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***Participatory Approach for the Development of Agribusiness Through
Multi Purpose Cooperatives in Degua Tembien Woreda, South Eastern
Tigray, Ethiopia***

By

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Advisor

Prof. G. B. Pillai



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Declaration

This is to certify that this thesis entitled “Participatory Approach for the Development of Agribusiness Through Multi Purpose Cooperatives in Degua Tembien Woreda, South Eastern Tigray, Ethiopia.” submitted in partial fulfillment of the requirements for the award of the degree of M.Sc., in Cooperative Marketing to the School of Graduate Studies, Mekelle University, through the Department of Cooperatives, done by Mr. Berhane Ghebremichael Weldeselassie, Id. No. FDA/GR013/98 is genuine work carried out by him under my guidance. The matter embodied in this project work has not been submitted earlier for award of any Degree or Diploma to the best of my knowledge and belief.

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ABSTRACT

The study was conducted in Degua Tembien Woreda, South Eastern Tigray, Ethiopia. with the objectives: (a) To identify the components of participation efficiency and develop a participation efficiency index; (b) To assess the existing problems and prospects of agribusiness in Degua Tembien woreda of Tigray region, Ethiopia; (c) To study the factors affecting participation efficiency in agribusiness carried out through multi-purpose cooperatives; (d) To identify the constraints in adopting participatory approach by the multi-purpose cooperatives; and (e) To develop a strategy for effective participatory approach for development of agribusiness through multipurpose cooperatives.

To address the objectives of the study, both quantitative and qualitative methodologies were used in this study. Data were collected from primary and secondary sources, the primary data necessary for the quantitative study were collected through personal interviews from 120 farmers drawn from four tabias by conducting formal survey using structured interview schedule. Qualitative data were collected through focus group discussion, observations, and informal discussion with key informants and extension workers. This study used a two stage sampling procedure in which both purposive and random sampling techniques were used to select the

tabias and sample respondents. Descriptive statistics with appropriate statistical tests, Pearson's Product-Moment Correlation, chi-square, Cramer's V and other relevant tests were used to analyze the data collected for the study.

A participatory efficiency index was developed in the study and was used as a tool to assess the participation efficiency of the respondents. Accordingly, 29.2 % of the respondents are classified having low participation, 57.5% medium participation and the remaining 13.3% with high participation. All the ten components of participation efficiency constitute to form the PEI. The survey result shows that the average age, size of land holding, and total annual income were found to be 48.71 year, 0.9833 ha, and 2763.75 Birr respectively. The major problems perceived in the progress of agribusiness by the sample respondents were inadequate knowledge and skill in post harvest techniques, inadequate market infrastructure, and inadequate market information especially on the tastes and preferences of customers. Based on the results obtained, the following policy implication can be drawn: Multi purpose cooperatives need to be involved in promotion of participatory approach for agribusiness development and sufficient training opportunities need to be provided for the cooperative members to upgrade their knowledge and skill in agribusiness development.

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ACRONYMS AND ABBREVIATIONS

ADLI	Agricultural Development Led Industrialization
AEMFI	Association of Ethiopian Microfinance Institutions
Birr	Ethiopian Currency
BoFED	Bureau of Finance and Economic Development
Coop(s)	Cooperative(s)
CSA	Central Statistical Authority
DECSI	Dedebit Credit and Saving Institute
DTW	Degua Tembien Woreda
E.C.	Ethiopian Calendar
FAO	Food and Agricultural Organization
FCA	Federal Cooperative Agency
FCC	Federal Cooperative Commission
FGD	Focus Group Discussion
Gov't	Government
ha	Hectare
Hr(s)	Hour(s)
HYV	High Yield Variety
ICA	International Cooperative Alliance
IFAD	International Fund for Agricultural Development
Km	Kilometer
m asl	Meters above sea level

mm	Millimeters
MPCs	Multi Purpose Cooperatives
MU	Mekelle University
NGOs	Non Governmental Organizations
PA	Participatory Approach
PEI	Participation Efficiency Index
PEIV	Participation Efficiency Index Value
PI	Personal Interview
Qt	Quintal
REST	Relief Society of Tigray
SIS	Structured Interview Schedule
SPSS	Statistical Package for Social Sciences
UNDP	United Nations Development Programme
UNO	United Nations Organization
WDTBoANR	Woreda Degua Tembien Bureau of Agriculture and Natural Resources
WHO	World Health Organization

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CHAPTER I-INTRODUCTION

Ethiopia stands as the fourth largest in size and the second populous country in Sub-Saharan Africa; with a total area of 1097 thousand square kilometers and a population of about 75 million in 2005. The total labor force of the country constitutes about 48 per cent of the population. The country is richly endowed with huge manpower, arable land and natural resources. However, much of its potential is not yet exploited. Out of the 60 per cent of its landmass which is known to have a potential for agricultural development, only 15 per cent is said to have been developed (G/Yohannes, 2000).

According to the statistics of MEDaC in 1999 as cited in Amha (2000), the per capita income of Ethiopia is 167 USD. About 45% of the population in Ethiopia live below the absolute poverty line (47% of the rural and 33% of the urban population), unable to fulfill the minimum livelihood standard. The agricultural sector is the mainstay of the economy, which forms the basis of livelihood for 85% of the population. It accounts for about 50% of the GDP. Performance of the agricultural sector is inadequate to feed the growing population.

Repeated drought, civil war, land degradation, limited uses of modern input and ill-advised policies have crippled the development of the economy. In the year 2000 an estimated 8 million people in Ethiopia required emergency food aid. The major factors behind the subsistence farming were soil degradation, inadequate and variable rainfall, tenure insecurity, weak

agricultural research base and extension system, lack of financial services, imperfect agricultural markets and poor infrastructure (Amha, 2000).

In most developing countries agriculture is the most important economic activity providing food, employment, foreign exchange and raw materials for industries. In the absence of an efficient agricultural sector, such countries will be severely suffering from the inability of feeding themselves and are likely to depend on food imports and food aid. The development strategy adopted in August 1992 set the country's strategy to be Agricultural Development-Led Industrialization (ADLI). According to this policy, growth in agriculture could be realized through improved productivity of small holder agriculture (where crop and livestock productions are strongly inter-dependent) through mutually reinforcing ways of achieving enhanced productivity levels which include combining resources of the farmer - i.e. land, labor and capital in a better way; introducing new technologies - i.e., improved seeds, improved farm implements, fertilizers and pesticides; widespread use of better cultural practices, minimization of post-harvest losses, greater and more efficient use of extension work and management techniques (Renee et al, 2000).

Smallholder farmers in particular face uncertain production environment and enormous constraints and higher cost in accessing markets. Moreover, there is a high level of uncertainty surrounding the agribusiness activities of peasants in developing countries (Embden, et al., 1997). This uncertainty is the reflection of climatic factors, which are more extreme in the tropics,

unstable markets, the paucity of information, low social and economic participation and status, etc., all the main problems of agricultural marketing.

Intervention to reduce uncertainty and other marketing problems and to bring the rural households in to profit maximizing category may be realized through establishment of rural institutions that can adopt participatory approach, such as cooperatives. The concept of human cooperation is not new. Cooperative is a world wide movement. It prevails both in developed and developing nations, and in all branches of economic activity (Krisiinaswami and Kulandaiswamy, 2000). Cooperatives are viewed as change agents. The change supposed to be brought about by the cooperatives is not simple rather it needs rigorous work. Improved performance of agricultural/multi purpose cooperatives is assumed to have a role in fostering agricultural production and agribusiness activities through the promotion of participatory approach and better resources allocation.

In Ethiopia, the formation of modern cooperative societies was started soon after the Italian invasion. However, it was only in 1960s that a cooperative was legally enacted. During the reign of Haileselassie, the cooperative legislation No 241/1966 was proclaimed and about 154 different types of cooperatives were organized. During the Dergue regime, cooperatives that were organized earlier were considered as unnecessary and discarded. The newly organized cooperatives under the regime have purposefully made instruments of political power. Their organizational procedures were not based on internationally accepted cooperative principles and

values. New era in cooperative development was then started in 1998 when new cooperative legislation No 147/1998 was enacted. Since then, cooperatives have been playing significant role in the rural Ethiopia, especially in the areas of input supply (i.e. fertilizers, agrochemicals, high yield varieties, etc), saving and credit, coffee and grain marketing (FCC, 2004, FCA, 2007).

At present above 19,147 different types of primary and 112 secondary cooperatives (unions) have been organized and made operational. Among these, 576 primary and 20 secondary cooperatives (i.e., multi purpose cooperatives), are multi purpose cooperatives which are organized in Tigray region, out of these 15 multi purpose cooperatives, 9 SACCOs, and 16 other cooperatives are situated in Degua Tembien woreda (Attached in the Appendix). They are playing great role in the dissemination of agricultural inputs. Although such signs of success are there, greater efforts should still be made to organize, promote, and develop cooperatives in the country through increasing members' commitments and participation (FCC, 2004, FCA, 2007).

1.1. Statement of the Problem

The experiences prove that individual approaches to development, by and large, failed. The group approach is accepted as the most effective way of transforming and empowering people. The cooperatives serve the resources poor and down trodden people. The cooperative way is the best way to solve the twin problems of Ethiopia viz, poverty and unemployment. The cooperatives should adopt a participatory approach for meeting the ever challenging demands of its farmer-members.

But, it is not ascertained clearly whether all the cooperatives strictly follow a participatory approach, and if they follow to what extent. There is no well defined procedure to measure participation efficiency. Because cooperatives are being considered by the government as the major organ for rural development, it is very much necessary to promote participatory approach and study the various parameters of participation efficiency and develop a device to measure participatory efficiency.

There are 576 multipurpose cooperatives with a total capital of 39,243,612.00 Birr in the Tigray region of Ethiopia which deal with promoting agricultural activities. These cooperatives, even though working for the benefit of individual members, are supposed to follow a group approach in development of agriculture. Agribusiness activities are promoted through the multi-purpose cooperatives. They need a concerted effort on the production, processing, manufacturing, and marketing sectors. The main activities of the multi-purpose cooperative societies requiring participatory approach in the field of agribusiness are to be:

1. Cooperative decision making in agribusiness.
2. Providing agricultural market information
3. Production planning in agriculture
4. Procurement and transportation of agricultural commodities
5. Storage of agricultural commodities
6. Processing and value addition
7. Marketing of agricultural products

8. Formation of primary group of farmer-members
9. Cooperative extension and transfer of technology.

So the research work is an attempt to develop measurement procedures to measure participation efficiency and to use it to study the functioning of multipurpose cooperatives in the study area.

1.2. Purpose of the Study

Participation has become synonymous with development. One way of overcoming the shortcomings of conventional extension system is to localize the extension efforts through participatory group approach. The concept of group approach sounds very suitable with the varied agro-eco production systems and socio-economic peculiarities of the region. So, it has to be assessed whether the multi-purpose cooperatives follow participatory approach to promote agribusiness related activities.

As it is, there are no standardized procedures to measure participation efficiency. Hence, evaluation of the functioning of groups becomes difficult. The participation Efficiency Index being developed in the study will be useful for monitoring and evaluating of groups formed for agricultural development. The constraints in the implementation of participatory approach in agriculture, when identified, will be an eye-opener to the planners and policy makers of people's participation. The study would ultimately provide a better appreciation on the dynamics of participatory group functioning and suggest a suitable strategy for the implementation of participatory approach for the development of agribusiness through multi-purpose cooperatives.

1.3. Objectives of the Study

The general objective of the study is:

To study the scope of participatory approach in the development of agribusiness through multi-purpose cooperatives in the Degua Tembien woreda of Ethiopia.

Therefore the research study entitled “participatory approach for the development of agribusiness through multi-purpose cooperatives in Degua Tembien woreda” is formulated with the following specific objectives.

- To identify the components of participation efficiency and develop a participation efficiency index.
- To assess the existing problems and prospects of agribusiness in Degua Tembien woreda of Tigray region, Ethiopia.
- To study the factors affecting participation efficiency in agribusiness carried out through multi-purpose cooperatives.
- To identify the constraints in adopting participatory approach by the multi-purpose cooperatives.
- To develop a strategy for effective participatory approach for development of agribusiness through multipurpose cooperatives.

1.4. Hypothesis

1. The multi purpose cooperatives follow a participatory approach for the development of agribusiness.
2. The participatory efficiency of the members in the multi purpose cooperatives is

adequate.

1.5. Limitation of the Study

The study was limited to only one selected woreda in Tigray region and out of which four *tabias* were selected. This is mainly because of limited availability of resources to undertake the study at a wider scale. Since the study was limited by time, financial constraints, and human resources that could have been some bias in the information obtained. These limitations determined the restricted selection of one woreda as the locale of the study and also forced to restrict the sample size.

This being the pioneer study in the field in Tigray region, the important limitation was the dearth of sufficient literature pertaining to functioning of participatory approach in the region. In a study of this nature, one cannot hope for comprehensive and exhaustive analysis of participatory approaches in all sectors and institutions in the region. Only multi-purpose cooperative societies are taken in to consideration for the study. Among the different activities of the multi-purpose cooperative societies, only activities related to agribusiness was taken in to consideration for the study. However, careful and rigorous procedure was adopted to carry out the research systematically. For the same reason, the sample size is limited to few respondents. Although the study is limited both in sample size and area coverage, the results of the study are expected to be of value in designing appropriate policies. Moreover, the research finding could be used to raise awareness among different stakeholders and also serve as background information for others who

seek to do further related research and would help serve in formulating and revising strategies and policies in the region and other areas.

CHAPTER II-LITERATURE REVIEW

Review of literature related to the study is presented in this chapter.

2.1. Basic Concepts

A review of previous research studies helps in delineating the problem areas and provide a basis for developing a conceptual framework for the study. This will also help in operationalising the variables and concepts, on the basis of which required data could be collected. Since participation efficiency is a new area of social research, there is a dearth of literature of research studies on these fields for exhaustive review to project the results of similar studies. In the circumstances, everything has been done by the researcher to use INTERNET and collect international references relevant to these areas.

2.1.1. Concept of Participation

French (1960) referred participation as a process in which two or more parties influence each other in making certain plans, policies, and decisions.

According to Davis (1969) participation is a mental and emotional involvement of a person in a group situation which encourages him to contribute to goals and shares responsibilities in them.

According to UNO (1979) participation means sharing by people the benefits of development, active contribution by people to development and involvement of people in decision making at all levels of society.

WHO (1982) defined participation as the process by which individuals, families or communities assume responsibility for their own health, welfare and develop the capacity to contribute to their own and community development.

Paul (1987) defined community participation as an active process by which beneficiary or client groups influence the direction and execution of a development project with a view to enhancing their well-being, of income, personal growth, self-reliance or values they cherish.

According to UNDP (1993) participation refers to the close involvement of people in the economic, social cultural and political process that affect their lives. People may, in some cases, have complete and direct control over these processes- in other cases; the control may be partial or indirect. The important thing is that people have constant access to decision making and power.

According to Chowdhry and Gilbert (1996) participation is a generic term covering a broad range of activities ranging from one-shot problem identification exercise (E.g.: Participatory rural

Appraisal) to continuing association in which rural communities and individual farm families play more active role.

According to Narayanaswamy and Boraian (1998) the concept of community participation refers to the process by people who involve themselves in analyzing the local situation, identifying major problems, formulating action plans, mobilising locally available resources, and executing development projects in order to access the benefits extended to the community at large or specific target groups during a given point of time.

2.1.1.1. Participatory Approaches in Development

Milton (1966) observed that one of the tasks of nation building and development is to bring members of the national community in to a network of relationships and institutions which enables them to participate actively in decisions affecting their individual and group welfare.

FAO (1984) recommended that opportunities should be made available to small farmers to participate in the design and implementation of programmes to use their unique experiences to explain constraints to form their own organizations through which they can exercise influence in expressing their needs. Mishara (1984) reported that involvement of people in participatory approach are in the scenes such as: (1) participation in decision making; (2) participation in implementation of programmes and projects; (3) participation in monitoring and evaluation; and (4) participation in sharing the benefits of development.

Oakley and Marsden (1990) reported that participation of the poor in development will have a direct access to the resources necessary for development and some involvement and influence in the decisions affecting those resources and the course of events. World Bank (1994) reported six sets of mechanisms of participatory involvement. They are: (1) information sharing mechanisms; (2) consultative mechanism; (3) joint assessment mechanisms; (4) shared decision mechanisms; (5) collaborative mechanisms; (6) empowering mechanisms. The potential costs of participation are: (1) risks of generating or aggravating conflict between stake holders with different priorities and interests; and (2) risks of raising expectations which may prove impossible to fulfill.

Ashby et al (1995) reported that the farmer participation in agriculture development helped to involve small farmers as active decision-makers in the development programmes and transfer of new technology. In participatory methodologies, instead of being taught blanket recommendations the farmers take part in selecting promising items from the menu and are involved in experimenting with them. Farmer participation improves rates of adoption and helped to raise small farmers' income.

