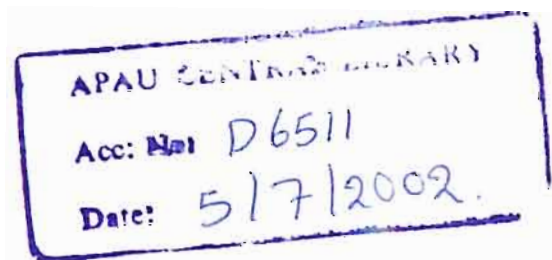


**JOINT FOREST MANAGEMENT (JFM) FOR  
SUSTAINABLE DEVELOPMENT IN TRIBAL  
AREAS OF VISAKHAPATNAM DISTRICT  
- ANDHRA PRADESH - A STUDY**

By

**MUTYALA ANANDARAO. B.Sc., (Ag.)**



THESIS SUBMITTED TO THE  
ACHARYA N G RANGA AGRICULTURAL UNIVERSITY  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE AWARD OF THE DEGREE OF

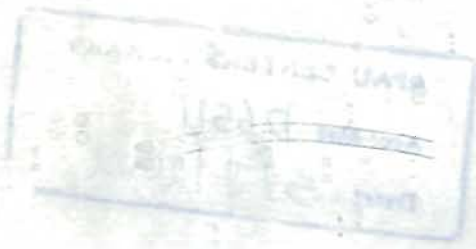
**MASTER OF SCIENCE  
IN THE FACULTY OF AGRICULTURE**



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## CERTIFICATE

Mr. M. ANANDARAO has satisfactorily prosecuted the course of research and that the thesis entitled "**JOINT FOREST MANAGEMENT (JFM) FOR SUSTAINABLE DEVELOPMENT IN TRIBAL AREAS OF VISAKHAPATNAM DISTRICT - ANDHRA PRADESH - A STUDY**" submitted is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination. I also certify that the thesis or part thereof has not been previously submitted by him for a degree of any university.

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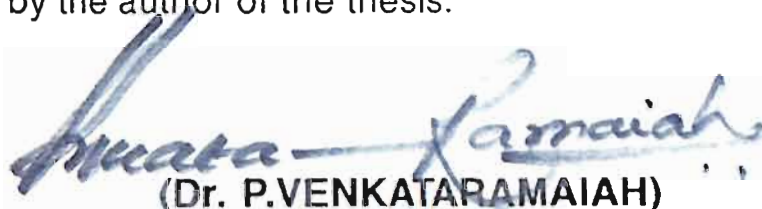
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This is to certify that the thesis entitled "JOINT FOREST MANAGEMENT (JFM) FOR SUSTAINABLE DEVELOPMENT IN TRIBAL AREAS OF VISAKHAPATNAM DISTRICT - ANDHRA PRADESH - A STUDY" submitted in partial fulfilment of the requirements for the degree of **MASTER OF SCIENCE IN AGRICULTURE** of the **Acharya N. G. Ranga Agricultural University, Hyderabad**, is a record of the bonafide research work carried out by **Mr. M ANANDA RAO** under our guidance and supervision. The subject of the thesis has been approved by the student's Advisory Committee.

No part of the thesis has been submitted by the student for any other degree or diploma. The published part has been fully acknowledged. All assistance and help received during the course of the investigations have been duly acknowledged by the author of the thesis.


  
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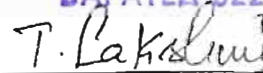
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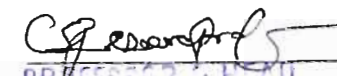
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*Place: BAPATLA*

*Date: 24.1.2002*

*Anand Rao*

*(M. ANANDA RAO)*

## DECLARATION

I, Mr. M. ANANDA RAO hereby declare that the thesis entitled "**JOINT FOREST MANAGEMENT (JFM) FOR SUSTAINABLE DEVELOPMENT IN TRIBAL AREAS OF VISAKHAPATNAM DISTRICT - ANDHRA PRADESH - A STUDY**" submitted to the Acharya N G Ranga Agricultural University for the degree of **Master of Science in Agriculture** in the major field of **Agricultural Extension** is the result of original research work done by me. I also declare that any material contained in the thesis has not been published earlier.

**Place :** Bapatla

**Date :** 10 - 9 - 2001.

*M. Anand Rao*

(M. ANANDARAO)

## ABSTRACT

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Title of the thesis : "JOINT FOREST MANAGEMENT (JFM)  
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Degree for which submitted : MASTER OF SCIENCE  
IN AGRICULTURE

Faculty : AGRICULTURE

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Joint Forest Management is an important programme for rehabilitation of degraded forests. It is a new system of management partnership through participatory process for sustainable development.

Keeping the above back drop in view, the research study was conducted with specific objective(s) of tracing the history, analyzing motivational pattern, knowing the opinion of direct and indirect changes, case illustrations followed by constraint analysis

of JFM for sustainable development in tribal areas of Visakhapatnam district in an exploratory research design with a total of 80 respondents drawn by multi-stage random sampling.

**Historical Profile:** In olden days people were permitted to obtain their requirement from forests without having any stake in their management. In *Pre-British period* (early 1750) the British rulers in India met their timber need for shipbuilding. In *early British period* (1750 to 1900), they used large quantities of teak for Royal Navel, as well as expanding railway network. In *Late British period* (1900-1947) major destruction of forests in World War II. In *early post Independence period* (1947-1975) Dr Von Mon Roy recommended large-scale plantation of quick growing Eucalyptus species. In *mid post independence period* (1975-1985) National Commission on Agriculture recommended Social Forestry Programmes. In *late post independence* (1985 to to-date) National Forest Policy (1988) recommended JFM.

### **Research Findings:**

**a. Motivational pattern** - Participating tribals (64.07%) belong to medium motivational pattern. Motives of highest order of priority observed were clothing, home and education (42.19%). The respondents (76.57%) agreed the economic motives as prime motives. So, efforts are required on the part of forest officials to

bestow attention on income generating activities so as to provide continuous employment.

**b. Forest Department Officials opinion** - Forest Officials (81.25%) had moderately favourable opinion on JFM. The prime priority was for nursery raising, boundary identification (18.75% each). Half of the respondents (50.00%) strongly agreed for participation in JFM.

**c. Participating Tribals opinion** - They opined (68.75%) moderately favourable towards participation in JFM, with a priority on nursery raising, jungle clearance, pitting, shifting and planting (21.87%) whereas 34 per cent strongly agreed towards forest activities. It calls for the recruitment of qualified / well trained forest officials, so as to infuse the skills among tribals on various activities.

**d. Direct and indirect changes** - They (68.75%) experienced moderate changes and ranked direct socio-economic (26.56%) changes as first. It indicates to make provision by Forest Department Officials to provide awards, rewards and incentives to increase tribal participation.

**e. Case study** - Case illustration reflected an increase in forest coverage, availability of safe drinking water, higher literacy and improvement in socio-economic conditions.

**f. Constraint analysis: a)** Forest Department Officials - Forest Officials (62.50%) experienced moderate number of constraints -

Situational (31.25), Administrative (25.00%), Organisational (18.75), Legal (18.75%) and Financial (6.25%).

b) Participating tribals - Participating tribals (71.88%) faced moderate number of constraints - Personal (28.13%), Organisational (17.19%), Marketing (15.62%), Administrative (14.06%), Situational (12.50%), Financial (6.29%) and Social (6.25%). Hence, it is suggested to allot additional budget towards staff quarters, accommodation and mobility to facilitate the forest officials for staying in the territorial jurisdiction and tribals need to be educated about long range benefits due to participation in JFM by modulating certain powers in favour of them for protection and rejuvenation.

## LIST OF SYMBALS AND ABBEREVIATIONS

%	: Percentage
&	: and
A.P	: Andhra Pradesh
APFP	: Andhra Pradesh Forest Protection
CBF	: Central Board of Forestry
DRDA	: District Rural Development Agency
EFES & TC	: Energy Forest Environment Science and Technology
FAO	: Food and Agriculture Organisation
FFC	: Forest Protection Committee
FYM	: Farm Yard Manure
GEF	: Global Environment Facility
ha	: hectare
JFM	: Joint Forest Management
MFP	: Minor Forest Produce
NCA	: National Commission on Agriculture
NTFP	: Non-Timber Forest Produce
NGO	: Non-governmental Organisation
P.P Chemicals	: Plant Protection Chemicals
PTG	: Primitive Tribal Groups
SAR	: Staff appraisal Report
S.D	: Standard Deviation
SMC	: Soil and Moisture Conservation works
TFAP	: Tropical Forest Action Plan
TRYSEM	: Training for Rural Youth for Self Employment
UN	: United Nations
UT	: Union Territories
VSS	: Vana Samrakshana Samithies

# INTRODUCTION

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## CHAPTER - I

### INTRODUCTION

Forests are among the most basic life support system of our planet. They support an extremely rich bio-diversity, which provide a wide variety of products and services. They are extremely important in regulating water flows in rivers. Forests, apart from producing food, fodder, fibre, timber and non-timber products, regenerate and improve quality through the process of photosynthesis through which they harvest solar energy by utilizing carbon dioxide and water. In this process trees and green plants give out oxygen which is an essential requirement for all living organisms on this planet.

Forests are tribal people's cherished homes through generations. It is an abode of their mother-deity. The tribal communities could subsist for thousands of years with reasonable standards of health and abode mainly because forests provided them food, water, shelter, clothes, medicines and employment.

Tribes traditionally collect many items of daily use from the forests, which are necessary for their day-to-day sustenance. The young, old and the women folk gather food items from forest. A

survey in forest region of Gujarat in 1980-81 revealed that nearly 22 per cent to 27 per cent of the elderly persons and 70 - 72 per cent of the children go to forests for collection of tubers, leafy vegetables, bamboo shoots and a host of other products. Another survey (1980 - 81) in Bastar district of Chattisgarh indicated that average household (having two adult members, one child and one old person) on an average earns Rs.1,500 a year (against total annual income of Rs.1,750) from the sale of MFP (Minor Forest Produce) without any initial input or risk. The size of contribution to the family income is significant and cannot be overlooked in the context of rural situation in the country and more so of the subsistence economy of tribal areas.

Tribals and forests are ecologically and economically inseparable. They have co-existed since times immemorial and will continue to co-exist in a mutually reinforcing relationship.

In tribal area, agriculture and its allied activities are dependent on forests to a large extent. However, with the passage of time their own untrammelled peaceful habit has been disturbed. The balance between these forest dwellers and nature has tilted due

to extraneous pressure of burgeoning population and entry of outsiders in their peaceful hour (Tewari, 1984).

With the pressure of the growing population, agriculture, urbanization and rapid industrial development, forests have suffered progressively. There has been a continuous demand of forests and lands for non-forest uses, which has effected the forest cover in this country. India has only 37.85 million hectare of closed forest cover with crown density of over 40 per cent, though the forest area of the country is 77.01 million hectare, which counts for 23.40% of the land area of the country (Varhney, 1997). National Remote Sensing Agency reported that the loss of forest cover was estimated at about 2.89 per cent in a span of seven years, between 1972 to 1975 and 1980-82. Today India has less than 2 per cent of total forest area in the world, but supports over 15 per cent of the world population.

Deforestation has created complex and wide-ranging problems in the form of soil erosion, flooding, land slides, excessive siltation of rivers and reservoirs, affecting local people and economy adversely. Forest management systems, inherited from British rule have failed to sustain natural forest eco-systems. As forest resource

depleted, the village communities dependent upon them are impoverished. Such destruction of environment has resulted in the breakdown of their support base and has led to immense hardship especially because of limited substitution possibility available for alternative sources of livelihood (Mukherjee, 1997). Reduced accessibility of local resources also paved the way for increased impoverishment of fringe dwellers. India has a history of about 150 years of "planned and scientific" forest management, which centered around timber production to fulfill the "national" needs. However, it led to alienation of local community groups from the resources on which they were depending for centuries. This approach proved to be ineffective in curbing the degradation process. The situation was further compounded by the development of forest based industries and increasing biotic pressure. Scarcity of agricultural land, encroachment and industries enjoying heavy subsidized flow of raw materials from the state forest, continued to accelerate the degradation process.

Realizing the earlier efforts to curb the exhaustion of forest is not yielding results. In 1976 forest, which was hitherto only a state subject was made a concurrent subject under the jurisdiction of both

the Central Government and State Government. The Central Government acquired the powers to pass the laws concerning forest and wildlife. One of the major steps was the passing Forest Constitution Act in 1980.

Although the process of diversion of forestland was arrested to a great extent due to the act, forest degradation continued. The programme of Social Forestry was launched on non-forest lands to meet people's subsistence needs. The purpose was to ease the pressure on forests, but it failed to yield desired results due to a variety of reasons. Social forestry failed to check the relentless battle between foresters and the users of forest produce.

The antagonism of people becomes endemic and forestry as a management regime could not flourish. Many foresters themselves began to question the methods and production of forest department. They started to realize that involvement of the people is a must for the success of any forestry programme.

Protection of our forests is very difficult without the cooperation of the local community. The policing approach to forest protection has resulted in a continual conflict between the forest staff and the local people. This leads to frequent confrontations, a

feeling of insecurity and helplessness among the forest staff, and lack of sympathy for the forest department. As population in villages near the forest boundary increases, it will become a partner in protecting the resource. Villagers are likely to protect forests when they have a say in forest management and receive a significant proportion of the benefits. This point has been shown to hold true in a number of joint management arrangements in different parts of the country. It is time to extend these experiments on a large scale (Tewari, 1993).

Meanwhile many village groups started protecting forests adjoining their villages on their own. There are many thousands of such informal forest protection groups in Orissa, south Bihar and Madhya Pradesh. Some enthusiastic officers in Andhra Pradesh also started involving the fringe communities in forest management. The result of both the cases have dramatic in times of forest management.

The challenge of poverty alleviation through forestry today is to investigate existing local knowledge and opinions and to build these in a two-way exchange of information and ideas. In this way local people are involved in all decisions concerning the

management of the forests that they use, with professional foresters supporting their process.

The greening of suitable areas, in all its component activities, is an effective way of increasing public awareness and participation in protecting and managing forest resources. Establishing, developing and sustaining an effective system of forest extension and public education to ensure better awareness, appreciation and management of forests should be expedited.

In this context the new National Forestry Policy was formulated in 1988. The policy recognizing the symbiotic relation between people and forest, envisages the peoples involvement in the development and protection of forests. The requirements of fuel wood, fodder and small timber such as house building materials of the tribals and other villages, living in and near the forests, are to be treated as first charge on forest produce. Revenue objectives have given secondary importance and industrial requirements are to be met primarily from the farm forestry sector.

### **Joint Forest Management (J. F. M.)**

By definition it would mean involving people in the decision making process in the management of forests. It is a new concept

under which forest departments of Government and the local communities jointly manage the state forestlands. In turn both share the responsibilities and benefits.

The main ingredients of the participatory approach to forest protection and management are as follows (Tewari, 1993):

- a) Give the local village communities a stake in the well-being of the forest, by giving a share of the produce;
- b) Develop institutions at the local level to provide a forum for developing the participatory approach and to manage the sharing of responsibilities and benefits;
- c) Enlist the help of committed non-governmental organizations, colleges and schools, local women's and youth clubs and other groups with a proven track record to start the dialogue between the Forest department and the villagers.

Many schemes and programmes have been executed in the past to improve tree cover in degraded forests and farm lands. During the 1980s, all states had some form or other of social forestry projects. The main objectives of these projects were to increase supplies of fuel wood, fodder, fibre, food, small timber and other non-wood forest produce with additional income base. The

programme meant to change the behaviour of not only individual but also of community towards the trees and forests. Community participation in forestry development helped in following activities:

- i) Generating income and stable employment opportunities for the socio-economically disadvantaged rural people.
- ii) Stabilizing and strengthening rural community and the institutions.
- iii) Producing on a sustained basis the vital commodities such as fuel wood, construction wood, fodder, green manure and food for local consumption and minimizing local ecological degradation and maintaining the productivity of the land.
- iv) A strong socio-economic dimension has been added to forestry, calling for a new breed of foresters who are not only well-versed in the science but are also great communicators and motivators. Whole new ranges of technological and sociological issues have surfaced.

The core idea behind Joint Forest Management is recognition of the role of forest dependent community in planning and managing forest resources. The Joint Forest Management approach goes "Beyond Participation." Local community and Forest

departments were together as "partners." It entails the development of Joint Management Plans and agreements between Forest departments and communities, keeping due technical feasibility and capacity of area as well. Whereas possible additional support activities and wage employment made available to the local community to compensate for the initial opportunity cost of forest protection. Joint Forest Management is based on the premise that still much of the degraded forest contains such of the rootstock, which can regenerate rapidly if protected and given despite from continuous biotic interference. As a result of the shift in approach as many as 16 state governments have passed resolution-outlining guidance in adopting Joint Forest Management.

The New Forest Management approach has led to the following issues:

1. How and when did the concept of Joint Forest Management originate?
2. What motivated villagers for participating in the Joint Forest Management?
3. Has the attitude of the Forest officials changed?

4. What is the impact of Joint Forest Management in terms of ecological, socio-economic, institutional, direct and indirect changes?
5. What are the constraints in the implementation of Joint Forest Management as perceived by personnel of Forest departments and participating villagers?

In order to address the above-mentioned issues, it was thought appropriate to probe into Joint Forest Management with the following specific objectives:

1. To trace the historical profile of J. F. M.
2. To analyse the motivational pattern of participatory tribals in J. F. M.
3. To know the opinion of forest department officials and participating tribals of Vana Samrakshana Samithies (FPC) about J. F. M.
4. To assess direct and indirect changes in terms of ecological, socio-economic and institutional due to J. F. M.
5. To study the successful and unsuccessful typical cases of Vana Samrakshana Samithies (FPC) of J. F. M.

6. To identify the constraints in the implementation of J. F. M (FPC/VSS) as perceived by personnel of forest department and participating tribals.

### **Scope of the Study**

The examination of historical profile of Joint Forest Management reveal how a local initiative in regenerating forests started gaining momentum and the role played by the Forest department. The knowledge about motivational pattern would help in Forest department& in redesigning J. F. M. to meet the needs of fringe dwellers. Information on development orientation, constraints and suggestions in implementation of JFM would be of greater use to the planners and administrators.

### **Limitations of the Study**

The study has been conducted by a in-service student researcher by the under mentioned limitations:

1. The study was carried out within the usual limitation of time, money and other resources of a single student project.
2. The findings are based on the expressed views of the respondents in the locale and hence cannot be generalized over a larger area.

## Organization of the Report

The report has been presented in six chapters. The first chapter deals with Introduction, which highlights the need, objective and limitations of the study. The second chapter is devoted to historical perspective (Part-I) and relevant review on findings (Part-II) of the subject. Research methodology has been described in the third chapter. It comprises of locale of the study, sampling procedure, tools of data collection and analysis. Findings and discussion have been presented in fourth and fifth chapters. The last chapter presents summary, conclusions and suggestions for future research.

# REVIEW OF LITERATURE

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## CHAPTER II

### REVIEW OF LITERATURE

A thorough review of literature is of paramount to research endeavour. It helps to have a general background in the given field of study as it gives an idea about the work done in the past. It also helps to find out the available information in relation to the objectives of the proposed research and assists in delineating the problem area and also provide basis for theoretical framework, testing and interpretation of findings. This work is concerned with "Joint Forest Management (JFM) for sustainable development in tribal areas of Visakhapatnam district, Andhra Pradesh - A study." Hence, every effort was made to review the relevant and updated literature having direct or indirect bearing on the study. Hence, every effort was made to collect historical Review, relevant and updated literature having direct or indirect bearing on the study. The review of literature was divided into 2 parts viz., Part I and Part II. Part I was devoted to cover only History of Forest Management, where as the Part II for the relevant literature pertinent to objectives of the study under Six headings.

## PART I

## HISTORY OF FOREST MANAGEMENT

If we trace the history of forest management in India, we find, though the people have traditionally close association and love for forests, since the time of emperor Ashoka or even earlier, forests have belonged to the state. Except for a few "Royal trees," however, people were permitted to obtain their requirements from the forests, which were used as an "open access resource" without having any stake in their management (Arnold and Steward, 1991). In western and southern regions of the country, the local rulers owned all the uncultivated land including forest and grazing lands, whereas in the northern and eastern regions the uncultivated parts around the village were owned by the local landlord. There are instances like, the local temple priest managed these forests with the help of the people, where the influence of the state is missing.

For a rational and intelligible description, the history of forest management was divided into six distinct periods.

1. Pre British Period (before 1750)
2. Early British Period (1750 - 1900)

### 3. Late British Period (1900 - 1947)

#### 4.a Post Independence Period (1947 - 1975)

#### 4.b Post Independence Period (1975 - 1985)

#### 4.c Post Independence Period (1985 to date)

## 1. Pre-British Period (before 1750)

The Muslim invasion uprooted large number of people who sought refuge in the forests, which they chased for settling down. The invaders did not have any special interests in the conservation of forests either and cleared the forests at will. The Mughal emperor, Akbar had evinced interest in the planning of trees along canals. With the fall of the Mughal Empire, the country was divided into a number of small kingdoms. Frequent fighting forced people to abandon cultivation and move into forests which resulted in more clearing of forests. Shifting cultivation was practiced in several parts of the country during these times. Local rulers as "Royal trees" proclaimed only specified species of timber value. Otherwise forests were opened to all to do what they liked.

In great contrast to the apparent health of India's forests, there was total deforestation in England by the time the British established their rule in India. Thus, the forests of India acquired a special significance through the rulers for meeting their timber

needs, particularly for ship building. Pre-British is characterized by community ownership and community management of forests, which ensured forests conservation. There were plenty of fuel, fodder and non-wood products for personal consumption and barter.

## **2. Early British Period (1750 - 1900)**

In the early years of this rule, the British also made large inroads on the timber wealth of the country. The British themselves were new to ideas of systematic forestry as they had themselves destroyed all the forests in Britain. Large quantity of Teak wood was taken out from India to substitute for Oak timber. At the close of the 18<sup>th</sup> century the position regarding forests in India was no better than before the advent of the British. This state of affairs was not conducive to forest conservancy. The policy to expand Agriculture at the costs of forests continued during this period.

The British used large quantities of Teak for Royal Navy, as well as expanding railway network. Heavy exploitation of this species took place during this period. The position of forests was much worse in north India. The accessible portions were subjected to heavy unregulated felling. When the western and eastern Jamuna canals were constructed, trees of sisoo, toon, sal and teak were

planted along these canals between 1820 - 1840. It was in 1855 that an outline for forest conservancy for the whole country was issued by the Memorandum of the government of India on 3<sup>rd</sup> August, 1855. The British, having no experience of forest management and realizing the consequences of total destruction of forests in Britain, brought a German, Dr. Brandis to set up the forestry management in India.

