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**DYNAMICS OF CO-ORDINATION FOR
AGRICULTURAL DEVELOPMENT IN THE
CONTEXT OF DEMOCRATIC
DECENTRALIZATION**

**By
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THESIS

**Submitted in partial fulfilment of the
requirement for the degree of**

Doctor of Philosophy in Agriculture

**Faculty of Agriculture
Kerala Agricultural University**

**Department of Agricultural Extension
COLLEGE OF HORTICULTURE
VELLANIKKARA, THRISSUR-680656
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2004

Affectionately dedicated to my beloved parents

Late Madhusudan Roy

Late Biswamber Roy

Smt. Basanti Roy

&

Smt. Jharna Roy

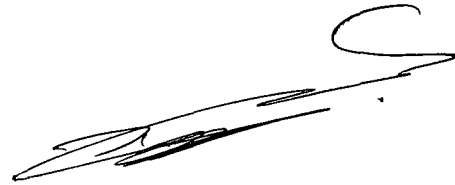
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DECLARATION

I hereby declare that this thesis entitled “DYNAMICS OF CO-ORDINATION FOR AGRICULTURAL DEVELOPMENT IN THE CONTEXT OF DEMOCRATIC DECENTRALIZATION” is a bonafide record of research work done by me during the course of research and, that the thesis has not previously formed the basis for the award to me of any degree, diploma, fellowship or other similar title, of any other University or Society.

Vellanikkara
31.3.2004.



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CERTIFICATE

Certified that this thesis, entitled “**DYNAMICS OF CO-ORDINATION FOR AGRICULTURAL DEVELOPMENT IN THE CONTEXT OF DEMOCRATIC DECENTRALIZATION**” is a record of research work done independently by **Mr. Sunil Kumar Roy**, under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to him.

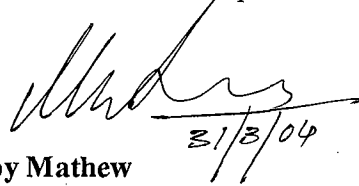


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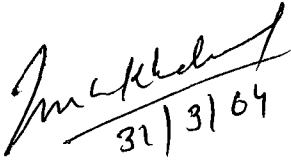
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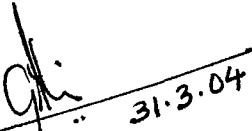
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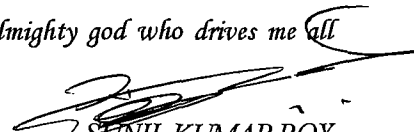
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ABBREVIATIONS

- BARS:** Behaviourally Anchored Rating Scale
- NABARD:** National Bank for Agriculture and Rural Development
- KLDC:** Kerala Land Development Corporation
- KAIC:** Kerala Agro. Industries Corporation
- UIC:** United India Insurance Company
- NIC:** National Insurance Company
- NIAC:** The New India Assurance Company
- KSEB:** Kerala State Electricity Board
- KFRI:** Kerala Forest Research Institute
- KILA:** Kerala Institute of Local Administration
- KVK:** Krishi Vegyan Kendra
- DRDA:** District Rural Development Agency
- DCP:** District Credit Plan
- SGRY:** Swampoorna Grama Rozgar Yojana
- SGSY:** Swarna Joyanti Swrozgar Yojana
- IAY:** Indira Awaz Yojana
- UNDA:** United Nations Development Assistance
- SENA:** Self Employment and Need Assessment

Introduction

CHAPTER I

INTRODUCTION

“Lack of proper co-ordination among the agencies engaged in agricultural development has resulted in the recording of the lowest agricultural productivity in the country”

Gowri Amma, Honourable Minister of Agriculture, Kerala.

Agricultural development has been recognized as a multidisciplinary and complicated process, which includes besides extension educational works, activities like supplies and services, all of which have to be simultaneously promoted. It is thus imperative that different agencies have to participate and play their part judiciously, in order to make a programme of agricultural development a success.

A single agency cannot perform all activities effectively. Co-ordination can accomplish the desired interaction, integration, co-operation/or collaboration among agencies involved in agricultural development.

Co-ordination connotes the vital function of keeping different parts of administration attuned to each other and establishes the harmonious relationship between the efforts of individuals and groups for the accomplishment of objectives of the organization (Ray, 1999).

Co-ordination seeks to bring about unity in purposes in order to achieve the common objectives effectively. Co-ordination is the most facilitating, yet most delicate intellectual exercise among all the activities in agricultural development (Muttalib, 1990).

Co-ordination is a dynamic and continuous process. It is a running thread that interweaves various levels together and thereby becomes a grand vehicle for affected equilibrium in the organization as a whole (Metcaf, 1996).

Co-ordination links related elements together, so that their collective impact and accomplishments will be greater than if they acted separately.

Lack of co-ordination among agencies has hampered delayed or frustrated effort to develop joint programmes (Morey, 1998).

Kerala is one of the smallest states in South India comprising the geographical area of 38,863 square kilometers. Agriculture holds the key to the overall economic development of Kerala. Agriculture accounts for 58 percent of the state's income (Saxena, 2002).

Over the years several agricultural development programmes have been implemented viz., in 1952, Community Development Programme, National Extension Service in 1953, Intensive Agricultural District Programme in 1961 and Intensive Agricultural Area Programme in 1967. During 1968, Multiple Cropping was launched, Small Farmers Development Agency (SFDA) in 1971, Command Area Development Programme (CADP), Drought Prone Area Programme (DPAP) during the fourth and fifth five year plans in 1972, Special Agricultural Development Unit (SADU) in 1976, Ela Programme and Training Rural Youth for Self-Employment (TRYSEM) in 1979, Integrated Rural Development Programme (IRDP) getting launched in 1979, National Rural Employment Programme (NREP) in 1980, Training and Visit System in 1981, Development of Women and Children in Rural Areas (DWCRA) in 1983, 'Krishi Bhavan' programme in 1987, Watershed Development Project in 1991, Kerala Horticultural Development Programme in 1993 and Green Farm in 1994.

In 1995 the government decentralized powers to the District Panchayats, the Block Panchayats and the Grama Panchayats for effective agricultural development. Accordingly, government has been providing the necessary funds to all agencies for implementing agricultural development activities but performance has been far from satisfactory in achieving development results (Gill *et al.*, 1982; Mitra and Satpathi, 1985; Kunju, 1989; Muttalib, 1990; Morey, 1998; Burton, 2000). They identified that co-ordination is the missing element in agricultural development and consequently intra and inter agencies disharmony and conflicts are gradually increasing.

Lack of co-ordination among agencies led to the partial or incomplete implementation of programmes and projects.

Conflicts for power and importance where heads/in-charges of the agency, specially the more pushing and vigorous ones indulged in empire building seeking constantly to expand the sphere of their own agency by adding to it new activities impinged upon the jurisdiction of other agencies.

All the panchayat offices at three levels viz., district, block and gramam are independent setting by government i.e., self governing system. District Rural Development Agency (DRDA) is implementing poverty eradication programme through different schemes namely; Swarna Jayanthi Sworzgar Yojana (SGSY), Swampoorana Grama Rozgar Yojana (SGRY), Indira Awaz Yojana (IAY), Employment Assurance Schemes (EAS) at block and grama panchayat levels.

Many related agencies namely; Department of Agriculture, Animal Husbandry, Fisheries, Rubber Board, Sericulture, Coir Development, Dairy Development, Co-operatives, Banking Agencies, Agricultural Universities and its research stations have remarkably improved the availability of information on modern technology in Kerala. Despite that production, supply, marketing, processing are now questionable (Ramachandran, 1997).

Agricultural development calls for a systematic approach through co-ordination of different agencies involved in agricultural development. Effective co-ordination can definitely alleviate the unhealthy situation through synchronizing group efforts and establishing harmonious relationship among various agencies involved in agricultural development.

Statement of the problem

The committee on “Decentralization of Powers” dealing with “Strengthening of Professional and Ministerial Support to Local Government” has given detailed recommendations on restricting of Development Departments in tune with the functional responsibilities devoted to local governments under the Kerala Panchayat Raj Act, 1994 and the Kerala Municipality Act, 1994. Accordingly, in most of the agricultural development agencies like Agriculture, Dairy Development, Animal Husbandry, Fisheries, Rural Development, Soil Conservation, Co-operation, Irrigation etc. all the field level functions and officials have been transferred to the local governments.

Conceptually, the Kerala local government system does not envisage a hierarchy but provide for simultaneous existence of different levels of local government with their own functional domains. Yet, the District Panchayat has to play a lead role by motivating the Block Panchayats, the Grama Panchayats and the urban local bodies to develop a common vision for the progress of the District.

A co-ordination committee organizes a meeting every month involving all those agencies under the control of District Panchayat at all panchayat levels such as, District, Block and Gramam. But committees are not bearing the expected fruit.

The personnel at all panchayat levels seem to be doing activities independently. Therefore, there is an urgent need for systematic study of co-ordination among the

agencies involved in agricultural development. It is equally important to design an objective method to measure the level of co-ordination for the same.

In this context, it is essential to study the level of co-ordination, identify gaps, problems, factors and indicators related to various dimensions of effective co-ordination namely; structural, functional, technological and psychological and socio political among the agencies involved in agricultural development. In the light of the above background the researcher has taken up the study entitled “Dynamics of co-ordination for agricultural development in the context of democratic decentralization”.

The present study was thus conceived with the prime purpose of dissecting and anatomizing the subtleties and intricacies of co-ordination activities among the agencies involved in agricultural development. It seemed meaningful and appropriate considering the changing context of agricultural development efforts in the state and the vital role played by the officers-in-charge/representatives of the agencies involved in agricultural development in these efforts.

By conducting the study we would be able to measure the level of effective co-ordination among the agencies involved in agricultural development through constructing a multidimensional scale, identify the gaps, problems, essential factors, indicators for effective co-ordination and suggest a model for the same among various agencies involved in agricultural development leading to better productivity and prosperity in the farming sector. Hence, the present study was designed with the following specific objectives:

1. To construct a multidimensional scale to measure the level of co-ordination among various government agencies involved in agricultural development
2. To analyze the factors and identify the indicators of effective co-ordination related to each dimension.

3. To identify the gaps in co-ordination and explore the problems among various government agencies involved in agricultural development.
4. To suggest a model for effective co-ordination among various government agencies involved in agricultural development.

Scope of the study

Hence an in-depth analysis of sub-dimensions under the major dimensions namely; structural, functional, technological and psychological and socio political of co-ordination for agricultural development and their perceived importance in deciding the final quality of research attempted in the present study may contribute in a big way in co-ordinating agricultural development activities in the long run. Determining their discriminatory power, identifying principal components and possible grouping/category among them, all of which may turn out to be of great value in identifying deficiency areas and working on them for augmenting co-ordination efficiency. Studies of co-ordination aspects have been scarce and intermittent after decentralization of powers to the local government bodies.

A study of this kind has not been attempted in a scientific manner in Kerala, as well as in the country so far as to the best knowledge of the researcher. A standardized and multidimensional composite measurement device meaningfully and rationally combining the perceptions of members of agencies involved in agricultural development and capable of being applied by self to assess one's own level of co-ordination is probably a pioneering venture in this line. The results of this investigation would reveal the level of co-ordination of the officers-in-charge/representatives of various agencies involved in agricultural development. Moreover, explored important factors, indicators, gaps in co-ordination may prove invaluable for the officers-in-charge/representatives of the agencies in co-ordinating

agricultural development activities. It would also reveal the problems/constraints; they are facing in performing these co-ordination activities and pertinent suggestions/guidelines to overcome these constraints.

The scale constructed by the researcher to quantify the level of co-ordination of the officers-in-charge/representatives of agencies involved in agricultural development is endowed with many unique features and is expected to open up new vistas in understanding this important concept. It would be immensely useful for researchers interested in taking up further research in this challenging area.

It is believed that, this study would contribute in a big way to the understanding of reality of co-ordination for policy makers, planners, extension administrators, educationalists and others who are involved directly or indirectly in implementing agricultural development programmes and to take appropriate decisions at higher levels to what extent and in what form/manner/how the co-ordination activities can be improved for the officers-in-charge/representatives of various agencies involved in agricultural development.

Limitations of the study

No human effort is devoid of limitations and this study is no exception. Man's experience with knowledge proves again and again that the more he knows, the more he finds he has yet to learn. As one becomes familiar with a subject, one also becomes conscious of its limitations. The *expost facto* research design followed in the study itself has its own lacunae, though it is the only suitable design for this type of study.

As the study formed a part of the doctoral degree programme, the time and other resources at the disposal of the student researcher were limited. Again considering the peculiar nature and intricacy involved in the phenomena to be explored a study like

this demands an analysis in depth rather than in spread. Therefore out of fourteen districts in Kerala, only Thrissur district has been purposively selected as the locale of the study. Therefore findings have to be viewed in the specific context of the conditions prevailing in the area and perhaps may not be generalizable for a wider geographical area.

The researcher also admittedly feels that since the investigation was completely based on the expressed responses of the officers-in-charge/representatives of various agencies involved in agricultural development, it may not be free from their personal biases and prejudices. However, careful and vigorous procedures have been adapted to carryout the research as objectively as possible. In spite of these, it is believed that the findings depicted and the conclusions drawn in the present study would stand the test of more vigorous field observations.

Presentation of the study

The report of the study has been spread out under five chapters as given below:

The first chapter deals with the introduction, where in the statement of the problem, objectives, the scope and limitations of the study are discussed. The second chapter covers review of the related studies in the light of the present investigation. The third chapter relates to the details of the methodology used in the process of investigation, followed by the results and discussion of the findings simultaneously in the fourth chapter and fifth chapter gives a summary of the study followed by the references and appendices.

*Review of
Literature*

CHAPTER II

REVIEW OF LITERATURE

Foundation of any systematic scientific inquiry depends upon studies conducted in the past. The main objective of this chapter is to review the theoretical and empirical information available from related or partially related studies. Such a recapitulation will serve as a basis for delineating an ideal conceptual framework for the present study and relating its empirical findings with those of earlier investigations.

Studies on application of the principles and practices of scientific management in running development agencies did not seem to have caught the imagination of investigators to any appreciable degree, especially so in the case of governmental and semi or quasi governmental agencies. Hence, there was a paucity of research studies in the area of co-ordination, as a management function, and practically no research studies were available on dynamics of co-ordination for agricultural development in the context of democratic decentralization, because democratic decentralization was implemented all over India only a few years back. However, efforts have been made to present the available relevant literature on co-ordination and related aspects under the following major headings keeping in mind the objectives of the study.

- 2.1 Concept of co-ordination and its related aspects
- 2.2 Measurement of co-ordination
- 2.3 Factors associated with effective co-ordination
- 2.4 Indicators of effective co-ordination
- 2.5 Gaps in co-ordination between and among agencies involved in agricultural development

- 2.6 Problems and constraints in effective co-ordination
- 2.7 Suggestions/guidelines for effective co-ordination
- 2.8 Conceptual model of the study
- 2.9 Hypotheses of the study

2.1 CONCEPT OF CO-ORDINATION AND ITS RELATED ASPECTS

2.1.1 Meaning of co-ordination

Many books on management have stressed the importance of co-ordination as a function of administration. Sears (1950) stated that co-ordination is the task of bringing things together in harmonious relationships to the end that they would function together effectively. According to Beers, (1952) the concept of co-ordination stands for “Correlation” involving “agreement and parallel action without force or power”. In development administration, it has been recognized as an important activity. Lack of co-ordination among different departments has been pointed out in many reports of the Programme Evaluation Organization (PEO), which has adversely affected the programme.

Mellet (1954) interpreted co-ordination as “the careful overview or relationships among operating units to ensure harmonious collaboration”. The famous POSDCORB mentioned by Gullick (1957), lists co-ordination as one of the major functions along with others.

According to Simon, (1957) the term co-ordination refers to activity in which participants share a common goal, and co-ordination refers to the process of informing each as to the planned behavior of others. He defined co-ordination as a process of developing working relationships between or among institutions in order to synchronize their programmes and activities to reach common objectives.

United Nations Development Assistance (UNDA) (1957) under its technical assistance programme, defined co-ordination as “spirited joint effort” emerging from “dedication to the achievement of common goals and from respect for one another’s contribution”.

According to Mishra (1959) “co-ordination is a facilitating function or a device to ensure the achievement of goals within stipulated time and cost parameters.

Mukherji (1961) described co-ordination as the means whereby different entities may achieve concerned action without looking their organization entity.

Prakash (1961) opined that co-ordination is between equals or near equals working together in which each agency retains its entity, objectives and function as well as responsibilities. It, however, willingly surrenders a small part of its individuality in return for the advantages of working together with other agencies, thereby ultimately securing better service for all concerned.

Newman (1963) observed that co-ordination involves the synchronizing or dove tailing of interdependent activities and demands harmonized programmes and policies. He considered co-ordination as one of the primary goals of every manager and a condition that permeates all phases of administration.

According to Reid (1964), co-ordination is a system of exchange between organizations in which each agency, lacking particular resources available for achieving its goals, turn to other agencies to achieve them.

Dubhashi (1966) expressed that co-ordination is the conscious and deliberate attempt to systematically link up a variety of activities of diverse agencies not necessarily subject to the control of single authority, with a view to realizing their common objectives.

Seshadri (1966) described co-ordination as a measure of managerial talent and administrative competence. It is also a test of the spirit of purposefulness that imbues all those working in an organization.

According to Dale (1978) "co-ordination means controlling all efforts towards the common goal. He stated that "Without constant efforts toward co-ordination, there is likely to be duplication of work and work at cross process"" He further remarked that co-ordination is needed to relieve difference of opinion.

According to Koontz *et al.* (1982) "co-ordination is achieving harmony of individual efforts with group efforts towards the accomplishment of group purposes and objectives.

Dahama and Bhatnagar (1985) stated important aspects of co-ordination, viz.,

1. Clear channels of communication among agencies involved in agricultural development.
2. Clear role system.
3. Ends and objectives of related programmes.
4. Orientation of personnel through seminars, conferences, using mass media, demonstration and socio drama.
5. Administrative control
 - a) Interpretation and transmitting policy
 - b) Budgeting control
 - c) Following line of authority
 - d) Co-ordination committee at all levels.

e) Unbiased and suitable personnel selection for co-ordinating their efforts.

According to Muttalib (1990), “co-ordination is the most facilitating, yet delicate intellectual exercise among all the activities in development administration. It seeks to bring about unity in purposes in order to achieve the common objectives effectively”. He further stated that a co-ordinating device might assume one of the three forms, integration, compromise and domination. He opined that an ideal form of such a device is integration in which every functionary may have a feeling of participation.

According to Gupta, (1992) “co-ordination is fundamental to any organization and a device need for effective and efficient administration. It is a pivot around which the whole machinery of developmental programmes revolves”.

According to Halmann, (1992) “co-ordination is the orderly synchronizing of efforts of the subordinates to provide the proper amount, timing and quality of execution so that their unified efforts lead to the stated objectives.

Sharma (1992) defined that “co-ordination is a process meant to accomplish the desired interaction, co-operation and/or collaboration to working in union with one focus in view or for achieving some common goals or target or aim or theme or purpose or objectives”.

Metcaf (1996) stated “co-ordination involves the exercise of authority by the incumbent of the office over lower levels, on the one hand and discharging of responsibility in relation to higher levels, on the other. Their co-ordination is a running thread that interweaves various levels together and thereby, become a grand vehicle for affected equilibrium in the organization as a whole.

Tripathi and Reddy (1997) observed that “Co-ordination is the management of interdependence in work situations. It is the orderly synchronization or fitting together of the interdependent efforts of individuals in order to attain a common goal. They said that co-ordination is different from co-operation. The former needs interdependency among agencies whereas the latter provides proper direction to all members of the group to apply the right amount of efforts at the right place, at the right time. They further stated that among three types of interdependence, viz., pooled, sequential and reciprocal, the latter is badly needed for effective co-ordination.

According to Ray, (1999) co-ordination means establishing harmonious relationship between the efforts of individual and groups for the accomplishment of objectives of the organizations.

According to James *et al.* (2000) “co-ordination is the integration of activities of the separate parts of an organization to accomplish organizational goals.

Prasad (2000) stated that co-ordination connotes the vital function of keeping different parts of administration attuned to each other. It is the essence of management rather than one of its functions. Co-ordination, being synchronization efforts of human beings in an organization is intrinsic to management as management also tries to synchronize group efforts for achieving organizational objectives. Co-ordination is the process of integrating the objectives of separate work units, departments or functional areas in order to realize the organizational goal effectively.

The above reviewed studies depict the meaning of co-ordination and some basic requirements for achieving co-ordination.

2.1.1.1 Meaning of dynamics of co-ordination

According to Dale, (1978) 'dynamics of co-ordination' refers to the interaction among members of the organization in a changing perspective.

Koontz *et al.* (1982) stated that dynamics of co-ordination of an enterprise affected the degree to which authority may be decentralized. They argued that strong forces favour the practices of decentralization. The nature of organized efforts require co-ordination of people at every level and most of the managers responsible for co-ordination of people are found at middle and lower organizational levels, these cannot function without the authority to manage.

According to Sartain *et al.* (1988) dynamics refers to changing, particularly because of forces within the system, leading to changes. They stated that dynamics is the underlying causes for motivation of behaviour. They are often unconscious.

Tripathi and Reddy (1997) opined that co-ordination should be continuously modified in the light of changes in the internal and external environments and it should not be rigid and static.

According to James, *et al.* (2000) dynamics of co-ordination refers to the view that time and human relationships are forcing management to rethink traditional approaches in the face of constant, rapid change.

The studies reviewed above reflect the need for co-ordination to be dynamic enough to meet the emerging challenges of rapid, grueling changes.

2.1.1.2 Concept of democratic decentralization

According to Dale (1978) “decentralization is a system of management in which decisions are passed down to lower levels to achieve the broad goals of an organization.

Nandedkar (1979) observed that Royal Commission on decentralization looked at the problems in terms of administrative improvement and not in the context of the rising political aspirations of the people.

According to Koontz, *et al.* (1982), ‘democratic decentralization’ refers to the decentralization of authority from higher level to lower levels i.e., the tendency to disperse decision-making authority in an organizational structure.

Isaac (1996) opined that implementation of various development programmes should be with the active participation of the people where people are involved in the plan formulation stage up to evaluation so that each and every individual involved in it is benefited.

According to James *et al.* (2000) “decentralization is the delegation of power and authority from higher to lower levels of the organization, often accomplished by the creation of small self-centered organizational units for conducting teamwork in order to accomplish the organizational broad goals.

Santhos (2000) reported that ‘Sen committee’ was formulated to streamline People’s Plan (PP) in Kerala in 1996. Their unique programme to strengthen the decentralization process through the local bodies is no more an experiment; it has become an integral part of people's life in Kerala. Ensuring maximum participation of people to discuss local development problems and governance issues is the hallmark of this movement. The committee enunciated eight principles of decentralization viz., functional, financial and administrative autonomy, subsidiary, role clarity,

complementarity, uniformity of norms and rules, maximum direct participation of people, accountability and transparency through right to information.

The People's Plan has several unique features. High autonomy geared to the local bodies to determine their priorities is the most important one. It has shown that the planning process is not to be centralized but must start with maximum involvement of the masses. People's participation is not just in electing their representatives. Peoples participation happens when ordinary people come together in Gramasabhas at regular intervals, when non-official experts and volunteers prepare the reports, formulate projects and draft the local plan.

Implementation of development programme through decentralized planning process ensures the maximum involvement of the people. Success of any development programme depends mainly on the participation of the people. By the decentralization of power, people are getting more and more chances to be involved in the different development projects.

2.1.2 Different types of co-ordination

Murdia (1975) clearly classifies co-ordination under two heads.

2.1.2.1 Intra-agency co-ordination

Intra-agency co-ordination can also be called as intra institutional co-ordination. Intra institutional, that is co-ordination within the agency, can be achieved at two levels (a) vertical and (b) horizontal.

Mellet (1954) has stated that the term intra-agency co-ordination refers to a phase of management as an aspect of supervision.

According to Simon (1957), intra-agency co-ordination deals with synchronizing and unifying the actions of a group of people in the agency. It includes the process of informing each as to the planned behaviour of others. Thus, in an agency,

co-ordination results when the behaviour of an individual is guided by the expectations of the behaviour of other members. As an agency grows in size, the task of co-ordination becomes difficult and special methods have to be designed to bring about intra-agency co-ordination.

Newman (1963) considered intra-agency co-ordination as one of the primary goals of every manager. According to him, co-ordination is not a separate activity but a condition that should permeate all phases of administration.

Seshadri (1966) stated that intra-agency co-ordination is a measure of managerial talent and administrative competence. It is also a test of the spirit of purposefulness that imbues all those working in an agency.

Clough (1968) while describing the concepts in management science refers to intra-agency co-ordination as integrating the activities of the various departments of the agency towards some common formal objective. According to him, this kind of co-ordination demands an adequate system of two-way communication between the executive and the departments under his authority, between the executive and his superior, and between the executive and his counterparts on the same level of the agency.

Koontz and O'Donnell (1972) identified intra-agency co-ordination, as the essence of managership for the achievement of harmony of individual effort towards the accomplishment of group goals. Each of the managerial functions is an exercise in co-ordination.

Sadasivan (1972) describes intra-agency co-ordination, as the dynamic process of bringing together the constituent parts of an agency in harmonious and active

intra-relationship, so that each part in its turn would perform its assigned function within the allotted time towards obtaining the anticipated total results of the whole.

In the dictionary of supervision and management, Banki (1974) describes intra-agency co-ordination as a management process of planning and directing activities towards a unified and harmonious relationship among factors designed to accomplish stated objectives.

Thomas (1975) refers intra-agency co-ordination as one which fits together the subtasks needed to accomplish an overall work objectives. Its purpose is to integrate once again the parts of the task that were separated by the division

2.1.2.2 Inter-agency co-ordination

Mukherji (1961) describes inter-agency co-ordination as the means, whereby; different entities may achieve concerted action without losing their organizational entity. He further explained that it is clearly distinguished by subordinating the different entities or agencies to one authority and achieving concerted action thereby. According to him, co-ordination is needed at two vital points - at the top level of policy making and at the field level of execution.

Prakash (1961) while explaining the term inter-agency co-ordination stated that co-ordination is between equals or near equals working together. In it, each agency retains its identity, objectives and functions as well as responsibilities. It, however, willingly surrenders a small part of its individuality in return for the advantage of working together with other agencies, thereby ultimately securing better service for all concerned.

Reid (1964) stated that integrated inter-agency co-ordination within the conceptual frame work of exchange theory (organizational exchange) as a "system of exchanges between organizations" in which each agency, lacking particular resources available

for achieving its goals, turn to other agencies to achieve them. Further the author while considering the extensiveness of exchange in terms of the quantity and value of resources distinguished three types and level of inter-agency co-ordination.

The first at the lowest level may be called the “ad-hoc case co-ordination” in which co-ordinative action is generated by individual practitioners to meet the needs of their particular clients. Formal inter-agency agreements are not usually involved. A second level may be called “systematic case co-ordination” or “service integration”, in which the goal is to mesh services from different agencies, though the co-ordination activity is still on the same level. Here specific rules and procedures are developed to guide the exchange process among the interested agencies. At this level, inter-agency exchanges are systematic and extensive. A third level may be described as “programme co-ordination”, in which co-ordination is centered on agency programme rather than on individual cases. This level of co-ordination often includes joint agency programme, mutual assistance in development of extension of programme or mutual modification of programme to bring about more rational alignment of agency functions. Inter-agency exchanges at this level may be complex and extensive.

Dubhashi (1966) stated that inter-agency co-ordination is the conscious and deliberate attempt to systematically link-up a variety of activities of diverse agencies, not all necessarily subject to the control of a single authority with a view to realize their common objective.

Prasad (1967) observed in his study that inter-departmental co-ordination is a group effort (between agencies), through properly streamlined actions for accomplishing a common end.

Coombs and Ahmed (1974) used the term “integration” to mean inter-institutional co-ordination. According to them, the term ‘integration’ does not imply the consolidation of functions in one agency. It simply means linking related elements

together so that their collective impact and accomplishment will be greater than if they acted separately. These investigators have stated some basic requirements for better integration of different agencies in the context of non-formal education activities, as follows.

1. Share a broad conception of development through a better understanding and faith on integrated approach.
2. Necessary information flow i.e., communication, both formal and (more of) informal between the participating agencies.
3. Broad participation of the concerned parties achieved through harmonizing policies, plans, procedures etc.
4. Physical proximity of participating agencies and
5. A single unified management for all concerned activities involved in agricultural development programmes.

Silveira (1974) referred that the term 'inter-agency co-ordination' applies to the specific utilization of resources of several public agencies definable through co-operative arrangements.

Mosher (1975) stated that almost every agri-support agency is complementary with many others. Research results, marketing structures, availability of farm inputs and farm credit, the adequacy of rural roads, and the level of education of farmers limit what an extension service can do. Similar lists of dependencies can be compiled for each other type of activity. Some of the agencies are governmental others may be private. Several of the public agencies are normally in the ministry of agriculture but certain ones are frequently attached to other ministries. Yet the performance of each is affected by the performance of each of the others, interagency co-ordination is therefore highly desirable and one of the strategic tasks of each administrator is, first

to ask himself what he can do to contribute to the co-ordination and second to do what he can about it. He further said that in many instances, interagency co-ordination is impeded by fear that one agency wants to dominate the process. Every one would like to be a co-ordinator; no one wants to be co-ordinated by some one else. He suggested that 'institution building' has become one of the recognized and insistent needs if agricultural development is to proceed and accelerate.

Murdia (1975) conceptualized inter-institutional co-ordination as an interactive process of working together of two or more agencies in pursuit of common or joint goals.

Mathew (1989) opined that when an agency extends its control over the environment, new functions are added within the organization itself, new complexities of structure are created to provide for these functions; new needs for co-ordination with existing structures arise; and new policies must be invested.

Almost all studies reiterate the need for interagency co-ordination, given the fact that agricultural development itself is a multi agency performance

2.1.2.3 Nature of inter-agency co-ordination under different agricultural development programmes

After independence of the country, the centrally powered administrative system had to undergo a change under democratic government, and later on, a new system of development administration came into existence. Under this setup, different development departments had to function in mutual co-ordination with each other to achieve development, particularly in rural areas. But this mutual co-ordination between government agencies and other agencies have proved to be a vexing problem till today. Various reports, studies and observations of different investigators have revealed these problems from time to time. A review of the same has been presented in this part.

Government of India (1952) summarizing achievements and shortcomings in the report provided by the Grow More Food Enquiry Committee commented that the integrated approach in rural development was not realized. The whole campaign was organized on a temporary basis; its execution was entrusted to staff hurriedly got together under different conditions, each set responsible for different programmes. The co-ordination between the permanent state agricultural and other departments and regular state administration was imperfect, except possibly in a few areas. Unity of efforts was thus impaired.

Programme Evaluation Organization (PEO) (1954) in its evaluation report on first year's working of community projects pointed out that the problem of co-ordination had extended from top, down to every village, and as a result, there is mutual uneasiness between the revenue staff and the newly appointed village workers in some areas.

Programme Evaluation Organization's report (1956) revealed that there was a distinct feeling among officers of technical agencies that the introduction of Block Development Officer was removing them from their contact with the ground and that the technical agencies do not have enough of a say in the working of the projects. It had also happened in many cases that the agency personnel had concentrated in the non-block areas, where they had direct control on their specialist staff.

Mishra (1959) ascertained the nature of co-ordination to be good between the officials of agricultural and co-operatives departments in Andhra Pradesh for arranging input supply to farmers.

From the foregoing reviews it may be concluded that after independence there appears to be little mutual co-ordination, integration and co-operation among and between agencies involved in agricultural development, both at the structural and functional level

2.1.3 Concept of co-ordination for agricultural development.

Agricultural development is a comprehensive term. It includes so many issues. Proper co-ordination among agencies involved in agriculture leads to more effective and comprehensive agricultural development. Many scientists describe co-ordination in the light of agricultural development in different ways.

2.1.3.1 Concept of agricultural development

Mosher (1975) stated that in addition to a broad understanding of agriculture, an administrator needs an equally lucid understanding of agricultural development. He further said that at the stage when agriculture is becoming more commercial but large pockets of subsistence agriculture still remain and when purchased inputs are increasingly important in farming, public agri-support programmes are needed with respect to three different purposes.

1. To help get more production out of existing agricultural capacity.
2. To help to increase the capacity of the country for agricultural production and
3. To contribute to adjustment within agriculture and between agriculture and the wider national economy.

Not all agencies can serve all three of these purposes, but each one need to be assessed for what it can and ought to contribute. To be able to do these administrators in all agencies need to have a thorough understanding of agricultural development as a process. He also opined that as one deepens his understanding of agricultural development he can see more easily where and how his own agency does or ought to fit in. At this point, it is important to be acquainted with the administrators of other agencies. The best way to find out is through getting acquainted with the work of all of the agencies whose tasks are needed to one's own, visiting them and talking with

their administrators, one can then begin to consider what modifications in the task and/or programme of his own agency might be desirable.

Shenoi (1975) stated that agricultural development involves a large number of complementary activities to be performed by different units - public, co-operative and private units at different levels. To achieve co-ordination among all these units, the investigator stated three means or approaches for agricultural development

1. Larger delegation of power to the field agencies, situated at district and block levels.
2. Minimizing the number of agencies involved, and
3. Fostering a sense of common purpose and inspiring leadership.

As Weisblat (1975) rightly pointed out, providing effective support for agricultural development usually requires a creative management style that emphasizes adaptability to rapidly changing conditions, delegation of considerable responsibility and sensitivity to local problems and attitude. He also pointed out that lack of skilled managers is retarding agricultural development in many countries.

The National Commission on Agriculture (1976), in its detailed study of agricultural conditions in the country has dealt the subject of inter-agency co-ordination under different agricultural situations and has made some recommendations for agricultural development which may be summarized as follows.

1. Establish an effective set up to draw integrated plan for all concerned parties and to ensure co-ordination in its implementation.
2. Common understanding and agreement on methodology, approach and basic assumptions for formulation of plan proposals among the various working groups.

3. Suitable information and reporting systems need to be evolved so that those responsible for implementation can anticipate difficulties, judge the progress and performance of these programmes in relation to pre-determined targets, with a view to take necessary corrective measures.
4. Appointment of a separate Chief Agricultural Development Officer (CADO) at district and block levels (BADO), mainly for co-ordination, planning and progressing evaluation.
5. Establish a co-ordination committee of representatives of the participating agencies, with Agricultural Development Officer as its chairman.
6. Location of branch offices of different departments, at a central place for facilitating co-ordination through consultation and mutual discussion.

He summarized the inter-agency co-ordination with respect to implementation of agricultural development programmes at the operational level as follows.

1. Each agency to have a clear programme with objectives, which need co-ordination from other agencies.
2. To have knowledge and complete understanding of working of each other agencies.
3. To develop a strategy/plan of work including work procedure, responsibility of each agency etc., i.e., pattern of relationship.
4. Delegation of appropriate authority to the technical personnel to facilitate joint decision making at the operational level.
5. To recognize co-ordinated action as official by all participating agencies.
6. Formation of a co-ordination committee of participating agencies with adequate authority.

7. To prepare a plan for co-ordination committee meetings.
8. To conduct meetings of co-ordination committee according to the plan.
9. To have a common orientation training programme for workers of different agencies.
10. To arrange for adequate and timely supply of funds and input requirements.
11. Physical proximity of participating agencies.
12. To develop an agreed programme of reporting and interpretation to give all agencies their due credit for the progress and accomplishment of the co-ordinated endeavour.

According to Hague *et al.* (1977) agricultural development can be defined as the improvement in productivity of foreign exchange earning crops like coconut and pepper, and thereby enhancing the economic status of farmers, especially small holders.

Sankariah and Deithmuller (1977) reported agricultural development as an outcome of developing people's ability to set up goals make decisions and carry out their plans.

Alexander (1982) observed that agricultural development would lead to

1. The transformation of subsistence agriculture to commercial agriculture.
2. Increase in commercial activities.
3. Increase in decision of labour in agriculture.
4. Transformation of occupational structure.
5. Modernization of beliefs and values.

Sinha (1996) stated that agricultural development is a process, which is continuous and dynamic. Research agency has to start the process by conducting basic and applied research. It is therefore important that researchers identify real problems and issues facing the clients before making a research postulate. This requires a direct linkage of research agency with both clients as well as extension agency.

Suresh (1999) stated that agricultural development is considered as development that occurs in the sphere of agriculture. It is referred to, as the considerable increase in the productivity of crops resulting from modern techniques, which in turn will shape meticulously the socio-economic condition of the farmers. He opined that agricultural development strategy should be developed in such a way so that maximum utilization of local resources by working out optimum combination of enterprises, resources, various methods and practices is possible.

2.2 MEASUREMENT OF CO-ORDINATION

Even though there are number of reports and observations regarding co-ordination in the context of administration of agricultural development programmes in the country, systematic studies using scientific tools and techniques in measurement of co-ordination are lacking. However, some attempts made in this respect are reviewed hereunder.

2.2.1 Measurement of co-ordination through other than scale methods

Prasad (1967) in his study of inter-departmental co-ordination in IADP (Delhi) identified factors, common for both types of co-ordination (inter and intra-departmental) and subjected these factors to the opinion of judges to indicate their relative importance.

Reidel (1969) studied the inter-agency relationships of state and Federal natural resource agencies in South-Eastern Minnesota in terms of scope and pattern of agency activities, perception of interdependencies by personnel of different agencies

and the existing inter-agency relationships at various levels of agencies. The data pertaining to these aspects of study were presented in terms of percentage. No other statistical tool or technique was used to measure co-ordination as such.

Singh (1969) in their study of relative importance of the factors influencing co-ordination among personnel working in the Intensive Agricultural District Programme identified fifteen factors of co-ordination.

In order to judge the relative importance of the fifteen selected factors 'two-stage ranking' was adopted. Further, the scores of the factors were worked out by using matrix analysis. In this study, no further attempt was made to measure the phenomenon of co-ordination. The factors identified and selected in the study were related to intra-agency co-ordination.

Barnabas and Pelz (1970) in their survey of agricultural development programme studied co-ordination, initiative and communication in three North Indian States. The investigators attempted to study co-ordination, in terms of the inter-relations of pairs of functionaries at district, block, tehsil and village levels, the major index of co-ordination devised for the study was the perceived promptness with which an agency in the network was reported to fulfill requests for help in agricultural matters. In this study, a subjective method of getting opinion of respondents was used for assessing co-ordination. There was no attempt to develop and use any objective scale to measure the level of co-ordination.

Sandhu and Gupta (1974) in their study of co-ordination attempted to determine the factors affecting co-ordination, and to study nature and extent of inter and intra departmental co-ordination in the agricultural university. Based on review and discussion with experts, the investigators identified ten factors of co-ordination along with the likely reasons and for the respondents to rank the same.

Silveira (1974) in his study to develop a model for co-ordination of agencies related to specially funded educational programmes studied the programme in twenty countries in U.S.A. The investigator revealed variety of social services utilized by different agencies, the various types of inter-agency contracts existed, areas in which duplication of services existed and the problems of inter-agency agreements. The investigator revealed position regarding above criteria, between different agencies on percentage basis only. There was no attempt to measure co-ordination in any form.

Blumenkrantz (1975) in his organizational analysis of co-ordination of services between a public school system and selected social agencies in one community revealed information about the context, volume and direction of exchange between the schools and four selected social agencies; and the factors that tended to influence the patterns of co-ordination of services. Most of the data had been presented in terms of frequencies. This study also did not involve any measurement of co-ordination.

The foregoing reviews reveal that studies in measurement of co-ordination are scanty. In the existing studies, both types of co-ordination, that is, inter and intra agency had been studied together with the help of common factors, and in a rather subjective way. Following lacunae, therefore, emerge from the above review of literature.

1. Lack of independent study in the field of inter-agency co-ordination, and
2. Lack of an objective instrument to measure the phenomenon of inter-agency co-ordination.

2.2.2 Measurement of co-ordination through developing scale

The study reported by Sandhu and Gupta (1974) had not identified clear-cut factors affecting inter-institutional co-ordination. Their attempt also was to identify factors in a very broad way which might influence inter and intra-institutional co-ordination.

Sawant (1978) developed a scale to measure inter institutional co-ordination with respect to agricultural programme. The twenty-one items selected in the scale constructed were based on judgment from experts in the field of management from various parts of the country. It could therefore, be said that the scale has content validity and thus, useful for general application in assessing co-ordination of any agricultural programme of the country.

Raju (1987) developed a co-ordination scale consisting of five items grouped under the headings viz. i) to name the representatives at the operational level who will co-ordinate the activities, ii) to constitute co-ordination committee with representatives of all participating agencies, iii) to prepare a plan of work for co-ordination committee meetings, iv) to conduct co-ordination committee meetings as per schedule and v) to ensure that representatives of all participating agencies regularly attend meeting.

Krishnamurthy (1991) developed a scale to measure the extent of inter-institutional co-ordination. The findings revealed that there were 42 per cent block demonstrations in the category of high co-ordination, denoting that in such block demonstrations, participating agencies involved worked in good co-ordination with each other. As regards block demonstrations in medium category, the co-ordination between agencies was fair, but only some of the scale items performed in a better way. With respect to block demonstrations in low co-ordination category, the co-ordination between agencies was poor, denoting that the performance of various scale items was also not satisfactory in such block demonstrations.

It may be seen that very few studies related to developing scales to measure the level of co-ordination among agencies involved in agricultural development were available. Those available approached the issue from varying perspectives. Therefore it may be concluded that a multidimensional and standardized co-ordination scale is

essential in order to meaningfully quantify the level of co-ordination among agencies involved in agricultural development.

2.3 FACTORS AFFECTING EFFECTIVE CO-ORDINATION

Since independence, the concept of co-ordination has been discussed in the context of administration of agricultural development programmes. Several academics, observers, researchers and reports have suggested different situations and/or factors, which directly or indirectly affect inter-agency co-ordination. A review of the same has been presented in this part.

2.3.1 Factors affecting inter-agency co-ordination

Litwak and Hylton (1952) observed three factors for bringing about co-ordination among formal agencies, as

1. Agency's interdependency
2. Level of agency's awareness about interdependency
3. Standardization of agency's activities.

Programme Evaluation Organization's report (1957) on the working of community projects and National Extension Service Blocks stated that orientation in the objectives and techniques of community development should be provided to officers at the highest level both generalists and specialists, who are dealing with development activities. The report also emphasized the need for a clear-cut policy to indicate the manner in which co-ordination between different lending departments of the government is to be accomplished.

Based on Simon (1957), it might be stated that the inter-agency co-ordination involves following elements:

1. The relation of the agency's objectives and intermediate goals to those of other agencies.
2. The agency's assessment of the alternatives available to it and to other agencies.
3. The agency's expectations as to the course of action that will be followed by other agencies.
4. In the process of co-ordination, the division of authority must be adapted to the division of work i.e., to the technology of the work process.

Government of India (1958) revealed through the report of Agricultural Administration Committee (AAC) formation of co-ordination committee as one of the effective tools for achieving co-ordination, and observes that for the successful operation of such committee, adequate authority is needed to be vested with the body at all levels, and the frequent meetings on predetermined dates should invariably be held. Further, for obtaining co-ordination between Irrigation and Agricultural Departments, the report recommended that each Superintendent Engineer office for irrigation should have an Agricultural Officer, whose duty should be to serve as a liaison between the agricultural and irrigation departments.

Jha (1958) opined that, if effective co-ordination is to be achieved, there must be arrangements firstly for consultation and co-operation among different committees and departments under which plans are being prepared; secondly, the council must have adequate provision for co-ordinating all plans and policies into one coherent integrated whole; and thirdly, there must be arrangements to ensure that all committees and departments work to consent to carryout approved plans expeditiously, and at a minimum cost.

Mukherji (1961) while commenting upon inter-agency co-ordination in community development programmes identified the following factors to achieve co-ordination.

1. Inter-agency co-ordination is facilitated, if thought of during policy making at the top level and planning at the top as well as operational level.
2. A development plan for operational level should be in consonance with and fit into overall plans of all participating agencies.
3. Teamwork among the participating agencies.
4. A single agency as a common for all the development departments to work after entire developmental needs of the area at the block level.
5. Delegation of appropriate and equal authority to the agencies working at the field level, in order to facilitate joint decision-making.
6. A co-ordination committee of representatives of all participating agencies.
7. A sense of voluntary co-ordination among the participating agencies.

Prakash (1961) stated that where co-ordination exists, teamwork automatically follows. Good teamwork presupposes good understanding. He further stated that good teamwork leads to fruitful co-ordination as follows:

1. Equality or near equality in status, rank etc., not too much disparity in pays and prospects.
2. Conviction or at least strong belief that joint thinking and mutual consultation are productive for far better results than individual departmental thinking, where the objective is development of the community.
3. Common outlook and attitude born of orientation training i.e., belief in teamwork activities.
4. Acceptance of the idea and agency of a co-ordinator or a sort of captain of the team.

5. Laying down details of strategy of work including work procedure, responsibilities of each agency.
6. Technical departments must be given proper status and be consulted on their respective subject matter.

Government of India (1963) revealed through the working group of Inter-departmental and Institutional Co-ordination of Agricultural Production Committee recommended formation of co-ordination committee to review the progress, inter-departmental problems and to define ways and means to improve administrative efficiency. The committee further stated that a single agency as a common agency for development programmes was imperative and that such agency unit should have responsibility and authority over the basic factors of production as well as extension and co-operative services in rural areas.

In the context of need for building external relationship by the enterprise, Newman (1963) opined that no enterprise operates in isolation. Every enterprise has to face the problem of assembling response and as such, the enterprise has to maintain a variety of relationship with other groups, such as informal agreement, formal contacts, the ownership, representation on board of directors, agreement on specific projects etc. For building such relationships, the author suggested some steps as follows:

1. Designing desired relationship
2. Negotiating mutual agreements
3. Maintaining workable relationships

Reid (1964) stated several determinants of co-ordination that directly flow from co-ordination formulated as a system of inter-agency exchanges as,

1. **Shared goals:** When agencies seek similar goals, a strong force to exchange resources to further mutual objectives, is brought into play.
2. **Complementary resources:** Shared goals are necessary but not sufficient for co-ordination. Complementary resources are also a necessary condition for co-ordination. Each agency must be able to provide the other with some resources to achieve its own goals.
3. **Mechanisms for controlling exchanges involved.** This refers to more systematic efforts towards co-ordination, which may take the form of inter-agency agreements, regular case conference, inter-agency committees and other form of programme co-ordination and control of resources other than the elemental level of individual cases.
4. **Domain consensus:** This refers to the degree of mutual understanding and acceptance of one agency with specific goals and functions to implement those goals of another organization with which it has transactions.

For achieving inter-agency co-ordination in the context of Community Development Programme, Dubhashi (1966) stated certain situations as follows:

1. Integrated approach in planning encompassing plans of individual departments.
2. Conscious efforts by the participating departments towards common understanding of the community development programme.
3. Communication - formal as well as informal, between the development departments.
4. Each department to consult the related departments before taking action.
5. Periodic meetings of concerned departments.

According to Pelz, (1966) the pre-requisites of good co-ordination area (i) adequate funds and supplies; (ii) interest and motivation among participants; (iii) good communication between the agencies and between agencies and the cultivators; and (iv) proper delegation of authority.

Prasad (1967) in his study of inter-agency co-ordination in Intensive Agricultural Development Programme (IADP) stated the following factors of co-ordination.

1. Teamwork
2. Aptitude and initiative
3. Methodical and timely action
4. Funds and supplies
5. Capable and co-operative personnel
6. Authority for decision close to operational level
7. Communication
8. Co-ordination committee
9. Supervision
10. Reduction in multiplicity of agencies during same type of jobs
11. Workable and non-conflicting policies
12. Peoples co-operation
13. Simplified procedure
14. Single line of command
15. Desirable load of work

16. Single unified organization

Sandhu and Gupta (1974) in their study of inter and intra departmental co-ordination in an agricultural university identified the following factors affecting co-ordination,

1. Agency
2. Teamwork
3. Funds and supplies
4. Authority
5. Methodical approach
6. Integration
7. Hierarchical levels
8. Aptitude and initiative
9. Supervision
10. Communication

Appaji and Kumar (1986) stated that 'concept of programme' was given the important factor in assessing the level of co-ordination. The other factors, knowledge of own duties, communication, willingness to work together, social forces, job satisfaction, faith in programme, professional relationship and aspiration are also considered as important factors of effective co-ordination among extension personnel.

Satpathi and Dash (1988) reported relative contribution of different factors for effective co-ordination in agricultural production. These factors include well active field staff and executives at state, block and village level. The factor of teamspirit

ranks first at district level. They further observed that, at all levels, mutual understanding among the officials, effective communication and faith in programme and non-conflicting policy were lacking. In the same study, they also found that very efficient, well trained active field staff and executives were ranked 'first' at the state, block and village level in implementation of agricultural development programmes.

Kumar (1993) stated in his study that 'inadequate contact' between officials in the department of agriculture and soil conservation unit in implementing scheme was ranked first followed by 'negative attitude towards functional integration' of the soil conservation unit with department of agriculture." Lack of teamwork' between them as the next important factor, which ultimately created a co-ordination gap.

Sharma and Sohal (1994) indicated in their study that there is a progressive decline in the extent of adoption of co-ordination factors at different levels of administration. Co-ordination gap started from village level due to inter-departmental conflict.

Morey (1998) identified some factors related to effective co-ordination viz.,

1. Extent of external influences
2. Teamwork
3. Technical competence
4. Clarity of task
5. Rationality in decision-making
6. Organizational climate

From the foregoing reviews it is evident that factors of co-ordination have not been studied in depth scientifically streamlined and meaningfully organized. Few

seem to be specific for effective co-ordination. The present study will explore the specific factors associated with effective co-ordination.

2.4 INDICATORS OF CO-ORDINATION

Hunter (1970) based on his experience in the field of administration of agricultural development programme under Indian conditions, made out contain 'indicators' to achieve effective co-ordination as follows.

1. A faith in the philosophy of ennoblement rather than enforcement among the agencies.
 2. Formation of co-ordination machinery to function as technical collaboration rather than administrative sovereignty.
 3. Clearer definition of functions of each agency .
 4. Higher efficiency and co-ordination within individual agency.
 5. Reduction in weaker and corrupt agencies.
 6. A clear and simple grouping of administrative services.
- Creating a spread cadre of "Development officers" selected from experienced field staff to function as a co-ordinating chairman, in order to protect the interests of technical departments.

Robert (1970) stated that generalizations on authority relationship must be exposed to and confined by concrete observation events, hence the need for developing indicators for acceptance of authority.

According to Albrecht and Bergman (1989) "Indicators are the units of measurement which stands for minimizing the complex reality of the world or target". They explored some important indicators for agricultural development viz.,

1. Adaptation rate
2. Ascertaining the level of production
3. Timely and adequate provision of resources
4. Quality and quantity of training programme
5. The speed of communication
6. Range of duties
7. Pressure on senior officers
8. Willingness of field advisors to discuss difficulties
9. Number and duration of visits
10. Timing of extension measurement
11. Decision making ability of senior management
12. Availability of the counter part.

According to Drucker, (1989) an indicator is a factor, which indicates the actual, or real life situations or reality or real world. All indicators are factors but not all factors are indicators. He stated that indicator is a thing or person that pointed out or gave the real information like a pointer, needle or a machine.

According to DANIDA, (1994) indicator functions as measures of output and impact and as proxies for attainment of development. Indicators are objective and specific measures of the results of the project. The agency explained a good indicator as

- 1) Substantial in relation to an objective

- 2) Independent at different levels of objectives
- 3) Factual rather than a subjective impression
- 4) Plausible, i.e., the changes recorded can be directly attributed to the indicator
- 5) Based on obtainable data, preferably existing data.
- 6) Further, the agency formulated some criteria for good indicators. It specified:
- 7) Target group (for whom)
- 8) Quantity (how much)
- 9) Quality (how well)
- 10) Time (by when)
- 11) Location (where)

Mandal (1992) in his study selected two dimensions, (a) Management of people, and (b) Management of project. He identified some indicators for each dimension.

In case of **Management of people:**

1. Level of relationship with functionaries
2. Level of interaction with functionaries
3. Level of participation of the functionaries in planning, co-ordination, communication and supervision.

In case of **Management of project:**

1. Level of co-ordination among participating agencies

2. Status of collection and maintenance of records
3. How well is the preparation of plan
4. How well is the preparation of annual budget
5. Timely supply of inputs to the farmers
6. Timely irrigation
7. Status of social forestry works

According to Hikkelsen, (1995) indicator is a common denominator for the units of analysis. Indicators are used to simplify the real world in the research process. He stated that in development studies, indicators are used for two main purposes (i) to differentiate central concepts, e.g. quality of life, poverty etc. in order to classify or rank societies and social groups along the indicators at macro level, (ii) to measure progress relating to intervention of social and economic change at the project and programme at micro level. Since indicators are used as measure of development, it becomes extremely important who defines development the 'expert' or the people concerned. A point is made of involving people in defining the objectives and in identifying indicators which development researchers and planners use in their models. Participatory techniques can make identification of indicators a joint exercise. The actual choice of indicators is also determined by the concrete situation in which they are to be used.

James and Wotfenjohn (1997) opined that selection of indicators reflect a broader and more integrated approach. They explained wide range of issues viz., environmental sustainability, macro economic performance, private sector development and the global links that influences the external environment for development.

Agbamu (1998) identified five indicators in order to measure the research-extension linkage factors.

1. Number of research institutes/experimental stations operating at state level.
2. Ratio of extension workers to farm families
3. The organizational nature of agricultural administration.
4. Research and extension budget as percentage of national agricultural budget, together with the existence of laws and regulations for agricultural policy.
5. Percentage of adults with basic education.

Morey (1998) identified some indicators in order to measure the performance of agri-business viz.,

1. Capacity utilization
2. Hired labour
3. Cost benefit ratio
4. Perceived profitability
5. Extent of diversification
6. Social contribution from enterprises

FAO (2000) used three indicators viz., expenditure intensity, contact intensity and technical manpower and cultivation ratio (TC ratio) to compare the performance of agencies involved in agricultural development.

Swaminathan (2001) stated that while pointers to measure good governance such as accountability, freedom from corruption, efficiency and transparency are universal,

there is a need to develop indicators that has a positive impact on priorities in public policies and investment. He proposed eleven indicators for the same:

1. Nutrition security
2. Water security
3. Energy security
4. Gender equity
5. Folk, classical and modern art, culture, music and drama
6. Technological leap frogging and providing the substrate conditions essential for enhanced national and foreign investment.
7. Health security
8. Shelter
9. Ecological security
10. Livelihood security
11. Literacy and technocracy

The literatures reviewed above are not sufficient to draw any substantive conclusion about indicators of co-ordination. The present study may throw further light on this aspect.

2.5 GAPS IN CO-ORDINATION BETWEEN AND AMONG AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

2.6.1 Gaps in co-ordination between agencies involved in agricultural development

Government of India (1955) identified gaps in co-ordination between Block Development Officers and technical officers. Because of this, considerable uncertainty and lack of co-ordination figured in normal working of the executive cum development officers at block level.

Guha (1958) pointed out gaps in co-ordination between Block office, the rural drinking water department and the Agricultural Department in the construction of tube wells for drinking water and irrigation. As a result, while the block office constructed tube wells, the water from the same could not be made available to farmers.

Ramaiah (1958) in his sociological survey of persons involved in community development programme observed that between the officials of different departments concerned with the programme the feeling of separation and individual approach seems to preponderate over the idea of co-operation and co-ordinated effort. In spite of earnest attempts at the highest levels, the feeling of individual and departmental superiority over rides the spirit of comradeship and team action.

Mukherji (1961) in the context of community development programme commented the effort to secure well co-ordinated channeling of departmental schemes capable of execution at the local levels through the block agency is yet to take full effort. The effort to secure teamwork at the block level with full support for an involvement of the technical departments in the block programme was lacking and created a gap in co-ordination between local level and block level development functionaries engaged in agricultural development. The investigation therefore, suggested the delegation of

power (to field functionaries) as an important requirement for programme to move forward.

Programme Evaluation Organization (1962) in its comments on minor irrigation programme, observed gap in co-ordination in some states, between irrigation department, agriculture department and the block agency. The report remarked that the gap in co-ordination was more acute at the lower level. The power to make disbursements was not delegated to the agency responsible for on-the-spot execution of the works. This resulted in delay and friction between the two agencies.

Paranjape (1963) opined that the poor co-ordination was due to lack of common understanding and mutual confidence between different technical officers involved in rural development programmes.

Government of India (1966) observed through the working group lack of single organization and lack of co-ordination between different departments involved in soil conservation programme in many states. Observation also indicated lack of substantial and effective contribution by the block agencies and panchayath in such programme. The group further pointed out that substantial progress had been made in research at various soil conservation research stations. However, for want of co-ordination between states and center regarding research and training, the results of research were not being tried on regional basis, nor demonstrated to evaluate the applicability of the results on large-scale basis.

Programme Evaluation Organization (1966) also indicated the existence of large gap between promise and performance mainly reflected in cases of supplies in the Intensive Agricultural District Programme.

Singh (1966) studying co-ordination in the IADP in Bihar stated that co-ordination between personnel involved in estimation and distribution of seeds, fertilizers and plant protection was good. However, poor co-ordination between canal irrigation

department and officials of package programme had adversely affected the agricultural development programme.

Government of India (1967) had clearly remarked through the report of the study team on Agricultural Administration that Community Development and Panchayath Raj had not contributed to increase agricultural production. Further, the team pointed out that the objective of co-ordinating the various services to farmers at local levels was not fulfilled. On the other hand, these programmes had led to frustration.

Fesler (1968) revealed that in the United States, each bureau and agency having field functions had developed its own field services. As such there were number of field services. For each of these, the sponsoring agency located field offices, delineated regional boundaries and determined the desirable degree of decentralization with primary reference to the administrative and functional requirements of its own operations, but with slight reference to the broader interests of the whole government. As a result, the federal government had no integrated field agency, and had, therefore, led to some gaps of inter-agency co-ordination.

Government of India (1969) observed that the old schematic approach of administering isolated single practices, such as compost, green manures, improved seeds, fertilizers, plant protection, etc., from "top down" still continued. The IADP was considered just one of the several agricultural schemes with the consequence that even in certain IADP districts, staff and other resources for the normal schemes continued to have separate departments working. Besides, lack of co-ordination between government departments, the report also found no effective link between Agricultural Universities and the extension agency in the State Department of Agriculture.

In an investigation on co-ordination between Agriculture and Co-operative Departments at State, Block and village levels, Singh and Prasad (1970) revealed that there was neither "very good" co-ordination nor even "good" at any of the levels in

question. The findings further showed, co-ordination at block levels was “very poor” between agriculture and co-operative officials and at village level co-ordination was fair, between agricultural officials and co-operative non-officials, but it was “very poor” between agriculture and co-operative officials.

Lal (1978) reported inadequate co-ordination between state government and banks for drawing up development plans from agricultural sector and implementation of such plans with financial support from banks.

Muttalib (1990) opined that due to the multiplicity of agencies, a co-ordination gap had been created between agriculture and co-operatives in Maharashtra and Andhra Pradesh, where inputs were supplied by both the agencies.

Amma (2002) stated that gaps in co-ordination between the Agricultural Universities engaged in research and the Department of Agriculture resulted in the recording of the lowest agricultural productivity in the country. She further pointed out that despite a remunerative price of Rs.950 per quintal for paddy, the cultivation in paddy was declining of Kerala.

Gupta (2002) in his study revealed that lack of proper feedback on farmers' problems from extension agency was expressed by majority of the scientists involved in that study. It was also observed during the survey that there was no clear understanding of the linkage activities to be performed by the scientists and extension personnel.

Majority of the studies as can be seen, point out glaring gaps in co-ordination between the various agencies involved in agricultural development leading to wide

disparities in production demands besides eroding morale among development personnel.

2.5.2 Gaps in co-ordination among agencies involved in agricultural development

Lack of interest revealed by much less frequent attendance of non-officials in Block Development Committee than officials has also noted by Government of India (1958). Non-officials, as a result, did not play their role properly and the official members found it difficult to direct them of the responsibility for planning.

Commenting on the routine type functioning of many of the co-ordinating bodies Mukherji (1958) remarked that those bodies did not meet often and there was little evidence of systematic follow up.

Government of India (1960) reported through the evaluation report of the 1958-59 Rabi Crop Campaign in Punjab, Rajasthan and Uttar Pradesh that Government laid great emphasis on co-ordination for supply of seeds, fertilizers and implements and loans to cultivators. Unfortunately, the plan for the supplies was drawn up in the month of August, which was rather late. As a result, in some places, the input did not reach the cultivators in time. The officers who adopted the village in the beginning created the impression that the Government was all out to help the cultivators. The resources of the organization proved unequal to the response provoked. There was indiscriminate rush of cultivators to get seeds on loan especially as these could be had at lower rates than in the market. Because of the decision to distribute seeds and fertilizers through Co-operatives and Panchayath, the outlay for distribution increased in Rabi 1958-59. However, the blocks had received smaller quantities of seeds compared to 1957-58. This resulted in a wide gap between promise made and actual performance.

Programme Evaluation Organization (1964) in its study of soil conservation programme pointed out that there was not a single organization of the type recommended by the planning commission to assume responsibility for soil conservation programme as a whole. Different departments such as Agriculture, Forest and even Irrigation attended to items of work, which fall within their purview and in which they specialized. Because of organizational deficiency, there was a general lack of co-ordinated approach to soil conservation problems, assessment of soil conservation needs, requirements of training, research, extension and perspective planning.

Government of India, (1965) reviewed the administrative experience gained in the IADP and IAAP districts and noted that in some states the co-ordination committees were functioning satisfactorily at state and district levels and were meeting at frequent intervals to review the progress and problems, while in others, these were inactive and meetings were held over long intervals, defeating the purpose for which these bodies were created.

Programme Evaluation Organization (1965) observed gap in co-ordination in the rural electrification programme among different departments such as agriculture, community development, industries and related departments.

Programme Evaluation Organization (1966) observed in their study that at the state level co-ordination had been more or less achieved through the state co-ordination committee but situation at district level was not encouraging. In Madras, no co-ordination committee had been set up at district level, while in Andhra and Uttar Pradesh; meetings of district committees were neither regular nor very effective.

