted and/or applied in such ways that (part of) the rural poor are prevented from organizing themselves.

3) **Administrative obstacles.** Centralized public administrative systems that control decision-making, resource allocation and information, may ostracize participation. The staffs in such structures frequently disdain people's involvement. Also complex, bureaucratic procedures impede genuine participation as well as one-way, top-down planning performed solely by professionals; the same can be said of rural development planning done in urban centers and hardly based on need assessments in the field.

4) **Socio-cultural impediments.** A serious obstacle is the widespread mentality of dependence, sense of frustration as well as distrust in officials among low income rural people. The latter are frequently dominated by local elites to whom they have to leave key decision-making. All this forms part of the "culture of poverty" of the silent, excluded majority for whom survival is the sole aspiration. Furthermore, the poor form a heterogeneous "group": there are various categories with class, caste,

tribal and religious differences and also with different interests, needs, access to resources as well as potentials. Accordingly, also participation must be planned and promoted according to different local contexts and factions.

5) **Other impediments are:** the isolation and scattered habitat of the poor, their low levels of living and heavy workloads especially of the women. Furthermore, their weak health conditions, low level of education and of exposure to non-local information, ignorance of their rights to self-organize groups and lack of leaders and know-how to move in this direction in order to promote their interests. (Heck 2003)

2.11 Strategies to Promote Participation

2.11.1 Constraints

The main constraint of genuine participation is the political will to promote this in a country or project area. This basic problem can be overcome by means of various strategies at international, national and lower levels. The strategies should all aim at informing, sensitizing and motivating various categories of key persons in one way or another involved with rural development efforts such as:

(a) Politicians and governmental policy- and decision-makers.

(b) The top and other staff of government, UN and donor agencies as well as of NGOs.

(c) The field staff of development projects.

(d) The elites and better-off people in rural areas.

The practical outcome of the strategies must be that politicians, officials, experts and elites become motivated to accept, support or at least tolerate effective forms of participation of the disadvantaged rural people in development. For this purpose it will be of course very useful to demonstrate the experience and successful results of pilot participatory projects like the FAO/PPP and their great benefits for the rural poor. Various possible strategies, of which some are described in a recent PPP review paper (McKone 1989), follow briefly hereunder. It is difficult for certain strategies to indicate precisely who should do what, when and in which way. For each strategy this has to be planned according to its concrete scope, target groups, location, timing, technical collaborators and materials needed, costs, etc.

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2.11.2 Promoting Policy Dialogues

According to the Heck (2002). Promoting dialogue between key officials. planners and decision-makers of national and international development agencies at country level is important. The latter may include one or more UN bodies. international and regional development banks. donors. aid consortia and voluntary organizations such as international NGOs. They could encourage. organize and/or participate in policy dialogues with selected governmental agencies in order to obtain rural poor-oriented economic and social policies and institutional arrangements that are required for participatory projects.

The most important policies required for participatory development regard appropriate legislation for rural people's organizations including full freedom of association or group formation as well as reorientation of the delivery system. in particular the extension services. towards the needs of the rural weak.

Other special policies required include full integration of women in development. decentralization of decision-making. planning and resource allocation. rural poor-oriented input supply. extension. credit and marketing. enhancing non-agricultural income-generating activities as well as just fiscal and pricing systems.

In sum. projects and programmes cannot be implemented with effective beneficiary participation before a minimum of certain favorable national policies are likely to be adopted in a country. In order to obtain strength in policy dialogues. the participation and concerted action is needed of all national and international development organizations which strive to combat rural poverty. In fact. international agencies as well as NGOs can influence a country's policy and institutional framework for effective poverty-alleviation.

Finally. the strategy of promoting dialogues between government agencies and non government organizations appears to be particularly useful. Government and other donor agencies are now becoming quite active in this direction. They have also created special units for dealing with non government organizations.

2.11.3 Planning and Implementation of Participation in Larger-Scale Projects

In a project cycle various institutions are involved such as one or more government agencies. international development. funding organizations. NGOs. etc. The lack of understanding and experience regarding participatory projects of one or more of these

cooperating institutions often makes it particularly difficult to make some of its components participatory. The institutions involved may have different. Furthermore, experience on how to attain effective beneficiary participation may be lacking as the country's projects are either not participatory or do not properly monitor and evaluate beneficiary participation.

There is thus a wide scope for strategies to motivate officials, project planners and implementers through, among others, the following methods:

- Meetings and field workshops at various levels
- Periodic informal exchanges of views
- Briefing sessions and documents on participatory development
- The inclusion of participatory experts in mission teams
- Incorporation of participatory issues in the terms of reference of identification, preparation, appraisal and evaluation missions
- Provision of background materials on on-going participatory projects and/or visits to the latter, if any, in a country.

A direct result of the above actions will be that project planners become convinced that participation must be included from the very beginning in all stages of the project cycle. This implies in practice, that they see urgent necessity and importance to start with the intended beneficiaries on their needs and desires by means of pre-project identification or reconnaissance missions

2.11.4 Increasing Support

The increasing support of donors and Development Agencies and banks for participatory projects are needed. Efforts to obtain this support it should have practiced following steps:

- To convince donors and agencies which support participatory projects, to continue this assistance until they yield sufficient successful results for demonstration to governments
- To insist that donors, development banks and agencies will only support a project if a participatory approach is incorporated in it;
- To attain more assistance to developing countries for participatory projects on a large scale up to the point of creating a critical mass.

For these wide scopes donors as well as international development agencies and banks should participate in, initiate and/or organize several of the earlier proposed promotional actions such as policy dialogues, seminars, field workshops and visits to participatory projects. It will be crucial to show the actions and results of participatory projects also by means of good monitoring and evaluation systems. Moreover, case studies on the benefits and cost effectiveness of participatory projects as well as promotional materials will be quite helpful.

Other actions include: studies on the policies and commitments of donors and development banks as well as identification of opportunities for assistance.

2.11.5 How to Identify Beneficiary Needs

Organize project cycle surveys and missions in a participatory way that is, consult on the needs and desires of as many future project participants as possible, in particular the intended beneficiaries and other village level informants.

The best way is to establish or send to the area prior to project identification missions or reconnaissance work teams for say 2-3 months.

During their field surveys, the team members will cover key topics such as on-going development efforts, felt needs, aspirations and constraints. Information is also to be gathered by means of structural observation and scrutiny of relevant, locally available documentation.

The need-assessment should focus on the identification of priority needs as perceived by the low-income people concerned. This is particularly necessary for the promotion of rural poor groups which are best formed around felt priority needs.

The information collected, though sufficient to plan a flexible project framework, will still be provisional and usually in part suspect: more reliable and in-depth data can only be gathered by field workers who work with the people for longer periods during project implementation and gain their confidence.

Needs identification or the search for ways to satisfy intended beneficiary needs, form part of an on-going participatory process and can be done more systematically and effectively when groups and organizations involved in a project bring up their felt needs, among other to perform gainful activities, whereas the delivery staff hopefully endeavors to meet these necessities. Group Promoters are to be trained to help the disadvantaged people to understand their own situations, to win their confidence by closely working with them and getting the poor to articulate their needs. The Group

Promoters will also learn to stimulate the delivery staff to help meet these necessities (Heck 2003).

2.12 Chapter Summary

Chapter explains history of the participatory irrigation management. Last past four years, most of the countries including Sri Lanka tent to Participatory Irrigation Management system. Many benefits of the PIM particularly apply to routing maintenance and reduce government expenditure, sustainability, Cost and Risk.

Government policies on Participatory Irrigation Management explained and minor versus major in irrigation sector in legal provisions in Sri Lanka. Participatory management implement in two stages. One is village levels develop by local levels and other one is district level (DAC meeting). Farmers can involve in planning and design stage, rehabilitation and water management stages.

Beneficiary participation in rural development projects is very effective for substantial rural poverty alleviation. Beneficiaries are encouraged to participatory activities and obtain benefits. Group formation and transitory mobilization for community development for the specific work are much sustained specific objective to help create new or strength existing self formed organizations through participate actively in projects.