### **Establishment of Forest Department**

The forest department under the government of India was set up on 1<sup>st</sup> November, 1864 under the guidance of Dr. Brandis as India's first Inspector General of forests. Brandis along with Cleghorn were responsible for the development of methodical system of management of forests in the early stages. The Indian Forest Act, 1865 came into being as the first attempt on forests legislation by the British. The famous German foresters Sehlich and Ribbentrop joined Brandis in setting up forestry management and training in India. During 1865 - 70, the planting of Casuarina was started in the coastal areas of Madras to meet the firewood demand and for supply to railways. Forests were created for best trees of the best species for export to England. In 1855 Dr. Brandis was appointed as the first Inspector General of forests. In 1865 first

Indian Forest Act was passed to legitimize the restriction regarding the users of forests by the local people. It was the period, which marked the beginning of breakdown of age old relationship of mutuality between forest dwellers and forests. The forest department gradually came up after the appointment of Dr. Brandis. Apart from the plantation of teak, exotic Acacias and Eucalyptus were introduced in Nilgiri hills in 1858. Earlier Eucalyptus had been planted by Tippu Sultan in Mysore State. This activity was subsequently increased primarily to meet the firewood demand of the growing population.

Taking a cue from their predecessors, the East India Company contended itself by clearing some valuable species like sal and shisham, teak and sandal wood as "royal trees" – trees that required a permit to sell. Otherwise, everyone was at liberty to sell what and where he liked.

### **Organization of Forests Under Regular Management**

By 1870, the foundation of the Forest department may be said to have been well and truly laid by Brandis. During the periods 1871 - 1900 preparation of working plans commenced. Treatments of forests were prescribed on scientific considerations. The demarcation of forests was also started during this time. The

revised Indian Forests Act was passed in 1878. In 1878 Forest School was inaugurated in Dehradun for training Forest Rangers and in 1891 a college for Provincial Forest Service also started in Dehradun. Forest Act was revised in 1927 and continued after Independence.

### **3. Late British Period (1900 - 1947)**

This period was characterized by extensive reservation and bringing most of the exploitable area under working plans of long rotations particularly for meeting the needs of railway sleepers. Since large openings were prohibited and natural regeneration was relied upon, environment was largely preserved. World War II changed all these. Thus it represents a watershed in the working of forests in India. Commercialization being an objective, only marketable timber species received attention, this resulted in radical interference with the ecology of forests leading to reduction in the population of all non-timber species and extension of vulnerable species.

Deprivation and marginalization of forest dwellers reached a new height leading to their migration, under mining of tribal culture and breaking down of mutually reinforcing relationship between forest and forest dwellers.

There was in general all round progress in the different fields of forestry during the early part of this century. The major emphasis was to step up research in various disciplines of forest management and utilization. Lord Curzon opened the Forest Research Institute, Dehra Dun in 1914. Large chunks of forests were destroyed in non-cooperation movement. However, this damage was recovered through scientific inputs in forestry. In 1926 -27 the forest administration was transferred to the concerned governments of the provinces. Each state appointed Chief Conservator of Forests for management of their forest department. The unified system of recruitment, training and service conditions, however, continued to serve and keep forestry in the whole country on well coordinated basis. A notable feature of the work during this period was the afforestation taken up in Punjab (Hoshiarpur) and UP (Etawah, Tarai and Bhabar) for reclamation of Chos, Ravines and eroded areas during 1926 onwards. World War II affected the forests of India. The heavy demand of wood for war had resulted in large felling of the major timber but simultaneously it increased the use of secondary timbers and lot of utilization research was carried out during this period. This research ultimately was responsible for several new wood based industries including starting of the paper, plywood and match wood industries.

#### 4.a Post Independence Period (1947 - 1975)

Independent India inherited forests over exploited during the two world wars. It inherited poor open and unhealthy growing stock. It inherited 9 million hectares of private forests devastated by merciless cutting for personal profit. It inherited in the environmental hospitality between forests and forest dwellers because of (i) the restriction put on the freedom enjoyed for generation, (ii) any inhuman and justified enforcement of forest laws. Inherited an administration which was insensitive and irresponsible to the people, it inherited a forest technology, which was evolved by and in favour of industrialized nations. Around 1960, Dr. Von Mou Roy recommended creation of large-scale plantations of quick growing species such as Eucalyptus. The Government was so anxious to augment, as quickly as possible, raw material supply to wood based industries which provided cent per cent subsidy initially to state Government for raising Eucalyptus plantations. The state Government, therefore, made all efforts to make maximum advantage of this free money. In this process, the question of ecological suitability was overlooked.

The independence of India resulted in the formation of new provinces after the merger of several princely states. The first few

years were devoted in consolidation of forests, unification of forest lands and extension of scientific management to the forest areas which were without such management. The National Forest Policy was enunciated in 1952. The Zamindari Abolition Acts changed the ownership of large areas of forests that vested in the forest departments. There was a sudden increase in the Government forests due to such transfers. The Zamindaris Abolition Act also resulted in large destruction of these Zamindari forests before their legal transfer to the forest departments.

The increase in Government forests was also gradually lost due to over emphasis on transfer for agricultural production immediately after independence. Nearly, 4.33 million hectares were lost for various purposes in the country.

The state of the country's forests reflected the colonial set-up, parts of the country being directly under central administration, and large parts under the princely states. Some of the large states like Travancore, Mysore, Hyderabad and Jammu & Kashmir had reasonably well organized forest departments; in others like Bhopal and states in central and eastern India, state agencies had benefited by advice from trained forest officers from neighbouring provinces of British India and their forests were in a reasonable state of

maintenance. But the forests of the princely states have served mainly as sources of revenue and no measure of forest conservancy had been practiced in them (Anon, 1961).

This forest policy was drafted with the backdrop of evolving thought in the period 1950-52, when efforts began to adopt a National Festival of Tree Planting (Vana Mahotsava); to devise measures for wildlife conservation and to promote soil conservation on an all-India footing.

Another major change took place in 1956, after the accession of the princely state with the union of India, when the country's provinces were re-organized on a linguistic basis and 14 different states came into being. This naturally resulted in considerable re-alignment of forest area and administration also, necessitating major administrative and professional cadre overhauls. Since then, with the administrative order more or less on an even keel, organized efforts began in real earnest.

#### **Forestry Under the 1<sup>st</sup> to 4<sup>th</sup> Five-Year Plans**

India adopted the centrally planned economy model of development, with the successive Five Year plans laying down the priority areas in each major sector. Forestry too came to have laid down trust areas in each plan. Generally reflecting both the

achieved state of development at that point in time as well as new thoughts and concepts that came to be evolved in the country as well as in the world. The first Five Year plan laid most emphasis on the agriculture and food grain sector, reflecting the urgent priority of generating self-sufficiency in food. The formulation of the National Forest Policy in 1952 laid emphasis upon improving the forest administration by area studies, working plans and by launching a programme of general afforestation. The second and third Five Year plans' forestry aims reflected the general thrust towards industrialization launched by the country. Thus, plantation activities got a boost in order to provide more timber for industrial consumption, as well as to regenerate degraded areas and by taking measures in soil conservation and rehabilitation of wastelands.

This period also saw the growth of Farm Forestry and a thrust towards extension. The introduction of fast growing species with a view to bridging the gap between demand and supply of pulp wood and other industrial use timber was given a greater thrust. The fourth and fifth Five Year plan periods saw a more comprehensive conceptual framework to evolve with thrust on the ecological aspects, wildlife and protected area conservation with the emergence of the concept of biosphere reserve conservation and protection gaining a major stimulus or incentives.

The early independence period was characterized by a change in the direction of Forest Management from "Follow the Nature" to "Change the Nature"; from "Conservative Intervention" to "Aggressive Intervention." The aim of management was to produce more and still more of industrial wood in as short time as possible. In this process, bio-diversity and ecology came to be the greatest victims.

The sudden spurt in the plantation activity caused shortage of technical manpower, quality seed and planning. As a result, unsuitable sites came to be selected accounting for large-scale failures; financial accountability and discipline got a terrible beating. Everything came to be reduced to mere numbers. Forestry, which was both an art and science, came to be reduced to mere mechanical and monotonous.

#### **4.b. Post Independence Period (1975 - 1985)**

Production continued to occupy the central stage with vigour unknown in the past, more of commercialisation and hence and more of clear cutting and more of Eucalyptus. National Commission on Agriculture (1976) focused on the conversion of mixed miscellaneous forests, which contain the lightest bio-diversity into man made forests of commercial species. In order to attract

institutional finance for rapid conservation of these forests, forest department corporations were created one in every state. In order to produce fuel wood and fodder rural people were encouraged to rise social forestry which was recommended by National Commission on Agriculture on all wastelands. The idea was excellent to meet the needs of the poor by creating a resource at their doorstep, on their community lands and with their environment, thus easing the pressure on forests.

The transformation of the character and composition of the forest had a profound impact on the life and livelihood of about 50 million forest dwellers; the marginalization and pauperisation of tribals led to the breaking down of their social and family structure. Some of them were forced to migrate to urban areas in search of employment.

This period from 1975 - 85 represents the period of culmination of clear cutting and the beginning of awareness regarding the need to maintain forest canopy at all times, <sup>the need</sup> to avoid exotics and to maintain diversity. (Shah, 1998)

### **Social Forestry**

The National Commission on Agriculture (1976) recommended the incorporation of the social objectives by suggesting that State

Forest Departments must be bifurcated into two wings, one handling the "traditional" forestry activities and the other the "social" forestry programmes. The NCA spelt out the objectives of social forestry as fuel wood, small timber, fodder supply, protection of agricultural fields and recreational. A major step was taken in 1978 when the Government of India and the World Bank (with assistance from the FAO of the UN) agreed to collaborate in giving a quantum boost to social forestry activities by launching World Bank aided Social Forestry Schemes. The first two states covered under this were Uttar Pradesh and Gujarat. Since then, Social Forestry Programmes have been launched throughout the country, in many cases transforming the face of rural areas.

### **Urban Forestry**

The unprecedented increase in the pace of urban development has significantly affected man's relationship with trees and forests. The trees have a significant impact in the urban areas too. Urban forestry was developed as a specialized branch of forestry and its objective is cultivation and management of trees in the urban environment. Trees provide a host of climate buffering services. Trees and green species play an important role in improving living conditions in cities.

#### **4.c Post Independence Period (1985 to date)**

In 1985 the National Wastelands Development Board was established to undertake massive afforestation through people's participation to bridge the staggering gap between demand and availability of fuel wood and fodder and to speedily restore ecologically our degraded lands (Rego, 1985).

This is an epoch making period in the history of forest management during which the subject took a steep turn.

Environment awareness was the interaction response to the wide spread destruction of forests, dilution of biological diversity and pollution of air, water and land. India did not lag behind in the awakening process.

This period represents a watershed in the history of Forest Management in the country. During the period 1975 - 85, modified the slogan from "change the nature" to "restore the nature." Environmental awareness and a better understanding of the role of forests in the preservation of bio-diversity, containing global warming and ozone depletion and in ensuring sustainability have invested forest with importance, which was not imagined before.

## Major Events of the Period

1. Reunion of National Forest Policy in 1988.
2. Policy decision of 1990 to make Tribals partners in planning, management and profit and to involve NGOs. This ushered the era of Joint Forest Management.
3. Earth Summit, Bio-diversity Convention, Treaty to contain Ozone depletion and the Kyoto Conference on Climate Change.
4. Spotted Owl controversy of USA leading to reinforcing the need to stop clear cutting.
5. Tropical Forestry Action Plan.
6. G. E. F (Global Environment Facility).

A new direction and a new strategy, therefore, became imperative. Fortunately, the work done by Dr. Banerjee during the early seventies had a great appeal. He diagnosed the real course why the rural poor destroy forests. He came to the conclusion that, it is unemployment, which forces the poor to destroy forests and eke out a living, in absence of Alternative Avenue of livelihood. Thus was born the concept of Joint Forest Management (JFM). Also, independently of this, some villages in Orissa, Gujarat and the like have been protecting forests without any Government involvement.

Also, a few devoted and motivated forests like Pathan of Gujarat have been developing models of forest management with the active participation of the villages concerned. It is about eight years that JFM is in operation in almost all the states, with mixed results. The basic foundation seems to have been neglected; the foresters, the NGOs and the people concerned were not adequately prepared to receive this programme wholeheartedly. Also, there is no mechanism to continually monitor, review and refine the activity. Precious little is being done to engender trust and confidence among the participating agencies. There is little direction and guidance regarding the technology, which has to be different from the known forest technology. We find in a large number of cases, lack of commitment to the ideology and philosophy of Joint Forest Management. (Shah, 1998)

### **Forestry Under the 5<sup>th</sup> to 8<sup>th</sup> Five-Year Plans**

The broad objectives of forestry continued in the subsequent plan periods also. The 5<sup>th</sup> and 6<sup>th</sup> five-year plans added Social Forestry as policy objectives, thus aiding the plantation activity outside Reserve Forest areas both as a measure of re-greening with its ecological ameliorative objectives and also to raise further forest resources to meet the growing industrial demand. A major

discernible trend during this phase was the thrust towards environmental conservation.

The seventh Five Year plan (1985 - 90) while continuing with the broad objectives of the earlier plan, laid emphasis on the role of tribals in forests and sought to both empower people residing in forests and those wholly dependent upon them as well as to cement a mutually beneficial relationship between forests and forest dwellers/dependents.

Major legislation changes took place during this period - the enactment of the Forests (Conservation) Act, 1980 in order to check diversion of forest lands/ deforestation (later amended in 1988) to incorporate more stringent provisions for violation as well as the placing of forests on the concurrent list of the constitution of India, thereby ensuring control of the central Government to check diversion of forest lands.

The Environment (Protection) Act 1986 was enacted to tackle major environmental issues related to atmospheric and water pollution and the increasing concentration of carbon dioxide in the atmosphere.

The National Forest Policy, 1988 recommended the approaches for greening the country as adoption of massive need-based and

time bound programme of afforestation and tree planting, planting of trees along with roadside, canal side, railway track side, raising of green belt in urban/industrial areas, development of village and community lands and encouraging of agro-forestry and farm forestry for increasing bio mass production and tree cover area (Tewari, 1991).

In 1985 the National Wastelands Development Board was established to undertake massive afforestation through people's participation to bridge the staggering gap between demand and availability of fuel wood and fodder and to speedily restore ecologically, our degraded lands (Rago, 1985).

The decade from 1985 to 1995 was also marked by an upsurge of political debate on forestry sector and saw the launching in 1985 of the Tropical Forestry Action Plan (TFAP) with the aim to "Save the World's Tropical Forests for Benefit of all Mankind."

The Eighth Five Year Plan (1992 -97) added bio-diversity conservation as a major objective, retaining the earlier thrust towards involving the people in the protection of forests and sharing with them the usufructs of their efforts, thus benefiting both the local people as well as the country at large by conserving forest wealth.

Thus, the Five Year Plans have served the cause of forestry and forest conservation. Some of these were discussed in the succeeding paragraphs.

### **Forest Legislation**

In pursuance of the recommendations in 1952 of the National Forest Policy, some of the states enacted their own full-scale forest acts and some extended the provisions of the Indian Forest Act to their territories (Tiwari, 1985).

In 1962 the Central Board of Forestry (CBF) recommended that the suggestions for improvement and changes in the Indian Forest Act in the light of the recent developments might be invited from State Governments. The issue of one aspect of forest management, viz., nationalization of trade in various minor forest products, came up again for discussion before the CBF in February, 1973. In order that there may be uniformity in respect of this legislation, the CBF recommended revision of the Act (Tiwari, 1985).

In a recent landmark judgement, the honourable Supreme Court of India has directed that working plans for all Forest Divisions shall be prepared by the State Governments and got approved from the GOI. Forest working shall be carried out strictly

in accordance with the approved prescriptions of the working plans (Annon, 1998).

### **Forest Corporation**

The NCA in their interim report of 1972 on "production forestry" called for the establishment of Forest Development Corporations in order to put the management of economically important forest areas under the discipline of corporate sector and to provide employment opportunities to the tribal and rural people living below the poverty line.

The Forest Corporations so established in various states and Union Territories are engaged in a host of forest development / business activities ranging from forests harvesting, forest based industries, trading in various forest produce to raising plantations of economically important species and finally greening the wastelands (Khullar, 1991).

### **Basic objectives of National Forest Policy of 1988:**

1. Maintenance of environmental stability through preservation where necessary, restoration of the ecological balance that has been adversely distributed by serious depletion of forests of the country.

2. Conserving the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, represent the remarkable biological diversity and genetic resources of the country.
3. Increasing substantially the forest tree cover in the country through massive afforestation and social forestry programmes especially on all demanded, degraded and unproductive lands.
4. Meeting the requirements of fuel wood, fodder, minor forest produce and small timber of the rural and tribal populations.
5. Increasing the productivity of forests to meet essential national needs.
6. Creating a massive peoples movement with the involvement of women, for achieving these objectives and minimizing the pressure on existing forests.
7. Checking soil erosion and denudation in the catchment areas of rivers, lakes, and reservoirs in the interest of soil and moisture conservation for mitigating floods, droughts and for the retardation of the siltation of the reservoirs.
8. Checking the extension of sand dunes in the desert areas of Rajasthan and along the coastal tracts and

9. Encouraging the efficient utilization of forest produce and maximizing substitution of wood.

The principle aim of Forest Policy must be to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium, which is vital for sustenance of all life forms - human animal and plants.

### **Joint Forest Management (JFM)**

In pursuance of the National Forest Policy, the Government of India issued guidelines in June 1990 to the states to adopt Joint Forest Management. JFM is thus a programme essentially to induct villagers formally into the forest management system, and to make the production system more responsive to community needs, thereby ensuring sustenance of the resource. A need for efficient forest protection by the people for wider ecological consideration and local sustenance is the genesis of the programme.

## **History of J. F. M. in A. P.**

The National Forest Policy 1988 recommends to have one third of land area under tree cover. The forestland in Andhra Pradesh extends over 63,813 sq. kms forming 23% of land area. Not only the existing forest cover falls short of the actual requirement of 33.33 per cent, the dense tree cover is limited to 25,008 sq. km. The poor tree coverage has resulted in ecological imbalance that is reflected through floods followed by drought, soil erosion, poor crop yield, pollution and shortage of drinking water and poor health of the people. Government of Andhra Pradesh launched the Joint Forest Management (JFM) programme to involve the people in reversing this trend of forest degradation. People are actively participating in the protection and development of degraded forest through Vana Samrakshana Samithi (VSS). However, while JFM and VSS may help in greening the forest area, there is need to expand tree plantation culture outside the forest areas to achieve the goal of covering 33.33 per cent of land area under tree cover. Farm output can be increased through agro-forestry. Similarly in urban areas trees can reduce the air by pollution providing healthy life to the citizens.

The initiative on Joint Forest Management (JFM) programme was started in the year 1992 when the proposals were formulated for

the implementation of JFM as per the Government of India guidelines issued on 1<sup>st</sup> June 1990. The Andhra Pradesh State Government issued orders on JFM vide G. O. Ms. No. 218, Environment, Forest Science & Technology Department, dated 22<sup>nd</sup> August 1992. By this time the preparatory work for the World Bank (WB) aided A. P. Forestry Project (APFP) was taking shape. West Bengal had the knowledge of the progress made by the Government of West Bengal in involving the people in the protection and development of forest by Forest Protection Committees (FPC). The barrier created due to years of regimented functioning of the Department was coming in the way of working together with the people. Therefore, given the pace at which the programme was getting implemented, it appeared that the target of 760 VSS envisaged under the APFP might be difficult to achieve. In spite of all the efforts made by Forest Department, only 22 VSS could be formed successfully throughout the State in the first year.

However, the training programme was continued and concerted efforts were made to motivate the officers and change their mind-set to adopt the participatory approach to forest management. By August 1995, 260 VSS were formed covering an area of 1,40,000 hectares.

In September 1995, the Chief Minister of Andhra Pradesh reviewed the position of the degraded forests and the efforts were made to improve their condition. After assessing the potential of forestry sector to provide employment to rural poor through the development of degraded forests. Originally there was an apprehension that JFM programme may be converted into a land distribution programme by unscrupulous elements. Government issued clear orders to follow the Government of India (GoI) guidelines and the Forest (Conservation) Act in dealing with the development of degraded forests through JFM programme. This new initiative of the Chief Minister was named as "Vana Samrakshana Udyamam" (Campaign for Forest Protection). The first meeting under this new nomenclature was held on 8<sup>th</sup> February 1996 in Chintalapudi village of West Godavari district.

Up to 1997, 1320 VSS have been constituted and about 3,90,000 hectares of degraded forests have been brought under the participatory protection of which 63,205 hectares of degraded forests have been treated.

"The projection for degraded forest rehabilitation through Joint (participatory) Forest Management (JFM) arrangement between fringe villages and Forest Department has been increased to about

2,38,000 hectares compared to SAR (Staff Appraisal Report) projection of 1,73,000 hectares, i.e., 37% increase."

### **Impact of Joint Forest Management (JFM)**

By the beginning of the year 1997-98, JFM was a major developmental programme in the remote villages throughout the State. 2500 Vana Samrakshana Samithis (VSS) have been formed and more were in the process of formation.

As the number of VSS was increasing day-by-day, funding became a constraint in further expansion of the programme. Most of the new VSS formed under 'Vana Samrakshana Udyamam' were not having adequate funds though it was agreed to tap the same from other sources. This was a slight setback to JFM. By March 1998, 3655 VSS were formed and they were protecting 8,98,970 hectares of forests. 1,69,626 hectares of degraded forests have been treated at a cost of Rs.5,397.15 lakhs. The number of people involved in the programme is 6,50,000.

With the success of JFM and its impact on the people a very ambitious programme has been drawn for the year 1998-99 to cover all the forest fringe villages numbering 6806 with an area of 17.88 lakh hectare at a cost of Rs.99.50 crores, out of which Rs.49.50 crores

is expected to flow from other sources such as Employment Assurance Scheme and other Government of India programmes.

The JFM programme, which was taken up in 1992-93 with lot of inhibition, has now come to a stage where positive results can be seen. Some of the VSS formed in 1993 are today in a position to harvest the first rotation crop after successfully protecting the forests and improving it.

## PART II

The relevant literature was reviewed under the following headings are as follows:

- 2.1 Concept of participation.
- 2.2 Villagers' motivation by participating in the Joint Forest Management.
- 2.3 Opinion of the forest officials and participating tribals.
- 2.4 Impact of Joint Forest Management in terms of ecological, socio-economic, institutional direct and indirect changes.
- 2.5 Illustration of few typical successful case-lets.
- 2.6 Constraints in implementation of Joint Forest Management as perceived by personnel of forest departments and participating villagers.