Verma (1970) pointed out that in the development of rural industries programme, the institutional framework involves State Governments and Central Government agencies. However, the lack of co-ordination among these agencies for assisting the

development of village industries had indirectly hampered the mobilization of resources in productive channels and had discouraged the small enterprise.

In the context of co-ordination of extension activities of the University, Centre, State and Private agencies Jalihal (1971) explored the following gaps - a) functions of the departments of agriculture have not been redefined in most of the states where agricultural universities have been set up; (b) establishment of extension units by several agricultural universities without clearly defining their extension roles; and of demand by agricultural universities for transfer of extension activities from the State Department of Agriculture.

Silveria (1974) in his study on co-ordination of agencies relating to specially funded educational programme concluded that formal inter-agency co-operative contracts did exist but relatively high number were operating without such contract and there was haphazard distribution of services.

Aslam (1978) in his critical evaluation of rural development programme in Jammu and Kashmir, remarked that as the extension agents of different activities (except agriculture) were working under their respective departments, the block agency was left at the mercy of other agencies to solve problems of farmers; so also this arrangement sometimes had resulted in overlapping of activities by different agencies. There was also a growing tendency towards departmental specialization. The investigator observed that this had blocked the quick and earliest implementation of the programme, as co-ordination among different agencies was lacking.

Sawant (1978) in a study on co-ordination in Block Demonstration Programme revealed that the activity i.e., "having clearly written statement of objectives" was performed to a fair level, "mutual understanding of the objectives of each organization" was performed to a highly satisfactory level, while "developing detailed plan regarding roles and relationship" was performed to a poor extent among

agencies involved in agricultural development. He further revealed that naming of the representatives of each agency at operational level performed to fair level. In constituting co-ordination committee, preparing plan of schedule for co-ordination meetings, conducting meetings as per schedule and ensuring representation of all the participating agencies were performed to a poor extent. He further indicated a gap between supply and receipt of inputs at village level due to lack of co-ordination among agencies. He reported that co-ordination achieved was very satisfactory with reference to "preparation of a list of input requirements and in ensuring that inputs are received at village level in advance". But, it was 'fair' with regard to supply of inputs to farmers in advance. He also found that the co-ordination achieved was 'highly satisfactory' in respect of estimation of credit requirements and 'fair' in respect of making the credit available to the farmers. It was also found that training of representatives of participating agencies was performed fairly, while training of leaders involved in the programme performed satisfactorily.

Arneja and Gill (1979) reported that due to inadequate association and involvement of other departments with small and marginal farmers agency, there was lack of co-ordination among agencies.

Gill *et al.* (1982) studied co-ordination problem at block level and stated that V.L.Ws did not receive due encouragement from higher officials for the efforts put in by them. The officers themselves mostly kept the rewards, recognition and appreciation for good work rather than passing them to the field staff.

Mitra and Satpathi, (1985) on a study conducted in Orissa reported that agricultural development programmes fail due to the lack of inter-departmental co-ordination. Maximum co-ordination gap was with the Orissa State Electricity Board (OSEB) followed by Orissa State Co-operative Marketing Federation (OSCMF), Private Input Agencies, Agro-industries and NSC. Co-ordination was lacking in most agencies of supply and marketing. At state level lack of co-ordination was found to be the highest

with private input agencies while at the district level it was with the Agro- industries and at block level and village level with OSEB, NSC and OSCMF. The input dealing agencies and agency for power supply fails to keep pace with desired co-ordination with other agencies for agricultural development.

Raju (1987) revealed in his study that the co-ordination achieved was poor in large percentage of the villages (42%), followed by medium co-ordination (26%). This indicates that co-ordination achieved by the participating agencies was 'poor'. He further revealed that in none of the villages under consideration all the participating agencies had provided adequate authority to their representatives for joint decision making. In all the villages only some of participating agencies had provided adequate authority to their personnel for the same. He also found that training aspect was neglected in the programme. In the same study, he identified that the activity, i.e., 'having written statement of objectives' was performed satisfactorily, 'clear understanding of the objectives of each organization' was performed to highly satisfactory level, while none of the participating agencies had written plans regarding 'inter-institutional linkages' and schedule for co-ordination committee meeting was performed to a poor extent.

Satpathi and Dash (1988) revealed that co-ordination committee was not set up at the execution level and they felt that there should be a co-ordination committee to stimulate team spirit in agricultural development.

Babu and Singh (1990) conducted a case study on co-ordination among the officers at block level in the State Department of Agriculture in Maharashtra and revealed that the technical staff, particularly the village worker is under dual control. They are under the administrative control of Block Development Officer and technical control of Agricultural Extension Officer.

Krishnamurthy (1991) observed during consultation with the participating agencies that co-ordination was ensured in an informal way, mostly when the joint

visits were made to the block demonstrations by the participating agencies. He opined that lack of formal way of co-ordination among all participating agencies created a gap in effective co-ordination.

Gupta (1992) found that insufficient and untimely supply of inputs create a very serious obstacle which make field level workers uncertain and unrealized and further create a co-ordination gap in the agricultural administration among participating agencies.

Agbamu (1998) identified a gap in co-ordination among agencies involved in agricultural development. He stated that this gap was created due to status difference among agencies.

Morey (1998) in a study conducted in Vietnam revealed that due to the lack of inter-personal communication among the personnel of the Department of Agriculture, serious gaps existed in co-ordination.

Princes (1998) reported that co-ordination was hampered because agencies do not have uniform practices for representation or the degree of authority given to field staff. Administration in India and Bangladesh always uses the authority of office instead of authority of ideas. Therefore, anarchy, chaos, frustration and bureaucratic highhandedness are very common there. Complexity is extreme where laymen and generalists lack knowledge and experience. He also stated that interception of administrators from general cadre widened the gap between generalists and technocrats.

From the above reviews, it may be seen that co-ordination gaps had been created among agencies in approaches, planning and decision-making, organizing co-ordination committee, programme implementation, administration, technology transfer etc. After devolution of powers to the local bodies still other factors also

might have come into the picture. The present study may throw further light in this regard.

2.6. PROBLEMS AND CONSTRAINTS IN EFFECTIVE CO-ORDINATION

The main objective of identifying the problems and constraints in co-ordination is to provide suggestions for fruitful solution for the same. Problems and constraints may arise between, among and even with in agencies involved in agricultural development.

2.6.1 Problems and constraints in co-ordination between agencies involved in agricultural development

National Extension Service (1957) revealed through the evaluation report on working of community projects, that absence of orientation in the objectives and techniques of community development to the officers at highest level, both generalists and specialists involved in implementation of the programme could result in problem of co-ordination. Further, the same report emphasized the need for clear-cut policy for co-ordination between different leading departments of Government and indicated that a more systematic approach to the problem is imperative and inadequate and defective arrangements must be set properly in the right direction.

Programme Evaluation Organization's report (1957) pointed out that all the administrative implications of the transformations in relationship between technicians and administrators have however not been realized either at the district or state levels.

Government of India (1959) observed a gross lack of co-ordination between irrigation and agriculture departments both at the level of planning and execution in the field. This had already resulted in the irrigation resources not being fully utilized. The Agricultural Administration committee pointed out some of the co-ordinating bodies does not meet often enough and in some cases; function in a routine manner and with lack of systematic follow up action.

Government of India (1963) felt through the report of the committee for study of improved agricultural implements in Punjab that there were number of loose ends to be tied up to achieve better working relationship between agriculture, the development and the Panchayath departments. The committee remarked that unless the district agricultural officers and their subject matter specialists worked in complete harmony with the extension staff and manufacturing programme of implements was fully co-ordinated with that of their distribution there were bound to be lapses and financial losses.

Paranjape (1963) while commenting on failure of administration in improving the economic and social conditions of rural areas, expressed that the programming was defective in that too much emphasis was placed on individual programmes like, improvement of supplies, irrigation, technical guidance, etc., and too little was achieved in working out an integrated approach to the farm problems. As a result, each department concerned with different aspects of the programme concentrated on its own tasks with least attention to the other tasks of the programme, to be performed by different departments. The investigator also pointed out teamwork, which is so essential for integrated programming, and execution had many times suffered because of a lack of common understanding and mutual confidence between different technical officers and generalists officers.

Narain (1966) indicated that the problem of inter-institutional co-ordination was rather crucial to the developmental role of the Panchayath Raj Institutions. There was a problem of co-ordination between Panchayath Raj institutions and revenue agencies, as the latter were to recover the loans, which the former distributed, besides certifying the status of land and farmers for purposes of loan and takkabi in time. The revenue agencies were not co-operative. He further pointed out that the co-operatives which form the supply line to Panchayath Raj institutions had not always been up and doing in time.

Vepa (1966) listed two difficulties in achieving increased productivity from the inadequate administrative and institutional apparatus. First, was lack of co-ordination between the research centers and the field conditions and the second, the dispersed responsibility, wherein, the infrastructure services were dispersed over a number of Government Departments with lack of integrated approach in agricultural sector.

Programme Evaluation Organization (1967) revealed the lack of sufficient co-ordination between the credit agencies and the authority in-charge of the administration in high yielding variety programme. This proved to be particularly significant in matters such as the selection and supply of lists of the participating cultivators, the timely and adequate supply of seed and fertilizer, and the selection of the agency for the provision of credit.

Government of India (1968) stated through the report of the Administration Reorganization Committee, Maharashtra that the "Zillah Parishad Act" had provided representation to co-operative organizations on Panchayath Raj bodies. In spite of these arrangements, mutual apathy among representatives of both organizations in each other's activities was observed which ultimately resulted in lack of co-ordination between the two organizations in the field activities.

Programme Evaluation Organization (1968) in its study of development staff at district and lower levels revealed lack of co-ordination between agriculture, minor irrigation and electricity departments in some states. The report also pointed out that similar type of schemes were being run concurrently by different departments leading to overlapping and duplication of work. The study further revealed that "delays in execution, lack of co-ordination between various executing agencies, duplication of agencies, wrong selection of settlers, under utilization of resources created, etc., hampered the success of programme to a great extent".

As per the Programme Evaluation Organization report (1969) on HYV programme, a considerable improvement was witnessed in inter-departmental co-ordination between Agriculture, Co-operation and Development Departments, since its introduction in the observed areas. However, lack of co-ordination between the Agricultural Department and the Irrigation and Hydel Departments was reported to have adversely affected the agricultural programmes in the states of Uttar Pradesh, Rajasthan and Orissa to some extent.

Government of India (1970) stated through the report on organizing Agricultural Extension in India that the extension services of the Punjab Agricultural University and the Department of Agriculture were adversely affected in operational efficiency by frequent conflicts and lack of confidence between departmental and extension personnel. There was very little co-ordination resulting in various complications and considerable overlapping of functions.

Blumenkrantz (1975) in his study of co-ordination of services between a public school system and selected social agencies observed that there was clearly a lower level of transaction and co-ordination between the schools and public assistance agency with little effort by either agencies to change this situation.

Jaiswal (1977) stated that for accelerating food production, the Government of India launched specific programmes such as IADP, HYV, etc., which required effective co-ordination between the activities of different development departments dealing with supply of inputs and handling of outputs for achieving desired goals. However, lack of co-ordination between different functionaries was one of the important bottlenecks at various levels, which adversely affected the agricultural development programmes.

Mishra (1989) in his study found lack of co-ordination between policy objectives, organizational design, operational procedures and personal motivation in implementing agricultural development programmes. The problems of

inter-departmental co-ordination are marked by lack of integrated planning between concerned departments, absence of resource allocation systems, lack of vertical and horizontal information gathering and lack of contacts between various departments leading to individual pursuits of objectives.

He also observed that intra-departmental co-ordination is characterized by excessive paper work, centralization of authority, lack of direct communication and block in the flow of information due to rigid structures and hierarchy, strained administrative involvement, preventing individual level commitment to productivity and finally a tendency among officials to protect their bureaucratic territories.

Gupta (2002) identified that lack of co-ordination between research and extension agencies was one of the major problems during the survey. He further observed that most of the scientists were busy with their research work with a little of extension work similarly, extension personnel also did not participate in research activities.

The preceding reviews have mapped out a number of problems and constraints in co-ordination between agencies viz., conflict in performance, lack of systematic follow up, untimely distribution of inputs, role difference, dual administration lack of confidence, lack of integration etc, majority of which are of a general nature. Democratic decentralization must have thrown up further more, which have not been explored. The present study proposes to probe deeper into the issue.

2.6.2 Problems and constraints in co-ordination among agencies involved in agricultural development

Government of India (1956) reviewed the problem of co-ordination as not merely of relation between the project or block staff and certain development departments but as basic problems of ensuring that the administrative arrangements to enable the projects or block agency to implement the programme successfully for the benefit of rural community .

Malkani (1957) while summing up some of the problems of Community Development Programme in Kashmir, remarked that lack of co-ordination at the intermediate level i.e., the Block, the Tehsil and the District, was one of the most disturbing things. The officers of co-operative, agriculture, animal husbandry, medicinal and education departments, working at Tehsil level were expected to be extension workers, assisting the Block Development Officers. But these officers showed lip loyalty to the Block. Many groupings and deviations persisted in spite of a sound agency at the bottom and good co-ordination at the state level.

According to Guha, (1958) Block Advisory Committees were more or less neglected and officials with proper regards did not trust the non-officials among various agencies involved in agricultural development. He also observed that lack of co-ordination among agencies and the investigator pointed out with respect to disbursement and receiving of loan, in which recovery was done in many states by revenue department, and disbursement of loan was done by different agencies of agriculture and co-operative departments, as also by the block authorities. Because of lack of co-ordination, while one receiver mounted up high loans the poor peasant did not get it, and even if he got, did not get it in time and inadequate quantity.

Government of India (1963) clearly revealed in the report of the working on inter-departmental and institutional co-ordination for Agricultural Production that the

problems of bringing about adequate co-ordination among agencies, dealing with complementary and inter-related aspects of agricultural production and dovetailing their programmes, policies and operations which have been considered from time to time, in numerous conferences and seminars has eluded solution so far. Further, the group categorically mentioned that sufficient emphasis was unfortunately not put on implementation of package of work as counterpart of package of practices in most of the areas.

Pelz (1966) in a pilot survey in three districts disclosed that among ten selected agricultural programmes, co-ordination was the poorest in respect of three viz., loans, minor irrigation and electricity essential for minor irrigation, moderately successful in the case of distribution of seed and fertilizer and mildly successful for the other four programmes viz., animal husbandry, flood control, demonstration and improved implements. While commenting on the situations causing break down in co-ordination, the investigator pointed out one of the major situations as lack of funds and supplies. A disturbing conclusion the investigator had drawn was the revenue department was the weakest link in the chain, enabling the poorest co-ordination in several respects.

Reidel (1969) stated that the achievement of effective inter-organizational co-ordination is especially complicated for agencies concerned with renewable resource management. The difficulty is to partly due to unique geographical, political and economic patterns both regionally and locally.

Minhas (1974) in his observation on the programme for smaller farmers stated that, while in many ways the various special rural development programmes (SFDA, DPAP, CSRE, etc.) were intended to be complementary in character, in practice they were often non co-ordinated in a given area in a proper time sequence. Much rural

development programmes were ad-hoc in character and suffers from wide dispersal and fragmentation, often resulting in overlapping of agency and financial resources.

Mosher (1975) opined that low performance of a particular agency is not due to it being poorly operated but due to inadequate performance by other agencies, or to lack of co-ordination among agencies in particular agricultural regions.

Quasem (1977) while commenting on agricultural administration in Bangladesh stated that there were as many as eleven agencies working in crop husbandry programme. However, due to lack of co-ordination between these agencies, it resulted in mistrust and competition among the agencies, and created confusion in the minds of farmers about whom to approach and what to grow. This lack of co-ordination was observed from top to bottom. The attitude of non-co-operation from top to bottom caused irregularities in supplies and services and farmers became the victims.

Arneja and Gill (1979) reported some problem faced by small/marginal farmers' agency in securing co-ordination of other departments. The problems reported were: (i) officials of other departments did not feel the work of small/marginal farmers' agency as their own and (ii) no proper instruction was given to the field staff through their respective district level representatives.

Gill *et al.* (1982) indicated that insufficient and untimely supply of inputs ranked 'second' as a co-ordination problem in execution of extension programmes at block level. They further stated that lack of proper planning and timely action, improper delegation of power to the junior staff, lack of mutual understanding among agencies as problems of co-ordination in execution of extension programmes at block level. They also indicated that lack of technical knowledge about modern farming was one of the important problems of co-ordination in implementing extension programmes at the block level.

Sharma (1992) pointed out that due to inter-departmental conflict there is a lot of duplication of work in the state planning of Himachal Pradesh in India.

The studies reviewed above highlight some problems and constraints in co-ordination among agencies viz., inter-agency conflict, misunderstanding, overlapping of works, mistrust, improper delegation of authority, status difference, political etc, which may be just the top of the iceberg. The issue needs to be probed further in the context of sweeping changes due to democratic decentralization.

2.6.3 Problem and constraints in co-ordination for both between and among agencies

Yonggong (2000) reported that insufficient co-operation and co-ordination between and among agencies such as planning and credit agencies, at both the national and provincial level. He further revealed that professional and agencies' linkages among research, extension and education is poor due to lack of funds.

Other studies directly referring to problems and constraints in co-ordination were rare and sparse. The available evidence does not provide from ground for drawing meaningful conclusions.

2.7 SUGGESTIONS/GUIDELINES FOR EFFECTIVE CO-ORDINATION

Different investigators have provided suggestions for effective co-ordination. Considerable numbers of related findings are given below under different headings.

2.7.1 Methods of securing co-ordination

Jain (1967) suggested different methods for securing co-ordination as

1. Advance planning of programme - A plan laying out the basic policies, objectives, programme, time tables, assignment of responsibilities, assignment of checking of results, etc., is the basic tool for effecting co-ordination.
2. Preparing time schedules for carrying out tours and other operations - time schedule define dates for various plan and budget operations. It also facilitates timely procurement of supplies and delivery.
3. Inter departmental co-ordination committee
4. Staff meetings
5. Advance clearance, consultation and negotiation
6. Communication of decision, scheme, plan, progress of work etc., orally or in writing to the concerned departments.
7. Joint training programme to develop common outlook and wider awareness of the various aspects of a problem.
8. Joint conference
9. Joint service arrangement and inter locking of personnel.
10. Pooling of funds, personnel, facilities and resources that is, arrangement of single agency to manage different activities required for an agricultural development programme.
11. Contiguous location of the various offices involved in co-operative working.
12. Decentralization of power at the point of decision-making.
13. Jurisdictional symmetry.

Kelsey and Hearne (1967) while discussing co-ordination as one of the principles of programme building suggested certain principles of co-ordination, which also serve as guidelines in achieving inter-agency co-ordination. These principles are as follows:

1. Recognize that each agency is responsible for its own work.
2. Have a clear understanding of the functions of each agency.
3. Interest in common objectives.
4. Definite planning for co-ordination and integration.
5. Regular periodic meetings of the parties concerned to report progress and to check on their own actions.

Reidel (1969) suggested that the need for co-ordination may be recognized at upper organizational levels, initiated there through formal agreements at these levels, and supplemented with regional and state arrangements, ultimately, however, it is the local field level, which is the critical point of interaction between agencies.

Robert (1970) suggested three functions which authority performs in administrative organization:

1. The enforcement of responsibility
2. The specialization of decision-making, and
3. The co-ordination of activities.

He opined that without acceptance of authority, no co-ordination would be effected.

For promoting inter-agency co-ordination, Jalihal (1971) suggested some guidelines for effective co-ordination as follows

1. The success of inter-agency co-ordination depends on the unifying forces of doctrine, spirit and morale.
2. Clearly written objectives and programme description will foster co-ordination.
3. Full and mutual understanding of the objectives and agencies of the programmes and unity of purpose of the administration and operating personnel at all levels, promote co-ordination.
4. In several circumstances, the objectives of one agency need to be formulated with partial sacrifices for sometimes, to promote better co-ordination.
5. Co-ordinated action directed towards a set of objectives, requires plans that every one recognizes as official.
6. Constant appraisal of the objectives and programmes of the agencies to see that they are following the pattern for which they were created is helpful in co-ordination.
7. Consistency and compatibility are necessary even in relatively more independent activities.
8. Action of different agencies must synchronize wherever their work interlocks.
9. Co-ordination requires the consideration of the systems of authority, status and specialization, the system of technically necessary interdependence about the agency's goal.
10. Authority, if any, used in co-ordination must be disciplined by reasons and reality.
11. In organizing, in dividing the work and delegating jurisdiction, authority must submit to the needs of speciality.

12. Co-ordination would be futile, if it were to be confined to laying down the law. It must seek consensus and convey reasons. It must elicit identification with its objectives. You cannot legislate co-operation and teamwork. It must be earned through leadership and sincerity.
13. The recognition of mutual interdependence is capable of providing a broad basis for co-ordination, as is technically needed.
14. Co-ordination based upon the mutual recognition of need, cannot of course, be arbitrarily imposed by authority.
15. Memoranda of understanding or agreements between or among different agencies help in co-ordination.
16. Mutual acquaintance of personnel belonging to different agencies is necessary to promote understanding, which is helpful for co-ordination.
17. Maintenance by each agency of a sincere attitude and willingness to develop plans for co-operative action with other agencies, without relinquishing its own responsibilities helps in co-ordination.
18. An agreed programme of reporting and interpretation should be developed, giving all agencies their just credit for the progress and accomplishments of the co-ordinated endeavor.
19. Administrative meetings of personnel of concerned agencies should be called frequently enough for evaluation and for correcting personnel clashes, which might come in the way of co-ordination.

Arnold (1973) stated that specialization creates the problem of co-ordination. He opined that many different functions that members perform must be co-ordinated or tied together some what so that they contribute jointly to the result. In order for this to be achieved, members have to do the right thing at the right place at the right time;

they have to perform their specified task so that each contribution fits the contribution of others essentially leading to teamwork.

Richest (1973) in his study on co-ordination of higher education in Wisconsin, recommended guidelines to classify understanding of all parties to co-ordination concerning the controlling and advisory involvement of the co-ordinating council for higher education and institutional systems with regard to each function.

Blumenkrantz (1975) opined that there is limited staff interaction on a planning level to develop principles and practices to make co-ordination more effective with limitation of staff time. He further stated that good individual working relationships might well prove most significant organizationally in effecting co-ordination on an operational level.

Raju (1987) suggested some guidelines in achieving inter-agencies co-ordination

1. 'Periodic visits' are essential to remind people about technical advice that reinforces the message already given.
2. Technical expertise, timely supply of inputs and credit to the farmers is equally important and badly needed for effective inter-agency co-ordination.
3. Effective leadership is essential who will influence the behaviour of the participating agencies to achieve better co-ordination. The adopting agency as co-ordinator and leader of the programme must be able to review the progress of work done by the participating agencies from time to time. This will enable them to set right the defects noticed in the implementation of the programme.
4. Joint visits of the participating agencies will ensure success of agricultural development programmes.
5. Systematic efforts of the participating agencies is very essential without which the programme suffers. Records if kept properly ensure higher co-ordination.

Mathew (1989) opined that agricultural development programme needs to be adapted to a wide variety of geographic, institutional and cultural settings. Close co-ordination among several separate agencies as well as with local groups, is often important.

Krishnamurthy (1991) suggested following guidelines for effective inter-agency co-ordination:

1. For successful co-ordination, joint decision-making is essential in the implementation of agricultural development programmes.
2. Adequate authority should be provided to the representatives of all agencies involved in agricultural development for appropriate joint decision-making.
3. Naming the representatives at the operational level should be ensured in implementing agricultural development programmes.
4. Constitution of co-ordination committee with representatives of the participating agencies, which will facilitate the participating agencies to review the progress of work done.

In furtherance of constitution of co-ordination committee, it is essential that a plan be prepared for periodical meetings of the committee. Each meeting date has to be decided in the previous meetings in consultation with all the participating agencies. It is equally essential that the representatives of all participating agencies regularly attend meetings.

5. The representatives of the participating agencies are required to be trained in advance with regard to the programme to be undertaken. Transfer of technology will be most effective when both the trainers and trainees are trained in the latest technology.

Purkat (1996) suggested the following guidelines for effective co-ordination:

1. Essential for structural and functional change in organization.
2. Usually horizontal and in some instance vertical co-ordination method should be used.
3. Proper steps should be taken by the central and state level to avoid overlapping of schemes.
4. Administrative co-ordination should be more emphasized in democratic decentralization.
5. Inter-agency and inter-personnel communication is essential.
6. To avoid conflict and duplication of work, voluntary co-ordination methods like reference, consultation and clearance should be used.
7. Standardization of procedures and methods is an important means of co-ordination.
8. Periodic review meetings and orientation meetings can be highly effective in promoting co-ordination.
9. A separate co-ordination cell may be established.
10. Proper integration should be maintained between teaching, research and extension through frequent workshops, seminars and joint collaboration research.

Tripathi and Reddy (1997) suggested that for excellent co-ordination the following requisites are essential:

1. Direct contact with other agencies

2. Early start to the development programme or activities, i.e., early planning and policy making.
3. Continuity of the activities, i.e., continuous process.
4. Formulate clear-cut objectives and programmes.
5. Simplified agency, i.e., closely related operations, functions and all interfacing agencies may be entrusted to one boss.
6. Clear definition of authority and responsibility reduce the violation among agencies.
7. Use effective communication channels.
8. Effective leadership and supervision is essential.

They also suggested that for effective co-ordination the following techniques or devices should be used:

1. Use hierarchies
2. Use the appropriate rules, procedures and policies
3. Appropriate planning
4. Establish committees, which met regularly
5. Induction of the employees
6. Provide incentives either in cash or kind
7. Establish liaison department
8. Create workflow in the right direction.

The preceding reviews provided ample guidelines in achieving inter-agency co-ordination like, clear mutual understanding, regular meeting, teamwork, system of authority, mutual trust and recognition, joint visits etc. A similar trend may be predicted in the present study also.

2.7.2 Suggestions regarding appropriate line of authority for effective co-ordination

According to Seshadri, (1967) neither institutional arrangements nor procedural devices for formal fixation of lines of authority by themselves can ever succeed in bridging proper co-ordination in a developmental context. However, he made some suggestions in this line as :

1. To avoid working at cross purposes and avoid tensions, all involved in the processes of development must be imbued with the spirit and devotion to work unitedly or achieving common goals.
2. To avoid competition and develop harmonious relationships with different agencies, every one concerned should be prepared to co-operate and hold informal talks and cut bureaucratic rituals and pride. The spirit of empathy at every level is the need of the hour.

The genuine feeling that every one is working 'with' and not 'under' someone helps to create an atmosphere for good co-ordination.

He further suggested that for successful co-ordination among the agencies involved in agricultural development adequate authority should be provided to their representatives at the operational level to facilitate joint decision-making in the implementation of the programme.

Raju (1987) suggested that adequate authority should be provided to the representatives of all participating agencies at the operational level to facilitate joint decision-making in the implementation of agricultural development programmes.

2.7.3 Suggestions for effective inter-agency co-ordination

Litwak and Hylton (1952) observed that three conditions are essential for bringing about co-ordination among formal organizations:

1. Organizational facilitative inter-dependency
2. Level of organization awareness about inter-dependence
3. Standardization of organizational activities.

Jha (1958) suggested for effective inter-agency co-ordination arrangements to be made for consultation and co-operation among different committees and departments when committees are preparing plans. The council must have adequate provision for co-ordination of all plans and policies into one coherent integrated completely. There must be arrangements to ensure that all committees and departments work in concert to carry out approved plans expeditiously and at a minimum cost.

Mukherji (1958) suggested that in almost every case, proper machinery for inter-agency co-ordination has to be built up to establish good and continuing communication between the functionaries who have to work together.

Government of India (1959) reported through the evaluation report on Community Development and National Extension Service that in most states, reliance was placed mostly on periodic meetings of the officers of different departments to secure

co-ordinated execution of the block programme. In some states, formal committees were set up for the purpose at district and state levels.

Government of India (1960) suggested through the report of the Administrative Reform Committee that the need for creating permanent co-ordination committee to be presided over by Chief Minister for every three months. The committee further suggested a monthly meeting of co-ordination committee at district level presided by District Collector once in two months.

Programme Evaluation Organization (1962) suggested that the stronger the bond of interest in achieving a mutual objective, the more viable the co-ordinated effort becomes. Further, it stressed for a clear understanding of function and activities.

Government of India (1963) recommended through the report of the working on inter-department and inter-agency co-ordination of agricultural production of the Ramsubhag Singh Committee that establishment of co-ordination committees at different levels to review the progress and inter-departmental problems of various departments concerned with agricultural production thereby to devise the ways and means to improve administrative efficiency.

Reid (1964) suggested several determinants of co-ordination that directly flow from co-ordination formulated as a system of inter-agency exchanges. They are:

1. Shared goals when agencies seek similar goals; a strong force to exchange resources to further mutual objectives is brought into play.
2. Complementary resources - shared goals are necessary but not sufficient for co-ordination. Complementary resources are also necessary condition for co-ordination. Each agency must be able to provide the other with some resources to achieve its own goals.

Mechanisms for controlling exchanges involved the researchers referred this to more systematic efforts towards co-ordination which may take the form of inter-agency agreements, regular case conferences, inter-agency committees and other forms of programme co-ordination and control of resources other than elemental level of individual once.

Government of India (1965) suggested through the report of the Fifth Annual Conference of key personnel of the Intensive Agricultural Development Programme that the departments involved in agricultural development work operated parallel through their own hierarchy, which was not conducive for good progress and efficiency. The conference felt that the District Co-ordination Committee should be responsible for working detailed programmes.

Fesler (1968) while commenting on divergences in the field agencies in the United States, stated that this diversity among field agencies had been carried too far, destroying the idea of an integrated services. Even with the need for diversity, there is necessity for inter-agency co-ordination in the field. The investigator suggested five possibilities to meet the necessity:

1. Uniformity in the location of regional boundaries and field offices.
2. Use of service and control agencies (such as General Service Administration, General Accounting Offices) as co-ordinating bodies.
3. Informal co-ordination through informal contacts.
4. Appointment of regional co-ordinator
5. Committees and commissions focused on an interest common to several agencies do have values.

Government of India (1969) had remarked on approach of land development banks through the All India Rural Credit Review Committee: "the operations of land

development banks cannot be effectively oriented to agricultural development, unless they are closely co-ordinated with the working of the relevant government departments, such as, agriculture, irrigation and public works, besides co-operation. Of the context in which co-ordination is necessary, the most important relates to the priorities governing the purposes and regions and aspects of land reform measures, which have a bearing on the working of the land development banks. It is clear that the investments to be financed by the banks are needed to be supported by the necessary supplies, services, other facilities and technical guidance functioning from government.

Jaiswal *et al.* (1969), in their study on Intensive Agricultural District Programme, suggested that genuine and spontaneous co-ordination among the personnel coming from agriculture, co-operation, minor irrigation, general administration, supply and other departments could best be achieved when all members have insight into the process and agreement of objectives, procedures and responsibilities of the package programme.

Reidel (1969) in his study of inter-agency relationships of States and Federal Natural Resources Agencies in Minnesota (U.S.A.) made following suggestions to achieve inter-agency co-ordination.

1. Inter-agency co-ordination requires fundamental restructuring of agency programme and/or field agencies.
2. Establishing unified office locations
3. Establishing formal inter-agency programmes and communication links among agencies.
4. Recognition of inter-agency relations in workload planning and performance evaluation.

For achieving inter-agency co-ordination, Barnabas and

Pelz (1970) stated that no single solution applicable to all situations could be suggested. However, the investigators pointed out some suggestions for effective inter-agency co-ordination as:

1. Co-ordination at the policy making level is a prime requisite for effective implementation.
2. Frequent contact between functionaries through large formal and informal meetings lead to greater promptness of action (used as a measure of co-ordination)
3. To hold conferences at which block officials and non-officials could meet with district officials and perhaps those at divisional and state levels to share goals and problems.
4. Frequent communications by whatever method, is helpful for promoting co-ordination.

Krishnaswamy (1972) suggested that the purpose of bringing commercial banks into the field of agriculture is to see that all the areas secure institutional credit facilities through proper planning and co-ordination to the weaker sections to promote balanced growth with justice.

Coombs and Ahmed (1974) used the term inter-agency co-ordination to mean co-ordination. They have suggested some basic requirements for co-ordination given as under:

1. Sharing broad conception of development through a better understanding and faith in integrated approach.

2. Necessary information flows, both formal and informal, among participating agencies.
3. Broad participation of the concerned parties achieved through harmonizing policies, plans, procedure etc. and
4. Physical proximity of participating agencies.

Sawant (1978) Suggested for improving inter-agency co-ordination that:

1. Whenever co-ordinated agricultural programmes have to be implemented by involving different agencies, adequate care should be taken up to see that systematic co-ordination is brought about among the participating agencies, by paying specific attention to the important activities in the process of inter-institutional co-ordination.
2. The success of the co-ordinated programme ultimately depends upon how effective is the role-played by financing and input supplying agencies. It is therefore, necessary that technical agencies, which generally take leadership role in implementing agricultural programmes, must take initiative in actively involving the financing and input supplying agencies right from the beginning.
3. Development workers in-charge of co-ordinated agricultural programmes must have important responsibility of involving local agencies like, youth clubs and Panchayath Committees in implementing the programme.
4. To ensure activities of the agencies involved in the co-ordinated programme as official, it is necessary that the District Officers In-charge of technical departments make special efforts to communicate within the District Officers or agencies supplying inputs and credit, so as to encourage them to write to their subordinate officers and personnel.

Mitra and Satpathi (1985) suggested for effective co-ordination are put forth:

1. Brotherhood relation rather than bossism should always maintain with the subordinates.
2. Joint supervision is essential in implementing agricultural development activities.
3. An atmosphere should be created, so that the employees, workers can work together willingly.
4. Inter-agency seminar is essential time-to-time in order to maintain the proper linkage with various agencies involved in agricultural development.
5. There must be provision to incentive to efficient workers. This may be given cash or kind for inspiration.

Haldipur (1986) suggested introducing implementation co-ordination unit into the existing structure in Malaysia. He stated that due to introducing this unit the rate of economic growth increased rapidly.

Singh (1986) opined it is necessary that the District Officer is an officer of sufficient maturity and experience to command respect of the technical officers for getting better co-operation from them. It depends upon the appropriate leadership of the District Officer and good dealings with technical officers.

Raju (1987) suggested that agricultural programme implemented in the adopted villages is successful only when the local support is assured. Therefore, youth clubs, village panchayath, young farmers association and other village-based organizations should contribute for the success of the programme.

Mishra (1989) suggested that effective structural linkages among agencies are essential for successful co-ordination. He opined that better the linkage, better the

co-ordination, more expeditious and successful implementation of agricultural development programmes can be expected. He also stated that organizational level co-ordination is one of the important factors for minimization of delays. He further suggested following some steps in order to ensure co-ordination between agencies.

1. Orientation meeting should be organized in which functionaries of various agencies may know about objectives, procedures and limitations of agencies,
2. A co-ordination cell should be constituted
3. Proper system for gathering of information regarding progress should be evolved
4. Review meetings should regularly be organized; representatives of different agencies are request to attend these meetings.

Krishnamurthy (1991) suggested that if co-ordination of agricultural programmes have to succeed, it is necessary that agencies involved must have clearly written statement of objectives and programmes. This is one of the important requirements that ensure good co-ordination. He further suggested that full and mutual understanding of the objectives of each agency is essential in order to avoid inter-agency conflict and overlapping of activities among different agencies involved in agricultural development. He also suggested that official support regarding appropriate instructions have to be provided to their representatives of all participating agencies.

Sheikh (1991) opined that co-operation between and among agencies and teamwork can ensure effective co-ordination. These cannot be left to hit or miss efforts but are the fruit of continuous and constant application of management policy. He further stated that communication and meetings are two dependable instruments, but even the best of these will fail without positive backing from top management, which through its power of delegation and control can co-ordinate activities.

Rao (1992) stated that intra-agency co-ordination is required for effective communication of the policy regarding adult education from top to the bottom level and feedback from the bottom to the top so that government policies could be realistically framed. Inter-agency co-ordination is necessary between government agencies and various other officials, non-officials agencies that are engaged in agricultural development. He further stated that co-ordinating machinery at all levels from the center to the village level is also required.

Thomas (1997) suggested changing the existing structures of the agency in all respects. He stated in this regard that the government of Andhra Pradesh changed the structure of their administration for effective co-ordination. Instead of 330 middle tiers Panchayath Raj, newly formed 1104 Mandal Praja Parishad (MPP) and each of the MPP covers the area of 24 revenue villages with 35 to 55 thousand people. The MPPs are sought to be developed as units of decentralization rural administrative system where all important government departments are to operate without changing the earlier power with the Panchayath.

Yonggong (2000) suggested that co-ordination policy is needed for protecting producers' right of knowledge. He opined that government could take the initiative in this regard. A unified co-ordination, planning and policy framework is essential for implementing agricultural development programme. Efficient support systems in terms of finance, administration and co-ordination from government at different levels are also essential for the same.

It may be seen that the reviewed above provided ample suggestions for effective inter-agency co-ordination. A similar trend but more specific and fruitful suggestions may be predicted in the present study.

2.7.4 Suggestions regarding appropriate approaches for effective co-ordination

Marx (1969) suggested some approaches to achieve inter-agency co-ordination at various levels as:

1. **Staff establishment:** It refers to part of the task of co-ordinating activities of different agencies, may be entrusted to offices or officers that serve the Chief Executive in a staff capacity and exercise authority essentially in his name and by his direction.
2. **Special co-ordinating agencies:** It refers to establishment of a separate agency with explicit and specific authority for pulling together governmental activities in order to organize the productive resources of the country, i.e., to function at national level.
3. **Use of inter-agency committee:** Such committees consisting of representatives of several agencies, function at rather specific levels.

It may be seen that the reviewed above does not provide any firm ground to suggest regarding appropriate approaches for effective co-ordination. The present study may further focus in this aspect.

2.7.5 Need training for the personnel to achieve better inter-agency co-ordination

Mukherji (1958) suggested that training of personnel involved in a programme could help them to co-ordinate their activities.

Naidu (1963) felt that in addition to multiplication and strengthening the agencies through training needs to provide finance, importance be given to co-ordinate

financing with schemes of agricultural development and that credit be utilized for productive purpose alone.

Jaiswal *et al.* (1969) in their study on co-ordination concluded that constant and continuous training is an essential component to upgrade the knowledge of facts, scientific knowledge and scientific methods to improve professional competence among personnel involved in a development programme. This would also help them to acquire knowledge about really newer problems and or better solution for the older ones. Advance training could provide perspective and tools for development.

William (1970) analyzed the training programmes in Nigeria and suggested that the professional development of extension officers was very important to extension service. Further, he stressed on the thorough analysis of training requirements and clearly stated administrative policies to support those training requirements like providing adequate opportunities for the extension officers to have a rewarding carrier in the organization.

Coombs and Ahmed (1974) emphasized the need to utilize the services of local volunteers and local leaders in agricultural programme through training. Since they would act as opinion leaders in the rural areas and help in articulation of village needs.

Haragopal and Mohan (1974) stated that the central theme of any training programme of government employees working particularly at the lower levels were to motivate them to develop a proper attitude towards public that enhance effective co-ordination.

Government of India (1976) recommended through the report of National Commission on Agriculture that imparting in service training to the officer at block level, which may include both specialized and general education with emphasis on ongoing development programme. They further reported that such a programme be

problem oriented and job-oriented to cover all levels of personnel in government departments.

Sawant (1978) found that training of representatives of participating agencies performed fairly well, while training of leaders involved in the programme performed satisfactorily. He suggested that training of professional leader is essential for effective co-ordination.

Raju (1987) suggested that training of local leaders is important. Involvement of trained leaders in advance as well their association with the representatives of the participating agencies in the programme should be encouraged. Messages transferred through local leaders are likely to be accepted with least resistance.

From the foregoing reviews provided ample suggestions for inter-agency co-ordination. A similar trend but more specific suggestion may be predicted in the present study.

2.7.6 Suggestions for effective co-ordination for integrating agricultural development programmes

Coombs and Ahmed (1974) in their review of non-formal education programme in different developing countries of the world made certain observations and suggestions in connection with integrated programmes. Some of their observations are summarized below:

1. Self Employment and Need Assessment's (SENA's) rural mobile training programme in Columbia showed better results in areas, where it had close collaboration and in consultation with one or more other agencies, supplying well defined and clearly needed training inputs for a more broadly planned local development programme. In area where no other agencies collaborated by way of local development planning, the results were less impressive.

2. The critical review of the programme namely, Overall Rural Development (ORD) in Republic of Korea aimed at improving family and community life revealed impressive record of achievement when local clubs and volunteer leaders reinforced the efforts of extension agency.
3. In connection with inter-agency collaboration for communication of message, the problems of co-ordination activities of different agencies were often more complex in government operated multi-media systems than in voluntary agencies. It was especially difficult, as many of the observations testified, to get subject matter specialists and communication specialists and their respective agencies to collaborate effectively. However, Senegal's effective way to ensure the efficient sharing of radio facilities by different government agencies proved to be success.
4. Many agricultural extension services operated without organic links or close collaboration with credit, input and marketing services handled by other agencies. Most Latin American extension services were of this type. At the opposite end of the scale were, of course, such integrated projects as CADU, Comilla, Bangladesh in which extension services were fully meshed with virtually all complementary services for agricultural development.

The preceding reviews provided negligible number of suggestions for effective co-ordination for integrating agricultural development. The present study may throw further focus in this aspect.

2.7.7 Model for effective co-ordination

Model is the simplified representative of a real thing or object either living or non-living. Model is a framework, which indicates how works or activities will have to be performed well.

Silveira (1974) in his study - A model for co-ordination of agencies related to specially funded educational programmes, has drawn some of the following conclusions:

1. Formal inter-agency co-operative contracts do exist, but the relatively high number of programmes were operating without such contracts suggests a duplication of services and/or a lack of systematic co-ordinated delivery system.
2. Conflicting regulations governing the various institutions of social service inhibit inter-agency co-operation.
3. Bureaucratic maze through which inter-agency co-operation agreements must pass impede such agreements.
4. A substantial majority of the services shared with education units by non-educational agencies are a result of informal agreements or voluntary unilateral action.

Kunju (1989) developed an empirical model of the linkages between and among the research, extension, client and input subsystems and showed the strong and weak linkages. However, research subsystem (RSS) perceived to have strong linkages with the extension subsystem (ESS) and the client subsystem (CSS), the ESS and the CSS found to have weak linkage with the RSS. The ISS though perceived to have strong linkages with the RSS and the CSS, these two subsystems were found to have weak linkage with the RSS and this found to be the weakest link followed by the ISS in TOT of improved rice varieties released by the Kerala Agricultural University.

Gupta (2002) developed an empirical modal of research and extension linkage. Scientists and extension personnel, methods and communication they used for establishing and maintaining linkages carried out the investigation to know the performance of linkage activities. Similarly. the investigation was carried out to know

the constraints faced by them in R-E linkages and to get the suggestions for strengthening the linkages between scientist and extension personnel. The investigator suggested through the model that different extension methods viz., bimonthly workshops, NARP meetings, joint farm trials, training, exhibition, krishimela, field days/visits, farmers-scientists interaction, diagnostic field visits, demonstration etc., through which both scientist and extension personnel may establish linkages with each other. In case of technology development the extension methods namely, NARP meetings, joint farm trials and farmers-scientist interaction through which both scientists and extension personnel may establish linkage with each other.

The foregoing reviews about model development for effective co-ordination showed that there is no established model for effective co-ordination. The present study may throw further light on this aspect.

2.8 CONCEPTUAL MODEL OF THE STUDY

The main objective of the conceptual model attempted in this section is to provide an effective backdrop against which the theoretical conclusions and the relationships predicted among the multi famous agencies involved in agricultural development could be empirically verified. Studies in the past have unequivocally illustrated co-ordination behaviour as a multivariate phenomenon explained by a wide spectrum of sub dimensions under major dimensions treated as factors. These sub dimensions or factors are so intricately interwoven with each other that they have to be viewed more in a totality rather than as separate entities. While discussing these features in the field of social psychology Kreeh and Crutchfield (1948) stated that it is impossible to analyze an individual's behaviour either purely in a sociological context or purely in a psychological context. Newcomb *et al.* (1965) also remarked human action as the interaction of different variables.

In this section, it is proposed to begin by anchoring a number of behaviours associated with co-ordination treated as sub dimensions under major dimensions among the representatives of agencies involved in agricultural development. These sub dimensions are anchored or fixed based on practical experience in the field and from more general knowledge concerning both human behaviour and the functioning of groups and agencies for inclusion in scale construction in order to measure the level of co-ordination among agencies involved in agricultural development.

The 'Behaviourally Anchored Rating Scale' (BARS) method developed by Campbell *et al.* (1973) describes that this is an appropriate technique for scale construction and measure the level of performance of individuals with less errors. According to this technique, a group of concerned experts set out the sub dimensions/ dimensions through consulting with each other and fixed or anchored them. In detail procedures have been described in the methodology chapter. This BARS technique was used in the present study for scale construction. This study has emphasized to identify the factors, indicators and explore the real situation of co-ordination among agencies involved in agricultural development.

The sub dimensions then grouped under four major dimensions viz., structural, functional, technological and psychological/sociopolitical and subjected to standardization and validation as a multidimensional scale were expected to tap effective co-ordination factor in agencies in a meaningful, reliable and quantitative way.

As Gurukkal (2003) has called for adoption of a new social science research methodology that goes beyond analysis of empirical data. He said social reality couldn't be understood by surveying empirical condition and quantifying them because social reality is socially constructed.

Based on this concept, the researcher visited all agencies involved in agricultural development prior to final survey. He personally interacted with officers-in-charge of

all agencies and collected their opinions unstructurally and compiled. After, he presented all those pertinent opinions in presence of a group of experts and prepare a comprehensive list of sub dimensions under each major dimensions of co-ordination. The experts interact with each other and passed their individual opinion for anchoring behaviours as sub dimensions of co-ordination.

The sub dimensions under 'structural dimension' included in the study were, pattern of authority, co-ordination committee, pattern of communication, pattern of independence, pattern of interdependence, pattern of participation and role identity.

Many studies reviewed in the past have established the importance of these sub dimensions in influencing effective co-ordination among agencies involved in agricultural development (Litwak and Hylton, 1952; Reid, 1964; Dubhashi, 1966; Kelsey and Hearnly, 1967; Prasad, 1967; Seshadri, 1967; Marx, 1969; Jalihal, 1971; Sandhu and Gupta, 1974; Sawant, 1978; Gill *et al.*, 1982; Dahama and Bhatnagar, 1985; Appaji and Kumar, 1986; Raju, 1987; Mishra, 1989; Krishnamurthy, 1991; Metcaf, 1996; Issac, 1996; Tripathi and Reddy, 1997; Princes, 1998; James *et al.*, 2000 and Santhos, 2000).

They opined that in absence of these above mentioned sub dimensions, the structure of co-ordination might not be concreted and effective co-ordination among the agencies involved in agricultural development leads to failure due to malfunction of functional units.

The sub dimensions under 'functional dimension' included in the study were; clarity of objectives and programmes, technical orientation, integration of services, procedure for committee meetings, teamwork, information sharing, resource allocation, time management, project formulation, project implementation and accountability.

Many studies reviewed in the past have established the importance of these sub dimensions in accelerating co-ordination for agricultural development (Simon, 1957; Mukherji, 1961; Prakash, 1961; Naidu, 1963; Reid, 1964; Pelz, 1966; Vepa, 1966; Jain, 1967; Kelsey and Hearney, 1967; Jalihal, 1971; Krishnaswamy, 1972 and Arnold, 1973; Combs and Ahmed, 1974; Sandhu and Gupta, 1974; Murdia, 1975; Jaiswal, 1977; Satpathi and Das, 1988; Mishra, 1989; Kumar, 1993; Sharma and Sohal, 1994 and Purkat, 1996). All of them proposed that when teamwork started among the representatives of agencies, then rest of all above mentioned functional units (sub dimensions) centralize towards it and leads to dynamics of effective co-ordination among them. On the other hand, in absence of these functional units, co-ordination among agencies leads to serious aftermath.

The sub dimensions under 'technological' dimension included in the study were; technology prioritization and technology integration. Various studies in the past have established of these sub dimensions in contributing effective co-ordination among the agencies involved in agricultural development (Government of India, 1963; Gill *et al.*, 1982 and Gupta, 2002). They opined that technology prioritization and integration need effective co-ordination among agencies involved in agricultural development for its development. A good number of technologies become useless due to lack of proper prioritization and integration of among them. Effective co-ordination among agencies involved in agricultural development can save time and valuable resources in this case.

In 'psychological and socio political' dimension in the study, empathy, motivation, accommodation, interpersonal skills, workload, attitude, towards co-ordination, job commitment, self confidence, leadership and political interference were included as sub dimensions of co-ordination.

Various studies reviewed in the past have established the importance of above mentioned sub dimensions in enhancing effective co-ordination among agencies

involved in agricultural development (Naidu, 1963; Paranjape, 1963; Reid, 1964; Pelz, 1966; Kelsey and Hearney, 1967; Prasad, 1967; Seshadri, 1967; Reidel, 1969; Government of India, 1970; Robert, 1970; Jalihal, 1971; Gill *et al.*, 1982; Appaji and Kumar, 1986; Raju, 1987; Satpathi and Das, 1988; Tripathi and Reddy, 1997; Yongong, 2000 and Gupta, 2002).

They have emphasized of the entire above mentioned sub dimensions especially on leadership, empathy, motivation, and attitude towards co-ordination. Appropriate leadership can drive towards effective co-ordination among agencies involved in agricultural development.

The present conceptualization of the interaction between earlier mentioned sub dimensions under four major dimensions and co-ordination among agencies involved in agricultural development is based on extensive review of relevant literatures and collected opinion from the representatives of agencies involved in agricultural development through personal visit with them prior to final survey.

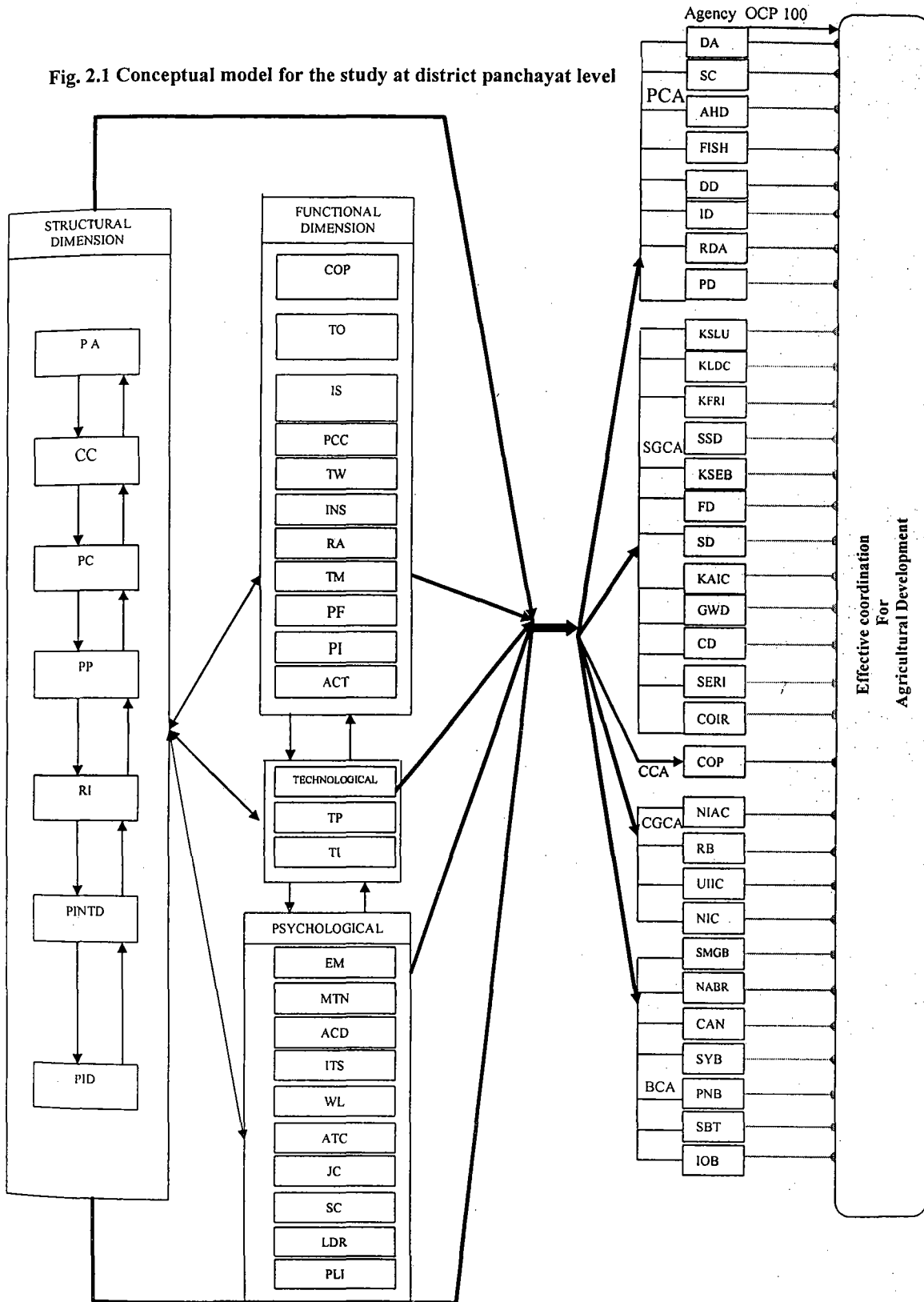
The researcher's concept in the present study is that within the structure; functional, technological and psychological and socio political units are included. If the structural units are properly set up, then rest three units function well and if not then vice versa. Structural units directly influence on the functional, technological and psychological and socio political units and ultimately these combined effect on agencies involved in agricultural development. Finally effect to effective co-ordination for agricultural development among the agencies involved in agricultural development.

Thus, co-ordination among the agencies involved in agricultural development is conceptualized in the present study to be the direct or indirect consequences of different interacting sub dimensions under major dimensions as factors of co-ordination among agencies involved in agricultural development, some of them under structural dimension (Pattern of authority, co-ordination committee, pattern of

communication, pattern of participation, role identity, pattern of interdependence and pattern of independence), functional dimension (clarity of objectives and programmes, technical orientation, integration of services, procedure for committee meetings, teamwork, information sharing, resource allocation, time management, project formulation, project implementation and accountability), technological dimension (technology prioritization and technology integration) and psychological and socio political dimension (empathy, motivation, accommodation, interpersonal skills, workload, attitude towards co-ordination, job commitment, self confidence, leadership and political interference). The empirical validation of which much insight to understanding this vivacious phenomenon.

The conceptual models for the study proposed here are represented in Fig.2.1, 2.2 and 2.3

Fig. 2.1 Conceptual model for the study at district panchayat level



LEGEND

Subdimensions

PA: Pattern of Authority
CC: Co-ordination Committee
PC: Pattern of Communication
PP: Pattern of Participation
RI: Role Identity
PINTD: Pattern of Interdependence
PID: Pattern of Independence
COP: Clarity of Objectives and Programmes
TO: Technical Orientation
IS: Integration of Services
PCC: Procedures for Committee Meetings
TW: Teamwork
INS: Information Sharing
RA: Resource Allocation
TM: Time Management
PF: Project Formulation
PI: Project Implementation
ACT: Accountability
TP: Technology Prioritization
TI: Technology Integration
EM: Empathy
MTN: Motivation
ACD: Accommodation
ITS: Interpersonal skills
WL: Work load
ATC: Attitude towards Co-ordination
JC: Job commitment
SC: Self confidence
LDR: Leadership
PLI: Political Interference
OCP: Overall co-ordination performance

Agency

DA: Department of Agriculture
SC: Soil Conservation Department
AHD: Animal Husbandry Department
FISH: Fishery Department
DD: Dairy Development Department
ID: Irrigation Department
RDA: Rural Development Agency
PD: Panchayat Department
KSL: Kerala State Land Use Board
KLDC: Kerala Land Development Corporation
KFRI: Kerala Forest Research Institute
SSD: Soil Survey Department
KSEB: Kerala State Electricity Board
FD/DF: Forest Department
SF: Social Forestry
KAIC: Kerala Agro. Industries Corporation
GWD: Ground Water Department
CD: Co-operation Department
SERI: Sericulture Department
COIR: Coir Development Department
COP: Co-operative Agency
NIAC: The New India Assurance Co. Ltd.
RB: Rubber Board
UIIC: United India Insurance Co. Ltd.
NABR: National Bank for Agrl. & Rural Devt.
NIC: National Insurance Company
SMGB: South Malabar Gramin Bank
CAN: Canara Bank
SYB: Syndicate Bank
PNB: Punjab National Bank
SBT: State Bank of Travancore
IOB: Indian Overseas Bank

Category

VC: Very close
C: Close
MD: Moderately close
FD: Far distant

PCA: Panchayat Controlled Agency
SGCA: State Government Controlled Agency
CCA: Co-operative Controlled Agency
CGCA: Central Government Controlled Agency
BCA: Banking Controlled Agency

Fig. 2.2 Conceptual model for the study at block panchayat level

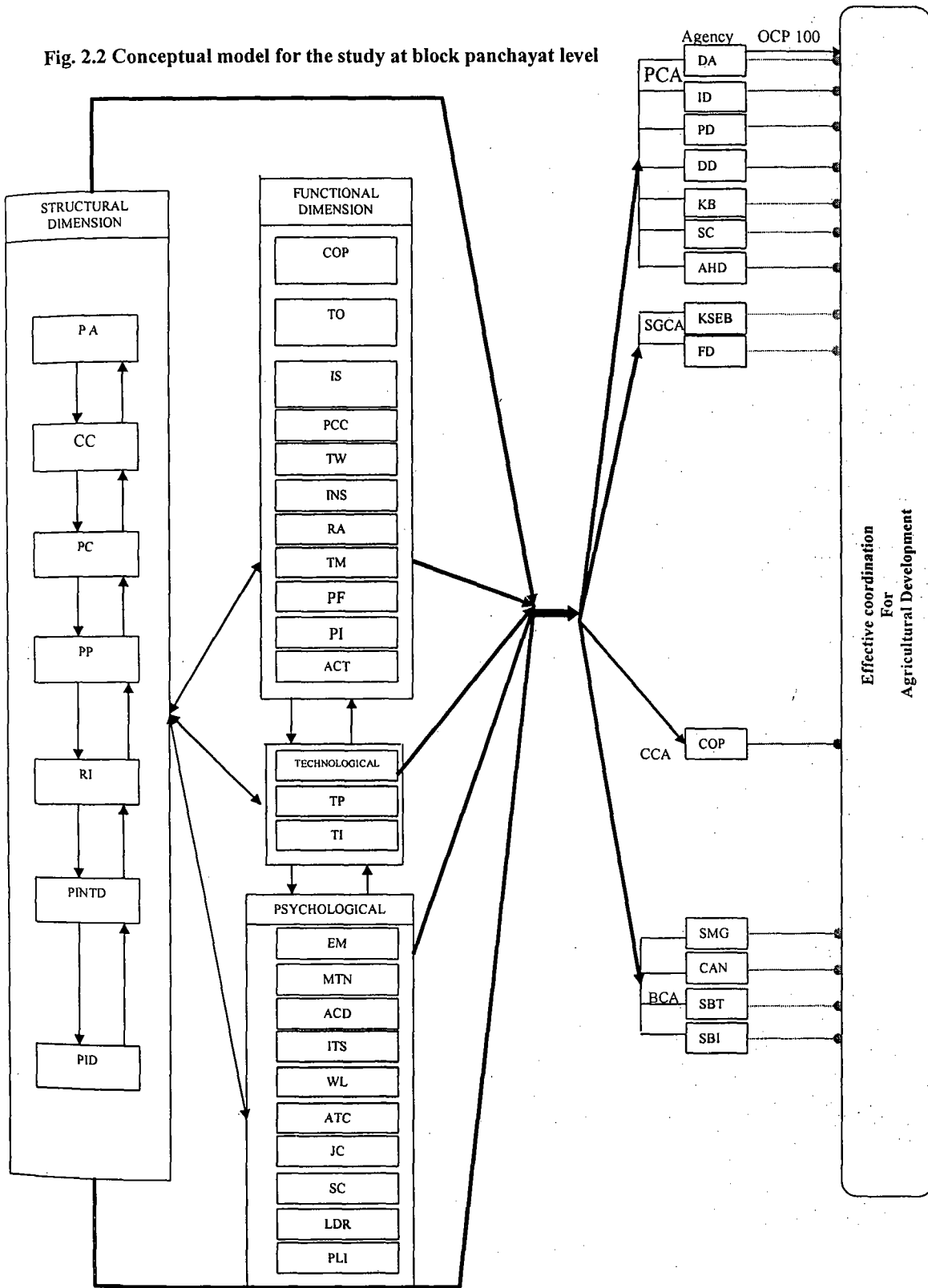
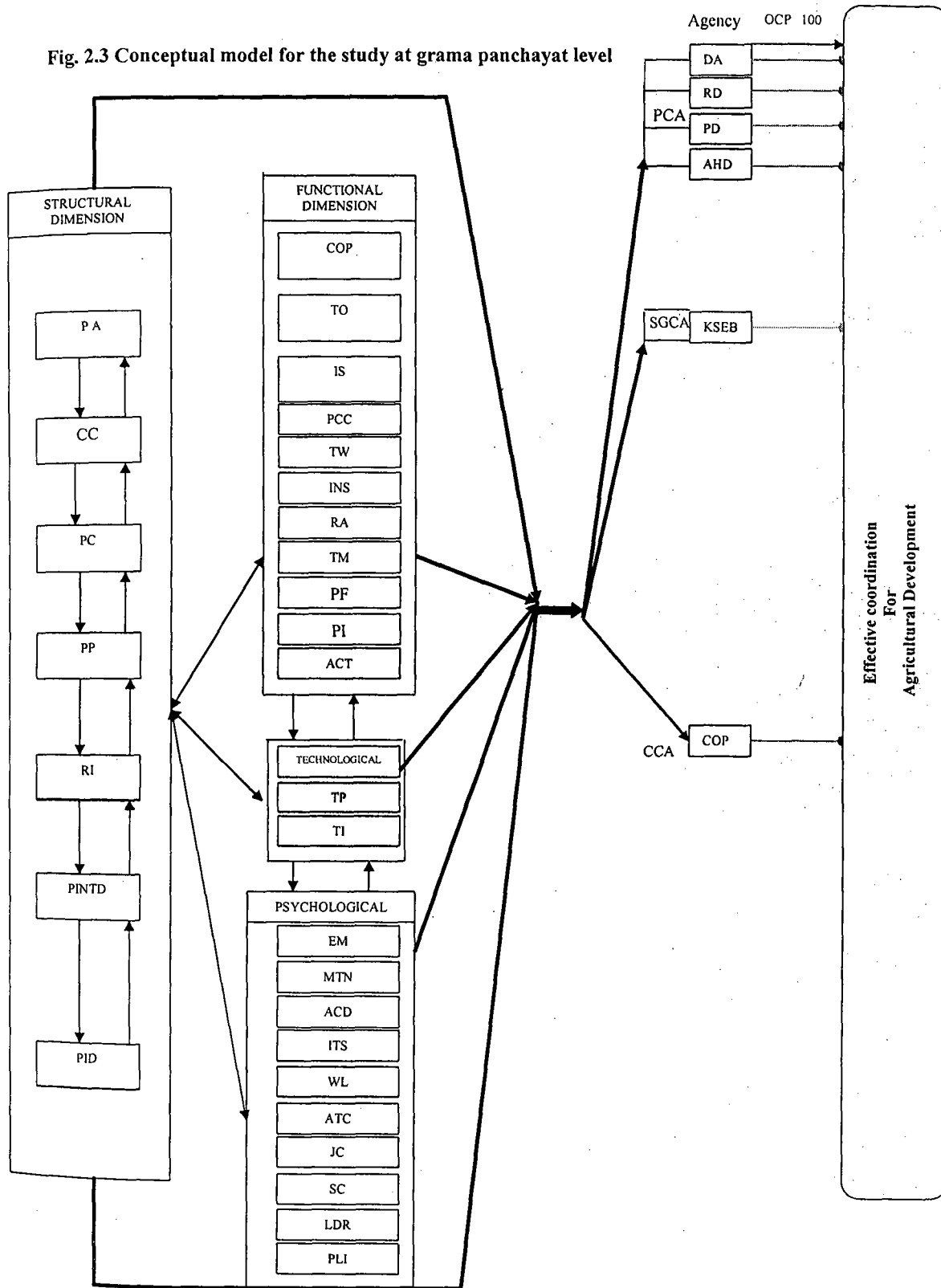


Fig. 2.3 Conceptual model for the study at grama panchayat level



2.9 HYPOTHESES OF THE STUDY

Keeping in view of the objectives, review of literature and conceptual orientation of the study, the following hypotheses were framed for the present investigation.