Singh (1995) observed that local development programme with outside efforts generally do not succeed unless and until beneficiaries and stakeholders find logic in these efforts. Initiative through participatory development is more successful and sustainable.

Shah and Shah (1995) reported that participatory approaches in development programmes increased the participation of local communities in development process and supported the

formation of accountable institutions. Bava (1997) reported that people's participation renders speedy but less costly implementation of development policies. FAO (1997) observed that people centered approach will improve the poor's access to productive assets, allow them to participate in designing and implementing development programmes and foster their involvement in institutions from village to national level.

Hoggarth and Mc Gregor (1997) reported that participation is not a neutral concept and involves political issues concerning who has decision making power and who has access to resources. O'Brien (1997) found that inadequate participation is one of the reasons why development projects are ineffective.

Gilbert (1998) reported that greater participation by farmers and farmer groups in agricultural services expanded the coverage dramatically. Neubert and Haggmann (1998) found that participatory approaches helped in mobilising the local resources in a sustainable manner. Oostrum (1998) reported that remarkable progress has been made in promoting conservation of farming practices like increasing food production and generating income through participatory approach.

Rehman and Rehman (1998) observed the features of participatory approaches such as: (1) help in making assessment of felt needs and constraints of people easier; (2) help in mobilising resources; (3) minimize the cost of implementation by reducing cost of supervision and by eliminating irrelevant components; (4) set up speed of implementation by mobilising popular

support and co-operation between members having diversified objectives and interests; (5) more effective monitoring and evaluation; (6) reduces the leakage of resources both material and human; (7) create conducive environment for formulation and implementation of plan through process of 'pressure group'; and (8) reduce unequal distribution of power among members and positively restructure the society in favour of deprived sections.

2.1.1.2. Types of Participation

Midgley (1986) formulated a typology of four types of likely state's responses to participation in social development as follows.

- a) **Anti-participatory-** The state acts on behalf of ruling class, furthering their interests, the accumulation of wealth and the concentration of power. Efforts to mobilise the masses for participation will be seen as a threat and suppressed.
- b) **Manipulative-** The state supports the community participation, but does so for ulterior motives. The state desires to use participation for political and social control and a recognition that community participation can reduce costs of social development programmes as it facilitates implementation.
- c) **Incremental-** It is characterized by official support for participation ideas, but by an ambivalent approach to implementation that fail to support local activities adequately or to ensure that participatory institutions functions effectively. The state does not oppose participation, but fails to provide necessary backing to ensure its realization.

d) Participatory- The state approves fully of participation and responds by creating mechanisms for the effective involvement of local communities in all aspects of development.

Pimbert and Pretty (1997) suggested the following levels of participation. They are:

- a) Passive participation-** People participate by being told what is going to happen or has already happened.
- b) Participation in information giving-** People participate by giving answers to questions posed by extractive research and project managers.
- c) Participation by consultation-** People participate by being consulted and external agencies listen to their views. External agencies define problems and solutions.
- d) Participation for material sources-** People participate by providing resources. For example, labour in return of cash or food.
- e) Functional participation-** People participate by forming groups to meet pre-determined objectives relating to the project, which can involve the development or promotion of externally initiated social organizations.
- f) Interactive participation-** People participate in joint analysis, which leads to joint action plans and formation of new groups or strengthening of old ones.
- g) Self mobilization-** People participate by taking initiatives independent of external institutions to change systems.

2.1.1.3. Factors Affecting Participation

Clark (1991) identified the elements essential for securing active participation of farmers' groups such as: (1) small homogenous group; (2) supplementary income generation activities; (3) institutional credit; (4) group promoters; (5) training to group members; (6) group savings; (7) ready access to extension service; (8) participatory monitoring and evaluation; and (9) group self reliance. He also observed the indicators of self-reliance of farmers' groups as (1) regularity of group meetings and level of attendance; (2) shared leadership and member participation in group decision making; (3) continuous growth in group savings; (4) high rates of loans repayment; (5) group problem solving; and (6) effective link with extension and other development services.

Mukherjee (1997) observed that the level of participation tends to fluctuate with passage of time. Sometimes it remains at a low key and then takes off and/or dissipate. While on other occasions, there emerges a high level community participation which slowly moderates itself and becomes steady.

Rehman and Rehman (1998) found out the factors which determine the nature of participation of the people in development programmes such as: (1) the willingness to participate; (2) the desirability to participate; (3) the representative nature of participants in the local bodies in terms of society as a whole or classes and castes; (4) the asset distribution pattern among the participants and the resultant dynamics in inter-relationships; and (5) the conflict of interests between the stakeholders and direct beneficiaries of the development programme.

2.1.2. Concept of Group

Bales (1950) defined a small group as any number of persons engaged in interaction with one another in as single face to face meeting or series of such meetings in which each member receives some impression or perception of each other member distinct enough so that he can either at the time or in later questioning, give some reaction to each of the other as an individual person, even though it be only to recall that the other was present.

Cattell (1951) defined a group as a collection of organisms in which the existence of all (in their given relationship) is necessary to the satisfaction of certain individual needs in each.

Verhagen (1987) defined a self-help group (organization) as an institutional framework for various individual or households who have agreed to co-operate on a continuing basis to pursue one or more objectives.

According to FAO (1999) farmers' group is an informal voluntary and self governing association of small farmers formed at local level for the purpose of economic co-operation aimed at improving the economic and social conditions of its affiliated individual members.

The International Cooperative Alliance (ICA, 1995), defines "Cooperative as an autonomous association of persons, united voluntarily to meet their common economic and social needs through jointly-owned and democratically-controlled organization/enterprise". A cooperative is not a mere association. It is both an association and an enterprise. The enterprise aspect gives

primacy to the economic and business functions of cooperative. A cooperative enterprise comes in to being when the participating members decide to establish a joint enterprise or undertaking, which is collectively operated. A cooperative aims at optimization of resource use and maximization of net returns to its members (Burt, 1997).

According to Bryson (1997) a group is a collection of people who regularly interact with each other to pursue a common purpose. Basic components of a group are: (1) it needs at least two people to exist; (2) the individuals must interact regularly in order to maintain the group; (3) all group members must have a common goal or purpose; and (4) there should be a stable structure.

2.1.2.1. Group Approach in Agricultural Development

Agribusiness is defined by Roy (1950'S) as the coordinating science of supplying agricultural production inputs and subsequently producing, processing and distributing food and fiber. It is the management of those businesses that buy from or sell to farmers. Agribusiness includes all the firms and people involved in the off farm aspects of agriculture. Agribusiness includes the entire farm input and output sectors. It is agricultural economics with a special emphasis on the business aspects of agriculture. Agribusiness includes all those business and management activities performed by firms that provide inputs to the farm sector, produce farm products, and / or process, transport, finance, handle or market farm products. Our modern day definition of agribusiness involves a broader view that encompasses the total food production and distribution system.

Milton (1966) observed that one of the tasks of national – building and development is to bring members of the national community in to a network of relationships and institutions which will enable them to participate actively in decisions affecting their individual and group welfare.

According to Devitt (1997) opined that the poor are often inconspicuous, inarticulate, and unorganized. Their voice may not be heard at public meetings in communities where it is customary for only the big men to put their views. It is rare to find a body or institution that adequately represents the poor in certain community areas.

Daouda and Pesche (1995) observed that solving many farmers' problems is no longer possible through individual decision making but only through collective decision making. Farmers' organizations can play an important role in soil erosion control, irrigation management, input and credit supply, product processing and marketing and rising educational facilities and influencing governmental policies. The outcomes of group action are: (1) effective planning and implementation at local level; (2) sustained benefits from development activity; (3) creation of local capacity so that group can manage development activities; and (4) people gain increased voice in decision making (Ricker, 1995).

2.2. Empirical Studies

2.2.1. Benefits of Participatory Approach in Agricultural Development

The advantages of farmers' organization as reported by (Maloney and Raju 1995) were: (1) significant increase in crop yield and income; (2) reduce conflict among farmers and better resolution of conflict; (3) joint procurement of agricultural inputs; (4) less opportunity for corruption; (5) better mutual trust and understanding between farmers and officials.

FAO (1997) based on their experience observed that peoples' participation through small group offers distinct advantages such as: (1) **economies of scale**: participatory groups at grass root receiving system allows development agencies to reduce the unit delivery or transaction costs of their services; (2) **higher productivity**: poor become more receptive to new technologies and services and higher levels of production and income; (3) **reduced costs and increased efficiency**: through poor's savings and their knowledge of local conditions; (4) **building democratic organizations**: small group suited to collective decision making and development of leadership skills; and (5) **sustainability**: participatory approach leads to increased self-reliance among poor and the establishment of a network of self-sustaining organizations.

2.2.2. Factors Affecting Group Efficiency

Aygyris (1962) reported three core activities for an effective organization such as: (1) achieving activities; (2) maintaining the internal system; and (3) adapting to the external environment.

The key external factors influencing the organizational effectiveness include: (1) the level of development of marketing and transportation infrastructure; (2) the level of development of other sectors in the economy; (3) coherence between government policies and association's goals; (4) natural endowment of the area; (5) an appropriate degree of professionalism among staff; (6) participatory management style; and (7) organizational channels of communication between members, staff and management (de Lasson, 1976).

Chinchankar (1986) developed a theoretical model that suggests that act of joining a self managed group consists of the elements such as: (1) coming together for the pursuit of common interest; (2) pooling of resources for communal use and mutual benefit; (3) joint sharing of risks and responsibilities; and (4) the control and management of the group's economic activities through participatory decision making. He also noted that the internal factors (individual motivation for joining) and external factors (social, political, legal, economic, and institutional factors) act together to influence the emergence of self-managed groups. The values of relevant to group functioning as indicated by (Hunter *et al*, 1992) are: (1) cooperative decision making; (2) open expression of feelings; (3) punctuality; (4) attendance in all group meetings; (5) honesty; (6) commitment to reach agreement; (7) expression of acknowledgement; (8) getting results; (9) congruence between speaking and action; (10) accountability; (11) full participation; and (12) autonomy.

FAO (1999) based on their experiences over world wide, identified two fundamental corner stones for successful and sustainable farmers' groups such as: (1) they satisfied base members'

felt needs first, not the needs of outsiders; and (2) they generated net positive benefits for their members.

2.2.3. Components of Participation Efficiency

According to G. Surendran, 2000 there are different components for having participation efficiency in any nation. These are:

1. Involvement in decision making
2. Involvement in implementing decisions
3. Involvement in monitoring and evaluation
4. Sharing of responsibility
5. Communication behaviour
6. Promptness and regularity in attending meetings
7. Leadership propensity
8. Empowerment
9. Conflict resolutions
10. Competitive spirit

1. Involvement in decision making

According to Singh and Singhal (1969) participation in decision making is a social and emotional involvement of person in a group situation which encourages him to contribute to group goals and share responsibility in group activity.

Dubey, Singh and Khera (1982) found that participation in decision making remained mostly same irrespective of their educational level. Thomas (1998) observed that 72 per cent of the respondents were found to have very low participation in planning watershed programmes and remaining 28 per cent had high participation.

2. Involvement in implementing decisions

Jaiswal et al (1985) reported that farmers benefited by soil and water conservation measures of watershed development scheme were not involved in implementing such works. According to Varma (1986), he reported that participation in implementing decision had the maximum contribution to the entrepreneurial behavior of farm women. 73.60 per cent of the respondents had medium level of involvement in implementing farm activities where as 16.80 per cent and 9.60 per cent only had high and low level of involvement respectively.

3. Involvement in monitoring and evaluation

Uphoff (1989) observed that people on the receiving end are ultimately the best judges of impact, whether benefits have been produced or not. Members of the grass root level farmer groups are involved in the programming, monitoring, and evaluation of development programmes and farmers, extension agents and researchers meet regularly and review results and decide up on the priority constraints to address and solutions to test (Bebbington et al, 1994).

Mukherjee (1997) was of the opinion that the activities of the group were to be continuously monitored and evaluated for identifying the weakness and limitations of such activities and devising ways to overcome them and also feeding them continuously in to the group process.

FAO (1999) reported that monitoring and evaluation was a sustainable element of group activities.

4. Sharing of responsibility

Moulton (1977) reported that the members of the traditional communal work groups did not expect to share equal responsibility or benefits from mutually generated wealth. They expected the elites to take the largest share in return for protecting the rest of them in the traditional patron-client manner. Chinchankar (1986) observed that one of the pre-conditions for collective action of self managed group is the willingness of the members to share the risk and responsibilities of the group activities.

FAO (1999) recommended that members of the farmers group should share the responsibility of the group decisions.

5. Communication behaviour

Supe and Singh (1968) opined that the success of agricultural development programmes depends on the farmers' ability to understand and adopt new developed technology. For that, farmers have to collect all possible information about innovations and relate them to their situation and select best alternatives in order to maximize agricultural production.

6. Promptness and regularity in attending meetings

Norman et al (1988) observed that if group is larger and heterogeneous, the less likely is that all members will regularly participate in group discussions. According to Clark (1991) the regularity

of group members in the group meetings are important indicators of self reliant farmers' group and Hunter et al (1992) opined that punctuality and attendance in all group meetings are important values for effective group functioning.

7. Leadership propensity

Ban (1997) reported that a participatory approach requires change in the leadership style and culture of extension agency. Noor (1998) refers leadership as the process of influencing people towards achieving the desired goals. The leader motivates people to behave in the most desired way.

8. Empowerment

Empowerment means that people are in a position too exercise their own free will to participate fully in making and implementing decisions (Haq, 1995).

Oakley et al (1991) observed that empowering rural people through development of skills and abilities enables them to manage or negotiate with existing delivery system. Participation is an exercise of empowering rural poor.

According to UNDP (1993) report, participation is a process, not an event. Since participation requires increased influence and control, it also demands increased empowerment in economic, social, and political terms: (1) Economic empowerment means being able to engage freely in economic activity. (2) Social empowerment means being able to join fully in all forms of

community life without regard to religion, colour, sex or race; and (3) Political empowerment means freedom to choose and governance at every level, from the presidential place to village level. For increased people's participation, increased empowerment is a must.

9. Conflict resolutions

Gubbels (1993) reported that distinct gradation of wealth, power and influence based on age, family origin, religion, occupation, gender and access to resources existed in most villages and often generated a conflict of interest. Bryson (1997) observed that conflicts occur as a result of disagreement, threat or opposition between individuals or groups or individuals within a group. There is need for adaption to overcome conflicts.

Brown and Korte (1998) reported that conflict played an essentially negative and destructive role in the process of institutional development.

10. Competitive spirit

Barnett (1953) stated that human beings are inherently lazy and are forced to exert themselves by economic threat of rivals. It is observed that the desire to build up reputation of one's village is often instrumental in causing acceptance of projects, competition between individuals, families, and villages.

In addition, to these components there are also many external factors which affect participation efficiency such as:

- | | |
|----------------------------------|---------------------------|
| I. Achievement motivation | IX. Knowledge in farming |
| II. Perception of group approach | X. scientific orientation |
| III. Innovation proneness | XI. Experience in farming |
| IV. Risk orientation | XII. Annual income |
| V. Education | XIII. Farm size |
| VI. Entrepreneurial behaviour | XIV. Credit orientation |
| VII. Economic motivation | XV. Age |
| VIII. Cosmopolitaness | |

2.2.4. Constraints to Group Approach

The main constraints for the development of group approach as identified by (Gautam and Singh, 1990) are: (1) improper selection of group activities; (2) lack of co-operation among group members; (3) non-availability of raw materials; (4) high cost of raw materials; (5) lack of local demand for products; and (6) lack of marketing facilities. The FAO (1999) identified the constraints in functioning of groups. They are: (1) lack of storage facilities; (2) poor roads; (3) lack of sufficient capital to purchase inputs; (4) lack of marketing information; (5) tight control by local business men and traders of agricultural market; (6) lack of transparency in transaction; (7) weak accounting systems; and (8) weak leaders.

It was inferred from the above reviews that participation efficiency of farmers' groups were influenced by various components and external factors. The proposed empirical validation of the

components and external factors would provide much insight to understand the phenomenon of participatory approach for sustainable development of agribusiness.