### 2.1 CONCEPT OF PARTICIPATION

Cohen and Uphoff (1980) regarded participation as "generally denoting, the involvement of a significant number of persons in situations or actions which enhance their well-being, e.g., their income, security and self esteem." Participation involves active collectively organized and continued efforts by the people themselves in setting goals, pooling resources together and taking actions which aim at improving their conditions. Participation is observed at different levels

of intensity measured by the kind of activities in which beneficiaries involved. When these are limited to information sharing and consultation, the level of participation is of low intensity. When beneficiaries become decision makers or start initiative actions on development activity, it can be said that the participation has reached a higher level of intensity. The following four kinds of involvement comprise participation. These are : i) Involvement in decision making (what would be done and how), ii) Involvement in implementing (by contributing where in resources or by cooperating in specific organizations and activities), iii) Involvement in sharing benefits (benefits of development programme), iv) Involvement in efforts to evaluate such programmes.

Banki (1981) expressed that participation as a dynamic group process in which all members of a group contribute, share or are influenced by the interchange of ideas and activities toward problem solving or decision making.

Santhanam (1982) defined participation as commitment on the part of the individual towards all forms of actions by which the individual can take part or play a role in the operation without being conscious of any socio-economic barriers to achieve certain common goals in a group situation.

Richardson (1983) indicated that a participation is an introduction of a new set of people in decision making process with regard to resource allocation or resource distribution.

Setty (1985) reported that in view of the nature of rural development programme, most of them initiated by the development agencies, the participation of people could be as diverse as follows:

- Responding to the programme, accepting the idea, the process and adopting the technology and innovations.
- Extending moral support.
- Participating in decision making, cooperating in implementation.
- Contribution of money, material, labour.
- Taking initiative, mobilizing people and resources and lastly
- Assuming leadership and ownership of projects.

Saradhi (1989) stated the basic concern of political scientist with regard to participation centres around the decision making and evaluation process whereas the economists emphasized participation as sharing the benefits of developmental programmes. But the concern of administrators (administration) was with participation in implementation of policies and programmes.

Gow (1992) indicated that there is more potential for success where the forest department introduces joint management of forest land, building up on mutual benefits to be obtained on greater access to forest products by local people and reduced potential covers for the forest department.

Singh (1993) revealed that cent per cent farmers were benefited with free supply of different species of plants. A majority of 98.75 per cent of farmers expressed that forests not only create better environment but also helped them in supply of wood for fuel (93.75%). Farmers (71.25%) agreed that the plants grown across cultivated fields acted as wind barriers. He further reported that 38.75 per cent of farmers expressed lack of technical knowledge. 21.50 per cent reported poor visits by officials. 12.50 per cent

farmers expressed marketing problems and 10 per cent farmers expressed improper motivation and insufficient skilled resources.

Francis (1993) analyse the people participation not only the involvement of items in the choice and administration of public policies, but also their direct involvement in making and implementing decisions pertaining to social, economic and participating activities.

He further expressed that people's participation is not only in the choice and administration of public policies but also their direct involvement in making and implementing decisions pertaining to social, economic and political activities.

Ahmad (1994) expressed that the public participation in combined efforts of the members of community, resulting from sense of dignity to utilize the resources available such a way that it results in an increased well-being of the community and reduces its' dependency on outside resources.

Singh (1996) concluded that the forest officials were prime source in intimating people regarding various aspects of social forestry programme. Trainings have to be conducted more coupled

with demonstrations. Forest officials should make personal contacts and take the people on field trips where good plantations are laid.

Naik (1997) suggested that the extent of participation in JFM activities independent on the labour from JFM and alternative enterprises.

Krishna *et al* (1999) revealed that it is the first time in history of Indian Forestry, the poverty ridden forest dependent people are made the stake-holders in JFM. They further discussed those efforts to protect or regenerate the forest with the active involvement of local communities. JFM strives to achieve people's participation through partnership, i.e., the partnership between government and local community in forest management.

In precise, the above studies depicted the participation in decision making, in sharing benefits, contribution of money, materials, labour and making the people as stake-holders in JFM.

## 2.2 MOTIVATIONAL PATTERN OF PARTICIPATING TRIBALS IN JFM

Mundra and Kothari (1988) reported that the economic security was found to be the most important motive for participation of women under TRYSEM scheme.

Chandukar and Thomas (1990) revealed that awareness, education and momentary gains generally motivated people to participate in rural development activities.

Tewari (1991a) revealed that nearly 22 per cent to 27 per cent of the elderly persons and 70 - 72 per cent of the children go to forests for collection of tubers, leaf vegetables, bamboo shoots and a host of other products. He further reported that social forestry programmes are characterized by motivating community management of forests, which ensured forests conservation. There was plenty of fuel, fodder and non-wood products for personal consumption.

Dey (1997) observed that women play a crucial role in JFM because of their intimate association with forest(s). They depend on forests for various livelihood security services. They get equal

representation in village forest committees and have choice in decision making on forest management activities for sustenance. Various women groups can also be constituted to establish alternate income generating activities.

Mukherjee (1998) stated that JFM is being implemented with full vigour and with an active involvement of village level Vana Samrakshana Samithis (VSS) in Andhra Pradesh. It has now come to a stage where positive results can be seen. Some of the VSS formed in 1993 are today in a position to harvest the first rotation crop after successfully protecting the forests and improving it. The programme will be sustained and the degraded forests of Andhra Pradesh could be regenerated giving maximum benefits to the local people.

Shah (1998) concluded the early years of independence were characterized by industry oriented production. The year 1980 was watershed year. The world conservation strategy altered the way we look at forests and forest management. The Earth Summit, the convention on biological diversity and recent climate change convention have all focussed on the need to maintain forest cover, conserve, bio-diversity and ensure sustainability.

Gupta *et al* (2000) found most of the tendu leaves collected by the tribals are sold in raw form without processing which adds value and fetch more income from the activity. If the tribals themselves take up the processing of removing the stem from leaf and making the leaf plates as finished products, they gain extra income, even after the season is over. Tendu leaves are used for rolling Beedies. If the tribals can be taught to roll Beedies and make leaf plates, thereby they fetch higher price and also get additional employment.

Mallik (2000) expressed that the under-employed and unemployed family labour in forest activities (collection and sale of NTFPs), there are huge employment opportunities to forest dependent communities and in particular to poor tribals. Around three-fourths (57.6%) of total man days of employment to a forest dwelling household is available in a variety of forest activities.

In summary, the above <sup>few</sup> studies indicated the motivational patterns of participating Tribals in JFM as - motivating the people for economic security, awareness, education and monetary gains, increased forest conservation, for fuel, fodder and for non-woody products.

### 2.3 OPINION(S) OF THE FOREST OFFICIALS AND PARTICIPATING TRIBALS IN JOINT FOREST MANAGEMENT

Sen *et al* (1985) observed that the social forestry programme in West Bengal has created an impact due to its orientation around weaker sections of the rural community.

Korten (1986) mentioned that in South Korea, while promoting formation of Village Forest Committees (VFC), a condition was laid down stating that various departmental funds would be channeled to the villages which reformed exceptionally in protecting and regulating the forests.

Mukhopadhyay (1987) identified an adequate decentralization of power at the local level and many of the community asset creations were possible by involvement of Panchayat bodies.

Seymour and Rutherford (1990) identified the unwillingness of FDs to provide responsibility to local people as among the main ingredients.

Gronow (1992) suggested that the government can sensitize the implementing officials to the needs of the disadvantaged groups and ensure equity in their contribution towards the programmes

and distribution of the benefits thereby making JFM as the peoples' movement for forest conservation in true sense.

Das (1994) opined that the policy guidelines issued by central and participating state governments are inadequate to stimulate forest personnel and operational levels to take adequate measures to include women in the management of forest(s).

Shankar (1995) concluded that the management of forest resources through Village Forest Committee (VFC) in Barwani Forest division was achieved through participation. By forming VFCs, there was increase in forest cover and grass production. The VFC is protecting the forests and vigil the activities of forest officials. There is socio-economic development through various works in the forests; the villagers are hopeful that they would be getting sufficient benefits from the developed forest area.

Menon (1995) reported that in order to "protect" forest areas, different configurations have to take shape which not only looks at forming forest participation committees and giving usufruct rights, employment opportunities, security of land tenure and ownership rights.

Rastogi (1995) argued that forest functionaries have now, therefore, not only to act as natural resource(s) managers, but also as facilitators of community participation in sustainable development, protection and conservation of forest wealth. He stressed the need for suitable communication strategy for facilitating community participation and involving people in decision making and planning.

Rajakutty and Gaur (1997) opined that the people's participation has come to be recognized as an effective role in development process. Participation has been producing encouraging results in awareness building, establishing linkages and convergence with other government schemes for the affected people and training the first-line workers of forest department to work, as committed agents of change and development are the key success of forest protection. People, who are generally dependent on forest for their livelihood by tradition, have been transformed into protectors of forest.

Saxena (2000) expressed that the forestry projects participation of local communities would improve forest productivity, alleviate

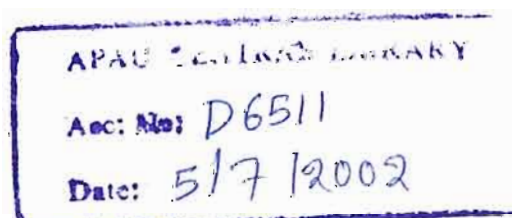
poverty and increase environmental stability. It would also build consensus with in the community.

Sreedhar and Bhaskar (2000) revealed that the Vana Samrakshana Samithies (VSS) activities paved the way for the emergence of collective and social consciousness among the people, creating a positive attitude towards education, health, family planning and gender equality. In addition, the VSSs' have contributed to the emergence of leadership among men and women at the gross root level. They were also successful in making the people environment friendly.

In brief, the studies revealed that the favourable opinion was created due to orientation programmes for regulating the forests, decentralization of power among villagers and making people environment friendly for attaining sustainable development.

#### 2.4 IMPACT OF JOINT FOREST MANAGEMENT IN TERMS OF ECOLOGICAL, SOCIO-ECONOMIC, INSTITUTIONAL, DIRECT AND INDIRECT CHANGES

Siva *et al* (1981) in their study on economical and ecological impact on social forestry observed that the social forestry practiced



so far lacks the origination and economic capabilities to provide the basic needs of the rural people.

Chaturvedi (1991) revealed that social forestry plantations can protect the environment and work as carbon dioxide sinks.

Tewari (1991b) concluded that land laws should be modified to facilitate individuals and institutions to undertake the farming and grow fodder plants, grasses and legumes on their own land and degraded lands. Appropriate legislation should be undertaken to allow ownership and rights to harvest and sell their trees.

Bahuguna (1992) reported that in Jhabua and Harda districts of MP, Participatory Forest Management has been quite successful.

Poffenberger (1992) concluded that the land satellite images of forest cover in Midnapore district of West Bengal along has increased from 11 to nearly 20 per cent of total land area in last 6 years.

Palit (1992) emphasized on participatory management like policy changes, institution arrangements, equity issues, input packages, micro planning, research needs and also opined that it is

slowly emerging as the only viable alternative in the national scenario.

Tewari (1993) observed that JFM resulted in generating income and stable employment opportunities for socio-economically disadvantaged people stabilizing and strengthening rural community and institutions followed by production on sustained basis the vital commodities such as fuel wood, construction wood, fodder, green manure and food for local consumption.

Shankar (1995) found once VFCs have constituted, a greater change is visible. Teak and other trees were coming up nicely, grass production has been increased, soil erosion checks and rate of forest offences decreased. All above mentioned impact is because of cooperation between FD and villagers.

Bahuguna and Hilalluddin (1995) assessed the impact of JFM or regenerating Sal (*Shorea robusta*) forests, they observed science of regeneration were positive in Kothalpur range and up to some extent in Joypur range when human related forests were under manageable limits, species richness under diversity had improved. And the soil was becoming more favourable for regeneration.

However, Bishnupur range was severely degraded due to more undulating vegetation profiles, overgrazing and forest floor sweeping for sal seeds and collection of leaves.

Patnaik and Brahmachari (1996) indicated the favourable conditions that facilitated community protection of forest in Orissa includes the presence of strong will organization or potential for such an organization, unity of the village, scarcity of forest produce and ripple effects or other villages protecting forest patches in the vicinity.

Sharma (1997) indicated that ecological and social objectives could be achieved through JFM programme implication. It also examines the likelihood of changing needs and responses of the local communities in different type of possible socio-economic scenario in which participative forestry programmes will have to operate in future. Need for research in various important policy related areas for JFM programmes as well as areas of potential conflict are also highlighted.

Mukherjee (1997) concluded that the poor tree coverage has resulted in ecological imbalance that is reflected through floods,

followed by drought, soil erosion, poor crop yield, pollution, shortage of drinking water and poor health of the people. In urban areas trees can reduce the air pollution providing healthy life to the citizens.

Mesare *et al* (1999) concluded that the scheme have shown positive influence on three vital aspects namely income, employment and standard of living. The finding with regard to overall impact of SFP suggests that the beneficiaries have perceived medium level of impact (53%) of the programme and the number of beneficiaries perceiving low impact (40%) was also considerable.

It was noticed that the nursery scheme and the schemes for private and wasteland development have created differential and diversified impact on their respective beneficiaries. The Kisan Nursery scheme has shown its impact in terms of income and employment generation and improvement in standard of living.

Sreedhar and Bhaskar (2000) reported that the forestry works alone generated as much as 1.89 lakh person-days of additional employment through which a sum of Rs.75.4 lakhs was paid to the members in the form of wages. The soil and moisture conservation

measures indirectly led to an increase in the net cultivated area and crop productivity. Besides, 56 thrifts were promoted among women, out of which 42 groups could undertake income generating programmes (IGPs) by mobilizing Rs.3.00 lakhs on their own and Rs.6.95 lakhs from outside agencies.

Verma and Rajput (2000) concluded that the socio-economic value of common lands can be increased by planting more trees and grasses on them. Establishment of village wood lots/social forests. The objective of establishing wood lots on Panchayat lands is to produce fuel wood, fodder and smaller timber for domestic use in the rural areas on a sustained basis. It will improve the village environment, meet their requirements for small timber, firewood, fodder and grasses.

In summary, the above studies indicated that the participation in JFM brought about significant changes in financial status, increased crop yield, improvement in knowledge and skills in agriculture and changes that occurred in the family living conditions of women by building up of durable and permanent assets.

## 2.5 CASE STUDIES

Jain (1998) concluded JFM scheme has been started with the active involvement of all the villagers in the tribal village of Saibaba Nagar, Cuddapah, AP. The scheme has been implemented through the formation of a Vana Samrakshana Samithi (FPC). A non-governmental organization has also been actively involved. The development of the scheme, which has involved confidence building, a participatory rural appraisal exercise, planning activities inside and outside the reserve area and support activities are briefly described. The results are very encouraging and the villages are taking an interest in protection and development of the degraded forest.

## 2.6 CONSTRAINTS IN IMPLEMENTATION OF JFM

Sarkar (1994) identified the weaknesses of JFM in West Bengal as follows:

- Repetition of Sal forest at 10 years interval is not good for silviculture.
- Sustainability of resources. Women do not participate actively.

- Large number of FPCs within the jurisdiction of beat officers become unmanageable.
- Marketing of forest produce.

Pawar and Kadam (1995) reported the constraints found by the agro-forestry growers were shortage of seedlings in case of teak, non-cooperation from the government officials and uneconomical transport facilities. About 23 per cent of the agro-forestry growers pointed out the difficulty of growing inter-culturing in tree plantations. Nearly about 21 per cent of the plantations growers complained about high mortality of seedlings especially in teak. More than 4 per cent of growers showed their dissatisfaction towards existing marketing constructions. Lack of market information as a constraint was reported by about 20 per cent of the growers.

They further reported that the agro-forestry growers expressed other constraints such as delayed returns, tree serving as host of pests and diseases, lowering down of water table by trees and shelter. For birds which were acting as obstacle in raising and expansion of agro-forestry systems.

Desai *et al* (1997) observed that non-availability of improved implements (45.94%), inadequate capital for the purchase of seeds and fertilizers (31.75%) and non-availability of improved seed in time (31.75%) were the main constraints pertaining to the availability of resources faced by the farmers.

Prakash (2000) found that all the tribal households faced problems in searching of Minor Forest Products (MFP) and the danger of wild animals. So collection in small quantity by traditional methods, marketing in raw form without grading and standardization, unawareness about prices prevailing in the markets, absence of notification for sale in regulated markets of the country and lack of infra-structural facilities like transport, storage and processing are the major constraints responsible for inefficient marketing of minor forest produce.

Tuteja (2000) concluded that the female agricultural workers do not enjoy the status, commensurate to their involvement in the households as a worker. Female agricultural workers contributed significantly to household income, but they lacked education, health and other support services and frequently do not have access to economic resources. They are not integrated into the mainstream

development process in the rural areas despite being the backbone of the village economy.

Verma and Rajput (2000) revealed that the limiting factors are lack of marketing facilities, long gestation period, lack of technical support and guidance, level of awareness, non-availability of seedlings in time.

The above research findings revealed that lack of knowledge and confidence, limited resources, non-availability of labour to carry work, complicated procedures, lack of incentives, lack of market, transportation facilities and inadequate staff were the major constraints for implementation of any development programme.

# MATERIALS AND METHODS

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## CHAPTER III

### MATERIALS AND METHODS

The present chapter explains a brief description of the methods and procedures followed in conducting the study under following heads:

3.1 Research Design

3.2 Sampling Procedure

3.3 Empirical Measurement

3.4 Data collection

3.5 Statistical Tools Used

#### 3.1 RESEARCH DESIGN

Exploratory Research Design coupled with case illustrations was used in the study.

Sabaratham and Mulay (1983) indicated that the exploratory study is a pilot study conducted prior to main investigation. This study is planned to gain more knowledge and familiarity with the phenomena or the subject concerned. This is conducted to achieve new insights into the problem. Variables are not required, however there is sensitivity and awareness regarding the variances. Though the said explanation about the exploratory study was endorsed by Katz

(1953), he considered it as a stage of science and conceptualized exploratory studies at two levels, the first level is discovery of the significant variables in the situation and the second is discovery of relationship between variables. However, Wilkinson and Bhandarkar (1984), considered the initial step in continuous research process rather than a detailed exercise, but Selltiz *et al* (1965) suggested the following methods are likely to be very fruitful in exploratory research directed towards the search for meaningful hypothesis.

- a) A review of related social science and other pertinent literature.
- b) To study the people who had practical experience of the problem to be studied.
- c) An analysis of "insight stimulating cases."

In the present study, an analysis of insight stimulating cases / typical cases were conducted to reinforce the main findings of the study.

### **3.1.1 Methodology used in conducting the case study**

A case is an eyewitness and narrative of real life situation, covering all aspects of personal, social, economical and participation of tribal farmers in joint forest management (Vana Samrakshana Samithies). Whereas a case study is a method of exploring and analyzing the life of a social unit, be it a person, a

family, an institution, a group or even an entire community (Young, 1965) .

Following procedure was followed in conducting a case study.

- i. Determination of factors and collection of materials about particular and general factors.
- ii. Statement of a problem and its' intensive study along with the classification of data analysis and conclusion.
- iii. Writing a case study report.

## **3.2 SAMPLING PROCEDURE**

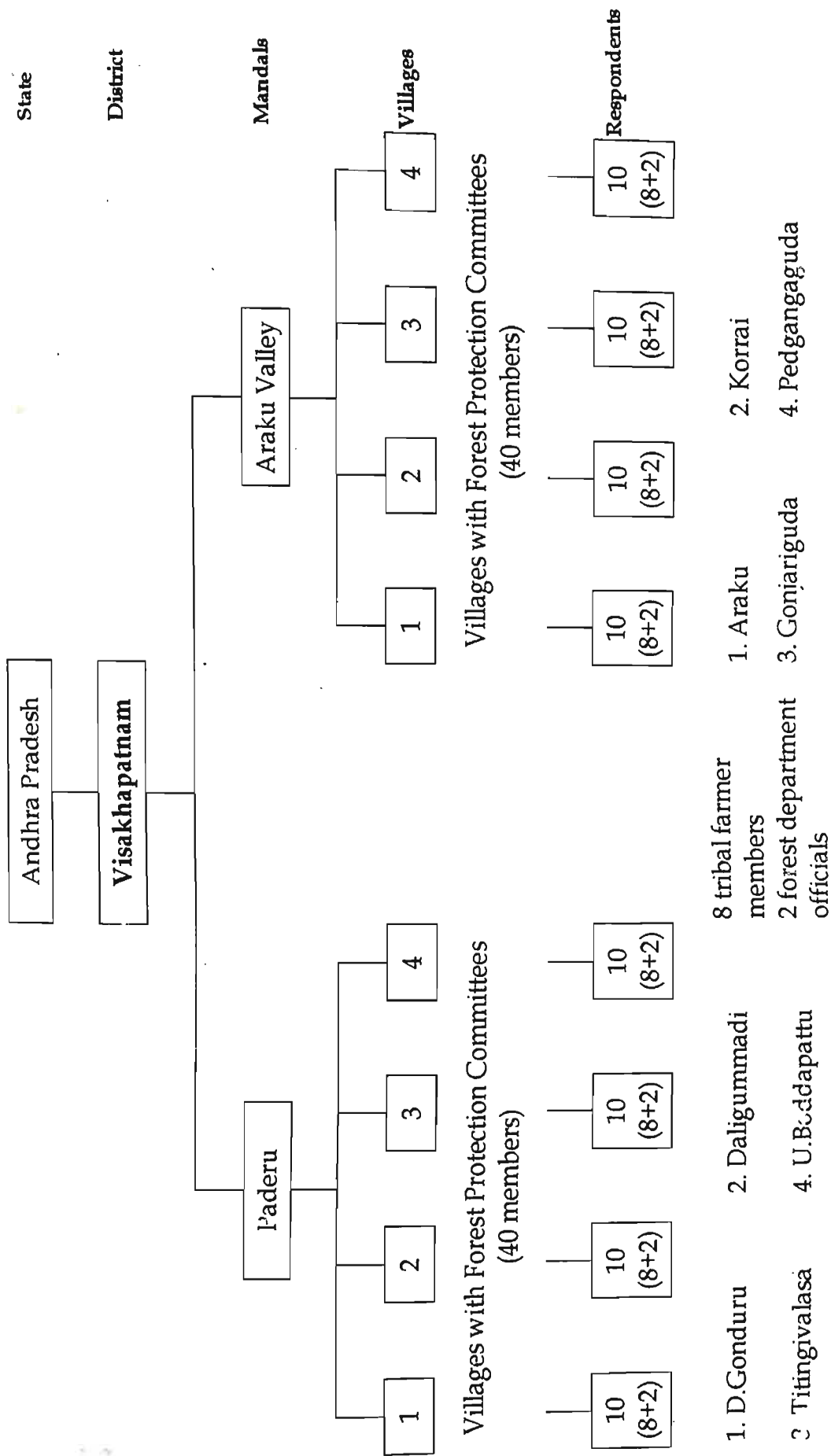
### **3.2.1 Locale of the Study**

The state of Andhra Pradesh was chosen for the study purposively as the Vana Samrakshana Samithi (JFM) is implementing in the state of Andhra Pradesh.