1. The level of co-ordination as perceived by the participating agencies in major dimensions viz., structural, functional, technological and psychological and socio political at district panchayat level will be the same.
2. The level of co-ordination as perceived by the participating agencies in major dimensions viz., structural, functional, technological and psychological and socio political at block panchayat level will be the same.
3. The level of co-ordination as perceived by the participating agencies in major dimensions viz., structural, functional, technological and psychological and socio political at grama panchayat level will be the same.

*Materials and
Methods*

CHAPTER III

MATERIALS AND METHODS

The present investigation was undertaken with the main objective of analyzing dynamics of co-ordination for agricultural development in the context of democratic decentralization. A general description of the methodology and procedure followed in conducting this research study is furnished in this chapter under the following sub headings.

- 3.1 Research design
- 3.2 Locale of the study
- 3.3 Selection of agency and categorization for the study
- 3.4 Selection of respondents
- 3.5 Description of the study areas
- 3.6 Operationalization and measurement of co-ordination
- 3.7 Method employed in constructing multidimensional co-ordination scale
- 3.8 Preparing the co-ordination index to determine the level co-ordination of agency.
- 3.9 Preparing the co-ordination coefficient for measuring the extent and gaps in co-ordination of agency.
- 3.10 Problem/constraints related to co-ordination among agencies involved in agricultural development
- 3.11 Suggestions to strengthen co-ordination among agencies involved in agricultural development

- 3.12 Data collection procedure
- 3.13 Statistical tools employed for data analysis

3.1. RESEARCH DESIGN

There is a discernible philosophical undertone to this study. Hence, after a careful analysis of the available literature and keeping in view of objectives, more qualitative and behavioural attributes (sub dimensions) were selected to be included in the study. Most of the attributes/subdimensions are *expost facto* in nature and offer little chance to be controlled by the researcher. Therefore, *expost facto* research design was decided to be used for the present study. According to Kerlinger (1964), *expost facto* research is “systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manipulations have already occurred or because they are inherently not manipulability. Inferences about relations among variables are made without direct intervention from concomitant variation of independent and dependent variables. Hence, the research design was of *expost-facto* type. Stratified multistage random sampling has been used for selecting agencies and respondents.

3.2 LOCALE OF THE STUDY

Considering the peculiar nature and intricacy involved in the phenomena to be explored a study like this demands, an analysis in depth rather than in spread. Therefore out of 14 districts in Kerala, Thrissur district had been purposively selected as the study area. Moreover, the selected district is in the proximity of Kerala Agricultural University main campus with five colleges, twelve research stations, Communication centre, Central Training Institute, Kerala Institute of Local Administration (KILA) and Krishi Vigyan Kendra (KVK).

So the availability of relevant information and easy accessibility to the study area is expected to help conduct the study in depth.

3.2.1 Selection of study unit

According to the requirement of approved technical programme, there was no upto date record of well functioning and not well functioning blocks in the district Panchayat. The researcher collected previous years' data on relevant items of different development schemes implemented by District Rural Development Agency (DRDA), District Collectorate and District Credit Plan programmes data from lead bank in Thrissur district. The researcher then, analyzed data by fixing the criteria in consultation with experts in the concerned discipline.

3.2.1.1 Performance evaluation of block panchayats

a) Evaluation by District Development Section (DDS), District Collectorate, Thrissur.

Following criteria was used

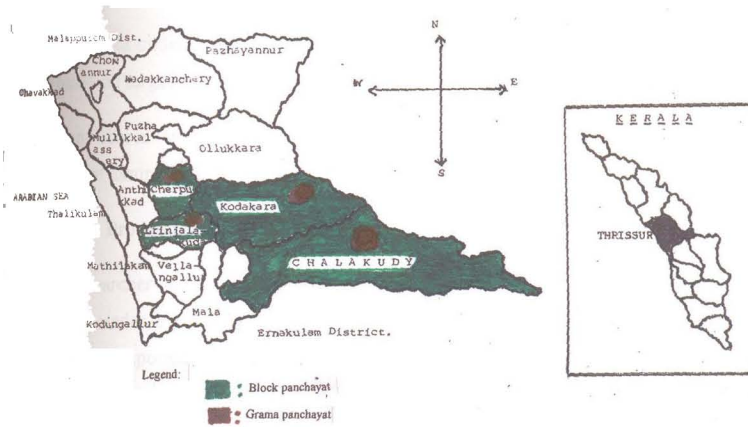
“Mean score under the plan progress based on target and achieved activities for the year 2000-2001 and 2001-2002.

Evaluation Procedure

The researcher collected relevant data on plan progress during the year 2000-2001 to 2001-2002 separately. Among all those data, four types of data had been included under evaluation viz., fund received, percentage of expenses, project targeted and achieved. All data on financial and project progress was placed block wise and converted into percentage separately. Score '1' was assigned for each percent of financial expense and project achievement. Then the two separate scores were added and made a mean score. Finally, mean score had been converted into '10' point scale.

THRISSUR DISTRICT

Fig. 3.1 Map showing the study areas



b) Evaluation by District Rural Development Agency (DRDA), Thrissur.

Following criteria were used

1. Mean scores under Indira Awaz Yojana (IAY) based on target and achieved activities.
2. Mean scores under Swarna Jayanthi Grama Swrozgar Yojana (SGSY) at individual level based on target and achieved activities.
3. Mean scores under Swarna Jayanthi Grama Swrozgar Yojana (SGSY) at group level based on target and achieved activities.
4. Mean scores under Swampoorna Grama Rozgar Yojana (SGRY) for employment assurance based on target and achieved activities.

Evaluation Procedure

The researcher collected previous three years relevant data from 1999-2000 to 2001-2002 under Swarna Jayanthi Grama Swrozgar Yojana (SGSY) at individual level. Two components namely, target and achieved activities were taken under consideration as evaluation criteria. All data were placed block wise and converted to percentage separately. Score '1' was assigned for each percent of achievement and calculated the mean score. Finally, the mean score had been converted into 10 point scale (Table3.1)

At group level, only one year data was available i.e. 2001-2002. Same components and procedure were followed for evaluating the block under SGSY scheme (Table3.1)

In case of Indira Awaz Yojana (IAY) scheme, previous three years data from 1999-2000 to 2001-2002 were taken under analysis for evaluating block

performance. Two components namely, target and achieved activities were taken under consideration for the same. All data were placed under each block and converted to percentage. Score '1' was assigned for each percent of achievement and calculated the mean score. Finally the mean score had been converted into 10 point scale (Table3.1)

For evaluating the block performance under Swampoorna Grama Rozgar Yojana (SGRY) on employment assurance, only one year data i.e. 2001-2002 was available. Two components viz., target and achieved activities were taken under consideration for the same. All data was placed against under each block and converted to percentage of achievement. Score '1' was assigned for each percent of achievement and calculated the mean scores. Finally, the mean scores had been converted into 10 point scale (Table3.1)

c) Evaluation by banking agency

Following criteria was used

"Mean scores of banking agency under Thrissur District Credit Plan based on their target and achieved activities in agricultural and allied sectors".

Evaluation procedure

For evaluating the block performance under district credit plan in agricultural and allied activities, the researcher collected only one year data during i.e.2001-2002. Two components viz., target and achieved on disbursement of loan were been taken for analysis. All data were placed under each block and converted to percentage of achievement. Score '1' was assigned for each percent of achievement and calculated mean score. Finally, the mean score had been concerted into 10 point scale (Table3.1)

Table 3.1. Performance of block panchayats under various schemes in Thrissur district of Kerala

Name of Block	Evaluation by DRDA (Score out of 10)				Evaluation by DDS (Collectorate) (Out of 10)	Evaluation by Banking Agency (Out of 10)	Total Mean Score (Out of 10)
	Mean Scores (IAY)	Mean Scores (SGSY) Individual.	Mean Scores (SGSY) Group	Mean Scores (SGRY)			
1. Anthikkad	6.73	6.94	0.00	3.18	1.41	3.20	3.57
2. Chalakuddy	5.38	8.83	9.10	6.67	4.33	10.00	7.39
3. Chavakkad	5.88	7.66	10.00	6.84	3.03	4.70	6.35
4. Cherpu	4.72	8.96	4.38	3.08	2.33	3.40	4.48
5. Chowannur	4.25	6.55	7.03	2.81	1.54	5.00	4.53
6. Irinjalakuda	6.06	6.44	10.00	6.15	2.74	5.70	6.18
7. Kodakara	5.83	5.32	3.45	5.65	3.54	3.30	4.52
8. Kodungallur	6.94	9.23	7.37	4.29	2.12	6.90	6.14
9. Mala	6.63	7.46	0.00	6.00	3.37	6.40	4.98
10. Mathilakam	4.89	9.45	10.00	8.89	2.33	8.40	7.33
11. Mullassery	4.21	6.52	2.00	6.25	3.78	10.00	5.46
12. Ollukkara	7.57	9.36	6.00	4.00	2.14	6.10	5.86
13. Pazhayannur	7.47	9.10	8.72	5.00	3.26	9.80	7.23
14. Puzhakkal	6.77	8.97	9.04	1.79	2.19	4.40	5.53
15. Thalikulam	4.50	9.89	10.00	2.86	2.63	9.30	6.53
16. Vellangallur	5.23	8.71	10.00	1.50	3.67	7.90	6.17
17. Wadakkancherry	3.59	6.00	5.53	2.81	1.77	8.30	4.67

3.2.1.2 Stratification of block panchayats based on database performance evaluation

For stratification of blocks into two strata viz., 'well functioning' and 'not well functioning', the mean of performance scores under IAY scheme, SGSY at individual and group level, SGSY, SGRY for employment assurance, plan progress under District Development Section (DDS) and District Credit Plan had been rated as the index. The indices for the 17 blocks ranged from 3.57 to 7.39 giving a mean value of 5.70. Equal and above mean score (≥ 5.70) had been treated as **Stratum-1** viz., 'well functioning block' and below (< 5.70) treated as **Stratum-11** 'not well functioning block'. Out of 17 block panchayats in Thrissur district, 9 blocks viz., Chalakuddy, Chavakkad, Irinjakuda, Kodungallur, Mathilakam, Ollukkara, Pazhayannur, Talikulam, and Vellangallur fall in the Stratum-1 (score ranged from 5.86 to 7.39) and 8 blocks viz., Anthikkad, Wadancherry, Chawnnur, Mullassery Mala, Cherpu, Puzhakkal and Kodakara fall in the Stratum-11 (scores ranged from 3.57 to 5.53), (Table3.2).

3.2.1.3 Selection of block panchayats and grama panchayats

Four blocks were selected for the study using stratified random sampling with equal allocation. By randomization, Chalakuddy and Irinjalakuda were selected from Stratum-1 (well functioning) and Kodakara and Cherpu were selected from Stratum-11 (not well functioning).

From each selected block, one grama panchayat was selected using randomization. Thus Pariyaram grama panchayat from Chalakuddy block, Porathissery grama panchayat from Irinjalakuda block, Kodakara grama panchayat from Kodakara block and Cherpu grama panchayat from Cherpu block were selected for the study. (Table3.3).

Table3.2. Stratification of block panchayats in Thrissur district based on database performance evaluation

Stratum-1 'Well functioning' (≥ 5.70 score)		Stratum-11 'Not well functioning' (< 5.70 score)	
Name	Overall score	Name	Overall score
1. Chalakuddy	7.39	1. Anthikkad	3.57
2. Mathilakam	7.33	2. Cherpu	4.48
3. Pazhaynnur	7.23	3. Kodakara	4.52
4. Thalikulam	6.53	4. Chowannur	4.53
5. Chavakkad	6.35	5. Wadakkancherry	4.67
6. Irinjalakuda	6.18	6. Mala	4.98
7. Vellangallur	6.17	7. Mullassery	5.46
8. Kodungallur	6.14	8. Puzhakkal	5.53
9. Ollukkara	5.86		

Table 3.3. Blocks and grama panchayats selected for the study

Block Panchayats in Thrissur District	Selected Block Panchayats	Grama Panchayats in Each selected Block Panchayat	Selected Grama Panchayats
Stratum-1 1. Chalakuddy 2. Chavakkad 3. Pazhayannur 4. Kodungallur 5. Mathilakam 6. Ollukkara 7. Irinjalakuda 8. Talikulam 9. Vellangallur	Chalakuddy	1. Athirapilly 2. Karukutty 3. Kodassery 4. Koratty 5. Melur 6. Pariyaram	Pariyaram
	Irinjalakuda	1. Kathor 2. Karalam 3. Parappukara 4. Muriyad 5. Porathissery	Porathissery
Stratum-11 1. Cherpu 2. Mullassery 3. Kodakara 4. Chowannur 5. Puzhakkal 6. Mala 7. Anithikkad 8. Wadakkacherry	Cherpu	1. Avinissery 2. Cherpu 3. Paralam 4. Vallachira	Cherpu
	Kodakara	1. Alagappanagar 2. Kodakara 3. Mattathur 4. Pudukkad 5. Trikkur 6. Varantharapilly 7. Nenmanikara	Kodakara
Total	04	22	04

Thus Thrissur district, four selected blocks and four grama panchayats constituted the study areas at the first stage. Apart from above mentioned study areas, Palghat district at the district level, Ollukkara and Mala blocks at the Block levels and Nathathara, Puthur, Panancherry and Mala at the grama panchayat level were selected for conducting the pilot study and pretesting of the interview schedule as the second stage of the study.

3.3. SELECTION AND CATEGORIZATION OF AGENCIES FOR THE STUDY

The major concern of the study being the co-ordination among agencies officers-in-charge/representatives involved in agricultural development. The researcher visited all those agencies in Thrissur district panchayat and selected four blocks panchayats, namely Chalakkudy, Irinjalakkuda, Kodakara and Cherpu and four grama panchayats viz., Pariyaram, Porathissery, Kodakara and Cherpu. He collected individual opinion from all officers-in-charge/representatives regarding co-ordination issue and compiled for the first stage. For the second stage, screening of agencies involved in agricultural development was done in consultation with concerned experts. Finally, categorized the selected agencies involved in agricultural development as:

- a) Panchayat controlled agencies
- b) State government controlled agencies
- c) Central government controlled agencies
- d) Co-operatives controlled agencies
- e) Banking controlled agencies

3.3.1 Screening procedure of banking agencies

The investigator visited twenty banking agencies in Thrissur District. All those agencies are impossible to include in the study. So, banking agencies were screened

maintaining systematic procedure for reducing the number. Screening was done based on the contribution in agricultural and allied activities. He collected last 3 years data from 1999-2000 to 2001-2002 on the disbursement of credit in agricultural and allied sectors. Collected data were placed under each banking agency in Thrissur district based on their target and achievement and made the individual total achievement over years. Percent of achievement was calculated based on these totals. Score '1' was assigned for each percent of achievement and converted into scores. Finally, ranked the agencies based on their obtained scores. Scores ranged from 16.30 to 91.28 (Table 3.4).

Table 3.4 Ranking of banking agencies involved in agricultural and allied activities under Thrissur District Credit Plan from 1999-2000 to 2001-2002.

S.No.	Name of Bank	Performance scores based on (Target & Achieved)	Rank
1	South Malabar Gamin Bank	91.28	1
2	State Bank of Travancore	88.45	11
3	Vijaya Bank	77.38	111
4	Punjab National Bank	54.43	1V
5	Canara Bank	53.42	V
6	State Bank of India	53.28	V1
7	Indian Overseas Bank	51.59	V11
8	Union Bank of India	48.07	V111
9	Corporation Bank	44.65	1X
10	Bank of India	40.85	X
11	Bank of Baroda	38.61	X1
12	Syndicate Bank	32.08	X11
13	Central Bank of India	20.85	X111
14	Indian Bank	16.30	X1V

Score '1' for each percent of achievement

3.3.2 Categorization of banking agencies

The researcher categorized the banking agencies into four based on their obtained scores. viz., excellent performing agency (>73), good performing agency (>53 to up to 73), moderate performing agency (≥ 34 to up to 53) and least performing agency (<34). Thus, three financial agencies, viz., South Malabar Gramin Bank, State Bank of Travancore, Vijaya Bank fall in the first category, Punjab National Bank, Canara Bank and State Bank of India in the second category, five agencies namely; Indian Overseas Bank, Union Bank of India, Corporation Bank, Bank of Baroda and Bank of India in the third category and Syndicate Bank, Central Bank of India and Indian Bank fall in the fourth category respectively (Table 3.5)

Table 3.5 Categorization of banking agencies in Thrissur District based on database performance from 1999-2000 to 2001- 2002.

Excellent Performing Agency (>73)	Good Performing Agency (>53 to up to 73)	Moderately Performing Agency (≥ 34 to up to 53)	Least Performing Agency (<34)
1. South Malabar Gamin Bank	1. Punjab National Bank	1. Indian Overseas Bank	1. Syndicate Bank
2. State Bank of Travancore	2. Canara Bank	2. Union Bank of India	2. Central Bank of India
3. Vijaya Bank	3. State Bank of India	3. Corporation Bank	3. Indian Bank
		4. Bank of India	
		5. Bank of Baroda	

Finally four agencies, one from each sub category had been selected purposively based on their maximum contribution in agricultural and allied activities. Apart from four banks namely; 'National Bank for Agriculture and Rural Development (NABARD)' and 'State Bank of Travancore (ADB)' because of their cent percent

contribution in agricultural development and 'Canara Bank' as lead bank in Thrissur district were included in the study at district level.

In block level, four agencies were selected purposively from each selected block. Agencies selected at district level and having branches in the selected blocks were taken for the block level study.

Table 3.6 Agencies involved in agricultural development selected at different levels in Thrissur district for the study

Level of Panchayat	Name of Panchayat	No. of Agencies Visited (168)	No. of Agencies Selected for the study (100)
District Panchayat	Thrissur District	52	32
Block Panchayat	1. Chalakuddy Block	24	14
	2. Irinjalakuda Block	23	11
	3. Kodakara	18	13
	4. Cherpu	22	11
Grama Panchayat	1. Pariyaram	08	06
	2. Porathissery	07	04
	3. Kodakara	07	04
	4. Cherpu	07	05
Total		168	100

Table 3.7 Category and number of the selected agencies involved in agricultural development at different panchayat levels in Thrissur district

Panchayat level	Panchayat Controlled	State Government Controlled	Central Government Controlled	Co-operatives Controlled	Banking Controlled	Total
District Panchayat	08	12	04	01	07	32
Block Panchayat	23	05	00	05	16	49
Grama Panchayat	16	01	00	02	00	19
	47	18	04	08	23	100

3.4. SELECTION OF THE RESPONDENTS

The officers-in-charge/representatives of the selected agencies involved in agricultural development were decided as the respondents of the study at all levels. The total number of respondents was the same as the number of agencies selected (Table 3.7). Thus 100 respondents constituted the sample for the study. The officers-in-charge/representatives of the participating agencies had been selected as the respondents only because the researcher assumed that they are very much sound about the agencies' actual situation.

3.5. DESCRIPTION OF THE STUDY AREA

Kerala consists of five zones, namely, southern zone; problem zone, central zone, northern zone and high range zone. Thrissur is one of the districts of central zone in Kerala. It is in the central part of central zone as well as Kerala state. The total geographical area is 4,234 sq.km (2,99,390 hectares) and total population of the area is 29,75,000 according to 2001 census. The district has seventeen block panchayats and ninety two grama panchayats, with 1,443 gramas. The literacy is cent percent.

The soils of the area ranges from light red to red. The average rainfall is 1,178 mm (Rabindranathan, 2002).

The district is well connected with other districts in Kerala, by roadways and train ways. It is surrounded by the adjacent Palghat district, Malappuram district and Ernakulam district. Among the selected four block panchayats viz., Chalakuddy, Irinjalakuda, Kodakara and Cherpu, the former is comparatively far distant (45 km) from Thrissur district head quarter and the last is the closest (15 km). The major crops of the selected areas are paddy, vegetables, spices, fruits etc. However, the detailed description of the selected blocks and grama panchayats are given in the Table3.8.

Table 3.8. Detailed information of selected blocks and grama panchayats of Thrissur district for the study.

Name of Panchayats at different levels	Description of Attributes							
	No. of Grama Panchayat	Distance from Thrissur District HQ(km)	Soil Characters	Fertility Status	Area (Sq. km)	Population	Literacy (%)	Main Crops
Block Panchayat Level								
Chalakkudy	06	45	Light red to red	Moderate	524	24,230	100	Paddy, Vegetable, Spice
Irinjalakuda	05	35	Light red to red	Moderate	428	34,220	100	Paddy Vegetable, Spice
Kodakara	07	20	Light red to red	Moderate	450	30,291	100	Paddy Vegetable, Spice
Cherpu	04	15	Light red to red	Moderate	375	24,272	100	Paddy Vegetable, Spice
Grama Panchayat Level								
Pariyaram	12	45	Light red to red	Moderate	24.2	10,247	100	Paddy Vegetable, Spice
Porathissery	15	35	Light red to red	Moderate	24.3	12,320	100	Paddy Vegetable, Spice
Kodakara	15	20	Light red To red	Moderate	24.5	10,200	100	Paddy Vegetable, Spice
Cherpu	17	15	Light red to red	Moderate	24.8	12,270	100	Paddy Vegetable, Spice

3.6. OPERATIONALIZATION AND MEASUREMENT OF CO-ORDINATION

Different scientists from earlier to recent perceived co-ordination at different angles. Sears (1950) stated that co-ordination is the task of bringing things together in harmonious relationships to the end that they would function together effectively.

According to Simon, (1957) co-ordination refers to activity in which participants share a common goal. He defined co-ordination as a process of developing working relationships between or among institutions in order to synchronize their programmes and activities to reach common objectives.

United Nations Development Assistance (1957) defined co-ordination as “spirited joint effort” emerging from “dedication to the achievement of common goals and from respect for one another’s contribution”.

According to Mishra (1959) “co-ordination is a facilitating function or a device to ensure the achievement of goals within stipulated time and cost parameters”.

Newman (1963) referred that co-ordination involves the synchronizing or dove tailing of interdependent activities and demands harmonized programmes and policies. He considered co-ordination as one of the primary goals of every manager and a condition that permeates to all phases of administration.

Dubhashi (1966) expressed that co-ordination is the conscious and deliberate attempt to systematically link up a variety of activities of diverse agencies not necessarily subject to the control of single authority, with a view to realizing their common objectives.

According to Koontz *et al.* (1982) “co-ordination is achieving harmony of individual efforts with group efforts towards the accomplishment of group purposes and objectives.”

According to Muttalib (1990), “co-ordination is the most facilitating, yet delicate intellectual exercise among all the activities in development administration. It seeks to bring about unity in purposes in order to achieve the common objectives effectively”.

According to Gupta, (1992) “co-ordination is fundamental to any organization and a device need for effective and efficient administration. It is a pivot around which the whole machinery of developmental programmes resolves”.

According to Halmann, (1992) “co-ordination is the orderly synchronizing of efforts of the subordinates to provide the proper amount timing and quality of execution so that their unified efforts lead to the stated objectives”.

Sharma (1992) defined that “co-ordination is a process meant to accomplish the desired interaction, co-operation and/or collaboration to an working in union with one focus in view or for achieving some common goals or target or aim or theme or purpose or objectives”.

Metcaf (1996) stated “co-ordination involves the exercise of authority by the incumbent of the office over lower levels, on one hand and discharging of responsibility in relation to higher levels, on the other. Their co-ordination is a running thread that interweaves various levels together and thereby, become a grand vehicle for affected equilibrium in the organization as a whole”.

Tripathi and Reddy (1997) stated, “co-ordination is the management of interdependence in work situations. It is the orderly synchronization or fitting together of the interdependent efforts of individuals in order to attain a common goal”.

According to Ray, (1999) co-ordination means establishing harmonious relationship between the efforts of individuals and groups for the accomplishment of objectives of the organizations.

According to James *et al.* (2000) “co-ordination is the integration of the activities of the separate parts of an organization to accomplish organizational goals”.

Prasad (2000) stated that co-ordination connotes the vital function of keeping different parts of administration attuned to each other. It is the essence of management rather than one of its functions. Co-ordination is the process of integrating the objectives of separate work units, departments or functional areas in order to realize the organizational goal effectively.

Drawing from theoretical conclusion and considered views of experts, co-ordination was operationalized for the present study as behavioural manifestation of intension, wishes, willingness of an officer-in-charge/representative of an agency to establish harmonious relationship with other agencies involved in agricultural development to work in groups in a unified way to achieve agricultural development programmes.

Drawing liberally from the experience of the earlier approaches and theoretical conclusion, a new method was attempted in the present study to measure the level of co-ordination for agricultural development by constructing a multidimensional scale.

3.7 METHOD EMPLOYED IN CONSTRUCTING MULTIDIMENSIONAL CO-ORDINATION SCALE

It was necessary to develop a multidimensional co-ordination scale to measure the level of co-ordination among agencies. As a more objective way of measurement, weightage (scale value) was given to various items for inclusion in the scale. Keeping this view the following steps were used in the scale construction.

3.7.1 Determination of scale values

Scale values were worked out for the multidimensional scale using Behaviourally Anchored Rating Scale (BARS) method was suggested by Campbell, *et al.* (1973), in order to arrive at the interval level of measurement. This method of scale construction is relatively new ones and through it, the performance evaluation in a job or a profession is measured. The construction of the scale is a lengthy process, and it is done in three stages. The first stage is one where a group of experts, usually through discussion, decides upon the possible dimension/subdimensions, which can be used as the aspects of the performance being measures.

Several items regarding dimensions/subdimensions are prepared and this marks the beginning of the second stage. Usually the experts prepare the items and subsequently a group of raters is assigned to sort each item to the different dimensions/subdimensions to which it belonged. On the basis of perfect or near perfect agreement the items are finally selected and the items showing least agreement are discarded. For this purpose, items are given to a group of judges who rate all these items on a scale of excellence. The median value of rating of each item is calculated. The median value becomes the scale value for each item. Finally, only those items having higher agreement among judges are retained. In this way the scale is ready. This method has got a unique advantage that it can be used with any number of dimensions/subdimensions. Further this method as compared to others, yield less halo error, less leniency error and fewer variances attribute to the methodology. The

present study followed the above mentioned method .The whole process was done in three stages.

1. First stage of scale construction

a) Selection of major dimension of co-ordination

The researcher of the study identified seven major dimensions of co-ordination through consultation with concerned experts in the field of agriculture along with experienced teachers, a group of experts from different colleges, research stations, Communication Centre, Agricultural Technology Information Centre and Central Training Institute under Kerala Agricultural University. Finally four major dimensions of co-ordination were selected after thorough discussion and interaction among them viz.,

1. Structural dimension
2. Functional dimension
3. Technological dimension
4. Psychological and socio-political dimension

b) Selection of sub dimensions under each selected major dimension

Delving into the vast volumes of available literature and frequent consultation with concerned experts in the fields of psychology, philosophy, management and extension an exhaustive list of sub dimensions associated with co-ordination for agricultural development was prepared. The list was then refined by sieving based on theoretical assumptions and with assistance from experts. Finally 51 sub dimensions under four major dimensions viz., structural, functional, technological and psychological and socio-political were selected in the first step.

In the second step, the identified sub dimensions were subjected to a panel of 36 judges incorporating their vigorous edited operational definitions on a three point continuum, 'More Relevant', 'Relevant' and 'Less Relevant' along with explanatory note. The researcher personally met with experts in different colleges of Kerala Agricultural University as well as, Central Training Institute, Research Stations, Communication Centre, Agricultural Technology Information Centre and Tamil Nadu Agricultural University, to judge their relevancy for measuring the level of co-ordination among agencies involved in agricultural development. The experts comprised of researchers in the field of Extension, Management and Psychology, teachers in post-graduate departments of Extension Education and Training Institutes and experienced extension personnel working in communication and technology transfer in agriculture.

After receiving all those schedules from cent percent experts, the ratings of judges were then tabulated and total scores was calculated giving the weightages 3, 2 and 1 for 'More Relevant', 'Relevant' and 'Less Relevant' response categories respectively. Finally, calculated the relevancy coefficient by using the following formula:

$$\text{Relevancy Coefficient (RC)} = \frac{\text{Sum of scores obtained in each sub dimension}}{\text{Maximum possible total scores in each sub dimension}} \times 100$$

$$= \frac{\Sigma (\text{FMR} \times 3) + (\text{FR} \times 2) + (\text{FLR} \times 1)}{\text{Total number of respondents} \times 3} \times 100$$

FMR: Frequency of 'More Relevant' Response

FR: Frequency of 'Relevant' Response

FLR: Frequency of 'Less Relevant' Response

Those sub dimensions retained which got a relevancy rating equal and above eighty percent ($\geq 80\%$) and below eighty percent ($<80\%$) rejected. Thus 10, 14, 04 and 13 sub dimensions were retained in the major dimensions viz., structural, functional, technological and psychological and socio-political respectively. At this stage, four sub dimensions namely, 'Identity of Personnel', 'Interagency linkage', 'Size of the Agency' and 'Infrastructure Facility' from 'structural dimension', three sub dimensions viz., 'Help seeking', 'Financial Management' and 'Level of Control from 'functional dimension' and same number of sub dimensions viz., 'Morale Building', 'Rural-Urban Background' and 'Personal Recognition' from the 'psychological and socio-political' dimension were rejected. Thus 41 sub dimensions were placed in the respective major dimensions for further redundant and refinement (Table 3.9). The details are given in the Appendix II.

Table 3.9. Sub dimensions retained under each selected major dimension after judges' relevancy test at the first stage

S.No.	Major dimensions	Number of sub dimensions identified	Number of sub dimensions retained
1	Structural dimension	14	10
2	Functional dimension	17	14
3	Technological dimension	04	04
4	Psychological and Socio-political dimension	16	13
Total	Total	51	41

c) Ranking of quantified sub dimensions

In the fourth step, all the quantified 41 sub dimensions were placed in a suitable format and subjected to a panel of 103 concerned experts of College of Horticulture, College of Co-operation, Banking and Management, College of Veterinary Science, Agricultural Technology Information Centre, Communication Centre, Central Training Institute, College of Agriculture, Vellayani under Kerala Agricultural

University, Tamil Nadu Agricultural University, University of Agricultural Sciences (UAS), Bangalore and field level experts of State Department of Agriculture along with some retired persons from the concerned agency for further refinement the sub dimensions. The researcher personally met with each and every expert and collected their ranking through clarification and interaction with the experts in the above mentioned institutions. After one month, the researcher collected 73 schedules from the respective experts. Finally, 63 were taken for ranking analysis and 10 schedules were rejected due to incomplete response.

d) Final selection procedure of sub dimensions in each major dimension

In case of structural dimensions, 10 sub dimensions were serially arranged in the format from 1 to 10 in ascending order of ranks in the tables. Score '10' were given to rank-1 and score '1' to rank-10 accordingly. The calculated scores of all the rows for each sub dimension were then summated. Similar procedure was followed for the sub dimensions of functional, technological and psychological and socio-political dimension.

Mean score was calculated using summated scores of all the sub dimensions under structural dimension. Finally, those sub dimensions for which scores equal and above mean score were retained. Mean scores of 'structural', 'functional', 'technological' and 'psychological and sociopolitical dimension' were 347, 470, 158 and 441 respectively. Thus, 3 sub dimensions viz., 'Review committee', 'Advisory committee' and 'Monitoring and evaluation committee' got rejected from the quantified ten sub dimensions of ' structural dimension' in the first screening and same number of sub dimensions namely; 'Joint Action', 'Joint Decision Making' and 'Level of Autonomy' got rejected from 'functional dimension'. In 'technological dimension', two sub dimensions viz., 'Technology Development' and 'Technology Dissemination' and three sub dimensions from 'psychological and socio-political

dimension' viz., 'Job Stress', 'Team Spirit' and 'Conflict Management' were rejected (Table 3.10). The details are given in the Appendix II.

Table 3.10 Sub dimensions selected finally for each major dimension after judges ranking

S.No.	Major dimensions	Sub dimensions quantified in the first screening	Sub dimensions selected finally
1	Structural	10	7 (≥ 347 scores)
2	Functional	14	11 (≥ 470 scores)
3	Technological	04	02 (≥ 158 scores)
4	Psychological and Socio-political	13	10 (≥ 441 scores)
Total		41	30

e) Operational definitions of major dimensions and their subdimensions

The sub dimensions selected thus, for the construction of multidimensional co-ordination scale were then operationally defined and given in a tabular form according to selected major dimensions (Table 3.11).

Structural dimension: refers to the framework of the participating agency in which legitimate power and authority is vested with the officers-in-charge/representatives and committee, clear channel of communication, interdependence, independence and role identity are properly set up for them to co-ordinate agricultural development activities.

Functional dimension: refers to the activities within the framework of the agency viz., technical orientation, getting freedom and discretionary in taking decision, scheduling of works, sharing reliable information, inspiring, pushing, consulting, following rules and regulations for conducting meetings, joint action, timely resource

allocation, clarity of objectives and programmes, project formulation and implementation are properly functioned/operated by the officer-in-charge/representative of the participating agency to co-ordinate agricultural development activity.

Technological dimension: refers to the technological framework of the participating agency in which technology prioritization and technology integration are appropriately fixed for the representatives/officers-in-charge for agricultural development.

Psychological and socio political dimension: refers to the behaviour viz., favorable attitude towards co-ordination, commitment, workload, domination, encouragement, reinforcing, providing suggestion/advice, understanding of objectives, mutual respect to each other, establish interpersonal skills, political interference, self confidence, and initiative are properly anchored for the officers-in-charge/representatives of the participating agencies in co-ordinating agricultural development activities.

Table 3.11 Operational definitions of sub dimensions under each major dimension of co-ordination

S.No.	Sub dimensions under Structural Dimension	Operational Definition
	Pattern of Authority	It refers to the degree to which legalized power is vested by the participatory agencies to its officers-in-charge/representatives to facilitate joint decision making with other agencies involved in agricultural development.
2	Co-ordination Committee	It refers to the existence of a committee for synchronizing joint efforts of the officers-in-charge/representatives of the participating agencies involved in agricultural development.
3	Pattern of Communication	It refers to the degree to which the officers-in-charge/representatives of the participating agencies communicate with each other using appropriate media for open exchange of ideas and information in order to better co-ordinate agricultural development.
4	Pattern of Participation	It refers to the degree of participation of the officers-in-charge/representatives of the participating agencies in various committee meetings in order to link with other agencies involved in agricultural development.
5	Role identity	It refers to the extent to which clear roles have been spelt out for the officers-in-charge/representatives of the participating agencies for ensuring effective co-ordination in agricultural development.
6	Pattern of Interdependence	It refers to the extent to which the officers-in-charge/representatives of the participating agencies depend directly, reciprocally and indirectly with other agencies involved in agricultural development.
7	Pattern of Independence	It refers to the degree to which freedom and discretionary power given by the participating agency to its officer-in-charge/representative for taking appropriate decisions on various activities related to agricultural development.

S.No.	Sub dimensions under Functional Dimension	Operational Definition
1	Clarity of Objectives and Programmes	It refers to the extent to which the officers-in-charge/representatives of the participating agencies involved in agricultural development perceive clearly the objectives and programmes for better co-ordination of agricultural development.
2	Technical Orientation	It refers to the degree to which the officers-in-charge/representatives of the participating agencies have oriented towards technical or scientific advances in agriculture through training, conferences, and workshops etc.
3	Integration of Services	It refers to the extent to which services like credit, input availability, are integrated and available to the officers-in-charge/representatives of the participating agencies involved in agricultural development.
4	Procedure for Committee Meetings	It refers to the extent to which the officers-in-charge/representatives of the participatory agencies perceive the existence of an appropriate system for committee meetings (regular attendance, plan of schedule, timely conducting etc).
5	Teamwork	It refers to the extent to which the officers-in-charge/representatives of the participatory agencies involved in agricultural development work together in groups in co-ordinating agricultural development
6	Information Sharing	It refers to the degree to which the officers-in-charge/representatives of the participating agencies share reliable information with each other.
7	Resource Allocation	It refers to the extent to which timely resource allocation is done by the officers-in-charge/representatives of the participating agencies involved in agricultural development in consultation with each other.
8	Time Management	It refers to the extent to which proper planning and implementation of activities related to agricultural development are done in a time scheduled manner by the officers-in-charge/representatives of the participating agencies in consultation with each other.

S.No.	Sub dimensions under Functional Dimension	Operational Definition
9	Project Formulation	It refers to the extent to which agricultural development projects are formulated by the officers-in-charge/representatives of the participating agencies in consultation with each other.
10	Project Implementation	It refers to the extent to which agricultural development projects are implemented by the officers-in-charge/representatives of the participating agencies in consultation with each other.
11	Accountability	It refers to the degree to which the officers-in-charge/representatives of the participating agencies involved in agricultural development are mutually responsible for the results of various activities undertaken by them.

Table 3.11 continued

S.No.	Sub dimensions under Technological Dimension	Operational Definition
1	Technology Prioritization	It refers to the extent to which support or assistance is provided or received by the representatives/officers-in-charge of the participating agencies reciprocally from each other for the successful prioritization of need based agricultural technologies for the actual beneficiaries.
2	Technology Integration	It refers to the extent to which support or assistance is provided or received by the representatives/officers-in-charge of the participating agencies reciprocally from each other for co-ordination the appropriate integration of need based agricultural technologies for the actual beneficiaries.

Table 3.11 continued

S.No.	Sub dimensions under Psychological and Socio Political Dimension	Operational Definition
1	Empathy	It refers to the ability of the officer-in-charge/representative of the participating agency to correctly interpret the attitudes and intensions, wishes and objectives, of other agencies involved in agricultural development and the accuracy with which they can perceive situations from others standpoint and thus anticipate and predict their behaviour
2	Motivation	It is pertained to the value associated with the officer-in-charge/representative of the participating agency, which drives him or her to pursue agricultural development goals in order to attain a sense of accomplishment
3	Accommodation	It refers to the extent to which suggestions or advice provided by other agencies are accepted by the officers-in-charge/representatives of the participating agencies involved in agricultural development avoiding watertight compartmentation.
4	Interpersonal skills	It refers to the extent to which personal skills are established and maintained by the officers-in-charge/representatives of the participating agencies involved in agricultural development.
5	Workload	It refers to the average quantum of work assigned by the participating agency to its officer-in-charge/representative which is limiting co-ordination of agricultural development activities with other agencies involved in agricultural development within a specified time.
6	Attitude towards Co-ordination	It refers to the degree of favorable or unfavorable feeling of the officer-in-charge/representative of the participating agency towards other agencies involved in agricultural development.

Table 3.11 continued

S.No.	Sub dimensions under Psychological and Socio Political Dimension	Operational Definition
7	Self Confidence	It refers to the extent to which the officer-in-charge/representative of the participating agency felt that he or she is self assured in the various aspects of co-ordination for agricultural development.
8	Leadership	It refers to the extent to which the officer-in-charge/representative of the participating agency is taking initiative, motivating and providing suggestions to other agencies involved in agricultural development and maintaining good relations with them in order to synchronize the efforts and action for agricultural development
9	Political Interference	It refers to the extent to which political interference in decision-making regarding agricultural development activities is limiting or breaking the linkage of the officer-in-charge/representative of the participating agency with other agencies involved in agricultural development.
10	Job commitment	It refers to the degree to which the officer-in-charge/representative of the participating agency is committed to his or her job in relation to agricultural development

2. Second stage of the scale construction

a) *Selection of items in each selected sub dimensions of major dimensions*

Based on the review of available literature and discussion with experts in the concerned fields a comprehensive list of 210 possible items were prepared under 30 sub dimensions. Care was taken to exhaust the universe of content and also to include items related to each of the selected sub dimension under each major dimension. The items were their subjected to a rigorous editing as per the criteria suggested by Thurstone and Chave (1929), Wang (1932), Likert (1932), Bird (1940) and Edwards and Kilpatrick (1948). Thirty items got eliminated and many were modified and refined. The remaining 180 items were then subjected to a panel of 20 experts for further redundant. After one month, the researcher received all copies from all experts. Twenty items were eliminated and some were modified. After incorporation all those correction, the researcher again submitted the remaining 160 items to the same experts for further refinement and higher agreement among experts. Twenty two items were eliminated in the second redundant and change the structure of few items.

The remaining 138 items were corrected and edited again. These items were then grouped and duly placed in the selected sub dimensions of major dimensions and prepared the third schedule. Then it was subjected to two panels experts in the field of agricultural and educational institutions on a five point response categories, viz., 'Most Relevant', 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' for rating the items. First group consists of 35 experts from Department of Agriculture, Directorate of Extension and experienced retired persons from field services and the second group consists of 68 experts selected from College of Horticulture, College of Co-operation, Banking and Management, College of

Forestry, College of Agriculture, College of Veterinary Science, Communication Centre, Central Training Institute, Agricultural Technology Information Centre under Kerala Agricultural University, Tamil Nadu Agricultural University and University of Agricultural Sciences (UAS), Bangalore. The researcher personally met with each and every expert and submitted the schedule with clarification. The judges were requested to assess the relevancy of each of the items in reflecting the characteristics associated with the particular sub dimension under which they had been grouped on a five point continuum.

After one and half month, the researcher received 86 schedules from the judges. Finally, 83 schedules were taken into consideration for item analysis and three were rejected due to incomplete response.

3. Final and third stage of scale construction

Calculating the scale value of each selected item in the schedule is the main purpose of this stage. It has been done systematically starting from item analysis.

a) Item analysis

Receiving eighty three schedules from two groups of experts were then mixed and gave the serial number from 1 to 83. Out of 138 items in the schedule, a total of 11 items; viz., item numbers 12, 13, 15, 21, 23 and 26 from 'structural dimension' item number 03, 10, 13 and 26 from 'functional dimension' and item number 39 from 'psychological and socio political dimension' were not considered for item analysis because of incomplete responses from the judges.

Finally, 127 items were taken into consideration for item analysis for calculating the scale values and Q values. Responses regarding categorization of item into five categories viz., 'Most Relevant', 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' were tabulated to obtain the frequencies in each item using slight modification of three rows sorting category format suggested by Edwards and

Kilpatrick (1948). The first row gives the frequency with which item placed in each of the five categories. The second gives these frequencies as proportions. The proportions are obtained by dividing each frequency by N i.e. the total number of judges or more simply, by multiplying each of the frequencies by the reciprocal of N. The third row gives the cumulative proportions, that is, the proportion of judgments in a given category plus the sum of all of the proportions below the category. The scale value and Q value have been calculated following equal appearing interval method suggested by the same scientists as:

Sorting format

Items No.	Sorting categories					Scale Value	Q Value
	Least Relevant	Less Relevant	Relevant	More Relevant	Most Relevant		
	(A)	(B)	(C)	(D)	(E)		
	1	2	3	4	5		
Frequency (F)							
Proportion (P)							
Cumulative proportion (CP)							

Source: Edwards and Kilpatrick (1948)

According to the 'Behaviourally Anchored Rating Scale' method of scale construction, the median of the distribution of judgments for each item is considered as the scale value of the item. The scale value was calculated from the data arranged

in the manner of above mentioned format by means of the following formulae suggested by Edwards and Kilpatrick (1948) as,

$$S = l + \left[\frac{0.50 - \sum P_b}{P_w} \right] \times i$$

Where, S = Scale value of the item

l = The lower limit of the interval in which the median falls

$\sum P_b$ = The sum of the proportions below the interval in which the median falls

P_w = The proportion within the interval in which the median falls

i = the width of the interval and is assumed to equal to 1.0

According to the BARS method of scale construction, those items having higher agreement among judges were retained for inclusion in the scale. In this regard, the interquartile range or Q value is essential to calculate for a given item as a measure of the variation of the distribution of judgments. Lower the Q value indicates the higher agreement among middle 50 percent of the judgments because the median value is taken as the scale for each item.

The interquartile range or Q value was calculated for a given item included in the scale by the following formula suggested by Thurstone and Clave (1929). To determine the value of Q, it needs to find two other point measures, the third quartile (75th centile) and the first quartile (25th centile). The 25th centile was calculated by using the formula,

$$C_{25} = l + \left(\frac{0.25 - \sum P_b}{P_w} \right) \times i$$

Where, C_{25} = The 25th centile

l = The lower limit of the interval in which the 25th centile falls

$\sum P_b$ = The sum of the proportions below the interval in which the 25th centile falls

P_w = The proportion within the interval in which the 25th centile falls

i = The width of the interval and is assumed to be equal to 1.0

The 75th centile was calculated by using the following formula

$$C_{75} = l + \left(\frac{0.75 - \sum P_b}{P_w} \right) \times i$$

Where, C_{75} = The 75th centile

l = The lower limit of the interval in which the 75th centile falls

$\sum P_b$ = the sum of the proportions below the interval in which the 75th centile falls

$\sum P_w$ = The proportion within the interval in which the 75th centile falls

i = The width of the interval and is assumed to be equal to 1.0

The interquartile range or Q value was calculated by taking the difference between C_{75} and C_{25}

$$\text{i.e. } Q = C_{75} - C_{25}$$

b) Method of Selection of Items for Inclusion in the construction of co-ordination scale

After calculating the scale value and corresponding Q value was then placed against each item sub dimension wise. There is no hard and first rule that Q value is the only consideration for selecting the item for inclusion in the scale. However, Edwards (1948) suggested to consider both the scale value and corresponding Q value in selecting the items for scale construction. Therefore to incorporate both scale value Q value for the selection of an item, a criterion, which, is directly, proportioned to the scale value and inversely proportioned to the Q value was used. The following criterion used to select the item from each sub dimension is,

Criterion = Scale value of a given item x Reciprocal Q value of that item.

Based on this criterion, two items were selected from each sub dimension, which has higher proportion because it indicates the higher scale and the higher agreement among middle 50 percent judges. Thus 60 items, two items from each sub dimension were screened and included in the final set for the construction of scale. The list has been shown in results and discussion section. In details are presented in the Appendix II.

4. Pretesting the co-ordination scale for judging the item difficulty

The multidimensional co-ordination scale was pretested by personally interviewing 20 officers-in-charge/representatives of the agencies involved in agricultural development from non-sample areas in Thrissur district and Palghat districts for item difficulty at all panchayat levels.

5. Reliability of the scale

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Reliability is the ability of a test instrument to yield consistent results from one set of measures to another. A good instrument should evoke response that are valid and yield nearly the same results if administered twice to the same respondents (Goode and Hatt, 1952). According to Kerlinger (1964) reliability is the accuracy or precision of a measuring instrument. Of the various methods of estimating test reliability, the split-half method was employed in the present study. From a single administration of a single form of a test it possible to arrive at a measure of test reliability by various split-half procedures. In this procedure, two scores are obtained for each individual by dividing the test into comparable halves in different ways, the easiest being finding the scores on the odd and even items of the test. Accordingly in the present scale items was divided into two halves after arranging the items in decreasing order based on their scale values. The scale was then administered to 30 officers-in-charge/representatives of the agencies involved in agricultural development in non-sample areas in Thrissur districts for both the block panchayats and grama panchayat level and Palghat district for district level. Using Pearson's Product Moment Correlation Coefficient (r) formula correlation for the two sets of scores was measured.

$$r = \frac{\sum xy - \frac{(\sum x) (\sum y)}{n}}{\sqrt{\left[\sum x^2 - \frac{(\sum x)^2}{n} \right] \left[\sum y^2 - \frac{(\sum y)^2}{n} \right]}}$$

Where,

r = Pearson's Product Moment Correlation Coefficient

Σx = Sum of 'x' values (odd member items)

Σy = Sum of 'y' values (even number items)

Σx^2 = Sum of square of 'x' values

Σy^2 = Sum of square of 'y' values

n = Number of respondents

Further, the researcher used another formula suggested by Rulon (1953) using the same score. The Rulon formulae is:

$$r = 1 - \frac{\delta^2 d}{\delta^2 t}$$

Where,

r = Reliability Coefficient

$\delta^2 d$ = Variance of the difference between two half scores for each respondent

$\delta^2 t$ = Variance of the total scores (Total score means, sum of the respondent's scores on the two halves of the test i.e. $(X_o + X_e)$).

6. Validity of the scale

An index of validity helps to ascertain whether a test instrument measures what it is designed to measure. Validity is the most important criterion by which a test may be judged. English and English (1958) defined "validity of a scale as the property which ensures that obtained test scores measure the variable they are supposed to

measure. The validity of the present scale was ascertained using the following procedures.

a) Content validity

This includes both face validity and logical or sampling validity. Here the main criterion is to determine whether the test contains items that are related to the variable being measured and relevant to its stated purpose; and how well the contents of the scale sample the subject matter under study.

According to Kerlinger (1978), content validity is the representativeness or sampling adequacy of the content, the substance, the matter, the topics of a measuring instrument. Content validation is guided by the question "Is the substance or content of this measure representative of the content or the universe of the content of the property being measured content validation consists essentially in judgment. Alone or with others one judges the representativeness of the items.

According to Thakur (1993), content validity is the representativeness of the items in the scale with reference to the universe of items of the property being measured. In the present scale, the area of co-ordination for agricultural development had been broken down into four major dimensions viz., structural dimension, functional dimension, technological dimension and psychological/socio-political dimension. Each selected major dimension had been broken down into several sub dimensions. Scales items for selected sub dimension had been selected meticulously through wide and judicious review of available literature on the universe of co-ordination among agencies involved in agricultural development. Out of 210 items, 30 items were eliminated by vigorous editing as per criteria suggested by Thurstone and Chave (1929). Before placing the items among the selected raters, the rest remaining 180 items were subjected to 20 experts in the concerned field for two times. In the first time, 20 items were redundant by experts and 22 items in the second time. Finally, 138 items were included for relevancy among 103 judges in different places in India.

Further 11 items were eliminated for their incomplete responses from experts. The remaining 127 items had been further subjected to item analysis to determine their relevancy for inclusion in the scale.

Further, a criterion was used based on the scale value and Q value for inclusion of the representative item in the schedule. Those items retained in each sub dimension under each major dimension, which have higher proportion indicates the higher agreement among judges. These thorough and vigorous procedures followed in constructing the scale automatically assumed it high face and sampling validity.

b) Construct validity

The notion of construct validity arises because of the complex and intangible traits associated with the sub dimensions included in the study. Anastasi (1961) indicated some specific techniques that could be utilized to establish construct validity. They are:

1. Correlation with a criterion
2. Correlation with other tests
3. Factor analysis
4. Internal consistency and
5. Effect of experimental variables on test scores.

For the purpose of the study, the first technique was employed to establish the construct validity of the scale.

1. Correlation with a criterion

Cronback (1960) has delineated three steps in the procedure for establishing construct validity, they are

- a) Deciding what constructs possibly account for the test performance
- b) Deriving hypothesis from the theory involving the construct
- c) Testing the hypothesis empirically.

The first step was properly taken care during the construction of the scale. Regarding the second step, it was hypothesized that "a higher level of co-ordination corresponded to a higher level of achievement motivation". An individual with a higher level of achievement motivation will naturally try to excel in any activity he or she undertakes and hence can be expected to be keen in co-ordination for agricultural development. The assumption posited in the hypothesis is thus quite logical.

To test the hypothesis empirically, which involved the third step; the level of co-ordination and the achievement motivation scores of 30 officers-in-charge/representatives of the agencies involved in agricultural development in non-sample areas were correlated.

7. Administration of the scale

The items selected finally under sub dimensions of each major dimension were arranged serially and administered to the respondent selected for the second stage of the study, at the time of the investigation for a self-rating of their level of co-ordination for agricultural development. Each of the items was required to be rated on a 5 point continuum: 'Always', 'Often', 'Occasionally', 'Seldom' and 'Never' weighted 4, 3, 2, 1 and 0 respectively. Mathew (1989) used this continuum in his study.

While administering the scale, the respondents were requested to respond to each item in terms of degree to which they manifested the behavioural characteristics reflected by the particular item by making a tick mark (\surd) in the appropriate box. After getting response, the scoring was done adopting the method by Thurstone and Chave (1929). Two items selected from each sub dimension, thus the total number of items were 60 under selected major dimensions. However, the scores summated over all the items for a particular major dimension got through the obtained weight for a given item multiplied by its scale value. The product thus obtained was the individual scores for each major dimension. The products summated of the entire major dimensions viz., structural, functional, technological and psychological/socio-political yielded the composite multidimensional co-ordination scores for an individual. The possible range of scores on this scale was 0 to 899.60.

Based on the co-ordination scores obtained by the respondents were classified them into three categories.

<u>Category</u>	<u>Criterion scores</u>
Low	: $< \text{Mean} - \frac{1}{2} \text{SD}$
Medium	: From mean $\pm \frac{1}{2} \text{SD}$ (i.e., Mean - $\frac{1}{2} \text{SD}$ to Mean + $\frac{1}{2} \text{SD}$)
High	: $> \text{Mean} + \frac{1}{2} \text{SD}$

3.8 PREPARING THE CO-ORDINATION INDEX TO DETERMINE THE LEVEL OF CO-ORDINATION OF AGENCY.

When a set or group of indicators is used to measure the level of particular character or performance then it is called an index, like the Human Development Index (HDI). In the study, co-ordination index was calculated based on the extracted group of sub dimensions (i.e., seven indicators) from all major dimensions, those are common to all levels i.e. district, block and grama panchayat levels and determine the

level of co-ordination of agency based on co-ordination index through sum of obtained scores from individual agency at each level dividing sum of maximum possible scores for that group of indicators in all major dimensions multiplied by 100. The following formula has been used for the same

$$CI = \frac{\Sigma (S_1 \cdot W_1) + \Sigma (S_2 \cdot W_2)}{\Sigma S (W_1 + W_2)} \times 100$$

Where,

CI = Co-ordination Index

Σ = Over seven indicators

S_1 = Obtained response weightage on the first item in each indicator

W_1 = Scale value to be given to the first item in each indicator

S_2 = Obtained response weightage on the second item in each indicator

W_2 = Scale value to be given to the second item in each indicator

S = Maximum possible weightage of scale item

Sawant (1978) and Krishnamurthy (1991) used this co-ordination index formula in their study (related to co-ordination) to determine the level of co-ordination of agencies involved in agriculture and farmers respectively.

Co-ordination index of each agency was calculated and categorized them into five based on their performance in agricultural development.

<u>Category</u>	<u>Co-ordination index</u>
1. Highly satisfactory	: 80-100
2. Satisfactory	: 60-79
3. Fair	: 40-59
4. Moderate	: 20-39
5. Poor	: less than 20

3.9 PREPARING THE CO-ORDINATION COEFFICIENT FOR MEASURING THE EXTENT AND GAPS IN CO-ORDINATION OF AGENCY.

For measuring the extent of co-ordination of agencies in each sub dimension, each major dimension and overall, co-ordination coefficient had been calculated for each sub dimension based on the scale items using following formulae.

$$CC = \frac{\sum (S_1 \cdot W_1) + \sum (S_2 \cdot W_2)}{\sum (S \cdot W_1) + \sum (S \cdot W_2)} \times 100$$

Where,

CC = Co-ordination Coefficient

Σ = Over 30 sub dimensions

S_1 = Obtained response weightage on the first item in each sub dimension

W_1 = Scale value to be given to the first item in each sub dimension

S_2 = Obtained response weightage on the second item in each sub dimension

W_2 = Scale value to be given to the second item in each sub dimension

S = Maximum possible response weightage for scale item

3.10 PROBLEMS/CONSTRAINTS RELATED TO CO-ORDINATION AMONG AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

Knowing the problems/constraints faced by the agency in co-ordinating agricultural development activities, a comprehensive list of problems/constraints were prepared based on review of literature, consult with the experts in the field level and discussion with the respondents/collecting opinions from them prior to final survey and the same was subjected to 30 experts in the concerned fields of agriculture for testing their relevancy on a three point continuum; 'More Relevant (MR) ', 'Relevant(R)' and 'Less Relevant (LR)' with weights 3, 2 and 1 respectively. The researcher then worked out relevancy coefficient by using the following formula.

$$\text{Relevancy Coefficient (RC)} = \frac{\text{Total scores obtained from all respondents for each problem i.e. } \sum [(MR \times 3) + (R \times 2) + (LR \times 1)]}{\text{Maximum possible total scores for problem i.e. } 3 \times 30} \times 100$$

Based on these values, the problems were included in the final interview schedule. Those problems included in the schedule which relevancy coefficient was above eighty percent (>80%). Finally, out of 39 problems/constraints, 15 were selected. For collection of opinions from the actual respondents for the study, 3 response categories viz., 'More Important', 'Important' and 'Less Important' had been placed in each problems/constraint. The respondents were requested to select only one response against each problem by making a tick mark (✓) in the appropriate column. After getting the responses from the agency, problems were analyzed in frequency and calculated the total scores of each problem/constraint with weights 3, 2 and 1 for 'More Important', 'Important' and 'Less Important' respectively and ranked the same based on the obtained scores. In details are in the Appendix 11

3.11 SUGGESTION TO STRENGTHEN THE CO-ORDINATION AMONG AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

The same procedure of problems/constraints had been followed in the selection of pertinent suggestions for inclusion in the interview schedule. Finally, out of 33 suggestions, 18 were selected for the same. For collection of opinions from the actual respondents for the study, 3 response categories viz., 'More Important', 'Important' and 'Less Important' had been placed in each suggestion. The respondents were requested to select only one response against each suggestion by making a tick mark (✓) in the appropriate column.

After getting the responses from the agency, suggestions were analyzed in frequency and calculated total scores of each suggestion with weights 3, 2 and 1 for 'More Important', 'Important' and 'Less Important' respectively and ranked the same based on the obtained scores. Details are in the Appendix II

3.12 DATA COLLECTION PROCEDURE

In the present study, data were collected using a pretested, structured and standardized interview schedule. Devout attention and utmost care had been spared in finalizing the wording and format of the schedule to eliminate mistakes and any element of ambiguity regarding the various items.

The print, layout and front size also had been chosen with maximum discretion to make the schedule appealing, attractive and handy. The schedule complete in all respects with an addressing letter and clear instructions were then given to the respondents personally during December 2003. By the last week of January 2004 the researcher had received all schedules personally from the respondents.

3.13 STATISTICAL TOOLS EMPLOYED FOR DATA ANALYSIS

Data collected from respondents were coded, compiled and analyzed using the following statistical techniques. Data analysis was done in the Department of Agricultural Statistics, College of Horticulture, Vellanikkara.

3.13.1 Person's product moment correlation

This measure was used to test the reliability and validity of the constructed scale.

3.13.2 Inter correlation among sub dimensions

The inter correlation matrix for the sub dimensions of co-ordination at all levels have been analyzed to suggest suitable models for each level.

Inter correlation matrix for sub dimensions of co-ordination provides a broad picture of the relationships among the selected sub dimensions at overall, district, block and grama pancvhayat levels (Table 4.63).

3.13.3 Discriminant function analysis

Canonical discriminant function analysis was carried out to identify the category of agencies, whether they discriminated each other in respect of co-ordination performance at all levels.

Bolch and Huang (1974) had indicated two sets of hypothesis tests in the case of discriminant function analysis viz.,

- a) a test for the usefulness of the entire discriminant function
- b) a test for the inclusion or omission of a sub dimension from the function

Only the first set of hypothesis tests were employed for the purpose of the present study.

3.13.4 Factor analysis

Factor analysis, according to Kerlinger (1964) is a method for determining the number and nature of the underlying variables among larger number of measures. More succinctly, it is a method for determining 'K' underlying variables (sub dimension or factors) from 'n' set of measures, 'K' being less than 'n'. It may also be called a method for extracting common factor variances from sets of measures. Factor analysis reduces the multiplicity of tests and measure to greater simplicity. It tells us, in effect, what tests or measures being together, or in other words which ones virtually measures the same thing and how much they do so. It helps the scientist to locate and identify unities or fundamental properties underlying tests and measures. In the present study factor analysis was employed to identify the best set of sub dimensions of co-ordination (factor) for agricultural development.