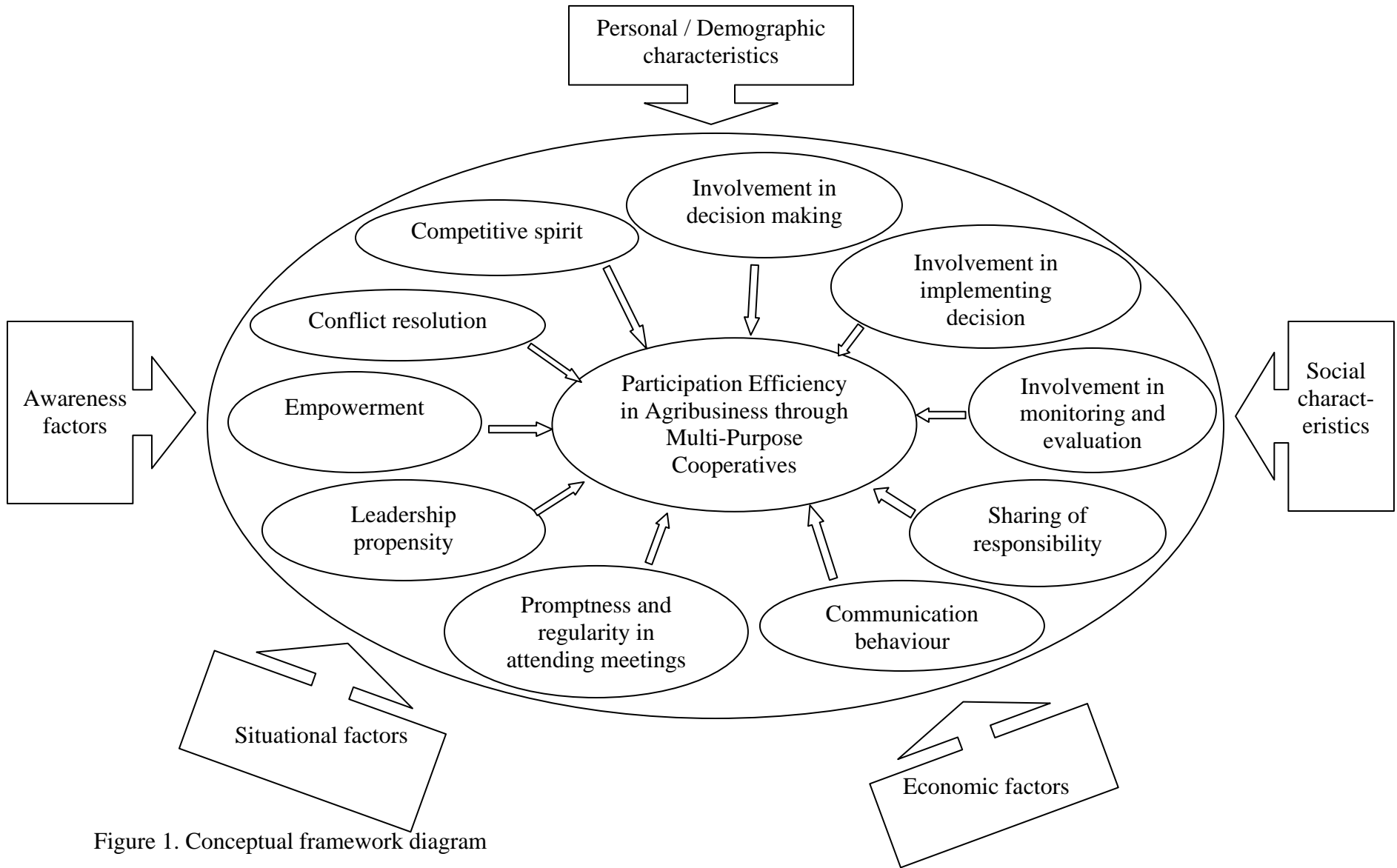


Figure 1. Conceptual framework diagram

CHAPTER III – MATERIALS AND METHODS

The methodology followed in the research study is explained in this chapter.

3.1. Site Selection and Description of the Study Area

Description of the Study Area

This study was conducted in the Degua Tembien woreda of Tigray region of Ethiopia. The State of Tigray is located at the northern tip of the country. The region shares common borders with Eritrea in the north, the State of Afar in the east, the State of Amhara in the south, and the Republic of the Sudan in the west. Based on figures from the Central Statistical Agency (CSA) of Ethiopia published in 2005, Tigray has an estimated total population of 4,334,996, consisting of 2,136,000 men and 2,198,996 women. 3,519,000 or 81.2% of the population are estimated to be rural inhabitants, while 816,000 or 18.8% are urban. With an estimated area of 50,078.64 square kilometers, this region has an estimated density of 86.56 people per square kilometer.

About 83% of the population are farmers. Teff, wheat, and barely are the main crops. Other agricultural products include beans, lentils, onions, and potatoes. Terrace farming is followed on some of the steep slopes. The region is also known for its export items of cotton, incense, sesame and minerals. 1.5 million hectares of land in the region is cultivable, of which one million hectares is being cultivated, while 420,877 hectares of land is terraced. Handicraft (gold smith,

painting and wood sculptures) is another area of activity observed in the historic cities of the state. The state has about 11.51 million domestic animals (1997 G.C.) of which 2.15 million are cattle, 5.63 million are sheep and goats and 392,000 are pack animals.

Centuries of erosion, deforestation and overgrazing have left most of the region with dry and treeless plains, hills and plateau. Nevertheless, an amazing landscape of chains of mountains ranging from 3,250-3,500 meters, cliffs, ledges and precipice are natural attractions of the region. Two altitude extremes: the elevation of the region rises from 600-2,700 above sea level, the Tekeze Gorge, 550 meters above sea level and the "Kisad Gudo" peak at 3,935 meters above sea level are among Tigray's natural scenery which is classified into the central highland, the western lowland and eastern escarpments. The climate of the region is characterized as "Kolla" (semi arid) 39%, "Woina dega" (warm temperate) 49%, and "Dega" (temperate) 12%. The average annual rainfall is between 450-980 mm.

There are 35 woredas, in the region. The study was conducted in the Degua Tembien woreda of Tigray which was selected purposively based on agro-ecological diversity and institutional and practical aspects. Further, four multi-purpose cooperatives were selected at random from the 17 tabias of the Woreda. In each tabia, there exists only one multi purpose cooperative society. Degua Tembien woreda is located in south Eastern zone of Tigray region.

Degua Tembien Woreda

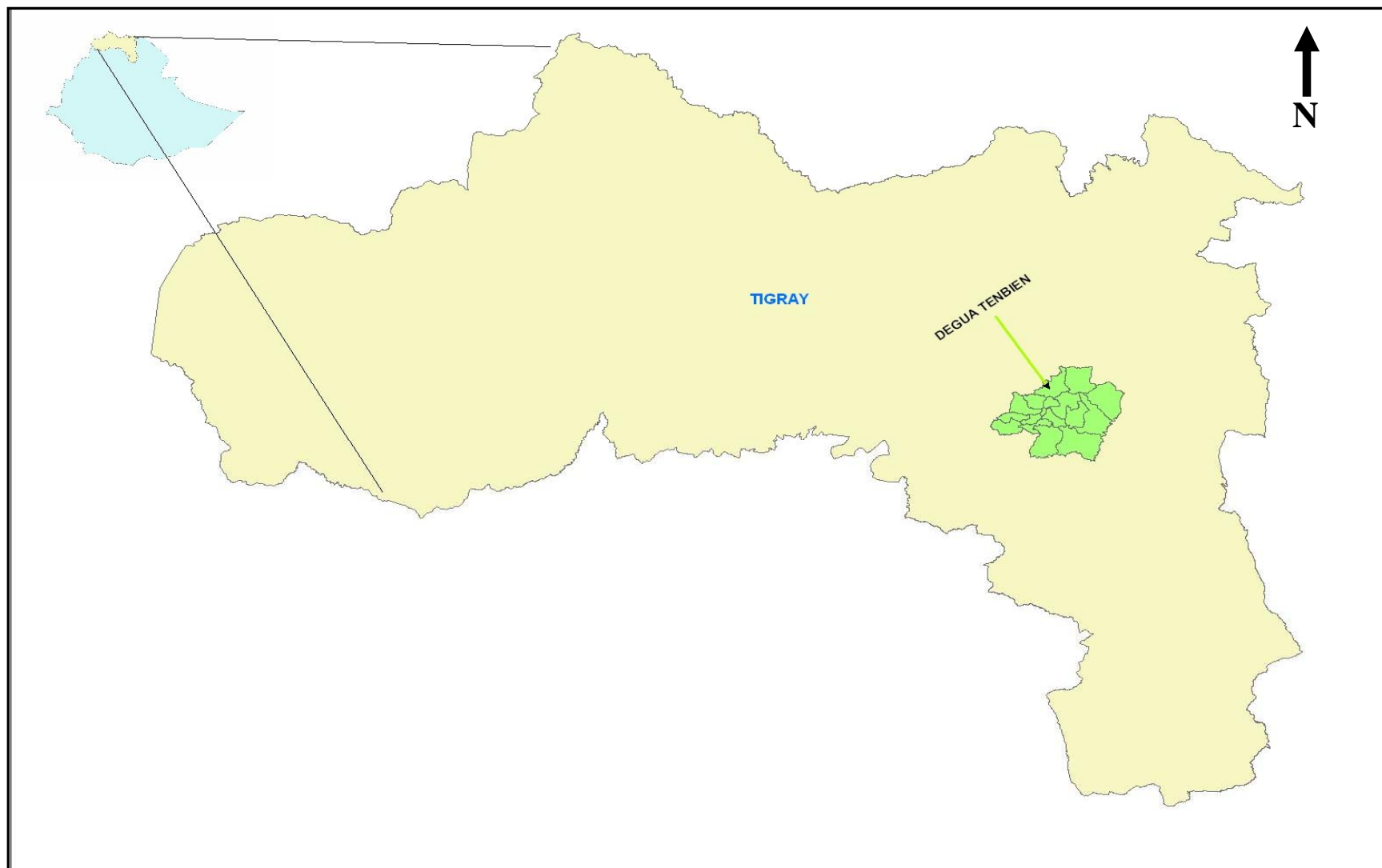
Degua Tembien is one of the 35 woredas in the Tigray region of Ethiopia. The study was carried out in the district of Dogua Tembien, nearby Hagere Selam (13°40'N, 39°10'E), some 50 km west of Mekelle (Figure 2). It is named in part after the former province of Tembien part of the South Eastern Zone; Degua Tembien is bordered on the south by the South Zone, on the west by Abergele, on the north by Kola Tembien, and on the east by the Eastern Zone. Towns in Degua Tembien include Hagera Selam.

Based on figures published by the Central Statistical Authority in 2005, this woreda has an estimated total population of 119,044, of whom 60,153 were males and 58,891 were females; 6,797 or 5.71% of its population are urban dwellers, which is less than the zone average of 23.9%. With an estimated area 1,109.72 square kilometers, Degua Tembien has an estimated population density of 107.3 people per square kilometer, which is less than the Zone average of 123.96.

The uppermost levels of the landscape at about 2700 - 2800 m a.s.l. are formed in the basalt series. The heavy rainy season (> 80 % of total rainfall) extends from June to September and is preceded by three months of dispersed less intense rains. Average yearly precipitation is 778 mm. High rain erosivity is due to large drop size (Nyssen *et al.*, 2005). Whereas average rain seems sufficient for agriculture from March on, it is however uncertain till June, due to the great interannual variability of the spring rains. Monthly averages of minimum temperatures range from 4 to 6 °C, the maxima from 20 to 22 °C. Amplitude of temperature is somewhat narrower

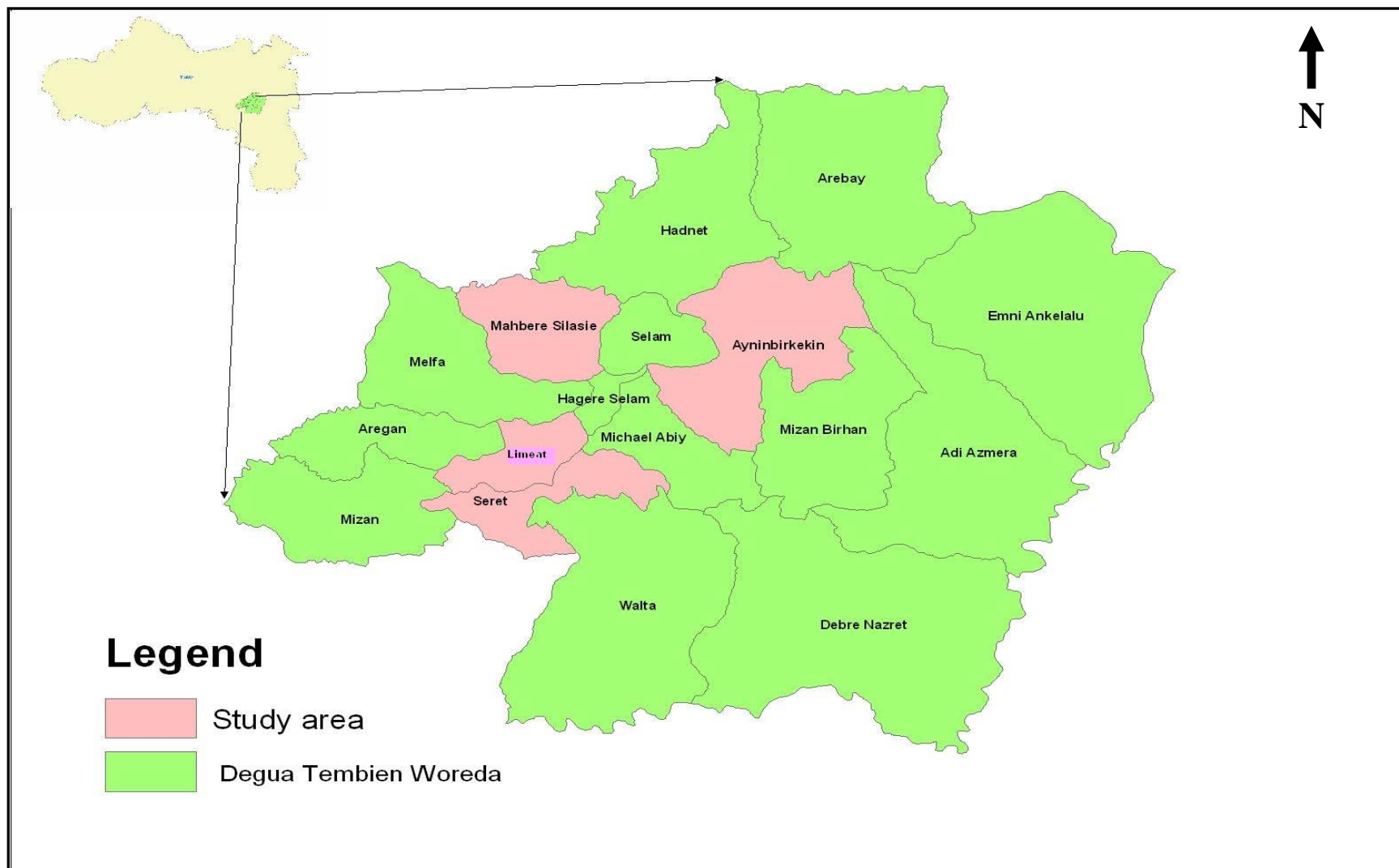
during the rainy season due to cloud cover. The major crops grown in the area are barley, wheat, maize, teff, hanfets (wheat and barley mixture), lentils, horse bean, finger millet and in some localities millet and other staple crops. Some farmers also grow vegetables both for household consumption and the remaining for market.

The major agribusiness activities in the woreda are: supply of fertilizer, supply of insecticides and herbicides, supply of seeds, storage of harvested produces in go downs, processing of agricultural commodities, preparation of fruit syrup, juice, making tella and tej, marketing of vegetables, marketing of cereals, collection and selling of honey, manufacturing of bread, selling milk and milk products, running of grinding mills, managing retail vegetable shops, managing of restaurants, etc.



Source: BoFED - Mekelle, 2007

Figure 2. Location of Degua Tembien Woreda in Tigray Region



Source: BoFED - Mekelle, 2007

Figure 3. Location of the selected tabias in Degua Tembien Woreda

3.2. Data Collection Procedure and Sampling Techniques

Tools and Techniques for the Study: As the issues addressed in the study were of qualitative and quantitative nature, different tools and techniques were used. Besides Personal Interview (PI) by administering the Structured Interview Schedule (SIS) among the respondents, Focus Group Discussion (FGD) with key communicators was also used. In addition to these primary data, secondary data were also used.

Personal Interview through Structured Interview Schedule (SIS): A comprehensive SIS was administered among the members of the multi-purpose cooperatives that was prepared, pre-tested and finalized. The SIS consists of questions pertaining to a wide range of information, starting from demographic indicators such as age, gender, to socio-economic conditions such as educational attainment, income, occupation, investment, participation in social organizations, exposure to mass media, contact with change agents etc. The cooperative indicators will be measured by the duration of membership, frequency of participation in the affairs of the society, membership in the board of management, level of participation by the member in decision making etc.

The SIS also included a few statements responded in a continuum, meant for assessing the social, economic, empowerment and democratic impact of the cooperative movement on the people, awareness creation, contribution for the economic development and also the extent of participation.

Moreover, a few statements enabling for assessing the awareness and knowledge levels and participation in management of cooperatives by member respondents were included. To elicit suggestions for the development of agribusiness through cooperative movement, a few, 'open ended' questions were also included in the SIS.

The data was collected from the respondents by five enumerators who were trained by the researcher in conducting the interviews. The focus group discussions were conducted by the researcher himself. The interview schedule was first prepared in English and later translated in to Tigrigna for administration.