Farmer organizations must interact constructively with government agencies and technical experts. This relationship works best when uniform rules are established, and supported by government regulation, for the turnover of responsibility throughout the project. Building the necessary organizational capacity for this turnover involves training farmers for a variety of new functions, from basic literacy, accounting, how to hold meetings, how to deal with agencies, to legal regulations, and even computer applications, as well as water management and operation of equipment.

For strength of the farmer organization, members of the farmers should have leadership skills financial management skills and internal communication skills. Expert knowledge of farmer organization of water distribution, irrigation structure

maintenance and joint management committees activities are significant factors of PIM.

Government organizations continuous effort for participatory management essential for success of participatory irrigation management such as public meeting, involvement of farmers for planning and design, involvement of water management, rehabilitation of irrigation structures and cost recovery of farmer participation.

3. METHODOLOGY

3.1 General

Preliminary data required for this research was collected through a detail literature review. In literature review most of beneficiary participation techniques and procedures were used. According to the research objectives methodology was selected. Interview survey carried out for staff of the Provincial Irrigation Department at the department office and minor irrigation farmer organization leaders of the department office. By interviewing survey of the staff and beneficiary identify the possible key parameters which effect to success of the projects. Two questioners were prepared for the beneficiaries and the staff. Data collection carried out three stages such that management staff, beneficiaries with successful projects and beneficiaries with unsuccessful projects. Data collection is limited to six divisional secretarial in North Central Province.

3.2 Descriptive Methodology

3.2.1. Interview Survey of the Staffs and Beneficiaries

At the preliminary stage it is necessary to have a brief idea about the possible parameters which might affect the success of a project. Then it is easy to address those parameters in the question are and collect data to verify there is an actual relationship between those identified parameters with the success of the project. Therefore interview survey has been conducted for the target groups which are members of the Farm Organizations (FO) and the Management and Technical staff of the Provincial Irrigation Department. When interview the staffs and beneficiaries, they have been given idea about objectives of the research. Management staffs were interviewed group discussion method and farmer leaders interviewed individually.

3.2.2. Identify Possible Key Parameters

By analyzing the comments given by beneficiaries and Management/Technical staff possible parameters have been identified as below.

1 Experience of the beneficiaries

Experience of the beneficiaries about the construction of the structures and understanding the drawings and other technical details

2 Financial capacities

Financial capacity of the Farm Organization to finish a phase without depending the funds from authorities.

3 Resources

Identify the resource availability of the Farm Organizations such as machineries, scaffoldings etc.

4 Communication with beneficiaries

How the communication is done by Management/ Technical staff with Farm Organizations, frequency of the communication, method and the person who involves the communication process etc.

5 Payment procedure

Delays in payments and adequacy of the payment as well as the areas to be improved are to be identified under this parameter and see whether there is an actual relationship with the success of the project

6 Time management by the beneficiaries

Knowledge of the time management of the beneficiaries and how they do the time management when there is a particular delay. Also the reasons for the delay etc

7 Third party involvement

The degree of involvement in the project and how it affects to the projects and the beneficiaries

8 Quality

The knowledge of the quality control measures of the beneficiaries and the reasons.

3.2.3. Questionnaire

By addressing the identified eight possible parameters which were mention in the section 3.2.2. two questioners were prepared for Management Staff and Beneficiaries to see whether there is an actual relationship between those parameters with the success of the project. The prepared questionnaires are attached in Annex I and II.

3.2.4. Data Collection

For any research, data collection plays a vital role because the quality of the output is directly influenced by the reliability, representativeness, homogeneousness and consistency of the data which have collected. Therefore the data collection is planned to be carried out for three target groups namely

- Management/ Technical staff
- Beneficiaries who involved in successful projects
- Beneficiaries who involved in unsuccessful projects

Sampling method has been adopted for selected people who can be considered as representative data sample

When collecting data from Management Staff, all the parties involved in this project have been selected. Therefore the data sample is include with all the engineers, technical officers and directly involved planning officers of the Provincial Irrigation Department. Some engineers and technical officers who are involved in minor irrigation construction of the other departments also were contributed for data collection.

Table 1 Participant of management staff

Category	Number of people involved
Engineers (Provincial Irrigation Department)	6
Technical Officers (Provincial Irrigation Department)	13
Planning Officers (Provincial Irrigation Department)	8
Engineers (Provincial Engineering Department)	4
Technical Officers (Provincial Engineering Department)	11

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Other two stages are beneficiaries' data collection. One is beneficiaries with successful projects and other one is beneficiaries with unsuccessful projects. Success full projects and unsuccessful projects were decided before data collection by the management staffs. The beneficiaries are selected from six divisional secretarial divisions in North Central Province. In one farm organization six people were selected including president and secretary of the organization. Twelve farmer organization members covering six divisional secretarial were selected for data collection.

Table 2 Beneficiary participation

Category	Number of people responded
Successful Projects	38
Unsuccessful Projects	36

After identified the sample data collection was done. The Sinhala translation of the questionnaires was distributed among the stake holders and gave enough time to fill the questionnaire. If there is something which they could not understand the question was read loud and explained by someone who does not know the research to avoid the biasness of the explanation. Hence the respondent can freely answer the question.

3.2.5. Data Analysis

Qualitative studies carried out using tools understanding and describing research objectives. Data collected in three stages such that management staff, beneficiaries having successful projects and beneficiaries having unsuccessful projects. Three categories analysis and compared under each category using MS Exel. Questions have to analyses according to their envision purpose which were identified in section 3.2.2. Furthermore, the analysis is to be carried out to check the relationship of the parameters to the success of the project.

3.3 Chapter Summary

By interviewing the management staff and the farmer organization leaders, identify the possible key parameters and developed the questioner. Data collection carried out for three categories. One category is management staff and other two categories are beneficiaries having successful project and beneficiaries having unsuccessful projects. All the Engineers and Technical Officer in Provincial Irrigation Department NCP were responds for data collection and some planning officers directly involve in miner irrigation projects in the PID. Some engineers and technical officers in other department who have experience in minor irrigation construction projects also involved for data collection. Other two categories are beneficiaries and they covered six divisional secretaries. Data Analysis done according to the data collected under identified eight key parameters.

4. DATA ANALYSIS AND DISCUSSION

4.1 General

Eight possible parameters have been identified in 3.2.2 and two questioners have been prepared for managing staff and beneficiaries. Data collected separately from managing staffs and beneficiaries having successfully completed projects and unsuccessfully completed projects. Collected data have been analyzed to see whether there is a relationship between possible parameters identified and the success of the project.

4.2 Experience of the Beneficiaries

To check the relationship between the Experience of the beneficiaries and the success of the project two questions were directed to the beneficiaries who have involved in success and unsuccessful projects separately. Furthermore the same two questions were given to the officers in the management staff who were involved in both successful and unsuccessful projects. Finally the results were analyzed as shown in section 4.2.1 and 4.2.2.

4.2.1 The beneficiaries have enough concreting experience to carry out irrigation structure of the project

In general the idea is that the concreting experience is required for the projects which are highly involved in concreting works. Irrigation projects are one of the key projects which are highly involved in concreting works such as sluices, spillways and downstream structures. Therefore the experiences of concreting work of the beneficiaries are very important for the success of the project.