### **3.2.2 Selection of District**

The Visakhapatnam district was selected purposively due to the reasons given below :

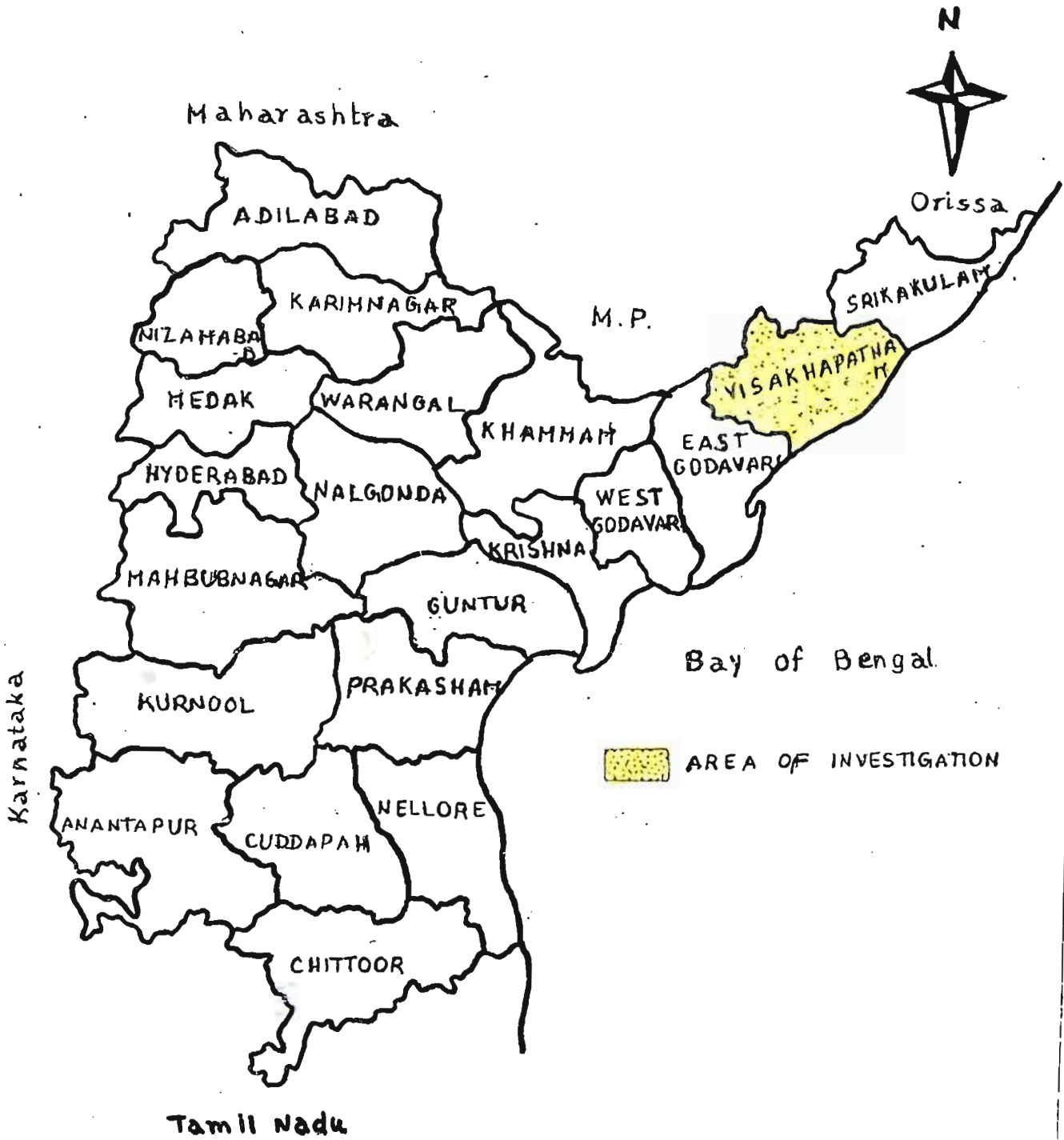
- i. No similar research was conducted earlier in this district.
- ii. The Forest Protection Committees in this district are functioning well.



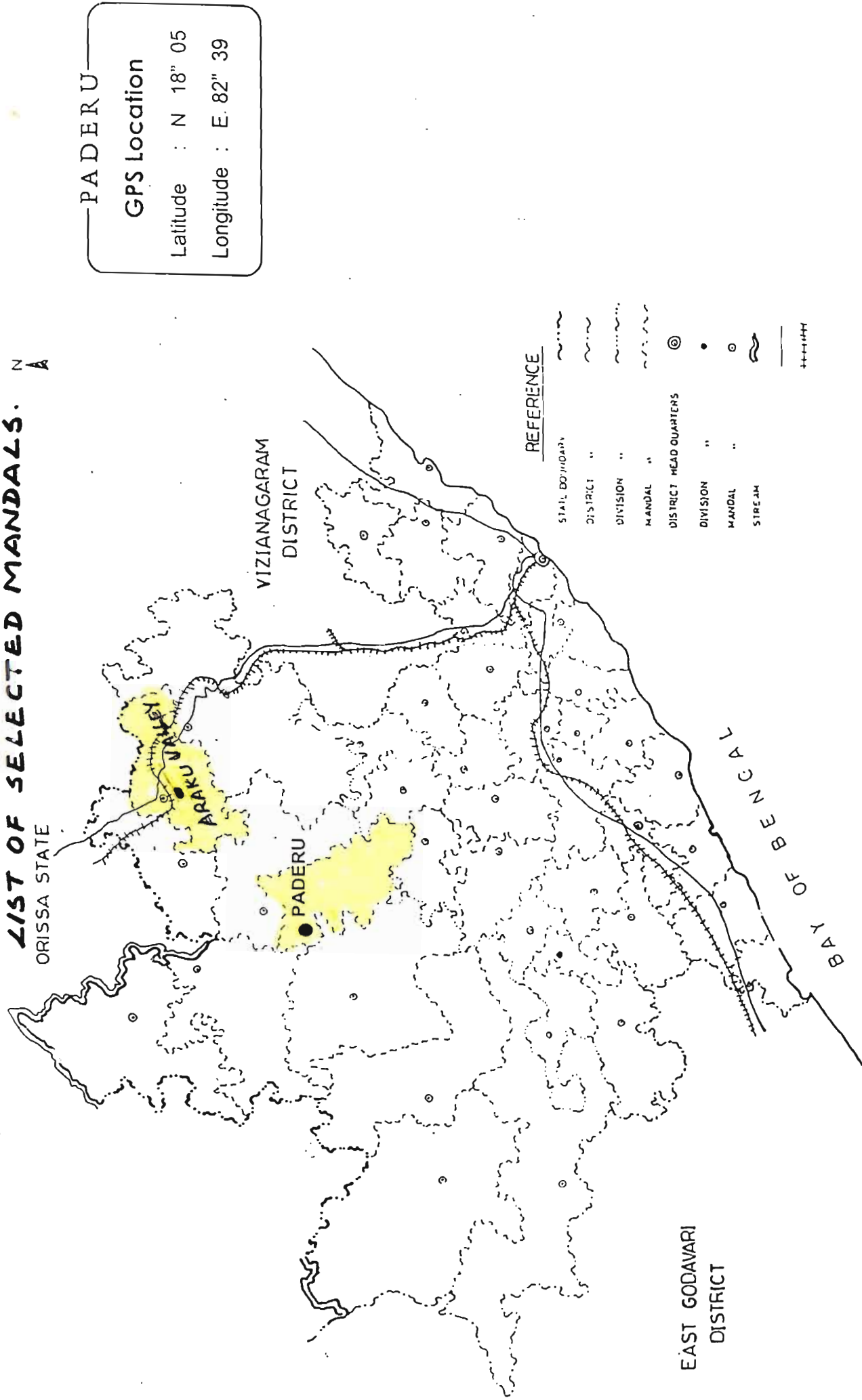
Note : Three successful and one unsuccessful case-lets selected from each mandal.

Fig. 1 : Schematic Diagram depicting the sampling procedure.

Fig : 2 Map of Andhra Pradesh showing the selected **VISAKHAPATNAM DISTRICT**



**FIG:3 MAP OF VISAKHAPATNAM DISTRICT SHOWING THE LIST OF SELECTED MANDALS.**



**PADERU**  
**GPS Location**  
 Latitude : N 18° 05  
 Longitude : E 82° 39

**REFERENCE**

STATE BOUNDARY	-----
DISTRICT "	~~~~~
DIVISION "	.....
MANDAL "	-----
DISTRICT HEAD QUARTERS	⊙
DIVISION "	•
MANDAL "	○
STREAM	~~~~~
	+++++

SCALE : 1" = 10 mile

FIG : 4 MAP OF PADERU DIVISION SHOWING THE LIST OF  
SELECTED MANDALS.

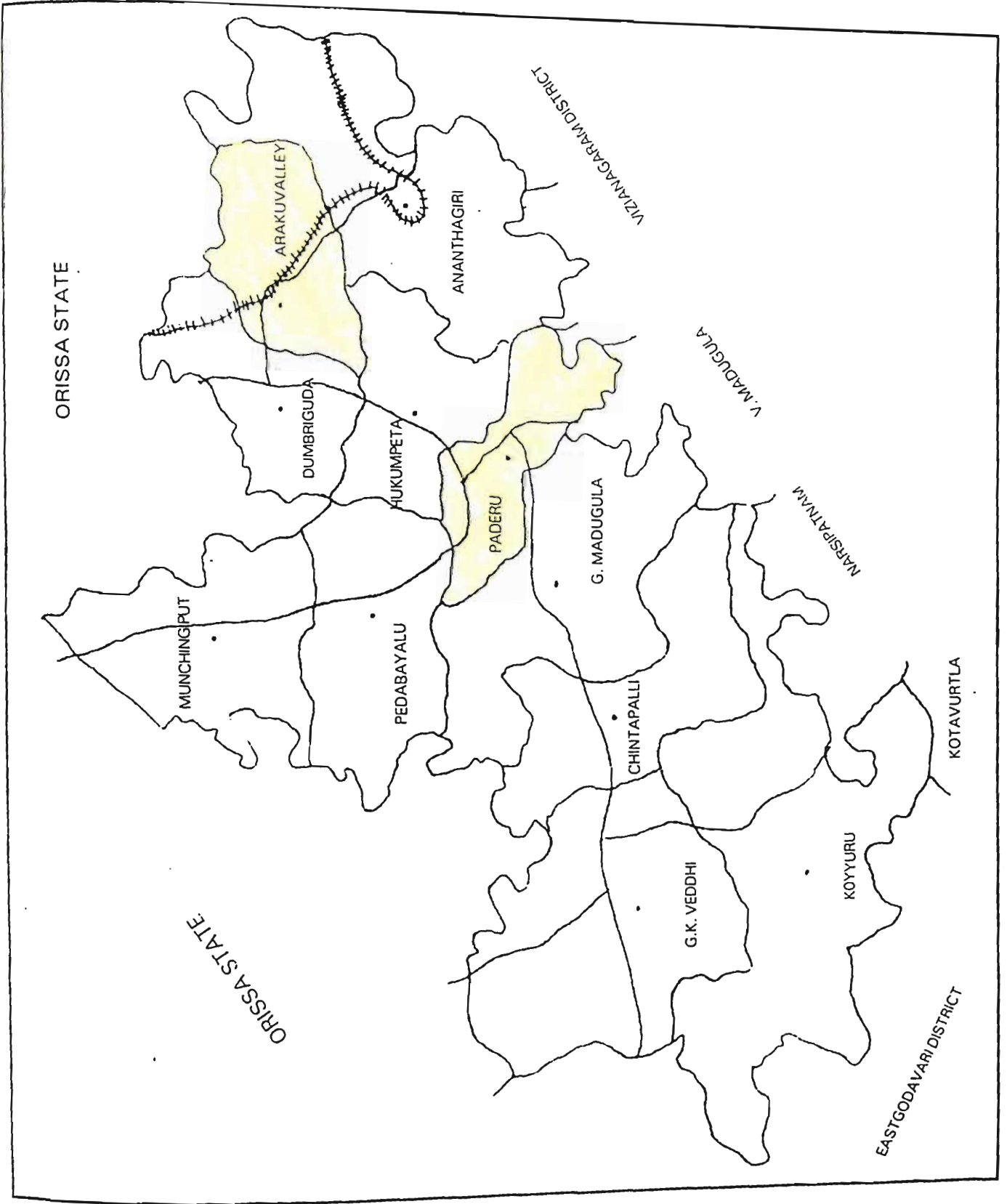
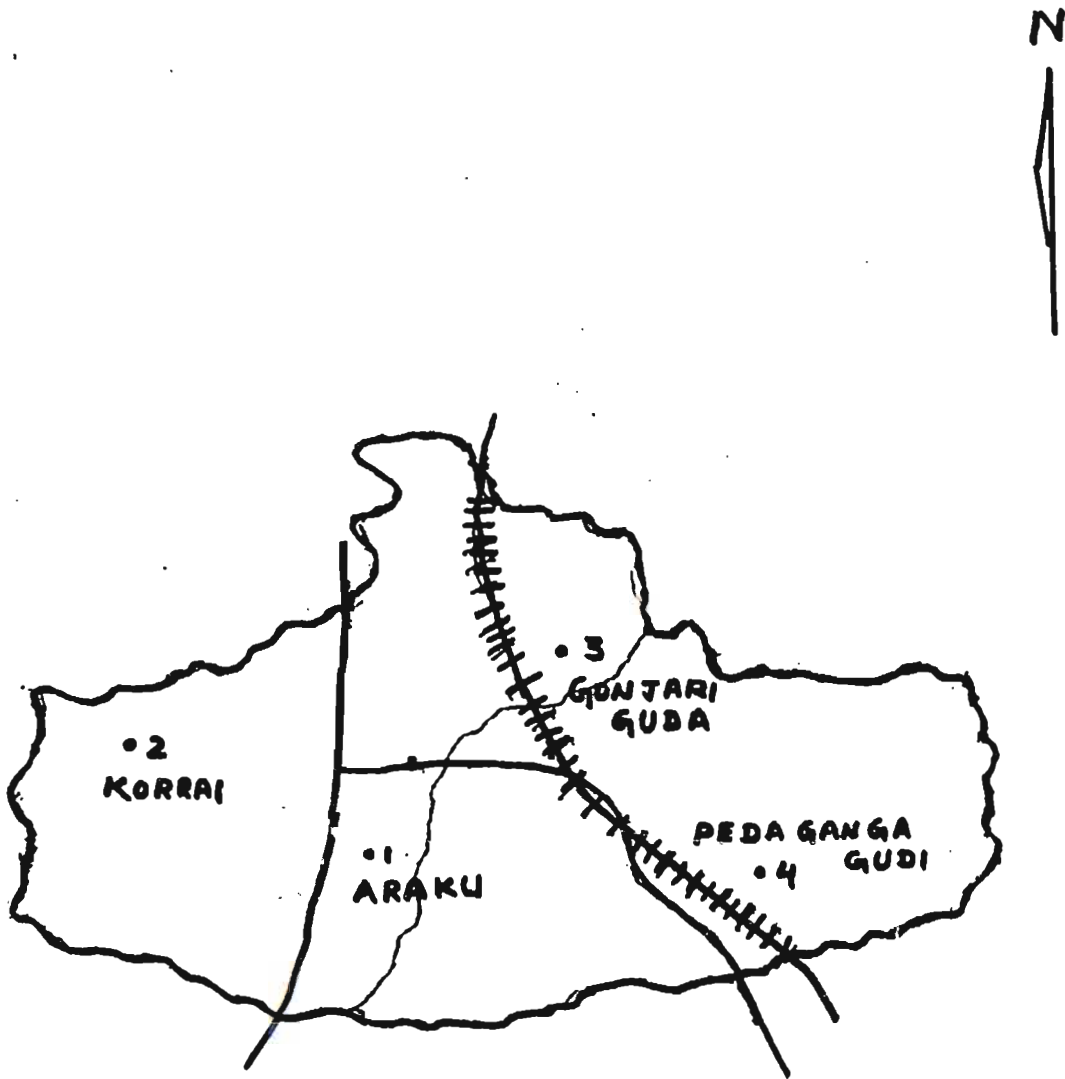


FIG: 5 MAP OF PADERU RANGE SHOWING THE  
SELECTED VILLAGES



FIG: 6 MAP OF ARAKU VALLEY RANGE SHOWING THE SELECTED VILLAGES.



- iii. The investigator hails from this region, which would help him to build quick rapport and also facilitates in depth study through personal observation.
- iv. Researcher needs not to face any semantic barrier neither in conducting research study nor in collecting reliable information.

### 3.2.3 Selection of Mandals

After listing out the existing tribal mandals with Vana Samrakshana Samitiies (JFM) of Visakhapatnam district, two tribal mandals viz., Paderu and Araku Valley were subjected for random sampling by Lottery method.

### 3.2.4 Selection of Villages

After obtaining the list of villages having the Forest Protection Committees, four villages viz., D. Gonduru, Daligummadi, Titingivalasa and U.Boddaputtu of Paderu mandal and Araku, Korrai, Gonjariguda and Peda Gangagudi of Araku Valley mandal were subjected for random sampling.

### 3.2.5 Selection of Respondents

A total number of eight committees comprising of 80 respondents were randomly selected at the rate of four committees i.e., 40 respondents from each mandal by applying multi stage random sampling for selection of respondents from the villages after listing out the total number of respondents with Forest Protection Committees in each village. So that the total number of tribal

respondents were 64 and Forest Department Officials were 16 and thus, the total sample constitute to 80.

### **3.2.6 Selection of Forest Protection Committee for conducting a Case Study**

Eight case-lets from two mandals were studied, which includes 6 successful and 2 unsuccessful case-lets to study their participation, motivation, opinion, constraint(s) faced by the committee members.

## **3.3 EMPIRICAL MEASUREMENT(S)**

### **3.3.1 Motivating Pattern**

The motivating pattern was operationalized as the pattern, which would have influenced the respondents to participate in JFM. To identify the motivating patterns, literature was reviewed, discussed with the social scientists, field functionaries of forest extension and finally the statements were subjected for judges rating. Thus, 45 statements were identified under 5 sub-heads about motives.

The responses were obtained on three point continuum namely, 'agree', 'undecided' and 'disagree.' A weightage of 3, 2 and 1 respectively were assigned to the statements. The total score of the respondents on their motivation pattern was arrived at by summing up the weightages of responses for each statement.

The respondents were categorized into three groups based on mean and standard deviation as follows:

High motivation	:	$> \text{Mean} + \text{S. D.}$
Medium motivation	:	$\text{Mean} \pm \text{S. D.}$
Low motivation	:	$< \text{Mean} - \text{S. D.}$

These 5 motives with 45 statements administered to the respondents and they are requested to indicate the factors that influenced them to participate in JFM. Based on the frequency of motivating factors, percentage analysis was made and ranked accordingly.

### 3.3.2 Opinion towards JFM:

It is a positive or negative feeling they had towards JFM programmes. A schedule was developed for the purpose and it consists of about 68 statements with 19 major opinions. Respondents were asked to indicate their degree of agreement or disagreement with each statement, for the total 68 statements, on five point continuum from strongly agree to strongly disagree. The scoring pattern adopted was '5' score to strongly agree response and '1' to strongly disagree response. These responses were recorded and the summated score for the total statements was obtained for all the respondents. The possible score, a

person can obtain was 340 and the minimum was 68. Based on the score obtained, the respondents were divided into three categories of opinion.

Favourable opinion ( $> \text{Mean} + \text{S. D.}$ )

Moderately favourable opinion ( $\text{Mean} \pm \text{S. D.}$ ) and

Unfavourable opinion ( $< \text{Mean} - \text{S. D.}$ ).

### **3.3.3 Direct and Indirect Changes**

#### **3.3.3.1 Changes**

Changes referred to as the consequences experienced by the respondents as a result of participation in JFM activities.

#### **3.3.3.2 Direct changes**

Direct changes like yield and income that the respondents achieved as a result of participation in JFM.

#### **3.3.3.3 Indirect changes**

Indirect consequences like changes in farming, family living conditions, social status and economic status of the respondents experienced as a result of participation in JFM activities.

This consists of 44 statements with 6 major changes and responses were obtained on response categories. A series of questions were asked to study the

direct and indirect changes due to participation in JFM activities. A scoring index developed for the purpose of study has been used as guideline to score each response. The scoring procedure of two and one was adopted, i.e., two for each "agree" response and one for each "disagree" response. The total score for each agreed response was summed up for arriving at the total score of a particular respondent. The categorization of the respondent(s) was done on the basis of mean and standard deviation as follows:

Less changes	:	$< \text{Mean} - \text{S. D.}$
Medium changes	:	$\text{Mean} \pm \text{S. D.}$
More changes	:	$> \text{Mean} + \text{S. D.}$

### 3.3.4 Constraints

It was operationalized as the degree to which the respondent faces some difficulties or hindrances in participation. For this purpose a schedule was developed keeping the possible constraints in view and the degree of constraints was measured on 5 point continuum as extremely severe, severe, can't say, less severe and not at all severe by assigning a score of 5, 4, 3, 2 and 1 respectively.

## Categorization

Based on the constraints score obtained by each respondent, the farmers were categorized into three categories by using mean and standard deviation as follows:

1	Less / Low	:	$< \text{Mean} - \text{one S. D.}$
2	Moderate	:	$\text{Mean} \pm \text{one S. D.}$
3	High / More	:	$> \text{Mean} + \text{one S. D.}$

## 3.4 COLLECTION OF DATA

### 3.4.1 Interview Schedule

Interview schedule was the instrument of data collection which consisted of a set of questions and were administered to the respondents and answers were filled in by the investigator in a face to face situation with the respondent. The interview schedule was prepared keeping in view the objectives of study. The required information for the schedule was collected by going through relevant literature in subject, conducting discussions with experienced people and experts in the field, in relation to the various aspects under the study with regard to the problem selected.

### 3.4.2 Questionnaire

Since some of the respondents were Forest Officials, questionnaire was considered to be the most convenient instrument of data collection. Hence, a questionnaire was developed in accordance with the objectives of the study with a set of questions asked by the researcher and filled in by the respondent himself.

### 3.4.3 Designing the Schedule and Questionnaire

The schedule was designed into five parts. The part-I dealt with the analysis of motivational patterns of participating tribals. The part-II dealt with the opinion of forest department officials and participating tribals of JFM. The part third for assessing direct and indirect changes in terms of ecological, socio-economic and institutional due to JFM. The part four to support successful and unsuccessful case-lets of JFM and the part fifth dealt with constraints in implementation of JFM as perceived by officers of forest department and participating tribals in JFM.