Efficiency of participation in agribusiness was measured by developing and using a participation efficiency index. For measuring the independent variables, suitable schedules and scoring procedures were devised.

Focus Group Discussion (FGD)

FGD: Qualitative Research encompasses several different techniques. Focus Group Discussion is one important technique among them. The issues affecting the participation efficiency and effectiveness of Cooperatives in delivering socio-economic benefits to people in particular and the economy in general can be understood to some extent through FGDs.

Sampling Techniques

For the purpose of studying the scope of participatory approach in the development of agribusiness through multi-purpose cooperatives, Degua Tembien woreda is purposefully selected as already mentioned. It has a good potential of agribusiness development. All multi-purpose cooperatives that are available in the woreda were considered and a two stage random sampling technique was applied. The first stage involves selection of four multi-purpose cooperative societies at random from 17 multi purpose cooperatives of the woreda. In the second stage, individual members were selected randomly from members of each cooperative. Thus, from each of the four multi purpose cooperatives selected, members were randomly selected based on probability proportionate to size. Thus, the total number of respondents in the sample selected for study was 120.

Table 1. Distribution of Sampled Respondents in the Study Area, DTW, 2007

S No.	Name of Tabia	Name of the Coop	No. of Members			Sample Respondents (4% of the members)			Rounded Sample Respondents to the Nearest Whole Number			Percentage
			Male	Female	Total	M	F	T	M	F	T	
1	Limeat	Hibret	908	337	1245	36.32	13.48	49.8	36	13	49	40.83
2	Seret	Debre-Birhan	501	63	564	20.04	2.52	22.56	20	3	23	19.17
3	Mahbereselassie	Shewit	451	87	538	18.04	3.48	21.52	18	3	21	17.50
4	Aynimbirikekin	Fana	527	156	683	21.08	6.24	27.32	21	6	27	22.50
Total			2387	643	3030	95.48	25.72	121.20	95	25	120	100.00

Market for their output

The market they use for selling their final output is in Hagereselam which is situated at a distance of 7 km, 8 km, 5 km, and 14 km from their village (tabia) Fana, Hibret, Shewit, and Debire Birhan respectively. The means of transport which they use for transportation of their output indicates that 22.5 per cent by man power carrying in their shoulder, and the remaining 77.5 per cent use animals for transporting their output to the market, almost all the later group use donkeys for transport, and some use mule. It takes them an average time of 1.50 hrs, 2.0 hrs, 1.0 hr, and 2.5 to 3.0 hrs from Fana, Hibret, Shewit, and Debire Birhan MPCs respectively.

3.3. Methods of Data Analysis

The role of statistics in research is to function as a tool in analyzing its data and drawing conclusions there from. Only after this, we can adopt the process of generalization from small groups (i.e. sample) to population. Depending on the objectives of a given study and nature of the data available, analysis to be made require different approaches. In fact, there are two major areas of statistics viz., descriptive statistics and inferential statistics.

In this study, data were analyzed using different quantitative and qualitative statistical procedures and methods. Descriptive statistical tools were used to analyze the quantitative data. The important statistical measures that were used to summarize and categorize the research data were means, percentages, frequencies, standard deviations, chi-square and correlation analysis. The qualitative data were partly analyzed on spot during data collection to avoid forgetting and to be able to fill the gap in the quantitative data. The inferences of FGD exercises were also drawn to supplement the inferences of quantitative analysis.

Among the measures of correlation, Karl Pearson's Coefficient of Correlation(r) was applied to analyze the data. The degree of association or correlation between two variables X and Y is answered by the use of correlation analysis (Gomez and Gomez, 1984; Kothari, 2003).

$$r = \frac{\text{Cov}(X \text{ and } Y)}{\text{SD}(X) \text{ SD}(Y)}$$

where r = Correlation Coefficient

Cov(X,Y) = Covariance between variables of X and Y

$SD(X)$ and $SD(Y)$ = Standard Deviation of variables X and Y respectively

Karl Pearson's coefficient of correlation (r) is also known as the Product Moment Correlation Coefficient. The value of ' r ' lies between +1 and -1. Positive values of ' r ' indicate positive correlation between the two variables (i.e., changes in both variables take place in the same direction), whereas negative values of ' r ' indicate negative correlation (i.e., changes in the two variables taking place in the opposite directions). A zero value of ' r ' indicates that there is no association between the two variables. When $r = (+) 1$, it indicates perfect positive correlation and when it is $(-) 1$, it indicates perfect negative correlation. The value of ' r ' nearer to +1 or -1 indicates high degree of correlation between the two variables (Kothari, 2003).

The existence of a significantly high correlation between two variables tells us nothing about why the correlation exists. In particular, the correlation does not tell us that one variable is the cause and the other is the effect (Brown and Starr, 1983).

Development of Participation Efficiency Index (PEI)

Development of Participation Efficiency Index (PEI) to measure the participation efficiency of members in the group is one of the specific objectives of the study.

Participation efficiency refers to the propensity of the members to actively associate in planning, execution, and monitoring and evaluation of activities related to farmer's group. Participation Efficiency Index (PEI) is the yardstick or standard to measure the level of participation of members in the various activities related to the farmer's group. The index consists of various

participation efficiency components and the cumulative expression of the performance of the farmers in relation to the components of participation efficiency is the Participation Efficiency Index Value (PEIV) of the member in the group.

There is no universally acceptable measure or index that could be used to evaluate the participation efficiency of farmers in a group. But the researchers constructed different types of indices for measurement based on specific objectives.

Singh (1991) measured the participation of farmers in watershed development programme through parameters such as proportion of target group of people participated in the various stages of a programme, adoption of various recommended measures and practices and spending time and money on participation in collective action.

Ganesan and Muthiah (1992) measured participation of farm leaders in agricultural development scheme by working out the participation index of each respondent by measuring the involvement of farmers in 12 identical development schemes.

Anwar et al. (1997) measured the participation of rural youth in household activities by selecting the household activities and developing a participation index.

In this study, participation efficiency of farmers in farmers' groups was measured by using the Participation Efficiency Index (PEI) developed for the purpose. It may be pointed out here that

the main purpose behind the index development was to construct an index of general nature to suit any group in the farming sector.

Computation of Participation Efficiency Index Value (PEIV)

Participation efficiency of the members in the group was measured by computing the PEIV of each respondent and compared.

Ganesan and Muthiah (1992) measured the participation of farm leaders in 12 agricultural development schemes by computing the participation index by using the following formula.

$$\text{Participation Index} = \frac{\sum w_i e_i}{\sum w_i E_i}$$

where, $i = 1, 2, \dots, 12$

$w_1, w_2 \dots w_{12}$ were relevancy weightage of each scheme

$e_1, e_2 \dots e_{12}$ were extent of participation score of each scheme

$E_1, E_2 \dots E_{12}$ were maximum participation score of each scheme

where,

$$\text{Weightage of component (w)} = \frac{\text{Total weightage score obtained for the component}}{\text{Total number of respondents}}$$

Anwar et al., (1997) measured the participation of rural youth in ten selected house hold activities by computing the participation index by applying the following formula.

$$\text{Participation Index} = P_{np} Y_0 + P_{op} Y_1 + P_{rp} Y_2$$

where,

P_{np} = percentage of respondents with no participation

P_{op} = percentage of respondents with occasional participation

P_{rp} = percentage of respondents with regular participation

Y_o = score assigned to no participation

Y_1 = score assigned to occasional participation

Y_2 = score assigned to regular participation

Development of PEI in the Study

In this study the Participatory Efficiency Index Value (PEIV) of each respondent was computed by applying a modified version of the above two formula. PEIV of each respondent was worked out by considering extent of participation score, the maximum possible score and weightage used of each component. The formula used for this purpose was

$$PEIV = \frac{\sum \left(\frac{e_i}{E_i} \right) w_i}{\sum w_i}$$

i.e.

$$PEIV = \frac{\left(\frac{e_1}{E_1} \right) w_1 + \left(\frac{e_2}{E_2} \right) w_2 + \dots + \left(\frac{e_{10}}{E_{10}} \right) w_{10}}{w_1 + w_2 + \dots + w_{10}}$$

where;

$w_1, w_2 \dots w_{10}$ were the weightage of ten components

$e_1, e_2 \dots e_{10}$ were the extent of participation score of ten components

$E_1, E_2 \dots E_{10}$ were the maximum possible participation score of ten components

In the modified formula (1) $\frac{e_i}{E_i}$ takes care of the unequal distribution in the range of scoring of the components and (2) the index takes a minimum value of zero and maximum one. Hence the efficiency can be easily identified and compared.

3.5. Variables Selected and Operationalization

Dependent variable

The dependent variable is efficiency of participation in agribusiness through the multi purpose cooperatives. In order to measure the member's level of participation, suitable questions were framed to invoke responses from them about the selected salient features.

Independent variables

For this study, 24 independent variables were hypothesized to influence the dependent variable. Independent variables include personal (demographic) characteristics, social characteristics, economic factors, situational factors and awareness indicators. The selection of independent variables is based on review of literature related to the study and discussion with experts.

Involvement in decision making: refers to the involvement of the members in generation of ideas, evaluation of ideas, evaluation of options, and making choice among options.

Involvement in implementing decisions: refers to the extent of physical and moral presence, involvement in physical working and sharing of responsibility by the member in the MPCs activities.

Involvement in monitoring and evaluation: refers to the involvement by the member in reviewing progress of implementing programmes, suggesting modifications and evaluating the achievements with respect to the MPCs goals.

Sharing of responsibility: refers to the processes involved such as voluntarism and capability-potentiality considerations in sharing responsibilities by the members.

Communication behavior: refers to information related to listening, seeking, processing and sharing behavior by the member.

Promptness and regularity in attending meetings: refers to the frequency, punctuality and readiness in attending meetings.

Leadership propensity: refers to the degree of ability of the member to influence the MPCs, in deciding and implementing group activities.

Empowerment: refers to the extent to which the MPCs members have gained the competency and authority to get involved in decision making and implementing the programmes.

Conflict resolutions: refers to the availability of techniques/methods to overcome disagreements, disputes, clashes, quarrel, or differences of opinion on MPCs activities.

Competitive spirit: refers to the competitive nature of the members in achieving the objective of each task in a better way.

Age: is measured in terms of number of years of age of the respondents.

Family size: is the size of the family of the respondent measured in terms of total number of members spouse and children. Higher number of family members leads to decision to take risk for participation and exposure to take information. Therefore, family size contributes to the variation in getting access to agriculture information. In this study, family size was assumed to have positive relation to participation efficiency.

Size of land holding: It refers to the area of cultivated land in ha possessed by the respondents or their families. It was assumed that larger farm size, the farmer has better access to participation. Therefore, it was hypothesized that land size has a positive relation ship with the dependent variable.

Educational level: Education refers to the level of formal and non-formal education and will be measured in terms of enrolment in primary, juniour, secondary schools or above educational level as a variable helping exposure to information, but also positively affects use of information.

Exposure to mass media: Individuals who have good exposure to mass media like radio, television, newspaper, and others have the opportunity of getting more information. It is therefore assumed that it affects participation efficiency positively.

Contact with change agents: It refers the contact of the respondents with development agents, cooperative officials and others. It is believed that, there is a positive relationship with the dependent variable.

Family annual income: Income is operationally defined as income obtained from off-farm and on-farm activities that are expressed in Birr per year. The income is anticipated to have a positive relationship.

Total assets: It refers the total possession of the respondent which is expressed in Birr. It is assumed in this study to have a positive relationship with participation efficiency.

Indebtedness: refers to refers to the amount of money which he/she has to repay to others or other institutions.

Involvement in agribusiness: it indicates the degree of involvement of the respondents in agribusiness activities.

Duration of membership: this means the number of years they have been members in their multi purpose cooperatives.

Membership with more than one cooperative society: it refers to whether the respondents are members only in one cooperative or more than one, because it is known that some are members of both in multi purpose cooperative and SACCO.

Awareness about cooperation: This refers to the level of awareness of the respondents about cooperatives principles and values, and bylaws of the same. And will be measured in yes or no question type. As there is high awareness, there is high probability of getting information and

willing to participate. Therefore, this is assumed to have a positive relationship with participation.

Awareness of agribusiness: It refers to the awareness and knowledge of the respondents regarding agribusiness activities and in line with this, provision of training was also considered to see their relation with participation efficiency. In this study, it is assumed that they have a positive relationship.

CHAPTER IV-RESULTS AND DISCUSSIONS

In this chapter, the results of the study are presented and discussed in detail to address the five objectives of the research.

4.1. Participation Efficiency

4.1.1. Components of Participation Efficiency

Ten components of participation efficiency of farmers were identified and selected for the purpose of study based on review of literature. The procedure adopted in this regard was described in the methodology chapter. The components of participation efficiency identified were: (1) Involvement in decision making, (2) Involvement in implementing decision, (3) Involvement in monitoring and evaluation, (4) Sharing of responsibility, (5) Communication behaviour, (6) Promptness and regularity in attending meetings, (7) Leadership propensity, (8) Empowerment, (9) Conflict resolution, and (10) Competitive spirit.

It could be observed that the ten components of participation efficiency objectively arrived represented fairly the major functional dimensions of participation as conceptualized in the review of literature part.

The components emerged were also in line with the view of Mishra (1984), who reported that involvement of people in participatory approach are in the scenes such as: decision making, implementing programmes, monitoring and evaluation, and sharing of benefits of development.

Similar finding was reported by World Bank (1994) on mechanisms of participatory involvement such as information sharing mechanisms, shared decision making mechanisms and empowering mechanisms. Shah and Shah (1995) found that participation in development process supported formation of accountable institutions. Puhazhendi and Jayaraman (1999) also reported that regularity in meetings, regular attendance and effective leadership are the major factors contributing to good participation.

4.1.2. Participation Efficiency Index (PEI)

The PEI was used as a tool to assess the participation efficiency of the respondents. The ten components of participation efficiency constitute to form the PEI. Based on the scores obtained by applying the PEI, the Participation Efficiency Index Value (PEIV) of the respondents were calculated to measure and compare the participation efficiency of the respondents. The procedure adopted in the development of PEI and computation of PEIV were described in the methodology chapter.

4.1.3. Correlation of Components of Participatory Efficiency with Participatory Efficiency Index Value

The degree of the linear relationship of the ten components of participation efficiency with PEIV was found out by calculating the Pearson's product-moment correlation coefficient. The results are presented in Table 4.1.

The perusal of the data presented in Table 4.1 indicates the relationship of components of participation efficiency with PEIV. The test for statistical significance for correlation coefficient (r) was made at 0.05 and 0.01 level of probability.

All the ten components viz., Involvement in decision making, Involvement in implementing decisions, Involvement in monitoring and evaluation, Sharing of responsibility, Communication behaviour, Promptness and regularity in attending meetings, Leadership propensity, Empowerment, Conflict resolution, and Competitive spirit had significant and positive association with PEIV at 0.01 level.

The high correlation coefficients obtained in the present study clearly indicate that the components included in the study were not extraneous but rather form part of PEI. The positive and significant correlation of all components to PEIV justified the important assumption that components included in the PEI have significant association with participation efficiency of the members in the multi purpose cooperatives.

Table 4.1. Correlation of components of participation efficiency with Participation Efficiency Index Value (PEIV)

S. No.	Components	Correlation coefficient (r)
1	Involvement in decision making	0.7856**
2	Involvement in implementing decisions	0.7730**
3	Involvement in monitoring and evaluation	0.7779**
4	Sharing of responsibility	0.7261**
5	Communication behaviour	0.6914**
6	Promptness and regularity in attending meetings	0.7153**
7	Leadership propensity	0.5880**
8	Empowerment	0.6093**
9	Conflict resolution	0.7509**
10	Competitive spirit	0.5700**

** Significant at 0.01 level

4.1.4. Intercorrelation among components of participation efficiency

The degree of intercorrelation among the components of participation efficiency was found out by calculating the Pearson's product moment correlation coefficients. The results are presented in Table 4.2.

The results of the study indicated that almost all the components exhibited strong positive and significant intercorrelation between components of PEI, as majority of the correlation were significant at 0.01 level of probability. Only the component- Competitive spirit had not exhibited any significant relationship with empowerment.

These results confirm the findings of correlation of components of participation efficiency with PEIV where the components exhibited strong positive correlation with PEIV. It indicates that components included in the PEI were not extraneous but rather integral components and a high degree of overlap is anticipated in the conceptual framework of the study itself. The components included in PEI had been identified from extensive review and rating and thus precisely delineated components were expected to explain participation efficiency adequately. The positive and significant association of the components with PEIV and the intercorrelation justify their selection and inclusion in the PEI. It clearly shows that relationship among components must also be given prime importance rather than focusing on only one component in isolation, only then a greater understanding of the complexities of the participation efficiency of the members in multi purpose cooperatives can be achieved.