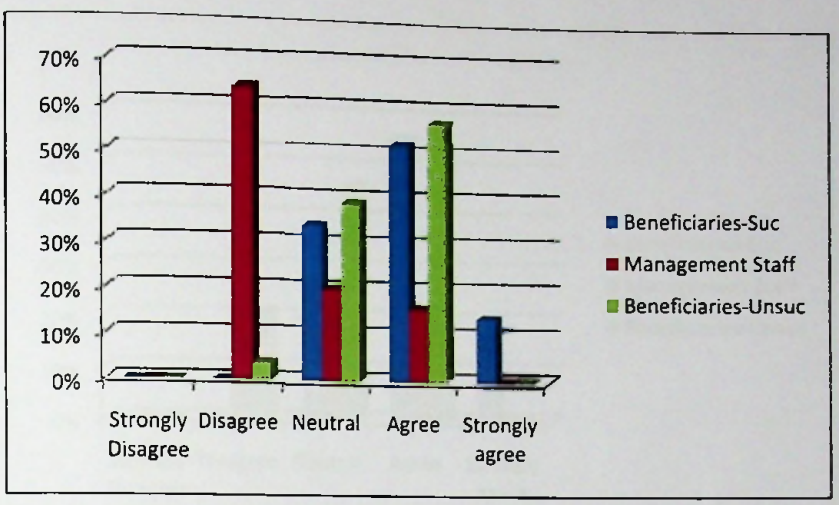

Figure 1: Concreting work experience of the beneficiaries

It can be seen that more than 50% beneficiaries having successful or unsuccessful projects believe that they have enough concreting work experience and more than 30% beneficiaries have no idea about it. Nevertheless, 64% of managing staffs have decided that Farmer Organization (FO) members do not have enough experience for concreting work and 20% staff members have no idea about the question.

4.2.2 The beneficiaries have enough earth work experience to carry out the project

Irrigation works are also involved with earth works, especially the minor irrigation projects. Therefore the earth work experience of the beneficiaries is highly influential for the success of a project.

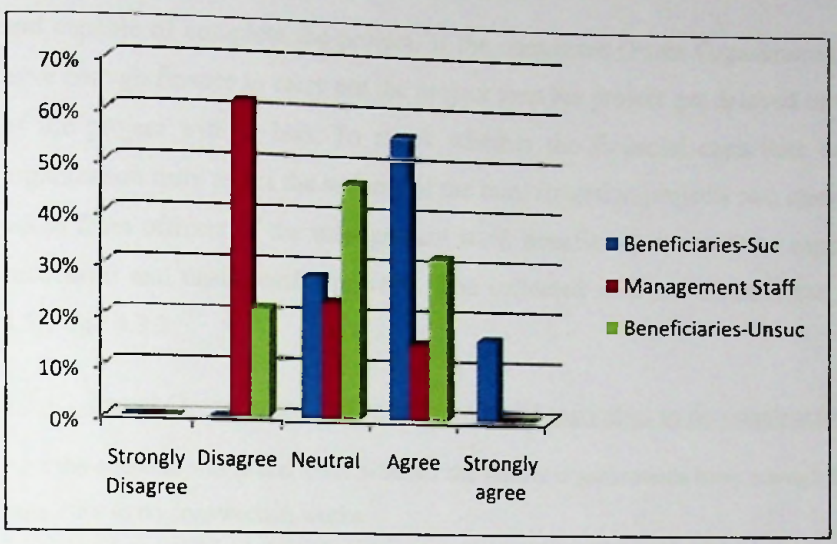

Figure 2: Earth work experience of the beneficiaries

According to the collected data, more that 50% of the beneficiaries who have involved in successful projects believe that they have enough earth work experience for carry out the projects. But it seems that the beneficiaries who have involved in unsuccessful projects have lack of confidence on their experience. More that 50% of them either disagree or neutral for the question. Furthermore the management staff believes that the earth work experience of the beneficiaries is not enough for the projects.

By considering the results obtained for section 4.2.1 and 4.2.2 it can be seen that the beneficiaries and the management staff are in two different viewpoints. Beneficiaries who have involved in both successful and unsuccessful projects believe that they have enough concreting work and earthwork experience while officers of the management staff believe that the experience is not enough for carry out the projects. The possible reason for having two different viewpoints is that the technical knowledge and the expected level of experience is different due to educational and professional background of the individuals.

4.3. Financial Capacities

Financial capability of a contractor is also a major factor which affects the progress of any construction project. Especially the projects which are funded by the government, because the payments are not on due dates hence the contractors has to bear the cost

and capable of complete the project. If the contractor (Farm Organization) does not have enough finance to carry out the project then the project get delayed or the quality of the project will be less. To check whether the financial capacities of the farm organization truly affect the success of the mini irrigation projects two questions were asked from officers of the management staff, beneficiaries who have experienced in successful and unsuccessful projects. The collected data are summarized in section 4.3.1 and 4.3.2.

4.3.1 Famer Organization has enough financial capacities to do construction works

First the question was asked to see whether the farmer organizations have enough financial capacities to do construction works.

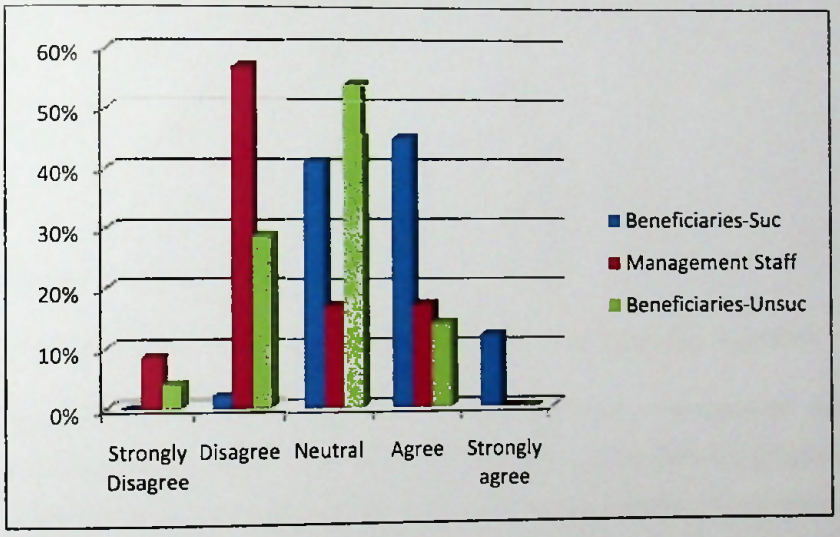

Figure 3: Financial capacities to do construction works

It is seen that 57% of beneficiaries having successful projects think that they have enough financial capacities while 41% of beneficiaries have no idea. In contrast, 34% beneficiaries having unsuccessful projects think they have no financial capacity while 54% beneficiaries have no idea. But compared to the respondent who believes that they have enough financial capability for carry out the project are less than the beneficiaries who think the financial capabilities are not enough. Furthermore, 65% of members in the managing staff believe that the farmer organizations don't have enough financial capability to carry out a minor irrigation projects while 17% staff no idea about it.

4.3.2 Famer organization receive mobilization advance

Second question in this section was to identify whether the mobilization advance is received on time to start and maintain the cash flow of the project.

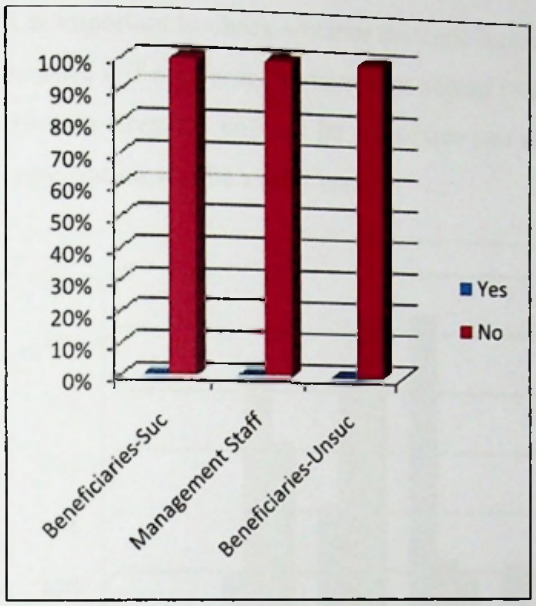

Figure 4: Mobilization advance

It is seen that no mobilization advance is given to the Farm Organizations.

According to the results obtained for two questions, management staff and the beneficiaries who have experienced in unsuccessful projects believe that the financial capability is not adequate and also the mobilization advance is not given to support the project implementation and carry out. In contrast the beneficiaries who have experience in successful project believe that the above mentioned problems are not affected to the progress of the project. The one of the possible reasons might be the different financial capacities of different farm organizations.