The schedule, questionnaire thus prepared was pre-tested with 18% of population in non-sampling area by following the procedure adopted by Mulay and Sabaratnam (1983). The readability difficulty and easiness were also identified and certain items have been modified to express the correct meaning what it ought to express. After incorporating all the suggestions, deletions and

alternations a final schedule and questionnaire was arrived at in multiple numbers and fostered to the respondents.

#### **3.4.4 Establishing Necessary Rapport**

Necessary rapport with the respondents was pivotal step in research study. First few days were devoted to get acquainted with JFM places selected for the study with the help of the local leaders and forest personnel. Later, the investigator made formal and friendly visits with them in the study area. Probes were used for getting additional information.

#### **3.4.5 Method of Data Collection**

Each respondent was interviewed personally in local language, i.e., in Telugu by the investigator and the responses were recorded on interview schedule immediately.

#### **3.4.6 Conducting Case Study**

Data was collected through interaction with the tribals participants in JFM. Though schedule is not required to conduct a case study, a small schedule that is appended was prepared to avoid memory bias while eliciting the information and 8 case-lets.

### 3.4.7 Preparation of Report

The data thus collected through the interview schedule were coded, tabulated, analyzed and presented in the form of tables in order to make findings meaningful and easily understandable. The finding emerging from the analysis of data were suitably interpreted and conclusions were drawn accordingly.

## 3.5 STATISTICAL TESTS USED

To convert the results into findings, the statistical tests used as given below for analyzing the data.

### 3.5.1 Arithmetic Mean ( $\bar{X}$ )

It is the sum of all values of the observations divided by the total number of observations. It was used for categorization on all components of study. Symbolically it is represented as ' $\bar{X}$ '.

$$\text{Arithmetic Mean (X)} = \frac{\sum X_i}{n} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n}$$

where,  $\bar{X}$  = arithmetic mean

$\bar{X}_i$  = value of  $i^{\text{th}}$  item of  $X$

$i$  = 1, 2, 3, .....,  $n$

$n$  = total number of items.

### 3.5.2 Standard Deviation

It is positive square root of mean of the squared observations taken from arithmetic mean. Symbolically it is represented as “ $\sigma$ ”.

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{1}{n} \left[ \Sigma x^2 - \frac{(\Sigma x)^2}{n} \right]}$$

where,  $\Sigma x^2$  = sum of squares of observations

$(\Sigma x)^2$  = square of sum of x values

n = number of observations.

Standard deviation was used to find out the variation in the scores on the components and for the categorization of JFM farmers.

### 3.5.3 Frequency and Percentages

#### a. Frequency

Frequency was used to know the distribution pattern of the respondents in JFM according to the objectives under study.

#### b. Percentage

Percentages were used for standardization of sample size by calculating the number of individuals that would be under the given category, if the total number of individuals were 100.

#### 3.5.4 Ranks

Ranks were given according to priority of the items. In case of motivational pattern, opinions, direct, indirect changes and constraints, they were given by prioritizing the frequencies and percentages of all motivational patterns, opinions, direct, indirect changes and constraints.

## OPERATIONALISATION OF CONCEPTS USED IN THE STUDY

- ❖ Utilitarian motive(s) - It refers to profits or usefulness, which influence the tribals to participate in JFM.
- ❖ Affiliation motive(s) - It is the family relation and connections, which influence the tribals to participate in JFM.
- ❖ Security motive(s) - It reflects the safe guard of family living conditions, which influence the tribals to participate in JFM.
- ❖ Economic motive(s) - are the financial benefits, which influence the tribals to participate in JFM.
- ❖ Prestige motive(s) - It indicated the participation of tribals for high estimation, which force the tribals to take active role in JFM.
- ❖ Achievement motive(s) - is the note worthy action which drives the tribals to participate in JFM.
- ❖ Ecological change(s) - are the environmental consequences experienced by the respondents as a result of participation in JFM activities.
- ❖ Socio-economic change(s) - It is a change in the family living conditions due to participation in JFM.
- ❖ Institutional change(s) - are the consequences experienced by the respondent(s) in the society through participation in JFM.
- ❖ Personal constraint(s) - are the individual barriers, hindrances or difficulties make the respondents to participate in JFM activities.
- ❖ Social constraint(s) - are the barriers or difficulties in the society, which hinders the respondents to participate in JFM activities.

- ❖ Situational constraint(s) - are the positional or conditional barriers, which acts as a barrier for the respondents in participation JFM activities.
- ❖ Financial constraint(s) - refers to lack of money / finance which come on the way of participating respondents in JFM.
- ❖ Organisational constraint(s) - reflect the state of unorganised activities, which affect the participation.
- ❖ Administrative constraint(s) - refers to public affairs come on the way of respondents' participation.
- ❖ Marketing constraint(s) - are the hindrances in marketing of the produce and act as barriers for participation of the respondents in JFM.
- ❖ Legal constraint(s) - refers to forest act or laws, which hinders the participation of the respondents in JFM activities.

# RESULTS

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## CHAPTER IV

### RESULTS

Keeping in view the specific objectives of the study, the results in terms of factual data through objective research procedures designed and developed have been analyzed by subjecting them to appropriate statistical and analytical tests. The results thus arrived were presented under the following heads:

- 4.1 Motivational pattern of participating tribals in Joint Forest Management.
- 4.2 Opinion of Forest Department Officials and participating tribals of Vana Samrakshana Samithies (FPC) about Joint Forest Management.
- 4.3 Direct and Indirect changes in terms of ecological, socio-economic and institutional changes due to Joint Forest Management.
- 4.4 Successful and Unsuccessful typical cases of Vana Samrakshana Samithies (FPC) of Joint Forest Management.

- 4.5 Constraints in implementation of Joint Forest Management (FPC/VSS) as perceived by personnel of Forest Department and participating tribals.

#### 4.1 MOTIVATIONAL PATTERN OF PARTICIPATING TRIBALS IN JFM

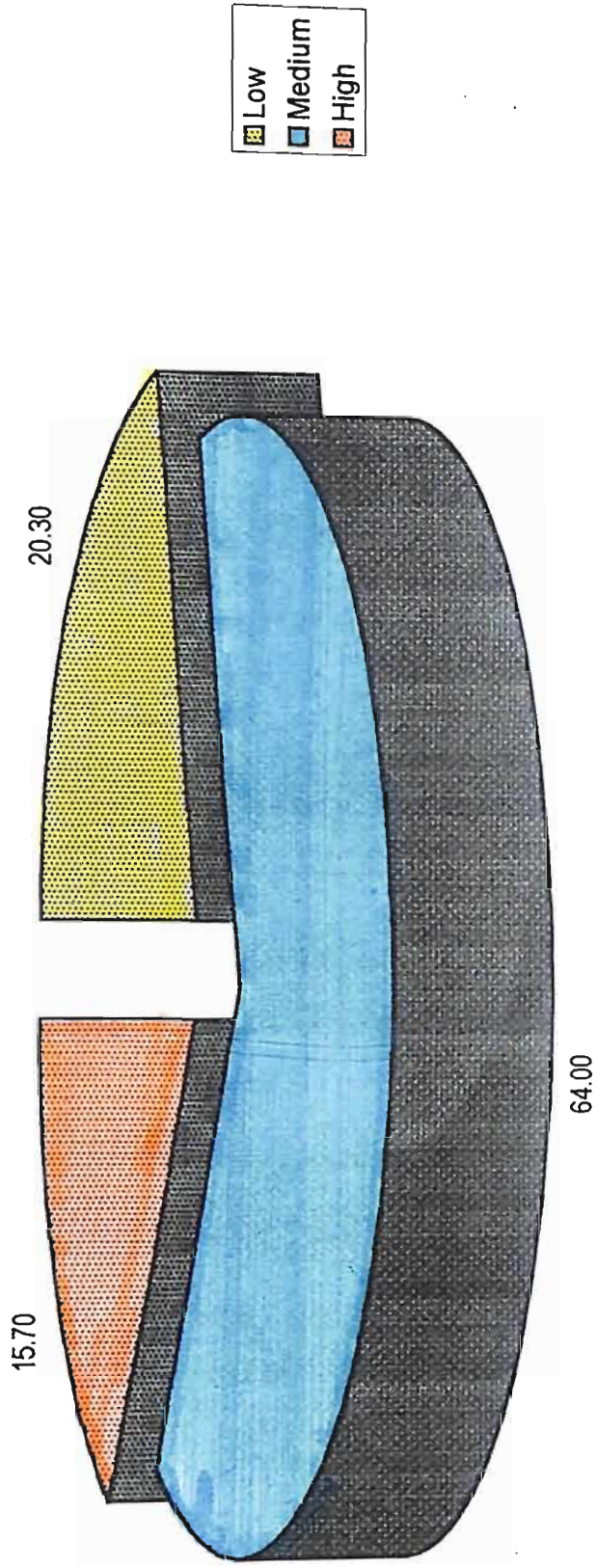
**Table 1: Distribution of participating tribal according to motivational pattern**

(n = 64)

S. No	Category	Frequency	Percentage
1	Low	13	20.30
2	Medium	41	64.07
3	High	10	15.63
Total		64	100.00
Mean 127.67		SD 13.89	

It could be seen from the Table 1 that the motivational pattern is found to be in increasing trend from low (20.30%) to medium (64.07%) followed by decreasing trend due to higher (15.63%) category of motivational pattern.

**Fig: 7 - DISTRIBUTION OF TRIBAL FARMERS ACCORDING TO THEIR  
MOTIVATIONAL PATTERN**



## Motives

The participating tribals expressed the motives as utilitarian motives, affiliation motives, security motives, economic, prestige and achievement motives.

The frequency of the motives in accordance with the number of participating tribals and feeling about particular motive with ranking was given accordingly (Table 2).

**Table 2: Distribution of participating tribals in accordance with motives.** (n = 64)

S No	Motives	Frequency	Percentage	Rank
<b>I Utilitarian Motives -</b>				
Participating in JFM for				
1	Grass/Fodder and fuel wood	14	21.88	X
2	Minor Forest Produce	20	31.25	IV
3	Medicinal plants	15	23.44	IX
4	Compost and FYM	12	18.75	XII
5	Wild grass for thatching	13	20.31	XI
6	Reducing rate of run-off	22	34.38	III
7	Developing healthy climate	16	25.00	VIII
8	Non Timber Forest Produce	19	29.69	V
9	Dry leaves	11	17.19	XIII
10	Increasing water recharge capacity in the vicinity of available wells	23	35.94	II

S.No	Motives	Frequency	Percentage	Rank
11	Increasing groundwater level	17	26.56	VII
12	Food security	18	28.13	VI
13	Clothing, home, education and security	27	42.19	I
	Average	17	26.56	
<b>II Affiliation Motives -</b>				
Participating in JFM with				
1	Family members	10	15.63	I
2	Neighbourhood members	7	10.94	II
3	Government officials	5	7.81	III
	Average	7	10.94	
<b>III Security Motives -</b>				
Participating in JFM for				
1	Government subsidies	3	4.69	VII
2	Seeking participation in development schemes	14	21.88	V
3	Getting membership in thrift and self help groups	19	29.69	III
4	Getting instant food for ready consumption	25	39.06	II
5	Produce security	17	26.56	IV
6	Increased employment	30	46.88	I
7	Security at old age	6	9.38	VI
	Average	16	25.00	
<b>IV Economic Motives -</b>				
Participating in JFM for				
1	Improvement in economic status	12	18.75	V
2	Sustainable life	15	23.44	IV

S.No	Motives	Frequency	Percentage	Rank
3	Increased yield	19	29.69	II
4	Increased returns	30	46.88	I
5	Free from debts	16	25.00	III
	Average	18	28.13	

#### V Prestige Motives -

Participating in JFM to

1	Exert the leadership	2	3.10	III
2	Become affluent to get command over others	1	1.56	IV
3	Have better social recognition	4	6.25	I
4	Be regarded as a best farmer in the village	3	4.69	II
	Average	2	3.13	

#### VI Achievement Motives -

Participating in JFM to

1	Participate in training	5	7.81	II
2	Get participation in programme planning of development programmes	4	6.25	III
3	Develop better extension contacts	8	12.50	I
4	Have the accessibility to key post of thrift and self help groups	3	4.69	IV
5	To make use of abilities and resources	2	3.13	V
	Average	4	6.25	

## 1. Utilitarian Motives

It could be seen from Table 2 that, a majority (42.19%) of the respondents have expressed clothing, home, education, security as their primary motive. Increasing water recharge capacity in the vicinity wells (35.94%), reducing rate of run off (34.38%), minor forest produce (31.25%), non-timber forest produce (29.69%), food security (28.13%), increasing ground water level (26.56%), developing healthy climate (25.00%), medicinal plants (23.44%), grass/fodder and fuel wood (21.88%), wild grass for thatching (20.31%), compost and FYM (18.75%) and dry leaves (17.19%) were the other utilitarian motives felt by them.

The overall trend is oscillating around the average 26.56 per cent with high and low ranks.

## 2. Affiliation Motives

About 15.63 per cent of the respondents stated the participation in JFM with their family members while 10.94 per cent with neighbourhood members and government officials (7.81%) as affiliation motives.

It could be seen from the above table that the affiliation motives are in decreasing trend from family members (15.63%) to government officials (7.81%).

### **3. Security Motives**

Majority (46.88%) of the respondents expressed increase in employment was their major motive. Getting instant food for ready consumption (39.06%), getting membership in thrift and self help groups (29.69%), produce (commodity) security (26.56%), seeking participation in development schemes (21.88%), security at old age (9.38%) and government subsidies (4.69%) were the other security motives as indicated by them.

It could be seen from the Table 2 that, the security motives were in increasing trend from getting government subsidies (4.69%) to getting instant food for ready consumption (39.06%) followed by decreasing trend by 9.38 per cent towards security at old age.

### **4. Economic Motives**

Majority (46.88%) of the respondents felt that increased returns were their prime economic motive. Increased yield (29.69%), free from debts (25.00%), sustainable life (23.44%) and

improved socio-economic changes (18.75%) were the other economic motives as perceived by them.

It was observed that the economic motives are in increasing trend from improved socio-economic status (18.75%) to increased returns (46.88%) followed by decreasing trend by 25.00 per cent to free themselves from debts.

### **5. Prestige Motives**

About 6.25 per cent of respondents expressed better social recognition as their prime prestige motive. Regarded as a best farmer in the village (4.69%), exert the leadership (3.10%) and become affluent to get command over others (1.56%) were the other prestige motives as perceived by them.

It could be seen from the Table 2, that prestige motives are in descending trend from exert the leadership (3.10%) to get command over others (1.56%) followed by increase at better social recognition (6.25%) and regarded as a best farmer in the village (4.69%).

## 6. Achievement Motives

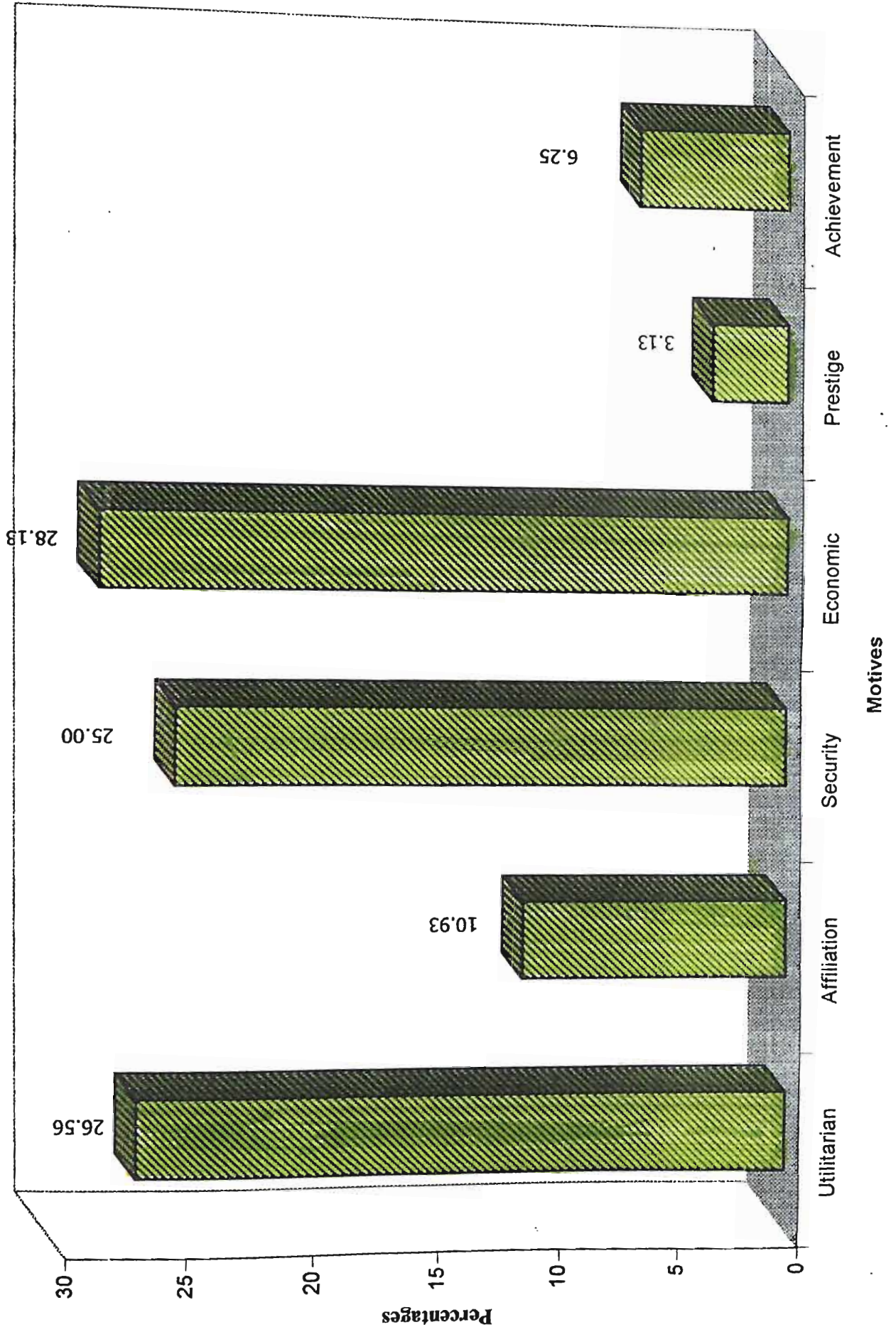
Majority (12.50%) of the respondents indicated the better extension contact was their prime achievement motive. Participation in training (7.81%), participation in programme planning of developmental programmes (6.25%), accessibility for key post in thrift and self-help groups (4.69%) and making use of abilities and resources (3.13%) were the other achievement motives perceived by them.

It could be seen from the table that achievement motives are in increasing trend from participation in training (7.81%) to better extension contact(s) (12.50%) followed by decrease at trend with 4.69 per cent by holding key posts and 3.13 per cent by making use of abilities and resources.

**Table 3: Motive-wise distribution of participating Tribals**  
(n = 64)

S No	Motives	Frequency	Percentage	Rank
1	Utilitarian motives	17	26.56	II
2	Affiliation motives	7	10.93	IV
3	Security motives	16	25.00	III
4	Economic motives	18	28.13	I
5	Prestige motives	2	3.13	VI
6	Achievement motives	4	6.25	V

Fig : 8- Motive-wise distribution of participating tribals



It could be seen from the Table 3 that the motives were decreasing at trend from utilitarian (26.56% and rank II) to security motives (25.00% and rank III) while there was increase by 28.13 per cent with economic motives (rank I) followed by 6.25 per cent decrease with achievement motives (rank V).

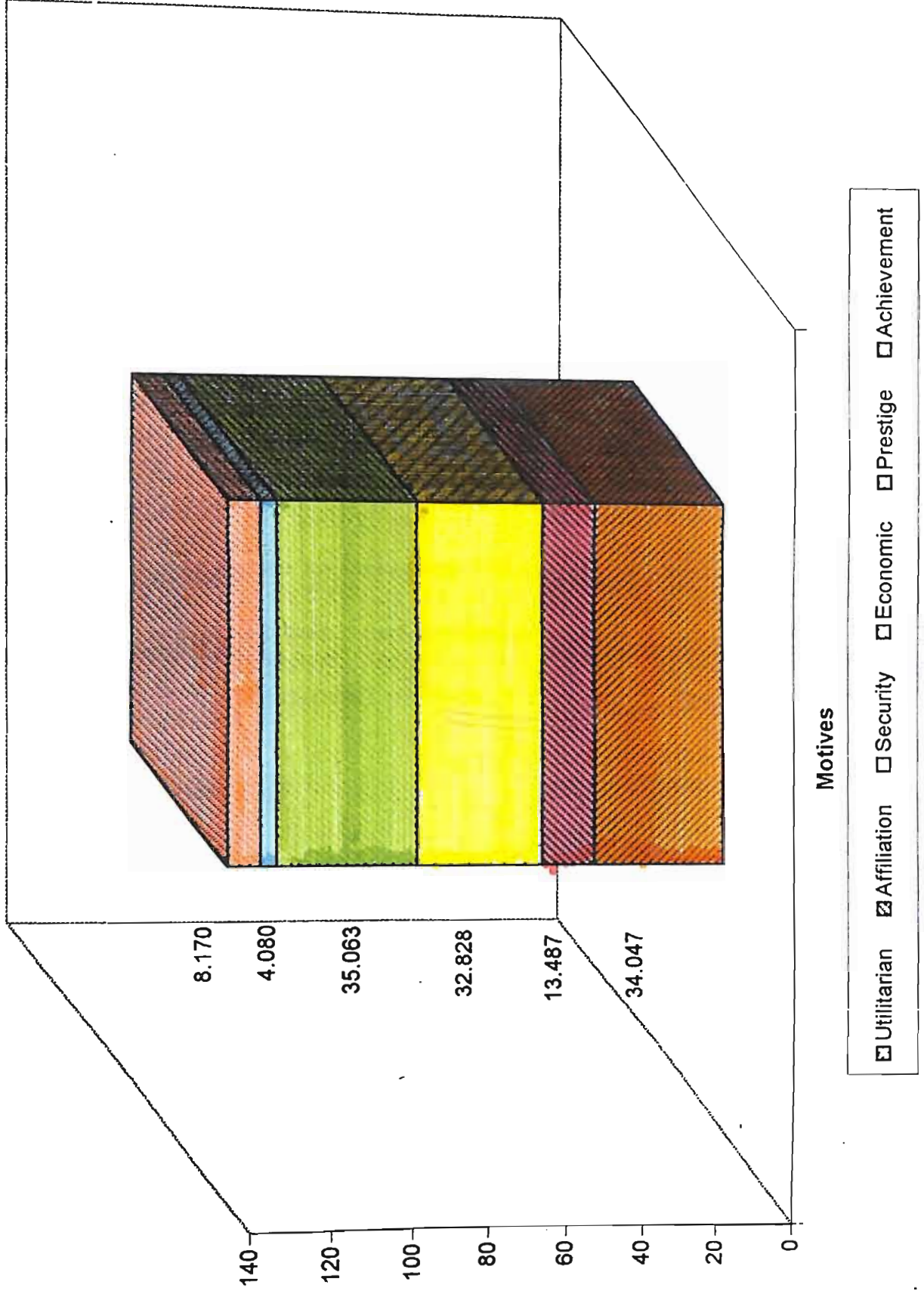
**Table 4: Ranking of motives according to the weighed mean.**

(n = 64)

S No	Motives	Weighted Mean	Rank
1	Utilitarian motives	34.047	II
2	Affiliation motives	13.487	IV
3	Security motives	32.828	III
4	Economic motives	35.063	I
5	Prestige motives	4.080	VI
6	Achievement motives	8.170	V

A close look at Table 4 indicated that the ranking followed from I to VI was in decreasing trend except economic motives (I Rank). Further the economic motives followed by utilitarian, security, affiliation and prestige and achievement motives occupied II to VI ranks respectively.