Table 4.2 Intercorrelation matrix of components of participation efficiency

components components	1	2	3	4	5	6	7	8	9	10
1	1.0000									
2	0.6023**	1.0000								
3	0.7022**	0.6024**	1.0000							
4	0.5247**	0.6048**	0.5265**	1.0000						
5	0.5326**	0.4811**	0.4517**	0.5668**	1.0000					
6	0.4883**	0.4894**	0.5424**	0.4128**	0.3163**	1.0000				
7	0.4280**	0.3062**	0.3845**	0.2706**	0.2879**	0.4036**	1.0000			
8	0.3740**	0.4116**	0.3884**	0.3228**	0.3178**	0.4478**	0.2921**	1.0000		
9	0.4339**	0.5689**	0.4977**	0.4675**	0.4828**	0.5548**	0.3387**	0.4693**	1.0000	
10	0.3592	0.3460**	0.3678**	0.3963**	0.4287**	0.2490**	0.3762**	0.1656	0.5006**	1.0000

** Significant at 0.01 level

* Significant at 0.05 level

1 : Involvement in decision making

2 : involvement in implementing decision

3 : Involvement in monitoring and evaluation

4 : Sharing of responsibility

5 : Communication behaviour

6 : Promptness and regularity in attending meetings

7 : Leadership propensity

8 : Empowerment

9 : Conflict resolution

10 : Competitive spirit

4.1.6. Classification of respondents based on Participation Efficiency Index

Value (PEIV)

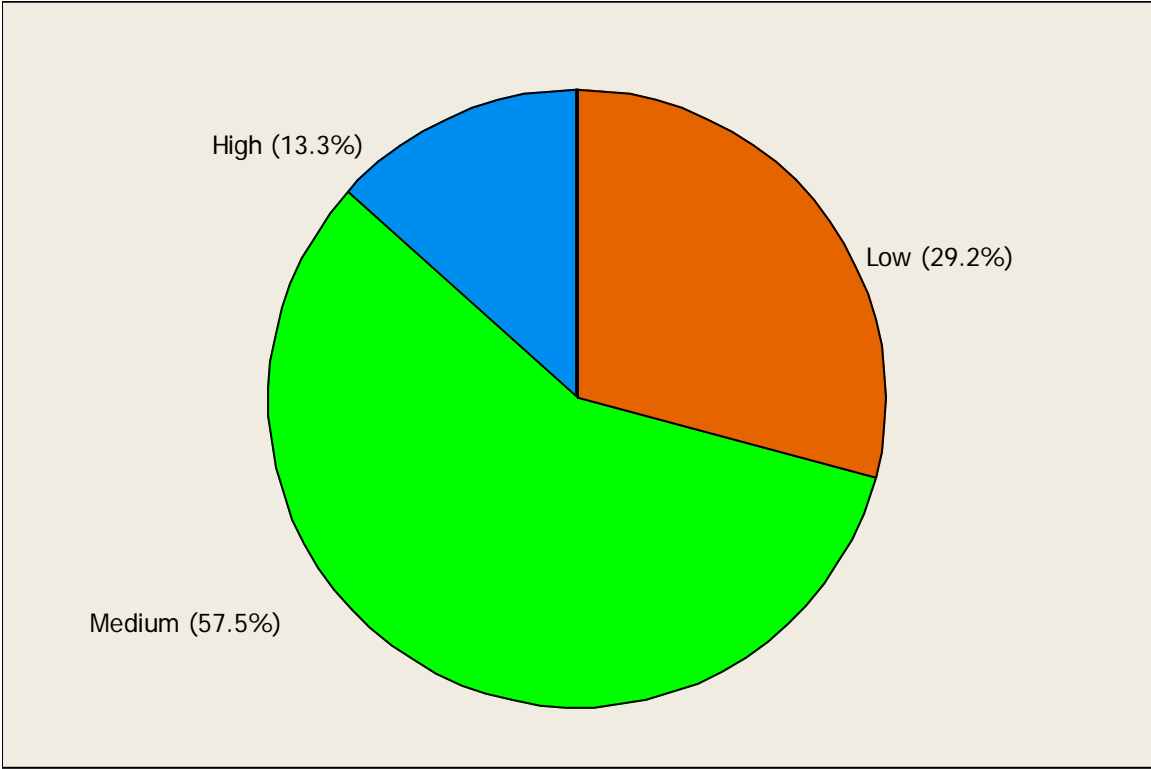
The results of the classification of respondents based on PEIV are presented in Tables 4.3. In this study, the respondents are classified in to three categories as Low, Medium and High participation efficiency categories based on PEIV. Respondents in the range of 0.1-0.6 PEIV fall in Low, 0.6-0.8 PEIV in Medium and 0.8-1.0 PEIV in High participation efficiency categories.

The results in Table 4.3. indicated that 29.2 per cent of the respondents fell in Low, 57.5 per cent in Medium and 13.3 per cent in High participation efficiency categories. It implies that majority of the respondents (more than 50 per cent) exhibited medium level of participation and only 13.3 per cent of the respondents exhibited high level of participation in group related activities. The above findings are almost similar to that of the observation of Natarajan (1991) who had found that majority of respondents were seen with medium level of participation followed by 8.33 per cent with high level of participation in social forestry programme. Velusamy (1999) reported that 34.0 per cent of beneficiaries fell in medium level of participation.

Table 4.3. Classification of respondents based on PEIV

S No.	Description	Class interval	Frequency	Percentage
1	Low	0.1-0.6	35	29.2
2	Medium	0.6-0.8	69	57.5
3	High	0.8-1.0	16	13.3
Total			120	100.0

Figure 4. Distribution of Respondents Based on PEIV



4.2. Description of personal/demographic characteristics, social characteristics, economic factors, and cooperation indicators of the Sample Respondents

In this section descriptions of personal/demographic characteristics, social characteristics, economic factors, and cooperation indicators of the sample respondents is presented and discussed in detail.

4.2.1. Description of personal/Demographic characteristics of the Respondents

Personal/demographic characteristics are variables which are related to personal characteristics such as age, gender, marital status, level of education, family size, and others. The distribution of sample respondents based on their personal/demographic characteristics is presented in Table 4.4.

Table 4.4. Distribution of sample respondents based on their personal/demographic characteristics (N = 120)

Attributes		Frequency	Per cent
Age of respondents	30 - 42 (Younger)	33	27.5
	43 - 54 (Middle)	58	48.3
	> 55 (Older)	29	24.2
	Total	120	100.0
	Mean= 48.71 SD = 8.841 Min = 30 Max = 79		
Marital status	Single	1	0.8
	Married	96	80.0
	Divorced	11	9.2
	Widowed	12	10.0
	Total	120	100.0
Gender	Male	95	79.2
	Female	25	20.8
	Total	120	100.0
Level of education	Illiterate	50	41.7
	Can read and write	26	21.7
	Elementary level (1-5)	33	27.5
	Junior level (6-8)	11	9.2
	Total	120	100.0
Family size	<2	1	0.8
	2-4	45	37.5
	5-7	61	50.8
	>7	13	10.8
	Total	120	100.0

Source: Computed from own survey data

4.2.1.1. Age Distribution of the Respondents

The age of the respondents who participated in the study ranged from 30 to 79. The mean age of the respondents was 48.71 years with the standard deviation of 8.841. The respondents were placed under three age categories. Majority (48.3%) of the respondents fall in the category of middle aged 43-54 followed by older age group >55 (24.2%) and younger age group 30-42 (27.5%).

4.2.1.2. Marital Status of the respondents

The respondents were categorized in to four categories namely, single, married, divorced, and widowed. The result in Table 4.4. shows that 96 (80.0%) the respondents are married and living with their wives/husbands, followed by widowed which is 10.0 per cent. The result shows that most of the widowed are females. And the remaining 11 (9.2%) and 1(0.8%) are divorced and single respectively.

4.2.1.3. Gender of the sample respondents

The above Table 4.4. reveals that, 79.2 per cent of the respondents or members of the MPCs are male headed, where as the share of female headed is only 20.8 per cent. Even though, there are good numbers of females, they are not allowed to be members if her husband is alive. She will be a member only if her husband dies.

This hinders the participation of females in the overall activity of the MPCs.

4.2.1.4. Level of education

Education is one of the important variables, which increases farmers' ability to acquire, process and use agricultural related information. Low level of education and high illiteracy rate are typical in developing countries like Ethiopia. In fact, education level of farmers is assumed to increase their ability of participation in agribusiness activities in a better way. Therefore, in this study, educational level is a variable helping exposure to information and its utilization.

As indicated in Table 4.4., 41.7 per cent of the sample respondents were illiterates, 21.7 % were able to read and write, 27.5% and 9.2% had attended elementary school level (1-5) and junior school level (6-8) respectively. There was high illiteracy rate among the respondents.

4.2.1.5. Family size

Higher number of family members leads to decision to take risk for participation and exposure to take information. Therefore, family size contributes to the variation in getting access to agriculture information. In this study, family size was assumed to have positive relation to participation efficiency.

The respondents were placed in to four categories, as Table 4.4., reveals 0.8%, 37.5%, 50.8%, and 10.8% had between less than 2, 2-4, 5-7, and greater than 7 family members respectively.

4.2.2. Description of social characteristics of the sample respondents

In this study, variables like exposure to mass media like radio, television, news paper, and neighbours and contact with change agents are considered to describe the social characteristics of the sample respondents. The findings are presented in Table 4.5. and 4.6.

Table 4.5. Exposure of the sample respondents to mass media

Attributes	Category						Total	
	No at all		Rarely		Often			
	N	%	N	%	N	%	N	%
Radio	1	0.8	20	16.7	99	82.5	120	100.0
Newspaper	53	44.2	10	8.3	57	47.5	120	100.0
Television	94	78.3	24	20.0	2	1.7	120	100.0
Neighbors	2	1.7	1	0.8	117	97.5	120	100.0

Source: Computed from own survey data, 2007

4.2.2.1. Exposure of the Sample Respondents to Mass Media

Individuals who have good exposure to mass media like radio, television, newspaper, and others have the opportunity of getting more information. It is therefore assumed that it affects participation efficiency positively.

i. Radio Exposure

0.8 per cent of the respondents have no exposure to radio, 16.7 percent rarely, but the majority 82.7 per cent have an exposure to radio often.

ii. Newspaper Exposure

As Table 4.5. above indicates, 44.2 percent have no any kind of exposure to newspaper, 8.3% and 47.5% of the sample respondents represent their exposure to newspaper to be rare and often respectively.

iii. TV Exposure

Majority of the sample respondents i.e., 94 (78.3 per cent) of the respondents have no exposure to television, 20.0 per cent with rare exposure and the remaining 1.7 per cent with often exposure.

iv. Neighbours

Most often in rural areas information is disseminated through neighbours, in line with this Table 4.5., indicates that almost all 117 (97.5%) of the respondents have often exposures with neighbours. The remaining 1.7% and 0.8 % have exposure with neighbours respectively not at all and rarely.

4.2.2.2. Contact with change agents

Contact with change agents is one of the variables which describe the social characteristics of the sample respondents, the findings are presented in the following table.

Table 4.6. Distribution of sample respondents based on their contact with change agents
(N=120)

Attributes	Category						Total	
	Never		Occasionally		Frequently			
	N	%	N	%	N	%	N	%
Contact with extension workers of Gov't	0	0.0	14	11.7	106	88.3	120	100.0
Contact with extension workers of NGOs	59	49.2	61	50.8	0	0.0	120	100.0
Officials of cooperatives	30	25.0	67	55.8	23	19.2	120	100.0
Officials of small scale industry department	120	100.0	0	0.0	0	0.0	120	100.0

Source: Computed from own survey data, 2007

i. Contact with extension workers of the government

Contacts with change agents are believed to have a positive relation with participation, according to the result 106 (88.3%) are having frequent contact with extension workers of the government. And the remaining 14 (11.7%) are having occasional contact with the same. This infers that the majority of the respondents have good contact, and this can play its own role for disseminating information and increase participation relatively.

ii. Contact with extension workers of NGOs

Table 4.6., indicates 61(50.8%) respondents have occasional contact with extension workers of NGOs like workers from ADCS, while the remaining 59(49.2%) does not have any kind of contact at all with extension workers of NGOs.

iii. Contact with officials of cooperatives

As presented in Table 4.6., among 120 interviewed sample respondents, more than half (55.8%) were having occasional contact with officials of cooperatives, 19.2 per cent were having frequent contact, while the remaining had never any contact with the cooperative officials of the woreda.

iv. Contact with officials of small scale industry department

The result in Table 4.6., reveals that all the respondents have no any kind of contact with officials and extension workers of small scale industry department. This shows that there is less attention with regard to small scale industries.

Table 4.7. Distribution of sample respondents based on overall effect of social factors (N=120)

Attribute		Frequency	Percentage
Overall exposure to mass media	Low	33	27.5
	Medium	61	50.8
	High	26	21.7
	Total	120	100.0
Overall Contact with change agents	Low	100	83.3
	Medium	20	16.7
	High	0	0.0
	Total	120	100.0

Source: Computed from own survey data, 2007

The above table reveals that the distribution of the sample respondents based on the overall effect of social factors, and clearly indicates that 27.5% of the respondents have low exposure to mass media, and the remaining 50.8% and 21.7% with medium and high exposure to mass media respectively. Regarding the contact of the sample respondents with change agents it shows that the majority (83.3%) of the respondents have poor/low contact, whereas 20 (16.7%) have medium contact and no high contact with the change agents in the woreda.

4.2.3. Description of economic factors of the sample respondents

The findings are presented in Table 4.8.

Table 4.8. Distribution of sample respondents based on their economic factors

Attributes		Frequency	Per cent
Size of land holding in hectare (N = 120)	0 - 0.5	30	25.0
	0.51 - 1.0	52	43.3
	1.01 - 1.5	38	31.7
	Total	120	100.0
Mean = 0.9833 Min = 0.25 Max = 1.50			
Total annual income (N = 120)	< 656.7 Birr	26	21.7
	656.7 – 1266.7 Birr	18	15.0
	> 1266.71 Birr	76	63.3
	Total	120	100.0
Mean = 2763.75 SD = 2639.20 Min = 150.00 Max = 13000.00			
Indebtedness (N = 120)	No at all	20	16.7
	< 1000 Birr	42	35.0
	1000 - 5000 Birr	57	47.5
	5000 - 10000 Birr	1	0.8
	Total	120	100.0

Source: Computed from own survey data, 2007

4.2.3.1. Size of land holding

Land is a primary source of livelihood for all rural households. In the study area, the size of the land owned differed from household to household. It could be observed from Table 6 that the land holding is generally very small. Of the total 120 respondents, 30 (25.0%) own between 0 - 0.5 hectare, 52 (43.3%) own between 0.51 - 1 hectare, while the remaining 38 (31.7%) own 1.01

- 1.5hectares of land. Average land holding of total respondents was about 0.98 hectare with maximum and minimum of 1.5 and 0.25 hectares respectively.

4.2.3.2. Annual income of the respondents

Total annual income is an important variable explaining the characteristics of households, in that those who have earning relatively high income could probably have high participation. As indicated in Table 4.8., the average annual income was Birr 2763.75 and the minimum and maximum annual income was Birr 150 and Birr 13,000 respectively with standard deviation of Birr 2639.20. This shows a great variation among respondents.

4.2.3.3. Indebtedness of the respondents and sources of borrowing

As it is shown in Table 4.8., 20 (16.7%) of the respondents got no loan, 42 (35.0%) had a loan of less than Birr 1000. These loans are mainly for a purpose of purchasing high variety seeds, fertilizers and other consumable goods. About half of the respondents which is 57 (47.5%) got a loan of total amount of Birr 1000 to 5000 mainly for the purchase of cattle, sheep, goat, and bee in which the source of loan is 100% from Dedebit Credit and Saving Institute (DECSI), one of the respondents has got loan of more than Birr 10,000. This shows that majority of the respondents are indebted to DECSI.

4.2.4. Description of situational factors of the sample respondents

For the purpose of this study, the situational factors of the respondents include membership characteristics of the sample respondents. This means the time of membership in the multi purpose cooperative, whether their membership is in the one multi purpose cooperatives or not, and level of satisfaction with their multi purpose cooperatives.

Table 4.9. Distribution of sample respondents based on their situational characteristics

Attributes		Frequency	Per cent
Time of membership in MPCs (N = 120)	1970 - 1980	29	24.2
	1981 - 1990	55	45.8
	1991 - 2000	36	30.0
	Total	120	100.0
Membership in more number of cooperatives? (N = 120)	Yes	15	12.5
	No	105	87.5
	Total	120	100.0
Level of satisfaction (N = 120)	Not satisfied	11	9.2
	Somewhat satisfied	57	47.5
	Very much satisfied	52	43.3
	Total	120	100.0

Source: Computed from own survey data, 2007

4.2.4.1. Membership characteristics of the respondents

Table 4.9. indicates year of membership of the respondents in their multi purpose cooperatives in Ethiopian calendar. As the table indicates 29 (24.2%) were members starting from 1970 to 1980, 55 (45.8%) of the respondents were starting from 1981 to 1990 which is relatively higher than the former. In 1991 to 2000 the number of members who joined the cooperatives was 36 (30.0 per cent). Majority of the respondents opined that they joined their cooperative which is from their self interest except few. According to the opinion of the respondents the main reasons for

joining the cooperatives are to increase farm production and productivity, additional income sources, enjoy working with others, produce high quality goods and services, diversify investment portfolio, increase market access or bargaining power, reduce marketing risks, reduce competition among farmers, increase member networking and knowledge.