3.13.5 Norms of distribution of scores by using the constructed scale

Working out norms of distribution of scores in the in the initial stage is an essential methodological aspect of test construction and standardization. In this part, theoretical aspect of the norms of distribution, have therefore, been presented in the following sequence;

1. Frequency distribution
2. Measures of central tendency
3. Measures of variability

1. Frequency distribution

Based upon scores of co-ordination of each sub dimension, the data were presented in frequency.

a) Graphical presentation

Data in frequency distribution was then presented in the form of simple bar diagram, multiple bar diagram and component bar diagram.

2. Measure of central tendency

Three values of central tendency, namely, the mean and median were worked out as per the formula quoted by Guilford (1954) and Garrett (1967).

3. Measures of variability

To know the spread or scatter of the co-ordination scores of sub dimensions around the central value, three measures of variability namely, range, inter quartile range and standard deviation were calculated based upon the procedure described by Garrett (1967), Sawant (1978).

4. Ranks

The ranks were calculated in accordance with the procedure described by Garrett (1967).

Results and Discussion

CHAPTER IV

RESULTS AND DISCUSSION

The results and discussion of the study are presented simultaneously in this chapter under the following main heads.

- 4.1 Construction of the multidimensional co-ordination scale to measure the level of co-ordination among the agencies involved in agricultural development
- 4.2 Discrimination of participating agencies with respect to their level of coordination: results of canonical discriminant function analysis
- 4.3 Categorization of participating agencies based on their level of co-ordination using co-ordination index.
- 4.4 Ranking of agencies based on their obtained co-ordination index scores.
- 4.5 Distribution of respondents on the selected dimensions of co-ordination using constructed scale.
- 4.6 Identification of essential factors and indicators from the selected subdimensions of co-ordination: results of factor analysis
- 4.7 Measurement of extent and gaps in co-ordination using co-ordination coefficient
- 4.8 Inter correlations among the selected sub dimensions
- 4.9 Identification of problems related to effective co-ordination among the agencies involved in agricultural development
- 4.10 Suggestions to strengthen co-ordination among the agencies involved in agricultural development
- 4.11 Empirical models of the study

4.1 CONSTRUCTION OF THE MULTIDIMENSIONAL CO-ORDINATION SCALE TO MEASURE THE LEVEL OF CO-ORDINATION AMONG THE AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

The results related to construction of the multidimensional scale for measuring the levels of co-ordination among the agencies involved in agricultural development is presented below:

4.1.1 Selection of the scale items

Detailed standardization procedures and methods have been described in the methodology chapter (page 120 to 142). 'Behaviourally Anchored Rating Scale (BARS)' method was used to construct the scale. All the three stages of BARS method were successfully completed. Out of 138 items, 127 were taken under item analysis and 11 were not included due to incomplete responses from the experts. Scale values and Q values were calculated using formulae suggested by Edwards and Kilpatrick (1948).

A criterion was used for screening items from a pool of sub-dimensions. After going through all the rigours of item analysis and scale construction, 60 items taking two from each sub dimension were included in the final scale. The scale values ranged from 2.681 to 4.538 and Q values from 0.70 to 2.16. The scale values and Q values of selected items in the scale are given below

Table 4.1 Scale value and Q value of the selected items in the multidimensional co-ordination scale

S.No.	Items	Scale Value	Q Value
01	Pattern of Authority: Legitimate power is vested with the officer-in-charge/representative of the participating agency to facilitate joint decision making with other agencies involved in agricultural development.	3.551	1.22
02	Lack of delegation of authority to the officers-in-charge/representatives of the participating agencies is hindering effective co-ordination in agriculture.	3.541	1.23
03	Co-ordination Committee: Local level co-ordination committee involving the officers-in-charge/representatives of the participating agencies is ensuring the identification of actual problems in agricultural development.	3.730	1.30
04	Co-ordination committee involving the officers-in-charge/representatives of the participating agencies is arranging for linking effectively with each other for agricultural development.	3.621	1.39
05	Pattern of Communication: Accessibility of the officer-in-charge/representative of the participating agency with other agencies involved in agriculture is facilitating agricultural development.	3.979	1.15
06	The officer-in-charge/representative of the participating agency is using parallel channels of communication with other agencies involved in agricultural development to bind the efforts for agricultural development.	3.625	1.40
07	Pattern of Participation: The officer-in-charge/representative of the participating agency is participating in various meetings, seminars, conferences, etc with other agencies involved in agricultural development.	4.037	0.93
08	Interactive participation of the officer-in-charge/representative of the participating agency with other agencies in agricultural development activities is fostering effective co-ordination.	3.812	1.17
09	Role Identity: Specific role has been identified to the officer-in-charge/representative of the participating agency for better co-ordination with other agencies involved in agricultural development.	4.100	1.33

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
10	Flexibility of the officer-in-charge/representative of the participating agency is ensuring appropriate decision-making in co-ordinating agricultural development activity.	3.404	1.39
	Pattern of Interdependence:		
11	The officer-in-charge/representative of the participating agency is directly interdependent with other agencies involved in agriculture in co-ordinating agricultural development activities.	3.500	1.24
12	The officer-in-charge/representative of the participating agency is indirectly interdependent with other agencies in achieving agricultural development activities.	2.855	1.24
	Pattern of Independence:		
13	Independent set up is creating duplication of agricultural development activity for the officers-in-charge/representatives of the participating agencies.	3.733	1.82
14	The officer-in-charge/representative of the participating agency is free to take appropriate decisions independently regarding agricultural development activities.	3.738	1.66
	Clarity of objectives and programme:		
15	Written statement of objectives and programmes is time consuming and difficult for the officer-in-charge/representative of the participating agency in co-ordinating agricultural development activities.	2.681	1.09
16	Clear objectives and programmes for agricultural development have been formulated by the officer-in-charge/representative of the participating agency in consultation with other agencies involved in agricultural development.	3.944	0.98
	Technical orientation:		
17	Training provided to the officer-in-charge/representative of the participating agency is fostering co-ordinated efforts for agricultural development.	3.957	1.72
18	Technical orientation to the officer-in-charge/representative of the participating agency through seminars, conferences, and workshops is synchronizing the efforts with other agencies involved in agricultural development.	4.519	1.72

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
	Integration of services:		
19	Credit made available by the officer-in-charge/representative of the participating agency in advance in consultation with concerned agencies is ensuring effective agricultural development	3.333	1.99
20	Essential inputs made available by the officer-in-charge/representative of the participating agency in advance in consultation with the concerned technical agency is enhancing agricultural development.	4.033	1.77
	Procedure for committee meetings:		
21	Co-ordination committee meetings conducted as per preplanned schedule is encouraging to the officers-in-charge/representatives of the participating agencies.	3.743	1.47
22	The officer-in-charge/representative of the participating agency is following plan of schedule for conducting co-ordination committee meeting with other agencies involved in agricultural development.	3.175	1.40
	Teamwork:		
23	Lack of teamwork of the officers-in-charge/representatives of the participating agencies is creating contradictions in agricultural development.	3.382	1.15
24	The officer-in-charge/representative of the participating agency is working as a team with officers-in-charge/representatives of other agencies involved in agricultural development.	3.606	1.11
	Information sharing:		
25	The officer-in-charge/representative of the participating agency is providing reliable information regarding agricultural development to other agencies involved in agricultural development.	4.018	0.93
26	Timely information on appropriate technology is provided by the officer-in-charge/representative of the participating agency in consultation with other agencies involved in agricultural development.	4.108	2.00
	Resource allocation:		
27	The officer-in-charge/representative of the participating agency is ensuring timely resource allocation in consultation with other agencies involved in agricultural development.	4.001	1.71
28	The officers-in-charge/representatives of the participating agencies optimize resource allocation jointly for saving time and money.	3.966	1.60

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
	Time management		
29	Time management techniques followed by the officers-in-charge/representatives of the participating agencies in project formulation and implementation is saving time and money	3.802	1.30
30	Planning and implementation of agricultural development activity are done jointly by the officers-in-charge/representatives of the participating agencies in time bound manner.	3.650	1.27
	Project formulation		
31	Agricultural development projects are formulated by the officer-in-charge/representative of the participating agency through active participation with other agencies involved in agricultural development.	3.882	1.59
32	Project formulation by the officer-in-charge/representative of the participating agency in consultation with other agencies involved in agricultural development is saving time and agricultural resources.	4.239	2.16
	Project implementation:		
33	Project implementation is done by the officer-in-charge/representative of the participating agency in consultation with other agencies involved in agricultural development.	4.500	1.80
34	Project implementation done jointly by the officers-in-charge/representatives of the participating agencies is saving time and resources.	3.895	1.37
	Accountability:		
35	The officers-in-charge/representatives of the participating agencies are mutually responsible for conducting agricultural development activities.	4.047	1.27
36	Accountability of the officers-in-charge/representatives of the participating agencies is improving mutual trust for agricultural development	3.742	1.49
	Technology prioritization:		
37	The officer-in-charge/representative of the participating agency is involving in technology prioritization with other agencies involved in agricultural development.	4.538	1.79
38	Need based technologies prioritized jointly by the officers-in-charge/representatives of the participating agencies is saving time and resources.	4.014	1.52

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
	Technology integration:		
39	Package of technologies is blended by the officer-in-charge/representative of the participating agency through assistance from other agencies involved in agricultural development.	3.894	1.38
40	Technology integrated by the officer-in-charge/representative of the participating agency in consultation with other agencies involved in agricultural development.	3.827	1.10
	Empathy		
41	Reciprocal understanding of the objectives by the officers-in-charge/representatives of the participating agencies is enhancing development efforts.	3.892	1.08
42	Matching perception of the officer-in-charge/representative of the participating agency with other agencies involved in agricultural development is leading to effective co-ordination in agriculture.	3.796	1.09
	Motivation		
43	The officer-in-charge/representative of the participating agency is trying to encourage other agencies in development efforts.	3.692	1.30
44	The officer-in-charge/representative of the participating agency is offering constructive criticism for improving the performance of other agencies involved in agricultural development	3.425	1.29
	Accommodation:		
45	Suggestions provided by the officer-in-charge/representative of the participating agency to other agencies involved in agricultural development are gladly accepted.	3.522	1.23
46	The officer-in-charge/representative of the participating agency is accepting new ideas and suggestions from other agencies involved in agricultural development.	4.083	1.58
	Interpersonal Skills		
47	Interpersonal skills of the officer-in-charge/representative of the participating agency are facilitating frequent communication with other agencies involved in agricultural development	4.082	0.83
48	Agricultural development activities are better co-ordinated by the officer-in-charge/representative of the participating agency through mutual trust with other agencies involved in agricultural development.	3.777	0.89

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
	Workload		
49	Workload is creating scope to the officer-in-charge/representative of the participating agency for frequent communication with other agencies involved in agricultural development.	3.900	1.60
50	Workload is breaking linkage of the participating agency with other agencies involved in agriculture in co-ordinating development efforts.	3.300	1.23
	Attitude towards co-ordination		
51	The officer-in-charge/representative of the participating agency has positive attitude in co-ordinating agricultural development programmes with other agencies involved in agricultural development	3.790	1.18
52	The officer-in-charge/representative of the participating agency is doubtful in co-ordinating agricultural development activity with other agencies involved in agricultural development .	3.055	1.53
	Job commitment		
53	Active involvement of the officer-in-charge/representative of the participating agency in jobs related to agricultural development is ensuring better co-ordination with other agencies involved in agricultural development.	4.000	0.96
54	The officers-in-charge/representatives of the participating agencies are willingly endorsing the duties and responsibilities in co-ordinating agricultural development efforts.	3.673	1.20
	Self confidence:		
55	The officer-in-charge/representative of the participating agency is confident in ensuring better liaison with other agencies involved in agricultural development	3.608	1.48
56	Self-confidence of the officer-in-charge/representative of the participating agency is encouraging better co-ordination with other agencies involved in development.	3.630	1.33
	Leadership		
57	As a professional leader, the officer-in-charge/representative of the participating agency is maintaining good relation, peace and working environment with other agencies involved in agricultural development.	3.908	0.70

Table 4.1 continued

S.No.	Items	Scale Value	Q Value
58	The officer-in-charge/representative of the participating agency is taking initiative to prioritize agricultural development activities through consultation with other agencies involved in agricultural development	3.524	1.22
Political interference			
59	Political domination over the officers-in-charge/representatives of the participating agencies is ensuring peoples participation for agricultural development.	2.959	1.87
60	Involvement of political leaders with the officers-in-charge/representatives of the participating agencies is ensuring timely implementation of agricultural development programmes.	3.563	1.12

The constructed scale was pretested for judging the item difficulty by personally interviewing 20 respondents from non-sample areas of Thrissur and Palghat districts. No item difficulty was detected at any level.

4.1.2 Reliability of the scale

Split-half technique was used to test the reliability of the constructed scale using Pearson's Product Moment Correlation Coefficient formulae through correlation of two sets of scores and correlation coefficient thus obtained 0.84 was found to be highly significant statistically. The formulae suggested by Rulon (1953) was also applied using the same scores for further confirmation of the result and reliability coefficient thus obtained was 0.85 indicating excellent reliability for the scale.

4.1.3 Validity of the scale

For ensuring the validity of the constructed scale, the following approaches were adopted:

- 1) Content validity: Thorough and rigorous procedures in constructing the scale automatically ensured high face and sampling validity for the scale.
- 2) Construct validity

Construct validity was established by working out 'correlation with a criterion'. The resultant r-value 0.75 was found to be positive and highly significant and the hypotheses were accepted, thus clearly establishing construct validity for the scale. Details of the technique have been given in the materials and methods section.

4.1.4 Administration of the scale

The selected items under the sub-dimensions for each major dimension were arranged serially and administered to the respondents. Each of the items was required to be rated on a 5-point continuum; 'Always', 'Often', 'Occasionally', 'Seldom' and

'Never' with weightages 4, 3, 2, 1 and 0 respectively. While administering the scale, the respondents were requested to respond to each item in terms of degree to which they manifested the behavioural characteristics reflected by the particular item by making a tick mark (✓) in the appropriate box. Based on the responses, the respondents were categorized and ranked using co-ordination index and co-ordination coefficient. These are presented in detail in the next section.

4.2. DISCRIMINATION OF PARTICIPATING AGENCIES WITH RESPECT TO THEIR LEVEL OF CO-ORDINATION: RESULTS OF CANONICAL DISCRIMINANT FUNCTION ANALYSIS

Tables 4.2, 4.3 and 4.4 present results of the canonical discriminant function analysis for the dimensions of co-ordination in different categories of agencies at district, block and grama panchayat levels.

Table 4.2. Results of canonical discriminant function analysis for the dimensions of co-ordination in different categories of agencies at district panchayat level

Categories of agencies	Major Dimension	Probability
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Central government controlled agency 5. Banking controlled agency	Structural dimension	0.288 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Central government controlled agency 5. Banking controlled agency	Functional dimension	0.362 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Central government controlled agency 5. Banking controlled agency	Technological dimension	0.865 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Central government controlled agency 5. Banking controlled agency	Psychological and socio political dimension	0.121 (Not significant)

* : 0.05 level of significance

** : 0.001 level of significance

Table 4.3. Results of canonical discriminant function analysis for the dimensions of co-ordination in different categories of agencies at block panchayat level

Categories of agencies	Major Dimension	Probability
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Banking controlled agency	Structural dimension	0.082 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Banking controlled agency	Functional dimension	0.130 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Banking controlled agency	Technological dimension	0.736 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency 4. Banking controlled agency	Psychological and socio political dimension	0.186 (Not significant)

* : 0.05 level of significance

** : 0.001 level of significance

Table 4.4. Results of canonical discriminant function analysis for the dimensions of co-ordination in different categories of agencies at grama panchayat level

Category of agencies	Major dimension	Probability
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency	Structural dimension	0.438 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency	Functional dimension	0.636 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency	Technological dimension	0.330 (Not significant)
1. Panchayat controlled agency 2. State government controlled agency 3. Co-operative controlled agency	Psychological and socio political dimension	0.625 (Not significant)

* : 0.05 level of significance

** : 0.001 level of significance

“Results of canonical discriminant function analysis showed that there was no discrimination between the groups at all panchayat levels. Therefore, the hypotheses were accepted which indicated that the selected categories of agencies viz., ‘Panchayat Controlled’, ‘State Government Controlled’, ‘Cooperative Controlled’, ‘Central Government Controlled’ and ‘Banking Controlled’ were not discriminating each other on the selected dimensions, namely; structural, functional, technological and psychological and socio political dimension at all panchayat levels.

A perusal of the results in Tables 4.2, 4.3 and 4.4 revealed that five categories, four categories and three categories of agencies at district, block and grama panchayat levels respectively, were not discriminating each other in co-ordinating agricultural development activities. All the categories of agencies were almost equally contributing for agricultural development in all major dimensions. It might be the reason that selection and categorization procedures of agencies and scoring measurement were appropriate and justified”.

4.3 CATEGORIZATION OF THE PARTICIPATING AGENCIES BASED ON THEIR LEVEL OF CO-ORDINATION USING CO-ORDINATION INDEX.

Tables 4.5, 4.6 and 4.7 present the categorization of the agencies at district, block and grama panchayat levels based on the co-ordination index value.

Table 4.5 Categorization of the participating agencies at district panchayat level based on the co-ordination index value

Name of agency	Co-ordination Index	Category	Name of agency	Co-ordination Index	Category
1. Panchayat Dept.	91.87	Highly Satisfactory	17. Forestry Dept.	62.40	Satisfactory
2. NABARD	86.43	Highly Satisfactory	18. Rubber Board	61.49	Satisfactory
3. Kerala Land Development Corporation	83.87	Highly Satisfactory	19. Soil Survey	59.72	Fair
4. South Malabar Gramin Bank	79.73	Satisfactory	20. United India Innsurance Co. Ltd.	59.18	Fair
5. Serifed	79.31	Satisfactory	21. Rural Development	57.33	Fair
6. Canara Bank	79.18	Satisfactory	22. Ground Water Dept.	56.77	Fair
7. Soil Conservation	78.51	Satisfactory	23. Dept. of Agriculture	55.06	Fair
8. Kerala Land Use Board	78.12	Satisfactory	24. KSEB	54.28	Fair
9. Co-operation Department.	77.01	Satisfactory	25. National Insurance Co.	53.80	Fair
10. Kerala Agro Industries Corporation	76.51	Satisfactory	26. Coir Development	51.58	Fair
11. Punjab National Bank	71.78	Satisfactory	27. Co-operative Society	50.48	Fair
12. Dairy Development	71.19	Satisfactory	28. Syndicate Bank	46.23	Fair
13. Indian Overseas Bank	68.29	Satisfactory	29. The New India Assurance Co. Ltd.	39.54	Moderate
14. State Bank of Travancore	66.70	Satisfactory	30. Social Forestry	39.13	Moderate
15. Fisheries	66.47	Satisfactory	31. Irrigation Dept.	37.12	Moderate
16. Animal Husbandry	65.78	Satisfactory	32. Kerala Forest Research Institute	36.89	Moderate

Table 4.6 Categorization of the participating agencies at block panchayat level based on the co-ordination index value

S.No.	Name of agency	Coordination Index	Category
1	Department of Agriculture	79.14	Satisfactory
2	Irrigation Department	73.99	Satisfactory
3	Dairy Development	68.46	Satisfactory
4	Forestry Department	65.20	Satisfactory
5	State Bank of Travancore	61.89	Satisfactory
6	South Malabar Gramin Bank	61.43	Satisfactory
7	Animal Husbandry	54.05	Fair
8	Kerala State Electricity Board	46.44	Fair
9	Kudumbasree	45.72	Fair
10	Block Panchayat	44.68	Fair
11	Canara Bank	43.94	Fair
12	State Bank of India	42.18	Fair
13	Co-operative Society	41.89	Fair
14	Soil Conservation	40.82	Fair
15	Central Bank of India	35.51	Moderate
16	Indian Overseas Bank	34.35	Moderate

Table 4.7 Categorization of the participating agencies at grama panchayat level based on the co-ordination index value

S.No.	Name of agency	Co-ordination Index	Category
1	Animal Husbandry	67.62	Satisfactory
2	Department of Agriculture	65.89	Satisfactory
3	Grama Panchayat Department	64.82	Satisfactory
4	Co-operative Society	59.90	Fair
5	Rural Development	50.51	Fair
6	Kerala State Electricity Board	43.26	Fair

Table 4.5 revealed that out of thirty two agencies, only three agencies namely; 'District Panchayat', 'National Bank for Agriculture and Rural Development (NABARD)' and 'Kerala Land Development Corporation' belonged to the 'highly satisfactory' level in co-ordinating agricultural development activity (scores were 91.87, 86.43 and 83.87 respectively), while fifteen agencies were in the 'satisfactory' level and the remaining ten agencies were in the 'fair' level and four agencies viz., 'The New India Assurance Co. Ltd'. 'Social Forestry', 'Irrigation' and 'Kerala Forest Research Institute (KFRI)' were in the 'moderate' level at district panchayat.

At block panchayat level, none of the agencies belonged to the 'highly satisfactory' level. Out of sixteen agencies six agencies viz; 'Department of Agriculture' (79.14), 'Irrigation (73.99)', 'Dairy Development (68.91)', 'Forestry (65.20)', 'State Bank of Travancore (61.89)' and 'South Malabar Gramin Bank (61.43)' belonged to the 'satisfactory' level. Eight agencies belonged to the 'fair'

level and two agencies; 'Indian Overseas Bank' and 'Central Bank of India' were in the 'moderate' level (Table 4.6).

At grama panchayat level, none of the agencies belonged to the 'highly satisfactory' level. However, three agencies namely; 'Animal Husbandry', 'Department of Agriculture' and 'Grama Panchayat' belonged to the 'satisfactory' level, whereas, the other agencies belonged to the 'fair' level (Table 4.7).

A perusal of the results in Tables 4.5, 4.6 and 4.7 revealed that only three agencies namely; Panchayat Department (91.87), National Bank for Agriculture and Rural Development (NABARD) (86.43) and Kerala Land Development Corporation (83.87) belonged to the 'highly satisfactory' level followed by sixteen agencies belonging to the 'satisfactory' level. After democratic decentralization, panchayat department has been performing the main role in co-ordinating agricultural development activities, starting from project formulation to implementation. The officer-in-charge of this agency organizes various meetings related to agricultural development involving other participating agencies. National Bank for Agriculture and Rural Development (NABARD) is directly related to agricultural development providing credit to the growers. Therefore it is only natural that these agencies are maintaining good relations with other agencies involved in agricultural development using proper channels of communication.

Kerala Land Development Corporation (KLDC) is directly related to agricultural development. This agency is engaged in selecting agricultural lands through consultation with other agencies involved in agricultural development. Naturally the officer-in-charge of this agency frequently liaises with other agencies involved in agricultural development. Moreover, authority has been delegated to majority of the officers-in-charge to facilitate joint decision making with other agencies for agricultural development activity.

The co-ordination performance of the banking agencies namely; South Malabar Gramin Bank, Canara Bank, Punjab National Bank, Indian Overseas Bank and State Bank of Travancore are directly related to agricultural development through providing credit to the growers. These agencies have to be in frequent communication with other agencies involved in agricultural development, especially development departments like 'Department of Agriculture', 'Fisheries', 'Animal Husbandry', 'Sericulture', 'Soil Conservation', 'Kerala State Land Use Board', 'Co-operation Department, Dairy Development, Rubber Board and 'Kerala Agro. Industries Corporation'.

Other agencies namely; 'Soil Survey', 'United India Insurance Co. Ltd.', 'Rural Development', 'Ground Water, 'Kerala State Electricity Board (KSEB)', National Insurance Company Ltd.', 'Coir Development, 'Co-operative Society' and 'Syndicate Bank' belonged to the 'fair' level. The reason might be that these agencies are indirectly involved with other participating agencies involved in agricultural development. Apart from above nine agencies, 'Department of Agriculture' was also in the 'fair' level. It is assumed that although, this agency is directly involved in agricultural development it is facing problems like lack of proper authority to facilitate joint decision making with other agencies involved. They are implementing projects/schemes without consulting other agencies involved in agricultural development and not maintaining good relations with them.

Finally, 'The New India Assurance Co. Ltd'. 'Social Forestry', 'Irrigation' and 'Kerala Forest Research Institute' are only indirectly involved in agricultural development activities. These agencies are facing problems due to lack of proper authority, using ineffective communication channels, lack of motivation and lack of accommodation in co-ordinating agricultural development activity at district panchayat level. Moreover, 'Kerala Forest Research Institute' is completely detached

from other agencies involved in agricultural development. They are doing jobs related to agricultural development but in isolation.

At block panchayat level, none of the participating agencies belonged to the 'highly satisfactory' level. The agencies viz., 'Department of Agriculture', 'Irrigation', 'Dairy Development', 'Forestry', 'State Bank of Travancore' and 'South Malabar Gramin Bank' belonged to the 'satisfactory' level. The reason might be that almost all the respondents at block panchayat level reported that legitimate authority was vested with them 'occasionally' to facilitate joint decision making with other agencies for agricultural development. Moreover, the above mentioned agencies are directly involved in agricultural development, whereas, 'Animal Husbandry', 'Kerala State Electricity Board', 'Kudumbassree', 'Block Panchayat, Canara Bank, 'State Bank of India', 'Co-operative Society' and 'Soil Conservation' were in the 'fair' level. The reason might be that these agencies were performing their jobs related to agricultural development without consulting other agencies and lacking reciprocal communication. Another two agencies viz; 'Central Bank of India' and 'Indian Overseas Bank' were in the 'moderate' level. These agencies are controlled by 'Central Government' and detached from the 'Panchayat Controlled Agencies'. Further, these agencies are only indirectly involved in agricultural development activities. In addition to this, there was no representative of these agencies in the co-ordination committee. Their communication and participation in agricultural developmental activity was 'low'.

At grama panchayat level, 'Animal Husbandry', 'Department of Agriculture' and 'Grama Panchayat' belonged to the 'satisfactory' level. It is assumed that these agencies are communicating well with each other and they are jointly participating in agricultural development activities. It is also assumed that they are accepting ideas, suggestions reciprocally though they 'seldom' have authority. Another, three agencies namely; 'Co-operative Society', 'Rural Development' and 'Kerala State

Electricity Board' are indirectly involved in agricultural development. 'Co-operative Society' is providing 'loan' to the growers and 'Kerala State Electricity Board' provides power at subsidized rates for agricultural development activities (Table 4.7).

Table 4.8 Level of co-ordination of different categories of agencies at district panchayat level based on the co-ordination index value

S.No.	Categorization	Co-ordination Index	Category
1	Banking controlled agency	71.19	Satisfactory
2	Panchayat controlled agency	66.90	Satisfactory
3	State government controlled agency	65.36	Satisfactory
4	Central government controlled agency	54.47	Fair
5	Co-operative controlled agency	50.48	Fair

Table 4.9 Level of co-ordination of different categories of agencies at block panchayat level based on the co-ordination index value

S.No.	Categorization	Co-ordination Index	Category
1	State government controlled agency	55.82	Fair
2	Panchayat controlled agency	54.05	Fair
3	Banking controlled agency	46.47	Fair
4	Co-operative controlled agency	41.89	Fair

Table 4.10 Level of co-ordination of different categories of agencies at grama panchayat level based on the co-ordination index value

S.No.	Categorization	Co-ordination Index	Category
1	Co-operative controlled agency	59.90	Fair
2	Panchayat controlled agency	53.76	Fair
3	State government controlled agency	43.26	Fair

Table 4.11 Categorization of different panchayat levels based on the co-ordination index value

S.No.	Panchayat level	Co-ordination Index	Category
1	District panchayat	65.47	Satisfactory
2	Block panchayat	58.57	Fair
3	Grama panchayat	58.29	Fair

Tables 4.8, 4.9, 4.10 and 4.11 present the level of co-ordination performance of the categories of agencies at district, block and grama panchayat levels based on the co-ordination index value. Table 4.8 revealed that none of the categories of the participating agencies belonged to the 'highly satisfactory' level but three categories of agencies namely; 'Banking Controlled', 'Panchayat Controlled' and 'State Government Controlled' belonged to the 'satisfactory' level. Rest of the two categories; 'Cooperative Controlled' and 'Central Government Controlled' were in the 'fair' level at district panchayat.

At block panchayat level, none of the categories of agencies belonged to the 'highly satisfactory' and 'satisfactory' levels. However all four categories of agencies belonged to the 'fair' level (Table 4.9). At grama panchayat level also a similar trend was observed (Table 4.10).

Table 4.11 presents the categorization of panchayats based on the co-ordination index value. It was observed that none of the panchayats belonged to the 'highly satisfactory' level with respect to co-ordination performance. However, 'District Panchayat' belonged to the 'satisfactory' level (65.47) followed by 'Block Panchayat' (58.51) and 'Grama Panchayat' (58.29) belonging to the 'fair' level.

Tables 4.8, 4.9, 4.10 and 4.11 reveal that none of the categories of agencies belonged to the 'highly satisfactory' level. Among five categories of agencies, three categories namely; 'Banking Controlled' 'Panchayat Controlled' and 'State Government Controlled' belonged to the 'satisfactory' level. It is perceived that on the professional ground, these three categories of agencies are communicating and consulting each other to facilitate joint decision making for agricultural development at district panchayat level, especially, 'Panchayat Controlled Agencies'. Other two categories of agencies; 'Central Government Controlled' and 'Co-operative Controlled' are completely detached from 'Panchayat Controlled'. These are indirectly involved in agricultural development activities.

At block panchayat level, almost all the categories of agencies except 'Central Government Controlled' were in the 'fair' level. The reason might be that the respondents of these agencies were lacking authority for joint decision making with other agencies involved in agricultural development.

At grama panchayat level, 'Co-operative Controlled Agencies' 'Panchayat Controlled Agencies' and 'State Government Controlled Agencies' were in the 'fair' level.

It is assumed that the respondents of these categories of agencies are lacking delegation of authority and they are not communicating with each other. 'Cooperative Controlled Agencies' are performing the main role in co-ordinating agricultural

development activities. However, 'District Panchayat Controlled Agencies' were in the 'satisfactory' level indicating that the respondents of this category of agencies possessed more authority than block and grama panchayat levels. Their participation in various committee meetings was also comparatively higher. They are utilizing proper channels of communication. It is perceived that they are motivated and empathized with each other in co-ordinating agricultural development activities. The finding is in conformity with the results of several authors (Sandhu and Gupta, 1974; Sawant, 1978; Gill *et al.*, 1982; Appaji and Kumar, 1986; Raju, 1987; Mishra, 1989; Krishnamurthy, 1991; Issac, 1996; Tripathi and Reddy, 1997; Princes, 1998 and Santhos, 2000).

4.4 RANKING OF AGENCIES BASED ON THE OBTAINED CO-ORDINATION INDEX SCORES

Tables 4.12, 4.13 and 4.14 present the ranking of agencies based on the co-ordination index scores at district, block and grama panchayat levels.

Table 4.12 Ranking of the participating agencies based on the co-ordination index score at district panchayat level

Name of agency	Co-ordination Index	Rank	Name of agency	Co-ordination Index	Rank
1. Panchayat Dept.	91.87	I	17. Forestry Dept.	62.40	XVII
2. NABARD	86.43	II	18. Rubber Board	61.49	XVIII
3. KLDC	83.87	III	19. Soil Survey	59.72	XIX
4. SMGB	79.73	IV	20. UIIC.	59.18	XX
5. Serifed	79.31	V	21. Rural Development	57.33	XXI
6. Canara Bank	79.18	VI	22. Ground Water Dept.	56.77	XXII
7. Soil Conservation	78.51	VII	23. Dept. of Agriculture	55.06	XXIII
8. Kerala State Land Use Board	78.12	VIII	24. KSEB	54.28	XXIV
9. Co-operation Dept.	77.01	IX	25. National Insurance Co.	53.80	XXV
10. Kerala Agro. Industries Corporation	76.51	X	26. Coir Department	51.58	XXVI
11. Punjab National Bank	71.78	XI	27. Co-operative Society	50.48	XXVII
12. Dairy Development	71.19	XII	28. Syndicate Bank	46.23	XXVIII
13. Indian Overseas Bank	68.29	XIII	29. The New India Assurance Co. Ltd.	39.54	XXIX
14. SBT	66.70	XIX	30. Social Forestry	39.13	XXX
15. Fisheries	66.47	XV	31. Irrigation Dept.	37.12	XXXI
16. Animal Husbandry	65.78	XVI	32. Kerala Forest Research Institute	36.89	XXXII

Table 4.13 Ranking of the participating agencies based on the co-ordination index score at block panchayat level

S.No.	Name of agency	Co-ordination Index	Rank
1	Department of Agriculture	79.14	I
2	Irrigation Department	73.99	II
3	Dairy Development	68.46	III
4	Forestry Department	65.20	IV
5	State Bank of Travancore	61.89	V
6	South Malabar Gramin Bank	61.43	VI
7	Animal Husbandry	54.05	VII
8	Kerala State Electricity Board	46.44	VIII
9	Kudumbasree	45.72	IX
10	Block Panchayat Department	44.68	X
11	Canara Bank	43.94	XI
12	State Bank of India	42.18	XII
13	Co-operative Society	41.89	XIII
14	Soil Conservation	40.82	XIV
15	Central Bank of India	35.51	XV
16	Indian Overseas Bank	34.35	XVI

Table 4.14 Ranking of the participating agencies based on the co-ordination index score at grama panchayat level

S.No.	Name of agency	Co-ordination Index	Rank
1	Animal Husbandry	67.62	I
2	Department of Agriculture	65.89	II
3	Grama Panchayat Department	64.82	III
4	Co-operative Society	59.90	IV
5	Rural Development	50.51	V
6	Kerala State Electricity Board	43.26	VI

Table 4.12 reveals that out of thirty two agencies, 'District Panchayat' (91.87) ranked first followed by 'National Bank for Agriculture and Rural Development (NABARD)' (86.43), 'Kerala Land Development Corporation' (83.87), 'South Malabar Gramin Bank' (79.73) and 'Canara Bank' (79.31), while, 'Kerala Forest Research Institute' (36.89) ranked last at district panchayat level.

At block panchayat level, 'Department of Agriculture' ranked first (79.14) followed by 'Irrigation' (73.99) and 'Dairy Development' (68.46), while, 'Indian Overseas Bank' (34.35) ranked last (Table 4.13).

Table 4.14 revealed that, 'Animal Husbandry' was ranked first (67.62) followed by 'Department of Agriculture' (65.89) and 'Grama Panchayat' (64.84), while,

'Kerala State Electricity Board' (KSEB) was ranked last (43.26) at grama panchayat level.

The results in Tables 4.12, 4.13 and 4.14 reveal that 'District Panchayat', 'National Bank for Agriculture and Rural Development (NABARD)', 'Kerala Land Development Corporation (KLDC)' and 'South Malabar Gramin Bank' were functioning well in co-ordinating agricultural development activity, whereas, 'Department of Agriculture' was ranked 23rd (55.06). At district panchayat level, absolutely agricultural related agencies; 'Fisheries', 'Animal Husbandry', 'Rubber Board', 'Soil Survey' and 'Irrigation' were ranked 15th, 16th, 18th, 19th and 31st respectively indicating that direct involved agencies were 'far distant' from effective co-ordination rather than other participating agencies involved in agricultural development. However, at block panchayat level, most of the direct involved agencies; 'Department of Agriculture', 'Irrigation' and 'Dairy Development' were functioning better than other agencies; such as 'Indian Overseas Bank', 'Central Bank of India' and 'Soil Conservation'. The reason may be that majority of respondents from the 'Department of Agriculture', 'Irrigation', 'Dairy Development', 'Forestry' and 'South Malabar Gramin Bank' are contributing more than others in co-ordinating agricultural development activities. The reason may be the same at grama panchayat level also. At this level, 'Kerala State Electricity Board' was not functioning well and this agency was completely detached from the 'Panchayat Controlled Agencies'.

The results further reveal that direct involved agencies at district panchayat level were not functioning well than other participating agencies. The reason might be that district panchayat has been doing almost all the activities related to agricultural development and 'National Bank for Agriculture and Rural Development' is directly related to agricultural development, whereas, 'Department of Agriculture' was seen ranked 23rd. 'Kerala Forest Research Institute' is completely detached from other agencies involved in agricultural development. They are doing their own job.

At block panchayat level, almost all the agencies were directly involved in agricultural development. At this level 'Department of Agriculture' is functioning well followed by 'Irrigation' and 'Dairy Development'. It is assumed that at block panchayat level, 'Department of Agriculture', 'Irrigation' and 'Dairy Development' are very much sound in co-ordinating agricultural development activities rather than other agencies; such as 'Kerala State Electricity Board', and even 'Block Panchayat'.

At grama panchayat level, a similar trend was observed like that at block panchayat level. At this level, 'Animal Husbandry', 'Department of Agriculture' and 'Grama Panchayat' were performing the leading function in co-ordinating agricultural development activities. However, the reasons may be the same as those have already discussed in Tables 4.5, 4.6 and 4.7 in case of ranking of the participating agencies

Table 4.15. Ranking of different categories of agencies based on the co-ordination index score at district panchayat level

S.No.	Categories of agencies	Co-ordination Index	Rank
1	Banking controlled agency	71.19	I
2	Panchayat controlled agency	66.90	II
3	State government controlled agency	65.36	III
4	Central Government controlled agency	54.47	IV
5	Co-operative controlled agency	50.48	V

Table 4.16. Ranking of different categories of agencies based on the co-ordination index score at block panchayat level

S.No.	Categories of agencies	Co-ordination Index	Rank
1	State government controlled agency	55.82	I
2	Panchayat controlled agency	54.05	II
3	Banking controlled agency	46.47	III
4	Co-operative controlled agency	41.89	IV

Table 4.17 Ranking of different categories of agencies based on the co-ordination index score at grama panchayat level

S.No.	Categories of agencies	Co-ordination Index	Rank
1	Co-operative controlled agency	59.90	I
2	Panchayat controlled agency	53.76	II
3	State government controlled agency	43.26	III

Table 4.18 Ranking of different panchayat levels based on the co-ordination index score

S.No.	Name of panchayat level	Coordination Index	Rank
1	District panchayat	65.47	I
2	Block panchayat	58.57	II
3	Grama panchayat	58.29	III

Tables 4.15, 4.16, 4.17 and 4.18 present the ranking of different categories of agencies based on the co-ordination index scores at all panchayat levels viz. district, block and grama panchayat. As shown in Table 4.15, 'Banking Controlled Agencies' was ranked first (71.19) followed by 'Panchayat Controlled Agencies' (66.90) and 'Cooperative Controlled Agencies' (50.48) was the last.

At block panchayat level, 'State Government Controlled Agencies' (55.82) was ranked first followed by 'Panchayat Controlled Agencies' (50.05) and 'Cooperative Controlled Agencies' was the last (41.89) (Table 4.16).

At grama panchayat level, 'Co-operative Controlled Agencies' (59.90) was ranked first and 'State Government Controlled Agencies' (43.26) was the last (Table 4.17).

Table 4.18 gives the ranking of different panchayat levels based on the co-ordination index scores. It was observed that 'District Panchayat' was ranked first (65.47) with respect to co-ordination performance followed by 'Block' and 'Grama Panchayat' (58.52 and 58.29 respectively).

Tables 4.15, 4.16, 4.17 and 4.18 reveal that 'Banking Controlled Agencies' was ranked first (71.19) followed 'Panchayat Controlled Agencies' (66.90) and 'Cooperative Controlled Agencies' (50.48) ranked last.

It is assumed that 'Banking Controlled Agencies' is performing the leading role in co-ordinating agricultural development activity providing loan to farmers. The performance of other categories of agencies such as, 'Central Government Controlled Agencies' was almost poor. It is perceived that this category of agencies are not permitting the representatives for facilitating joint decision with other participating agencies at the operational levels, whereas, at block panchayat level, 'State

Government Controlled Agencies' was ranked first and 'Banking Controlled Agencies' ranked third. At grama panchayat level, 'Cooperative Controlled Agencies' has been performing the leading role in co-ordinating agricultural development activities. This category of agencies is directly linked with farmers and provides loan to them.

Finally, it was observed that 'District Panchayat' ranked first followed by 'Block' and 'Grama Panchayat'. The reason may be that a lot of agencies at district panchayat level are functioning in co-ordinating agricultural development activities. However, it may be the same reasons, which have already been discussed in Tables 4.8, 4.9, 4.10 and 4.11. The finding is in conformity with the results of author (Sawant, 1978).

4.5 DISTRIBUTION OF RESPONDENTS ON THE SELECTED DIMENSIONS OF CO-ORDINATION USING CONSTRUCTED SCALE

Tables 4.19, 4.20 and 4.21 present the distribution of respondents on the selected sub dimensions under the major dimension namely; 'structural dimension' with respect to co-ordination performance at different panchayat levels. As could be observed from Table 4.19, reasonable percentage (40.63%) of the respondents belonged to the 'medium' category in 'pattern of authority' followed by the 'low' category (34.37%) with respect to level of co-ordination under 'structural dimension'. Reasonable percentage (40.63%) of the respondents belonged to the 'high' category in 'co-ordination committee' followed by the 'medium' category (31.25). In the sub dimension 'pattern of communication', considerable percentage (37.50%) of the respondents belonged to the 'high' category followed by the 'low' category (34.37%). Same percentage (34.37%) of the respondents belonged to the 'medium and low' category in 'pattern of participation' followed by the 'high' category

(31.26%). Considerable percentage (37.50%) of the respondents belonged to the 'high' category in 'role identity' followed by the 'low' category (34.37%). Reasonable percentage (46.86%) of the respondents belonged to the 'medium' category in 'pattern of interdependence' followed by the 'high' category (31.26%), whereas, considerable percentage (37.50%) of the respondents belonged to the 'high' category in 'pattern of independence' followed by same percentage in the 'medium and low' level with respect to co-ordination performance under the same major dimension' at district panchayat level.

Table 4.19 Distribution of respondents on the selected subdimensions under 'structural dimension' with respect to level of co-ordination at Thrissur district panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=32	Percentage
1	Pattern of Authority	High	Above 19.86	08	25.00
		Medium	15.03 to 19.86	13	40.63
		Low	Below 15.03	11	34.37
2	Co-ordination Committee	High	Above 21.05	13	40.63
		Medium	15.98 to 21.05	10	31.25
		Low	Below 15.98	09	28.12
3	Pattern of Communication	High	Above 21.28	12	37.50
		Medium	14.00 to 21.28	09	28.13
		Low	Below 14.00	11	34.37
4	Pattern of Participation	High	Above 24.41	10	31.26
		Medium	17.07 to 24.41	11	34.37
		Low	Below 17.07	11	34.37
5	Role Identity	High	Above 20.96	12	37.50
		Medium	13.74 to 20.96	09	28.13
		Low	Below 13.74	11	34.37
6	Pattern of Interdependence	High	Above 18.33	10	31.26
		Medium	13.15 to 18.33	15	46.86
		Low	Below 13.15	07	21.88
7	Pattern of Independence	High	Above 17.29	12	37.50
		Medium	11.85 to 17.29	10	31.25
		Low	Below 11.85	10	31.25

Table 4.20 Distribution of respondents on the selected sub dimensions under 'structural dimension' with respect to level of co-ordination at block panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=49	Percentage
1	Pattern of Authority	High	Above 17.47	25	51.03
		Medium	13.70 to 17.47	14	28.57
		Low	Below 13.70	10	20.40
2	Co-ordination Committee	High	Above 18.15	22	44.89
		Medium	10.84 to 18.15	17	34.71
		Low	Below 10.84	10	20.40
3	Pattern of Communication	High	Above 20.46	13	26.54
		Medium	15.40 to 20.46	18	36.73
		Low	Below 15.40	18	36.73
4	Pattern of Participation	High	Above 24.01	16	32.65
		Medium	18.25 to 24.01	21	42.85
		Low	Below 18.25	12	24.50
5	Role Identity	High	Above 19.42	14	28.57
		Medium	12.91 to 19.42	19	38.78
		Low	Below 12.91	16	32.65
6	Pattern of Interdependence	High	Above 18.01	18	36.73
		Medium	13.66 to 18.01	14	28.57
		Low	Below 13.66	17	34.70
7	Pattern of Independence	High	Above 16.95	15	30.63
		Medium	11.71 to 16.95	14	28.57
		Low	Below 11.71	20	40.80

Table 4.21 Distribution of respondents on the selected sub dimensions under 'structural dimension' with respect to level of co-ordination at grama panchayat level

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=19	Percentage
1	Pattern of Authority	High	Above 15.84	07	36.84
		Medium	10.66 to 15.84	04	21.05
		Low	Below 10.66	08	42.11
2	Co-ordination Committee	High	Above 17.59	08	42.11
		Medium	8.77 to 17.59	04	21.05
		Low	Below 8.77	07	36.84
3	Pattern of Communication	High	Above 19.03	08	42.11
		Medium	12.03 to 19.03	01	5.26
		Low	Below 12.03	10	52.63
4	Pattern of Participation	High	Above 23.09	09	47.36
		Medium	17.47 to 23.09	05	26.32
		Low	Below 17.47	05	26.32
5	Role Identity	High	Above 17.32	08	42.11
		Medium	11.91 to 17.32	04	21.05
		Low	Below 11.91	07	36.84
6	Pattern of Interdependence	High	Above 16.47	05	26.32
		Medium	12.28 to 16.47	09	47.36
		Low	Below 12.28	05	26.32
7	Pattern of Independence	High	Above 11.89	04	21.05
		Medium	7.38 to 11.89	10	52.63
		Low	Below 7.38	05	26.32

Table 4.22 Distribution of respondents on the selected sub dimensions under 'structural dimension' with respect to overall level of co-ordination at entire Thrissur district

S.No.	Sub dimensions	Category based on overall co-ordination performance	Score range	Frequency N=100	Percentage
1	Pattern of Authority	High	Above 18.03	20	20.00
		Medium	13.43 to 18.03	55	55.00
		Low	Below 13.43	25	25.00
2	Co-ordination Committee	High	Above 19.07	31	31.00
		Medium	11.99 to 19.07	39	39.00
		Low	Below 11.99	30	30.00
3	Pattern of Communication	High	Above 20.55	26	26.00
		Medium	14.22 to 20.55	44	44.00
		Low	Below 14.22	30	30.00
4	Pattern of Participation	High	Above 24.03	23	23.00
		Medium	17.64 to 24.03	50	50.00
		Low	Below 17.64	27	27.00
5	Role Identity	High	Above 19.55	28	28.00
		Medium	12.96 to 19.55	37	37.00
		Low	Below 12.96	35	35.00
6	Pattern of Interdependence	High	Above 18.67	30	30.00
		Medium	12.38 to 18.67	48	48.00
		Low	Below 12.38	22	22.00
7	Pattern of Independence	High	Above 17.91	29	29.00
		Medium	13.12 to 17.91	26	26.00
		Low	Below 13.12	45	45.00

At block panchayat level, majority (51.03%) of the respondents belonged to the 'high' category in 'pattern of authority' followed by the 'medium' category (28.57%) with respect to co-ordination performance under 'structural dimension'. Reasonable percentage (44.89%) of the respondents belonged to the 'high' category in 'co-ordination committee' followed by the 'medium' category (34.71%). In the sub dimension 'pattern of communication', same percentage (36.73%) of the respondents belonged to both the 'medium' and 'low' category followed by the 'high'

category (26.54%). Reasonable percentage (42.85%) of the respondents belonged to the 'medium' category in 'pattern of participation' followed by the 'high' category (32.65%). Considerable percentage (38.78%) of the respondents belonged to the 'high' category in 'role identity' followed by the 'low' category (32.65%). Considerable percentage (36.73%) of the respondents belonged to the 'high' category in 'pattern of interdependence' followed by the 'low' category (34.70%), whereas, reasonable percentage (40.80%) of the respondents belonged to the 'low' category in 'pattern of independence' followed by the 'high' category (30.63%) with respect to co-ordination performance under the 'structural dimension' at block panchayat level (Table 4.20).

At grama panchayat level, reasonable percentage (42.11%) of the respondents belonged to the 'low' category in 'pattern of authority' followed by the 'high' category (36.84%) with respect to co-ordination performance under the 'structural dimension'. Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'co-ordination committee' followed by the 'low' category (36.84%). In the sub dimension 'pattern of communication', majority (52.63%) of the respondents belonged to the 'low' category followed by the 'high' category (42.11%). Reasonable percentage (47.36%) of the respondents belonged to the 'high' category in 'pattern of participation' followed by the same percentage (26.32%) in both the 'medium' and 'low' category respectively. Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'role identity' followed by the 'low' category (36.84%). Reasonable percentage (47.36%) of the respondents belonged to the 'medium' category in 'pattern of interdependence' followed by the same percentage (26.32%) in both the 'high' and 'low' category, whereas, majority (52.63%) of the respondents belonged to the 'medium' category in 'pattern of independence' followed by the 'low' category with respect to co-ordination performance under the 'structural dimension' at block panchayat level (Table 4.21).

Majority (55.00%) of the respondents belonged to the 'medium' category in 'pattern of authority' followed by the 'low' category (25.00%) with respect to level of co-ordination under 'structural dimension'. Considerable percentage (39.00%) of the respondents belonged to the 'medium' category in 'co-ordination committee' followed by the 'high' category (31.00%). In the sub dimension 'pattern of communication', reasonable percentage (44.00%) of the respondents belonged to the 'medium' category followed by the 'low' category (30.00%). Majority (50.00%) of the respondents belonged to the 'medium category in 'pattern of participation' followed by the 'low' category (27.00%). Considerable percentage (37.00%) of the respondents belonged to the 'medium' category in 'role identity' followed by the 'low' category (35.00%). Reasonable percentage (48.00%) of the respondents belonged to the 'medium' category in 'pattern of interdependence' followed by the 'high' category (30.00%), whereas, reasonable percentage (45.00%) of the respondents belonged to the 'low' category in 'pattern of independence' followed by the 'high' category (29.00%) with respect to co-ordination performance under the same major dimension at entire Thrissur district (Table 4.22).

Tables 4.19, 4.20, 4.21 and 4.22 present the distribution of respondents under 'structural dimension' of co-ordination. At district panchayat level, reasonable percentage of the respondents belonged to the 'high' category in 'co-ordination committee', 'role identity', 'pattern of independence' and 'pattern of communication'. It is perceived that the co-ordination committee is linking the participating agencies and facilitating joint decision making for agricultural development. The participating agencies have given freedom to the officer-in-charge to communicate with each other agencies in co-ordinating agricultural development activity. Moreover, the agency has specified their specific role for better co-ordination in agricultural development activities. Further, it is assumed that the officers-in-charge are using parallel channels of communication to synchronize the

efforts for agricultural development. At district panchayat level, majority of the participating agencies were interdependent to each other.

'High' level authority was vested with one fourth of the total respondents of the participating agencies. Vast majority of the respondents were in the 'medium' to 'low' level authority. It is perceived that when proper authority is vested with the personnel then rest of all attributes tend to centralize towards it. Without delegation of authority, they are unable to participate in joint decision making with other agencies involved in agricultural development. The authorized personnel may plan properly to co-ordinate agricultural development. Without proper authority, they are unable to take any appropriate decision to accelerate the development activity. Negligible percentage of the respondents was enjoying the 'high' level authority indicating that structure of effective co-ordination at district panchayat level is not reinforced.

At block panchayat level, the participating agencies were in wrong perception about co-ordination committee. There was no established co-ordination committee at block panchayat level just like as district panchayat. Instead of this, a 'technical committee' involving few technical agencies was organizing meetings once in a month and even this was not linked with district panchayat level. However, reasonable percentage of the respondents was in the 'high' level authority to facilitate joint decision making with other participating agencies for agricultural development. The participating agency has given 'low' level freedom to majority of the officers-in-charge. Considerable percentage of the respondents was participating in various meetings, seminars, and conferences with other participating agencies involved in agricultural development.

At grama panchayat level, also same wrong perception as that of block panchayat level was felt by the officers-in-charge/representatives about co-ordination

committee. A 'technical committee' is maintaining liaison among the participating agencies during the cropping season only, not all round the year. However, majority of the respondents were participating in various meetings organized by grama panchayat from time to time, but lacking authority to facilitate joint decision making for agricultural development.

At entire Thrissur district, it was observed that majority of the respondents were in the 'medium' level authority and negligible percentage of the respondents was enjoyed the 'high' level authority to facilitate joint decision making for agricultural development. Their participation in various committee meetings, and pattern of communication were also 'medium' level indicating that in all panchayat levels, 'structure of co-ordination' is not robust.

Moreover, without specific role, they are in dilemma whether they would be able to perform their vested duties and responsibilities. In addition to this, lack of proper communication hampers effective co-ordination. This finding is in conformity with the results of several authors (Dubhashi, 1966; Robert, 1970; Blumenkrantz, 1975; Gupta, 1992; Purkat, 1996).

Table 4.23 Distribution of respondents on the selected subdimensions under 'functional dimension' with respect to level of co-ordination at district panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=32	Percentage
1	Clarity of Objectives and Programmes	High	Above 17.17	14	43.75
		Medium	11.35 to 17.17	06	18.75
		Low	Below 11.35	12	37.50
2	Technical Orientation	High	Above 25.77	08	25.00
		Medium	17.97 to 25.77	16	50.00
		Low	Below 17.97	08	25.00
3	Integration of Services	High	Above 19.27	14	43.75
		Medium	11.47 to 19.27	08	25.00
		Low	Below 11.47	10	31.25
4	Procedures for Committee Meetings	High	Above 21.19	10	31.25
		Medium	14.45 to 21.19	10	31.25
		Low	Below 14.45	12	37.50
5	Team work	High	Above 18.41	08	25.00
		Medium	13.72 to 18.41	16	50.00
		Low	Below 13.72	08	25.00
6	Information Sharing	High	Above 25.70	11	34.37
		Medium	17.68 to 25.70	08	25.00
		Low	Below 17.68	13	40.63
7	Resource Allocation	High	Above 21.80	12	37.50
		Medium	14.81 to 21.80	12	37.50
		Low	Below 14.81	08	25.00
8	Time Management	High	Above 22.45	07	21.87
		Medium	15.29 to 22.45	15	46.88
		Low	Below 15.29	10	31.25
9	Project Formulation	High	Above 21.85	12	37.50
		Medium	13.68 to 21.85	09	28.13
		Low	Below 13.68	11	34.37
10	Project Implementation	High	Above 25.07	16	50.00
		Medium	16.44 to 25.07	06	18.75
		Low	Below 16.44	10	31.25
11	Accountability	High	Above 27.16	15	46.88
		Medium	20.35 to 27.16	09	28.12
		Low	Below 20.35	08	25.00

Table 4.24 Distribution of respondents on the selected subdimensions under 'functional dimension' with respect to level of co-ordination at block panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=49	Percentage
1	Clarity of Objectives and Programmes	High	Above 16.31	19	38.77
		Medium	11.45 to 16.31	14	28.57
		Low	Below 11.45	16	32.66
2	Technical Orientation	High	Above 23.04	17	34.69
		Medium	16.86 to 23.04	23	46.93
		Low	Below 16.86	9	18.38
3	Integration of Services	High	Above 18.15	20	40.80
		Medium	10.23 to 18.15	13	26.54
		Low	Below 10.23	16	32.66
4	Procedures for Committee Meetings	High	Above 17.48	14	28.57
		Medium	10.65 to 17.48	23	46.96
		Low	Below 10.65	12	24.47
5	Team work	High	Above 17.47	11	22.44
		Medium	13.78 to 17.47	27	55.12
		Low	Below 13.78	11	22.44
6	Information Sharing	High	Above 23.68	18	36.73
		Medium	17.31 to 23.68	13	26.54
		Low	Below 17.31	18	36.73
7	Resource Allocation	High	Above 21.93	16	32.66
		Medium	15.40 to 21.93	21	42.87
		Low	Below 15.40	12	24.47
8	Time Management	High	Above 20.23	18	36.73
		Medium	13.19 to 20.23	16	32.66
		Low	Below 13.19	15	30.61
9	Project Formulation	High	Above 20.84	17	34.69
		Medium	13.20 to 20.84	13	26.54
		Low	Below 13.20	19	38.77
10	Project Implementation	High	Above 24.07	21	42.87
		Medium	15.85 to 24.07	11	22.44
		Low	Below 15.85	17	34.69
11	Accountability	High	Above 25.64	18	36.73
		Medium	20.67 to 25.64	18	36.73
		Low	Below 20.67	13	26.54

Table 4.25. Distribution of respondents on the selected subdimensions under 'functional dimension' with respect to level of co-ordination at grama panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=19	Percentage
1	Clarity of Objectives and Programmes	High	Above 16.99	07	36.84
		Medium	12.52 to 16.99	04	21.05
		Low	Below 12.52	08	42.11
2	Technical Orientation	High	Above 24.75	08	42.11
		Medium	15.24 to 24.75	03	15.78
		Low	Below 15.24	08	42.11
3	Integration of Services	High	Above 16.27	04	21.05
		Medium	10.40 to 16.27	10	52.64
		Low	Below 10.40	05	26.31
4	Procedures for Committee Meetings	High	Above 15.55	08	42.11
		Medium	7.39 to 15.55	04	21.05
		Low	Below 7.39	07	36.84
5	Team work	High	Above 17.86	04	21.05
		Medium	14.75 to 17.86	08	42.11
		Low	Below 14.75	07	36.84
6	Information Sharing	High	Above 21.49	08	42.11
		Medium	15.27 to 21.49	06	31.58
		Low	Below 15.27	05	26.31
7	Resource Allocation	High	Above 17.75	08	42.11
		Medium	11.17 to 17.75	04	21.05
		Low	Below 11.17	07	36.84
8	Time Management	High	Above 19.05	07	36.84
		Medium	12.29 to 19.05	03	15.78
		Low	Below 12.29	09	47.38
9	Project Formulation	High	Above 19.93	07	36.84
		Medium	8.18 to 19.93	03	15.78
		Low	Below 8.18	09	47.38
10	Project Implementation	High	Above 18.56	06	31.58
		Medium	11.58 to 18.56	09	47.38
		Low	Below 11.58	04	21.04
11	Accountability	High	Above 25.52	07	36.84
		Medium	19.56 to 25.52	06	31.58
		Low	Below 19.56	06	31.58

Table 4.26 Distribution of respondents on the selected sub dimensions under 'functional dimension' with respect to overall level of co-ordination at entire Thrissur district

S.No.	Sub dimensions	Category based on overall co-ordination performance	Score range	Frequency N=100	Percentage
1	Clarity of Objectives and Programmes	High	Above 16.77	37	37.00
		Medium	11.57 to 16.77	31	31.00
		Low	Below 11.57	32	32.00
2	Technical Orientation	High	Above 24.33	40	40.00
		Medium	16.82 to 24.33	36	36.00
		Low	Below 16.82	24	24.00
3	Integration of Services	High	Above 18.14	39	39.00
		Medium	10.66 to 18.14	32	32.00
		Low	Below 10.66	29	29.00
4	Procedures for Committee Meetings	High	Above 18.36	32	32.00
		Medium	11.19 to 18.36	38	38.00
		Low	Below 11.19	30	30.00
5	Team work	High	Above 17.95	24	24.00
		Medium	13.85 to 17.95	52	52.00
		Low	Below 13.85	24	24.00
6	Information Sharing	High	Above 24.02	41	41.00
		Medium	16.94 to 24.02	24	24.00
		Low	Below 16.94	35	35.00
7	Resource Allocation	High	Above 21.22	29	29.00
		Medium	14.29 to 21.22	42	42.00
		Low	Below 14.29	29	29.00
8	Time Management	High	Above 20.67	41	41.00
		Medium	13.74 to 20.67	26	26.00
		Low	Below 13.74	33	33.00
9	Project Formulation	High	Above 20.77	34	34.00
		Medium	12.60 to 20.77	26	26.00
		Low	Below 12.60	40	40.00
10	Project Implementation	High	Above 23.48	40	40.00
		Medium	15.08 to 23.48	30	30.00
		Low	Below 15.08	30	30.00
11	Accountability	High	Above 26.30	39	39.00
		Medium	20.17 to 26.30	36	36.00
		Low	Below 20.17	25	25.00

Tables 4.23, 4.24, 4.25 and 4.26 present the distribution of respondents based on the selected sub dimensions under the major dimension namely; 'functional dimension' with respect to co-ordination performance at different panchayat levels. As it could be observed from Table 4.23, reasonable percentage (43.75%) of the respondents belonged to the 'high' category in 'clarity of objectives and programmes' followed by the 'low' category (37.50%), whereas, majority (50.00%) of the respondents belonged to the 'medium' category in 'technical orientation' followed by the 'low' category (31.25%). Reasonable percentage (43.75%) of the respondents belonged to the 'high' category in 'integration of services' followed by the 'low' category (31.25%). Considerable percentage (37.50%) of the respondents belonged to the 'low' category in 'procedures for committee meetings' followed by the same percentage (31.25%) in both the 'high' and 'medium' category. Majority (50.00%) of the respondents belonged to the 'medium category in 'teamwork' followed by the same percentage (25.00%) in both the 'high' and 'low' category. Reasonable percentage (40.63%) of the respondents belonged to the 'low' category in 'information sharing' followed by the 'high category (34.37%). Considerable percentage (37.50%) of the respondents belonged to both the 'high' and 'medium' category in 'resource allocation' followed by the 'low' category (25.00%). Reasonable percentage (46.88%) of the respondents belonged to the 'medium' category in 'time management' followed by the 'low' category (31.25%), whereas, considerable percentage (37.50%) of the respondents belonged to the 'high' category in 'project formulation' followed by the 'low' category (34.37%). Majority (50.00%) of the respondents belonged to the 'high' category in 'project implementation' followed by the 'low' category (31.25%). Reasonable percentage (46.88%) of the respondents belonged to the 'high' category in 'accountability' followed by the 'medium' category (28.12%) with respect to co-ordination performance under the 'functional dimension' at district panchayat level.