**Fig 9.9 - Ranking of motives according to their weighted mean**



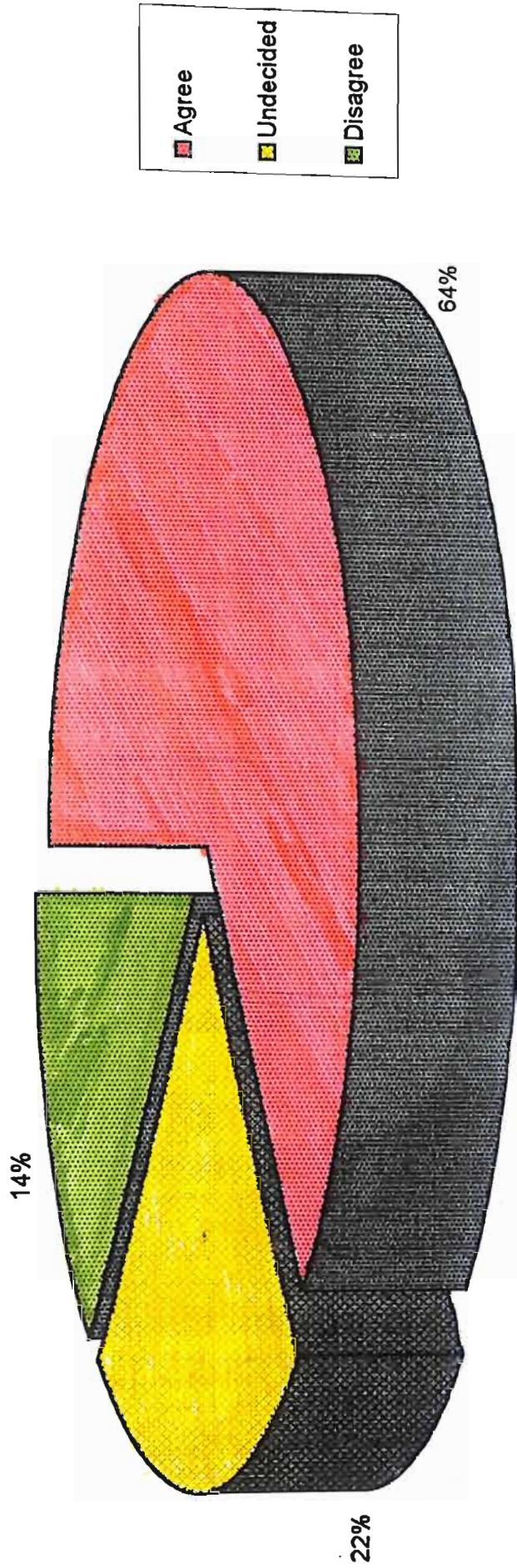
**Table 5: Distribution of participating Tribals in accordance with Agreement / Disagreement.**

(n = 64)

S No	Response (Agreement / Disagreement)	Frequency (No. of respondents)	Percentage
1	Agree	41	64.00
2	Undecided	13	22.00
3	Disagree	10	14.00
	Total	64	100.00

A perusal of data in Table 5 representing the frequency distribution of respondents towards motivational pattern was at decreasing in trend from agree to disagree. Majority (64.00%) of the respondents agreed while 22 per cent undecided and about 14 per cent disagreed towards motivational pattern.

Fig : 10 - Distribution of participating tribals in accordance with agreement / disagreement towards forest activities



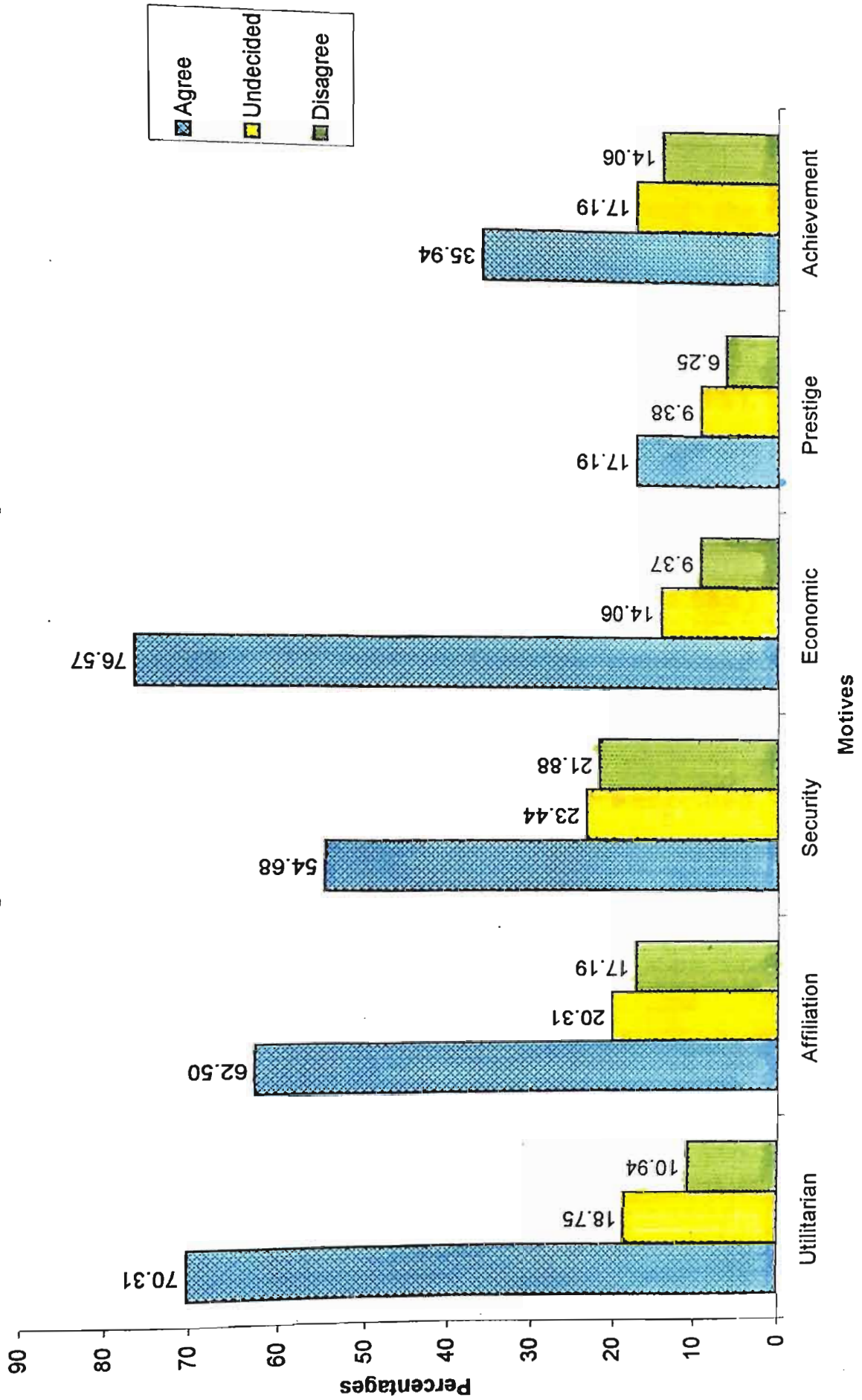
**Table 6: Distribution of participating Tribals in accordance with the Agreement / Disagreement towards motivational pattern.**

S No	Motives	Response		
		Agree	Undecided	Disagree
1	Utilitarian motives	45 (70.31)	12 (18.75)	7 (10.94)
2	Affiliation motives	40 (62.50)	13 (20.31)	11 (17.19)
3	Security motives	35 (54.68)	15 (23.44)	14 (21.88)
4	Economic motives	49 (76.57)	9 (14.06)	6 (9.37)
5	Prestige motives	11 (17.19)	6 (9.38)	4 (6.25)
6	Achievement motives	23 (35.94)	11 (17.19)	9 (14.06)
	Total	203	66	51
	Frequency	41	13	10
	Percentage	(68.44)	(20.63)	(15.93)
	Rank	I	II	III

Note: Figures in the parentheses are in percentages

Table 6 depicts the distribution of respondents in accordance with their motives. Majority (63.44%) of the respondents agreed to the motivational pattern consisting of Utilitarian, Affiliation, Security, Economic, Prestige and Achievement motives.

Fig : 11 - Distribution of participating tribals in accordance with the agreement / disagreement towards motivational pattern



Whereas 15.93 per cent disagreed and 20.63 per cent undecided with regard to motivational pattern which has got direct bearing on peoples participation in JFM.

Majority (76.57%) of the tribal participants agreed the economic motive as the strongest one which influence the people's participation in JFM followed by Utilitarian motives (70.31%) followed by Affiliation motive (62.50%), Security motive (54.68%), Achievement motive (35.94%) and Prestige motive (17.19%).

The trend reflecting the participation of people in JFM was at decrease from Utilitarian (70.31%) to Security motives (54.68%) while Economic motives (76.57%) were at high in trend and strongest in facilitating participation in JFM by participating tribals.

The tribal participants of JFM responded as undecided about 23.44 per cent security motives, 20.31 per cent economic motives, 18.75 utilitarian motives, 17.19 per cent achievement motives and 9.38 per cent prestige motives by the tribal.

In other words, the participant tribals responded as undecided towards the motivational pattern with Utilitarian to Security motives which was at increase followed by the similar

trend towards the Economic motives to Achievement motives (Table 6).

Participant tribals responded as disagreed with 21.88 per cent security motives, 17.19 per cent of affiliation motives, 14.06 per cent achievement motives, 10.94 per cent of utilitarian motives, 9.37 per cent of economic motives and 6.25 per cent prestige motives.

The disagreed response was in decreasing trend from utilitarian to security motives followed by decreasing trend.

#### 4.2 OPINION OF FOREST DEPARTMENT OFFICIALS AND PARTICIPATING TRIBALS OF VANA SAMRAKSHANA SAMITHIES (FPC) ABOUT JOINT FOREST MANAGEMENT

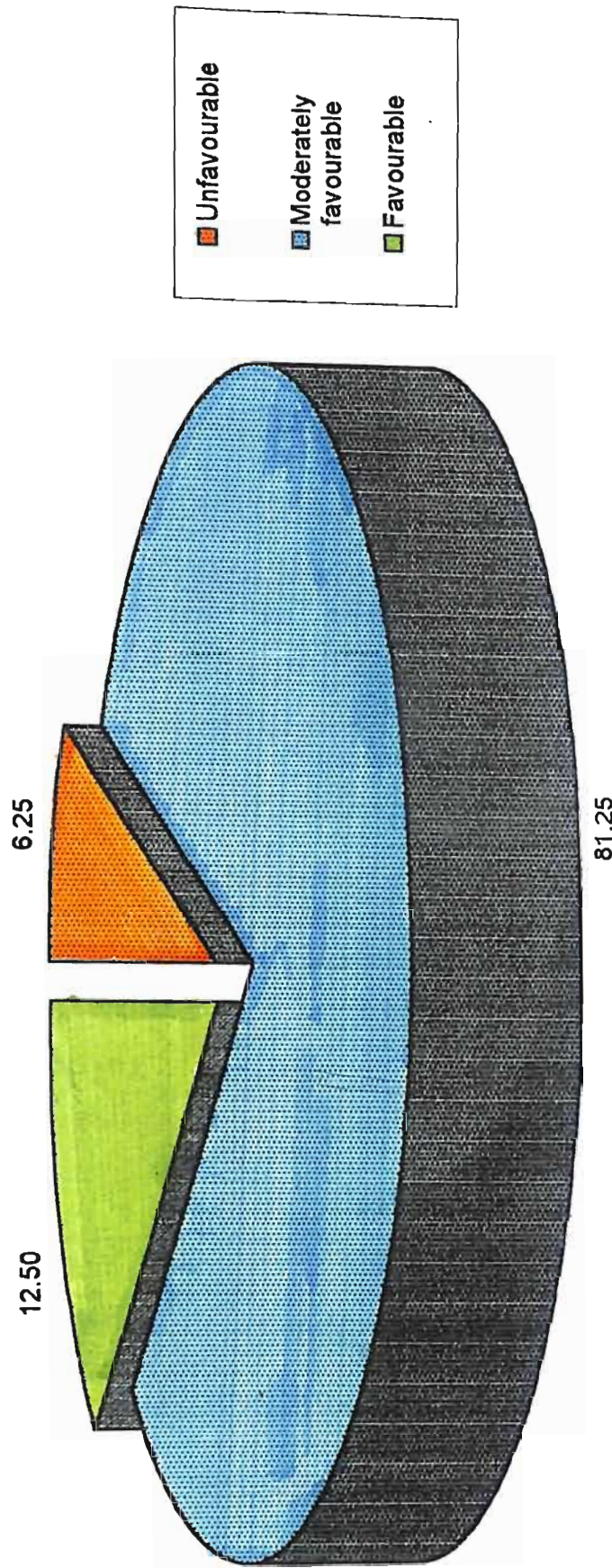
##### 4.2.1 Opinion of Forest Officials about JFM

Table 7: Distribution of forest officials according to the opinion basing on favourableness about forest activities.

(n = 16)

S. No	Category	Frequency	Percentage
1	Unfavourable	1	6.25
2	Moderately favourable	13	81.25
3	Favourable	2	12.50
Total		16	100.00
Mean 164.44		SD 23.30	

Fig 12 - Distribution of Forest officials according to the opinion basing on favourableness towards forest activities



It is clear from the Table 7 that majority of the participating Forest Officials opined moderately favourable towards JFM. About 81.25 per cent opined moderately favourable while 12.50 per cent had favourable opinion. A few respondents (6.25%) had unfavourable opinion towards JFM.

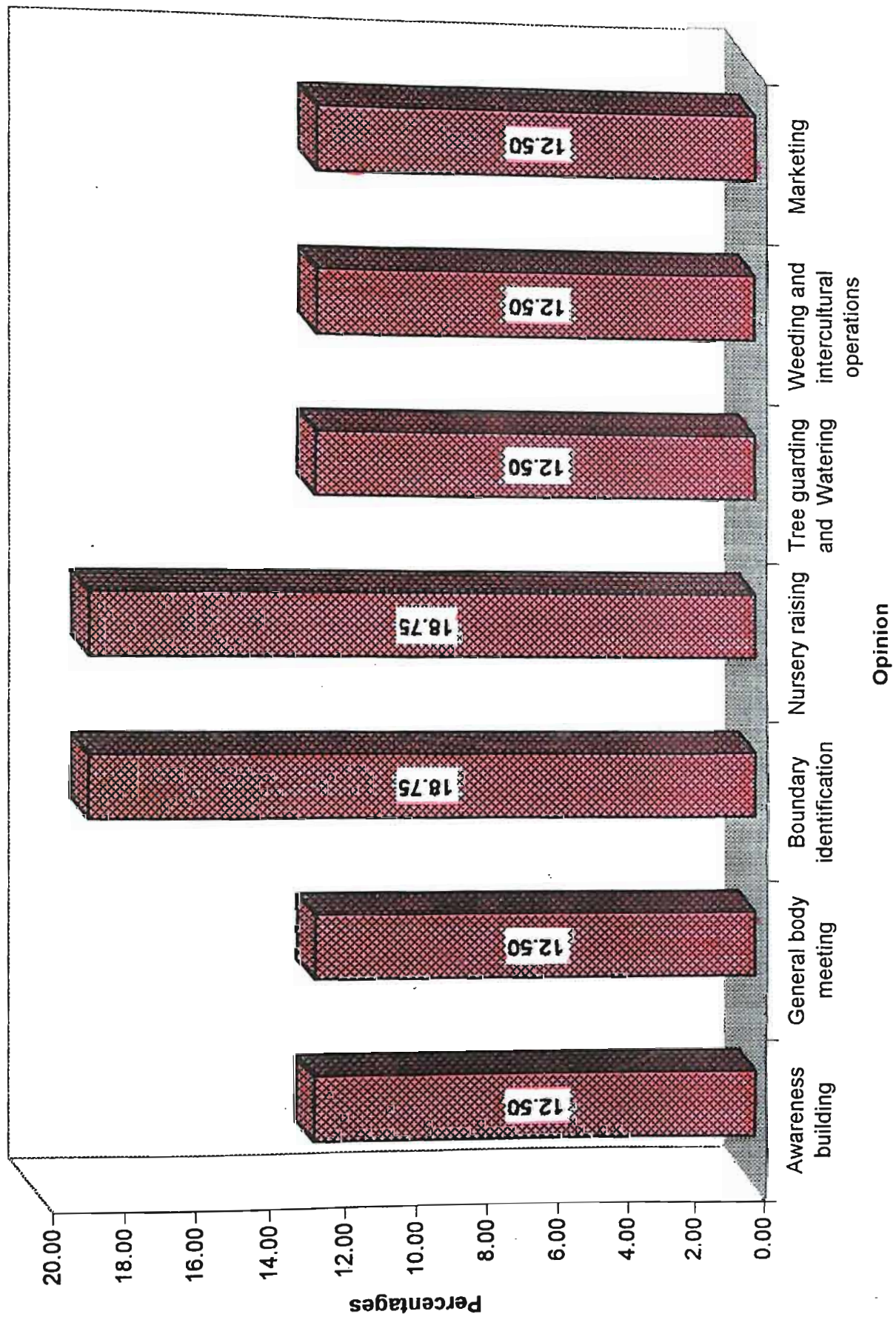
**Table 8: Distribution of Forest Officials according to the opinion towards forest activities in terms of frequencies, percentages and ranking.**

(n = 16)

S No	Opinion towards forest activities	Frequency	Percentage	Rank
1	Awareness building	2	12.50	II
2	General body meetings	2	12.50	II
3	Boundary identification	3	18.75	I
4	Nursery raising	3	18.75	I
5	Tree guarding and watering	2	12.50	II
6	Weeding and intercultural operations	2	12.50	II
7	Marketing	2	12.50	II
Total		16	100.00	

It is evident from Table 8 that the respondents ranked I for nursery raising (18.75%), boundary identification (18.75%), followed by awareness, conducting general body meeting, tree guarding and watering, weeding and intercultural operations and marketing were equally ranked as II of 12.50 per cent each respectively.

Fig 9.13 - Distribution of Forest Officials according to the opinion towards forest activities in terms of frequencies, percentages and ranks.



**Table 9: Distribution of Forest Officials according to the opinion based on Agreement / Disagreement towards forest activities.**

S No	Opinion towards forest activities	Response				
		SA	A	UD	DA	SDA
1	Awareness	6 (37.50)	5 (31.25)	1 (6.25)	1 (6.25)	3 (18.75)
2	General body meetings	8 (50.00)	4 (25.00)	1 (6.25)	2 (12.50)	1 (6.25)
3	Boundaries identification	9 (56.25)	3 (18.75)	1 (6.25)	1 (6.25)	2 (12.50)
4	Nursery raising	8 (50.00)	4 (25.00)	1 (6.25)	2 (12.50)	1 (6.25)
5	Tree guarding and watering	7 (43.75)	1 (6.25)	2 (12.50)	2 (12.50)	4 (25.00)
6	Weeding and intercultural operations	8 (50.00)	4 (25.00)	1 (6.25)	2 (12.50)	1 (6.25)
7	Marketing	5 (37.50)	3 (18.75)	1 (6.25)	3 (18.75)	3 (18.75)
Total		50	24	8	13	16
Frequency		8	3	1	2	2
Percentage		(50.00)	(18.75)	(6.25)	(12.50)	(12.50)

Note: Figures in the parentheses are in percentages

SA-Strongly Agree; A-Agree; UD-Undecided; DA-Disagree; SDA-Strongly Disagree

Fig : 14 - Distribution of Forest Officials according to the opinion based on agreement / disagreement towards forest activities

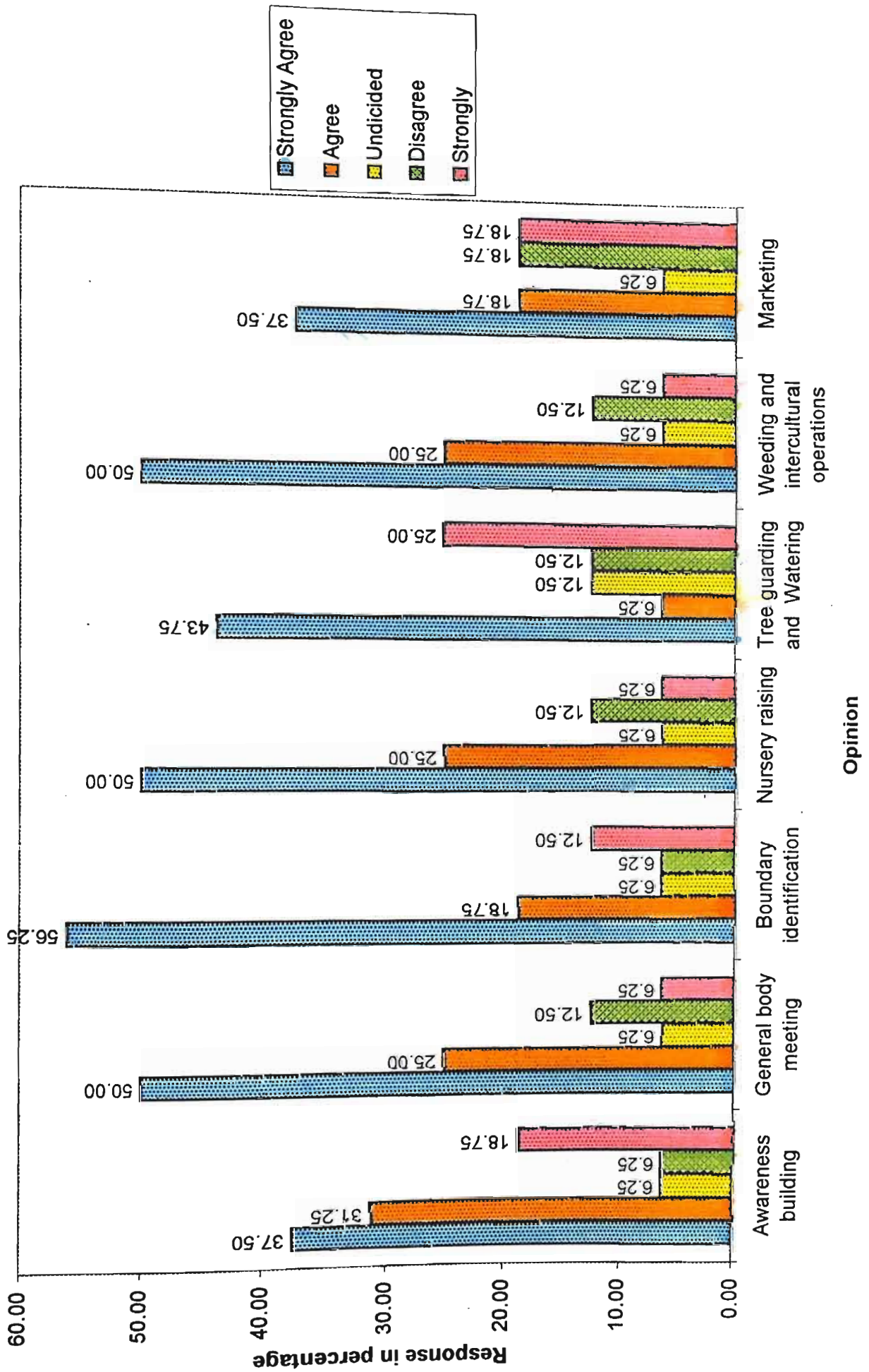


Table 9 depicts that half of the respondents (50.00%) strongly agreed in forest activities followed by agreed (18.75%), disagreed (12.50%) and strongly disagreed (12.50%) towards the participation in various activities like awareness, conducting general body meetings, boundaries identification, nursery raising, tree guarding, weeding, intercultural operations and marketing.