4.4 Resources

Resources are one of the prime factors govern the quality and the speed of the project. Quality materials and machineries control the overall quality of the project while the availability of the resources governs the speed and the cost of the project. Also it was considered that the beneficiaries should involve in their own projects to increase the attitudes towards the project. To see whether the beneficiaries are involved in the

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projects one question was asked and the data collected for the question is summarized under section 4.4.1.

4.4.1 Beneficiaries Involve for Construction Works

It is important to check whether the beneficiaries have involved in construction work because it if not Farm Organizations should hire outside labors. Then the beneficiaries (Human strength) will not be a resource and also the additional benefits to the farm organization will be a minimum.

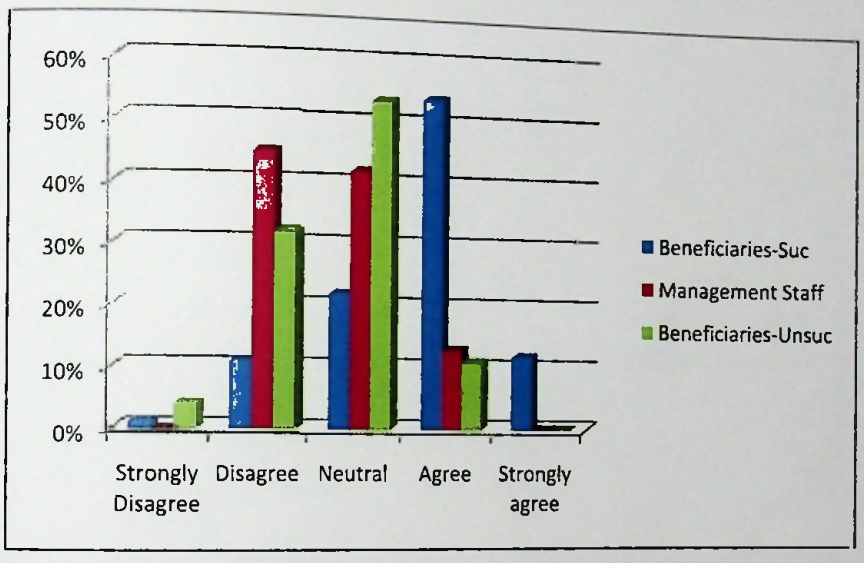

Figure 5: Beneficiaries involve for construction works

It can be seen that 66% of beneficiaries having successful project say they involve construction works of the project while 22% of them have no idea about questioner. But 54% of beneficiaries having unsuccessful projects have no idea about questioner while 36% of them say; they are not involving construction work of the project. 45% of members of the management staff decided beneficiaries are not involved for construction work while 42% staff can not decided whether they involve or not.

4.5 Communication with Beneficiaries

Communication with the beneficiaries is also important because the technical instructions should passes to the beneficiaries by the technical staff. The effectiveness of the technical instructions is depending on few factors and they have been identified

as the frequency of the technical instructions and the person who received the technical instructions. Furthermore it has been identified that the monthly site meetings also help for the progress of the project. Therefore three questions were asked form management staff and beneficiaries and the results were summarized as in section 4.5.1, 4.5.2 and 4.5.3.

4.5.1 Monthly Site Meeting is Held

To check the influence to the success of the project by monthly site meeting the data was collected and summarized as in figure 6.

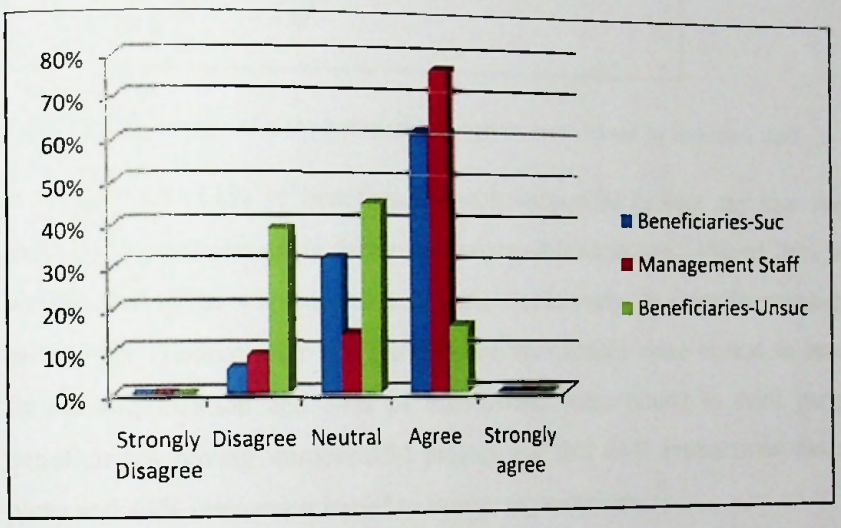

Figure 6: Frequency of monthly site meetings

It can be seen that 77% of managing staff and 62% of beneficiaries in successful project say monthly site meeting is held. 45% of beneficiaries in unsuccessful project have no idea about site meeting while 39% of them say monthly site meeting is not held. Only 16% of beneficiaries in unsuccessful project agreed that site meeting held. Therefore it can be seen that among the beneficiaries experienced unsuccessful projects, people who agree is a lesser proportion compared to the people who do not agree.

4.5.2 To Whom Technical Instruction Issued

It can be found that the technical instructions were issued for several parties hence the productivity of the project varies. Therefore data was collected to identify the effectiveness of the technical instruction issued and it was summarized as in figure 7.

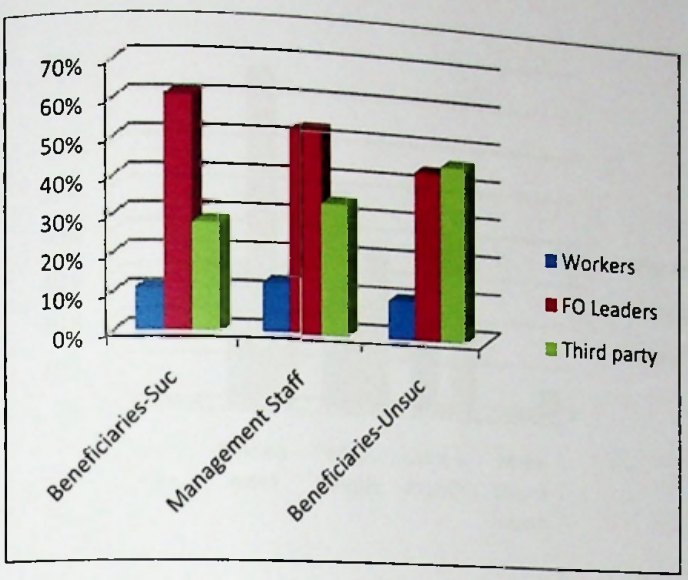

Figure 7: The person who the technical instructions were issued by technical staff

It is seen that 61% of beneficiaries with successful project say that the technical instructions were issued to farmer organization leaders and 11%and 28% instructions were issued to the workers and third party respectively. In a similar manner, members of the management staff say that 53% of instructions were issued to leaders of the farmer organization and 34% of instructions were issued to third party. But the beneficiaries having unsuccessful project say that 46% instructions issued to third party and 44% instruction issued to farmer organization.

4.5.3 Frequency of the Technical Instructions Issued

Also the Technical Instructions were issued in different frequencies. Some of the instructions were issued weekly basis, monthly basis and etc. Therefore data was collected and summarized as in figure 8.