4.2.4.2. Membership in more number of cooperatives

105 (87.5%) of the respondents are members only in the multi purpose cooperative in their tabia, where as the remaining 15 (12.5%) are members both in the multi purpose cooperative and saving and credit cooperatives (list of SACCOs in the woreda are attached in the appendix). Membership in different cooperatives may have its own negative impact in the participation of the members in their MPCs.

4.2.4.3. Level of satisfaction in their MPCs

Satisfaction is one of the variables which tell the participation of the respondents in their multi purpose cooperatives. The respondents are categorized in to three groups such as: those are not satisfied, somewhat satisfied, and very much satisfied and the result shows that 9.2%, 47.5%, and 43.3% respectively. This shows that above half of the respondents are satisfied with their MPCs. It is believed that level of satisfaction has a direct relationship with the participation (Table 4.9.).

4.2.5. Description of awareness factors of the sample respondents

4.2.5.1. Awareness of the respondents about cooperation

Table 4.10. Distribution of sample respondents based on their awareness about cooperation

Attributes		Frequency	Per cent
Do you Know the Constitutions of the General Assembly?	Yes	119	99.2
	No	1	0.8
	Total	120	100.0
Do you Know the Purpose of Convening the General Body?	Yes	119	99.2
	No	1	0.8
	Total	120	100.0
Do you Know the Agenda to be Discussed in the General Body?	Yes	118	98.3
	No	2	1.7
	Total	120	100.0
Do you Know the Rights of a Member in the General Body?	Yes	118	98.3
	No	2	1.7
	Total	120	100.0
Do you Know the Duties of the Chief Executive of your Coop?	Yes	119	99.2
	No	1	0.8
	Total	120	100.0

Source: Computed from own survey data, 2007

As Table 4.10. above, indicates the awareness of individual members towards their knowledge to the principles and values of cooperatives and tells that majority of the respondents know the constitutions of the general assembly, the purpose of convening the general body, the agenda to be discussed in the general body and almost all know the rights of their membership in the general body and also know the duties of the chief executive of the cooperative.

4.2.5.2. Training undergone of the respondents

Table 4.11. Distribution of sample respondents based on training undergone

		Frequency	Per cent
Do you get any training so far?	Yes	62	51.7
	No	58	48.3
	Total	120	100.0

The above table depicts that 62 (51.7%) of the respondents have got a chance of getting training where as the remaining 58 (48.3%) had no any chance of getting training in the woreda. It is believed that training has a positive relation to participation. The nature of training includes bee keeping, irrigation, record keeping, crop production, and others. Mainly the training was conducted by the bureau of agriculture and natural resource department of Tigray region,

4.3. Relationship between dependent and independent variables

This section covers the findings on the relationship between participatory efficiency (dependent variable) and independent variables (personal/demographic characteristics, social characteristics, economic factors, situational factors, and awareness factors) through Pearson’s Product – Moment Correlation analysis, χ^2 -test and Cramer’s V for discrete categorical variables. The relationships between participatory efficiency and independent variables both discrete and continuous variables are presented in Table 4.12. and 4.13.

Table 4.12. Relationship between PEIV and discrete independent variables

Discrete independent variable		Chi-square test			
		χ^2	df	P	Cramer’s V
Personal factors					
1	Gender	1.808	2	0.405	0.0151
2	Marital status	8.723	6	0.073	0.036
3	Educational level	10.226*	6	0.015	0.043

* Significant at the 0.05 level

The chi-square measures indicate whether there is a relationship between two variables; but they do not indicate the strength or direction of relationship. A low significance value (typically below 0.05) indicates that there may be some relationship between the two variables. The Nominal directional measures or Cramer’s V indicate both the strength and significance of the relationship between the independent and dependent variables. But the low values for both test statistics indicate that the relationship between the two variables is a fairly weak one.

The output of chi-square test in Table 4.12. generally revealed that, among the three discrete independent variables, only educational level shows positive and significant association with the dependent variable at 5% level of significance. The other two discrete variables namely gender

and marital status were positively associated to the dependent variable but statistically non significant.

Table 4.13. Relationship between participation efficiency and continuous independent variables

Continuous independent variables		Pearson Correlation Analysis	
		r	p
Personal factors			
1	Age	- 0.066	0.476
2	Family size	0.012	0.894
Social factors			
3	Exposure to mass media	0.457(**)	0.000
4	Contact with change agents	0.376(*)	0.032
Economic factors			
5	Land holding	0.231(**)	0.003
6	Family annual income	0.187(*)	0.047
7	Indebtedness	0.567(**)	0.000
8	Total assets	0.418(**)	0.000
Situational factors			
9	Time of membership	0.325(**)	0.076
10	Membership in more than one coop	- 0.120	0.007
11	Level of satisfaction	0.627(**)	0.000
Awareness factor			
12	Awareness of coop	0.541(**)	0.000
13	Awareness of agribusiness	0.324(**)	0.022

** Significant at the 0.01 level (2-tailed)

* Significant at the 0.05 level (2-tailed)

The output of Pearson correlation analysis in Table 4.13. indicates that, out of 13 continuous variables, 11 are positively and significantly associated with the dependent variable at different levels of significance. Except age and membership in more than one cooperative which are negatively associated, other continuous variables such as family size and time of membership are positively correlated, but statistically they are not significant.

The negative association of age implies that, the two variables were not linearly related and when age of the respondents increases, participation efficiency of the members decreases.

The probable reason for non significant and quite weak relationship observed between age and participation might be that elder members do not seek many new ideas since they conform to the practices they followed for a long time in their life.

4.3.1. Relationship between Personal Characteristics and Participation Efficiency

As indicated in Table 4.13., age has a negative relation ship with participation efficiency, whereas family size is positively related with participation efficiency of the members but statistically it is not significant.

The probable reason of positive relation between family size and participation efficiency could be as the family size increases the possibility of sharing new ideas can be increased.

4.3.2. Relationship between Social Characteristics and Participation Efficiency

It could be observed from Table 4.13. that, there was significant correlation at 0.01 significant level and positive relationship between exposure to mass media and respondents' participation. This implies that when respondents' exposure to mass media increases, their participation also increases.

The probable reason might be that, as the respondents' exposure to radio, television, newspaper, and contact with neighbours increases the information flow regarding to the cooperative may

increase, it has a direct implication in increasing participation. Therefore farmers who have relatively more exposure will be initiated to participate and also may seek more new ideas and information and knowledge than these who have less exposure.

Statistical analysis using Pearson correlation coefficient revealed that there was significant and positive relationship between participation efficiency and contact with change agents at 5% level of significance ($r = 0.367$, $P = 0.032$). This implies the participation efficiency of the respondents increases with increase in contact with change agents. The probable reason might be those respondents with relatively higher contact with change agents can have access to new ideas and guidance from the contact agents and in turn may expose them to new information and increases their participation.

4.3.3. Relationship between Economic Factors and Participation Efficiency

As indicated in Table 4.13., among four variables of economic factors, three of them, land holding, indebtedness and total asset of the respondents were significant at 1% significance level and family annual income was significant at the 5% level of significance respectively

As shown in Table 4.13., there is positive, significant and strong relationship between respondents' participation and land holding of the respondents. This might be due to the fact that, farmers who have relatively large land holding will be more initiated to use more inputs and other raw materials and this increases their participation in the cooperative.

There was significant and positive relationship between level of indebtedness of the respondents and participation efficiency. This might be probably because; the farmers who are indebted need to pay back the money in the stipulated time frame; if they fail to do so their personal property may be taken over, and this makes them eager to participate.

The result of the study revealed that there was significant and positive relationship between the participation efficiency and family annual income. However the relationship was at 5% level of significance. The likely reason might be that, as the level of family annual income increases, the purchasing power of the family increases and this implies to purchase more from the multi purpose cooperative.

The study revealed that there was significant, positive and strong relationship between level of total assets and participation efficiency. This is because as the total asset increases, the desire for new technologies and spread of business increases, and this gives a chance to participate in the cooperative.

Many studies confirm that in addition to farm income, income obtained from off-farm and non-farm activities increases the probability of investing in new technologies and participation (Asfaw et al, 1997; Habtemariam, 2004).

4.3.4. Relationship between situational Factors and Participation Efficiency

Statistical analysis of Pearson correlation of field data shows that there is significant, positive and relatively strong relationship between participation efficiency and time of membership. This

might be due to members who join recently have good understanding of the usage of cooperatives and are more likely to be aware of new information.

As shown in Table 4.13., there was a negative relationship between participation efficiency and membership in more than one cooperative. This can be due to, as one is being member in more than one cooperative like in multi purpose cooperative and SACCO, his intention will be diversified and possibly the rate of his/her participation relatively decreases.

There was significant and positive relationship between level of satisfaction and participation efficiency. This is because, as the members are highly pleased and get the goods and services they like at a reasonable price, at the appropriate time and place, in turn they come to know their core contribution and increase their participation.

4.3.5. Relationship between Awareness Factors and Participation Efficiency

It could be observed from Table 4.13. that, there was significant correlation at 0.01% level of significance and positive relationship between awareness of cooperation and level of participation (i.e. participation efficiency). This implies that as the awareness of the respondents increases, their participation efficiency also increases.

The probable reason might be that, respondents who have relatively more exposure to mass media and contact with change agents can have relatively more awareness regarding cooperatives and this in turn helps to increase their participation in the same.

The result of the findings revealed that, there is positive relationship between participation efficiency and awareness of agribusiness. However, the relation was at 5% level of significance. The probable reason might be that, as awareness of agribusiness increases, the farmers come to know what to produce, how much to produce, usage of raw materials, market oriented products, and others and this in turn increases their participation.

4.4. Agribusiness activity in the woreda

There are different activities of agribusiness done by the sample respondents. To mention some, all most all respondents are having land for the cultivation of staple foods or grains. Some of the members also have vegetables and fruits in small scale and others are engaged in bee production as a secondary means of income in addition to labour work during winter by going to nearer cities.

4.4.1. Problems and Prospects of Agribusiness Activities

The rank orders of the problems were identified through using score values of the problems. The problem that got the highest score value was taken as the most important problem that hinder agribusiness activities in the woreda.

Table 4.14. Major problems perceived in the progress of agribusiness (N=120)

S. No	Attributes	Relative importance of the problems /attributes						Score	Rank
		Not important (1)		Important (2)		Most important (3)			
		N	%	N	%	N	%		
1	Inadequate knowledge and skill in post harvest techniques	10	8.3	42	35.0	68	56.7	298	1 st
2	Inadequate market infrastructure	16	13.3	58	48.3	46	38.3	270	2 nd
3	Inadequate market information especially on the tastes and preferences of customers	35	29.2	47	39.2	38	31.6	243	3 rd
4	Poor skill in processing and value addition	45	37.5	34	28.3	41	34.2	236	4 th
5	Lack of opportunities for training in processing	57	47.5	27	22.5	36	30.0	219	5 th
6	Inadequate facilities for storage and transportation	64	53.3	35	29.2	21	17.5	197	6 th
7	Perishable nature of agricultural commodities	77	64.2	31	25.8	12	10.0	175	7 th
8	Poor quality of the agricultural produce	89	74.2	24	20.0	7	5.8	158	8 th
9	Inadequate technical guidelines from extension workers	97	80.8	18	15	5	4.2	148	9 th
10	Poor access to credit to start agribusiness	107	89.2	9	7.5	4	3.3	137	10 th

The response analysis of Table 4.14. indicates that, the problems of agribusiness activities in the woreda as responded by the sample respondents: are inadequate knowledge and skill in post harvest techniques, inadequate market infrastructure, inadequate market information especially on the tastes and preferences of customers, and poor skill in processing and value addition ranked from 1st to 4th respectively. Where as poor access to credit to start agribusiness scored the smallest as a constraint of the development of agribusiness in the woreda.

4.4.2. Suggestions for the development of agribusiness and related sectors through MPCs

Table 4.15. Rank order of suggestions for the development of agribusiness and related sectors through MPCs (N= 120)

S. No	Attributes	Relative importance of the problem/attribute						Score	Rank
		Not important (1)		Important (2)		Most important (3)			
		N	%	N	%	N	%		
1	Introducing knowledge and skill in post harvest technologies	17	14.2	58	48.3	45	37.5	268	1 st
2	Increasing access to market infrastructure	21	17.5	67	55.8	32	26.7	251	2 nd
3	Availing market information especially on the tastes and preferences of customers	36	30	71	59.2	13	10.8	217	3 rd
4	Upgrading skill in processing and value addition	47	39.2	66	55	7	5.8	200	4 th
5	Upgrading the quality of agricultural produce	54	45	56	46.7	10	8.3	196	5 th
6	Increasing technical guidelines from extension workers	49	40.8	66	55	5	4.2	196	5 th
7	Others	67	55.8	34	28.3	19	15.9	192	7 th

As indicated in Table 4.15., among the six suggestions, introducing knowledge and skill in post harvest technologies is the most important suggestion for development of agribusiness and related sectors in the woreda, followed by increasing access to market infrastructure, availing market information especially on the tastes and preferences of customers, upgrading skill in processing and value addition ranked from 2nd to 4th respectively. Upgrading the quality of agricultural produce and increasing technical guidelines from extension workers have got equal rank and lastly followed by others.

This issue was also discussed thoroughly among the respondents in the focus group discussion which was held in group of six to ten respondents. And they opined that, a great emphasis should be given to the post harvest technologies in order to assure the sustainable growth in the development of agribusiness which may have a great contribution in the sustainable development of the woreda in general and members of the multi purpose cooperatives in particular. They also agreed that even if the technical guidelines from extension workers is vital, its rank is minimal in which access to market infrastructure, availability of market information, and upgrading skill in processing and value addition are crucial in this regard.

4.5. Participatory Approach in Multi Purpose Cooperatives

4.5.1. Constraints in adopting participatory approach by the multi purpose cooperatives

The major constraints in the implementation of participatory approach were identified in two stages: by farmers in the first stage and extension personnel in the second stage.

The major constraints which were experienced by the farmers in the MPCs were identified and the results are presented in Table 4.16.

The inquiry of the results revealed that inadequate awareness in participatory approach, inadequate leadership and guidance, lack of coordination of different agencies, non availability of agricultural implements, Low price for produces, absence of effective machinery for technology transfer, interference of local leaders, and others were the most important constraints.

Other constraints identified by extension personnel involved in the implementation of participatory approach are presented in Table 4.17., below.

Results revealed that inadequate efforts towards participatory approach, lack of dedicated and efficient group leaders, inefficient monitoring mechanisms, high influence of vested interests, non availability of suitable agricultural implements and machinery, low price of produces, and absence of effective machinery for technology transfer were the most important constraints.

Table 4.16. Constraints for not following Participatory Approach perceived by the Respondents

(N=120)

S. No	Attributes	Relative importance of the constraint/attribute						Score	Rank
		Not important (1)		Important (2)		Most Important (3)			
		N	%	N	%	N	%		
1	Inadequate awareness in participatory approach	10	8.3	45	37.5	65	54.2	295	1 st
2	Inadequate leadership and guidance	16	13.3	48	40.0	56	46.7	280	2 nd
3	Lack of coordination of different agencies	25	20.8	53	44.2	42	35.0	257	3 rd
4	Interference of local leaders	31	25.8	67	55.8	22	18.3	231	4 th
5	Non availability of agricultural implements	34	28.3	68	56.7	18	15.0	224	5 th
6	Low price for produces	47	39.2	58	48.3	15	12.5	208	6 th
7	Absence of effective machinery for technology transfer	53	44.2	50	41.7	17	14.1	204	7 th
8	Others	68	56.7	42	35.0	10	8.3	182	8 th

Table 4.17. Constraints for not following Participatory Approach perceived by the Extension

Personnel (N=10)

S. No	Attributes	Relative importance of the constraint/attribute						Score	Rank
		Not important (1)		Important (2)		Most important (3)			
		N	%	N	%	N	%		
1	Inadequate efforts towards participatory approach	0	0.0	2	20.0	8	80.0	28	1 st
2	Lack of dedicated and efficient group leaders	0	0.0	3	30.0	7	70.0	27	2 nd
3	Inefficient monitoring mechanisms	1	10.0	3	30.0	6	60.0	25	3 rd
4	High influence of vested interests	3	30.0	4	40.0	3	30.0	20	4 th
5	Non availability of suitable agricultural implements and machinery	4	40.0	3	30.0	3	30.0	19	5 th
6	Low price of produces	5	50.0	3	30.0	2	20.0	17	6 th
7	Absence of effective machinery for technology transfer	6	60.0	3	30.0	1	10.0	15	7 th
8	Others	7	70.0	2	20.0	1	10.0	14	8 th

4.4.2. Perception of extension personnel respondents towards participatory approach of the woreda

The mean scores for the perception statements were calculated separately. Respondents having less than mean perception score were grouped under low perception category and these having equal to or more than mean perception score were grouped under high perception category.