At block panchayat level, considerable percentage (38.77%) of the respondents belonged to the 'high' category in 'clarity of objectives and programmes' followed by the 'low' category (32.66%), whereas, reasonable percentage (46.93%) of the respondents belonged to the 'medium' category in 'technical orientation' followed by the 'high' category (34.69%). Reasonable percentage (40.80%) of the respondents belonged to the 'high' category in 'integration of services' followed by the 'low' category (32.66%). Reasonable percentage (46.96%) of the respondents belonged to the 'medium' category in 'procedures for committee meetings' followed by the 'high' category (28.57%). Majority (55.12%) of the respondents belonged to the 'medium' category in 'teamwork' followed by the same percentage (22.44%) in both the 'high' and 'low' category. Considerable percentage (36.73%) of the respondents belonged to both the 'high' and 'low' category in 'information sharing' followed by the 'medium category (26.54%), whereas, reasonable percentage (42.87%) of the respondents belonged to the 'medium' category in 'resource allocation' followed by the 'high' category (32.66%). Considerable percentage (36.73%) of the respondents belonged to the 'high' category in 'time management' followed by the 'medium' category (32.66%), whereas, considerable percentage (38.77%) of the respondents belonged to the 'low' category in 'project formulation' followed by the 'high' category (34.69%). Reasonable percentage (42.87%) of the respondents belonged to the 'high' category in 'project implementation' followed by the 'low' category (34.69%), whereas, same percentage (36.73%) of the respondents belonged to both the 'high' and 'medium' category in 'accountability' followed by the 'low' category (26.54%) with respect to co-ordination performance under the 'functional dimension' at block panchayat level (Table 4.24).

At grama panchayat level, reasonable percentage (42.11%) of the respondents belonged to the 'low' category in 'clarity of objectives and programmes' followed by the 'high' category (36.84%), whereas, same percentage (42.11%) of the respondents belonged to both the 'high' and 'low' category in 'technical orientation' followed by

the 'medium' category (15.78%). Majority (52.64%) of the respondents belonged to the 'medium' category in 'integration of services' followed by the 'low' category (26.31%). Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'procedures for committee meetings' followed by the 'low' (31.25%) category. Reasonable percentage (42.11%) of the respondents belonged to the 'medium category in 'teamwork' followed by the 'low' (36.84%). Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'information sharing' followed by the 'medium category (31.58%). Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'resource allocation' followed by the 'low' category (36.84%). Reasonable percentage (47.38%) of the respondents belonged to the 'low' category in 'time management' followed by the 'high' category (36.84%), whereas, 37.50 per cent of the respondents belonged to the 'low' category in 'project formulation' followed by the 'high' category (36.84%). Reasonable percentage (47.38%) of the respondents belonged to the 'medium' category in 'project implementation' followed by the 'high' category (31.58%) and 36.84 per cent of the respondents belonged to the 'high' category in 'accountability' followed by the same percentage (31.58%) in both the 'medium' and 'low' category with respect to co-ordination performance under the 'functional dimension' at grama panchayat level (Table 4.25).

Table 4.26 reveals that considerable percentage (37.00%) of the respondents belonged to the 'high' category in 'clarity of objectives and programmes' followed by the 'low' category (32.00%), whereas, 42.00 per cent of the respondents belonged to the 'high' category in 'technical orientation' followed by the 'medium' category (36.00%). Considerable percentage (39.00%) of the respondents belonged to the 'high' category in 'integration of services' followed by the 'medium' category (32.00%), whereas, 38.00 per cent of the respondents belonged to the 'medium' category in 'procedures for committee meetings' followed by the 'high' (32.00%)

category. Majority (52.00%) of the respondents belonged to the 'medium category in 'teamwork' followed by the same percentage (24.00%) in both the 'high' and 'low' category. Reasonable percentage (41.00%) of the respondents belonged to the 'high' category in 'information sharing' followed by the 'low' category (35.00%). Reasonable percentage (42.00%) of the respondents belonged to the 'medium' category in 'resource allocation' followed by the same percentage (29.00%) in both the 'high' and 'low'. Reasonable percentage (41.00%) of the respondents belonged to the 'high' category in 'time management' followed by the 'low' category (33.00%), whereas, 40.00 per cent of the respondents belonged to the 'low' category in 'project formulation' followed by the 'high' category (34.00%). Reasonable percentage (40.00%) of the respondents belonged to the 'high' category in 'project implementation' followed by the same percentage (30.00%) in both the 'medium' and 'low' category. Considerable percentage (39.00%) of the respondents belonged to the 'high' category in 'accountability' followed by the 'medium' (36.00%) category with respect to co-ordination performance under the 'functional dimension' at entire Thrissur district (Table 4.26).

Tables 4.23, 4.24, 4.25 and 4.26 present the distribution of respondents on the selected sub dimensions under major dimensions. It was observed that reasonable percentage of the respondents were mutually responsible for conducting agricultural development activity, whereas majority was seen lacking in 'clarity of objectives and programmes', 'integration of service' 'project formulation' and in 'information sharing'. It may have to be assumed that majority of the respondents are very much inclined to implementation of project activities without giving proper attention to project formulation. Effective implementation of project activities depends upon appropriate project formulation. Moreover, exchange of ideas and good relations depend upon better information sharing that was conspicuously lacking at district panchayat level.

'Clarity of objectives and programmes' needs teamwork and 'project formulation' needs 'clarity of objectives and programmes' but both the activities were inadequate in most of the participating agencies at district panchayat level. Implementation of project activities needs 'time management' but majority of the respondents were lacking this aspect. A similar situation was prevailing at block panchayat and grama panchayat levels also. It is assumed that functional units are not properly set within the structure of co-ordination. Further, the results also reveal that considerable percentage of the respondents were in the 'low' category in 'project formulation' and it indicates that majority of the respondents are looking for implementation neglecting project formulation. This might be the reason for poor co-ordination among them as reported by several authors (Jaiswal, 1977; Mitra and Satpathi, 1985; Appaji and Kumar, 1986 and Babu and Singh, 1990).

Table 4.27 Distribution of respondents on the selected subdimensions under 'technological dimension' with respect to level of co-ordination at district panchayat level

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=32	Percentage
1	Technology Prioritization	High	Above 25.90	09	28.13
		Medium	17.90 to 25.90	12	37.50
		Low	Below 17.90	11	34.37
2	Technology Integration	High	Above 19.33	10	31.25
		Medium	11.06 to 19.33	10	31.25
		Low	Below 11.06	12	37.50

Table 4.28 Distribution of respondents on the selected subdimensions under 'technological dimension' with respect to level of co-ordination at block panchayat level

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=49	Percentage
1	Technology Prioritization	High	Above 22.27	19	38.77
		Medium	13.10 to 22.27	11	22.46
		Low	Below 13.10	19	38.77
2	Technology Integration	High	Above 15.60	13	26.53
		Medium	7.57 to 15.60	20	40.80
		Low	Below 7.57	16	32.67

Table 4.29 Distribution of respondents on the selected subdimensions under 'technological dimension' with respect to level of co-ordination at grama panchayat level

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=19	Percentage
1	Technology Prioritization	High	Above 20.72	08	42.11
		Medium	13.68 to 20.72	03	15.78
		Low	Below 13.68	08	42.11
2	Technology Integration	High	Above 19.30	08	42.11
		Medium	11.58 to 19.30	04	21.05
		Low	Below 11.58	07	36.84

Table 4.30 Distribution of respondents on the selected subdimensions under 'technological dimension' with respect to overall level of co-ordination in Thrissur district

S.No.	Sub dimensions	Category based on overall co-ordination performance	Score range	Frequency N=100	Percentage
1	Technology Prioritization	High	Above 23.23	42	42.00
		Medium	14.66 to 23.23	25	25.00
		Low	Below 14.66	33	33.00
2	Technology integration	High	Above 17.52	36	36.00
		Medium	9.43 to 17.52	19	19.00
		Low	Below 9.43	45	45.00

Tables 4.27, 4.28, 4.29 and 4.30 present the distribution of respondents based on the selected sub dimensions under the major dimension namely; 'technological dimension' with respect to co-ordination performance at different panchayat levels. As could be observed from Table 4.27, considerable percentage (37.50%) of the respondents belonged to the 'medium' category in 'technology prioritization' followed by the 'low' category' (34.37%), whereas, 37.50 per cent were in the 'low' category in 'technology integration' followed by the same percentage (31.25%) in both the 'high' and 'low' category under this dimension at district panchayat level.

At block panchayat level, same percentage (37.50%) of the respondents belonged to both the 'high' and 'low' category in 'technology prioritization' followed by the 'medium' category' (22.46%), whereas, 40.80 per cent were in the 'medium' category in 'technology integration' followed by the 'low' (32.67%) under the same major dimension of co-ordination (Table 4.28).

At grama panchayat level, same percentage (42.11%) of the respondents belonged to both the 'high' and 'low' category in 'technology prioritization' followed by the 'medium' category' (15.78%), whereas, 42.11 per cent were in the 'high' category in 'technology integration' followed by the 'low' (36.84%) under the 'technological dimension' (Table 4.29).

At entire Thrissur district, reasonable percentage (42.00%) of the respondents belonged to the 'high' category in 'technology prioritization' followed by the 'low' category' (33.00%), whereas, 45.00 per cent belonged to the 'low' category in 'technology integration' followed by the 'high' category (36.00%) under the same major dimension (Table 4.30).

Tables 4.27, 4.28, 4.29 and 4.30 present the distribution of respondents on the selected sub dimensions under 'technological' dimension with respect to level of co-ordination. At district panchayat level, majority of the respondents were lacking

'technology prioritization'. Appropriate 'integration of technology depends upon its prioritization. Negligible percentage of the respondents was in the 'high' category in both sub dimensions at district panchayat level. Almost a similar situation was prevailing at block and grama panchayat levels also. The results indicate that majority of the respondents were not giving proper attention to 'technology prioritization'. It is perceived that majority of the respondents are integrating technology without giving keen attention to technology prioritization. But proper prioritization and appropriate integration of technologies save money, time and other resources. The results also indicate that co-ordination performance of the respondents in 'technology dimension' was low. Consequently, the results are seen fluctuating at all panchayat levels, which is in agreement with results reported by several authors (Sawant, 1978; Raju, 1987; Kunju, 1989; Krishnamurthy, 1991; Burton, 2000 and Gupta, 2002).

Table 4.31 Distribution of respondents on the selected subdimensions under 'psychological and socio-political dimension' with respect to level of co-ordination at district panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=32	Percentage
1	Empathy	High	Above 24.43	14	43.75
		Medium	17.32 to 24.43	10	31.25
		Low	Below 17.32	08	25.00
2	Motivation	High	Above 24.48	13	40.63
		Medium	17.93 to 24.48	10	31.25
		Low	Below 17.93	09	28.12
3	Accommodation	High	Above 24.84	11	34.38
		Medium	19.31 to 24.84	09	28.12
		Low	Below 19.31	12	37.50
4	Interpersonal Skills	High	Above 24.65	08	25.00
		Medium	18.63 to 24.65	15	46.88
		Low	Below 18.63	09	28.12
5	Work load	High	Above 20.04	10	31.25
		Medium	15.16 to 20.04	07	21.87
		Low	Below 15.16	15	46.88
6	Attitude towards Co-ordination	High	Above 25.95	14	43.76
		Medium	20.09 to 25.95	09	28.12
		Low	Below 20.09	09	28.12
7	Job Commitment	High	Above 24.23	08	25.00
		Medium	17.95 to 24.33	15	46.88
		Low	Below 17.95	09	28.12
8	Self Confidence	High	Above 27.48	14	43.76
		Medium	21.82 to 27.48	06	18.74
		Low	Below 21.82	12	37.50
9	Leadership	High	Above 27.35	10	31.25
		Medium	22.02 to 27.35	18	56.25
		Low	Below 22.02	04	12.50
10	Political Interference	High	Above 14.38	05	15.62
		Medium	11.52 to 14.38	21	65.63
		Low	Below 11.52	06	18.75

Table 4.32 Distribution of respondents on the selected subdimensions under 'psychological and socio-political dimension' with respect to level of co-ordination at block panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=49	Percentage
1	Empathy	High	Above 15.94	34	69.38
		Medium	10.61 to 15.94	10	20.40
		Low	Below 10.61	05	10.22
2	Motivation	High	Above 22.31	12	24.51
		Medium	18.21 to 22.31	20	40.80
		Low	Below 18.21	17	34.69
3	Accommodation	High	Above 23.09	17	34.69
		Medium	18.14 to 23.09	18	36.73
		Low	Below 18.14	14	28.60
4	Interpersonal Skills	High	Above 21.80	18	36.73
		Medium	16.83 to 21.80	11	22.47
		Low	Below 16.83	20	40.80
5	Work load	High	Above 16.68	17	34.69
		Medium	12.90 to 16.68	17	34.69
		Low	Below 12.90	15	30.62
6	Attitude towards Co-ordination	High	Above 25.27	20	40.80
		Medium	21.84 to 23.23	12	24.51
		Low	Below 21.84	17	34.69
7	Job Commitment	High	Above 23.23	10	20.40
		Medium	18.29 to 23.23	27	55.09
		Low	Below 19.29	12	24.51
8	Self Confidence	High	Above 24.66	18	36.73
		Medium	20.98 to 24.66	22	44.91
		Low	Below 20.98	09	18.36
9	Leadership	High	Above 25.25	23	46.94
		Medium	21.12 to 25.25	13	26.53
		Low	Below 21.12	13	26.53
10	Political Interference	High	Above 13.73	12	24.51
		Medium	10.97 to 13.73	21	42.84
		Low	Below 10.97	16	32.65

Table 4.33 Distribution of respondents on the selected subdimensions under 'psychological and socio-political dimension' with respect to level of co-ordination at grama panchayat

S.No.	Sub dimensions	Category based on co-ordination level	Score range	Frequency N=19	Percentage
1	Empathy	High	Above 22.29	08	42.11
		Medium	18.21 to 22.29	06	31.57
		Low	Below 18.21	05	26.32
2	Motivation	High	Above 23.51	10	52.63
		Medium	19.35 to 23.51	03	15.80
		Low	Below 19.35	06	31.57
3	Accommodation	High	Above 23.55	05	26.32
		Medium	18.97 to 23.55	11	57.88
		Low	Below 18.97	03	15.80
4	Interpersonal Skills	High	Above 22.63	08	42.11
		Medium	14.79 to 22.63	04	21.05
		Low	Below 14.79	07	36.84
5	Work load	High	Above 15.79	06	31.58
		Medium	10.55 to 15.79	06	31.58
		Low	Below 10.55	07	36.84
6	Attitude towards Co-ordination	High	Above 23.71	09	47.36
		Medium	18.39 to 23.71	03	15.80
		Low	Below 18.39	07	36.84
7	Job Commitment	High	Above 21.08	06	31.58
		Medium	15.27 to 21.08	09	47.37
		Low	Below 15.27	04	21.05
8	Self Confidence	High	Above 24.21	07	36.84
		Medium	19.97 to 24.21	07	36.84
		Low	Below 19.97	05	26.32
9	Leadership	High	Above 23.78	08	42.11
		Medium	18.53 to 23.78	04	21.05
		Low	Below 18.53	07	36.84
10	Political Interference	High	Above 16.11	07	36.84
		Medium	13.17 to 16.11	04	21.05
		Low	Below 13.17	08	42.11

Table 4.34 Distribution of respondents on the selected subdimensions under 'psychological and socio-political dimension' with respect to overall level of co-ordination at entire Thrissur district

S.No.	Sub dimensions	Category based on overall co-ordination performance	Score range	Frequency N=100	Percentage
1	Empathy	High	Above 22.95	51	51.00
		Medium	17.12 to 22.95	22	22.00
		Low	Below 17.12	27	27.00
2	Motivation	High	Above 23.41	38	38.00
		Medium	18.12 to 23.41	27	27.00
		Low	Below 18.12	35	35.00
3	Accommodation	High	Above 22.84	40	40.00
		Medium	17.56 to 22.84	40	40.00
		Low	Below 17.56	20	20.00
4	Interpersonal Skills	High	Above 22.98	31	31.00
		Medium	16.91 to 17.68	40	40.00
		Low	Below 16.91	29	29.00
5	Work load	High	Above 17.68	40	40.00
		Medium	13.09 to 17.68	37	37.00
		Low	Below 13.09	23	23.00
6	Attitude towards Co-ordination	High	Above 25.42	27	27.00
		Medium	20.41 to 25.42	43	43.00
		Low	Below 20.41	30	30.00
7	Job Commitment	High	Above 23.33	21	21.00
		Medium	17.92 to 23.33	48	48.00
		Low	Below 17.92	31	31.00
8	Self Confidence	High	Above 25.62	29	29.00
		Medium	20.92 to 25.62	54	54.00
		Low	Below 20.92	17	17.00
9	Leadership	High	Above 25.86	45	45.00
		Medium	20.78 to 25.86	30	30.00
		Low	Below 20.78	25	25.00
10	Political Interference	High	Above 14.44	22	22.00
		Medium	11.53 to 14.44	56	56.00
		Low	Below 11.53	22	22.00

Tables 4.31, 4.32, 4.33 and 4.34 present the distribution of respondents based on the selected subdimensions under the major dimension namely; 'psychological and socio political dimension' with respect to co-ordination performance at different panchayat levels. As could be observed from Table 4.31, reasonable percentage (43.75%) of the respondents belonged to the 'high' category in 'empathy' followed by the 'medium' category (31.25%), whereas, 40.63 per cent of the respondents were in the 'high' category in 'motivation' followed by the 'medium' category (31.25%). Considerable percentage (37.50%) of the respondents belonged to the 'low' category in 'accommodation' followed by the 'high' category (34.38%), whereas, reasonable percentage (46.88%) belonged to the 'medium' category in 'interpersonal skills' followed by the 'low' category (28.12%). Reasonable percentage (46.88%) of the respondents belonged to the 'low' category in 'workload' followed by the 'high' category (31.25%), whereas, 43.76 per cent belonged to the 'high category in 'attitude towards co-ordination' followed by the same percentage (28.12%) of the respondents belonging to both the 'medium' and 'low' category. Reasonable percentage (46.88%) of the respondents belonged to the 'medium' category in 'job commitment' followed by the 'low' category. Reasonable percentage (43.76%) of the respondents belonged to the 'high' category in 'self confidence' followed by the 'low' category (37.50%). Majority (56.25%) of the respondents belonged to the 'medium' category in 'leadership' followed by the 'high' category (31.25%), whereas, a good majority (65.63%) belonged to the 'medium' category followed by the 'low' category (18.75%) under this dimension at district panchayat level.

At block panchayat level, majority (69.38%) of the respondents belonged to the 'high' category in 'empathy' followed by the 'medium' (20.40%), whereas, 40.80 per cent of the respondents belonged to the 'medium' category in 'motivation' followed by the 'low' category (34.69%). Considerable percentage (36.73%) of the respondents belonged to the 'medium' category in 'accommodation' followed by the 'high' category (34.69%). Reasonable percentage (40.80%) of the respondents

belonged to the 'low' category in 'interpersonal skills' followed by the 'high' category (36.73%). Same percentage (34.69%) belonged to both the 'high' and 'medium' category in 'workload' followed by the 'low' category (30.62%). Reasonable percentage (40.80%) of the respondents belonged to the 'high' category in 'attitude towards co-ordination' followed by the 'low' category (34.69%). Majority (55.09%) of the respondents belonged to the 'medium' category in 'job commitment' followed by the 'low' category (24.51%). Reasonable percentage (44.91%) of the respondents belonged to the 'medium' category in 'self confidence' followed by the 'high' category (36.73%), whereas, 46.94 per cent of the respondents belonged to the 'high' category in 'leadership' followed by the same percentage (26.53%) of the respondents belonging to both the 'medium' and 'low' category respectively. Reasonable percentage (42.84%) belonged to the 'medium' category followed by the 'low' category (32.65%) under the 'psychological and socio political' dimension at block panchayat level (Table 4.32).

At grama panchayat level, reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'empathy' followed by the 'medium' (31.57%), whereas, majority (52.63%) of the respondents belonged to the 'high' category in 'motivation' followed by the 'low' category (31.57%). Majority (57.88%) of the respondents belonged to the 'medium' category in 'accommodation' followed by the 'high' category (26.32%). Reasonable percentage (42.11%) of the respondents belonged to the 'high' category in 'interpersonal skills' followed by the 'low' category (36.84%). Considerable percentage (36.84%) of the respondents belonged to the 'low' category followed by the same percentage (31.58%) of respondents in both the 'high' and 'medium' category for 'workload'. Reasonable percentage (47.36%) of the respondents belonged to the 'high' category in 'attitude towards co-ordination' followed by the 'low' category (36.84%), whereas, 47.37 per cent of the respondents belonged to the 'medium' category in 'job commitment' followed by the 'high' category (31.58%). Same percentage (36.84%) of respondents belonged to both the

'high' and 'medium' category in 'self confidence' followed by the 'low' category (26.32%), whereas, 42.11 per cent of the respondents belonged to the 'low' category in 'leadership' followed by the 'high' category (36.84%) under the 'psychological and socio political' dimension at grama panchayat level (Table 4.33).

At entire Thrissur district, majority (51.00%) of the respondents belonged to the 'high' category in 'empathy' followed by the 'low' (27.00%), whereas, considerable percentage (38.00%) of the respondents belonged to the 'high' category in 'motivation' followed by the 'low' category (35.00%). Same percentage (40.00%) of the respondents belonged to both the 'high' and 'medium' category in 'accommodation' followed by the 'low' category (20.00%). Reasonable percentage (40.00%) of the respondents belonged to the 'medium' category in 'interpersonal skills' followed by the 'high' category (31.00%). Reasonable percentage (40.00%) of the respondents belonged to the 'high' category followed by the 'medium' category (37.00%) in 'workload'. Reasonable percentage (43.00%) of the respondents belonged to the 'medium' category in 'attitude towards co-ordination' followed by the 'low' category (30.00%), whereas, reasonable percentage (48.00%) of the respondents belonged to the 'medium' category in 'job commitment' followed by the 'low' category (30.00%). Majority (54.00%) of the respondents belonged to the 'high' category in 'self confidence' followed by the 'high' category (29.00%), whereas 45.00 per cent of the respondents belonged to the 'high' category in 'leadership' followed by the same percentages (22.00%) in the 'high' and 'low' category with respect to co-ordination performance under the 'psychological and socio political' dimension at entire Thrissur district (Table 4.34).

Tables 4.31, 4.32, 4.33 and 4.34 present the distribution of the respondents on the selected sub dimensions under 'psychological and socio-political' dimension with respect to the level of co-ordination. The results reveal that considerable percentage of the respondents belonged to the 'high' category in 'self confidence', 'attitude

towards co-ordination', 'empathy and 'motivation', whereas, majority of them were lacking the above attributes. It is observed that majority of the respondents are lacking in 'self confidence' while self confidence might ensure better liaison with each other and it is the food for mental strength. Most of the respondents showed 'low' to 'medium' level 'self confidence' indicating lower than expected levels.

A similar situation was observed regarding empathy like as self confidence. Reciprocal understanding of the objectives among the respondents depends upon reciprocal feeling. Empathy can eliminate all clouds from the mind and it can create intension among the representatives of the participating agencies to communicate with each other for matching their perceptions in co-ordinating agricultural development activities. The results revealed that majority of the respondents were lacking such type of empathy.

Majority of the respondents were in the 'medium' to 'low' level in 'motivation' indicating that they were not trying to encourage each other in development efforts. Motivation can create psychological force in the mind of the representatives of the participating agencies in co-ordinating development efforts. It is perceived that once a person is motivated, then it is easier to solve complex problems by offering constructive criticism from others. The results showed that such type of motivation was lacking at district panchayat level.

Majority of the respondents were in the 'medium' level in 'political interference' indicating that political interference was lacking at district panchayat level. Political involvement is must in identifying basic problems and accordingly for appropriate project formulation. The results showed that instead of active involvement with the respondents, they were dominating them in different ways. Now, political leaders are identifying problems and formulating agricultural development projects involving few participating agencies. After formulation of projects, they are organizing a

co-ordination committee meeting for final approval from the participating agencies. It is assumed that the respondents are bound to agree the approval of projects physically but not mentally. However, 'high' level of political interference is must for agricultural development under democratic decentralization but their actual involvement is not up to the satisfactory level. Such type of unfavourable practices should be removed from the mind of the political leaders.

Majority of the respondents were in the 'medium' to 'low' level in 'leadership' indicating that they were not maintaining good relations, peace and working environment with each other and even not taking initiative to prioritize agricultural development activities through reciprocal consultation. Without appropriate leadership means 'a boat without rudder'. Effective leadership can run all the activities smoothly. The results revealed that their leadership was not up the satisfactory level.

Considerable percentage of the respondents was in the 'medium' to 'low' in 'interpersonal skills' indicating that they were lacking in mutual trust. Effective interpersonal skills may facilitate frequent communication among them but the results revealed that majority of respondents were lacking such type of 'interpersonal skills' at all panchayat levels. Consequently, it is hampering the co-ordination of agricultural development activities.

Though considerable percentage of the respondents was in the 'high' category in 'attitude towards co-ordination' majority of them were lacking positive attitude towards co-ordination. Positive attitude always precede forward thinking. The results revealed that most of the respondents were doubtful in co-ordinating agricultural development activity at district panchayat level.

A perusal of the results revealed that majority of the respondents was in the 'medium' to 'low' level in 'job commitment'. It may be perceived that they are not

willingly endorsing the duties and responsibilities in co-ordinating development efforts. They are involved in jobs related to agricultural development but their active involvement appears to be low.

The respondents were seriously lacking in 'accommodation'. The results revealed that majority of them, were in the 'low' to 'medium' level in this behaviour. It is assumed that they are not accepting new ideas and suggestions reciprocally and gladly. This might be the reason for their low level of 'self confidence, 'empathy' and 'motivation' which was affecting negatively and created such type of barrier.

The results revealed that while a reasonable percentage of respondents opined that they were not facing problems in co-ordinating agricultural development activity due to 'workload' majority of them reported they were facing this problem. They were not finding enough time to communicate with each other due to their heavy workload. However, the perception of workload depends on the personality of the individual also. This might be the reason why the respondents belonged to the 'low' category in 'workload'. Almost a similar situation was observed at block panchayat and grama panchayat levels also. The finding is in conformity with the results of several authors (Jhansi, 1985; Rao, 1985 and Mathew, 1989).

Table 4.35 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at district panchayat

S.No.	Major Dimension	Category based on co-ordination level	Score range	Frequency N=32	Percentage
1	Structural Dimension	High	Above 137.24	10	31.25
		Medium	106.73 to 137.24	12	37.50
		Low	Below 106.73	10	31.25
2	Functional Dimension	High	Above 243.89	12	37.50
		Medium	171.30 to 243.89	12	37.50
		Low	Below 171.30	08	25.00
3	Technological Dimension	High	Above 45.51	12	37.50
		Medium	28.69 to 45.51	10	31.25
		Low	Below 28.69	10	31.25
4	Psychological and Socio-political Dimension	High	Above 229.62	12	37.50
		Medium	189.96 to 229.62	14	43.75
		Low	Below 189.96	06	18.75

Table 4.36 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at block panchayat

S.No.	Major Dimension	Category based on co-ordination level	Score range	Frequency N=49	Percentage
1	Structural Dimension	High	Above 130.93	16	32.65
		Medium	99.97 to 130.93	17	34.70
		Low	Below 99.97	16	32.65
2	Functional Dimension	High	Above 223.43	17	34.70
		Medium	163.97 to 223.43	15	30.60
		Low	Below 163.97	17	34.70
3	Technological Dimension	High	Above 39.62	17	34.70
		Medium	21.48 to 39.52	11	22.44
		Low	Below 21.48	21	42.86
4	Psychological and Socio-political Dimension	High	Above 211.74	14	28.57
		Medium	183.50 to 211.74	19	38.78
		Low	Below 183.50	16	32.65

Table 4.37 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at grama panchayat level

S.No.	Major Dimension	Category based on co-ordination level	Score range	Frequency N=19	Percentage
1	Structural Dimension	High	Above 120.47	06	31.58
		Medium	92.43 to 120.47	04	21.05
		Low	Below 92.43	09	47.37
2	Functional Dimension	High	Above 206.79	05	26.32
		Medium	143.23 to 206.79	09	47.36
		Low	Below 143.23	05	26.32
3	Technological Dimension	High	Above 41.17	04	21.05
		Medium	24.14 to 41.17	10	52.63
		Low	Below 24.14	05	26.32
4	Psychological and Socio-political Dimension	High	Above 212.37	04	21.05
		Medium	171.51 to 212.37	11	57.90
		Low	Below 171.51	04	21.05

Table 4.38. Distribution of respondents on the selected dimensions with respect to overall co-ordination performance at entire Thrissur district

S.No.	Major Dimension	Category based on co-ordination level	Score range	Frequency N=100	Percentage
1	Structural Dimension	High	Above 131.16	30	30.00
		Medium	100.68 to 131.16	35	35.00
		Low	Below 100.68	35	35.00
2	Functional Dimension	High	Above 227.05	34	34.00
		Medium	162.15 to 227.05	30	30.00
		Low	Below 162.15	36	36.00
3	Technological Dimension	High	Above 41.83	32	32.00
		Medium	24.31 to 41.83	35	35.00
		Low	Below 24.31	33	33.00
4	Psychological and Socio-political Dimension	High	Above 235.49	18	18.00
		Medium	165.37 to 235.49	67	67.00
		Low	Below 165.37	15	15.00

Fig. 4.1 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at district panchayat level

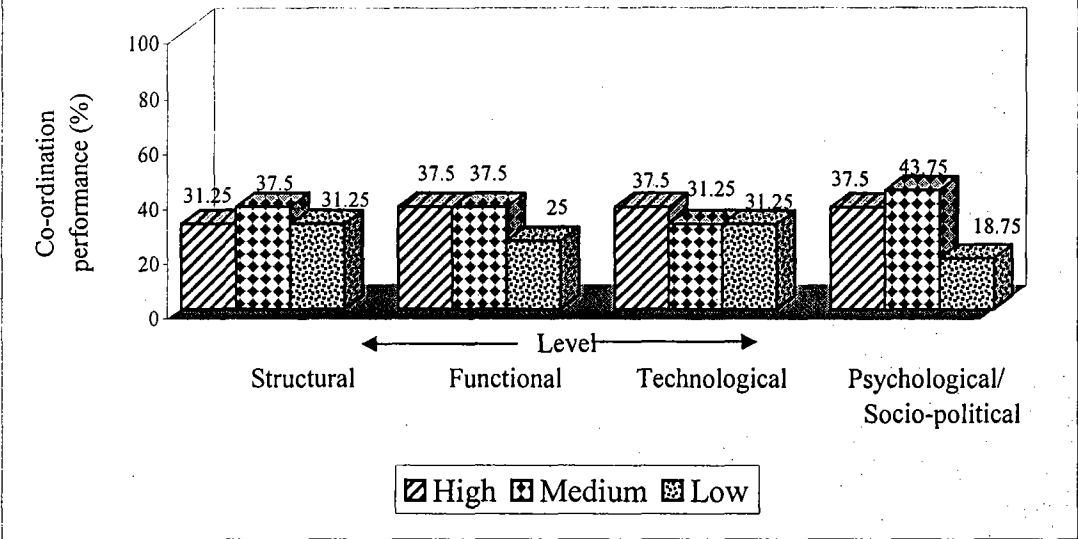


Fig. 4.2 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at block panchayat

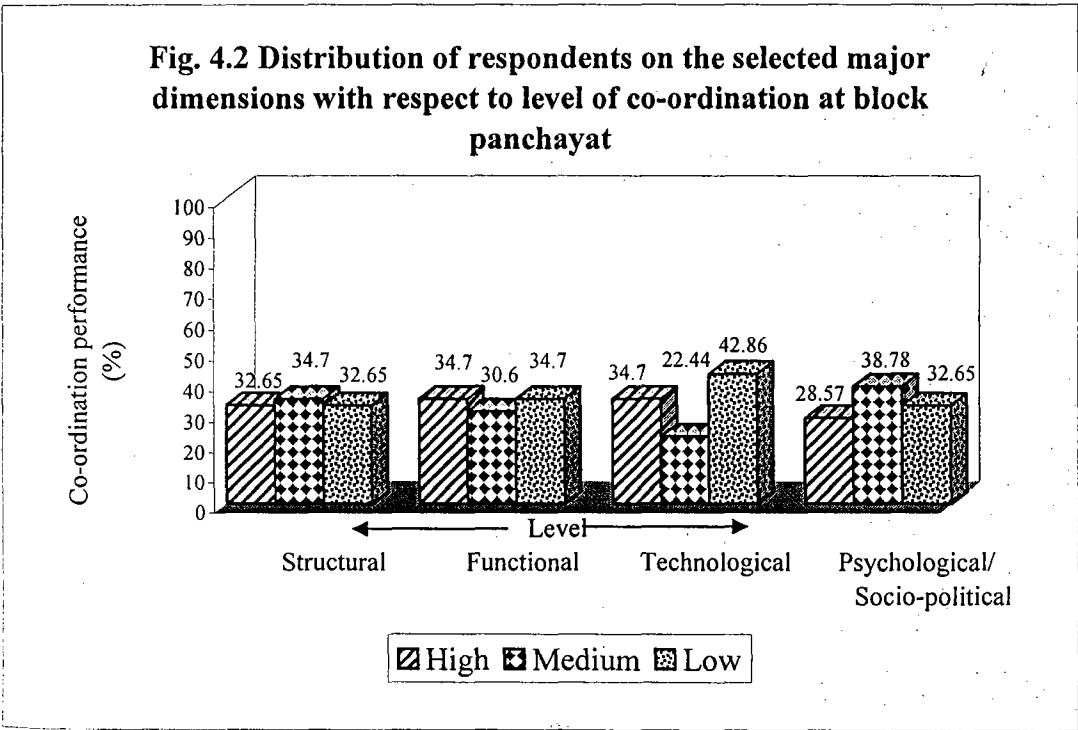


Fig. 4.3 Distribution of respondents on the selected major dimensions with respect to level of co-ordination at grama panchayat level

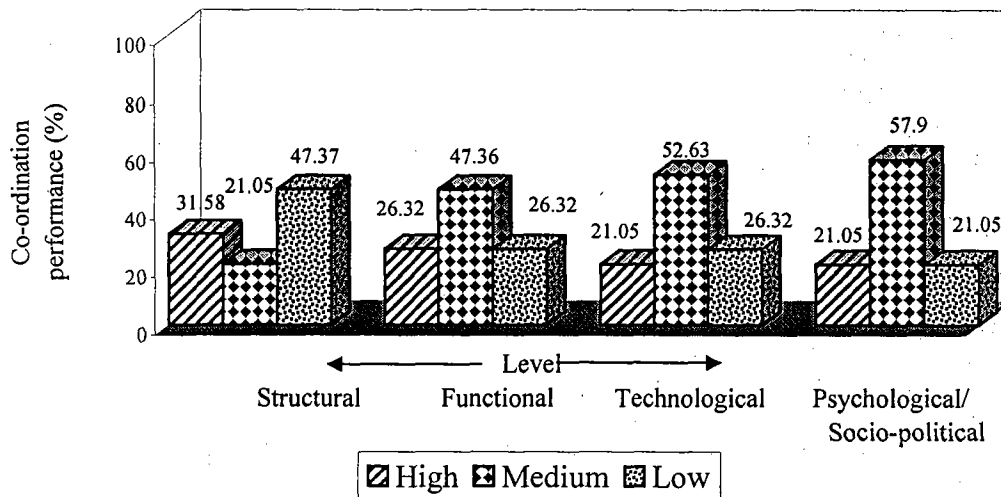
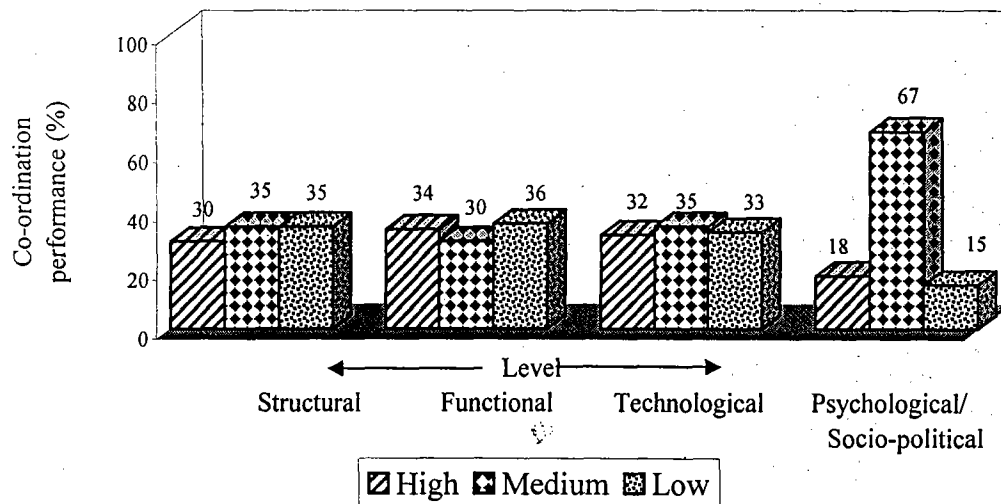


Fig. 4.4 Distribution of respondents on the selected dimensions with respect to overall co-ordination performance at entire Thrissur district



Tables 4.35, 4.36, 4.37 and 4.38 present the distribution of respondents based on the selected major dimensions namely, 'structural', 'functional', 'technological' and 'psychological and socio-political' with respect to co-ordination performance at different panchayat levels of Thrissur district. As could be observed from Table 4.35, considerable percentage (37.50%) of the respondents belonged to the 'medium' category in 'structural dimension' followed by the same percentage (31.25%) in the 'high' and 'low' category. Same percentage (37.50%) of the respondents belonged to both the 'high' and 'medium' category in 'functional dimension' followed by the 'low' category (25.00%), whereas, considerable percentage (37.50%) of the respondents belonged to the 'high category in 'technological dimension' followed by the same percentage (31.25%) in the 'medium' and 'low' category. Reasonable percentage (43.75%) of the respondents belonged to the 'medium' category in 'psychological and socio political' dimension followed by the 'high category (37.50%) at district panchayat level.

At block panchayat level, considerable percentage (34.70%) of the respondents belonged to the 'medium' category in 'structural dimension' followed by the same percentage (32.65%) in the 'high' and 'low' category. Same percentages (34.70%) of the respondents belonged to both the 'high and 'low' category in 'functional dimension' followed by the 'medium' category (30.60%), whereas, reasonable percentage (42.86%) of the respondents belonged to the 'low category in 'technological dimension' followed by the 'high' category (22.44%). Considerable percentage (38.78%) of the respondents belonged to the 'medium' category in 'psychological and socio political' dimension followed by the 'low' category (32.65%) at block panchayat level (Table 4.36).

At grama panchayat level, reasonable percentage (47.37%) of the respondents belonged to the 'low' category in 'structural dimension' followed by the 'high' category (31.58%), whereas, 47.36 per cent of the respondents belonged to the

'medium' category in 'functional dimension' followed by the same percentage (26.32%) in the 'high' and 'low' category. Majority (52.63%) of the respondents belonged to the 'medium' category in 'technological dimension' followed by the 'low' category (26.32%). Majority (57.90%) of the respondents belonged to the 'medium' category in 'psychological and socio political dimension' followed by the same percentage (21.05%) in the 'high' and 'low' category at grama panchayat level. (Table 4.37).

At entire district level, as could be observed from Table 4.38, same percentage (35.00%) of the respondents belonged to both the 'medium' and 'low' category in 'structural dimension' followed by the 'medium' category (30.00%). Considerable percentage (36.00%) of the respondents belonged to the 'low' category in 'functional dimension' followed by the 'high' category (34.00%), whereas, considerable percentage (35.00%) of the respondents belonged to the 'medium' category in 'technological dimension' followed by the 'low' category (33.00%). Majority (67.00%) of the respondents belonged to the 'medium' category in 'psychological and socio political dimension' followed by the 'high category at entire Thrissur district (18.00%).

It was observed from the results that vast majority of the respondents of the participating agencies at district; block and grama panchayats levels were in the 'low' to 'medium' category of co-ordination in 'psychological and socio-political dimension'. It is assumed that 'low' to 'medium' level of empathy, motivation, accommodation, interpersonal skills, job commitment, political interference, self confidence, attitude towards co-ordination and heavy workload might have negatively interfered creating a psychological block in the minds of the respondents in co-ordinating agricultural development activities with each other at all panchayat levels.

Majority of the respondents at district and block panchayat levels belonged to the 'medium' to 'high' category of co-ordination in 'functional dimension', whereas, at grama panchayat it was 'low' to 'medium' level. It may be seen that a lot of agencies are performing agricultural development activities at these two levels and most of the agencies were interdependent to each other. District panchayat has an established co-ordination committee involving at least all the officers-in-charge under the control of district panchayat. District co-ordination committee organizes meetings once in a month. They discuss all issues related to agricultural development and exchanges ideas related to agricultural development. At block panchayat level, though there was no established 'co-ordination committee' a 'technical committee organizes meetings once in a month. Considerable percentages of interdependent agencies are operating agricultural related jobs at this level. At grama panchayat level the situation is very pathetic. Few agencies were involved in agricultural development activities. There was no established co-ordination committee at grama panchayat level. A nominal 'technical committee' is there but there are no technical experts except 'Agricultural Officer' and 'Assistant Veterinary Surgeon' and even they are confined their own jobs. There was no coherent understanding among the participating agencies at this level.

Further it was revealed that 'low' to 'medium' level of clarity of objectives and programmes, technical orientation, integration of services, procedures for committee meetings, teamwork, resource allocation, time management and project implementation were hampering effective co-ordination among the participating agencies. Majority of the respondents at district and block panchayat levels were in the 'medium' category of co-ordination in 'structural dimension' indicating that structural units were not functioning properly at these levels. Structural dimension is the framework of co-ordination, which included pattern of authority, co-ordination committee, pattern of participation, pattern of communication, role identity, pattern of interdependence and pattern of independence. The results revealed that 'low' to 'medium' level of authority were not enough for the participating agencies to

facilitate joint decision making for agricultural development. Majority of the respondents were lacking enough authority at these levels. It is perceived that when appropriate authority is vested with personnel, they can integrate the rest of the units. A 'co-ordination committee' involving few representatives of the participating agencies at district panchayat level is not enough for sharing information with each other. At block panchayat level, there was no established co-ordination committee. 'Low' to 'medium' level of communication is limiting reciprocal accessibility at this level. It may be assumed that the respondents are not using parallel channels of communication in co-ordinating agricultural development activities. 'Low' to 'medium' level participation indicates that the respondents are not participating in various meetings, seminars and conferences related to agricultural development.

Moreover, political domination over the representatives of the participating agencies enhanced symbolic participation in various meetings organized by them. It is perceived that the critical problems may be solved through the interactive participation of the representatives of the participating agencies but it was lacking at all levels. Recently, volume of agricultural projects/schemes increased the number of participation of the representatives quantitatively, but lacked interactive participation in co-ordinating agriculture development activities. At district panchayat level, majority of the respondents were performing their roles without specificity that resulted in duplication of activities. 'Low' to 'medium' level interdependence indicates that the participating agencies were independently accomplishing agricultural development activities. "Co-ordination is the management of interdependence in work situations" (Tripathi and Reddy, 1997). It is observed that majority of the respondents are not interdependent, whereas, effective co-ordination plays the vital role when agencies are interdependent to each other. At district panchayat level, negligible percentage of respondents was free to take decisions independently regarding agricultural development activities, whereas, none of the respondents did have that opportunity. It also indicates that serious structural

problems are there at the roots level. Technical committees are functioning instead of co-ordination committee at block and grama panchayat levels, but results reveal that majority of the respondents at these levels are in the 'low' category. The reason might be that these committees failed to pull together the representatives of all the participating agencies at these levels. The finding is in conformity with the results of several authors (Jaiswal, 1977; Gill *et al.*, 1982; Appaji and Kumar, 1986 and Gupta, 1992).

Table 4.39 Distribution of respondents at district panchayat with respect to overall co-ordination performance

S.No.	Category based on overall co-ordination performance	Score range	Frequency N = 32	Percentage
1	High	Above 649.80	11	34.38
2	Medium	From 502.03 to 649.81	12	37.50
3	Low	Below 502.03	09	28.12
4	Total		32	100.00

Table 4.40 Distribution of respondents at block panchayat with respect to overall co-ordination performance

S.No.	Category based on overall co-ordination performance	Score range	Frequency N = 49	Percentage
1	High	Above 596.53	13	26.53
2	Medium	From 475.52 to 596.53	19	38.78
3	Low	Below 475.52	17	34.69
4	Total		49	100.00

Table 4.41 Distribution of respondents at grama panchayat with respect to overall co-ordination performance

S.No.	Category based on overall co-ordination performance	Score range	Frequency N = 19	Percentage
1	High	Above 570.83	05	26.32
2	Medium	From 430.05 to 570.00	07	36.84
3	Low	Below 430.05	07	36.84
4	Total		19	100.00

Table 4.42 Distribution of respondents with respect to overall co-ordination performance at entire Thrissur district

S.No.	Category based on overall co-ordination performance	Score range	Frequency N = 100	Percentage
1	High	Above 609.80	33	33.00
2	Medium	From 474.60 to 609.80	34	34.00
3	Low	Below 474.60	33	33.00
4	Total			

Tables 4.39, 4.40, 4.41 and 4.42 present the distribution of the respondents based on the entire selected major dimensions with respect to overall co-ordination performance at different panchayat levels in Thrissur district. As could be observed from Table 4.39, considerable percentage (37.50%) of respondents belonged to the 'medium' category followed by the 'high' category (34.38%) and 'low' category (28.12%) at district panchayat level.

At block panchayat level, considerable percentage of respondents belonged to the 'medium' category (38.78%) followed by the 'low' category (34.69%) and 'high' category (24.33%) respectively (Table 4.40).

Fig. 4.5 Distribution of respondents at district panchayat with respect to overall co-ordination performance

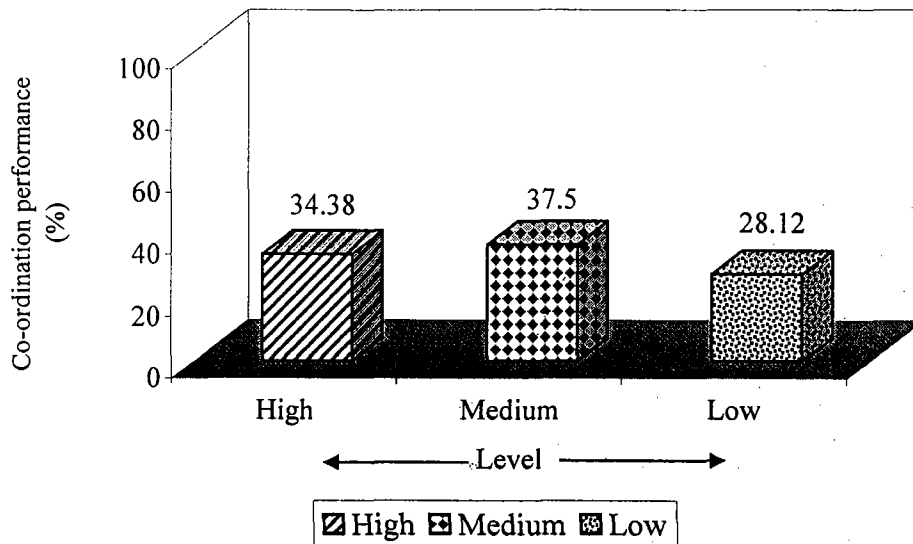


Fig. 4.6 Distribution of respondents at block panchayat with respect to overall co-ordination performance

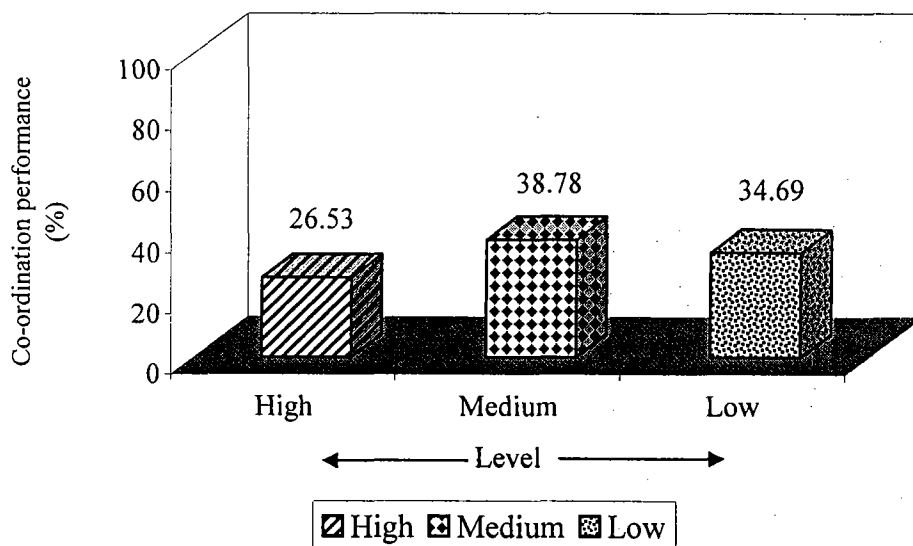


Fig. 4.7 Distribution of respondents at grama panchayat with respect to overall co-ordination performance

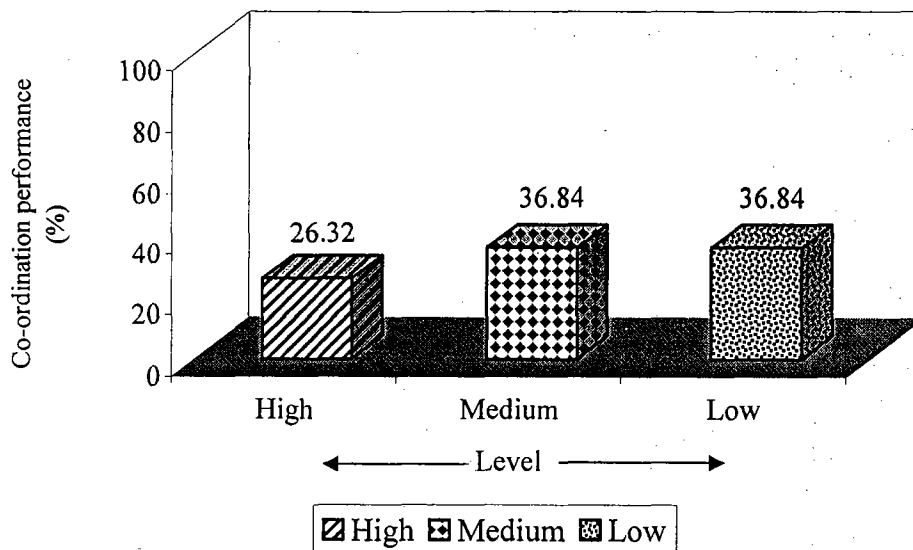
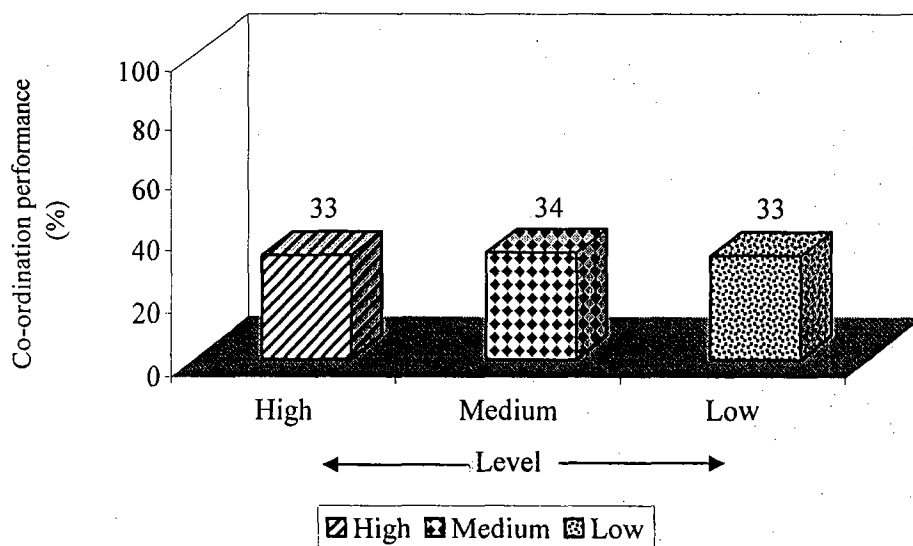


Fig. 4.8 Distribution of respondents with respect to overall co-ordination performance in the entire Thrissur district



At grama panchayat level, considerable percentage of respondents belonged to both the 'medium' and 'low' category (36.84%) followed by the 'high' category (Table 4.41).

At entire Thrissur district, considerable percentage (34.00%) of respondents belonged to the 'medium' category followed by the same percentage (33.00%) in the 'high' and 'low' category in the entire major dimensions of co-ordination (Table 4.42).

It was observed from Tables 4.39, 4.40, 4.41 and 4.42 that considerable percentage of the participating agencies at all panchayat levels belonged to the 'low' to 'medium' level of co-ordination performance. The reason might be that majority of the respondents were in the 'low' to 'medium' level of co-ordination performance in almost all the sub dimensions under the major dimensions of co-ordination. However, considerable percentage of respondents was in the 'high' category of co-ordination performance at district panchayat level.

The results of the study revealed that reasonable percentage of the participating agencies were in the 'medium' category of co-ordination performance in 'structural dimension', 'technological dimension' and 'psychological and socio-political dimension and 'low' category of co-ordination in 'functional dimension' at all panchayat levels'. The reason might be that majority of the participating agencies were in the 'low' to 'medium' category in pattern of authority, co-ordination committee, pattern of participation, role identity, pattern of interdependence and pattern of independence.

Reasonable percentage of the respondents at all panchayat levels was in the 'medium' level of co-ordination performance in 'technological', and 'psychological and socio-political' dimension. The results indicated that majority of the respondents

were not giving proper attention in 'technology prioritization' and 'technology integration'. Moreover, majority of the respondents are lacking reciprocal understanding in co-ordinating agricultural development activity. They are unable to match perceptions reciprocally.

Majority of the respondents were in the 'low' category of co-ordination in 'functional dimension'. It is perceived that the respondents were lacking better clarity of objectives and programmes, information sharing, teamwork and time management at all panchayat levels.

At entire Thrissur district, majority of the respondents were in the 'low' to 'medium' level in 'pattern of authority'. The results indicated that majority of the respondents at all panchayat levels were lacking authority to facilitate joint decision making for agricultural development activities and lacking clarity of objectives and programmes. Moreover, they were not giving proper attention to technology prioritization and not accepting new ideas reciprocally. Consequently, their level of co-ordination was 'low' to 'medium'. The finding is in conformity with the results reported by several authors (Jaiswal, 1977; Gill *et al.*, 1982; Appaji and Kumar, 1986 and Gupta, 1992).

4.6. IDENTIFICATION OF ESSENTIAL FACTORS AND INDICATORS FROM THE SELECTED SUBDIMENSIONS OF CO-ORDINATION THROUGH FACTOR ANALYSIS

Factor analysis was applied to the data on the subdimensions under major dimensions of co-ordination among the agencies to identify the factors or possible groupings among them based on similar properties. The results are presented in Tables 4.43, 4.44, 4.45 and 4.46.

Table 4.43 Extracted sub dimensions under major dimensions of co-ordination at district panchayat: results of factor analysis

S.No	Major dimensions	Extracted sub dimensions	Percent of variation explained	Cumulative percent of variation explained
1	Structural dimension	1. Pattern of authority 2. Co-ordination committee 3. Pattern of communication	41.36 17.24 15.17	41.36 58.60 73.77
2	Functional dimension	1. Clarity of objectives and programmes	65.26	65.26
3	Technological dimension	1. Technology prioritization	82.67	82.67
4	Psychological and socio-political dimension	1. Empathy 2. Motivation 3. Accommodation	51.10 14.39 10.18	51.10 65.49 75.67

Table 4.44 Extracted sub dimensions under major dimensions of co-ordination at block panchayat: results of factor analysis

S.No.	Major dimensions	Extracted sub dimensions	Percent of variation explained	Cumulative percent of variation explained
1	Structural dimension	1. Pattern of authority 2. Co-ordination committee	41.37 19.59	41.37 60.96
2	Functional dimension	1. Clarity of objectives and programmes 2. Technical orientation	46.98 15.33	46.98 62.31
3	Technological dimension	1. Technology prioritization	84.97	84.97
4	Psychological and socio-political dimension	1. Empathy 2. Motivation 3. Accommodation 4. Interpersonal skills	32.49 16.04 11.09 10.22	32.49 48.53 59.62 69.84

Table 4.45 Extracted sub dimensions under major dimensions of co-ordination at grama panchayat : results of factor analysis

S.No.	Major dimensions	Extracted Sub dimensions	Percent of Variation explained	Cumulative Percent of Variation explained
1	Structural dimension	1. Pattern of authority 2. Co-ordination committee 3. Pattern of communication	51.08 18.91 14.32	51.08 69.99 84.31
2	Functional dimension	1. Clarity of objectives and programmes 2. Technical orientation	51.37 17.80	51.37 69.17
3	Technological dimension	1. Technology prioritization	83.43	83.43
4	Psychological and socio-political dimension	1. Empathy 2. Motivation 3. Accommodation 4. Interpersonal skills	43.66 18.74 12.67 10.48	43.66 62.40 75.07 85.55

Table 4.46. Factors and indicators of effective co-ordination among participating agencies for all panchayat levels in Thrissur district

S.No.	Major dimensions	Extracted Sub dimensions	Indicators of effective Co-ordination
1	Structural dimension	1. Pattern of authority 2. Co-ordination committee 3. Pattern of communication	1. Pattern of authority* 2. Co-ordination committee
2	Functional dimension	4. Clarity of objectives and programmes 5. Technical orientation	3. Clarity of objectives and programmes*
3	Technological dimension	6. Technology prioritization	4. Technology prioritization*
4	Psychological and socio-political dimension	7. Empathy 8. Motivation 9. Accommodation 10. Interpersonal skills	5. Empathy* 6. Motivation 7. Accommodation

* : Explained maximum variation

Fig. 4.9 Percent of variation explained by the extracted sub dimension through factor analysis under the major dimensions of co-ordination at district panchayat level

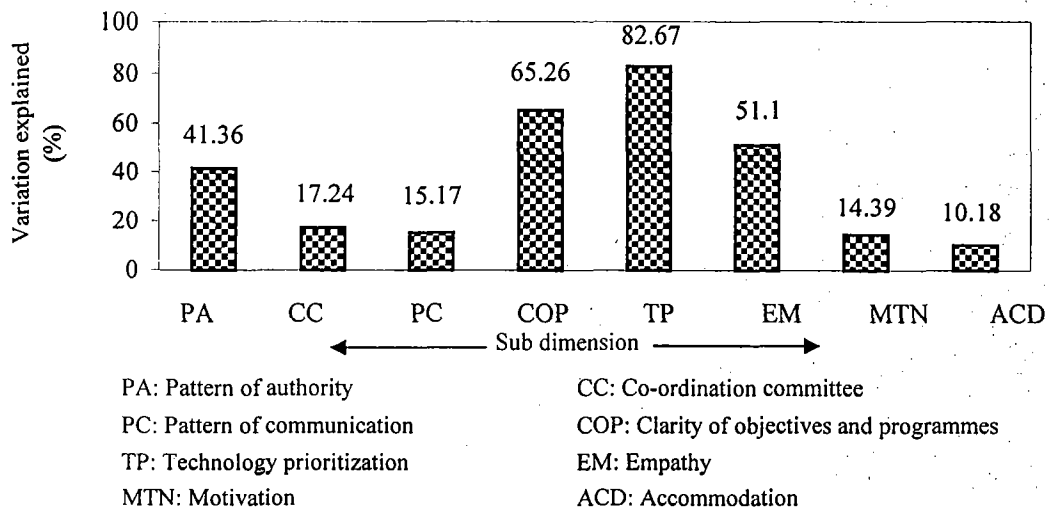


Fig. 4.10 Percent of variation explained by the extracted sub dimension through factor analysis under the major dimensions of co-ordination at block panchayat level

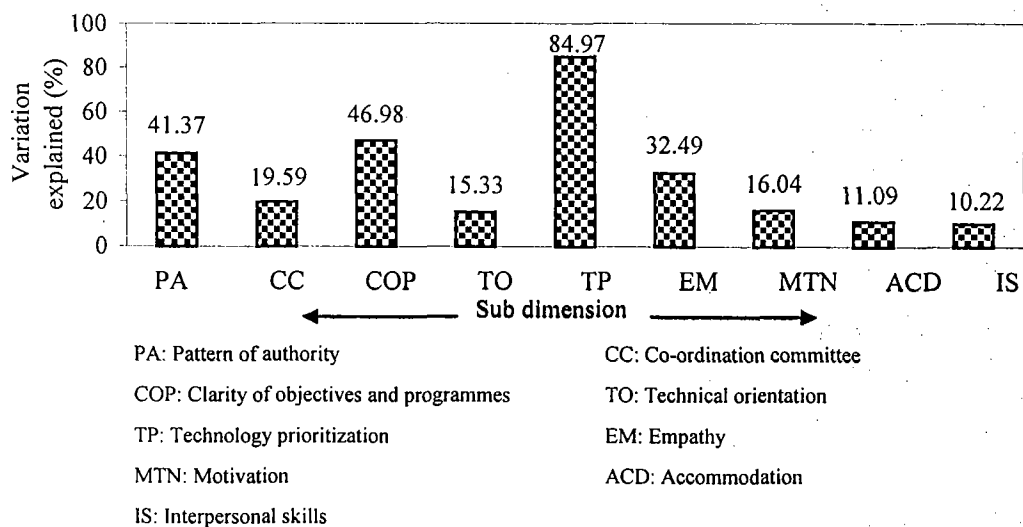
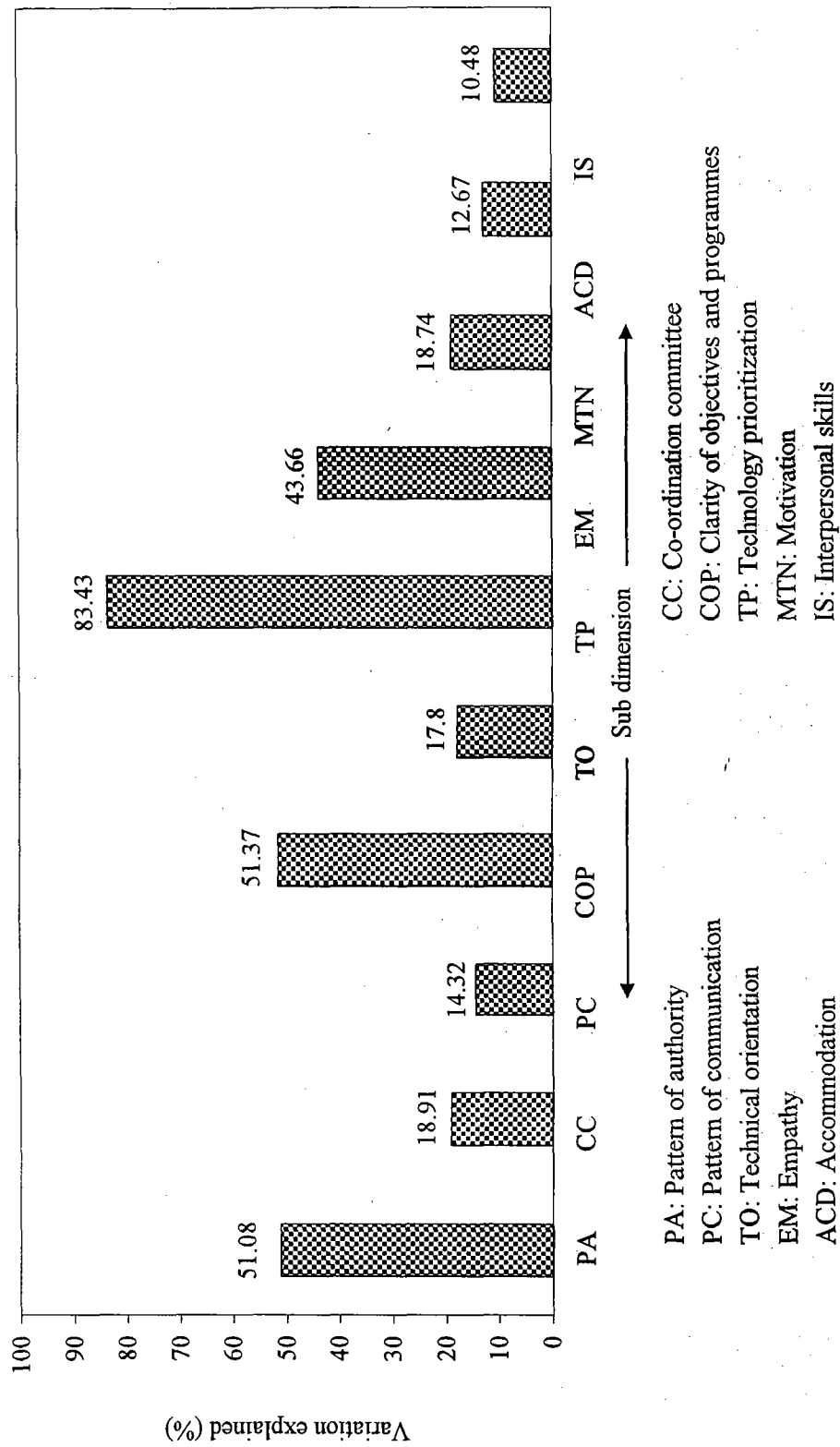


Fig. 4.11 Percent of variation explained by the extracted sub dimension through factor analysis under the major dimensions of co-ordination at grama panchayat level



Tables 4.43, 4.44 and 4.45 present the sub dimensions extracted from major dimensions of co-ordination at district, block and grama panchayat level through factor analysis. It was observed from Tables that, out of thirty sub dimensions under the four major dimensions, eight sub dimensions namely; pattern of authority, co-ordination committee and pattern of communication (structural dimension), clarity of objectives and programmes (functional dimension), technology prioritization (technological dimension) and empathy, motivation and accommodation (psychological and socio political dimension) were extracted at district panchayat level. At block panchayat level, in addition to the former eight sub dimensions, one more 'interpersonal skills' from 'psychological and socio political' dimension was extracted. At grama panchayat level, in addition to the former nine sub dimensions, one more, 'technical orientation' from 'functional dimension' was extracted.