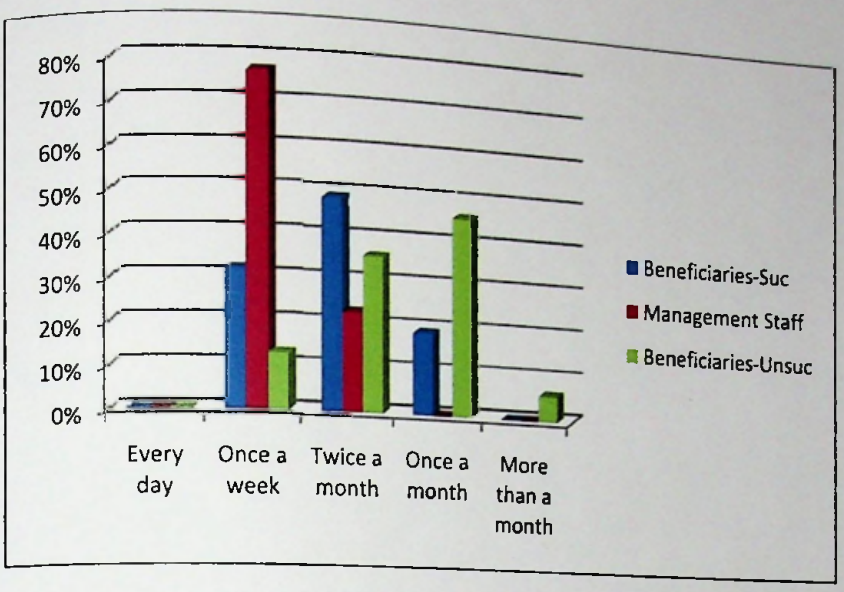

Figure 8: Frequency of the technical instructions issued

Analyzing the figure 8 is can be seen that 77% of the Management Staff members say that technical instruction issued once a week and others say instruction issued twice a month. Beneficiaries in successful projects say that 32% technical instruction issued once a week 49% technical instruction issued twice a month. But, beneficiaries having unsuccessful projects say that 36% instruction issued twice a week. Majority of the beneficiaries who had experienced unsuccessful projects, which is 46%, say that the instructions were issued one a month. Furthermore some of them say that the instructions were issued in more than one months'

In general the members of management staff and the beneficiaries' experienced successful projects have same opinion on the questions asked and they admit that the monthly meetings and the frequency of technical instructions given are acceptable and the instructions were issued to the leaders of the farm organization. But there is a contradiction of the answers between the beneficiaries' experienced unsuccessful projects and the management staff. Beneficiaries who had experienced unsuccessful projects say that the monthly site meeting was not held properly and the technical instructions issued are in monthly or more than a one months' interval.

4.6 Payments

Payments procedure and payment delays due to some reasons are directly affect for the progress of the project. If the payment procedure is too long contractor will be fed

up, hence the quality will be reduced and in the same time delays can be occurred. Also the delays are occurred due to quality control report. In that case there are two possibilities such as due to lack of quality in the project or due to technical officers' delay. Therefore, two questions are included to the questionnaire to identify the problems of the payment process and to improve the process afterwards. The collected data are presented in section 4.6.1 and 4.6.2.

4.6.1 Payment procedure

At the initial stage it has been identified that the payments are also significant factor for the success of the project in different ways. Therefore, one of the data was collected on payment procedure, which is one of the major parameter which affects the payments of the mini irrigation projects.

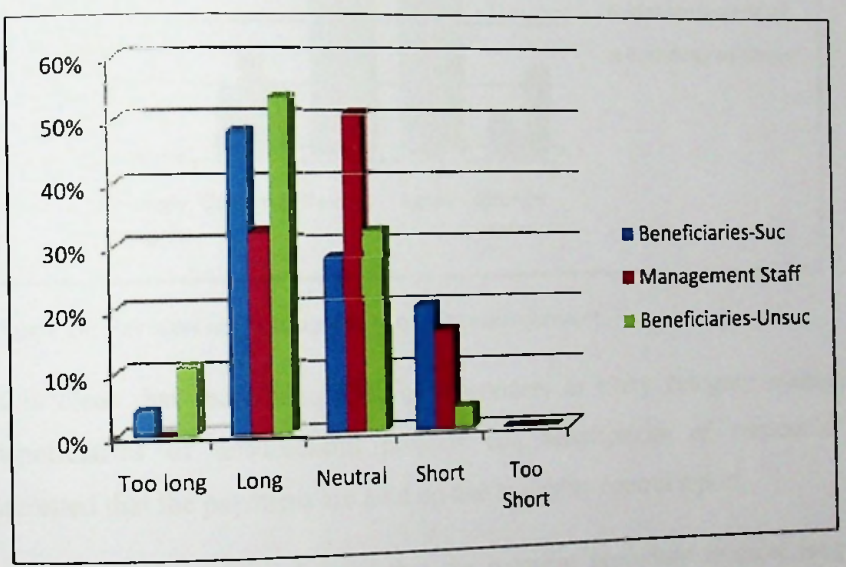

Figure 9: Payment procedure

It is seen that 52% of beneficiaries in successful projects and 65% beneficiaries in unsuccessful projects believe that payment procedure is long. 28% and 20% beneficiaries in successful projects think payment procedure normal and short respectively. Only 32% and 4% beneficiaries of unsuccessful projects say normal and short respectively. 32% of managing staff says payment procedure is long while 51% and 16% think that payment procedure is normal and short respectively. But in general all three parties have admitted that the payment procedure is quite long.

4.6.2 Payment are held up due to quality control report

Another factor which affects the overall payment process is the quality control reports. Sometimes the stake holders experienced that the payments were held up due to quality control reports. Therefore, the data was collected and presented as in figure 10.

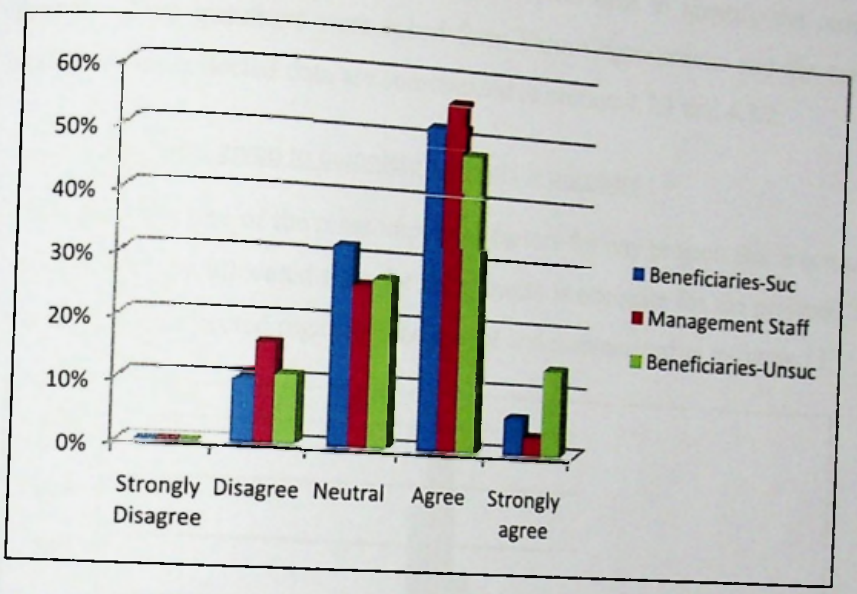

Figure 10: Payment are held up due to quality control report

It is clear that more than 50% of responders in every category managing staff, beneficiaries of unsuccessful projects and beneficiaries of successful projects admitted that the payments are held up due to quality control report.

In general all parties admitted that the payment procedure is quite long and the payments are held up due to quality control reports. The possible reasons for the lengthy payment procedure are due to lack of coordination among involving parties, imprest is not receiving continuously to the department by the treasury and FOs are not aware of the payment procedure. Furthermore the possible reasons for held up payments due to quality control reports are due to lack of quality in the construction, lack of awareness of the testing procedure and sometimes it might be the delay for the technical officers side.

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4.7 Time Management by the Beneficiaries

Time management is crucial in mini irrigation projects as in any other major project because the project is directly involved with the lives of the farmers. Therefore it is necessary to see whether the Farm Organization have enough knowledge of managing the time and complete the project in given time frame. First opinion was taken regarding the duration of the time given. And then to identify the most delayed process. Two questions were asked form Farm Organizations and the management staff and the collected data are summarized in section 4.7.1 and 4.7.2.