#### 4.2.2 Opinion of Participating Tribals about JFM

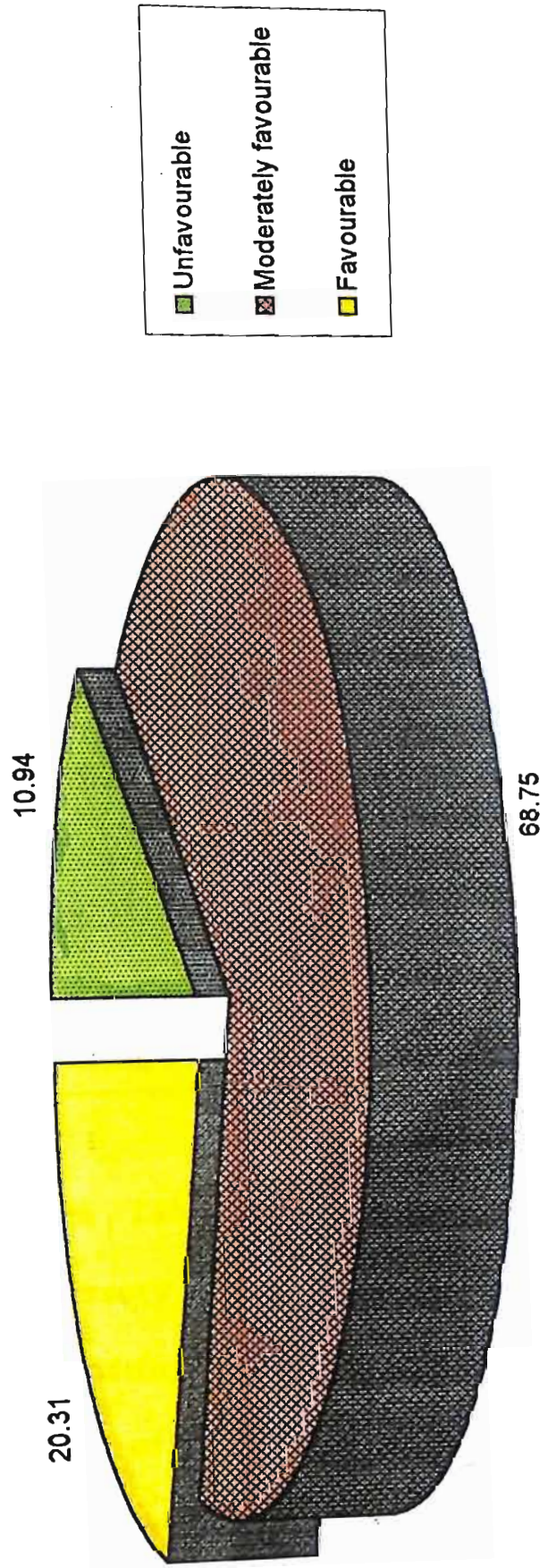
**Table 10: Distribution of participating tribals according to opinion towards forest activities in terms of favourableness.**

(n = 64)

S. No	Category	Frequency	Percentage
1	Unfavourable	7	10.94
2	Moderately favourable	44	68.75
3	Favourable	13	20.31
	Total	64	100.00
	Mean 162.82	SD 29.196	

Majority (68.75%) of the participating tribals expressed moderately favourable opinion towards the participation of people in JFM. Meagre number of tribals opined unfavourable (10.94%) and favourable (20.31%) towards the participation leaving the lot of potentiality in formulating the favourable opinion towards JFM.

*Fig : 15 - Distribution of participating tribals according to opinion inters of favourable / unfavourable towards forest activities*

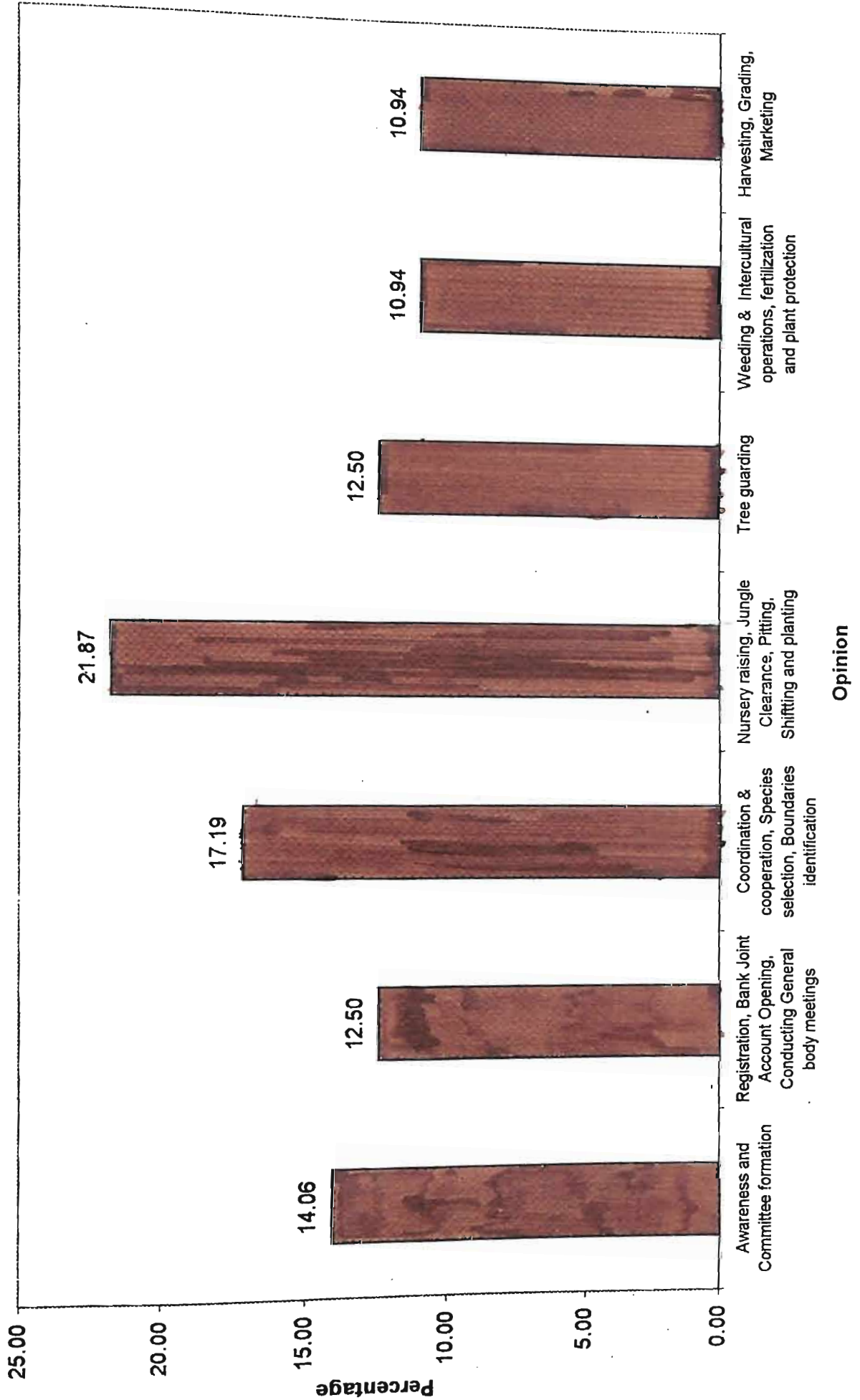


**Table 11: Opinion-wise distribution of participating Tribals in terms of frequency, percentage and ranking towards forest activities.**

S No	Opinion towards forest activities	Frequency	Percentage	Rank
1	Awareness and committee formation	9	14.06	III
2	Registration, Bank Joint Account Opening, Conducting General body meetings	8	12.50	IV
3	Coordination and cooperation, Species selection, Boundaries identification	11	17.19	II
4	Nursery raising, Jungle clearance, pitting, shifting and planting	14	21.87	I
5	Tree guarding	8	12.50	IV
6	Weeding and intercultural operations, fertilization, plant protection	7	10.94	V
7	Harvesting, grading, marketing	7	10.94	V
Total		64	100.00	

It could be seen from Table 11 that the majority of respondents (21.87%) ranked nursery raising as I<sup>st</sup>. It comprised of jungle clearance, pitting, shifting and planting. Boundary identification (II rank) comprised of cooperation, coordination and species selection. Ranked as III was awareness, which includes committee formation. Rank IV for conducting general body meeting

Fig 16 - Opinion-wise distribution of participating tribals in terms of frequency, percentage and ranking towards forest activities



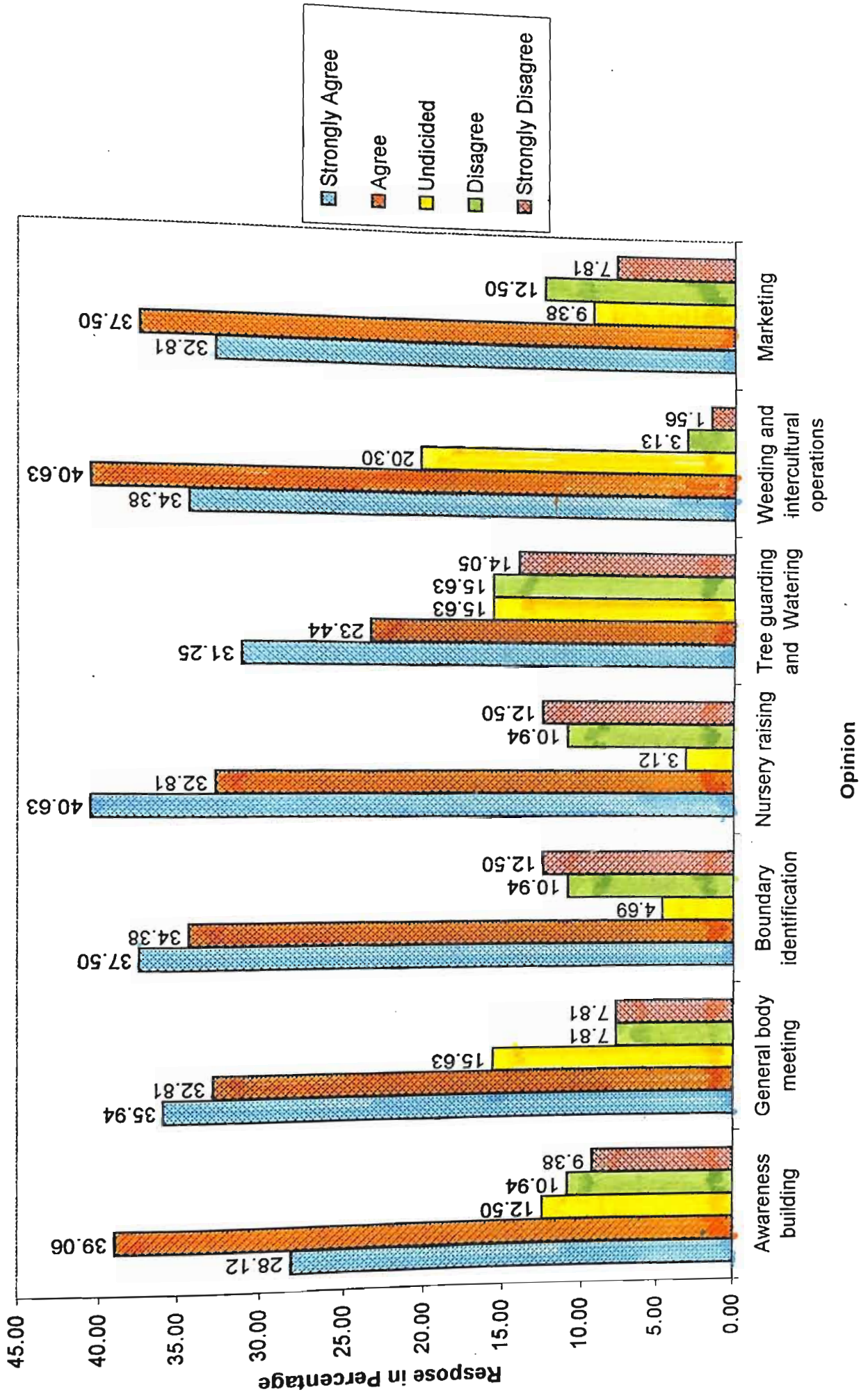
and tree guarding which consists the registration and joint account opening. Ranked as V is for the opinion towards weeding and intercultural operations and marketing, which includes fertilization, plant protection and harvesting.

**Table 12: Distribution of participating tribals according to the opinion based on Agreement / Disagreement towards forest activities.**

S No	Opinion towards forest activities	Response				
		SA	A	UD	DA	SDA
(n = 64)						
1	Awareness	18 (28.12)	25 (39.06)	8 (12.50)	7 (10.94)	6 (9.38)
2	General body meetings	23 (35.94)	21 (32.81)	10 (15.63)	5 (7.81)	5 (7.81)
3	Boundaries identification	24 (37.50)	22 (34.38)	3 (4.69)	7 (10.94)	8 (12.50)
4	Nursery raising	26 (40.63)	21 (32.81)	2 (3.12)	7 (10.94)	8 (12.50)
5	Tree guarding	20 (31.25)	15 (23.44)	10 (15.63)	10 (15.63)	9 (14.05)
6	Weeds and intercultural operations	22 (34.38)	26 (40.63)	13 (20.30)	2 (3.13)	1 (1.56)
7	Marketing	21 (32.81)	24 (37.50)	6 (9.38)	8 (12.50)	5 (7.81)
Total		154	154	52	48	42
Frequency		22	22	11	11	10
Percentage		(34.00)	(34.00)	(11.00)	(11.00)	(10.00)

Note: Figures in the parentheses are in percentages

Fig : 7 - Distribution of participating tribals according to the opinion based on agreement / disagreement towards forest activities



SA-Strongly Agree; A-Agree; UD-Undecided; DA-Disagree; SDA-Strongly Disagree

The results presented in the Table 12 revealed that the respondents strongly agreed as well as agreed with 34 per cent each. There were undecided and disagreed with 11 per cent each followed by strong disagreement with 10 per cent .

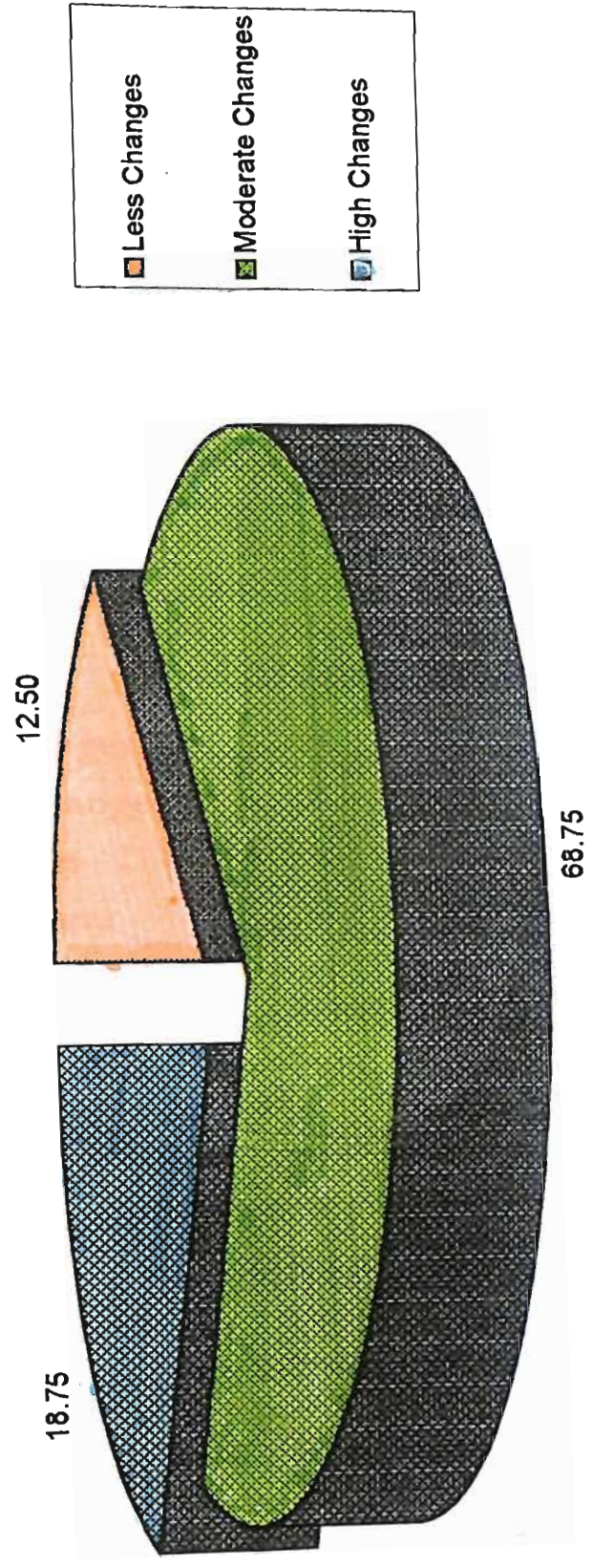
#### 4.3 DIRECT AND INDIRECT CHANGES IN TERMS OF ECOLOGICAL, SOCIO-ECONOMIC AND INSTITUTIONAL DUE TO JFM

**Table 13: Distribution of participating Tribals according to the number of changes.**

(n = 64)

S. No	Changes due to JFM	Frequency	Percentage
1	Less number of changes	8	12.50
2	Moderate number of changes	44	68.75
3	High number of changes	12	18.75
Total		64	100.00
Mean 79.37		SD 6.716	

**Fig. 18 - Distribution of participating tribals according to the number of changes towards JFM**



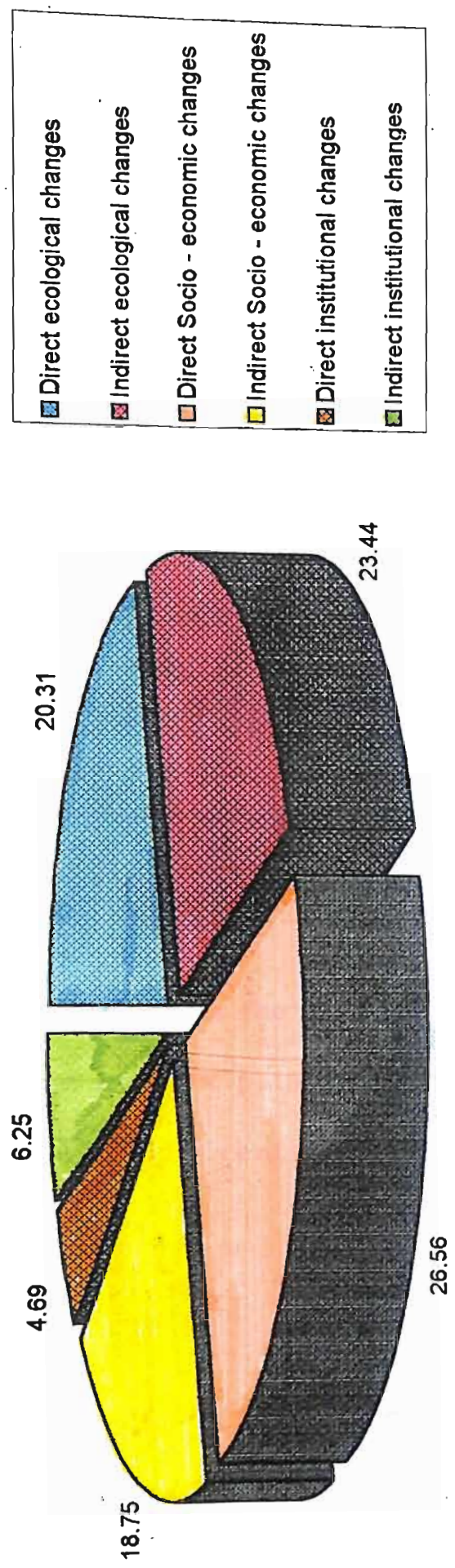
Changes due to JFM are both direct and indirect. Majority (68.75%) of the participating tribals indicated moderate changes followed by 12.50 per cent and 18.75 per cent indicating less change and high change (s) respectively.