Table 4.46 presents the essential factors and indicators of effective co-ordination. Out of the above mentioned ten sub dimensions (factors), seven namely; pattern of authority and co-ordination committee (structural dimension), clarity of objectives and programmes (functional dimension), technology prioritization (technological dimension) and empathy, motivation and accommodation (psychological and socio political dimension) were common to all panchayat levels. These seven sub dimensions under the four major dimensions were treated as the essential indicators of effective co-ordination among the agencies involved in agricultural development due to the maximum variation in co-ordination explained by these sub dimensions.

Factor analysis identifies the underlying factors or brings out the possible groupings based on similar properties among larger number of subdimensions under the major dimensions of co-ordination. Tables 4.43, 4.44, 4.45 and 4.46 depict the results of factor analysis. A scanning of the Tables reveal that except 'technological dimension' the other three major dimensions brought out the possible groupings with the corresponding extracted sub dimensions. In structural dimension, three

subdimensions viz; pattern of authority, co-ordination committee and pattern of communication, two subdimensions in functional dimension viz; 'clarity of objectives and programmes' and 'technical orientation' and four sub dimensions from 'psychological and socio political' viz., empathy, motivation, accommodation and interpersonal skills brought out possible groupings. Out of thirty subdimensions, maximum ten subdimensions were extracted at grass root level and these were the essential subdimensions (factors) for effective co-ordination and seven were common to all panchayat levels (indicators). It may be recalled that at the time of identifying subdimensions under each major dimension of co-ordination among the agencies, utmost care was taken to make an exhaustive list of subdimensions and group them under various mutually exclusive dimensions, with the help of experts and resource persons.

Above Tables further reveal that out of seven subdimensions under structural dimension; pattern of authority jointly with co-ordination committee explained a variation of 58.60 per cent, 60.96 per cent and 69.99 per cent respectively at district, block and grama panchayat levels. In functional dimension, one subdimension namely, 'clarity of objectives and programmes' alone explained a variation of 65.27 per cent at district panchayat level, whereas at block and grama panchayat levels, with 'technical orientation' it explained a variation of 62.31 per cent and 69.17 per cent respectively. The subdimension, 'technology prioritization' explained variation at district, block and grama panchayat levels to the extent of 82.67 per cent, 84.97 per cent and 83.43 per cent respectively. Three sub dimensions namely; empathy, 'motivation' and 'accommodation' under 'psychological and socio political dimension' jointly explained variation at different panchayat levels to the extent of 75.67 per cent, 59.62 per cent and 75.07 per cent respectively.

Out of the seven sub dimensions common at all panchayat levels; pattern of authority, 'clarity of objectives and programmes' 'technology prioritization', and

'empathy' explained maximum variation of 41.36 per cent, 65.26 per cent, 82.67 per cent and 51.10 per cent respectively at district panchayat level and at block panchayat level, these were 41.37 per cent, 46.98 per cent, 84.97 per cent and 32.49 per cent respectively, whereas at grama panchayat level these four subdimensions explained variation to the tune of 51.08 per cent, 51.37 per cent, 83.43 per cent and 43.66 per cent respectively.

At entire Thrissur district, majority of the respondents were in the 'low' to 'medium' level in 'pattern of authority'. The results of factor analysis indicated that the above sub dimension explained maximum variation under 'structural dimension'. An authoritative person might have influence and thereby motivate and accelerate the activities of others. 'Low' to 'medium' level authority is not enough in co-ordinating agricultural development activities with other agencies involved in agricultural development. Therefore, authority is the most important factor as well as indicator of effective co-ordination at all panchayat levels. A committee means a group of alike persons committed in achieving the common goal. A co-ordination committee may bind and synchronize the efforts of the participating agencies to achieve the goal of agricultural development. The above mentioned two subdimensions were the most important factors as well as indicators of effective co-ordination for agricultural development under structural dimension. 'Clarity of objectives and programmes' was the most important factor and indicator of effective co-ordination under the 'functional dimension'. Common understanding and thinking among the agencies involved in agricultural development might save time and valuable resources. The results of factor analysis showed that this subdimension explained maximum variation at all panchayat levels. 'Low' to 'medium' level 'clarity of objectives and programmes' indicated that the participating agencies are not giving proper attention to this behaviour (subdimension). Consequently, a lot of duplication of activities related to agriculture is common to all panchayat levels.

Appropriate technology might accelerate agricultural development activities and save valuable resources. The results indicated that majority of the respondents were in the 'low' to 'medium' level in 'technology prioritization'. The results of factor analysis showed that this subdimension explained maximum variation. Sustainable agricultural development depends mainly on technology prioritization. It is perceived that once the technology is prioritized properly, integration of technologies follows. Without prioritization, integration is useless. Therefore, technology prioritization is the most important factor as well as indicator of effective co-ordination of agricultural development activities.

'Empathy' is the best psychological tool that influences persons reciprocally. An empathized person can understand the feeling of others. The results of factor analysis showed that this subdimension explained maximum variation in effective co-ordination for agricultural development. It is perceived that motivation and accommodation function positively when a person can empathize with others.

The above finding unequivocally establishes the vital significance of each of these subdimensions in contributing to the variation in the level of co-ordination as reported by several authors (Litwak and Hylton, 1952); Mukherji, 1961; Newman, 1963; Reid, 1964; Dubhashi, 1966; Pelz, 1970; Sandhu and Gupta, 1974; Sawant, 1978; Raju, 1987; Satpathi and Das, 1988; Mathew, 1989 and Krishnamurthy, 1991 and Morey, 1998).

4.7 MEASUREMENT OF EXTENT AND GAPS IN CO-ORDINATION USING CO-ORDINATION COEFFICIENT

Tables 4.47, 4.48 and 4.49 present the extent and gaps in co-ordination of the participating agencies at district, block and grama panchayat level based on their co-ordination performances on different subdimensions under 'structural dimension' using co-ordination coefficient.

Table 4.47 Extent and gaps in co-ordination performance of the participating agencies at district panchayat level on the subdimensions under structural dimension

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Pattern of authority	61.48	38.52
2	Co-ordination committee	62.96	37.04
3	Pattern of communication	57.99	42.01
4	Pattern of participation	65.99	34.01
5	Role identity	57.81	42.19
6	Pattern of interdependence	61.93	38.07
7	Pattern of independence	48.73	51.27

Table 4.48 Extent and gaps in co-ordination performance of the participating agencies at block level on the subdimensions under structural dimension

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Pattern of authority	54.91	45.09
2	Co-ordination committee	49.28	50.72
3	Pattern communication	58.96	41.04
4	Pattern of participation	67.31	32.69
5	Role identity	53.84	46.16
6	Pattern of interdependence	62.22	37.78
7	Pattern of independence	47.95	52.05

Table 4.49 Extent and gaps in co-ordination performance of the participating agencies at grama panchayat on the subdimensions under structural dimension

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Pattern of authority	46.69	53.31
2	Co-ordination committee	47.78	52.22
3	Pattern communication	51.07	48.93
4	Pattern of participation	64.59	35.41
5	Role identity	48.67	51.33
6	Pattern of interdependence	56.53	43.47
7	Pattern of independence	32.24	67.76

Table 4.47 reveals that maximum extent of co-ordination of respondents at district panchayat level under 'structural dimension' was in 'pattern of participation' (65.99%) followed by 'co-ordination committee' (62.96%) and 'pattern of interdependence' (61.93%), whereas, maximum gaps were in 'pattern of independence' (51.27%) followed by 'role identity' (42.19%) and 'pattern of communication' (42.01%).

At block panchayat level, maximum extent of co-ordination of respondents was in 'pattern of participation' (67.3%) followed by 'pattern of interdependence' (62.22%) and 'pattern of communication' (58.96%), whereas, gaps in co-ordination were in 'pattern of independence' (52.05%) and 'role identity' (46.16%) under the same dimension (Table 4.48).

At grama panchayat level, maximum extent of co-ordination of respondents was in 'pattern of participation' (64.59%) followed by 'pattern of interdependence' (56.53%) and in 'pattern of communication' (51.07%), whereas, gaps were in 'pattern

of independence' (67.76%) followed by 'pattern of authority' (53.31%) and 'co-ordination committee' (52.22%) under the 'structural dimension' (Table 4.49).

Tables, 4.47, 4.48 and 4.49 present the extent and gaps in co-ordination performance of respondents at district panchayat level on different subdimensions under structural dimension. Table 4.47 reveals that extent and gaps in co-ordination performance ranged from 48.73 per cent to 65.99 per cent, whereas, gaps were 34.01 per cent to 51.27 per cent respectively. It may be assumed that 'low' to 'medium' level co-ordination performance of majority of the respondents on all the subdimensions namely; pattern of authority, co-ordination committee, pattern of communication, pattern of participation, role identity, pattern of independence and pattern of interdependence has created these wide gaps in co-ordination. Majority of respondents had no authority to facilitate joint decision making with other agencies involved in agricultural development. Majority of them were not involved also in the co-ordination committee. Only negligible percentage of respondents was participating in the co-ordination committee meetings. Moreover, majority of them had no freedom to take decision regarding agricultural development independently. A good majority of the participating agencies were not interdependent with each other. Watertight compartmentation of the agencies might be the reason, which reduces such type of interdependency among them. Thus, 'low' to 'medium' level co-ordination performance of respondents on the entire subdimensions appears to have made the structure of co-ordination shabby. Almost, a similar situation was prevailing at block panchayat level and at grama panchayat level also.

Table 4.50 Extent and gaps in co-ordination performance of the participating agencies at district panchayat level on the subdimensions under functional dimension

S.No	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Clarity of objectives and programmes	53.80	46.20
2	Technical orientation	64.51	35.61
3	Integration of services	52.15	47.85
4	Procedures for committee meetings	64.39	35.61
5	Teamwork	57.45	42.55
6	Information sharing	66.73	33.27
7	Resource allocation	57.42	42.58
8	Time management	63.31	36.69
9	Project formulation	56.39	43.61
10	Project implementation	61.81	38.19
11	Accountability	76.22	23.78

Table 4.51 Extent and gaps in co-ordination performance of the participating agencies at block panchayat level on the sub dimensions under functional dimension

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Clarity of objectives and programmes	52.38	47.62
2	Technical orientation	58.85	41.15
3	Integration of services	48.16	51.84
4	Procedures for committee meetings	50.81	49.19
5	Teamwork	55.93	44.07
6	Information sharing	63.05	36.95
7	Resource allocation	58.54	41.46
8	Time management	56.06	43.94
9	Project formulation	52.38	47.62
10	Project implementation	59.43	40.57
11	Accountability	74.31	25.69

Table 4.52 Extent and gaps in co-ordination performance of the participating agencies at grama panchayat level on the subdimensions under functional dimension

S.No.	Subdimension	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Clarity of objectives and programmes	55.65	44.35
2	Technical orientation	58.95	41.05
3	Integration of services	45.24	54.76
4	Procedures for committee meetings	41.45	58.55
5	Teamwork	58.23	41.77
6	Information sharing	56.55	43.45
7	Resource allocation	45.38	54.62
8	Time management	52.58	47.42
9	Project formulation	40.17	59.83
10	Project implementation	44.88	55.12
11	Accountability	72.35	27.65

Tables 4.50, 4.51 and 4.52 present the extent and gaps in co-ordination of respondents at the three levels of panchayat under 'functional dimension'. Table 4.50 reveals that maximum extent of co-ordination of respondents was in 'accountability' (72.22%) followed by 'information sharing' (66.73%) and 'technical orientation' (64.51%), whereas, gaps were in 'integration of services' (47.85%) followed by 'clarity of objectives and programmes' (46.20%) and in 'project formulation' (43.61%).

At block panchayat level, maximum extent of co-ordination of respondents under 'functional dimension' was in 'accountability' (74.31%) followed by 'information sharing' (63.05%) and 'project implementation' (59.43%), whereas, gaps were in 'integration of services' (51.84%) followed by 'procedures for committee meetings' (49.19%) and same percentage (47.62%) of respondents in 'clarity of objectives and programmes' and in 'project formulation' (Table 4.51).

At grama panchayat level, maximum extent of co-ordination of respondents was in 'accountability' (72.35%) followed by 'technical orientation' (58.95%) and 'teamwork' (58.23%), whereas, gaps were in 'project formulation' (59.12%) followed by 'procedures for committee meetings' (58.55%) and in 'project implementation' (55.12%) under the 'functional dimension' (Table 4.52).

Ranges of extent and gaps were 52.15 per cent and 23.78 per cent in the entire subdimensions under 'functional dimension' at district panchayat level. Majority of respondents were in the 'low' to 'medium' level co-ordination performance on all the subdimensions except 'accountability'. Majority of the participating agencies were not working as a team in co-ordinating agricultural development activities. They had no common understanding in formulating common projects/schemes and even they were not sharing information with each other.

Table 4.53 Extent and gaps in co-ordination performance of the participating agencies at district panchayat level on the sub dimensions under technological dimension

S.No.	Sub dimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Technology prioritization	64.03	35.97
2	Technology Integration	49.20	50.80

Table 4.54. Extent and gaps in co-ordination performance of the participating agencies at block panchayat level on the sub dimensions under technological dimensional

S.No.	Sub dimension	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Technology prioritization	51.68	48.32
2	Technology integration	37.49	62.51

Table 4.55. Extent and gaps in co-ordination performance of the participating agencies at grama panchayat level on the sub dimensions under technological dimension

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Technology prioritization	50.29	49.71
2	Technology integration	50.00	50.00

Tables 4.53, 4.54 and 4.55 present the extent and gaps in co-ordination performance of respondents at three levels of panchayat under 'technical dimension'. Table 4.53 reveal that maximum extent of co-ordination of respondents was in 'technology prioritization' (64.05%), whereas, gaps was in 'technology integration' (50.80%) at district panchayat level.

Maximum extent of co-ordination of respondents was in 'technology prioritization' (51.68%), whereas, gaps was in 'technology integration' (62.51%) at block panchayat level (Table 4.54)

Maximum extent of co-ordination of respondents was in 'technology prioritization' (50.29%), whereas, gaps was in 'technology integration' (50.00%) at grama panchayat level (Table 4.55).

Extent and gaps in co-ordination performance of respondents at entire Thrissur district ranged from 49.00 per cent to 64.03 per cent and 35.97 per cent to 50.80 per cent among all the sub dimensions under 'technological dimension'. 'Low' to 'medium' level co-ordination performance in 'technology prioritization' and 'technology integration' might be the reason for the wide gaps. A similar situation is prevailing at block panchayat and grama panchayat levels also.

Table 4.56 Extent and gaps in co-ordination performance of the participating agencies at district panchayat level on the subdimensions under 'psychological and social political dimension'

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Empathy	67.87	32.13
2	Motivated	74.46	25.54
3	Accommodation	72.57	27.43
4	Interpersonal skills	68.84	31.16
5	Workload	61.13	38.87
6	Attitude towards co-ordination	84.10	15.90
7	Job commitment	68.72	31.28
8	Self confidence	85.15	14.85
9	Leadership	83.02	16.98
10	Political interference	49.64	50.36

Table 4.57 Extent and gaps in co-ordination performance of the participating agencies at block panchayat level on the subdimensions under 'psychological and socio political dimension'

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Empathy	63.07	36.93
2	Motivated	71.18	28.82
3	Accommodation	67.75	32.25
4	Interpersonal skills	61.42	38.58
5	Workload	51.34	48.66
6	Attitude towards co-ordination	85.99	14.01
7	Job commitment	69.28	30.72
8	Self confidence	78.81	21.19
9	Leadership	78.32	21.68
10	Political interference	47.33	52.67

Table 4.58 Extent and gaps in co-ordination performance of the participating agencies at grama panchayat level on the subdimensions under 'psychological and socio political dimension'

S.No.	Subdimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Empathy	65.88	34.12
2	Motivated	75.26	24.74
3	Accommodation	69.90	30.10
4	Interpersonal skills	59.51	40.49
5	Workload	45.72	54.28
6	Attitude towards co-ordination	76.89	23.11
7	Job commitment	59.21	40.79
8	Self confidence	76.31	23.69
9	Leadership	71.14	28.86
10	Political interference	56.12	43.88

Tables 4.56, 4.57 and 4.58 present the extent and gaps at three levels of panchayat on the subdimensions under 'psychological and socio political dimension' of co-ordination. Table 4.56 reveals that maximum extent of co-ordination was in 'self confidence' (85.15%) and in 'leadership' (83.02%) whereas, gaps were in 'political interference' (50.36%) followed by 'workload' (38.87%) and 'empathy' (32.13%) at district panchayat level.

At block panchayat level, maximum extent of co-ordination of respondents was in 'attitude towards co-ordination' (85.99%) followed by 'self confidence' (78.81%) and 'leadership' (78.32%), whereas, gaps were in 'political interference' (52.67%) followed by 'workload' (48.60%) and 'interpersonal skills' (38.58%) under the same major dimension (Table 4.57).

At grama panchayat level, maximum extent of co-ordination of respondents was in 'attitude towards co-ordination' (76.89%) followed by 'self confidence' (76.31%)

and 'motivation' (75.26%), whereas, gaps were in 'workload' (54.28%) followed by 'political interference' (43.88%) and 'job commitment' (40.79%) under this dimension (Table 4.58).

Extent and gaps in co-ordination performance of respondents at district panchayat level ranged from 49.64 per cent to 85.15 per cent and 14.85 per cent to 50.36 per cent on all the subdimensions under 'psychological and socio-political' dimension at district panchayat level. The results revealed that majority of respondents were in the 'medium' to 'high' level on all the subdimensions except 'political interference'. Most of the respondents were in the 'high' level in self-confidence, leadership, attitude towards co-ordination, accommodation and motivation. In addition to that, majority of respondents were in the 'medium' level in empathy, interpersonal skills and job commitment, 'low' to 'medium' in workload' and 'low' on 'political interference'. At block and grama panchayat levels also the situation was more or less the same.

Table 4.59 Extent and gaps in co-ordination of the participating agencies at district panchayat level on the selected major dimensions

S.No	Major dimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Structural dimension	59.34	41.66
2	Functional dimension	61.52	38.48
3	Technological dimension	57.00	43.00
4	Psychological and socio political dimension	72.46	27.54

Table 4.60 Extent and gaps in co-ordination performance of the participating agencies at block panchayat level on the selected major dimensions

S.No.	Major dimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Structural dimension	56.35	43.65
2	Functional dimension	57.50	42.50
3	Technological dimension	45.00	55.00
4	Psychological and socio political dimension	67.51	32.49

Table 4.61 Extent and gaps in co-ordination performance of the participating agencies at grama panchayat level on the selected major dimensions

S.No.	Major dimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Structural dimension	49.22	50.78
2	Functional dimension	51.95	48.05
3	Technological dimension	50.23	49.77
4	Psychological and socio political dimension	65.57	34.43

Table 4.62 Extent and gaps in co-ordination performance of the participating agencies at entire Thrissur district on the selected major dimensions

S.No.	Major dimensions	Extent of Co-ordination (%)	Gaps in Co-ordination (%)
1	Structural dimension	56.01	43.99
2	Functional dimension	57.71	42.29
3	Technological dimension	49.86	50.14
4	Psychological and socio political dimension	68.47	31.53

Tables 4.59, 4.60, 4.60 and 4.62 present the extent and gaps in co-ordination of respondents at three levels of panchayat on the selected major dimensions of co-ordination. Table 4.59 reveal that maximum extent of co-ordination of respondents was in 'psychological and socio political' (72.46%) dimension followed by 'functional dimension' (61.52%), whereas, gaps were in 'structural dimension' (43.66%) followed by 'technological dimension' (43.00%) at district panchayat level.

Maximum extent of co-ordination of respondents was in 'psychological and socio political dimension' (67.51%) followed by 'functional dimension' (57.50%) whereas, gaps were in 'technological dimension' (55.00%) followed by the 'structural dimension' (43.65%) at block panchayat level (Table 4.60).

Maximum extent of co-ordination of respondents was in 'psychological and socio political' dimension (65.57%) followed by 'functional dimension' (51.95%), whereas, gaps were in 'structural dimension' (50.78%) followed by 'technological dimension' (49.77%) at grama panchayat level (Table 4.61).

Table 4.62 reveal that maximum extent of co-ordination of respondents was in 'psychological and socio political dimension' (68.47%) followed by 'functional dimension' (57.71%), whereas, gaps were in 'technological dimension' (50.14%) followed by 'structural dimension' (43.99%) at entire Thrissur district.

Extent and gaps in co-ordination performance of respondents at district panchayat level ranged from 49.64 per cent to 85.15 per cent and 14.85 per cent to 50.36 per cent on all the subdimensions under 'psychological and socio-political dimension' at district panchayat level. The results revealed that majority of respondents were in the 'medium' to 'high' level on all the sub dimensions except 'political interference'. Most of the respondents were in the 'high' level in self-confidence, leadership, attitude towards co-ordination, accommodation and motivation. In addition to that,

Fig. 4.12. Extent and gaps in co-ordination of the participating agencies at district panchayat level on the selected major dimensions

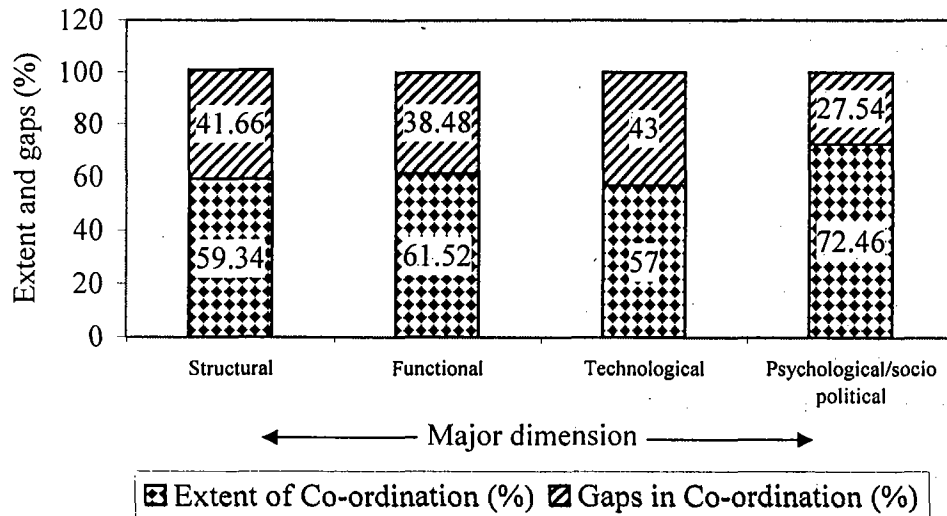


Fig. 4.13. Extent and gaps in co-ordination of the participating agencies at block panchayat level on the selected major dimensions

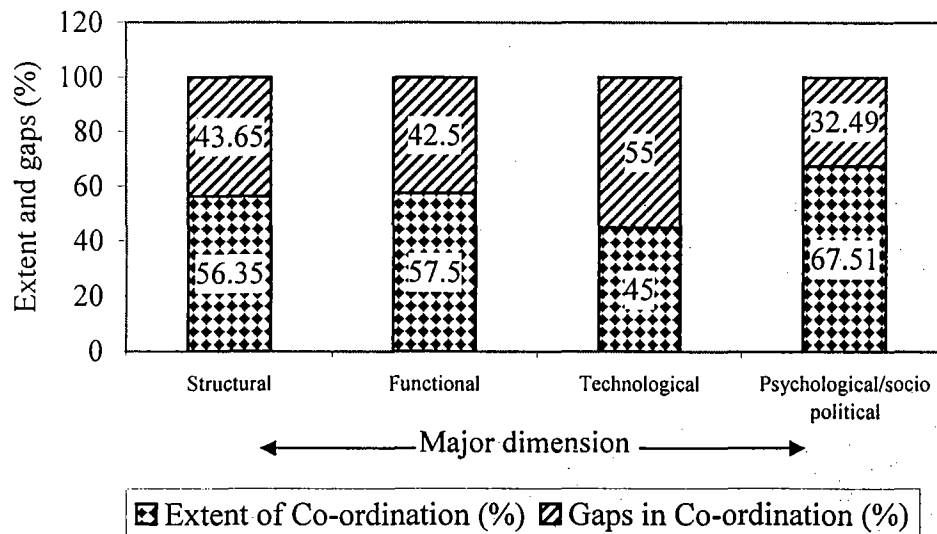


Fig. 4.14. Extent and gaps in co-ordination of the participating agencies at grama panchayat level on the selected major dimensions

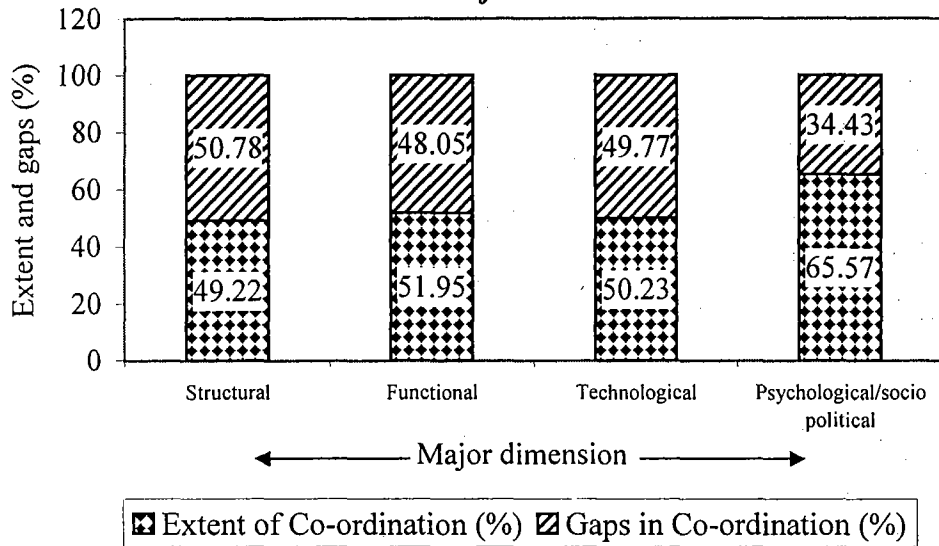
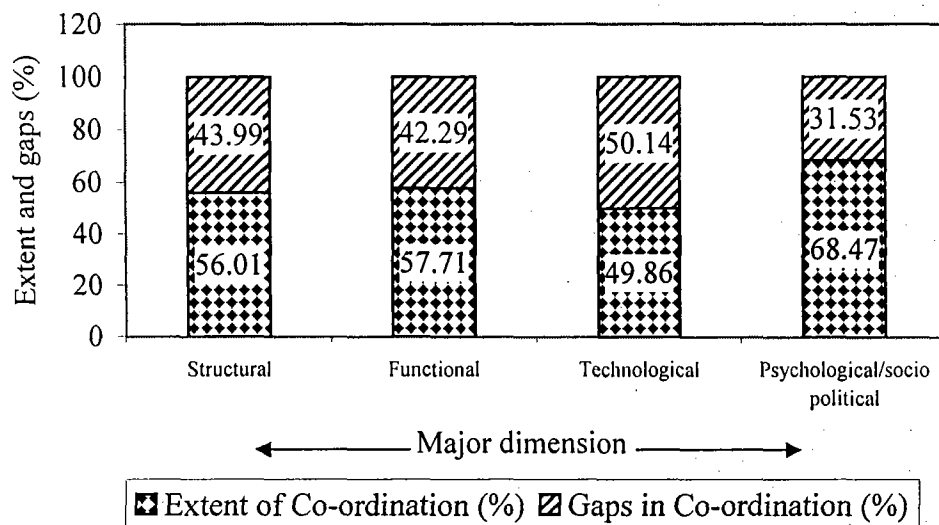


Fig. 4.15. Extent and gaps in co-ordination performance of the participating agencies on the selected major dimensions at entire Thrissur district



majority of respondents were in the 'medium' level in empathy, interpersonal skills and job commitment and 'low' to 'medium' in 'workload'. A similar situation is prevailing at block panchayat and grama panchayat levels also. The finding is in conformity with the results of several authors (Litwak and Hylton, 1952; Dubhashi, 1966; Prasad, 1967; Seshadri, 1967; Marx, 1969; Sandhu and Gupta, 1974; Sawant, 1978; Gill *et al.*, 1982; Appaji and Kumar, 1986; Raju, 1987; Krishnamurthy, 1991; 1996; Issac, 1996 and Princes, 1998).

4.8 INTER CORRELATIONS AMONG THE SELECTED SUBDIMENSIONS

The inter correlation matrix for the sub dimensions of co-ordination at three levels of panchayat was analyzed to suggest suitable models for each level.

It was observed from the results of inter correlations among the selected subdimensions at district, block and grama panchayat levels that two third of the sub dimensions included in the study at all panchayat levels were significantly intercorrelated with each other.

Table 4.63 Correlation matrix showing the interrelations among the subdimensions of co-ordination (District panchayat level)

	PA	CC	PC	PP	RI	PIND	PID	COP	T0	IS	PCC	TW	INS	RA	TM
PA	1.000	-0.39	0.147	0.246	0.465**	0.242	0.110	0.231	0.334	0.271	0.421*	0.260	0.495**	0.513**	0.389*
CC		1.000	0.365*	0.229	0.262	0.082	-0.111	0.170	0.114	0.036	0.222	0.417*	0.171	0.193	0.295
PC			1.000	0.667**	0.551**	0.134	0.317	0.628**	0.606**	0.428*	0.571**	0.522**	0.594**	0.493*	0.430*
PP				1.000	0.613**	0.364*	0.216	0.652**	0.661**	0.352*	0.639**	0.442*	0.565**	0.576**	0.362*
RI					1.000	0.550**	0.368*	0.665**	0.651**	0.591**	0.612**	0.611**	0.637**	0.719**	0.645**
PIND						1.000	0.057	0.207	0.258	0.193	0.260	0.389*	0.186	0.269	-0.016
PID							1.000	0.136	0.303	0.452**	0.182	0.255	0.440*	0.344	0.305
COP								1.000	0.802**	0.643**	0.762**	0.567**	0.610**	0.623**	0.695**
T0									1.000	0.696**	0.818**	0.605**	0.627**	0.744**	0.714**
IS										1.000	0.539**	0.546**	0.700**	0.719**	0.601**
PCC											1.000	0.551**	0.567**	0.731**	0.684**
TW												1.000	0.624**	0.674**	0.535**
INS													1.000	0.765**	0.672**
RA														1.000	0.719**
TM															1.000
PF															
PI															
ACT															
TP															
T1															
EM															
MTN															
ACD															
IIS															
WL															
ATC															
JC															
SC															
LDR															
PL1															

*: 0.01 per cent level of significance
 **: 0.001 per cent level of significance

Table 4.63 Continued (District Panchayat Level)

	PF	PI	ACT	TP	TI	EM	MTN	ACD	ITS	WL	ATC	JC	SC	LDR	PLI
PA	0.269	0.234	0.114	0.160	0.257	0.466**	0.236	0.046	0.382*	0.037	0.101	0.200	0.304	0.096	-0.026
CC	0.124	0.271	0.369**	0.362*	0.268	0.115	0.406*	0.460**	0.464**	0.267	0.273	0.345	0.324	0.330	-0.008
PC	0.596**	0.477**	0.472**	0.667**	0.673**	0.636**	0.668**	0.760**	0.696**	0.278	0.465**	0.394*	0.369*	0.565**	-0.047
PP	0.651**	0.647**	0.626**	0.654**	0.560**	0.742	0.648**	0.492**	0.664**	0.364*	0.396*	0.307	0.481**	0.678**	-1.62
R1	0.589**	0.497**	0.303	0.545**	0.591**	0.684**	0.641**	0.561**	0.769**	0.107	0.149	0.462**	0.405*	0.370**	-0.101
PIND	0.000	0.106	0.149	0.232	0.091	0.407*	0.210	0.143	0.227	0.044	0.043	0.154	0.290	0.067	-0.009
PID	0.352*	0.326	0.160	0.213	0.227	0.395*	0.264	0.229	0.334	0.062	-0.057	0.300	0.120	0.216	-0.224
COP	0.721**	0.610**	0.576**	0.696**	0.564**	0.702**	0.481**	0.533**	0.736**	0.462**	0.521**	0.434*	0.395*	0.514**	-0.076
T0	0.646**	0.691**	0.336	0.611**	0.607**	0.714**	0.532**	0.506**	0.665**	0.336	0.529**	0.523**	0.451**	0.641**	-0.127
IS	0.672**	0.696**	0.241	0.323*	0.645**	0.641**	0.357*	0.441*	0.605**	0.233	0.249	0.417*	0.201	0.335	-0.102
PCC	0.710**	0.670**	0.496**	0.634**	0.607**	0.748**	0.681**	0.463**	0.726**	0.278	0.475**	0.476**	0.562**	0.636**	-0.200
TW	0.465**	0.641**	0.493**	0.726**	0.494**	0.584**	0.521**	0.611**	0.634**	0.235	0.284	0.414*	0.256	0.447*	-0.123
INS	0.652**	0.643**	0.525**	0.683**	0.768**	0.832**	0.504**	0.545**	0.739**	0.335	0.422*	0.562**	0.397*	0.435*	-0.241
RA	0.630**	0.604**	0.277	0.599**	0.633**	0.701**	0.489**	0.483**	0.634**	0.367*	0.300	0.536**	0.368*	0.445*	-0.270
TM	0.714**	0.647**	0.456**	0.559**	0.700**	0.604**	0.402*	0.456**	0.724**	0.248	0.246	0.502**	0.342	0.350*	-0.069
PF	1.000	0.772**	0.586**	0.694**	0.772**	0.762**	0.646**	0.476**	0.728**	0.167	0.319	0.483**	0.365*	0.441*	-0.117
PI		1.000	0.501**	0.687**	0.715**	0.779**	0.466**	0.368*	0.568**	0.263	0.410*	0.583**	0.477*	0.477**	-0.024
ACT			1.000	0.641**	0.548**	0.633**	0.461**	0.639**	0.676**	0.430*	0.486**	0.368*	0.326*	0.374*	-0.127
TP				1.000	0.653**	0.702**	0.553**	0.572**	0.718**	0.214	0.411*	0.364*	0.330	0.642**	-0.356*
TI					1.000	0.503**	0.563**	0.627**	0.796**	0.254	0.373*	0.562**	0.336	0.325	-0.064
EM						1.000	0.676**	0.579**	0.749**	0.266	0.443*	0.567**	0.630**	0.479**	-0.178
MTN							1.000	0.666**	0.723**	0.176	0.354*	0.444*	0.506**	0.661**	-0.173
ACD								1.000	0.737**	0.462**	0.418*	0.391*	0.203	0.413*	-0.056
ITS									1.000	0.361*	0.390*	0.545**	0.483**	0.551**	-0.259
WL										1.000	0.616**	0.509**	0.337	0.410*	0.101
ATC											1.000	0.582**	0.616**	0.591**	-0.018
JC												1.000	0.726**	0.532**	0.142
SC													1.000	0.686**	-0.052
LDR														1.000	-0.234
PL1															1.000

*: 0.01 per cent level of significance

**: 0.001 per cent level of significance

Table 4.63 Continued (Block Panchayat Level)

	PA	CC	PC	PP	R1	PIND	PID	COP	T0	IS	PCC	TW	INS	RA	TM	
PA	1.000	0.496**	0.178	0.213	0.203	0.258	0.419**	0.131	0.175	0.222	0.475**	0.212	0.232	0.105	0.432**	
CC		1.000	0.279	0.236	0.249	0.397*	0.339*	0.147	0.040	0.422**	0.590**	0.106	0.290*	0.481**	0.533**	
PC			1.000	0.565**	0.525**	0.009	0.260	0.342*	0.046	0.465**	0.227	-0.007	0.392*	0.380**	0.386**	
PP				1.000	0.719**	0.220	0.245	0.250	0.332*	0.525**	0.428**	0.167	0.536**	0.600**	0.667**	
R1					1.000	0.241	0.295*	0.487**	0.445**	0.621**	0.489**	-0.081	0.439**	0.603**	0.530**	
PIND						1.000	0.128	0.071	0.290*	0.345**	0.470**	0.128	0.309*	0.365*	0.625**	
PID							1.000	0.102	0.038	0.220	0.314*	-0.006	0.138	0.211	0.299*	
COP								1.000	0.397**	0.432**	0.298*	0.349*	0.362*	0.247	0.273	
T0									1.000	0.433**	0.328*	0.103	0.302*	0.282*	0.290*	
IS										1.000	0.519**	-0.034	0.397*	0.512**	0.645**	
PCC											1.000	0.229	0.430**	0.583**	0.713**	
TW												1.000	0.147	0.360*	0.337*	
INS													1.000	0.568**	0.379*	
RA														1.000	0.712**	
TM															1.000	
PF																
PI																
ACT																
TP																
TI																
EM																
MTN																
ACD																
ITS																
WL																
ATC																
JC																
SC																
LDR																
PLI																

*: 0.01 per cent level of significance

**: 0.001 per cent level of significance

Table 4.63 Continued (Block Panchayat Level)

	PF	PI	ACT	TP	TI	EM	MTN	ACD	ITS	WL	ATC	JC	SC	LDR	PLI
PA	0.356*	0.281	0.124	0.460**	0.266	-0.27	0.268	0.127	0.186	-0.076	-0.197	0.152	0.025	0.245	0.291*
CC	0.630**	0.429**	0.332*	0.602**	0.380*	0.061	0.047	0.164	0.389*	0.098	-0.162	0.411**	0.240	0.489**	0.186
PC	0.416**	0.286*	-0.162	0.230**	0.253	0.276	0.258	0.357*	0.503**	0.510**	-0.005	0.221	0.021	0.179	0.011
PP	0.570**	0.532**	0.088	0.355*	0.365*	0.359*	0.162	0.484**	0.500**	0.219	-0.114	0.329*	0.016	0.370**	0.118
R1	0.616**	0.653**	-0.061	0.267	0.234	0.205	-0.107	0.345*	0.438**	0.288*	0.016	0.209	0.002	0.201	0.218
PIND	0.405**	0.496**	0.328*	0.499**	0.389**	0.081	0.005	0.007	0.199	0.211	-0.071	0.243	0.260	0.291*	0.203
PID	0.141	0.196	0.112	0.350**	0.300*	0.005	-0.051	0.134	0.164	-0.025	-0.174	-0.007	0.109	0.187	0.234
COP	0.505**	0.654**	0.032	0.428**	0.268	0.036	-0.032	0.338*	0.674**	0.310**	0.444**	0.221	0.319*	0.330*	0.183
T0	0.367*	0.614**	0.151	0.345*	0.330*	0.286*	0.136	0.200	0.344*	0.139	-1.140	0.290*	-0.008	0.124	-0.051
IS	0.563**	0.605**	0.625	0.489**	0.625**	0.279	0.006	0.404**	0.461**	0.383*	-0.012	0.656**	0.186	0.338*	-0.012
PCC	0.537**	0.64**	0.354*	0.697**	0.405**	0.213	0.75	0.249	0.466**	0.140	0.019	0.490**	0.237	0.380**	0.317*
TW	0.196	0.062	0.302*	0.232	0.150	0.337	0.164	0.009	0.062	0.200	-0.216	0.194	0.143	-0.096	0.116
INS	0.684**	0.451**	0.131**	0.487**	0.623**	0.332*	0.406**	0.426**	0.578**	0.234	0.089	0.412**	0.266	0.297*	0.144
RA	0.615**	0.632**	0.375*	0.636**	0.478**	0.423*	0.085	0.391**	0.548**	0.194	0.036	0.575**	0.240	0.428**	0.187
TM	0.586**	0.672**	0.386**	0.643**	0.421**	0.215	0.124	0.393**	0.444**	0.231	-0.014	0.439**	0.200	0.476**	0.264
PF	1.000	0.626**	-0.171	0.636**	0.623**	0.268	0.075	0.436**	0.522**	0.297	0.004	0.537**	0.183	0.296*	0.315*
PI		1.000	0.426**	0.662**	0.454**	0.294*	0.146	0.426**	0.630**	0.201	0.077	0.511**	0.331*	0.590**	0.040
ACT			1.000	0.636**	0.242	0.167	0.040	0.100	0.065	-0.144	0.161	0.482**	0.429**	0.492**	-0.149
TP				1.000	0.709**	0.127	0.091	0.401**	0.480**	0.121	-0.73	0.561**	0.330*	0.441*	0.203
TI					1.000	0.329*	0.263	0.393**	0.361*	0.101	-0.216	0.555**	0.133	0.266	0.088
EM						1.000	3.88**	0.454**	0.345*	-0.086	0.126	0.363*	0.054	0.196	0.202
MTN							1.000	0.265	0.239	0.032	0.086	0.139	0.197	0.304*	-0.187
ACD								1.000	0.627**	-0.016	0.079	0.387**	0.022	0.277	-0.069
ITS									1.000	0.275	0.173	0.443**	0.317*	0.538**	-0.083
WL										1.000	0.088	0.264	0.278	0.214	0.027
ATC											1.000	0.043	0.417**	0.213	0.072
JC												1.000	0.361*	0.457**	-0.048
SC													1.000	0.682**	-0.021
LDR														1.000	-0.085
PLI															1.000

*: 0.01 per cent level of significance
 **: 0.001 per cent level of significance

Table 4.63 Continued (Grama Panchayat Level)

	PA	CC	PC	PP	RI	PIND	PID	COP	T0	IS	PCC	TW	INS	RA	TM	
PA	1.000	0.266	0.580**	0.500*	0.667**	0.047	0.036	0.364	0.260	0.209	0.231	0.462*	0.334	0.034	0.250	
CC		1.000	0.699**	0.260	0.622**	0.626**	0.049	0.631**	0.463**	0.550*	0.831**	0.113	0.493*	0.467*	0.719**	
PC			1.000	0.646**	0.241**	0.254	0.169	0.665**	0.408	0.623**	0.512*	0.518*	0.570*	0.232	0.492*	
PP				1.000	0.708**	0.324	0.347	0.245	0.533*	0.669**	0.173	0.626*	0.528*	0.273	0.188	
RI					1.000	0.329	0.326	0.477*	0.480*	0.418	0.481*	0.491*	0.486*	0.343	0.418	
PIND						1.000	0.453	0.312	0.315	0.667**	0.461*	0.387	0.618**	0.440	0.194**	
PID							1.000	-0.046	0.219	0.422	-0.35	0.220	0.399	0.284	-0.026	
COP								1.000	0.446	0.431	0.619**	0.243	0.681**	0.416	0.701**	
T0									1.000	0.585**	0.249	0.327	0.463*	0.292	0.158	
IS										1.000	0.453	0.322	0.707*	0.547*	0.490*	
PCC											1.000	-0.105	0.354	0.595*	0.768**	
TW												1.000	0.499*	-0.020	0.066	
INS													1.000	0.590**	0.605**	
RA														1.000	0.533*	
TM															1.000	
PF																
PI																
ACT																
TP																
TI																
EM																
MTN																
ACD																
ITS																
WL																
ATC																
JC																
SC																
LDR																
PLI																

*: 0.01 per cent level of significance

**: 0.001 per cent level of significance

Table 4.63 Continued (Grama Panchayat Level)

	PF	PI	ACT	TP	TI	EM	MTN	ACD	IIS	WL	ATC	JC	SC	LDR	PLI
PA	0.657**	0.291	0.205	0.272	0.352	0.472*	0.557	0.536*	0.658**	0.202	-0.172	0.500*	0.449	0.546**	0.389
CC	0.545**	0.778	0.381	0.574**	0.451*	0.214	0.047	0.648**	0.640**	0.411	0.044	0.620**	0.336	0.580**	0.160
PC	0.775**	0.560*	0.056	0.645**	0.653**	0.460*	0.103	0.499*	0.605**	0.031	-0.234	0.509*	0.407	0.481*	0.309
PP	0.654**	0.221	-0.441	0.413	0.720**	0.523*	0.210	0.697**	0.734**	0.033	0.007	0.581**	0.510*	0.631**	0.136
R1	0.798**	0.505*	-0.096	0.511*	0.624**	0.501*	0.030	0.680**	0.683**	0.373	-0.024	0.814**	0.548*	0.667**	0.665
PIND	0.260	0.308	0.190	0.234	0.238	-0.080	0.494*	0.606**	0.479*	0.261	0.401	0.648**	0.508*	0.615**	0.026
PID	0.213	-0.51	-0.228	0.167	0.315	0.209	0.304	0.496*	0.316	-0.279	0.349	0.389	0.396	0.521*	-0.367
COP	0.689**	0.674**	0.401	0.441	0.206	0.122	0.074	0.269	0.699**	0.316	-0.016	0.469*	0.430	0.375	0.383
T0	0.402	0.312	-0.048	0.472*	0.460*	-0.98	0.228	0.496*	0.477*	0.024	0.208	0.450	0.329	0.604**	-0.249
IS	0.556*	0.497*	-0.026	0.639**	0.680**	0.174	0.091	0.589**	0.645**	-0.241	0.037	0.448	0.466*	0.547*	-0.254
PCC	0.631**	0.775*	0.480*	0.661**	0.352	0.050	-0.087	0.373	0.631**	0.460*	-0.062	0.583**	0.462*	0.355	0.121
TW	0.266	0.026	-0.302	0.023	0.296	0.480*	0.484*	0.505*	0.420	-0.076	0.274	0.458*	0.440	0.294*	0.244
INS	0.629**	0.551*	0.186	0.367	0.373	0.204	0.44	0.604**	0.589*	-0.011	0.325	0.537*	0.499*	0.631**	0.237
RA	0.514*	0.703**	0.283	0.478*	0.134	0.133	0.149	0.296	0.384	0.237	0.460*	0.583*	0.566*	0.439	-0.230
TM	0.658**	0.699**	0.564*	0.368	0.205	0.096	-0.036	0.306	0.650**	0.467*	-0.124	0.567*	0.407	0.279	0.390
PF	1.000	0.721**	0.193	0.511*	0.509*	0.515*	0.010	0.550*	0.875**	0.274	-0.096	0.661**	0.618**	0.560*	0.246
PI		1.000	0.387	0.609*	0.334	-0.001	-0.111	0.360	0.547*	0.344	0.129	0.573*	0.327	0.456*	0.161
ACT			1.000	0.091	-0.327	-0.196	0.086	-0.214	-0.019	0.266	-0.099	-0.012	0.007	-0.113	0.477*
TP				1.000	0.669**	0.076	-0.283	0.410	0.568	-0.024	-0.103	0.378	0.162	0.386	-0.175
T1					1.000	0.277	-0.130	0.720**	0.714**	-0.207	-0.324	0.342	0.152	0.406	-0.193
EM						1.000	0.096	0.223	0.480*	-0.077	-0.149	0.292	0.510*	0.110	0.138
MTN							1.000	0.359	0.003	-0.10	0.717**	0.294	0.409	0.412	0.066
ACD								1.000	0.735**	0.061	0.173	0.680**	0.542*	0.627**	-0.026
IIS									1.000	0.309	-0.210	0.741**	0.604**	0.617**	0.143
WL										1.000	0.067	0.530*	0.0273	0.208	0.279
ATC											1.000	0.384	0.354	0.471*	-0.165
JC												1.000	0.800**	0.821**	0.034
SC													1.000	0.682**	-0.034
LDR														1.000	-0.025
PLI															1.000

*: 0.01 per cent level of significance

** : 0.001 per cent level of significance

Full form of the selected **subdimensions** of co-ordination

PA: Pattern o of Authority
CC: Co-ordination Committee
PC: Pattern of Communication
PP: Pattern of Participation
RI: Role Identity
PIND: Pattern of Interdependence
PID: Pattern of Independence
COP: Clarity of Objectives and Programmes
TO: Technical Orientation
IS: Integration of Services
PCC: Procedures for Committee Meetings
TW: Teamwork
INS: Information Sharing
RA: Resource Allocation
TM: Time Management
PF: Project Formulation
PI: Project Implementation
ACT: Accountability
TP: Technology Prioritization
TI: Technology Integration
EM: Empathy
MTN: Motivation
ACD: Accommodation
ITS: Interpersonal Skills
WL: Workload
ATC: Attitude Towards Co-ordination
JC: Job Commitment
SC: Self Confidence
LDR: Leadership
PLI: Political Interference

4.9 PROBLEMS/CONSTRAINTS RELATED TO EFFECTIVE CO-ORDINATION AMONG AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

The problems/constraints related to effective co-ordination for agricultural development were identified through judges' rating and opinion of the officers-in-charge/representatives of the participating agencies and then analyzed. The problems/constraints were ranked based on their importance in influencing effective co-ordination among the agencies. The problems/constraints with these scores and ranks are presented in Table 4.64. The problems 'lack of proper interaction among agencies involved in agricultural development' and 'lack of integrated projects/schemes' were identified as the most important ones, while 'professional jealousy of the representatives limiting frequent communication with each other' was perceived to be the least important problem affecting effective co-ordination among the agencies involved in agricultural development.

Table 4.64 Problems related to effective co-ordination among the agencies involved in agricultural development in Thrissur district

S.No.	Problems	Total Scores	Rank
1	Lack of proper interaction among agencies involved in agricultural development	255	I
2	Lack of integrated projects/schemes	249	II
3	Political biases and partiality in implementing development projects	231	III
4	Lack of proper guidelines/instructions for the representatives of agencies involved in agricultural development	222	IV
5	Lack of interdependence among agencies due to routine job provided by government	221	V
6	Project/schemes identified by local government body involving few agencies neglecting other agencies involved in agricultural development	216	VI
7	Individual agency is lacking decision unilaterally for agricultural development	203	VII
8	Lack of seminars, conferences involving the representatives of all agencies involved in agricultural development	197	VIII
9	Similar type of projects/schemes run concurrently causing duplication of activities among agencies	195	IX
10	Bureaucratic involvement and rigidity affecting individual commitment in achieving common goal	195	X
11	Autocratic functioning of the local government body breaks the linkage among agencies involved in agricultural development	190	XI
12	Lack of joint decision in formulating and implementing schemes	179	XII
13	Watertight compartmentation of the agencies	179	XIII
14	Independent set up enhances symbiotic participation for the representatives of the agency	176	XIV
15	Professional jealousy of the representatives limiting frequent communication with each other	148	XV

Table 4.64 reveals that 'lack of proper interaction among agencies involved in agricultural development' was perceived as the most important problem related to effective co-ordination. Appropriate planning and implementation of agricultural development activities depend upon the proper interaction among the agencies involved in agricultural development. Quasem (1977) reported that lack of interaction among the agencies involved in agricultural development resulted in mistrust and competition, which create confusion in the minds of end users about whom to approach and what to grow. 'Lack of integrated projects/schemes' was the next important problem related to effective co-ordination among the agencies involved in agricultural development. Agricultural development itself is a multidisciplinary approach and lack of integration among various agencies leads to isolation and duplication of agricultural development efforts thereby resulting unnecessary escalation of cost of production. Proper integration among agencies leads to teamwork and easier achievement of common objectives.

Mishra (1989) opined that lack of integrated projects among the agencies leads to individual pursuits of objectives. Integrated projects/schemes require effective co-ordination among them. Virtually, very few or no integrated projects/schemes could be located in the study area. Formulation and implementation of integrated projects/schemes require proper co-ordination among the agencies involved in agricultural development but saves time and valuable resources.

'Political biases and partiality in implementing development projects' was rated as the next important problem/constraint related to effective co-ordination among the agencies involved in agricultural development. In 1995, Kerala state government envisaged people's participation in all developmental activities through decentralization of powers to the local bodies but in reality the participation was limited to some local political leaders. Development projects/schemes were identifying and selecting by the local government bodies even without contact of the

representatives of agencies involved in agricultural development. In all respects of formulation and implementation of development projects/schemes, political interference and biases appeared to be common practice in the study area. It is perceived that political involvement is must for effective formulation and implementation of agricultural development projects/schemes activities but political biases are detrimental. Such type of mal practices should be avoided for effective agricultural development.

'Lack of proper guidelines/instructions for the representatives of agencies involved in agricultural development' was rated as the next important problem/constraint related to effective co-ordination among the agencies involved in agricultural development. Proper guidelines/instructions for the representatives of agencies help to move in right direction in implementing development projects/schemes/activities.

"Lack of interdependence among agencies due to routine job provided by government" was rated as the next important problem/constraint related to effective co-ordination among the agencies involved in agricultural development. Tripathi and Reddy (1997) stated, "Co-ordination is the management of interdependence in work situation. It is the orderly synchronization or fitting together of the interdependent efforts of individuals in order to attain a common goal". At present, government has decentralized powers to local bodies i.e., individual setup at district panchayat, block panchayat and grama panchayat levels. In each panchayat level, they were doing their job independently that leads to ineffective co-ordination among the agencies involved in agricultural development. Interdependence among the participating agencies might enhance effective co-ordination for agricultural development. Government was provided some guidelines to the participating agencies for undertaking activities related to agricultural development but the representatives were simply following

them in implementing development activities. For effective co-ordination, proper interdependence is must among the agencies involved in agricultural development.

“Projects/schemes identified by local government body involving few agencies neglecting other agencies involved in agricultural development” was rated as the next problem/constraint related to effective co-ordination for agricultural development. A lot of agencies are performing agricultural development activities under different frameworks i.e., panchayat, controlled, state government controlled, central government controlled, co-operatives controlled and banking controlled. After decentralization of powers to the local bodies, project/schemes were identified by them involving few agencies which were directly related to agricultural development and even neglecting many like banking agencies, co-operative agencies and central government agencies, which were directly and indirectly involved in agricultural development. It certainly affects effective co-ordination among the agencies involved in agricultural development.

“Individual agency is taking decision unilaterally for agricultural development” was identified as the next problem/constraint. Individual set up at all panchayat levels i.e., district, block and grama panchayat has created a scope for the individual agency to take decision unilaterally for agricultural development; and it ultimately hinders effective co-ordination among the agencies involved in agricultural development. This independent set up at all panchayat levels was created other problems like, “Lack of seminar, conferences involving the representatives of all agencies involved in agricultural development”, “Similar type of projects/schemes run concurrently causing duplication of activities among agencies” and it enhances other problems like “Bureaucratic involvement and rigidity affecting individual commitment in achieving common goal”, “Autocratic functioning of the local government body breaks the linkage among agencies involved in agricultural development”. Further the above problems restrict joint decisions in formulating and implementing schemes and enhance symbolic participation for the representatives of the agency.

“Watertight compartmentation of the agencies” was rated as the next important problem/constraint related to effective co-ordination among the agencies involved in agricultural development. Individual agency was looking for activities in their own area of specialization ultimately hampering effective co-ordination. “Professional jealousy of the representatives limiting frequent communication with each other” was rated as the least important problem/constraint related to effective co-ordination among the agencies involved in agricultural development. This reveals that professional jealousy is not limiting frequent communication with each other and it is not a serious problem for them in co-ordinating agricultural development activities.

4.10 SUGGESTIONS TO STRENGTHEN CO-ORDINATION AMONG AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT

Probable suggestions to strengthen co-ordination among the agencies involved in agricultural development were identified through judges’ rating and opinion of the officers-in-charge/representatives of the participating agencies was ranked and analyzed. The suggestions with scores and ranks are presented in Table 4.65. The suggestion ‘Establishment of co-ordination committees at all levels involving the representatives of all agencies involved in agricultural development’ was identified as the most important one, while ‘Fundamental restructuring of agency programmes through collaborative projects/schemes’ was perceived to be the least important in strengthening co-ordination among the agencies involved in agricultural development.

Table 4.65 Suggestions to strengthen the co-ordination among agencies involved in agricultural development

S.No.	Suggestions	Total Scores	Rank
1	Establishment of co-ordination committees at all levels involving the representatives of all agencies involved in agricultural development	271	I
2	Elected members of the local government body should adopt a development oriented approach	263	II
3	Teamwork for joint formulation and implementation of the projects/schemes	261	III
4	Formulating integrated projects/schemes	254	IV
5	Sharing of resources among agencies on a 'give and take policy' basis	235	V
6	Legitimate power must be provided to the representatives of the agencies for taking joint decision in implementing agricultural development programme	234	VI
7	Joint technical committees and monitoring and evaluation committees at all levels i.e. district, block and grama panchayat	234	VI
8	Proper guidelines/instructions on co-ordinating action for the representatives of agencies involved in agricultural development	234	VI
9	Joint conferences among agencies involved in agricultural Development	230	IX
10	Regular co-ordination committee meetings and interaction among the members of identify the problems and immediate corrective action	229	X
11	Integrated training programmes for the representatives of all agencies	228	XI
12	Balancing of interests and purposes between administrative staff and technical staff	225	XII
13	Frequent formal and in formal contract among the representatives of agencies involved in agricultural development	222	XIII
14	Reciprocal reward, recognition and appreciation among the representatives of agencies involved in agricultural development	217	XIV
15	Joint service arrangement and interlocking of personnel among agencies involved in agricultural development	216	XV
16	Structural and functional arrangement for effective co-ordination among agencies for sharing information	215	XVI
17	Inter agency agreement on duties, responsibilities, procedures and practices for implementing projects/schemes	198	XVI I
18	Fundamental restructuring of agency programmes through collaborative projects/schemes	193	XVI II

Table 4.65 reveals that "Establishment of co-ordination committee at all levels involving the representatives of all agencies involved in agricultural development" was perceived as the most important suggestion to strengthen co-ordination among the agencies involved in agricultural development. A co-ordination committee was established at district panchayat level but not involving all the participating agencies. At block and grama panchayat levels, there were no co-ordination committees. The present study proposes to establish co-ordination committees at block panchayat level and grama panchayat levels involving the representatives of all participating agencies and to revamp the existing co-ordination committee at district panchayat level involving all the participating agencies. These committees should be interlinked at all panchayat levels in order to minimize duplication of development activities. This finding is in conformity with the results evinced by several authors (Jain, 1967; Marx, 1969 and Krishnamurthy, 1991).

"Elected member of the local government body should adopt a development oriented approach" was rated as the next important suggestion to strengthen co-ordination among the agencies involved in agricultural development. Actual agricultural development depends on the vision and mission of the local government bodies, because they only can identify the root problems in agricultural development. If they adopt a development oriented approach, then the representatives of all the participating agencies will come together under the umbrella of this approach for agricultural development.

"Teamwork for joint formulation and implementation of the projects/schemes" was rated as the next important suggestion for effective co-ordination. Sheikh (1991) opined that teamwork could ensure effective co-ordination among the agencies involved in agricultural development. It is perceived that once teamwork started among them, it is easy to solve the critical problems in agricultural development and it enhances joint formulation and implementation of the projects/schemes/activities.