4.7.1 Duration given to complete a project is adequate

Time factor is one of the most important factors for any project. But it is necessary to see whether the allocated time for the projects is adequate for the projects. Therefore the data was collected regarding the matter and summarized as in figure 11

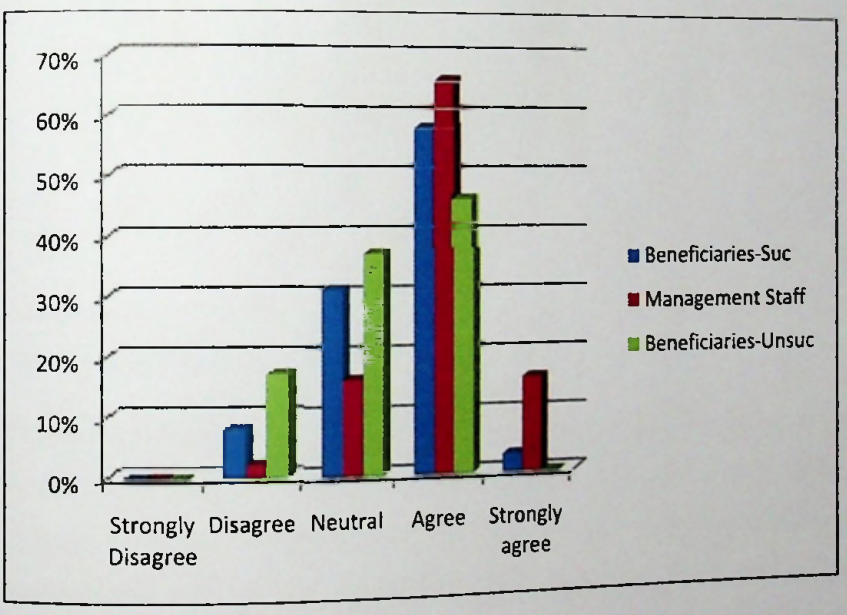

Figure 11: Adequacy of the duration given to complete a project

It is seen that 82% of management staff members believe that the duration allocated to complete a project is adequate. 61% of beneficiaries in successful projects also say that the duration allocated to complete a project is adequate while 31% of them have no idea about it. 46% of beneficiaries in unsuccessful projects believe that duration given to complete a project is adequate while 37% of them have no idea about it.

But in general majority of the beneficiaries and the management staff believe that the time allocated is adequate. But in the same time few beneficiaries' experienced successful and unsuccessful projects say the time allocated for the project is not adequate

4.7.2 What is the most Delayed Process in the project

There are many processes in a construction project and the delay of a one project affects the overall progress of the project. Therefore data was collected and presented as in figure 12.

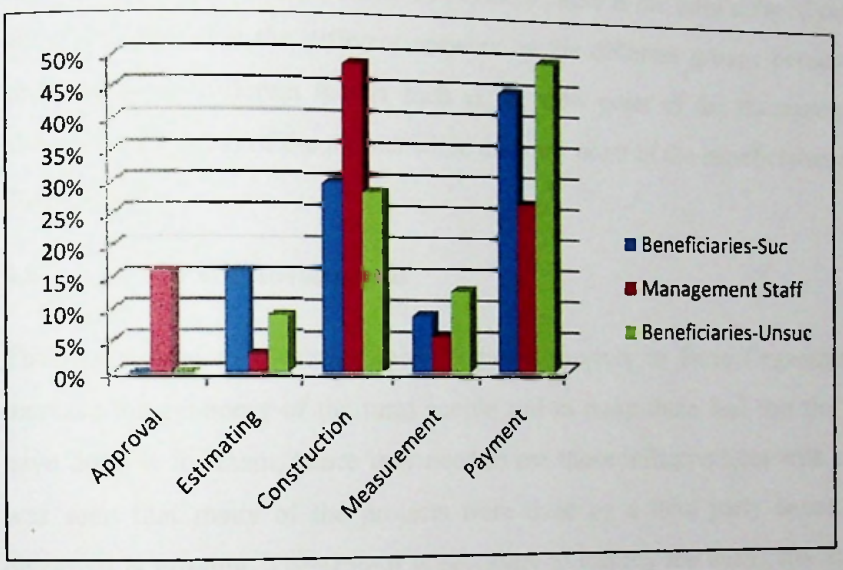

Figure 12: Most delayed process in the project

When consider the management staffs' responds, 49% say that the construction phase is the most delayed process, 27% say that the payment phase is the most delayed process, 16% say that the approval phase is the most delayed process and few of the respondents say that the estimating and measurement phases is the most delayed process. When consider the beneficiaries' responds in successful project, 45% say that the payment phase is the most delayed process, 30% say that the construction phase is the most delayed process, 16% say that the estimating phase is the most delayed process. When consider the beneficiaries' responds in unsuccessful project, 50% say that the payment phase is the most delayed process, 29% say that the construction phase is the most delayed process, 13% say that the measurement phase is the most delayed process. But in general members of the management staff believe that the construction phase is the most delayed process while the beneficiaries having

successful and unsuccessful projects believe that the payment process is the most delayed process.

By summarizing the facts collected for the two question it can assume that the reasons for mention that the duration given to complete a project is not adequate by some beneficiaries is might be that they don't have knowledge about critical tasks in the project, therefore they wait until a one task is completed instead of do the tasks simultaneously and without prioritizing the critical tasks. Furthermore, the majority of the management staff believes that the construction phase is the most delayed process and the beneficiaries believe that the payment phase is the most delayed process. It is understandable that the different answers by the different groups because they are sensitive to do different factors such as the view point of the management staff is always the progress of the project while the view point of the beneficiaries are always the payments.

4.8 Third Party Involvement

The major goal of awarding mini irrigation projects to Farm Organizations is to increase the economy of the rural people and to make them feel that the work they have done is for them, hence they need to use those infrastructures with care. But it was seen that many of the projects were done by a third party hence the prime objective is missing. Therefore it is necessary to identify the third party involvement for these projects.

4.8.1 Third Party Involved Manage Contract

In previous questions it has been identified that there might be some influence to the success of the project by a third party. Therefore question has been asked and data was collected and presented as in figure 13.

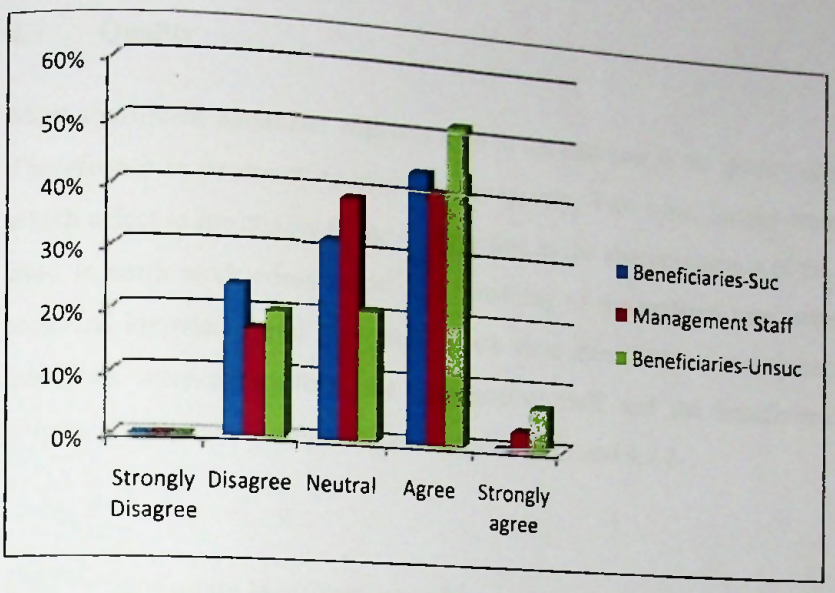

Figure 13: Third party involved manage contract

It is seen that 59% of the beneficiaries in unsuccessful projects say there is a third party involvement to manage the contract while, 21% is neither agree nor disagree, also 20% say that there are no third party involvement for contract management. 44% of the beneficiaries in successful projects say that the third party was involved to manage the contract while, 32% is neither agree nor disagree. Furthermore 24% say that there is no third party involvement for contract management. 44% of the managing staff says that there is a third party involvement for manage the contract, 39% neither agree nor disagree and 17% says that there is no third party involvement for contract management.