Results with respect to perception of extension personnel on participatory approach in the development of agribusiness are presented. Perusal of the results revealed that majority of the

respondents reacted very favourably to the statements in the development of agribusiness through MPCs. Cost of cultivation can be significantly reduced by following group approach in farming,

4.4.3. Suggestions to improve the implementation of participatory approach

Suggestions made by the extension personnel to improve the implementation of participatory approach in the development of agribusiness are presented below by having focus group discussion with the extension personnel in the woreda. The perusal of data in the study revealed that the management body of the MPCs leaders are to be given regular training on group management and leadership was the most important suggestion made, followed by suggestions such as very old people should not be made office bearers of groups, groups are to be involved in participatory technology development, sufficient training opportunities are to be provided for the cooperative members to upgrade their knowledge and skills in agribusiness development, multi purpose cooperatives are to be empowered to mobilize resources like deposit collection, borrowing, cess collection to undertake development activities, etc.

4.5. Strategy for Effective Participatory Approach for the Development of Agribusiness in the Woreda

The agricultural development planned and implemented during the past decades in the country was on top-down approach was highly dependent on technology and focused on potential areas and large elite farmers. By and large, big and influential farmers reaped the major portion of the benefits of the top-down approach. The resources-poor small and marginal farmers who constitute majority of the population were practically left unattended. To overcome the mismatch

of conventional top-down approach in agribusiness development, the best alternative is to reverse the approach to bottom-up process through promoting participatory process by using the available scarce resources and putting farmer first in the continuum.

A group like multi purpose cooperative is a pre-requisite for following effective participatory approach, especially among resource-poor small and marginal farmers who have not been empowered to the desirable extent. Formation of cooperative is the first activity to be undertaken in the direction of participatory approach.

The analysis of the sample respondents in the multi purpose cooperatives revealed that majority of the members are not functioning efficiently due to various issues related to participation of the members in their cooperative activities, operational procedures of the cooperative and policy interventions. The issues of participatory approach develop right from the formation of the cooperative, monitoring and evaluation of the entire activities, at various levels and dimensions.

Once these issues are left unattended, they may cause further serious implications and will result in decline of the cooperatives. Hence to promote a participatory approach for sustainable development of agribusiness, there is a need of clear-cut strategy. A strategy in this context means a planned design aimed to tackle problems concerning formation, operation, maintenance, and monitoring and evaluation of multi purpose cooperatives in achieving sustainable development of agribusiness in the woreda.

All the members of the multi purpose cooperative are to be fully involved in formation of the cooperative, deciding, implementing, and monitoring and evaluation of group activities. In participatory approach, extension personnel are to play the role of facilitators by extending necessary technical assistance and support in undertaking the entire cooperative activities and maintenance of the cooperative.

Based on the study, the following general guidelines are suggested for efficient functioning of multi purpose cooperatives for sustainable agribusiness development in the woreda:

1. The multi purpose cooperative should promote participatory approach.
2. The number of the members should be of manageable size, according to proclamation 147/98 it says the minimum number to organize a cooperative is 10, but in this woreda the number of members is too large and there is only one multi purpose cooperative in the entire tabia each.
3. Democratic procedure should be followed in the formation of cooperatives, planning, implementation and monitoring of the group activities.
4. Performance based leadership should be promoted to enhance participation of members in their multi purpose cooperatives.
5. Specific responsibilities are to be assigned to members with due consensus to take up various activities of the multi purpose cooperative.
6. Transparency and accountability in the multi purpose cooperative processes are to be ensured.
7. Communication breakdowns among the members of the multi purpose cooperative are to be reduced by promoting interpersonal trust, honesty, acceptance and informal relations.

8. Economically viable and socially acceptable programmes are to be taken by the multi purpose cooperatives on a priority basis and equity should be promoted among the members by rational sharing of benefits and opportunities.
9. A marketing network for the disposal of produces is to be promoted and credit facilities on easy terms and conditions are to be extended to the members of the multi purpose cooperative. The concept of micro-credit is to be promoted along with.

The strategy suggested in the study is only of general nature and the inherent feature of any strategy is that it can slightly vary from place to place or even cooperative to cooperative during implementation. In such cases, flexibility in the strategy is required based on the context, reality of circumstances, and resources. However, dedicated persons and leaders or board of management in the multi purpose cooperatives can tremendously improve the work culture in the cooperative.

CHAPTER-V CONCLUSIONS AND RECOMMENDATIONS

The experiences prove that individual approaches to development, by and large, failed. The group approach is accepted as the most effective way of transforming and empowering people. The cooperatives serve the resources-poor and down trodden people. The cooperative way is the best way to solve the twin problems of Ethiopia viz, poverty and unemployment. The cooperatives should adopt a participatory approach for meeting the ever challenging demands of its farmer-members.

So far, there has not been conducted any study in this field in Tigray region on the participatory approach for the development of agribusiness through multi purpose cooperatives. Therefore, this study is intended to identify the components of participation efficiency and develop a participation efficiency index, to assess the existing problems and prospects of agribusiness in Degua Tembien woreda of Tigray region, Ethiopia, to study the factors affecting participation efficiency in agribusiness carried out through multi-purpose cooperatives, to identify the constraints in adopting participatory approach by the multi-purpose cooperatives, and to develop a strategy for effective participatory approach for development of agribusiness through MPCs.

To address the objectives of the study, both quantitative and qualitative methodologies were used in this study. Data were collected from primary and secondary sources. The primary data necessary for the quantitative study were collected through personal interviews from 120 farmers drawn at random from four *tabias* by conducting formal survey using structured interview

schedule. Qualitative data were collected through, focus group discussion, observations, and informal discussion with key informants and extension workers. This study uses a two stage sampling procedure in which both purposive and random sampling techniques were used to select the *tabias* and sample respondents. Descriptive statistics with appropriate statistical tests, Pearson's Product-Moment Correlation chi-square, Cramer's V and other relevant tests were used to analyze the data collected for the study.

The results of the study revealed that the components of participation efficiency identified were: (1) Involvement in decision making, (2) Involvement in implementing decision, (3) Involvement in monitoring and evaluation, (4) Sharing of responsibility, (5) Communication behaviour, (6) Promptness and regularity in attending meetings, (7) Leadership propensity, (8) Empowerment, (9) Conflict resolution, and (10) Competitive spirit. All the ten components had significant and positive association with PEIV at 0.01 level of significance.

Based on the scores obtained by applying the participatory efficiency index, the Participation Efficiency Index Value (PEIV) of the respondents were calculated to measure and compare the participation efficiency of the respondents.

The participatory efficiency index is used as a tool to assess the participation efficiency of the respondents. Accordingly, 29.2 % of the respondents are classified having low participation, 57.5% medium participation and the remaining 13.3% with high participation. All the ten components of participation efficiency constitute to form the PEI.

The survey result shows that the average age, size of land holding, and total annual income were found to be 48.71 year, 0.9833 ha, and 2763.75 Birr respectively.

According to the findings of the study 27.5% of the sample respondents have low exposure to mass media, and the remaining 50.8% and 21.7% with medium and high exposure to mass media respectively. Contact of the sample respondents with change agents is relatively poor and it shows that the majority (83.3%) of the respondents have poor/low contact, whereas 20 (16.7%) have medium contact and no high contact with the change agents in the woreda.

There was relatively high access of credit and the majority of the respondents were indebted to Dedit credit and saving institute in the study area. The main purpose of the credit taken from DECSI were for purchase of high variety seeds, fertilizers, purchase of cattle, sheep, goat, and bee and other consumable goods.

The major problems perceived in the progress of agribusiness by the sample respondents were inadequate knowledge and skill in post harvest techniques, inadequate market infrastructure, inadequate market information especially on the tastes and preferences of customers, poor skill in processing and value addition, lack of opportunities for training in processing, inadequate facilities for storage and transportation, perishable nature of agricultural commodities, poor quality of the agricultural produce and inadequate technical guidelines from extension worker.

The study reveals that, the major constraints identified for not following participatory approach were inadequate awareness in participatory approach, inadequate leadership and guidance, lack

of coordination of different agencies, interference of local leaders, non availability of agricultural implements, low price for produces, absence of effective machinery for technology transfer, and others according to their rank value.

Based on the summarized findings and general survey conditions of the sub-sector, the following suggestions that could be used for policy measures are put forward to improve the performance of multi purpose cooperatives and ensure the sustainable development of agribusiness activities.

- The number of members in one multi purpose cooperative must be manageable (less) to assure their participation because there is only one multi purpose cooperative in one *tabia*.
- The perusal of study revealed that the management body of the MPCs leaders need to be given regular training on group management and leadership was the most important suggestion made.
- Multi purpose cooperatives need to be involved in promotion of participatory approach for agribusiness development, sufficient training opportunities need to be provided for the cooperative members to upgrade their knowledge and skills in agribusiness development.
- Multi purpose cooperatives need to be empowered to mobilize resources like deposit collection and borrowing to undertake agribusiness development activities.
- The interference of the government is high, and it needs to follow the cooperative principles and values, because it violates one of the basic principles i.e., cooperatives must be an autonomous and independent.

- Policy must be framed to initiate members to participate openly and in which there must be transparency and accountability.
- As one of the principles of cooperatives says every member in the specific cooperative must have access to education, training, and information, the cooperative promotion bureau of the woreda, region, and the federal cooperative agency must give attention in this regard.
- The MPCs need to have Controlling mechanism and continuous auditing system to ensure the members know the status of their cooperatives regularly, raise their sense of ownership and participation.
- Establishing and strengthening of farmers' organizations based on their needs has to receive enough attention for the fact that it empowers the farmers and would help them much in the timely provision of inputs at the desired quantity with reasonable price, in improving output marketing and make available sufficient loan.
- Last but not least, the role of extension/cooperatives should go beyond passing technologies / information and focusing on a mere increase in agricultural production. Also, the orientation of extension program should be in view of the broader issue of sustainable agribusiness development by taking in to account land degradation, an increase in human population, diverse agro-ecological, socio-economic, cultural, etc. problems.

Implications for future research:

The study was conducted only in Degua Tembien Woreda. Similar research studies on participatory approach for the development of agribusiness may be conducted in other regions of Ethiopia.

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Appendix 1. INTERVIEW SCHEDULE

I. General Instructions to Enumerators

- ☞ Make brief introduction to each farmer before starting the interview, get introduced to the farmers, (greet them in the local way) get his/her name; tell them yours, the institution you are working for, and make clear the purpose and objective of the study.
- ☞ Please ask each question clearly and patiently until the farmer understands (gets) your point.
- ☞ Please fill up the questionnaire according to the farmers reply (don't put your own opinion).
- ☞ Please do not try to use technical terms while discussing with farmer and do not forget to record the local unit.
- ☞ During the process put the answer of each respondent both on the space provided and encircle in the choice.

Identification Number (Code) _____

Tabia _____

Name of enumerator _____

Date of interview _____

SI No.

PART- I

Date:

General Information

A. Demographic Variables

Region:

Zone:

Woreda:

Village:

Cooperative:

1. Name of the respondent _____
2. Gender a. M _____ b. F _____
3. Age (Completed Years) _____
4. Marital status
 - a. Married _____
 - b. Single _____
 - c. Divorced _____
 - d. Widowed _____

5. Size of the family (= Husband + Wife + Children)

(✓ Mark against the correct response)

S. No.	Family size	
a.	< 2	
b.	2 to 4	
c.	5 to 7	
d.	8 to 9	
e.	> 10	

6. Educational status:

S. No.	Level of Education	
a.	Illiterate	
b.	Can read and write	
c.	Elementary school level (1 – 5)	
d.	Junior school level (6 – 8)	
e.	Secondary school level (9 -12)	
f.	TVET, College	
g.	Degree and above	

If other please specify _____

7. Exposure to mass media (indicates the exposure of the respondents towards mass media)

S. No.	Means	Very often (3)	Often (2)	Rare (1)
a.	Radio			
b.	Newspaper			
c.	TV			
d.	Neighbour			

If other, please specify _____

8. Occupation: Primary _____
Secondary _____

9. Do you have farm? a. Yes b. No

10. If **Q9** is yes what is the size of your farm land? _____ in hectare

11. What are the main crops you grow

12. Do you produce fruits and vegetables? a. Yes b. No

13. If **Q12** is yes, mention the type of fruits and vegetables you grow, total size of the plot, and annual income out of it

14. If **Q9** is no, why?

15. Family annual income in Birr _____

16. Total assets in Birr _____

17. Indebtedness

S. No.	Birr	Purpose of Borrowing	From whom
a.	< 1,000.00		
b.	1,000.00 - 5,000.00		
c.	5,000.00 – 10,000.00		
d.	> 10,000.00		

18. What is the proportion of borrowings from the cooperative?

19. Contact with change agents (development agents)

S. No.	Change agents	Frequently (3)	Occasionally (2)	Never (1)
a.	Extension worker of the government			
b.	Extension worker of NGOs			
c.	Officials of cooperatives			
d.	Officials of small scale industry department			
e.	Agricultural officials			

If other, please specify _____

20. Do you have other means of income? a. Yes b. No

21. If **Q20** is yes, what are the sources

Cooperation Indicators

1. When did you become a member? (Year) _____
2. How many years have you been? (Duration) _____
3. Is your membership in one cooperative only? a. Yes b. No
4. If **Q3** is no, in how many cooperatives you are a member and why?

5. How did you become member

- a. Self interest
- b. Government enforcement
- c. Non governmental organizations help
- d. Other member's persuasion
- e. If other please specify _____

6. If **Q3** is choice a., from where did you get the importance of cooperation?

7. Why you become a member?

(✓ Mark against the correct response)

S. No.	Statements	
a.	Increase farm production and productivity	
b.	Additional income sources	
c.	Enjoy working with others	
d.	Produce high quality goods and services	
e.	Diversify investment portfolio	
f.	Increase market access or bargaining power	
g.	Reduce marketing risks	
h.	Reduce competition among farmers	
i.	Increase member networking and knowledge	

If other please specify _____

8. Did you expect any from the cooperative? 1. Yes 2. No
9. If **Q8** is **yes**, specify what your early hopes were and what you got?
Expectation

What received _____

10. If **Q8** is **No**, specify the reasons why you didn't get your early expectation?

- 1) _____
2) _____
3) _____
4) _____

11. By now, are you happy being a member? 1. Yes 2. No (Explain the reasons why or why not?)

- 1) _____
2) _____
3) _____
4) _____

12. What is your level of satisfaction with the cooperative?

- a. Very much Satisfied
b. Satisfied
c. Somewhat Satisfied
d. Not Satisfied
e. Not at all

13. Specify the reasons for **Q12** if your choice will be either of the two extremes (a and b or c and d).

- a. _____
b. _____
c. _____
d. _____

14. What is your level of communication with the cooperative officials?

- a. Very strong b. Strong c. Satisfactory d. Weak e. No at all

15. What is your level of communication with the cooperative members?

- a. Very strong b. Strong c. Satisfactory d. Weak e. No at all

16. How is your exposure to mass media?

- a. Very good b. Good c. Satisfactory d. Low e. No at all

17. Do you know the constitutions of the general assembly? a. Yes b. No
18. Do you know the purpose of convening the general body? a. Yes b. No
19. Do you know the agenda to be discussed in the general body? a. Yes b. No
20. Do you know the rights of a member in the general body? a. Yes b. No
21. Do you know the duties of the chief executive of your cooperative? a. Yes b. No

PART-II

1. Name of the agribusiness you are dealing with:

- a. _____
- b. _____
- c. _____
- d. _____

2. Specific activity under agribusiness where you are focusing

S. No.		
a.	Production	
b.	Processing	
c.	Threshing	
d.	Distribution	
e.	Marketing	

If other, please specify _____

3. Organizational form of your agribusiness

S. No.	For of Business	
a.	Single proprietorship	
b.	Partnership	
c.	Through Cooperatives	

If other, please specify _____

4. Location of the agribusiness

Name of town: _____

Tabia: _____

Kebele: _____

5. Initial investment (Birr) _____

6. Number of employees you engage in your agribusiness (other than family members)

S. No.	Work Time	
a.	Full time	
b.	Part time	
c.	Occasionally	
d.	Rarely	

7. Date of commencement of the agribusiness _____

8. Net profit / Year

S. No.	From	Birr
a.		
b.		
c.		
d.		
e.		
f.		

9. Are your family members assisting you in the agribusiness? a. Yes b. No
10. If Q9 is yes, how

S. No.	Work time	
a.	Full time	
b.	Part time	
c.	Sometimes	

11. Where do you sell the products? _____
12. Number of local market _____ and large/district market _____ in the worda (district).
13. How far is your agribusiness from the large market? _____ km _____ hrs
14. How do you deliver the inputs and products?
- By man power
 - By animals
 - By vehicles
 - Other, please specify _____
15. The benefits you perceive by doing agribusiness through cooperatives
- _____
 - _____
 - _____
 - _____
 - _____
16. Any idea of starting new agribusiness? a. Yes b. No
17. If Q16 is yes, the name of the agribusiness
- _____
- _____
18. What kind of services are available for agribusiness activities from your multi purpose cooperatives?
- _____
- _____
19. Did you get any training in agribusiness? a. Yes b. No
20. If Q19 is yes, nature of the training
- _____
 - _____
 - _____
 - _____
 - _____
21. If Q19 is yes, who conducted the training?
- Cooperatives
 - NGO
 - Government agents
 - Self
 - Others, please specify _____

22. Major problems you perceive in the progress of your agribusiness

S. No.	Perceived problems	Most important (3)	Important (2)	Less important (1)
a.				
b.				
c.				
d.				
e.				

23. What are your suggestions for the development of agribusiness and related sectors through multi purpose cooperatives?