“Formulating integrated projects/schemes” was rated as the next important suggestion. Integrated projects/schemes can certainly enhance teamwork for agricultural development.

“Sharing of resources among agencies on a give and take policy basis” was rated as the next important suggestion to strengthen co-ordination among the agencies involved in agricultural development. Sharing resources can establish interdependency among the participating agencies leading to effective co-ordination among them besides saving valuable resources, time and money also.

“Legitimate’ power must be provided to the representatives of the agencies for taking joint decision in implementing agricultural development”, “joint technical committees and monitoring and evaluation committees at all levels; district, block and grama panchayat” and “proper guidelines/instructions on co-ordinating action for the representatives of agencies involved in agricultural development” were rated as the next three important suggestions to strengthen co-ordination among the agencies involved in agricultural development. Legitimate power for the representatives of the participating agencies can stimulate and facilitate joint decision making for agricultural development. Interlinked technical committees and monitoring and evaluation committees can enhance technical co-ordination among concerned agencies and identify the weaknesses of the projects/schemes. Accordingly they can take the appropriate corrective measure to overcome this issue. Proper guidelines and instructions help them to move in the right direction. These findings are in conformity with the results reported by several authors (Robert, 1970; Krishnamurthy, 1991 and Purkat, 1996).

“Joint conferences among agencies involved in agricultural development” was rated as the next suggestion to strengthen co-ordination. Joint conferences among the agencies lead to close contact with each other and create scope for exchange of ideas

and establishing good relations as reported by the authors (Jain, 1967 and Mitra and Satpathi, 1985).

Regular co-ordination meetings and interaction among the representatives can ensure identification and prioritization of problems and immediate corrective action. "Integrated training programmes for the representatives of all agencies" was rated as the next important suggestion to improve co-ordination among the agencies involved in agricultural development. It is assumed that such types of training programmes may reduce the gap among the participating agencies. This type of training programmes may balance the interests and purposes between administrative staff and technical staff also as reported by several authors (Jain, 1967; Jaiswal *et al.*, 1969) and Haragopal and Mohan, 1974).

"Frequent formal and informal contact among the representatives of agencies involved in agricultural development" was rated as the most important suggestion for the same. It enhances better communication among them because effective communication is the important component of effective co-ordination for agricultural development as reported by several authors (Barnabas and Pelz, 1970 and Combs and Ahmed, 1974).

'Reciprocal reward, recognition and appreciation among the representatives of agencies involved in agricultural development" was rated as the next suggestion to strengthen co-ordination for agricultural development. This enhances reciprocal inspiration and empathy for effective co-ordination as reported by the authors (Seshadri, 1967 and Krishnamurthy, 1991).

In addition, joint service arrangement, structural and functional arrangement for sharing information, interagency agreement on duties, responsibilities, procedures and practices for implementing projects/schemes and fundamental restructuring of

agency programmes through collaborative projects/schemes were also pertinent suggestions to strengthen effective co-ordination among the agencies involved in agricultural development.

4.11 EMPIRICAL MODELS OF THE STUDY

Detailed conceptual models have already been given in the 'review of literature' section. Based on the results of the intercorrelations among the selected subdimensions, the empirical models were drawn at district, block and grama panchayat levels separately. Solid lines indicate that subdimensions are significantly intercorrelated and dotted lines indicate no significant intercorrelation with each other. In the empirical models, 'structural dimension' is the main dimension of effective co-ordination. Rest of the three dimensions, namely; 'functional dimension', 'technological dimension' and 'psychological and socio political dimension' are included in the 'structural dimension'. All the sub dimensions of 'structural dimension' are reciprocally connected with the above mentioned three major dimensions.

Finally, all the dimensions of effective co-ordination jointly affect each category of agency namely; 'panchayat controlled agencies', 'state government controlled agencies', 'cooperative controlled agencies', 'central government controlled agencies' and 'banking controlled agencies'. Based on the 'Overall Co-ordination Performance (OCP)', the solid lines were drawn for showing the closeness to the line of '**Effective Co-ordination for Agricultural Development**' of the participating agencies at all panchayat levels separately. The distance between right margins of one agency to left margin of effective co-ordination line was assumed as 100 scores. The overall co-ordination performance of the participating agencies ranged from 27.59 to 90.10. Based on the OCP, the participating agencies were categorized into four namely; '**Very close**', '**Close**', '**Moderately close**' and '**Far distant**'. From the

model at district panchayat level, it was observed that 'Panchayat Department' and 'Soil Conservation Department' (panchayat controlled), 'Cooperation Department' 'Kerala Agro. Industries Corporation' and 'Kerala Land Development Corporation' (state government controlled), 'National Bank for Agriculture and Rural Development' and 'South Malabar Gramin Bank' (banking controlled) were 'very close' to effective co-ordination. It may be assumed that the 'Panchayat Department' was performing the main role in co-ordinating agricultural development activities. This agency was integrating activities related to agriculture and maintaining proper liaison with other participating agencies. 'District Soil Conservation Officer is performing the main co-ordinating role and he is the 'District Co-coordinator', whereas, 'Irrigation Department' (panchayat controlled), 'Coir Department', 'Social Forestry' and 'Kerala Forest Research Institute' (state government controlled) and 'The New India Assurance Company' (central government controlled) were 'far distant' from effective co-ordination.

At block panchayat level, 'Irrigation Department' and 'Department of Agriculture' (panchayat controlled) were 'very close' to effective co-ordination, whereas, 'Kerala State Electricity Board' and 'Cooperative Society' were 'far distant' from effective co-ordination.

At grama panchayat level, none of the agencies was in the 'very close' to effective co-ordination. However, 'Animal Husbandry Department' was 'close' to effective co-ordination, whereas, 'Rural Development Department' and 'Kerala State Electricity Board' were 'far distant' from effective co-ordination.

Fig. 4.16 Empirical model for the study at district panchayat level

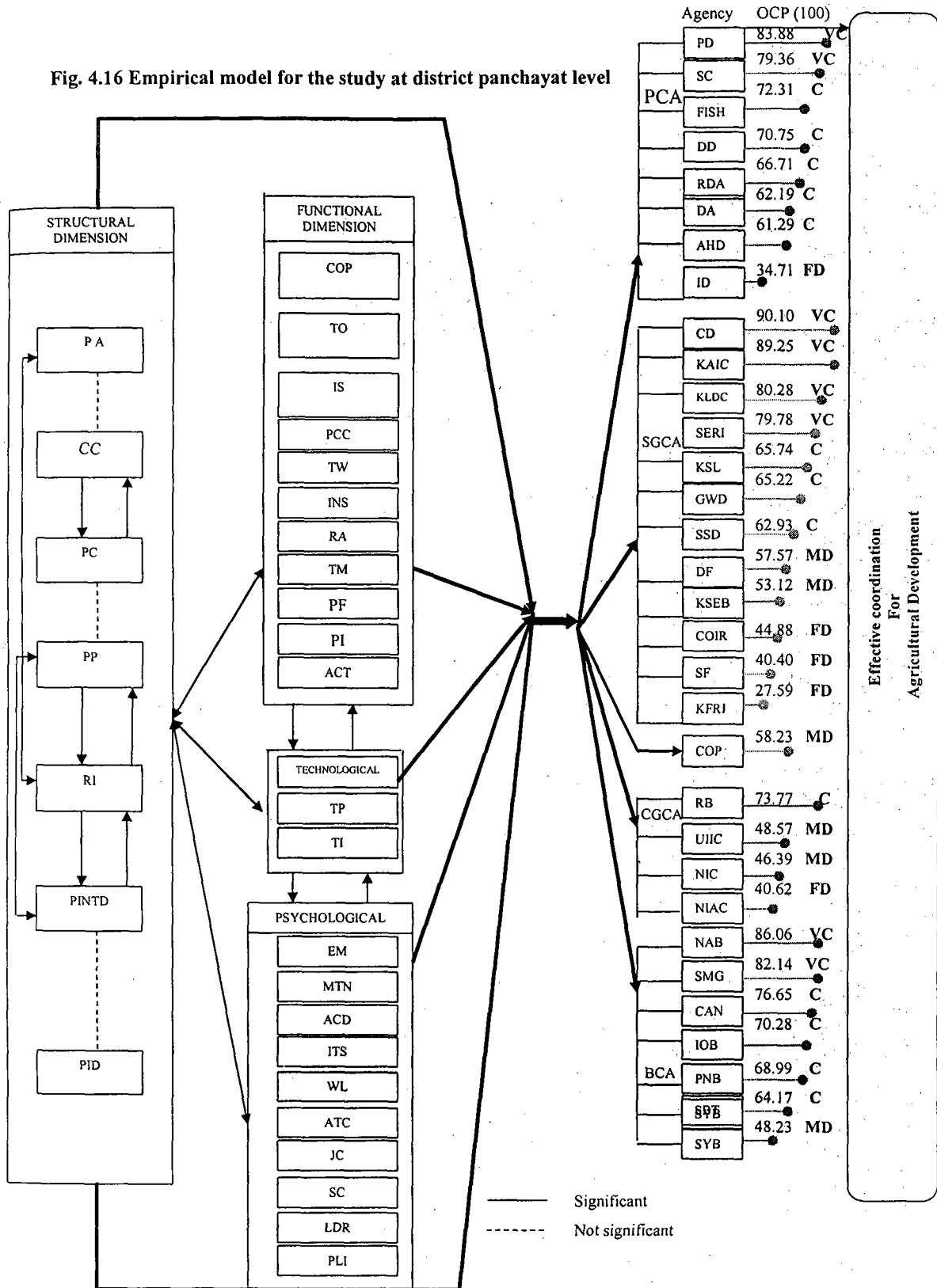


Fig. 4.17 Empirical model for the study at block panchayat level

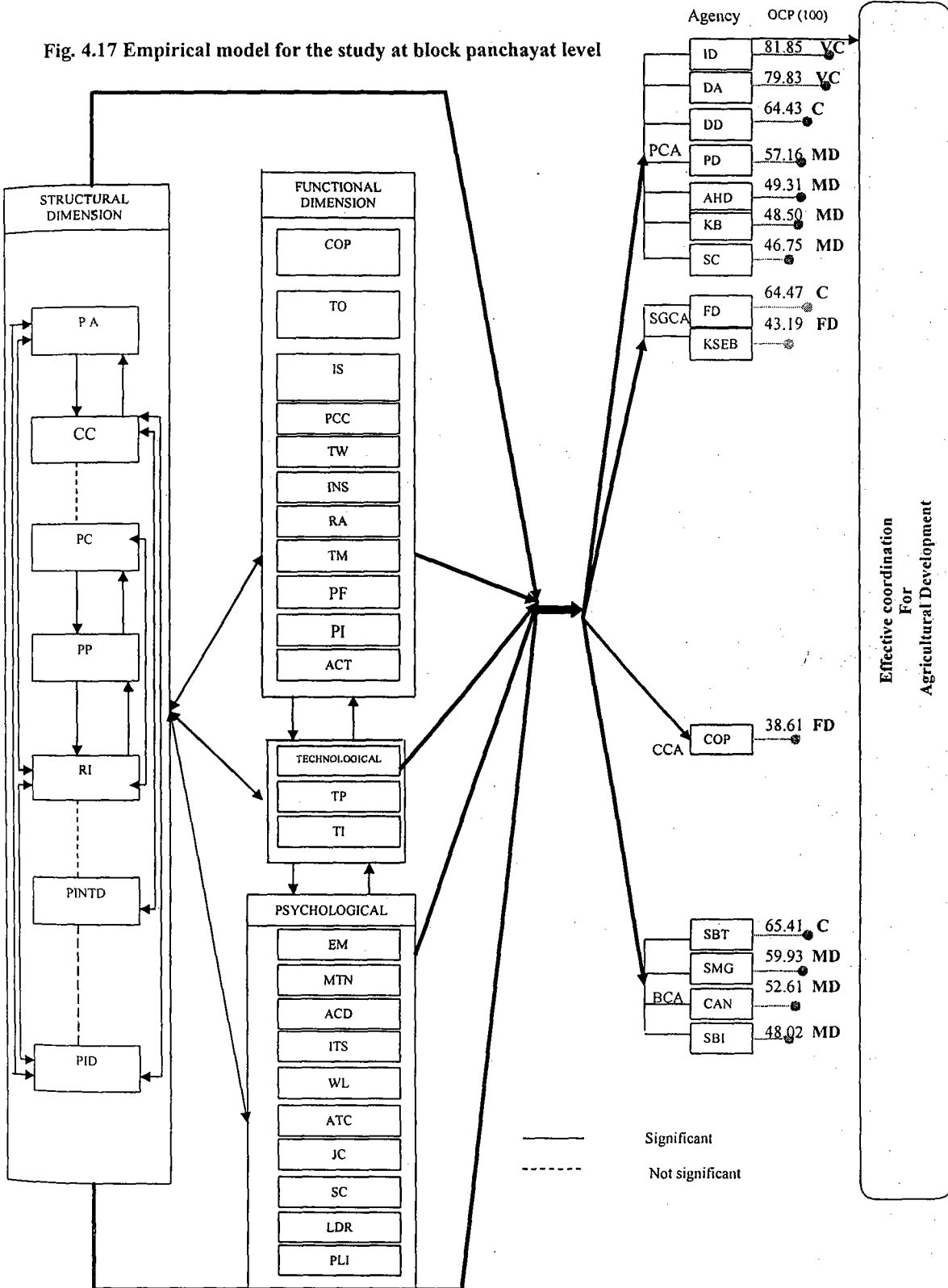
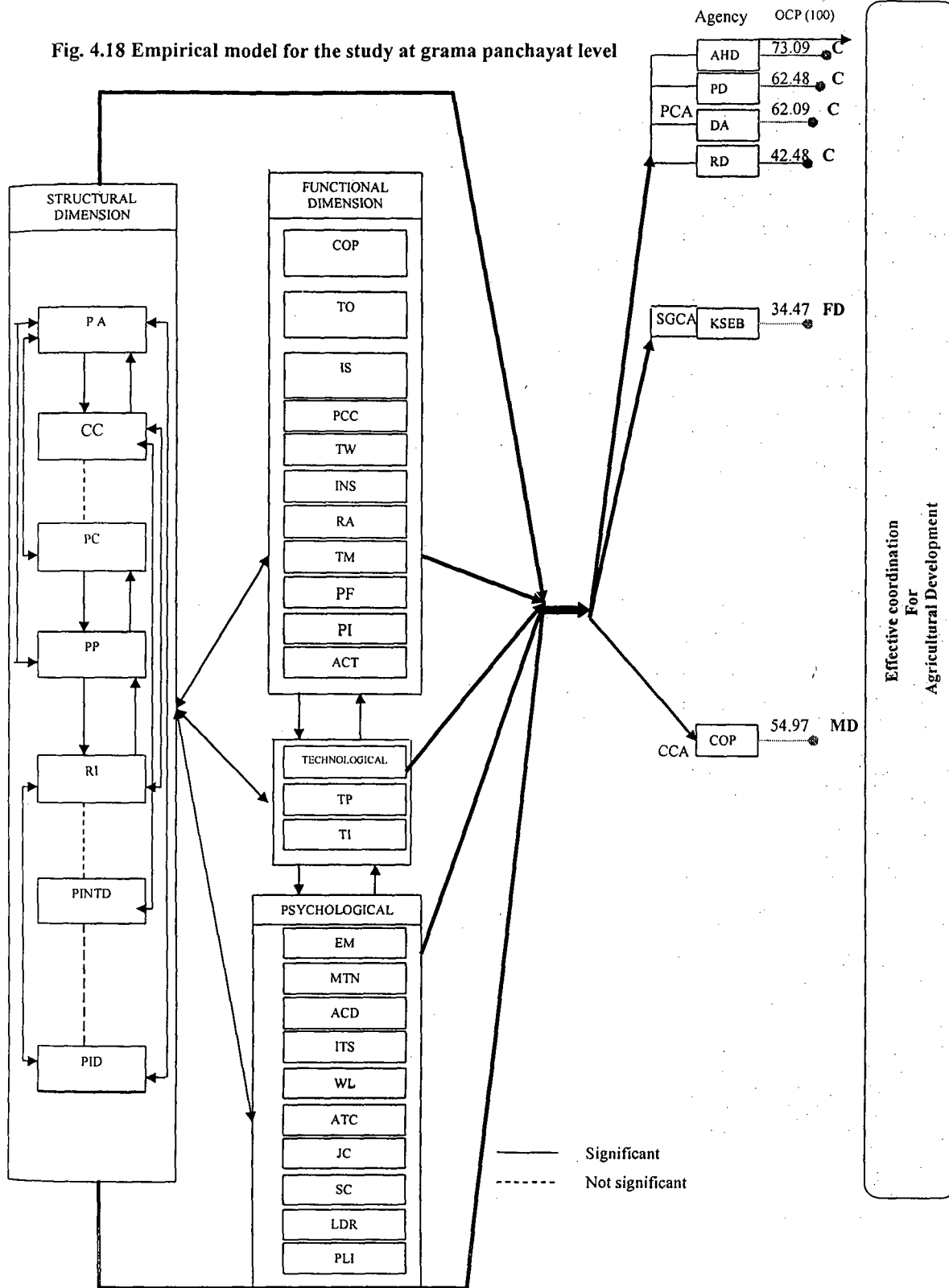


Fig. 4.18 Empirical model for the study at grama panchayat level



Summary

CHAPTER V

SUMMARY

Formulation and implementation of agricultural development programmes/projects is recognized as a co-ordinated process. It is therefore essential that supplying, financing, producing, processing and marketing agencies have to co-ordinate their efforts to make programmes/projects of agricultural development a success. Reports of successful case studies from different developing countries clearly indicated that agricultural extension services become effective only when their activities are co-ordinated with local support like credit, input supplies, processing and marketing. In spite of this recognition, effective co-ordination among the agencies involved in agricultural development is yet to be realized.

Although in recent years some efforts were being made to take up agricultural development at local level as co-ordinated programmes, but it was not known to what extent the ideas underlying interagency co-ordination were implemented by personnel in-charge of various agencies involved in agricultural development.

Very few attempts were made to measure inter-agencies co-ordination by operationally defining it. Even after decentralization of powers to the local bodies, there were no serious attempts to measure the level of co-ordination among the agencies involved in agricultural development.

The existing measuring scales constructed by Prasad (1967), Sandhu and Gupta (1974), Sawant (1978), Raju (1987) and Krishnamurthy (1991) may not be good enough to study this vital concept in the changed scenario after democratic decentralization and devolution of powers to the local bodies.

Therefore, there was an urgent need for a systematic study on interagency co-ordination and the present investigation was undertaken to operationalise the concept and to construct a standardized measuring instrument for quantifying the

same and to measure the level of co-ordination among the agencies involved in agricultural development using the constructed instrument.

The specific objectives of this study were;

1. to construct a multidimensional co-ordination scale to measure the level of co-ordination among government agencies involved in agricultural development.
2. to analyze the factors and identify the indicators of effective co-ordination related to each dimension.
3. to identify the gaps in co-ordination and explore the problems among various government agencies involved in agricultural development.
4. to suggest a model for effective co-ordination among government agencies involved in agricultural development.

The study was conducted in Thrissur district taking four block panchayats and the same number of grama panchayats. *Expost facto* research design was followed to conduct the study. Stratified multistage random sampling was followed for selecting agencies and respondents.

An objective and standardized multidimensional scale to measure the level of co-ordination was constructed with the help of judges consisting of experts in the field of administration and agricultural development personnel.

Behaviourally Anchored Rating Scale (BARS) method developed by Campbell *et al.* (1973) was used for the construction of the scale. Though it is a lengthy method, all the stages and steps of scale construction was successfully completed. A total of 127 items were screened using criteria based on scale values and Q values and the final composite scale consisted of 60 items taking two from each sub dimension. Scale values and Q values of scale items ranged from 2.681 to 4.538 and 0.70 to 2.16 respectively.

Scale values and Q values were calculated based on judges' rating using accepted techniques was recommended by research methodologists. The constructed scale was pretested by respondents from non-sample areas for testing the item difficulty.

A pilot study was conducted using the constructed scale before finally administering the scale to the actual respondents of the study.

The summary of the important findings of the study is presented below.

CONSTRUCTION OF THE MULTIDIMENSIONAL CO-ORDINATION SCALE TO MEASURE THE LEVEL OF CO-ORDINATION AMONG THE AGENCIES INVOLVED IN AGRICULTURAL DEVELOPMENT.

1. Construction of the scale

The co-ordination scale was constructed using 'Behaviourally Anchored Rating Scale (BARS)' method suggested by Campbell *et al.* (1973). The method consisted of three stages.

a) First stage: Selection of dimensions/subdimensions

Out of seven major dimensions initially identified, four were selected finally for inclusion in the scale, viz., structural dimension, functional dimension, technological dimension and psychological and socio-political dimension. A list of 51 subdimension under the four major dimensions was scrutinized twice by a panel of 36 experts and 63 experts respectively. Finally 30 subdimensions, viz., 7, 11, 2 and 10 were selected under the major dimensions respectively for inclusion in the study.

b) Selection of items

A comprehensive list of 138 items were prepared and subjected to a panel of 103 experts in different states in India to be rated for their relevancy on a five point continuum; 'Most Relevant', 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' with weightages, 5, 4, 3, 2 and 1 respectively. After getting the responses from the experts, out of the 138 items, 127 were considered for item analysis.

c) Calculation of scale values

Scale values and Q values were calculated using appropriate statistical formula. According to the method, median value of each item was calculated as scale value.

2. Reliability and validity of the scale

a) Reliability of the scale

Split-half method was used to find out reliability of the constructed scale.

b) Validity of the scale

Content and construct validity was established for the constructed scale using appropriate methods.

3. Administration of the scale

The constructed scale was administered to the respondents to be rated on a five point continuum, 'Always', 'Often', 'Occasionally', 'Seldom' and 'Never' with weightages 4, 3, 2, 1 and '0' respectively. Based on the obtained scores, the respondents were classified into three categories 'High', 'Medium' and 'Low'.

4. Method of data generation

The researcher personally met the respondents and collected data which were then coded, tabulated and analyzed using appropriate statistical tools like frequencies,

percentage, discriminant function analysis, correlation matrix and factor analysis for drawing the conclusions.

The salient findings of the study are presented below.

1. Canonical discriminant function analysis showed that five categories of agencies viz., Panchayat Controlled, State Government Controlled, Co-operative Controlled, Central Government Controlled and Banking Controlled did not discriminate each other with respect to co-ordination function for agricultural development at all panchayat levels. All the agencies under the study were alike in co-ordinating agricultural development programmes. Association among the participating agencies with level of co-ordination was insignificant. Therefore, the hypotheses were accepted
2. Out of thirty two participating agencies at district panchayat level, only three viz., District Panchayat, 'National Bank for Agriculture and Rural Development (NABARD)' and 'Kerala Land Development Corporation (KLDC)' were in the 'highly satisfactory' level in co-ordinating agricultural development activity (scores were 91.87, 86.43 and 83.87 respectively). However, fifteen agencies were in the 'satisfactory', ten agencies in the 'fair' and four agencies were in the 'moderate' level.
3. At block panchayat level, none of the participating agencies belonged to the 'highly satisfactory' level. Out of sixteen participating agencies, six viz., 'Department of Agriculture', 'Irrigation', 'Dairy', 'Fisheries', 'State Bank of Travancore' and 'South Malabar Gramin Bank' belonged to the 'satisfactory' level (score were 79.18, 73.99, 68.91, 65.20, 61.89 and 61.43 respectively) and eight agencies belonged to the 'fair' level and the remaining two to the 'moderate' level.
4. At grama panchayat level also, none of the participating agencies belonged to the 'highly satisfactory' level. However, the agencies namely, 'Animal

Husbandry', 'Department of Agriculture' and 'Grama Panchayat' belonged to the 'satisfactory' level and 'Kerala State Electricity Board' was in the 'fair' level.

5. Out of five categories of agencies, three categories of agencies, viz., 'Banking Controlled' 'Panchayat Controlled' and 'State Government Controlled' belonged to the 'satisfactory' level. The remaining two categories, viz., 'Central Government Controlled' and 'Cooperative Controlled' were in the 'fair' at district panchayat level. At block and grama panchayat levels, all the categories of agencies belonged to the 'fair' level. District panchayat belonged to the 'satisfactory' level and block and grama panchayat were in the 'fair' level with respect to overall co-ordination performance.
6. Out of thirty two participating agencies at district panchayat level, the co-ordination performance of 'District Panchayat' ranked first followed by 'National Bank for Agriculture and Rural Development (NABARD)', 'South Malabar Gramin Bank' and 'Canara Bank' while, 'Kerala Forest Research Institute (KFRI)' ranked last.
7. Out of participating agencies at block panchayat level, the co-ordination performance of 'Department of Agriculture' ranked first followed by 'Irrigation' and 'Dairy Development,' while, 'Kerala State Electricity Board (KSEB)' was ranked last.
8. Out of participating agencies at grama panchayat level, the co-ordination performance of 'Animal Husbandry' ranked first followed by 'Department of Agriculture' and 'Grama Panchayat', while, 'Kerala State Electricity Board (KSEB)' ranked last.
9. At district panchayat level, out of five categories of agencies viz., Panchayat Controlled, State Government Controlled, Cooperative Controlled, Central Government Controlled and Banking Controlled, the co-ordination

performance of 'Banking Controlled' ranked first followed by 'Panchayat Controlled'.

10. At block panchayat level, out of four categories of agencies viz., Panchayat Controlled, State Government Controlled, Cooperative Controlled and Banking Controlled Agencies; 'State Government Controlled Agencies' ranked first followed by 'Panchayat Controlled' with respect to co-ordination performance.
11. At grama panchayat level, out of three categories of agencies viz., Panchayat Controlled, State Government Controlled and Cooperative Controlled; 'Cooperative Controlled' ranked first followed by 'Panchayat Controlled'.
12. Among the three levels of panchayats, the overall co-ordination performance of 'District Panchayat' ranked first.
13. Reasonable percentage (55.00%) of the respondents belonged to the 'medium' category in 'pattern of authority' pattern of participation (50.00%) and 'pattern of interdependence' (48.00%) followed by 'pattern of independence (45.00%)' and 'role identity' (37.00%) in the 'low' category with respect to co-ordination performance at entire Thrissur district under 'structural dimension'.
14. Majority (52.00%) of the respondents belonged to the 'medium' category in 'teamwork' followed by 'resource allocation' (42.00%). Considerable percentage (41.00%) of respondents belonged to the 'high' category in 'time management' 'information sharing' (40.00%), 'technical orientation' (40.00%) and 'project implementation' (40.00%), while 'project formulation' (40.00%) was in the 'low' category under 'functional dimension' at entire Thrissur district.

15. Reasonable percentage (45.00%) of the respondents belonged to the 'medium' category in the 'technology integration' followed by the 'high' category in 'technology prioritization' (42.00%) under 'technological dimension' at entire Thrissur district.
16. Majority (56.00%) of the respondents belonged to the 'medium' category in the subdimensions, namely; 'political interference' 'self confidence' (54.00%) followed by the 'high' category in 'empathy' (51.00%), 'job commitment' (48.00%), 'attitude towards co-ordination' (43.00%), 'interpersonal skills' (40.00%) and 'workload' (40.00%) and to the 'low' category in 'motivation' (35.00%) under 'psychological and socio-political' dimension at entire Thrissur district.
17. Majority (67.00%) of the respondents belonged to the 'medium' category in the major dimensions namely, 'psychological and socio-political' followed by the 'low' category in the 'functional' dimension' (36.00%) and same percentage of respondents were in the 'medium' and 'low' categories on the 'structural dimension' (35.00%) at entire Thrissur district.
18. Considerable (34.88%) percentage of the respondents belonged to the 'high' category followed by the 'medium' (37.50%) category and the 'low' (28.00%) with respect to overall co-ordination performance at district panchayat level.
19. At block panchayat level, more respondents belonged to the 'medium' category with respect to overall level of co-ordination performance (38.78%) followed by the 'low' category (34.69%) and the 'high' category (26.33%).
20. At grama panchayat level, same percentage (36.84%) of the respondents belonged to the 'medium' and 'low' categories followed by the 'high' (26.32%) category with respect to overall level of co-ordination performance.

21. Considerable percentage (34.00%) of the respondents belonged to the 'medium' category followed by the 'high' and the 'low' categories (33.00%) with respect to overall co-ordination performance at entire Thrissur district.
22. Out of thirty subdimensions, ten namely; pattern of authority, pattern of communication, co-ordination committee, clarity of objectives and programmes, technical orientation, technology prioritization, empathy, motivation, accommodation and interpersonal skills were extracted through factor analysis. These extracted ten subdimensions were treated as the essential factors of effective co-ordination. The other subdimensions were found to be negligible in their contribution to the variation in effective co-ordination.
23. Out of ten essential factors, seven namely, pattern of authority, co-ordination committee, clarity of objectives and programmes, technology prioritization, empathy, motivation and accommodation were common to all panchayat levels. These seven factors explained maximum variation individually and jointly than others. Therefore, these were treated as the essential indicators of effective co-ordination. Out of these seven indicators, four namely; technology prioritization, 'clarity of objectives and programmes, empathy and pattern of authority explained maximum variation viz., 84.97 per cent, 65.26 per cent, 51.10 per cent and 51.08 per cent respectively.
24. Maximum extent of co-ordination performance of the participating agencies under structural dimension was in 'pattern of participation' (65.99%) followed by 'co-ordination committee' (62.96%), whereas, maximum gaps were in 'pattern of independence' (51.27%) followed by 'role identity' (42.19%) at district panchayat level. At block panchayat level, maximum extent of co-ordination was in 'pattern of participation' (67.31%) followed by 'pattern of interdependence' (62.22%), whereas, maximum gaps were in 'pattern of

- independence' (52.05%) followed by 'co-ordination committee' (50.72%). At grama panchayat level, the same trend observed was found at block panchayat level in 'extent of co-ordination performance' (64.59%) and (56.53% respectively), whereas, gaps were in 'pattern of independence' (67.76%) followed by 'pattern of authority (53.31%).
25. Maximum extent of co-ordination performance under 'functional dimension' at district panchayat level was in 'accountability' (72.22%) followed by 'information sharing' (64.51%), whereas, maximum gaps were in 'integration of services' (47.85%) followed by 'clarity of objectives and programmes' (46.20%) and 'project formulation' (43.61%). At block panchayat level, maximum extent of co-ordination was in 'accountability' (74.31%) followed by 'information sharing' (63.05%), whereas, gaps were in 'integration of services' (51.84%) followed by 'procedures for committee meetings' (49.19%). At grama panchayat level, maximum extent of co-ordination performance was in 'accountability' (72.35%) followed by 'technical orientation' (58.95%), whereas, maximum gaps were in 'project formulation' (59.12%) followed by 'procedures for committee meetings' (58.55%) and 'project implementation' (55.12%).
26. Maximum extent of co-ordination performance under 'technological dimension' at district, block and grama panchayat levels was in 'technology prioritization' and the percentages were, 64.03, 51.68 and 50.29 respectively, whereas, gaps were in 'technology integration' and the percentages were 50.80, 62.51 and 50.00 respectively.
27. Extent of co-ordination performance was maximum in 'self confidence' (85.15%) followed by 'attitude towards co-ordination' (84.10%) and 'leadership' (83.02%), whereas, gaps were in 'political interference' (50.36%) followed by 'workload' (38.87%) and 'empathy' (32.13%) under

'psychological and socio-political dimension' at district panchayat level. At block panchayat level, maximum extent of co-ordination was in 'attitude towards co-ordination' (85.99%) followed by 'self confidence' (78.81%) and 'leadership' (78.32%), whereas; gaps were in 'political interference' (52.67%) followed by 'workload' (48.66%) and 'interpersonal skills' (38.58%). At grama panchayat level, maximum extent of co-ordination performance was in 'attitude towards co-ordination' (76.89%) followed by 'self confidence' (76.31%) and 'motivation' (75.26%), whereas, gaps were in 'workload' (54.28%) followed by 'political interference' (43.88%) and 'job commitment' (40.79%) under the same dimension of co-ordination.

28. Maximum extent of co-ordination performance was in 'psychological and socio-political dimension' (72.46%) followed by 'functional dimension' (61.52%), whereas, gaps were in 'structural dimension' (43.66%) followed by 'technological dimension' (43.00%) at district panchayat level. At block panchayat level, the same trend was observed like as district panchayat but percentages varied i.e., 67.51 per cent, 57.50 per cent for 'extent of co-ordination' and 55.00 per cent and 43.65 per cent for 'gaps in co-ordination' respectively. At grama panchayat level, slight variations in the 'gaps of co-ordination' i.e., maximum gaps were in 'structural dimension' (50.78%) followed by 'technological dimension' (49.77%), whereas, extent of co-ordination were 65.57 per cent and 51.95 per cent in 'psychological and socio-political dimension' and 'functional dimension' respectively.
29. Maximum overall extent of co-ordination was in 'psychological and socio political dimension' (68.47%) followed by 'functional dimension' (57.71%), whereas, gaps were in 'technological dimension' (50.14%) followed by 'structural dimension' (43.99%). Extent of overall co-ordination performance in the entire dimensions was 60.26 per cent and 'gap' was 39.74 per cent.

30. "Lack of proper interaction among agencies involved in agricultural development" and "lack of integrated projects/schemes" were rated as the most important, while "professional jealousy of the representative limiting frequent communication with each other" was perceived as the least important regarding problems related to effective co-ordination among the agencies involved in agricultural development.
31. "Establishment of co-ordination committees at all three levels of panchayat involving the representatives of all agencies involved in agricultural development" was rated as the most important, while "fundamental restructuring of agency programmes, through collaborative projects/schemes" was perceived as the least important regarding suggestions to strengthen effective co-ordination among the agencies involved in agricultural development.
32. Empirical model for district panchayat showed that 'Panchayat Department' and 'Soil Conservation Department' were 'very close' to effective co-ordination, whereas, 'Irrigation Department' was 'far distant' under 'Panchayat Controlled Agencies'. 'Co-operation Department', 'Kerala Agro Industries Corporation', 'Kerala Land Development Corporation' and 'Sericulture Department' were 'very close' to effective co-ordination, whereas, 'Kerala Forest Research Institute (KFRI)' was 'far distant' under 'State Government Controlled Agencies'. 'Cooperative Society' under 'Co-operative Controlled Agencies' was 'moderately distant' to effective co-ordination. 'Rubber Board' was 'close' to effective co-ordination, whereas, 'The New India Assurance Co. Limited' was 'far distant' under 'Central Government Controlled Agencies'. In the case of 'Banking Controlled Agencies', 'National Bank for Agriculture and Rural Development (NABARD)' and 'South Malabar Gramin Bank' were 'very close' to effective

co-ordination, whereas, 'Syndicate Bank' was 'moderately distant' from effective co-ordination.

33. Empirical model for block panchayat showed that 'Irrigation Department' and 'Department of Agriculture' were 'very close' to effective co-ordination, whereas, 'Soil Conservation, 'Kudumbasree' and 'Animal Husbandry' were 'far distant' under 'Panchayat Controlled Agencies'. Only one agency, 'Fisheries' was 'close' to effective co-ordination, whereas, 'Kerala State Electricity Board' was 'far distant' under 'State Government Controlled Agencies'. 'Cooperative Society' under 'Cooperative Controlled Agencies' was 'far distant' and 'State Bank of Travancore' was 'close' to effective co-ordination, whereas, 'State Bank of India' was 'far distant' from effective co-ordination under 'Banking Controlled Agencies'.
34. Empirical model for grama panchayat showed that, 'Animal Husbandry' was 'very close' to effective co-ordination, whereas, 'Rural Development' was 'far distant' under 'Panchayat Controlled Agencies'. 'Kerala State Electricity Board' from 'State Government Controlled Agencies' and 'Co-operative Society' from 'Cooperative Controlled Agencies' were 'far distant' from effective co-ordination for agricultural development.

Implications of the study

The results of the present research reveal the following implications.

1. The development and standardization of the measurement device designed for quantifying effective co-ordination among the agencies involved in agricultural development would offer a meaningful and worthwhile tool to the erudite research fraternity in similar and related studies in this state and the country as well.

2. Standardized, reliable and valid multidimensional co-ordination scale can therefore, be used as an objective instrument to measure the level of co-ordination among the agencies involved in agricultural development.
3. Almost equal number of the participating agencies was classified either as 'high' or 'medium' in co-ordinating agricultural development activity. This implies that successful co-ordination will result not only by the association of different agencies in a co-ordinated programme, but requires systematic and sincere efforts towards achieving co-ordination on the part of agencies involved in agricultural development.
4. The findings revealed that high level of co-ordination was associated with both the quantitative and qualitative aspects of performance like political interference, participation in the committee, involvement of the representatives of agencies and majority of them were qualitative aspects like pattern of authority, pattern of communication, pattern of independence, teamwork, accountability, job commitment, empathy, leadership, etc. The implication is that for successful implementation of a co-ordinated programme, it is essential to have high level of co-ordination among the agencies involved in agricultural development.
5. Those agencies, which are 'very close' and 'close' to effective co-ordination under each category of agencies, generally play a dominant role in co-ordinating agricultural development activities at all panchayat levels.
6. Finally, policy makers or planners may use the 'co-ordination index', already established in the study, to measure the present level of co-ordination among the agencies involved in agricultural development within a very short span of time for identification of root problems, and thereby, they can plan appropriately.
7. Inputs and credit are the most important aspects of agricultural production. Excluding banking controlled agencies, other agencies like cooperative agency,

'National Insurance Company and Assurance Companies' were providing loan to farmers without the consent of technical agencies. The implication is that unless systematic efforts are made to bring about co-ordination, availability of credit and supply of inputs were bound to suffer, even in the so called co-ordinated programmes for overall agricultural development. Political active involvement with the representatives of agencies involved in agricultural development is also essential.

Suggestions for future research

To render the generalization of this study more applicable, a comprehensive research project of wider breadth and coverage, stretching over different states and including many more dimensions and subdimensions need to be undertaken.

The present study limited its span of investigation to officers-in-charge/representatives of the participating agencies only. To arrive at more conclusive evidence on this obscure concept, a study covering management personnel at many different rungs of the organizational hierarchy seems imperative.

The present study attempted to construct a multidimensional composite scale and its use at the operational level to measure the level of co-ordination and identify essential factors and indicators and explore important problems and gaps among the agencies involved in agricultural development. The study was conducted in only one district due to the peculiar nature and intricacy of the problem. This study may be extended to larger areas using other pertinent techniques like critical incident technique for more in depth study.

Finally studies among other development organizations also look relevant and pertinent.

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Appendices

APPENDIX-1



KERALA AGRICULTURAL UNIVERSITY
College of Horticulture
Vellanikkara 680656, Thrissur, Kerala

Dr. Joy Mathew
Associate professor
Extension

Department of Agricultural

Date:

Dear-----,

Shri Sunil Kumar Roy, one of the Ph.D. scholars of this department has undertaken a research study entitled “ **Dynamics of co-ordination for agricultural development in the context of democratic decentralization**” as part of his research study. After extensive review of available literature and discussions with extension scientists, sub dimensions with in the selected major dimensions viz., structural dimension, functional dimension, technological dimension and psychological and socio political dimension supposed to have close association with the study have been identified.

Considering your vast experience and professional expertise you have been selected as a judge to rate the relevancy of the sub dimensions on a three point continuum ‘More Relevant’, ‘Relevant’, and ‘Less Relevant’ which are provided against each sub dimension, by making a (✓) mark in the appropriate column.

I request you to kindly spare some of your valuable time for examining the sub dimensions critically and return the list duly filled at the earliest.

Thanking you

Yours sincerely

(Joy Mathew)

To

Schedule: 1

Given below are the sub dimensions assumed to be closely associated with the **structural** dimension of co-ordination. You may kindly consider each of them for their relevancy to be included under the structural dimension and check the operational definition for its correctness and objectivity. Further you are requested to judge the relevancy of the sub dimensions on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant' which are provided against each sub dimension by making a (✓) mark in the appropriate column.

Structural dimension

Number of Sub Dimension: 14

MR: More Relevant, R: Relevant, LR: Less Relevant

S.No.	Sub dimension	Relevancy		
		MR	R	LR
1	Pattern of Authority: It refers to the degree to which legalized power is delegated by the participatory agencies to its officers-in-charge/representatives to facilitate joint decision making with other agencies involved in agricultural development.			
2	Identity of Personnel: It refers to the extent to which the representatives/officers-in-charge of the participatory agencies is recognized by name for better co-ordination with other agencies involved in agricultural development			
3	Co-ordination Committee: It refers to the existence of a committee for synchronizing joint efforts of the officers-in-charge/representatives of the participating agencies involved in agricultural development in identifying local problems for agricultural development.			
4	Review Committee: It refers to the existence of a committee for helping to the officers-in-charge/representatives of the participating agencies to overview the progress of activities done by the agencies involved in agricultural development.			
5	Advisory Committee: It refers to the existence of a committee for ensuring effective technical support to the officers-in-charge/representatives of the participating agencies involved in agricultural development.			
6	Monitoring and Evaluation Committee: It refers to the existence of a committee to ascertain the strengths, weaknesses, threats and opportunities of agricultural development programmes for the officers-in-charge/ representatives of the participating agencies involved in agricultural development.			

S.No.	Sub dimension	Relevancy		
		MR	R	LR
7	Pattern of Communication: It refers to the degree to which the officers-in-charge/ representatives of the participating agencies communicate with other agencies involved in agricultural development using appropriate media for open exchange of ideas and information in order to better co-ordinate agricultural development.			
8	Interagency Linkage: It refers to the extent to which linkage of the participating agency with other agencies involved in agricultural development is present for fostering effective co-ordination in agricultural development.			
9	Pattern of Participation: It refers to the degree of regular and interactive participation of the officers-in-charge/representatives of the participating agencies in various meetings in order to link with other agencies involved in agricultural development.			
10	Role identity: It refers to the extent to which clear roles have been spelt out for the officers-in-charge/representatives of the participating agencies for ensuring effective co-ordination in agricultural development.			
11	Pattern of Interdependence: It refers to the extent to which the officers-in-charge/representatives of the participating agencies depend directly, reciprocally and indirectly with other agencies involved in agricultural development.			
12	Pattern of Independence: It refers to the degree to which freedom and discretionary power given by the participating agency to its officer-in-charge/representative for taking appropriate decisions on various activities related to agricultural development.			
13	Size of the Agency: It refers to the extent to which joint initiative is taken for agricultural development by the officers-in-charge/representatives of the participatory smaller or larger span of work agencies with each other.			
14	Infrastructure Facilities: It refers to the extent of availability of infrastructure facilities with the participating agency to co-ordinate agricultural development as perceived by the officer-in-charge/representative.			

Given below are the sub dimensions assumed to be closely associated with the **functional** dimension of co-ordination. You may kindly consider each of them for their relevancy to be included under the functional dimension and check the operational definition for its correctness and objectivity. Further you are requested to judge the relevancy of the sub dimensions on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant' which are provided against each sub dimension by making a (✓) mark in the appropriate column. .

Functional dimension

MR: More Relevant, R: Relevant, LR: Less Relevant

S.No.	Sub dimension	Relevancy		
		MR	R	LR
1	Clarity of Objectives and Programmes: It refers to the extent to which the officers-in-charge/representatives of the participating agencies involved in agricultural development perceive clearly the objectives and programmes for better co-ordination of agricultural development.			
2	Technical Orientation: It refers to the degree to which the officers-in-charge/representatives of the participating agencies have oriented towards technical or scientific advances in agriculture through training, conferences, and workshops etc.			
3	Integration of Services: It refers to the extent to which services like credit, input availability, are integrated and available to the officers-in-charge/representatives of the participating agencies involved in agricultural development.			
4	Procedure for Committee Meetings: It refers to the extent to which the officers-in-charge/representatives of the participatory agencies perceive the existence of an appropriate system for committee meetings (regular attendance, plan of schedule, timely conducting etc).			
5	Joint Action: It refers to the extent to which joint actions are undertaken by the officers-in-charge/representatives of the participating agencies for agricultural development.			
6	Teamwork: It refers to the extent to which the representatives/officers-in-charge of the participating agencies involved in agricultural development work together in groups in co-ordinating agricultural development			
7	Joint Decision Making: It refers to the extent to which the officers-in-charge/representatives of the participating agencies consult each other in diagnosing agricultural related problems and analyzing, comparing and selecting the best alternative solution or decision.			
8	Information Sharing: It refers to the degree to which the officers-in-charge/representatives of the participating agencies share reliable information with each other.			

S.No.	Sub dimension	Relevancy		
		MR	R	LR
9	Help Seeking: It refers to the extent to which support received for agricultural development by the officers-in-charge/representatives of the participating agencies involved in agricultural development with each other.			
10	Level of Autonomy: It refers to the degree to which substantial freedom, independence and discretion is enjoyed by the officers-in-charge/representatives of the participating agencies in scheduling the activities, determining the procedures, taking appropriate decision through consulting with other agencies involved in agricultural development.			
11	Resource Allocation: It refers to the extent to which timely resource allocation is done by the officers-in-charge/representatives of the participating agencies involved in agricultural development in consultation with each other.			
12	Financial Management: It refers to the extent to which financial management activities are done by the officers-in-charge/representatives of the participating agencies through consultations with other agencies involved in agricultural development.			
13	Time Management: It refers to the extent to which proper planning and implementation of activities related to agricultural development are done in a frame schedule manner by the officers-in-charge/representatives of the participating agencies in consultation with each other.			
14	Project Formulation: It refers to the extent to which agricultural development projects are formulated by the officers-in-charge/representatives of the participating agencies in consultation with each other.			
15	Project Implementation: It refers to the extent to which agricultural development projects are implemented by the officers-in-charge/representatives of the participating agencies in consultation with each.			
16	Level of Control: It refers to the degree to which the officers-in-charge/representatives of the participating agencies exercise control over each other in matters related to agricultural development.			
17	Accountability: It refers to the degree to which the officers-in-charge/representatives of the participating agencies involved in agricultural development are mutually responsible for the results of various activities undertaken by them.			

Given below are the sub dimensions assumed to be closely associated with the **technological** dimension of co-ordination. You may kindly consider each of them for their relevancy to be included under the technological dimension and check the operational definition for its correctness and objectivity. Further you are requested to judge the relevancy of the sub dimensions on a three point continuum 'More Relevant', Relevant', and 'Less Relevant' which are provided against each sub dimension by making a (v) mark in the appropriate column.

Technological dimension

Number of Sub Dimension: 04

MR: More Relevant, R: Relevant, LR: Less Relevant

S.No.	Sub dimension	Relevancy		
		MR	R	LR
1	Technology Development: It refers to the extent to which support or assistance is provided or received by the officers-in-charge/representatives of the participating agencies reciprocally from each for co-ordination development of need based agricultural technologies for the actual beneficiaries			
2	Technology Prioritization: It refers to the extent to which support or assistance is provided or received by the representatives/officers-in-charge of the participating agencies reciprocally from each other for co-ordinating the successful prioritization of need based agricultural technologies for the actual beneficiaries.			
3	Technology Integration: It refers to the extent to which support or assistance is provided or received by the representatives/officers-in-charge of the participating agencies reciprocally from each other for co-ordination the appropriate integration of need based agricultural technologies for the actual beneficiaries.			
4	Technology Dissemination: It refers to the extent to which support or assistance is provided or received by the representatives/officers-in-charge of the participating agencies reciprocally from each other for co-ordinating the successful dissemination of need based agricultural technologies for the actual beneficiaries.			

Given below are the sub dimensions assumed to be closely associated with the **psychological and socio political** dimension of co-ordination. You may kindly consider each of them for their relevancy to be included under the psychological and socio political dimension and check the operational definition for its correctness and objectivity. Further you are requested to judge the relevancy of the sub dimensions on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant' which are provided against each sub dimension by making a (✓) mark in the appropriate column .

Psychological and Socio Political Dimension

Number of Sub Dimension: 16

MR: More Relevant, R: Relevant, LR: Less Relevant

S.No.	Sub dimension	Relevancy		
		MR	R	LR
1	Empathy: It refers to the ability of the officer-in-charge/representative of the participating agency to correctly interpret the attitudes and intensions, wishes and objectives, of other agencies involved in agricultural development and the accuracy with which they can perceive situations from others standpoint and thus anticipate and predict their behavior			
2	Motivation: It is pertained to the value associated with the officer-in-charge/representative of the participating agency, which drives him or her to pursue agricultural development goals in order to attain a sense of accomplishment			
3	Accommodation: It refers to the extent to which suggestions or advice provided by other agencies are accepted by the officers-in-charge/representatives of the participating agencies involved in agricultural development avoiding watertight compartmentation.			
4	Interpersonal skills: It refers to the extent to which personal skills are established and maintained by the officers-in-charge/representatives of the participating agencies involved in agricultural development.			
5	Workload: It refers to the average quantum of work assigned by the participating agency to its officer-in-charge/representative which is limiting co-ordination of agricultural development activities with other agencies involved in agricultural development within a specified time.			
6	Attitude towards Co-ordination: It refers to the degree of favorable or unfavorable feeling of the officer-in-charge/representative of the participating agency towards other agencies involved in agricultural development.			
7	Job Stress: It refers to the average pressure of jobs assigned by the participating agency to its officer-in-charge/representative, which is limiting or restricting frequent communication with other agencies involved in agricultural development within a specified time.			

S.No.	Sub dimension	Relevancy		
		MR	R	LR
8	Team spirit: It refers to the extent to which the officer-in-charge/representative of the participating agency is working with other agencies involved in agricultural development at the expense of his or her personal and professional interests.			
9	Job Commitment: It refers to the degree to which the officer-in-charge/representative of the participating agency is committed to his or her job in relation to agricultural development.			
10	Morale Building: It refers to the extent to which the officer-in-charge/representative of the participating agency is involved in building morale with other agencies involved in agricultural development through co-operation, showing respect etc.			
11	Self Confidence: It refers to the extent to which the officer-in-charge/representative of the participating agency felt that he or she is confident in the various aspects of co-ordination for agricultural development.			
12	Rural-Urban Background: It refers to the background of the officers-in-charge/representatives of the participating agencies in terms of rural or urban upbringing.			
13	Leadership: It refers to the extent to which the officer-in-charge/representative of the participating agency is taking initiative, motivating and providing suggestions to other agencies involved in agricultural development and maintaining good relations with them in order to synchronize the efforts and action for agricultural development			
14	Political Interference: It refers to the extent to which political interference in decision-making regarding agricultural development activities is limiting or breaking the linkage of the officer-in-charge/representative of the participating agency with other agencies involved in agricultural development.			
15	Conflict Management: It refers to the extent to which conflicts are resolved by the officer-in-charge/representative of the participating agency through negotiation and open discussion with other agencies involved in agricultural development.			
16	Personal Recognition: It refers to the extent to which the representative/officer-in-charge of the participating agency is receiving non-monetary rewards from other agencies involved in agricultural development.			



KERALA AGRICULTURAL UNIVERSITY
College of Horticulture
Vellanikkara 680656, Thrissur, Kerala

Dr. Joy Mathew
Associate professor
Department of Agricultural Extension
College of Horticulture
Vellanikkara

Date: -----

Dear-----,

This is in connection with a research study undertaken by Shri Sunil Kumar Roy, Ph.D. scholar of this department under my guidance. In the study entitled “**Dynamics of co-ordination for agricultural development in the context of democratic decentralization**” he is trying to construct a multidimensional scale to measure the level of co-ordination among government agencies involved in agricultural development. In this direction, he has identified sub dimensions based on judges rating under each selected major dimension viz., structural, functional, technological and psychological/socio political. He has formulated an exhaustive list of items under each sub dimension based on review of literature and discussions with experts.

In view of your vast experience and professional expertise in the area of social science research we are extremely happy and honoured to request you to rank the sub dimensions and judge the relevancy of the items for their inclusion under the specific dimension to measure the level of co-ordination among government agencies involved in agricultural development.

Considering your busy schedule, it could be hard, but still we request you to be kind enough to spare some of your valuable time to go through the two schedules furnished overleaf and record your free and unbiased responses. Questions and clarifications if any are always welcome.

We assure you that the information collected will be kept strictly confidential and will be used only for purposes of the research study.

Your well considered opinion and wise counsel are solicited to help us complete the study in time.

Thanking you

Yours sincerely

To

(Joy Mathew)

Given below are the sub dimensions under 'Functional Dimension' and 'Technological Dimension' of co-ordination selected using judges' rating. You are requested to kindly rank each sub dimension according to their importance by making a (✓) mark in the appropriate row alone and not duplicating scores for each sub dimension either in columns or rows. Score '1' indicates 'Most important' and '14' 'Least important'. Kindly note that only one (✓) mark falls in each column or row.

Functional dimension
Number of Sub Dimension: 14

S.No.		Rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Clarity of objectives and Programme														
2	Technical orientation														
3	Integration of services														
4	Procedure for committee Meetings														
5	Joint action														
6	Teamwork														
7	Joint decision making														
8	Information sharing														
9	Level of autonomy														
10	Resource allocation														
11	Time management														
12	Project formulation														
13	Project implementation														
14	Accountability														

Technological dimension
Number of Sub Dimension: 04

S.No.	Sub dimension	Rank			
		1	2	3	4
1	Technology development				
2	Technology prioritization				
3	Technology integration				
4	Technology dissemination				

Title of the study: Dynamics of co-ordination for agricultural development in the context of democratic decentralization.

Objectives of the study: This study proposes to

1. construct a multidimensional scale to measure the level of co-ordination among various government agencies involved in agricultural development
2. identify the gaps in co-ordination and explore the problems among various government agencies involved in agricultural development
3. analyze the factors and identify the indicators of effective co-ordination related to each dimension
4. suggest a model for effective co-ordination among various government agencies involved in agricultural development.

Schedule: 3

Given below are the items assumed to be closely associated with the following sub dimensions of the 'Structural dimension' of co-ordination. You are requested to judge the relevancy of each item sub dimension wise on a five point continuum 'Most Relevant,' 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' by making a (✓) mark in the appropriate column. Further, you are also requested to check the items for their correctness and objectivity.

The term OFFICER in the text denotes OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Items	MoR	MR	R	LR	LeR
	Sub dimension: 1. Pattern of Authority					
01	Legitimate power is vested with the officer to facilitate joint decision-making for agricultural development.					
02	Legitimate power is vested with the officer to ensure attendance in various committee meetings related to agricultural development.					
03	Formal authority is vested with the officer for facilitating better co-ordination in agricultural development.					
04	Position coupled with authority is vested with the officer for ensuring co-ordination in agriculture.					
05	Lack of delegation of authority to the officers is hindering effective co-ordination in agriculture.					
	2. Co-ordination Committee					
06	Local level co-ordination committee involving the officers is ensuring the identification of actual problems in agricultural development.					
07	Co-ordination committee involving the officers is arranging for linking effectively with each other for agricultural development.					
08	Lack of co-ordination among the committee members is creating anarchy in formulating agricultural projects.					
09	The committee is synchronizing joint efforts with other agencies to achieve the common goal.					

S.No.	Items	MoR	MR	R	LR	LeR
	3. Pattern of Communication					
10	Frequent communication of the officer with other agencies is creating complexity for agricultural development.					
11	Accessibility of the officer with other agencies is facilitating agricultural development.					
12	The officer communicates with other agencies through individual approach than group approaches to co-ordinate agricultural development.					
13	The officer communicates with other agencies using both individual and group approaches in co-ordinating agricultural development.					
14	The officer is using parallel channels of communication with other agencies to bind the efforts for agricultural development.					
15	Parallel channel of communication used by the officer with other agencies is creating rumors.					
	4. Pattern of Participation					
16	The officer is participating in various meetings, seminars, conferences, etc with other agencies for agricultural development.					
17	Interactive participation of the officer with other agencies is fostering effective co-ordination.					
18	Symbolic participation of the officers in agricultural development activities is determining the quality of co-ordination for agricultural development.					
	5. Role Identity					
19	Specific role has been identified for the officer to better co-ordination in agricultural development activity.					
20	The officer specifically identified for a particular role is creating delays in decision making for co-ordinating agricultural development activities.					
21	Clear role of the officer (i.e., rights and duties clearly defined for each agency) is ensuring effective co-ordination with other agencies involved in agriculture.					
22	Flexibility of the officer is ensuring appropriate decision-making in co-ordinating agricultural development activity.					
23	Bureaucratic rigidity of the officers is posing problem in co-ordinating agricultural development.					
	6. Pattern of Interdependence.					
24	Interdependence of the officers of the participating agencies is fostering reciprocal acceptability for agricultural development.					
25	The participating agency is directly interdependent with other agencies in co-ordinating agricultural development.					
26	The participating agency is reciprocally interdependent with other agencies in co-ordinating agricultural development.					
27	The participating agency is indirectly interdependent with other agencies in achieving agricultural development.					
28	The officers are competitively interdependent in co-ordinating agricultural development.					

S.No.	Items	MoR	MR	R	LR	LeR
29	7. Pattern of Independence:					
30	The officer is self-reliant in performing agricultural development activity.					
31	The officer is depending fully on other agencies in co-ordinating agricultural development programmes.					
32	Autocratic functioning of the local government body is breaking the linkage of the officers for better co-ordination.					
33	Independent set up is creating duplication of agricultural development activity for the officer.					
34	The officer is free to take appropriate decisions independently regarding agricultural development.					
	Agricultural development decisions taken independently by the officer is creating duplication of agricultural development activities					

Given below are the items assumed to be closely associated with the following sub dimensions of the 'Functional dimension' of co-ordination. You are requested to judge the relevancy of each item sub dimension wise on a five point continuum 'Most Relevant,' 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' by making a (✓) mark in the appropriate column. Further, you are also requested to check the items for their correctness and objectivity.

The term **OFFICER** in the text denotes **OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.**

S.No.	Description of item	MoR	M R	R	L R	LeR
	1.Clarity of Objectives and Programmes					
01	Clearly written statement of objectives and programmes is followed by the officer in co-ordinating the agricultural development activities.					
02	Written statement of objectives and programmes is time consuming and difficult for the officer in co-ordinating the agricultural development activities.					
03	Mutual understanding of the objectives and programmes by the officers is accelerating co-ordinated action.					
04	Clear objectives and programmes for agricultural development have been formulated by the officer in consultation with other agencies.					
05	Programmes planned by the officers without consulting other agencies is creating delays in co-ordinating agricultural development activities					
	2.Technical Orientation					
06	Training provided to officer is fostering co-ordinated efforts for agricultural development.					
07	Training to the officer is helping very little in co-ordinating efforts with other agencies.					
08	Technical orientation through seminars, conferences, and workshops is synchronizing the officer's efforts with other agencies for agricultural development.					
	3.Integration of Services					
09	Credit made available by the officer in advance in consultation with concerned agencies is ensuring effective agricultural development.					
10	The officer of the credit-supplying agency is sufficient to distribute credit without consulting the concerned technical agencies.					
11	Essential inputs made available by the officer in advance in consultation with the technical agency is enhancing agricultural development.					
12	The officer is making inputs available without assessing any information from the technical agency.					
13	Integration of services for agricultural development by the officer is ensuring effective co-ordination for agricultural development.					
	4.Procedure for Committee Meetings					
14	Regular attendance in the co-ordination committee meeting is helping the officer to keep track of up-to-date progress of agricultural development.					
15	Co-ordination committee meetings conducted as per preplanned schedule is encouraging to the officers.					
16	The officer is following plan of schedule for conducting co-ordination committee meeting with other agencies.					

S.No.	Description of item	MoR	M R	R	L R	LeR
	5.Team work					
17	Lack of teamwork of the officers is creating contradictions in agricultural development.					
18	The officer is working as a team with officers of other agencies.					
19	The officer is co-operating with other agencies in co-ordinating agricultural development.					
20	Teamwork by the officer is establishing positive feelings with officers of other agencies.					
21	Teamwork by the officers is providing reciprocal inspiration to each other.					
22	Periodic joint visits by the officer with other agencies are ensuring timely technical information to the actual beneficiaries.					
23	Continued joint efforts of the officer with other agencies are solving the critical problems in agricultural development.					
24	Agricultural development activities are effectively harmonized by the officer in collaboration with other agencies.					
	6.Information Sharing					
25	The officer is providing reliable information regarding agricultural development to other agencies.					
26	The officer of the Department of Agricultural Extension is enough to provide reliable information regarding agricultural development.					
27	Timely information on appropriate technology is provided by the officer in consultation with other agencies.					
28	The officer sharing information about agricultural development with other agencies is time consuming and unproductive.					
	7. Resource Allocation					
29	The officer is ensuring timely resource allocation in consultation with other agencies.					
30	The officer is ensuring timely resource allocation, but without consulting other agencies.					
31	The officers optimize resource allocation jointly for saving time and money.					
32	The officers critically analyze allocation of scarce resources for agricultural development.					
	8. Time Management					
33	The officer is getting little chance to consult other agencies for timely planning and implementation of agricultural development activity.					
34	Time management techniques followed by the officers in project formulation and implementation is saving time and money.					
35	Planning and implementation of agricultural development activity is done jointly by the officers in time bound manner.					
36	Conducting agricultural development activity jointly with other agencies is cumbersome and difficult.					

S.No.	Description of item	MoR	M R	R	L R	LeR
	9. Project Formulation					
37	Agricultural development projects are formulated by the officer through active participation with other agencies.					
38	Project formulation by the officer in consultation with other agencies is saving time and agricultural resources.					
39	Formulation of agricultural development projects by the officer in consultation with other agencies is time consuming and difficult.					
	10. Project Implementation					
40	Project implementation is done by the officer in consultation with other agencies.					
41	Project implementation done by the officer without consulting other agencies is easier and more effective.					
42	Project implementation done jointly by the officers is saving time and resources.					
	11. Accountability					
43	Proper answerability of the officer is establishing reliability with other agencies.					
44	Answerability of the officer is creating complexity in agricultural development activities.					
45	The officers are mutually responsible for conducting agricultural development activities.					
46	Accountability of the officers is improving mutual trust for agricultural development					

Given below are the items assumed to be closely associated with the following sub dimensions of the 'Technological dimension' of co-ordination. You are requested to judge the relevancy of each item sub dimension wise on a five point continuum 'Most Relevant,' 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' by making a (✓) mark in the appropriate column. Further, you are also requested to check the items for their correctness and objectivity.