But in general it can be seen that there is a third party involvement for managing minor irrigation project even though the true purpose it to increase the economical back ground and the attitudes towards the project by the beneficiaries. The possible reasons for the above mentioned problem are that the political influences, financial capabilities, attitudes of the beneficiaries and lack of technical expertise of the beneficiaries. Sometime there are many cases that in the initial stage FOs were awarded the contract but afterwards it was managed by a third parties due to all or some of the above mentioned reasons.

4.9 Quality

Most significant parameter which is seen to the end user is the quality of the project. Therefore it is necessary to maintain the quality. Two main factors were identified which affect to the quality of the construction as the appropriateness of the machinery used in earth work construction and suitability of the material used, other than the technical knowledge and experience which were identified in previous sections. Two questions were asked form the management staff and the beneficiaries and the collected data were summarized as in section 4.9.1 and 4.9.2.

4.9.1 Appropriate Machinery is used for earth work construction

Quality of the project is highly influenced by the machinery used. Since the minor irrigation projects majorly dealing with the earth works, the machineries used for earth work is highly affected to the quality of the project. Therefore the data was collected and presented on the appropriateness of the machinery used for earth work construction and presented as in figure 14.

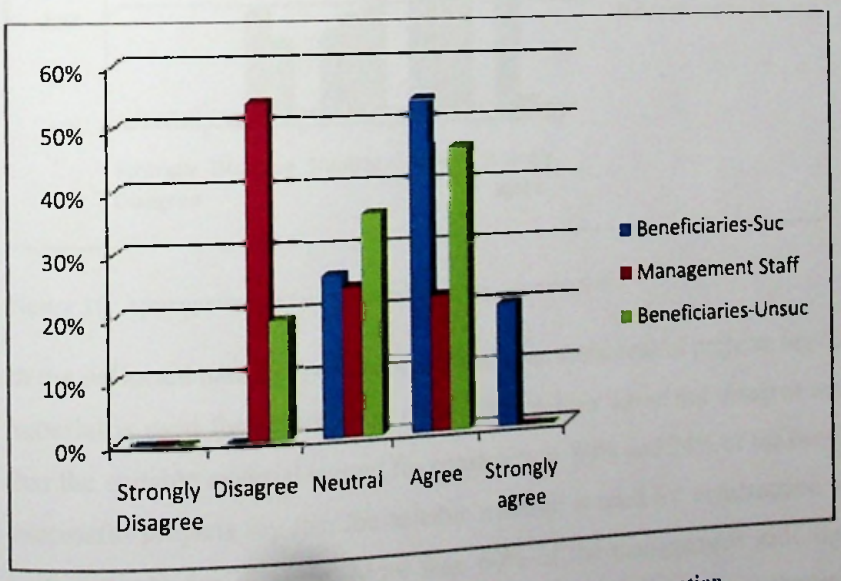

Figure 14: Appropriateness Machinery used for earth work construction

It is seen that 74% of beneficiaries in successful projects believe that they have used required machinery for earth work construction while 26% have no idea. 46% of

beneficiaries in unsuccessful projects believe that they have used required machinery for earth work construction while 36% have no idea and 19% believe that they haven't used required machinery for earth work construction. But, 54% of management staff believes that farm organizations haven't required machinery for earth work construction, while 24% have no idea and 22% say that they used required machine for earth work.

4.9.2 Suitable Material is used for construction

Same as the appropriate machineries, materials used have to be suitable and up to the given project specifications. Data was collected to check whether the suitable materials were used and presented in figure 15.

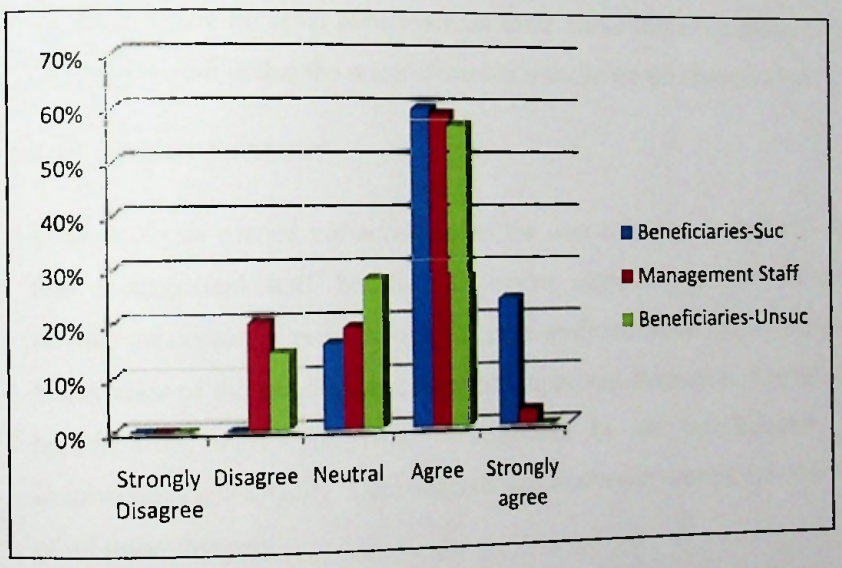

Figure 15: Appropriateness of material used for construction

In the collected data 57% of the beneficiaries in unsuccessful projects say that suitable material is used for construction while, 28% neither agree nor disagree and 14% say that the suitable material is used for construction. 60% and 24% of the beneficiaries in successful projects say that the suitable material is used for construction while, 16% neither agree nor disagree. More than 60% of the management staff says that the suitable material is used for construction and 19% neither agree nor disagree and 20% of them disagree to the statement.

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In general regarding the appropriateness of the machineries members of the management staff believe that the appropriate machineries haven't been used while most of the beneficiaries having successful and unsuccessful projects believe that they have used appropriate machineries for construction work Possible reasons for having contradictory ideas on appropriateness of the machinery are that the management staff exactly knows the appropriateness of the required machineries but the beneficiaries don not have much idea about the required machineries. Sometime beneficiaries think that the machineries they used is appropriate even though they are not up to given project specifications.

But in general all the parties have admitted that the suitable materials have been used for construction but few members of the management staff were disagree for the statement. The possible reason is that the answers might be based on the project involved of the personal experience on some minor irrigation project. But overall it can be concluding that the material used is suitable for the construction.

4.10 Chapter Summary

Data Analysis carried out according to the data collected from three category such that management staff, beneficiaries having successful projects and beneficiaries having unsuccessful projects. All the data analyzed under eight categories such as Experience of the beneficiaries, financial capacities, Resources, Communication with beneficiaries, Payments, Time Management by the beneficiaries, Third party involvement and Quality. Data analysis and discussion carried out results comparing of all three category.

It can be seen two different viewpoints of management staff and beneficiaries about experience of the beneficiaries. Financial capacity of farmer organization is not sufficient for the carryout construction projects, but there is no given mobilization advance also. Beneficiaries involvements are not satisfied level in construction projects.

All the group responds for data collecting agreed some percentage that third party involvements are there in beneficiary participation construction projects. Frequency of technical instruction issued also some contradiction results are there. All the parties agreed that payment procedure and some barriers are exists for delays in construction

bill payments. Results say most delay process are construction stage and payment stage and although all agreed suitable material used for construction, management staff says that beneficiaries, they are not used suitable machinery for construction.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Participatory Irrigation Management is the concept that farmers or irrigation water users, target group of irrigation management, participate with Irrigation Department on decision making and conducting irrigation activities in aspect of construction and operation and maintenance process. In this research how effective farmers or beneficiaries participation in minor irrigation construction and what are the solution for success of Participatory Irrigation Management. Many problems were identified during the data analysis of the questioners as follows;

Beneficiaries having both successful and unsuccessful projects believe that they have enough concreting work and earthwork experience while officers of the management staff believe that the experience is not enough for carry out the projects. The possible reason for having two different viewpoints is that the technical knowledge and the expected level of experience are different due to educational and professional background of the individuals.