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

24. Do you follow a participatory approach in taking up agribusiness through multi purpose cooperatives?

- a. Yes
- b. No

25. If Q2 is no, what are the constraints which prevent you from following a participatory approach.

S. No.	Constraints	Very Important (3)	Important (2)	Less Important (1)
a.				
b.				
c.				
d.				
e.				
f.				
g.				

26. Who did fix price for your products? _____

27. Do you have any knowledge about value addition? a. Yes b. No

28. If Q27 is yes, Mention the practices

29. What are possible opportunities of agribusiness in your area

S. No.	Opportunities	Very Important (3)	Important (2)	Less Important (1)
a.				
b.				

PART III

1. Involvement in decision making

Please indicate your involvement in the following areas (A=Always, ST=Sometimes, N=Never)

S. No.	Areas	A (3)	ST (2)	N (1)
a)	Setting the objective of the group			
b)	Deciding the cropping pattern, variety and calendar of activities			
c)	Estimating the operation-wise expenditure and labour requirement for cultivation			
d)	Deciding the use of fertilizer, p.p. chemicals and agricultural implements			
e)	Planning alternate means for storage and marketing			

2. Involvement in implementing decisions

Please indicate your involvement in the implementation of the following group activities.

S. No.	Activities	A (3)	ST (2)	N (1)
a)	Are you actively involved in achieving the objectives of the group?			
b)	Are you involved in implementing the cropping patterns, choice of variety and calendar of operations as per group decision?			
c)	Do you implement the decisions of the group with respect to fertilizer application, plant protection and use of agricultural implements?			
d)	Do you share your responsibility with respect to arrangements for storage and marketing?			
e)	Do you personally involve in group action by sharing money and labour?			

3. Involvement in monitoring and evaluation

Please indicate your degree of involvement in the following areas

S. No.	Areas	A (3)	ST (2)	N (1)
a)	Watching the progress of implementation of group activities in relation to the objectives / goals			
b)	Assessing the suitability of technology / skills and demand for new technology			
c)	Helping in developing operational mechanisms for implementation of the programs			
d)	Analysis of feed back and review			
e)	Appraisal of results			

4. Sharing of responsibility

Please indicate the extent of your agreement or disagreement to the following statements.

SA=Strongly Agree, A=Agree, UD=Undecided,, DA=Disagree, SDA=Strongly Disagree

S. No.	Areas	SA (5)	A (4)	UD (3)	DA (2)	SDA (1)
a)	A member should be ready to accept any responsibility entrusted to him/her by the group					
b)	A member should voluntarily come forward to accept the responsibility in implementing group decisions.					
c)	Sub groups are to be formed for execution of decisions in the group.					
d)	A member should try to keep away from taking any responsibility in implementing group decisions by persuading others to do it.					
e)	Members of the group should be willing to accept joint liability by sharing risk, cost and benefits of the group activities.					

5. Communication Behaviour

a. Information input

Please indicate the sources from where you have received information regarding technical aspects of crop production. (MO=Most often, O=Often, ST=Sometimes, R=Rarely, N=Never)

S. No.	Sources	MO (5)	O (4)	ST (3)	R (2)	N (1)
a)	Group leaders/ Group members					
b)	Neighbours/ Non-group members					
c)	Agricultural officers/ Agricultural Assistants/ Other extension agents					
e)	Newspapers/ agricultural periodicals/ Leaflets/ Bulletins Campaigns, demonstrations, seminars & exhibitions.					

b. Information processing

Have you felt difficulty at anytime in understanding the technical aspects of crop production in the following aspects? Please indicate your response by marking (✓) in the appropriate column.

S. No.	Items	MO (5)	O (4)	ST (3)	R (2)	N (1)
a)	Information about the characteristics of HYVs of different seeds you use					
b)	Information about recommended dose of manures and fertilizers of different seeds you use					
c)	Information about the plant protection measures of different seeds you use					
d)	Information about agronomic practices of different seeds you use					
e)	Information pertaining to the irrigation practices different seeds you use					

c. Information output

How often did you communicate the technical information pertaining to the improved agricultural practices to the following personnel.

S. No.	Personnel	MO (5)	O (4)	ST (3)	R (2)	N (1)
a)	Friends/ Neighbours					
b)	Group members/ Group leaders					
c)	Non-group members					

d. Information feedback

How often did you receive the response, opinions, feelings, doubts, ideas, thoughts, and comments about improved agriculture practices from others. Please put a mark (✓) in the appropriate column.

S. No.	Methods of information feedback	MO (5)	O (4)	ST (3)	R (2)	N (1)
a)	Through informal discussion					
b)	Through discussion during home visits/ farm visits					
c)	During group meetings/ trainings					

6. Promptness and regularity in attending meetings

S. No.	Statements	A	ST	N
a)	Do you attend the group meetings?			
b)	Do you come to attend the meetings in the fixed scheduled time and leave the meeting only after the meeting is over?			
c)	Do you keep attending the meetings if deliberations of the meetings are not much relevant to you?			
d)	Do you try to attend the meetings even if you have some personal inconvenience.			
e)	Do you try to attend the meetings even if the meetings are convened in a distant place or a place which is not of your choice?			

7. Leadership propensity

S. No.	Statements	A (3)	ST (2)	N (1)
a)	Do you lead group meetings and discussions?			
b)	Are you available to group members at anytime to extend necessary help to them?			
c)	Do you guide and influence the group members in taking decisions?			
d)	Do you feel that other members in the group are convinced by you?			
e)	Do you think that you can change the attitude of others in the group?			

8. Empowerment

- 1) Do you have sufficient chances for trainings to upgrade skills of activities?
- | | |
|---------------------------------|--------|
| (a) Crop production | Yes/No |
| (b) Marketing | Yes/No |
| (c) Processing | Yes/No |
| (d) Managerial aspects of group | Yes/No |
- 2) Do you have access to information on group related office procedure, maintenance of accounts and conduct of meetings?
- | |
|--------|
| Yes/No |
|--------|
- 3) Do you have the right to involve in policy decisions of group?
- | |
|--------|
| Yes/No |
|--------|
- 4) Are you aware of the bye-laws, rules, and regulations of the group?
- | |
|--------|
| Yes/No |
|--------|

9. Conflict Resolutions

S. No.	Statements	A (3)	ST (2)	N (1)
a)	Important group decisions are taken by arriving at a consensus among members			
b)	Personal issues are separated from group issues for discussion in group meetings			
c)	Members will follow the group norms to enforce discipline while conducting meetings			
d)	Members are free to express their opinions during group meetings			
e)	There will be no coercion or compulsion to accept opinions.			

10. Competitive Spirit

S. No.	Statements	SA (5)	A (4)	UD (3)	DA (2)	SDA (1)
a)	The key points of success in farming should not be divulged to other members					
b)	A better yield in comparison to the neighbours brings more prestige.					
c)	It is of no use to keep information on what others are doing					
d)	Crop competition should be organized for all important crops					
e)	Better farming provides opportunity for recognition by the extension officers					
f)	It is not good for a farmer to become too ambitious in life					

Participation Efficiency

Participation Efficiency- refers to the propensity of the members to actively associate in planning execution and monitoring and evaluation of activities related to farmer's groups.

S.No.	Components	Most relevant (5)	More relevant (4)	Relevant (3)	Less relevant (2)	Least relevant (1)
1.	Involvement in decision making - refers to the involvement of the members in generation of ideas, evaluation of options and making choice from among options.					
2.	Involvement in implementation of decision – refers to the extent of physical and moral presence, involvement in physical work and sharing of responsibility by the member in group activities					
3.	Involvement in monitoring and evaluation – refers the involvement by the member in reviewing progress of implementing the programmes, suggesting modifications and evaluating the achievements with respect to group goals.					
4.	Promptness and regularity in attending meetings – refers to the frequency, punctuality and readiness of the member in attending the group meetings.					
5.	Communication behaviour – refers to information listening, seeking, processing and sharing behaviour by the member in the group.					
6.	Sharing of responsibility – refers to the processes involved such as voluntarism and capability – potentiality considerations in sharing of responsibilities by the member in the group.					

7.	<p>Conflict resolution- refers to the availability of techniques/methods to overcome disagreement, disputes, clashes, quarrel or difference of opinion in group activities.</p>					
8.	<p>Competitive spirit – refers to the competitive nature of members in achieving the objective of each task in a better way.</p>					
9.	<p>Empowerment – refers to the extent to which the group members have the authority to get involved in decision making and in implementing the programmes.</p>					
10.	<p>Leadership propensity – refers to the degree of ability of the member to influence others in the group in deciding and implementing group activities.</p>					

FOCUS GROUP DISCUSSION

1. What is your knowledge regarding the cooperative principles and values?
2. What is the participation of each and every member in your specific multi purpose cooperative?
3. What is the role of multi purpose cooperatives in development of agribusiness in Degua Tembien woreda?
4. What is your suggestion in assuring the sustainability of the agribusiness activities in your woreda?
5. How do you see the relationship:-
 - i. Among members
 - ii. Between members and management body
 - iii. Between members and cooperative promotion bureau of the woreda
 - iv. Between members and non members in the same woreda
6. What advantages do you get so far, by becoming a member of the specific multi purpose cooperative in your woreda?
7. Do you encourage non members to join your multi purpose cooperative?
8. How do you see the women participation in your multi purpose cooperatives?

Table 1. List of multi purpose cooperatives in Degua Tembien Woreda

S No.	Name of Tabia	Name of the Coop	Year of Registration (year E.C.)	Year of Legal Issue	No. of Members			No. of Family			Registration Fee		Share Value		Initial Capital	
					Male	Female	Total	M	F	T	Birr	Cents	Br	C	Br	C
1	Limeat	Hibret	10/09/89	1990	908	337	1245	1877	1610	3487	2490	00	24900	00	27390	00
2	Hadinet	Ruba-Weyni	10/09/90	1990	579	241	820	1851	1759	3610	1640	00	16400	00	18040	00
3	Seret	Debre-Birhane	10/09/90	1990	501	63	564	1777	1361	2838	1128	00	11280	00	12408	00
4	Mahbereselassie	Shewit	05/11/89	1989	451	87	538	1354	1279	2633	1076	00	10760	00	11836	00
5	Arebay	Fre-Kalsi	27/10/92	1992	270	121	391	917	907	1834	782	00	7820	00	8602	00
6	Simret	Brhan	27/10/92	1992	260	51	311	788	809	1597	622	00	6220	00	6842	00
7	Aynimbirikekin	Fana	09/09/90	1990	527	156	683	873	890	1763	1366	00	13660	00	15026	00
8	Hagere-Selam*	Hatsey-Yohannis	08/08/92	1992	110	349	459	329	399	728	918	00	9180	00	10098	00
9	Adi-Azmera	Adi-Azmera	21/02/95	1995	515	22	537	1461	1419	2880	684	00	6870	00	7554	00
10	Mizan	Kokob	11/08/93	1993	174	53	227	501	442	943	454	00	4560	00	5014	00
11	Mizan-Berhan	Mizan-Berhan	20/10/94	1994	411	195	606	1019	1022	2041	606	00	6330	00	6936	00
12	Mikiel-Abay	Selam	11/01/91	1991	445	82	527	1328	253	1581	1054	00	11400	00	12454	00
13	Melf	Fryat	19/04/90	1990	649	221	870	1717	1756	3475	1740	00	18320	00	20060	00
14	Walta	Miebale	20/09/90	1990	566	37	603	1579	230	1809	1206	00	12060	00	13266	00
15	Emni-Ankelalu	Awet	04/10/92	1992	478	90	568	1510	1377	2887	1136	00	11360	00	12496	00
16	Debre-Nazreth	Qolia	20/10/94	1994	625	112	737	1270	1174	2444	737	00	7860	00	8597	00
Total					7469	2217	9686	19851	16689	36540	17639	00	178980	00	196619	00

* changed to small and micro enterprises and joined the trade and industry.

Sources: Cooperative promotion bureau of the Woreda (2000 E.C.)

Table 2. List of Saving and Credit Cooperatives in Degua Tembien Woreda

S No.	Name of Tabia	Name of the Coop	Year of Registration (year E.C.)	No. of Members			No. of Family			Registration Fee		Share Value		Saving Capital	
				Male	Female	Total	M	F	T	Birr	Cents	B	C	B	C
1	Limeat	Tembien Terei	Jan, 1993	15	5	20	-	-	-	40	00	120	00	400	00
2	Mahbereselassie	Adi-Gezaeti	July, 1993	9	2	11	-	-	-	55	00	220	00	220	00
3	Hagere-Selam	Raeay	Nov, 1994	13	2	15	-	-	-	75	00	60	00	165	00
4	Hagere-Selam	Weyni*	June, 1994	-	20	20	-	-	-	100	00	400	00	400	00
5	Seret	Qorar	July, 1995	18	4	22	-	-	-	110	00	400	00	400	00
6	Hagere-Selam	Hagere-Selam	Oct, 1995	27	10	37	-	-	-	370	00	660	00	331	00
7	Mizan	Mizan	April, 1998	20	4	24	-	-	-	120	00	114	00	360	00
8	Hagere-Selam	Admas	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Hagere-Selam	Dinglayit-Baraki	-	-	-	-	-	-	-	-	-	-	-	-	-
Total															

*

Women's saving and credit cooperative

- Serial number 3, 4 & 6 are changed to small and micro enterprises and joined the trade and industry.

Sources: Cooperative promotion bureau of the Woreda (2000 E.C.)

Table 3. List of other Cooperatives in Degua Tembien Woreda

S No.	Name of Tabia	Name of the Coop	Year of Registration (year E.C.)	Type of Cooperative	No. of Members			No. of Family			Registration Fee		Share Value		Initial Capital	
					Male	Female	Total	M	F	T	Birr	Cents	B	C	B	C
1	Adi-Azmera	Maebel	21/07/96	Sand Mining	38	-	38	77	63	140	460	00	920	00	1380	00
2	Aynimbirikekin	Meaza	03/03/96	Honey	35	3	38	98	89	197	190	00	760	00	950	00
3	Limeat	Tsega	27/01/97	Honey	21	2	23	47	78	125	115	00	920	00	1035	00
4	Mikiel-Abay	Lemlem	27/09/97	Irrigation	19	-	19	52	24	76	95	00	256	50	351	50
5	Hagere-Selam	Tesfa	17/06/95	Construction	14	-	14	22	22	44	350	00	1400	00	1750	00
6	Hagere-Selam	Simret	12/05/96	Construction	14	-	14	34	30	64	560	00	1400	00	1960	00
7	Hagere-Selam	Limeat	14/07/96	Water Construction	12	-	12	11	8	19	300	00	240	00	540	00
8	Hagere-Selam	Yekatit	27/12/96	Hide & Skin	12	-	12	26	29	55	60	00	1380	00	1440	00
9	Limeat	Fre-Limeat	29/03/97	Mills	6	6	12	28	44	72	600	00	25000	00	25600	00
10	Hagere-Selam	Hiwot	29/03/97	Dairy	10	5	15	45	41	86	300	00	3000	00	3300	00
11	Hagere-Selam	Union	27/10/97	Union	3537	756	4293	9396	8804	18200	600	00	5400	00	6000	00
12	Mizan	Limeat Maedin	27/07/99	Stone Mining	30	-	30	180	134	314	600	00	2400	00	3000	00
13	Emni-Ankelalu	Niwres	21/03/99	Sand Mining	-	-	-	-	-	-	-	-	-	-	3000	00
14	Hagere-Selam	Fre-Tsaeri	14/09/99	Construction	12	-	12	35	32	67	240	00	2750	00	2990	00
15	Limeat	Fre-Lekatit	-	Natural Resources	-	-	-	-	-	-	-	-	-	-	-	-
16	Limeat	Fre-Lekatit	26/11/99	Mills	19	-	19	-	-	-	950	00	2660	00	3610	00
Total																

Sources: Cooperative promotion bureau of the Woreda (2000 E.C.)