The term OFFICER in the text denotes OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Description of item	MoR	M R	R	L R	LeR
	1.Technology Prioritization					
01	The officer is involving in technology prioritization with other agencies.					
02	Technologies prioritized by the officer in consultation with other agencies are creating problems in development efforts.					
03	Need based technologies prioritized jointly by the officers is saving time and resources.					
	2.Technology Integration					
04	Technology integration by the officer in consultation with other agencies					
05	Technology integration by the officer in consultation with other agencies is creating complexity in development efforts.					
06	Package of technologies are blended by the officer through assistance from other agencies.					
07	Technology integrated by the officer involving other agencies is balancing development efforts.					
08	Technology integrated by the officer in consultation with other agencies is enhancing mutual agreement for development.					

Given below are the items assumed to be closely associated with the following sub dimensions of the 'Psychological and Socio political dimension' of co-ordination. You are requested to judge the relevancy of each item sub dimension wise on a five point continuum 'Most Relevant,' 'More Relevant', 'Relevant', 'Less Relevant' and 'Least Relevant' by making a (A) mark in the appropriate column. Further, you are also requested to check the items for their correctness and objectivity.

The term OFFICER in the text denotes OFFCER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Description of item	MoR	M R	R	L R	LeR
	1. Empathy					
01	Reciprocal understanding of the objectives by the officers is enhancing development efforts.					
02	Objectives perceived differently by the officers are creating conflict in achieving agricultural development goals.					
0.3	Matching perception of the officer with other agencies is leading to effective co-ordination in agriculture.					
04	The officers respect each other for their decisions in co-ordinating agricultural development activity.					
05	The officer is pushing heart and soul to support other agencies in co-ordinating development efforts.					
06	The officer is holding important information for the agency's benefit rather than disclosing to other agencies.					
	2. Motivation					
07	Personal prejudices of the officer are breaking effective communication with other agencies in development efforts.					
08	Interagency co-ordination is impeded by the fear of the officer that one agency wants to dominate the process.					
09	The officer's efforts have little effect in motivating the participating agency for agricultural development.					
10	The officer is trying to encourage other agencies in development efforts.					
11	The officer is offering constructive criticism for improving the performance of other agencies.					
12	The officer is critical regarding the performance of other agencies.					
	3. Accommodation					
13	Suggestions provided by the officer to other agencies are gladly accepted.					
14	Acceptance of suggestions provided by the officer to other agencies is creating a complex situation.					
15	The officer is accepting the new ideas and suggestions from other agencies.					
16	Opinions provided by the officer to the participating agencies are creating delays in taking appropriate decision for agricultural development.					
17	Watertight compartmentation of the agencies is creating blocks for agricultural development.					
18	Watertight compartmentation of the agencies is ensuring speedy implementation of agricultural development activities.					
	4. Inter-personal Skills					
19	The officer's interpersonal skills are facilitating frequent communication with other agencies.					

S.No.	Description of item	MoR	M R	R	L R	LeR
20	Frequent communication by the officer with other agencies is time consuming and difficult.					
21	Agricultural development activities are better co-ordinated by the officer through mutual trust with other agencies.					
22	Establishment of interpersonal skills by the officers is getting hindered due to various reasons.					
23	Interpersonal relations are established by the officer with other agencies through organizing seminars, conferences, personal contacts, meetings etc.					
24	The officer is establishing interpersonal relations with other agencies through providing reliable information on matters related to their area of operation.					
25	Development of interpersonal relation by the officer is impeded by the bureaucratic rigidity of other agencies.					
26 27 28 29	5.Workload					
	The officer's workload is limiting frequent communication with other agencies in co-ordinating development efforts.					
	Workload is creating scope to the officer for frequent communication with other agencies.					
	Workload is restricting participation in key interventions (seminar, conferences, meetings) with other agencies in co-ordinating development activities.					
30 31 32 33	6.Attitude towards Co-ordination					
	The officer is favorably inclined towards other agencies in co-ordinating agricultural development activities.					
	Attitude of the officer towards other agencies is creating complexity in agricultural development.					
	The officer has positive attitude in co-ordinating agricultural development programmes with other agencies.					
34 35 36 37	7.Job Commitment					
	Active involvement of the officer in jobs related to agricultural development is ensuring better co-ordination with other agencies.					
	The officer is ready to co-ordinate agricultural development activities with other agencies.					
	The officers are willingly endorsing the duties and responsibilities in co-ordinating agricultural development efforts.					
38 39	8.Self Confidence					
	Self-confidence of the officer is ensuring better liaison with other agencies.					
39	The officer is taking decisions unilaterally without consulting other agencies.					

S.No.	Description of item	MoR	M R	R	L R	LeR
40	The officer is confidently solving the problems in agricultural development through consulting with other agencies.					
41	Self-confidence of the officer is encouraging better co-ordination with other agencies in agricultural development activities.					
9. Leadership						
42	Leadership of the officer is synchronizing the efforts of other agencies for better agricultural development.					
43	As a professional leader, the officer is maintaining good relation, peace and working environment with other agencies.					
44	Democratic leadership of the officer is reflecting directly on effective co-ordination with other agencies for agricultural development.					
45	The officer is taking initiative to prioritize agricultural development activities through consultation with other agencies.					
10. Political Interference						
46	Political interference is breaking linkages with other agencies in decision-making for agricultural development					
47	Political interference is providing little chance to the officer to consult with other agencies in co-ordinating agricultural development activities.					
48	Political domination over the officer is ensuring peoples participation for agricultural development.					
49	Involvement of political leaders with the officers is ensuring timely implementation of agricultural development programmes.					
50	Political interference is creating job stress for the officers.					



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Dr. Joy Mathew
Associate professor
Department of Agricultural Extension
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Vellanikkara

Date: -----

Dear-----,

This is in connection with a research study undertaken by Shri Sunil Kumar Roy, Ph.D. scholar of this department under my guidance. In the study entitled “ **Dynamics of co-ordination for agricultural development in the context of democratic decentralization**” he is trying to explore problems/constraints and pertinent suggestions related to effective co-ordination among government agencies involved in agricultural development. In this direction, he has identified an exhaustive list of problems/constraints and probable suggestions based on discussions with experts in the field level.

In view of your vast experience and professional expertise in the area of social science research we are extremely happy and honoured to request you to judge the relevancy of the problems/constraints and suggestions for their inclusion in the schedule.

Considering your busy schedule, it could be hard, but still we request you to be kind enough to spare some of your valuable time to go through the schedule furnished overleaf and record your free and unbiased responses. Questions and clarifications if any are always welcome.

We assure you that the information collected will be kept strictly confidential and will be used only for purposes of the research study.

Your well considered opinion and wise counsel are solicited to help us complete the study in time.

Thanking you

Yours sincerely

To

(Joy Mathew)

Schedule: 4

Following are the problems/constraints related to co-ordination among agencies involved in agricultural development. Please tick mark (✓) the appropriate alternative for each problem/constraint according to its relevancy on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant.' You may also add any other problem/constraint, which you think, is relevant in the context of the present study.

S.No.	Problems/constraints	MR	R	LR
1	Lack of delegation of authority to the representatives of the agency to co-ordinate for agricultural development			
2	Centralized authority by higher level management.			
3	Lack of proper interaction among agencies involved in agricultural development			
4	Lack of proper guidelines/instructions for the representatives of agencies involved in agricultural development			
5	Lack of appropriate linkage among agencies.			
6	Lack of appropriate channels of communication among agencies.			
7	Lack of meaningful feedback among agencies			
8	Lack of specific role for the representatives			
9	Bureaucratic involvement and rigidity affecting individual commitment in achieving common goal			
10	Lack of interdependence among agencies			
11	Independent setup at all levels enhances symbolic participation for the representatives of the agency.			
12	Autocratic functioning of the local government body breaks the linkage among agencies			
13	Individual agency is taking decision unilaterally for agricultural development			
14	Lack of interdependence among agencies due to routine job provided by government			
15	Projects/schemes identified by local government body involving few agencies neglecting other agencies involved in agricultural development			
16	Lack of common projects/schemes			
17	Lack of interactive participation among members in committee meetings related to agricultural development			
18	Lack of common understanding and mutual trust among agencies			
19	Similar type of projects/schemes run concurrently causing duplication of activities among agencies			
20	Lack of proper training programme for the representatives			
21	Lack of seminars, conferences involving the representatives of all agencies involved in agricultural development			
22	Inputs and credit distribution without assessing any information from the technical agencies			
23	Lack of co-ordination among members of various committees for agricultural development			
24	Lack of joint decision in formulating and implementing schemes			

S.No.	Problems/constraints	MR	R	LR
25	Lack of accountability among representatives of agencies			
26	Lack of mutual agreement among agencies in technology prioritization and implementation			
27	Personal prejudices of the representatives of agencies.			
28	Professional jealousy of the representatives limiting frequent communication with each other.			
29	Watertight compartmentation of the agencies.			
30	Mistrust and competition among agencies			
31	Lack of reciprocal reward, recognition and appreciation to each other			
32	Lack of positive attitude of the representatives towards co-ordination			
33	Political biases and partiality in implementing development projects			
34	Lack of technical committee at all levels			
35	Lack of monitoring and evaluation committee at all levels			
36	Conflict between bureaucrats and representatives of agencies involved in agricultural development			
37	Conflict between administrative staff and technical staff.			
38	Prime agricultural development agency is holding important information for the agency's benefit rather than disclosing to other agencies			

Following are the suggestions related to strengthen co-ordination among agencies involved in agricultural development. Please tick mark (✓) the appropriate alternative for each suggestion according to its relevancy on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant.' You may also add any other pertinent suggestions, which you think, are relevant in the context of the present study.

S.No.	Suggestions	MR	R	LR
01	Establishment of co-ordination committees at all levels involving the representatives of all agencies involved in agricultural development.			
02	Integrated training programmes for the representatives of all agencies.			
03	Joint conferences among agencies involved.			
04	Joint service arrangement and interlinking of personnel among agencies involved in agricultural development			
05	Formulating integrated projects/schemes.			
06	Regular co-ordination committee meetings and interaction among the members to identify the problems and immediate corrective action.			
07	To avoid mistrust and competition among the representatives of agencies involved in agricultural development.			
08	The genuine feeling should be perceived in the mind of the representatives of the agencies that every one is working 'with' not 'under'			
09	Reciprocal reward, recognition and appreciation among the representatives of agencies involved in agricultural development.			
10	Frequent formal and informal contact among the representatives of agencies involved in agricultural development			
11	Teamwork for joint formulation and implementation of the projects/schemes.			
12	Sharing of resources among agencies on a 'give and take policy' basis.			
13	Appropriate leadership is required for taking initiative to synchronize the efforts of agencies involved in agricultural development.			
14	Joint technical committees and monitoring and evaluation committees at all levels i.e. district, block and grama panchayat.			
15	Structural and functional arrangement for effective co-ordination among agencies for sharing information.			
16	Proper guidelines/instructions on co-ordinating action for the representatives of agencies involved in agricultural development			

S.No.	Suggestions	MR	R	LR
17	Elected members of the local government body should adopt a development oriented approach.			
18	Balancing of interests and purposes between administrative staff and technical staff.			
19	Appropriate leadership role should play by technical agencies.			
20	Joint visits and monitoring the projects/ schemes.			
21	Legitimate power must be provided to the representatives of the agencies for taking joint decision in implementing agricultural development programmes			
22	Fundamental restructuring of agency programmes through collaborative projects/schemes.			
23	Interagency agreement on duties, responsibilities, procedures and practices for implementing projects/schemes.			
24	Mutual acquaintance among the representatives of agencies involved in agricultural development.			
25	Brotherhood relation rather than bossism should be maintained among the representatives of agencies involved in agricultural development.			
26	Administrative co-ordination should be emphasized on democratic decentralization.			
27	Periodic review meeting and orientation meeting are essential in promoting effective co-ordination among agencies involved in agricultural development.			
28	A separate co-ordination cell is essential at all levels.			
29	Co-ordination policy is needed and that is to be made by government itself.			
30	Involving all the representatives of agencies involved in agricultural development should identify Projects/schemes.			
31	Agencies must have clearly written statement of objectives and programme.			
32	The members of the local body should have positive attitude towards technical reasoning and basic approach of the projects/schemes.			
33	Personal prejudices of the representatives of agencies involved in agricultural development should avoid.			

Number and name of the government agencies related to agricultural development in
Thrissur District Panchayat

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head/In charge of the Agency
District Panchayat Controlled (8)	1. Department of Agriculture.	C. Rabindranathan	Joint Director (JDA or PAO)
	2. Soil Conservation Department	P.N. Prem Kumar	District Soil Conservation Officer
	3. Animal Husbandry Department	Dr. K.G. Suma	Joint Director (JDAH)
	4. Department of Fisheries	P.R. Mony	Deputy Director
	5. Dairy Development Department.	K.A. Tony	Dairy Development Officer
	6. Irrigation Department	T.R. Vasu	Assistant Engineer
	7. District Rural Development Agency (DRDA)	Ram Monohar	Project Officer and Deputy Development Commissioner
	8. Panchayath Dept.	N. Chandrasenan	Deputy Director of Panchayat
Direct State Government Controlled (12)	1. Kerala State Land Use Board	K.G. Omena	Secretary
	2. Kerala Land Development Corporation	P.K. Rabendra	Construction Engineer
	3. Kerala Forest Research Institute	MD. Kunnu	Deputy Commissioner of Forest Research
	4. Soil Survey Department	K.J. Raja Mohan	Deputy director
	5. Kerala State Electricity Board	Vincent Antony	Executive engineer
	6. Forestry Department	Mr. Ganga Singh	District Forest Officer
	7. Social Forestry	Shashi Kumar	Assistant Conservator of Forestry
	8. Kerala Agro Industries Corporation	C.P. Paul	Divisional Engineer
	9. Ground Water Department	V.T. Devis	Executive Engineer
	10. Coir Development Agency	P.T. Thomas	Assistant Registrar
	11. Serified (Sericulture Department)	T. Babu	District Sericulture Officer
	12. Cooperation Department	Smt. Ragmini Kutty Amma	Joint Registrar
Cooperative Controlled (1)	Cooperative Bank (ADB)	C.B. Girijan	Secretary
Central Government Controlled (4)	1. The New India Assurance Co. Ltd.	P. Radha Krishnan	Branch manager
	2. Rubber Board	Rughavan	Deputy Rubber Commissioner
	3. United India Insurance Co. Ltd	K.P. Lakshmanan	Senior Divisional Manger
	4. National Insurance Co. Ltd.	P.S. Menon (Sasidharan)	Assistant Administrative Officer
Banking controlled Agency (7)	1. South Malabar Gamin Bank	P.N.G. Pillai	Area Manager
	2. National Bank for Agriculture and Rural Development (NABARD)	C. Ramakrishna	Assistant General Manager
	3. Canara Bank	C. Raveendranathan	Lead District Manager
	4. Syndicate Bank	S. Ramendran	Senior Branch Manager
	5. Punjab National Bank	M.M. Thomas	Senior manager
	6. Indian Overseas Bank	Swaminathan	Chief manager
	7. State Bank of Travancore (ADB)	K.K. Narayanan	Manager

Number and name of the government agencies related to agricultural development at
Cherpu Block Panchayat

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head or In charge of the Agency
Block Panchayat Controlled (5)	1.State Department of Agriculture.	Jose Varghese	Assistant Director
	2.Minor Irrigation Department	Mr. Sudhir Kumar	Assistant Executive Engineer
	3.Block Panchayat Department	P. Unnikrishna	BDO, RDO/C Secretary
	4.Dairy Development Department.	Simon Chrish	Dairy Development Officer (DDO)
	5. Animal Husbandry Department	Dr.N. Sadhesh Kumar	Asst.Project Officer
State Government Controlled (1)	1.Kerala State Electricity Board	A.S. Das	Asst. Executive Engineer
Cooperative Controlled (1)	1.Cooperative Bank (ADB)	Ananda Valli	Branch manager
Banking controlled (4)	1.South Malabar Gamin Bank	Venu Gopal	Manager
	2.Canara Bank	Jose	Manager
	3.State Bank of Travancore	Thampi Paul	Manager
	4.State Bank of India	Shiva Kumar	Manager

Number and name of the government agencies related to agricultural development at Kodakara Block Panchayat level.

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head or In charge of the Agency
Block Panchayat Controlled (6)	1. Department of Agriculture.	Shyla C.S.	Assistant Director
	2. Minor Irrigation Department	Shaibi George	Assistant Executive Engineer
	3. Block Panchayat Department	P.K. Sudhan	BDO, RDO/C Secretary
	4. Dairy Development Department.	K. Malethy	Dairy Development Extension Officer (DDEO)
	5. Animal Husbandry Department	Dr. Vijoy Kumar	Asst. Project Officer
	6. Block Rural Development Department	E.K. Suttan	Literacy officer
State Government Controlled (1)	1. Kerala State Electricity Board	P.K. Abu Bakker	Asst. Executive Engineer
Cooperative Controlled (2)	1. Cooperative Bank (ADB)	Lizy Joseph	Branch manager
	2. Iringjalakuda Co-op. and Rural Development Bank (Taluka level) ADB	K.L. Verghese	Secretary
Banking controlled Agency (4)	1. South Malabar Gamin Bank	K.V. Ram Kumar	Manager
	2. State Bank of Travancore	M.J. Ramen	Chief Manager
	3. State bank of India	Swaminathan	Manager
	4. Central Bank of India	Joy Thomas K	Manager

Number and name of the government agencies related to agricultural development at Chalakuddy Block Panchayat level.

Category Of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head/In charge of the Agency
Block Panchayat Controlled (7)	1.Department of Agriculture.	C. A. Usha	Assistant Director
	2.Minor Irrigation Department	Victor	Assistant Executive Engineer
	3.Block Panchayat Department	T.G. Mono Mohan	BDO, RDO I/C Secretary
	4.Dairy Development Department.	M.V. Devasikutty	Dairy extension Officer (DEO)
	5.Kudumbassary	Kunna Abdullah	Project officer
	6.Soil Conservation Department	Thara Mohonan	Soil Conservation Officer
	7.Animal Husbandry Department	Dr. V.V Raji	Sr. Veterinary Surgeon
State Government Controlled (2)	1.Kerala State Electricity Board	T.A. Koriokos	Asst. Executive Engineer
	2. Forestry Department	V.V. Mohonan	Forest Officer
Cooperative Controlled (1)	1.Cooperative Bank (ADB)	K.K Molli	Branch manager
Banking Controlled Agency (4)	1.South Malabar Gamin Bank	Sateesan Valuathan	Manager
	2.Canara Bank	Bidhyananda	Manager
	3.State Bank of Travancore	C.T. Sudhir	Chief manager
	4.State Bank of India	Jose Thomas	Manager

Number and name of the agencies related to agricultural development at Irinjalakuda Block Panchayat level.

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head or In charge of the Agency
Block Panchayat Controlled (5)	1. Department of Agriculture.	John G. Thakkekans	Assistant Director
	2. Minor Irrigation Department	Beena Gopal	Assistant Executive Engineer
	3. Block Panchayat Department	V.K. Chandra Shekar	BDO, RDOI/C Secretary
	4. Dairy Development Department.	V.G. Parvathy	Dairy Development Officer (DDO)
	5. Animal Husbandry Department	Dr. P.S. Rajendran	Sr. Veterinary Surgeon
State Government Controlled (1)	1. Kerala State Electricity Board	M.R. Rabindranathan	Asst. Executive Engineer
Co-operative Controlled (1)	1. Agricultural and Rural Development Bank	P. Sanker	Secretary
Banking Controlled Agency (4)	1. South Malabar Gamin Bank	E. Chadran	Manager
	2. State Bank of Travancore	V. Ramesh	Chief Manager
	3. Canara Bank	Narayan I.R.	Manager
	4. Indian Overseas Bank	Venu Gopal	Manager

Number and name of the agencies related to agricultural development at porathiserry grama panchayat.

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head/In charge of the Agency
Grama Panchayat Controlled (4)	1. Department of Agriculture.	V.R. Narendran	Agriculture Officer
	2. Rural Development Department.	Ando	Village Extension Officer (VEO)
	3. Grama Panchayat department	C.C. Magy	Secretary
	4. Animal Husbandry Department	Dr.T.A. Babu Raj	Veterinary Surgeon

Number and name of the government agencies related to agricultural development at Cherpu Grama Panchayat.

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head/In charge of the Agency
Grama Panchayat Controlled (4)	1. Department of Agriculture.	Lalitha	Agriculture Officer
	2. Rural Development Department.	Vipin Chandran	Village Extension Officer (VEO)
	3. Grama Panchayat department	Krishna Kumari P. V.	Secretary
	4. Animal Husbandry Department	Dr. N. Sadhesh Kumar	In charge of Grama Panchayat (Sr. Veterinary Surgeon)
Co-operative Controlled (1)	1. Co-operative Society Bank.	M.T. Philomina	Secretary

Total number and name of the Government Agencies related to Agricultural Development at Kodakara Grama Panchayat.

Category of Agencies	Name of Agency	Name of Head or In charge of the Agency	Designation of Head/In charge of the Agency
Grama Panchayat Control (4)	1. Department of Agriculture.	K.K. Sateeshan	Agriculture Officer
	2. Rural Development Department.	Veloyudhan	Village Extension Officer (VEO)
	3. Grama Panchayat department	Sagamesan	Secretary
	4. Kudumbassary	C.V. Mohan Das	Mission Co-ordinator

Total number and name of the Government Agencies related to Agricultural Development at Pariyaram Grama Panchayat.

Category of Agencies	Name of Agencies	Name of Head/ In charge of the Agency	Designation of Head/In charge of the Agency
Grama Panchayat Controlled (4)	1. Department of Agriculture.	Elsy Augustin	Agriculture Officer
	2. Rural Development Department.	Joya Suredran	Lady Village Extension Officer (VEO)
	3. Grama Panchayat Department	P.K. Subaimani	Secretary
	4. Animal Husbandry Department	Siba Das	Livestock Inspector
State Government Controlled (1)	1. Kerala State Electricity Board	K. Prabhakaran	Asst. Engineer
Co-operative Controlled (1)	1. Service Co-operative society Bank.	C.K. Saraswati	Secretary

APPENDIX-11

The relevancy co-efficient of the sub dimensions under major dimensions calculated after judges rating on the first stage.

Structural dimension
Number of Sub Dimensions: 14

S.No.	Sub dimensions	Relevancy Coefficient
1	Pattern of Authority	98.15
2	Identity of Personnel	70.37
3	Co-ordination Committee	97.22
4	Review Committee	80.56
5	Advisory Committee	82.41
6	Monitoring and Evaluation Committee	89.81
7	Pattern of Communication	97.22
8	Interagency Linkage	44.44
9	Pattern of Participation	95.37
10	Role identity	87.96
11	Pattern of Interdependence	92.59
12	Pattern of Independence	88.89
13	Size of the Agency	39.81
14	Infrastructure Facilities	65.74

The relevancy co-efficient of the sub dimensions under major dimensions calculated after judges rating on the first stage.

Functional dimension

Number of Sub Dimension: 17

S.No.	Sub dimensions	Relevancy Coefficient
1	Clarity of objectives and programmes	96.30
2	Technical orientation	87.04
3	Integration of services	89.81
4	Procedures for committee meetings	90.74
5	Joint action	87.04
6	Teamwork	96.30
7	Joint decision making	93.52
8	Information sharing	94.44
9	Help seeking	41.67
10	Level of autonomy	80.56
11	Resource allocation	90.74
12	Financial management	57.41
13	Time management	95.37
14	Project formulation	91.67
15	Project implementation	87.96
16	Level of control	37.04
17	Accountability	83.33

Technological dimension

Number of Sub Dimension: 04

S.No.	Sub dimensions	Relevancy Coefficient
1	Technology development	91.67
2	Technology prioritization	92.59
3	Technology integration	88.89
4	Technology dissemination	93.52

The relevancy co-efficient of the sub dimensions under major dimensions calculated after judges rating on the first stage.

Psychological and Socio Political Dimension

Number of Sub Dimensions: 16

S.No.	Sub dimensions	Relevancy Coefficient
1	Empathy	95.37
2	Motivation	97.22
3	Accommodation	82.40
4	Interpersonal skills	93.52
5	Workload	87.04
6	Attitude towards Co-ordination	82.40
7	Job Stress	85.19
8	Team spirit	94.44
9	Job Commitment	81.48
10	Morale Building	43.52
11	Self Confidence	90.74
12	Rural-Urban Background	36.11
13	Leadership	96.30
14	Political Interference	97.22
15	Conflict Management	94.44
16	Personal Recognition	64.81

Technological dimension
Number of Sub Dimension: 04

xxxviii

S.No.	Sub dimension	Rank				Total Score	Mean score
		1	2	3	4		
1	Technology development	23	5	12	23	154	158
2	Technology prioritization	25	21	14	3	194	
3	Technology integration	12	29	14	8	171	
4	Technology dissemination	3	8	23	29	111	
TOTAL		63	63	63	63		

Scale Values and Q Values of Structural dimension'.

The term OFFICER in the text denotes OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Items	Scale Value	Q Value
Sub dimension: 1. Pattern of Authority			
01	Legitimate power is vested with the officer to facilitate joint decision-making for agricultural development.	3.551	1.22
02	Legitimate power is vested with the officer to ensure attendance in various committee meetings related to agricultural development.	3.240	1.30
03	Formal authority is vested with the officer for facilitating better co-ordination in agricultural development.	3.551	1.32
04	Position coupled with authority is vested with the officer for ensuring co-ordination in agriculture.	3.96	1.88
05	Lack of delegation of authority to the officer is hindering effective co-ordination in agriculture.	3.541	1.23
2. Co-ordination Committee			
06	Local level co-ordination committee involving the officers is ensuring the identification of actual problems in agricultural development.	3.730	1.30
07	Co-ordination committee involving the officers is linking effectively with other agencies for agricultural development.	3.621	1.39
08	Lack of co-ordination among the committee members is creating anarchy in formulating agricultural projects.	4.530	2.27
09	The committee is synchronizing joint efforts with other agencies to achieve the common goal.	3.61	1.48
3. Pattern of Communication			
10	Frequent communication of the officer with other agencies is creating complexity for agricultural development.	2.501	2.49
11	Accessibility of the officer with other agencies is facilitating agricultural development.	3.979	1.15
12	The officer is using parallel channel of communication with other agencies to bind the efforts for agricultural development.	3.625	1.40
4. Pattern of Participation			
13	The officer is participating in various meetings, seminars, conferences; etc is ensuring linkage with other agencies for agricultural development.	4.037	0.93
14	Interactive participation of the officer with other agencies is fostering effective co-ordination.	3.812	1.17

S.No.	Items	Scale Value	Q Value
15	Symbolic participation of the officers in agricultural development activities is determining the quality of co-ordination for agricultural development	2.680	2.69
5. Role Identity			
16	Specific role has been identified for the officer for better co-ordination in agricultural development activity.	4.100	1.33
17	The officer specifically identified for a particular role is creating delays in decision making for co-ordinating agricultural development activities.	2.551	2.13
18	Flexibility of the officer is ensuring appropriate decision-making in co-ordinating agricultural development activity.	3.404	1.39
6. Pattern of Interdependence.			
19	Interdependence of the officers of the participating agencies is fostering reciprocal acceptability for agricultural development.	4.281	1.94
20	The officer is directly interdependent with other agencies in co-ordinating agricultural development.	3.500	1.24
21	The officer is indirectly interdependent with other agencies in achieving agricultural development.	2.855	1.24
22	The officers are competitively interdependent in co-ordinating agricultural development.	2.731	1.58
7. Pattern of Independence			
23	The officer is self-reliant in performing agricultural development activity.	3.231	2.08
24	The officer is depending fully on other agencies in co-ordinating agricultural development programmes.	3.050	2.08
25	Autocratic functioning of the local government body is breaking the linkage of the officers for better co-ordination.	3.500	1.78
26	Independent set up is creating duplication of agricultural development activity for the officer.	3.733	1.82
27	The officer is free to take appropriate decisions independently regarding agricultural development.	3.738	1.66
28	Agricultural development decisions taken independently by the officer is creating duplication of agricultural development activities	4.10	2.46

Scale Values and Q Values of 'Functional dimension'

The term **OFFICER** in the text denotes **OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.**

S.No.	Description of item	Scale Value	Q Value
1.Clarity of Objectives and Programmes			
01	Clearly written statement of objectives and programmes is followed by the officer in co-ordinating the agricultural development activities.	4.071	2.26
02	Written statement of objectives and programmes is time consuming and difficult for the officer in co-ordinating the agricultural development activities.	2.681	1.09
03	Clear objectives and programmes for agricultural development have been formulated by the officer in consultation with other agencies.	3.944	0.98
04	Programmes planned by the officers without consulting other agencies is creating delays in co-ordinating agricultural development activities	2,551	2.01
2.Technical Orientation			
05	Training to the officer is fostering co-ordinated efforts for agricultural development.	3.957	1.72
06	Training to the officer is helping very little in co-ordinating efforts with other agencies.	2.501	2.14
07	Technical orientation to the officer through seminars, conferences, and workshops is synchronizing the efforts with other agencies for agricultural development.	4.519	1.72
3.Integration of Services			
08	Credit made available by the officer in advance in consultation with concerned agencies is ensuring effective agricultural development	3.333	1.99
09	Essential inputs made available by the officer in advance in consultation with the technical agency is enhancing agricultural development.	4.033	1.77
10	The officer is making inputs available without assessing any information from the technical agency.	2.461	2.09
4.Procedure for Committee Meetings			
11	Regular attendance in the co-ordination committee meeting is helping the officer to keep track of up-to-date progress of agricultural development.	4.420	1.62
12	Co-ordination committee meetings conducted as per preplanned schedule is encouraging to the officers.	3.743	1.47

S.No.	Description of item	Scale Value	Q Value
13	The officer is following plan of schedule for conducting co-ordination committee meeting during the particular cropping season only.	3.175	1.40
5.Team work			
14	Lack of teamwork of the officers is creating contradictions in agricultural development.	3.382	1.11
15	The officer working as a team with other agencies is saving time and money for agricultural development.	3.606	1.15
16	The officer is co-operating with other agencies in co-ordinating agricultural development.	3.180	1.34
17	Teamwork by the officer is establishing positive feelings with officers of other agencies.	4.330	1.51
18	Teamwork by the officers is providing reciprocal inspiration to each other.	3.891	1.35
19	Periodic joint visits by the officer with other agencies are ensuring timely technical information to the actual beneficiaries.	4.090	1.60
20	Continued joint efforts of the officer with other agencies are solving the critical problems in agricultural development.	4.031	1.48
21	Agricultural development activities are effectively harmonized by the officer in collaboration with other agencies.	3.980	2.23
6.Information Sharing			
22	The officer is providing reliable information regarding agricultural development to other agencies.	4.018	0.93
23	Timely information on package of practices is provided by the officer in consultation with other agencies.	4.108	2.00
24	The officer sharing information about agricultural development with other agencies is time consuming and unproductive.	2.891	2.11
7. Resource Allocation			
25	The officer is ensuring timely resource allocation in consultation with other agencies.	4.001	1.71
26	The officer is ensuring timely resource allocation, but without consulting other agencies.	2.500	2.36
27	The officers optimize resource allocation jointly for saving time and money.	3.966	1.60
28	The officers critically analyze allocation of scarce resources for agricultural development.	3.910	1.92

S.No.	Description of item	Scale Value	Q Value
8. Time Management			
29	The officer is getting little chance to consult other agencies for timely planning and implementation of agricultural development activity.	3.130	1.77
30	Time management techniques followed by the officers in project formulation and implementation is saving time and money.	3.802	1.30
31	Planning and implementation of agricultural development activity is done jointly by the officers in time bound manner.	3.650	1.27
32	Conducting agricultural development activity jointly with other agencies is cumbersome and difficult.	2.610	1.97
9. Project Formulation			
33	Agricultural development projects are formulated by the officer through active participation with other agencies.	3.882	1.59
34	Project formulation by the officer in consultation with other agencies is saving time and agricultural resources.	4.239	2.16
35	Formulation of agricultural development projects by the officer in consultation with other agencies is time consuming and difficult.	2.441	1.97
10. Project Implementation			
36	Project implementation is done by the officer in consultation with other agencies.	4.500	1.80
37	Project implementation done by the officer without consulting other agencies is easier and more effective.	2.501	2.16
38	Project implementation done jointly by the officers is saving time and resources.	3.895	1.37
11. Accountability			
39	Proper answerability of the officer is establishing reliability with other agencies.	3.851	1.59
40	Answerability of the officer is creating complexity in agricultural development activities.	2.241	2.14
41	The officers are mutually responsible for conducting agricultural development activities.	4.047	1.27
42	Accountability of the officers is improving mutual agreement for agricultural development	3.742	1.49

Scale Values and Q Values of 'Technological dimension'

The term OFFICER in the text denotes OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Description of item	Scale Value	Q Value
1.Technology Prioritization			
01	The officer is involving in technology prioritization with other agencies.	4.538	1.79
02	Technologies prioritized by the officer in consultation with other agencies are creating problems in development efforts.	2.570	2.38
03	Need based technologies prioritized jointly by the officers is saving time and resources.	4.014	1.52
2.Technology Integration			
04	Technology integration is done by the officer in consultation with other agencies.	4.500	2,06
05	Technology integration by the officer in consultation with other agencies is creating complexity in development efforts.	2.680	2.20
06	Package of technologies are blended by the officer through assistance from other agencies.	3.894	1.38
07	Technology integrated by the officer involving other agencies is balancing development efforts.	3.421	1.24
08	Technology integrated by the officer in consultation with other agencies is enhancing mutual agreement for development.	3.827	1.10

Scale Values and Q Values of 'Psychological and Socio political dimension'

The term OFFICER in the text denotes OFFICER-IN-CHARGE/REPRESENTATIVE OF THE PARTICIPATING AGENCY INVOLVED IN AGRICULTURAL DEVELOPEMNT.

S.No.	Description of item	Scale Value	Q Value
	1.Empathy		
01	Reciprocal understanding of the objectives by the officers is enhancing development efforts.	3.892	1.08
02	Objectives perceived differently by the officers are creating conflict in achieving agricultural development goals.	3.270	1.40
03	Matching perception of the officer with other agencies is leading to effective co-ordination in agriculture.	3.796	1.09
04	The officers respect each other for their decisions in co-ordinating agricultural development activity.	3.580	1.33
05	The officer is pushing heart and soul to support other agencies in co-ordinating development efforts.	3.761	1.70
06	The officer is holding important information for the agency's benefit rather than disclosing to other agencies.	2.100	1.75
	2.Motivation		
07	Personal prejudices of the officer are breaking effective communication with other agencies in development efforts.	2.501	2.07
08	Interagency co-ordination is impeded by the fear of the officer that one agency wants to dominate the process.	4.271	2.16
09	The officer's efforts have little effect in motivating the participating agency for agricultural development.	2.470	1.62
10	The officer is trying to encourage other agencies in development efforts.	3.692	1.30
11	The officer is offering constructive criticism for improving the performance of other agencies.	3.425	1.29
12	The officer is critical regarding the performance of other agencies.	2.350	1.83
	3.Accommodation		
13	Suggestions provided by the officer to other agencies are gladly accepted.	3.522	1.23
14	Acceptance of suggestions provided by the officer to other agencies is creating a complex situation.	2.070	1.29
15	The officer is accepting the new ideas and suggestions from other agencies.	4.083	1.58
16	Opinions provided by the officer to the participating agencies are creating delays in taking appropriate decision for agricultural development.	2.440	1.79

S.No.	Description of item	Scale Value	Q Value
17	Watertight compartmentation of the agencies is creating blocks for agricultural development.	4.570	1.82
18	Watertight compartmentation of the agencies is ensuring speedy implementation of agricultural development activities.	2.180	2.12
4. Inter-personal Skills			
19	The officer's interpersonal skills are facilitating frequent communication with other agencies.	4.082	0.83
20	Frequent communication by the officer with other agencies is time consuming and difficult.	2.320	1.95
21	Agricultural development activities are better co-ordinated by the officer through mutual trust with other agencies.	3.777	0.89
22	Establishment of interpersonal skills by the officers is getting hindered due to various reasons.	2.800	1.61
23	Interpersonal relations are established by the officer with other agencies through organizing seminars, conferences, personal contacts, meetings etc.	3.501	1.61
24	The officer is establishing interpersonal relations with other agencies through providing reliable information on matters related to their area of operation.	3.040	1.07
25	Development of interpersonal relation by the officer is impeded by the bureaucratic rigidity of other agencies.	2.930	1.78
5. Workload			
26	The officer's workload is limiting frequent communication with other agencies in co-ordinating development efforts.	3.285	1.76
27	Workload is creating scope to the officer for frequent communication with other agencies in co-ordinating development efforts.	3.900	1.60
28	Workload is restricting participation in key interventions (seminar, conferences, meetings) with other agencies in co-ordinating development activities.	4.130	1.78
29	Workload is breaking linkage of the participating agency with other agencies in co-ordinating development efforts.	3.300	1.23
6. Attitude towards Co-ordination			
30	The officer is favorably inclined towards other agencies in co-ordinating agricultural development activities.	4.551	1.93
31	Attitude of the officer towards other agencies is creating complexity in agricultural development.	2.270	1.76
32	The officer has positive attitude in co-ordinating agricultural development programmes with other agencies.	3.790	1.18

S.No.	Description of item	Scale Value	Q Value
33	The officer is doubtful in co-ordinating agricultural development activity with other agencies.	3.055	1.53
7.Job Commitment			
34	Active involvement of the officer in jobs related to agricultural development activities is ensuring better co-ordination.	4.000	0.96
35	The officer is ready to co-ordinate agricultural development activities with other agencies.	3.550	1.27
36	The officers are willingly endorsing the duties and responsibilities in co-ordinating agricultural development efforts.	3.673	1.20
37	The officers follow principled commitment in co-ordinating agricultural development activities.	2.94	1.23
8.Self Confidence			
38	Self-confidence of the officer is ensuring better liaison with other agencies.	3.608	1.48
39	The officer is confidently solving the problems in agricultural development through consulting with other agencies.	4.520	1.83
40	Self-confidence of the officer is encouraging better co-ordination with other agencies in agricultural development activities.	3.630	1.33
9. Leadership			
41	Leadership of the officer is synchronizing the efforts of other agencies for better agricultural development.	2.740	1.98
42	As a professional leader, the officer is maintaining good relation, peace and working environment with other agencies.	3.908	0.70
43	Democratic leadership of the officer is reflecting directly on effective co-ordination with other agencies for agricultural development.	3.880	1.53
44	The officer is taking initiative to prioritize agricultural development activities through consultation with other agencies.	3.524	1.22
10. Political Interference			
45	Political interference is breaking linkages with other agencies in decision-making for agricultural development	3.500	2.25
46	Political interference is providing little chance to the officer to consult with other agencies in co-ordinating agricultural development activities.	2.800	1.89
47	Political domination over the officer is ensuring peoples participation for agricultural development.	2.959	1.87
48	Involvement of political leaders with the officers is ensuring timely implementation of agricultural development programmes.	3.563	1.12
49	Political interference is creating job stress for the officers.	3.080	1.97

Problems/constraints had been identified through judges rating on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant' and then relevancy coefficient was calculated.

S.No.	Problems/constraints	Relevancy Coefficient
1	Lack of delegation of authority to the representatives of the agency to co-ordinate for agricultural development	71.11
2	Centralized authority by higher level management.	50.00
3	Lack of proper interaction among agencies involved in agricultural development	95.55
4	Lack of proper guidelines/instructions for the representatives of agencies involved in agricultural development	95.55
5	Lack of appropriate linkage among agencies.	74.44
6	Lack of appropriate channels of communication among agencies.	66.66
7	Lack of meaningful feedback among agencies	60.00
8	Lack of specific role for the representatives	43.33
9	Bureaucratic involvement and rigidity affecting individual commitment in achieving common goal	96.66
10	Lack of interdependence among agencies	67.77
11	Independent setup at all levels enhances symbolic participation for the representatives of the agency.	82.22
12	Autocratic functioning of the local government body breaks the linkage among agencies	91.11
13	Individual agency is taking decision unilaterally for agricultural development	85.55
14	Lack of interdependence among agencies due to routine job provided by government	92.22
15	Projects/schemes identified by local government body involving few agencies neglecting other agencies involved in agricultural development	83.33
16	Lack of common projects/schemes	92.22
17	Lack of interactive participation among members in committee meetings related to agricultural development	53.33
18	Lack of common understanding and mutual trust among agencies	72.22
19	Similar type of projects/schemes run concurrently causing duplication of activities among agencies	92.22
20	Lack of proper training programme for the representatives	63.33
21	Lack of seminars, conferences involving the representatives of all agencies involved in agricultural development	82.22
22	Inputs and credit distribution without assessing any information from the technical agencies	76.66
23	Lack of co-ordination among members of various committees for agricultural development	63.33
24	Lack of joint decision in formulating and implementing schemes	95.55
25	Lack of accountability among representatives of agencies	46.66
26	Lack of mutual agreement among agencies in technology prioritization and implementation	57.77
27	Personal prejudices of the representatives of agencies.	68.88
28	Professional jealousy of the representatives limiting frequent communication with each other.	92.22
29	Watertight compartmentation of the agencies.	83.33

S.No.	Problems/constraints	Relevancy Coefficient
30	Mistrust and competition among agencies	75.55
31	Lack of reciprocal reward, recognition and appreciation to each other	71.11
32	Lack of positive attitude of the representatives towards co-ordination	50.00
33	Political biases and partiality in implementing development projects	97.77
34	Lack of technical committee at all levels	73.33
35	Lack of monitoring and evaluation committee at all levels	66.66
36	Conflict between bureaucrats and representatives of agencies involved in agricultural development	72.22
37	Conflict between administrative staff and technical staff.	51.11
38	Prime agricultural development agency is holding important information for the agency's benefit rather than disclosing to other agencies	61.11

Probable suggestions had been selected by the field level, universities and Directorate of extension experts on a three point continuum 'More Relevant', 'Relevant', and 'Less Relevant'. Table showing the relevancy co-efficient

S.No.	Suggestions	RC
01	Establishment of co-ordination committees at all levels involving the representatives of all agencies involved in agricultural development.	90.20
02	Integrated training programmes for the representatives of all agencies.	82.50
03	Joint conferences among agencies involved.	89.30
04	Joint service arrangement and interlinking of personnel among agencies involved in agricultural development	81.50
05	Formulating integrated projects/schemes.	91.30
06	Regular co-ordination committee meetings and interaction among the members to identify the problems and immediate corrective action.	81.25
07	To avoid mistrust and competition among the representatives of agencies involved in agricultural development.	54.56
08	The genuine feeling should be perceived in the mind of the representatives of the agencies that every one is working 'with' not 'under'	56.67
09	Reciprocal reward, recognition and appreciation among the representatives of agencies involved in agricultural development.	88.50
10	Frequent formal and informal contact among the representatives of agencies involved in agricultural development	84.45
11	Teamwork for joint formulation and implementation of the projects/schemes.	92.37
12	Sharing of resources among agencies on a 'give and take policy' basis.	85.34
13	Appropriate leadership is required for taking initiative to synchronize the efforts of agencies involved in agricultural development.	54.23
14.	Joint technical committees and monitoring and evaluation committees at all levels i.e. district, block and grama panchayat.	83,67
15	Structural and functional arrangement for effective co-ordination among agencies for sharing information.	82.39
16	Proper guidelines/instructions on co-ordinating action for the representatives of agencies involved in agricultural development	84.25

17	Elected members of the local government body should adopt a development oriented approach.	87.25
18	Balancing of interests and purposes between administrative staff and technical staff.	81.70
19	Appropriate leadership role should play by technical agencies.	56,34
20	Joint visits and monitoring the projects/ schemes.	63.23
21	Legitimate power must be provided to the representatives of the agencies for taking joint decision in implementing agricultural development programmes	82.30
22	Fundamental restructuring of agency programmes through collaborative projects/schemes.	81.70
23	Interagency agreement on duties, responsibilities, procedures and practices for implementing projects/schemes.	81.65
24	Mutual acquaintance among the representatives of agencies involved in agricultural development.	67.34
25	Brotherhood relation rather than bossism should be maintained among the representatives of agencies involved in agricultural development.	64.23
26	Administrative co-ordination should be emphasized on democratic decentralization.	56.78
27	Periodic review meeting and orientation meeting are essential in promoting effective co-ordination among agencies involved in agricultural development.	68.34
28	A separate co-ordination cell is essential at all levels.	68.35
29	Co-ordination policy is needed and that is to be made by government itself.	58.79
30	Involving all the representatives of agencies involved in agricultural development should identify Projects/schemes.	63.45
31	Agencies must have clearly written statement of objectives and programme.	49.56
32	The members of the local body should have positive attitude towards technical reasoning and basic approach of the projects/schemes.	64.23
33	Personal prejudices of the representatives of agencies involved in agricultural development should avoid.	63.57

APPENDIX-111



KERALA AGRICULTURAL UNIVERSITY
College of Horticulture
Vellanikkara 680656, Thrissur, Kerala

Dr. Joy Mathew
Associate professor
Department of Agricultural Extension
College of Horticulture
Vellanikkara

Date: -----

Dear-----,

Shri Sunil Kumar Roy, Ph.D. scholar of this department has taken up a study entitled “**Dynamics of co-ordination for agricultural development in the context of democratic decentralization**” as part of his doctoral research programme, under my guidance. We are happy to inform you that, by virtue of your field level experience in agriculture related development activities, you have been selected as one of the respondents for the study.

Considering your busy schedule, it could be hard, but still we request you to spare some of your valuable time to go through the schedule furnished overleaf and express your opinion on the various items included. Your free and unbiased responses are of great value for the successful completion of this research programme. The researcher’s directions for your responses may be found overleaf.

Expecting your good will and whole hearted co-operation.

With regards,

Yours sincerely

Date:

(Joy Mathew)

To

Shri/ Smt

.....

.....



KERALA AGRICULTURAL UNIVERSITY
College of Horticulture
Vellanikkara 680656, Thrissur, Kerala

Sunil Kumar Roy
Ph.D. Scholar
Department of Agricultural Extension
College of Horticulture
Vellanikkara

Date: -----

Dear Sir/ Madam,

As you are aware, I have taken up a study related to “**Dynamics of co-ordination for agricultural development in the context of democratic decentralization**” as part my research programme. I am happy to have you as one of the respondents for my study. Your thoughtful responses are vital for the successful completion of my research programme. The schedule enclosed herewith, duly filled in and returned, could be of great help to me.

I know, I must be pressing on your precious time. But, yet, I request your whole hearted co-operation in this regard.

Also wish you a happy X'mas and a very prosperous New Year

With regards,

01-01-2004

Yours Sincerely

(SUNIL KUMAR ROY)

DIRECTIONS

1. Please read through the items carefully.
2. Record your first reaction to each item.
3. Do not leave out any item. Without complete information, the research will remain inconclusive.
4. Other agencies mean; rest of all agencies involved in agricultural development except your agency.

Agencies included in the study are; State Dept. of Agriculture, Soil Conservation, Animal Husbandry, Fishery, Dairy Development, Irrigation, Rural Development, Panchayath Dept., KSEB, Kerala State Land Use Board, Rural Development Agency, Kerala Land Development Corporation, Kerala Forest Research Institute, Soil Survey Dept, Forestry Dept., Kerala Agro Industries Corporation, Ground Water Dept, Co-operation Dept, Co-operative Bank (ADB), The New India Assurance Co. Ltd., Rubber Board, United India Insurance Co. Ltd., Coir Development Dept., Serifed, National Insurance Co. Ltd., South Malabar Gramin Bank, NABARD, Canara Bank, Syndicate Bank, Punjab National Bank, State Bank of Travancore (ADB), Central Bank of India, State Bank of India and Indian Overseas Bank.

* The information provided by you will be kept strictly confidential. *

* It will be used only for research purposes*

* The success of my research programme depends entirely on your goodwill and co-operation*

INTERVIEW SCHEDULE

- I. Official address :

- II. Name of the agency :
(District/Block/Grama panchayat level)

- III. Male/Female :

- IV. Total experience :-----

- V. Experience after democratic decentralization in 1995. :-----

- VI. Higher education, if any :Name of the course
Duration -----

- VII. Advanced training, if any : Name of the course
Duration -----

VIII. Co-ordination is the vital management function for development effectiveness. Items 1 to 60 represent various subtle details regarding this important behavioural function. **THIS SECTION FORMS THE MOST CRUCIAL PART OF THIS RESEARCH STUDY** and your frank and unbiased responses are of utmost importance to its success. How often do you perform the following? Please tick mark (✓) the alternative which best describes your behaviour.

S.No.	Items	Al-ways	Of-ten	Occas-ionally	Sel-dom	Ne-ver
01	Legitimate power is vested with me to facilitate joint decision making with other agencies involved in agricultural development.					
02	Lack of delegation of authority to the officers-in-charge/representatives of the participating agencies is hindering effective co-ordination in agriculture.					
03	Local level co-ordination committee involving the officers-in-charge/representatives of the participating agencies is ensuring the identification of actual problems in agricultural development.					
04	Co-ordination committee involving the officers-in-charge/representatives of the participating agencies is arranging for linking effectively with each other for agricultural development.					
05	My accessibility with other agencies involved in agriculture is facilitating agricultural development.					
06	I am using parallel channels of communication with other agencies involved in agricultural development to bind the efforts for agricultural development.					
07	I am participating in various meetings, seminars, conferences, etc with other agencies involved in agricultural development.					
08	My interactive participation with other agencies in agricultural development activities is fostering effective co-ordination.					
09	Specific role has been identified to me for better co-ordination with other agencies involved in agricultural development.					
10	My flexibility is ensuring appropriate decision-making in co-ordinating agricultural development activity.					
11	My agency is directly interdependent with other agencies involved in agriculture in co-ordinating agricultural development activities.					
12	My agency is indirectly interdependent with other agencies in achieving agricultural development activities.					

S.No.	Items	Al-ways	Of-ten	Occas-ionally	Sel-dom	Ne-ver
13	Independent set up is creating duplication of agricultural development activity for the officers-in-charge/representatives of the participating agencies.					
14	I am free to take appropriate decisions independently regarding agricultural development activities.					
15	Written statement of objectives and programmes is time consuming and difficult for me in co-ordinating agricultural development activities.					
16	Clear objectives and programmes for agricultural development have been formulated by me in consultation with other agencies involved in agricultural development.					
17	Training provided to me is fostering co-ordinated efforts for agricultural development.					
18	Technical orientation through seminars, conferences, and workshops is synchronizing my efforts with other agencies involved in agricultural development.					
19	Credit made available by me in advance in consultation with concerned agencies is ensuring effective agricultural development					
20	Essential inputs made available by me in advance in consultation with the concerned technical agency is enhancing agricultural development.					
21	Co-ordination committee meetings conducted as per preplanned schedule is encouraging to the officers-in-charge/representatives of the participating agencies.					
22	I am following plan of schedule for conducting co-ordination committee meeting with other agencies involved in agricultural development.					
23	Lack of teamwork of the officers-in-charge/representatives of the participating agencies is creating contradictions in agricultural development.					
24	I am working as a team with officers-in-charge/representatives of other agencies involved in agricultural development.					
25	I am providing reliable information regarding agricultural development to other agencies involved in agricultural development.					

S.No.	Items	Al-ways	Of-ten	Occas-ionally	Sel-dom	Ne-ver
26	Timely information on appropriate technology is provided by me in consultation with other agencies involved in agricultural development.					
27	I am ensuring timely resource allocation in consultation with other agencies involved in agricultural development.					
28	The officers-in-charge/representatives of the participating agencies optimize resource allocation jointly for saving time and money.					
29	Time management techniques followed by the officers-in-charge/representatives of the participating agencies in project formulation and implementation is saving time and money					
30	Planning and implementation of agricultural development activity are done jointly by the officers-in-charge/representatives of the participating agencies in time bound manner.					
31	Agricultural development projects are formulated by me through active participation with other agencies involved in agricultural development.					
32	Project formulation by me in consultation with other agencies involved in agricultural development is saving time and agricultural resources.					
33	Project implementation is done by me in consultation with other agencies involved in agricultural development.					
34	Project implementation done jointly by the officers-in-charge/representatives of the participating agencies is saving time and resources.					
35	The officers-in-charge/representatives of the participating agencies are mutually responsible for conducting agricultural development activities.					
36	Accountability of the officers-in-charge/representatives of the participating agencies is improving mutual trust for agricultural development					
37	I am involving in technology prioritization with other agencies involved in agricultural development.					
38	Need based technologies prioritized jointly by the officers-in-charge/representatives of the participating agencies is saving time and resources.					

S.No.	Items	Al-ways	Of-ten	Occas-ionally	Sel-dom	Ne-ver
39	Package of technologies is blended by me through assistance from other agencies involved in agricultural development.					
40	Technology integrated by me in consultation with other agencies involved in agricultural development.					
41	Reciprocal understanding of the objectives by the officers-in-charge/representatives of the participating agencies is enhancing development efforts.					
42	My matching perception with other agencies involved in agricultural development is leading to effective co-ordination in agriculture.					
43	I am trying to encourage other agencies in development efforts.					
44	I am offering constructive criticism for improving the performance of other agencies involved in agricultural development					
45	Suggestions provided by me to other agencies involved in agricultural development are gladly accepted.					
46	I am accepting new ideas and suggestions from other agencies involved in agricultural development.					
47	My interpersonal skills are facilitating frequent communication with other agencies involved in agricultural development					
48	Agricultural development activities are better co-ordinated by me through mutual trust with other agencies involved in agricultural development.					
49	My workload is creating scope for frequent communication with other agencies involved in agricultural development.					
50	My workload is breaking linkage of the participating agency with other agencies involved in agriculture in co-ordinating development efforts.					
51	I have positive attitude in co-ordinating agricultural development programmes with other agencies involved in agricultural development					
52	I am doubtful in co-ordinating agricultural development activity with other agencies involved in agricultural development					
53	My active involvement in jobs related to agricultural development is ensuring better co-ordination with other agencies involved in agricultural development.					

S.No.	Items	Al- ways	Of- ten	Occas- ionally	Sel dom	Ne ver
54	The officers-in-charge/representatives of the participating agencies are willingly endorsing the duties and responsibilities in co-ordinating agricultural development efforts.					
55	I am confident in ensuring better liaison with other agencies involved in agricultural development					
56	My self-confidence is encouraging better co-ordination with other agencies involved in development.					
57	As a professional leader, I am maintaining good relation, peace and working environment with other agencies involved in agricultural development.					
58	I am taking initiative to prioritize agricultural development activities through consultation with other agencies involved in agricultural development					
59	Political domination over the officers-in-charge/representatives of the participating agencies is ensuring peoples participation for agricultural development.					
60	Involvement of political leaders with the officers-in-charge/representatives of the participating agencies is ensuring timely implementation of agricultural development programmes.					

IX. Following are the problems/constraints related to co-ordination among agencies involved in agricultural development. Please tick mark (✓) the appropriate alternative for each problem/constraint according to its importance. You may also add any other problem/constraint, which you think, is relevant in the context of the present study.

S.NO	Problems/Constraints	MI	I	LI
01	Lack of proper interaction among agencies involved in agricultural development.			
02	Lack of proper guidelines/instructions for the representatives of agencies involved in agricultural development.			
03	Bureaucratic involvement and rigidity affecting individual commitment in achieving common goal.			
04	Independent setup at all levels enhances symbolic participation for the representatives of the agency.			
05	Autocratic functioning of the local government body breaks the linkage among agencies involved in agricultural development.			
06	Individual agency is taking decision unilaterally for agricultural development			
07	Lack of interdependence among agencies due to routine job provided by government			
08	Projects/schemes identified by local government body involving few agencies neglecting other agencies involved in agricultural development			
09	Lack of integrated projects/schemes			
10	Similar type of projects/schemes run concurrently causing duplication of activities among agencies			
11	Lack of seminars, conferences involving the representatives of all agencies involved in agricultural development			
12	Lack of joint decision in formulating and implementing schemes			
13	Professional jealousy of the representatives limiting frequent communication with each other			
14	Watertight compartmentation of the agencies			
15	Political biases and partiality in implementing development projects			
16	Others, if any			

- X. Following are the suggestions related to improvement of co-ordination among agencies involved in agricultural development. Please tick mark (✓) the appropriate alternative for each suggestion according to its importance. You may also add any other suggestion, which you think, is relevant in the context of the present study.

S.No.	Suggestions	MI	I	L1
01	Establishment of co-ordination committees at all levels involving the representatives of all agencies involved in agricultural development.			
02	Integrated training programmes for the representatives of all agencies.			
03	Joint conferences among agencies involved.			
04	Joint service arrangement and interlinking of personnel among agencies involved in agricultural development			
05	Formulating integrated projects/schemes.			
06	Regular co-ordination committee meetings and interaction among the members to identify the problems and immediate corrective action.			
07	Legitimate power must be provided to the representatives of the agencies for taking joint decision in implementing agricultural development programmes.			
08	Fundamental restructuring of agency programmes through collaborative projects/schemes.			
09	Reciprocal reward, recognition and appreciation among the representatives of agencies involved in agricultural development.			
10	Frequent formal and informal contact among the representatives of agencies involved in agricultural development			
11	Teamwork for joint formulation and implementation of the projects/schemes.			
12	Sharing of resources among agencies on a 'give and take policy' basis.			
13	Interagency agreement on duties, responsibilities, procedures and practices for implementing projects/schemes.			
14	Joint technical committees and monitoring and evaluation committees at all levels i.e. district, block and grama panchayat.			

15	Structural and functional arrangement for effective co-ordination among agencies for sharing information.			
16	Proper guidelines/instructions on co-ordinating action for the representatives of agencies involved in agricultural development			
17	Elected members of the local government body should adopt a development oriented approach.			
18	Balancing of interests and purposes between administrative staff and technical staff.			
19	Others, if any			

“Many thanks for your kind co-operation”

**DYNAMICS OF CO-ORDINATION FOR
AGRICULTURAL DEVELOPMENT IN THE
CONTEXT OF DEMOCRATIC
DECENTRALIZATION**

**By
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ABSTRACT OF THE THESIS

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ABSTRACT

The study on “Dynamics of Co-ordination for agricultural development in the context of democratic decentralization” was conducted with the objective of analyzing effective co-ordination among the agencies involved in agricultural development in Thrissur district of Kerala. *Expost facto* research design was followed to conduct the study. Stratified multi stage random sampling was used for selecting agencies and respondents. ‘Behaviourally Anchored Rating Scale (BARS)’ method developed by Campbell *et al.* (1973) was used for the construction of scale. The respondents of the study comprised of 100 officers-in-charge/representatives of the agencies involved in agricultural development. Interview schedule was used for both the relevancy test and data collection.

Thirty subdimensions (behaviours) of effective co-ordination under four major dimensions; structural, functional, technological and psychological and socio political for agricultural development were anchored for measuring the level of co-ordination and thereby identify factors and indicators and explore problems among the agencies involved in agricultural development.

A multidimensional composite scale consisting of 60 items was constructed for quantifying effective co-ordination for agricultural development and applied to the selected sample. The scale was highly reliable and valid. Considerable percentage of respondents at district panchayat level (37.50%), block panchayat level (38.78%), grama panchayat level (36.84%) and at entire Thrissur district (34.00%) showed a ‘medium’ level of co-ordination performance in agricultural development activities. The remaining 62.50 per cent, 61.22 per cent, 63.16 per cent and 66.00 per cent belonged to ‘low’ to ‘high’ category of co-ordination performance.

Out of thirty subdimensions, eight namely; pattern of authority, co-ordination committee, pattern of communication, clarity of objectives and programmes, technology prioritization, empathy, motivation and accommodation were extracted

through factor analysis at district panchayat level and in addition to the former, one more 'interpersonal skills' from 'psychological and socio political dimension' was screened at block panchayat level along with one more 'technical orientation' from 'functional dimension' was screened at grama panchayat level. These ten subdimensions were treated as essential factors of effective co-ordination for agricultural development. Out of these ten factors, seven namely; pattern of authority, co-ordination committee, clarity of objectives and programmes, technology prioritization, empathy, motivation and accommodation were treated as indicators of effective co-ordination due to the maximum variation explained by these subdimensions on level of co-ordination. Maximum extent of co-ordination performance of respondents at district panchayat level (72.46%), block panchayat level (67.51%), grama panchayat level (65.57%) and entire Thrissur district (68.47%) was in 'psychological and socio political dimension', whereas, maximum gaps viz; 43.66 per cent, 55.00 per cent, 50.78 per cent and 43.99 per cent respectively were in 'structural dimension'. Extent of overall co-ordination performance in the entire dimensions was 60.76 per cent and gap was 39.74 per cent.

"Lack of proper interaction among the agencies involved in agricultural development" was rated as the most important problem, while, "professional jealousy of representatives limiting frequent communication with each other" was perceived as the least important among problems related to effective co-ordination among the agencies involved in agricultural development.

"Establishment of co-ordination committee at all levels involving the representatives of all agencies involved in agricultural development" was rated as the most important suggestion, while, "fundamental restructuring of agency programmes through collaborative projects/schemes" was perceived as the least important among suggestions to strengthen effective co-ordination among the agencies involved in agricultural development.

Among the participating agencies; 'Panchayat Department', 'Soil Conservation Department', 'Co-operation Department', 'Kerala Agro-Industries Corporation', 'National Bank for Agriculture and Rural Development (NABARD) and 'South Malabar Gramin Bank' were 'very close' to effective co-ordination for agricultural development, whereas, 'Irrigation Department', 'Kerala Forest Research Institute' and 'The New India Assurance Company Limited' were 'far distant' from effective co-ordination at district panchayat level.

At block panchayat level, 'Irrigation Department' and 'Department of Agriculture' were 'very close' to effective co-ordination, whereas, 'Soil Conservation Department', 'Animal Husbandry Department', 'Kudumbasree', 'Kerala State Electricity Board' and 'State Bank of India' were 'far distant' from effective co-ordination.

At grama panchayat level, 'Animal Husbandry Department' was 'very close', whereas, 'Rural Development' was 'far distant' from effective co-ordination.

The study, it is believed, could bring out the subtle details of effective co-ordination, which would provide deeper insight to the policy makers and top management in this state and the country as well on how to strengthen co-ordination among the agencies involved in agricultural development.