According to the result management staff thinks that farmers' organizations don't have enough financial capabilities to carry out construction of the projects. Beneficiaries with successful projects believe they have enough Financial Capacity and beneficiaries with unsuccessful projects have no clear idea about their Financial Capacity. Mobilization Advance also would not received by the farmers' organization. Financial capacity is very important factor for success of a project. Therefore, financially strengthening of farmers' organizations is a considerable factor for PIM system.

Beneficiaries in successful projects say that they involved construction works of the project. But management staff and beneficiaries in unsuccessful projects say that beneficiaries are not involving the construction work. Beneficiaries can be used as a human resource for the farmer organization in construction process. The concept of the construction doing with the farmers organization contribution of farmers in order to develop the attitudes and knowledge of the farmers about irrigation engineering concept and enhance the economy of the beneficiaries through the construction.

Communication is very important another factor in any construction project. Management staff and beneficiaries in successful projects admitted that monthly site meetings are held. Beneficiaries having unsuccessful projects say that monthly site meetings are not held. There may be many reasons for that situation. However, monthly site meeting is very acceptable and commonly used method to obtain the good progress.

All the parties admitted that technical instructions are given to third party as well as farmer leaders. And also all the parties say in section 4.8 that third party involvements are there in construction projects. There may be many reasons in involvement in third party for construction work such that financial capacity of the famers organization, communication ability with irrigation staff and other relevant authorities, least involvement of farmers, attitudes of farmers, etc.

Technical Instruction given frequency also very is very important for the progress and the quality of a project. Management Staff says that technical instruction is given once a week. Most of beneficiaries of both successful projects and unsuccessful projects say that technical instruction is issued twice a month and once a month.

Most of the beneficiaries in both successful and unsuccessful projects say that payment procedure is long. But management staff says that payment procedure average and long. Payment procedure may be long and sometimes it will be an unawareness of beneficiaries about payment procedure. All the parties admitted that payments are held up due to quality control report.

All the parties admitted that duration given to complete a project is adequate and the most delayed process in projects is payments and construction stages. When payment delay construction also delay due to failure of cash flow maintenance.

All the parties believe that suitable material is used for construction but management staff says that suitable machinery not used for earth work construction while beneficiaries believe that they used suitable machinery for earth work construction. Due to unawareness of appropriate machinery of beneficiaries may cause this contradiction result between beneficiaries and Management Staff.

By considering the results obtained for eight parameters identified it can be seen that some of the parameters do not improve to the success of the minor irrigation project

such as time allocated for the project. Because everyone has agreed that the time allocated for the projects are enough.

The main objective of this research is to identify whether the beneficiaries get enough benefits such as economic growth of their families, increasing sense of ownership of irrigation projects. Maintaining the quality of the project for durability and rehabilitation will be in conform to both farmers' requirement and irrigation engineering principle. It can be seen that some of the things have been successful but some areas have to be improved to achieve a greater success. In the recommendation the initiatives to be taken to mitigate the effects from identified problems have been described further.

5.2 Recommendations

Based on the findings from the research the following recommendation can be originated for future similar projects implementing using government or donor funds.

At the initial stage of the project there should be provision to arrange training program to up lift knowledge of the farmer organization leaders and farmers about the area of earth work and concrete work and payment procedure of the government. Farmer organizations should be strengthening in financially. Maintaining the cash flow during the construction is very important. According to the government regulation mobilization advance can be paid if they provide mobilization advance bond obtain from the Commercial Bank. But they have capacity to provide such bank bond. Due to barriers of the advance payment, to maintain the cash flow of the construction project recommends to pay monthly bill for farmer organization whatever the amount of the bill. Irrigation Department makes process to obtain the imprest form the treasury. Communication with Farmer Organization and the farmers is very important. In order to maintain good communication; monthly site meeting, frequently site visits at least once a week, technical instruction should be give FOs leaders and farmers as possible as. When maintain the good communication with FOs leaders and continues support to maintain he cash flow of the construction project third party involvement will be minimum and also politician and policy makers should be aware about the PIM.

5.3 Recommendations for Future Research

In this research it was revealed that the third party involvements are there. But it was not found that what extent it was affected to the participatory irrigation management concept. Therefore, it is recommended to have future research in this area.

Data collection is done officers involve in construction projects. It might be a limitation in expression ideas specially farmers and farmer organization leaders. Therefore it also recommends for future research in data collection carried out persons who not involve construction process.

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APPENDIX

1. The questionnaire used for the survey – Beneficiaries
2. The questionnaire used for the survey – Management Staff

Appendix 1

Questionnaire to Beneficiaries

EFFECTIVENESS OF COMMUNITY PARTICIPATION IN STATE FUNDED MINER IRRIGATION REHABILITATION PROJECTS

Office use only

I am a MSc Construction Project management student, of UOM and it is one of the course requirements to conduct a field survey regarding the above title. I earnestly request your kind assistance and co- operation and assure your of confidentiality regarding information revealed by you

A. General

A. 1 Your DS Division.

A.2 Your sub project

According to your knowledge with the minor irrigation constriction projects,

B. Experience

B.1 The beneficiaries have enough concreting experience to carry out irrigation structure of the project

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

B.2 The beneficiaries have enough earth work experience to carry out the project

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

C. Beneficiaries financial capacities

C.1 Famer organization has enough financial capacities to do construction works

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

C.2 Famer organization receive mobilization advance

Yes	No

D. Availability of resources

D.1 Beneficiaries are involve for construction works

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

E. Communication

E.1 Monthly site meeting is held

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

E.2 To whom technical instruction issued

Workers	FO Leaders	Third party

E.3 Frequency of the Technical instruction issued

Every day	Once a week	Twice a month	Once a month	More than a month

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F. Payments

F.1 Payment procedure

Too long	Long	Neutral	Short	Too short

F.2 Payment are held up due to quality control report

Strongly Disagree	Agree	Neutral	Disagree	Strongly agree

G. Time Management

G.1 Duration given to complete a project is adequate

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

G.2 What is the most delayed process in the project?

Approval	Estimating	Construction	Measurement	Payments

H Third party involvement

H.1. Third party involved manage contract

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

I Quality

I.1 Appropriate machinery is used for earth work construction

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

I.4 Suitable material is used for construction

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

Appendix 2

Questionnaire to Management Staff

EFFECTIVENESS OF COMMUNITY PARTICIPATION IN STATE FUNDED MINER IRRIGATION REHABILITATION PROJECTS

Office use only

I am a MSc Construction Project management student, of UOM and it is one of the course requirements to conduct a field survey regarding the above title. I earnestly request your kind assistance and co- operation and assure your of confidentiality regarding information revealed by you

A. General

A. 1 Your Working District

According to your knowledge with the minor irrigation constriction projects,

B. Experience

B.1 The beneficiaries have enough concreting experience to carry out irrigation structure of the project

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

B.2 The beneficiaries have enough earth work experience to carry out the project

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

C. Beneficiaries financial capacities

C.1 Famer organization has enough financial capacities to do construction works

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

C.2 Famer organization receive mobilization advance

Yes	No

D. Availability of resources

D.1 Beneficiaries are involve for construction works

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

E. Communication

E.1 Monthly site meeting is held

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

E.2 To whom technical instruction issued

Workers	FO Leaders	Third party

E.3 Frequency of the Technical instruction issued

Every day	Once a week	Twice a month	Once a month	More than a month

F. Payments

F.1 Payment procedure

Too long	Long	Neutral	Short	Too short

F.2 Payment are held up due to quality control report

Strongly Disagree	Agree	Neutral	Disagree	Strongly agree

G. Time Management

G.1 Duration given to complete a project is adequate

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

G.2 What is the most delayed process in the project?

Approval	Estimating	Construction	Measurement	Payments

H Third party involvement

H.1. Third party involved manage contract

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

I Quality

I.1 Appropriate machinery is used for earth work construction

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

I.2 Suitable material is used for construction

Strongly Disagree	Disagree	Neutral	Agree	Strongly agree

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