**Table 14: Distribution of participating Tribals in accordance with type of changes.**

(n = 64)				
S No	Changes	Frequency	Percentage	Rank
1	Direct ecological changes	13	20.31	III
2	Indirect ecological changes	15	23.44	II
3	Direct socio-economic changes	17	26.56	I
4	Indirect socio-economic changes	12	18.75	IV
5	Direct institutional changes	3	4.69	VI
6	Indirect institutional changes	4	6.25	V
Total		64	100.00	

A cursory look on Table 14 depicts the types of changes both direct and indirect which have got influence over the participation of tribals in JFM along with direct Socio-economic changes with 26.56 per cent scored I rank followed by II rank towards Indirect Ecological changes 23.44 per cent, rank III for Direct ecological changes 20.31 per cent followed by IV, V, VI ranks towards Indirect

Fig : 19 - Distribution of participating tribals in accordance with types of changes due to JFM



Socio-economic (18.75%) Indirect Institutional changes (6.25%) and Direct Institutional (4.69%) changes respectively.

#### 4.3.1 Direct Changes due to Participation in JFM:

**Table 15: Distribution of participating tribals according to the extent of direct changes.**

(n = 64)			
S. No	Direct changes	Frequency	Percentage
1	Less changes	9	14.00
2	Moderate changes	45	70.00
3	High changes	10	16.00
Total		64	100.00
Mean 41.21		SD 3.727	

Majority 70.00 per cent fallen under the category indicating the moderate changes caused due to participation in JFM followed by high and less changes with 14.00 per cent and 16.00 per cent respectively.

Fig : 20 - Distribution of participating tribals according to extent of direct changes

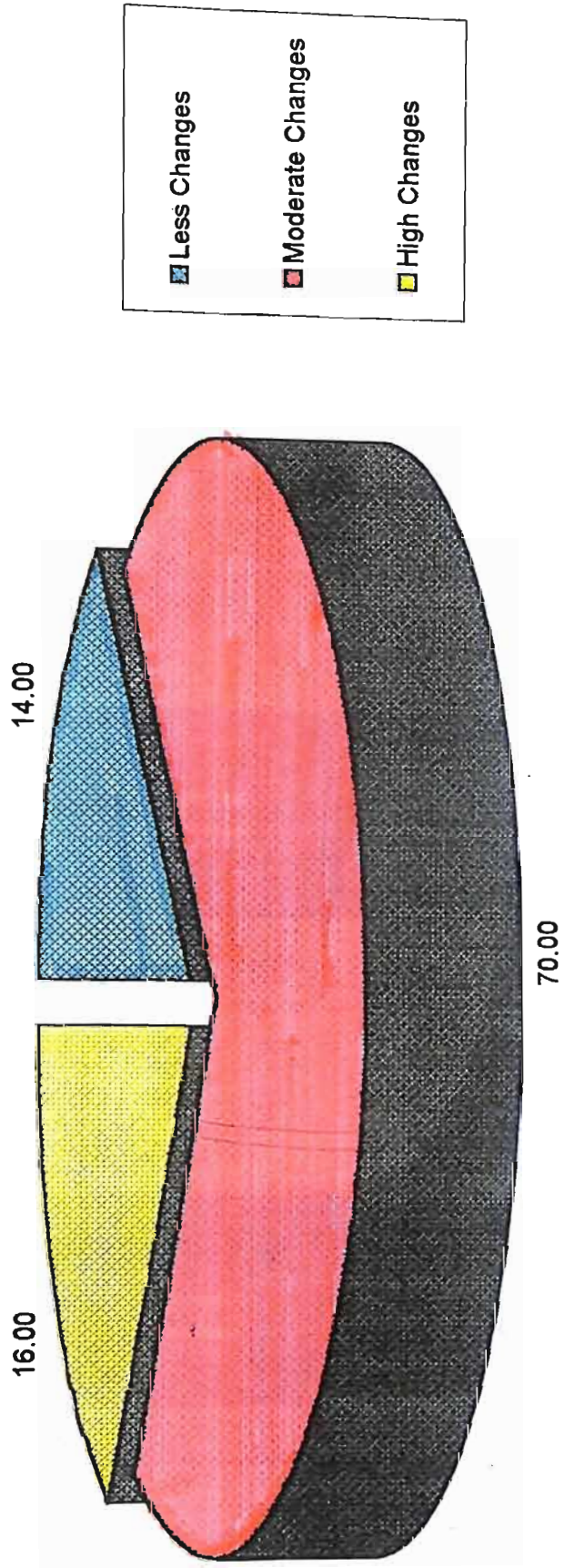
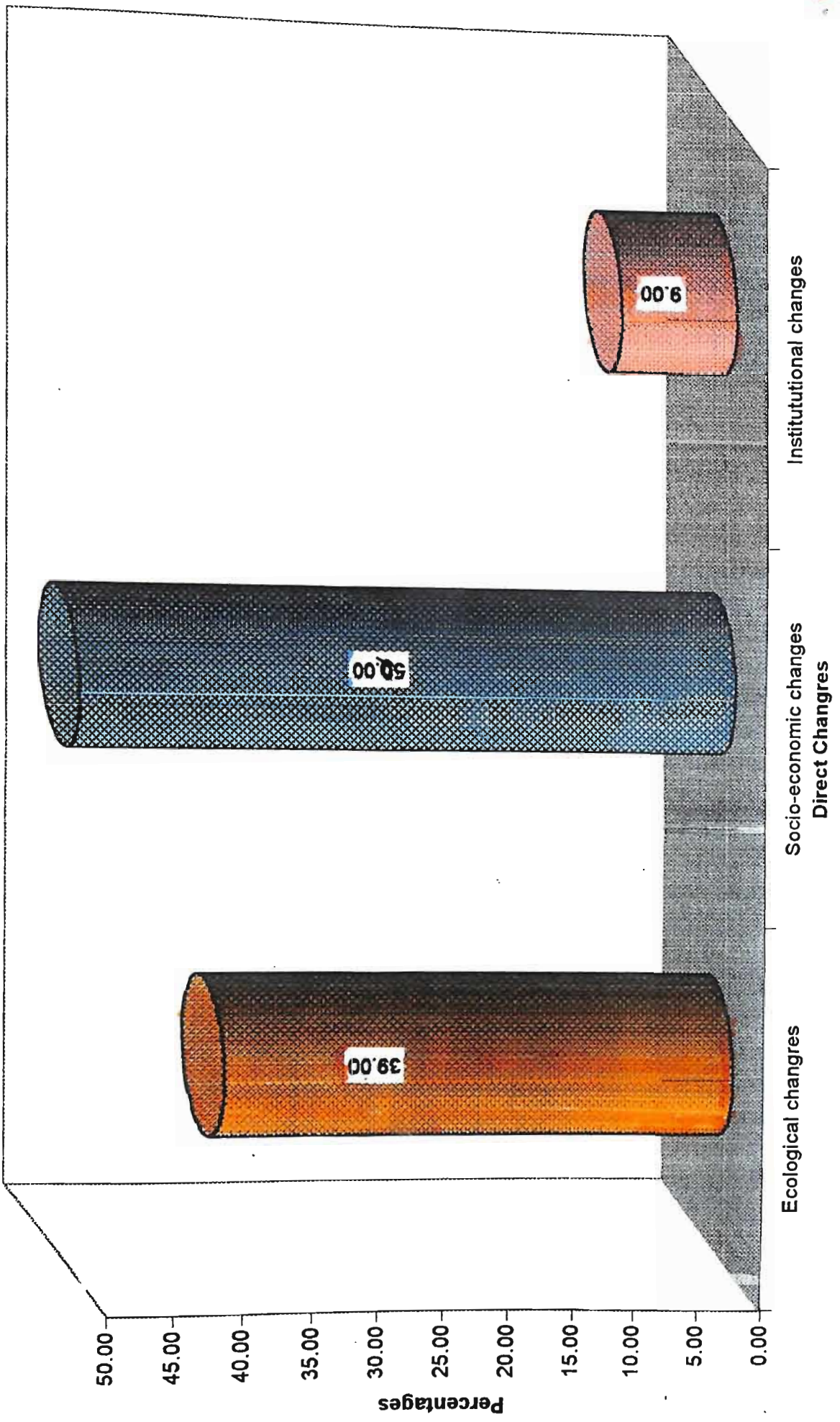


Fig. 21 - Item-wise rank distribution of participating tribals according to the direct changes



**Table 16: Item-wise rank distribution of participating Tribals according to direct changes.**

S No	Direct Changes			(n = 64)
		Frequency	Percentage	Rank
1	Ecological changes	25	39.00	II
2	Socio-economic changes	33	52.00	I
3	Institutional changes	6	9.00	III
	Total	64	100.00	

Table 16 represents an indicative of fact that Socio-economic direct changes 52 .00 per cent scored rank I followed by II and III ranks towards ecological (39.00%), institutional (9.00%) changes respectively.

**Table 17: Sub-item-wise distribution of participating tribals in accordance with direct changes.**

S No	Direct changes	(n = 64)			
		Agree		Disagree	
		F	P	F	P
I	<b>Ecological changes</b>				
1	Increased forest coverage	60	93.75	4	6.25
2	Increased fodder production	45	70.31	19	29.69
3	Increased forest food produce	53	82.81	11	17.19
4	Increased availability of firewood/fuel wood	47	73.44	17	26.56
5	Increased availability of dry plant leaf litter	40	62.50	24	37.50
6	Decreased run-off rate	60	93.75	4	6.25

S No	Direct changes	F		P	
		F	P	F	P
7	Increased availability of medicinal plants	52	81.25	12	18.75
8	Increased grass availability for thatching	47	73.44	17	26.56
9	Change in waste land area	62	96.88	2	3.12
	Average	52	81.25	12	18.75
<b>II Socio-economic changes</b>					
1	Income	64	100.00	—	—
2	Employment	62	96.88	2	3.12
3	Nutrition	52	81.25	12	18.75
4	Status	54	84.38	10	15.62
5	Transportation facilities	61	95.31	3	4.69
6	Storage facilities	42	65.63	22	34.37
7	Yield	59	92.19	5	7.81
8	Purchase of household material	52	81.25	12	18.75
9	Cleared-off the outstanding debts	55	85.94	9	14.06
10	Wholesale and retail market	45	70.31	19	29.69
11	Disposal of agricultural products	51	79.69	13	20.31
12	Demand for labour	63	98.44	1	1.56
	Average	55	85.94	9	14.06
<b>III Institutional changes</b>					
1	Increased participation of tribals in forest production	53	82.81	11	17.19
2	More contacts by extension agency	45	70.31	19	29.69
	Average	49	76.56	15	23.46

F = Frequency    P = Percentage

### **1. Ecological changes:**

It could be seen from Table 17 that a great majority (96.88%) of the participating tribals accepted that there was change in their wasteland area, increased forest coverage (93.75%), decreased run-off rate (93.75%), increased forest food produce (81.81%), increased availability of medicinal plants (81.25%), increased availability of firewood (73.44%), increased availability of grass for thatching (73.44%), increased fodder production (70.31%) and availability of dry plant leaf litter (62.50%).

### **2. Changes in Socio-economic conditions:**

Majority of the participating tribals expressed that there was improvement in income (100.00%), demand for labour (98.44%), employment (96.88%), transportation facilities (95.31%), increased yield (92.19%), cleared off the outstanding debts (85.94%), improved status (84.38%), purchased house hold materials and nutrition (81.25%), disposal of agricultural products (79.69%), wholesale and retail market (70.31%) and storage facilities (65.63%).

### **3. Institutional changes:**

Higher percentage of participating tribals found the increased participation of tribals in forest protection (82.81%)

followed by more contacts by extension agency (70.31%) as institutional changes.

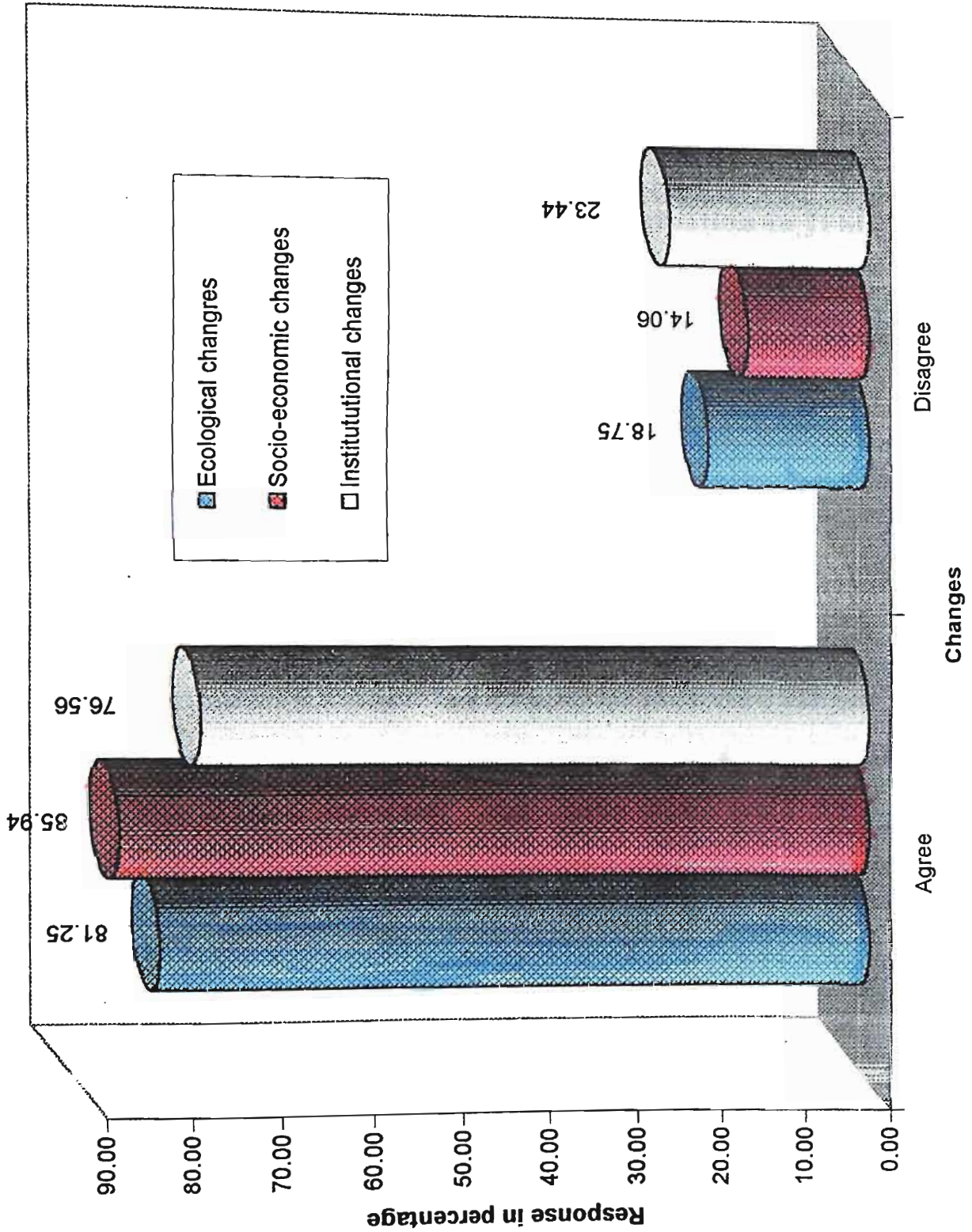
**Table 18: Item-wise distribution of participating tribals in accordance with agreement / disagreement due to direct changes.**

(n = 64)			
S. No	Direct changes	Response	
		Agree	Disagree
1	Ecological changes	52 (81.25)	12 (18.75)
2	Socio-economic changes	55 (85.94)	9 (14.06)
3	Institutional changes	49 (76.56)	15 (23.44)
	Total	156	36
	Frequency	52	12
	Percentage	(81.00)	(19.00)

Note: Figures in the parentheses are in percentages

The Table 18 depicts the tribal participants agreement / disagreement with direct changes which includes Ecological, Socio-economic and Institutional. A great majority (81.25%) and a meagre percentage 18.75 agreed and disagreed towards ecological changes which has got direct bearing on participation in activities of JFM. 85.94 and 14.06 per cent followed by 75.56 and 23.44 per cent respectively agreed as well as disagreed with Socio-economic

Fig 22 - Item-wise distribution of participating tribals in accordance with agreement / disagreement due to direct changes



changes and Institutional changes. These direct changes proved better in establishing participation among the tribals in attending to varied operational activities in JFM.

#### 4.3.2 Indirect Changes due to Participation in JFM:

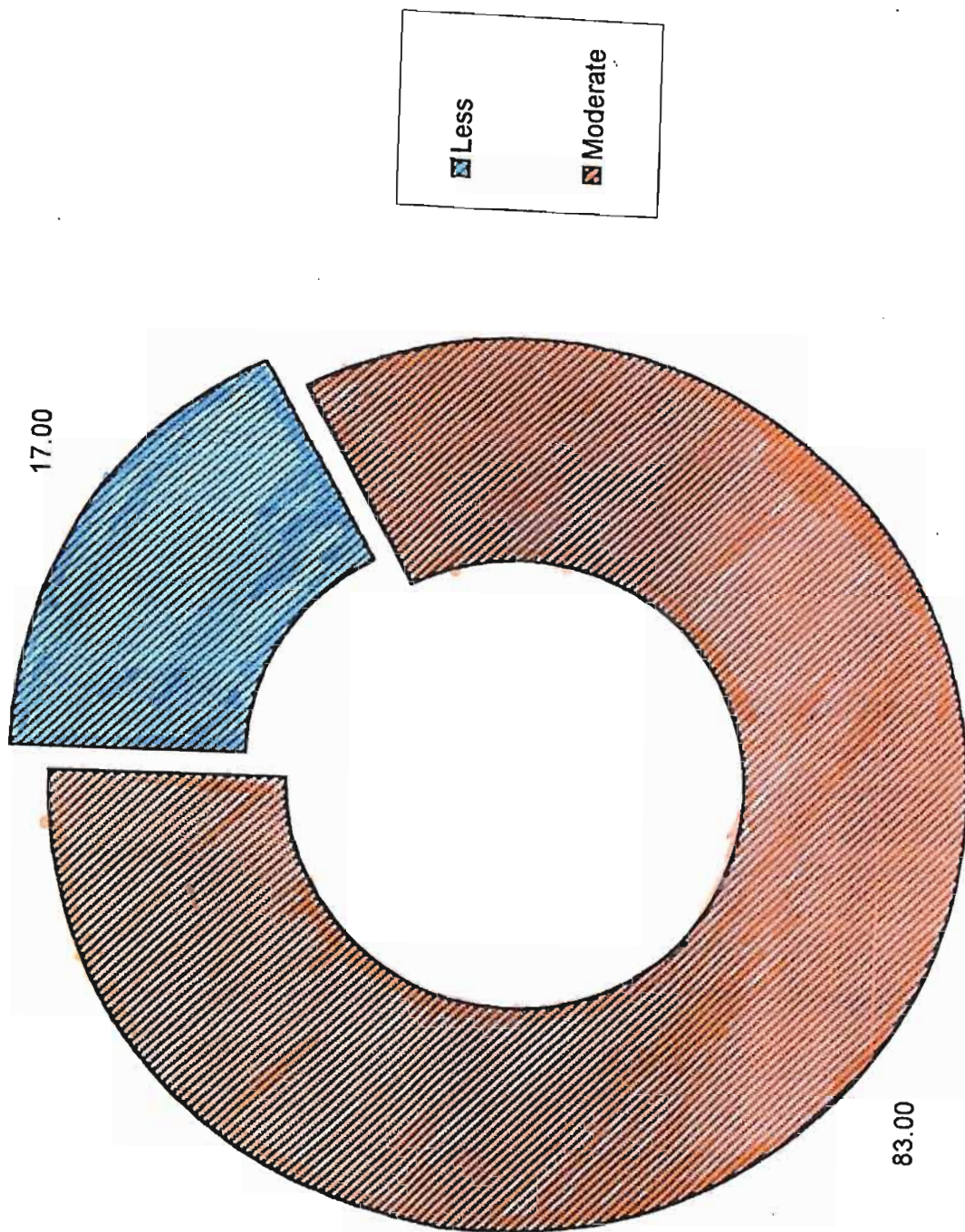
**Table 19: Distribution of participating tribals according to the extent of indirect changes facilitating participation in JFM.**

(n = 64)

S. No	Indirect changes	Frequency	Percentage
1	Less	11	17.00
2	Moderate	53	83.00
3	High	—	—
Total		64	100.00
Mean 38.15		SD 3.505	

Table 19 indicated that the higher percentage (83.00) of participating tribals occupied moderate category of indirect changes followed by less (17.00) of indirect changes for facilitating the participation in JFM. Surprisingly none of the respondents have fallen under the high category of indirect changes indicating that there were no participating tribals either to facilitate or enhance the participation in JFM.

Fig. 23 - Distribution of participating tribals according to the extent of indirect changes facilitating participation in JFM



**Table 20: Item-wise rank distribution of indirect changes.**

(n = 64)				
S No	Indirect changes	Frequency	Percentage	Rank
1	Ecological	31	48.98	I
2	Socio-economic	24	37.55	II
3	Institutional	9	13.47	III
Total		64	100.00	

Table 20 vividly illustrates the item wise rank distribution of indirect changes. Very interestingly the majority 48.98 per cent followed by 37.55 per cent preferred ecological, socio-economic indirect changes with I and II ranks respectively. The institutional indirect changes with 13.47 per cent gained rank III.

**Table 21: Sub-item wise distribution of participating tribals according to the indirect changes.**

(n = 64)					
S No	Indirect changes	Agree		Disagree	
		F	P	F	P
<b>I</b>	<b>Ecological changes</b>				
1	Increased groundwater level	59	92.19	5	7.81
2	Drinking water availability	63	98.44	1	1.56
3	Increased perennial river flows	42	65.63	22	34.37
4	Increased rains	54	84.38	10	15.62
5	Increased temperature	38	59.38	26	40.62
6	Recharging of wells in the locality	60	93.75	4	6.25
7	Reduced soil erosion	61	95.31	3	4.69

S No	Indirect changes	Agree		Disagree	
		F	P	F	P
8	Protection against winds	59	92.19	5	7.81
9	Flood control	61	95.31	3	4.69
10	Pollution control	60	93.75	4	6.25
	Average	56	87.50	8	12.50
<b>II Socio-economic changes</b>					
1	Increased communal solidarity	57	89.10	7	10.90
2	Improved skills and knowledge	36	56.25	28	43.75
3	Change in children education	57	89.10	6	10.90
4	Change in dietary habits	42	65.63	22	34.37
5	Change in the living standards	57	89.10	7	10.90
6	Change in the entrepreneurial behaviour	42	65.63	22	34.37
7	Increased usage of crop technologies	51	79.69	13	20.31
8	Improvement in clothing	63	98.44	1	1.56
	Average	51	79.69	13	20.31
<b>III Institutional changes</b>					
1	Decentralized planning	51	79.69	13	20.31
2	Improper programme	35	54.69	29	45.31
3	Self-reliant instructions	51	79.69	13	20.31
	Average	46	71.88	18	28.12

F = Frequency    P = Percentage

### 1. Ecological changes:

It could be seen from Table 21 that a great majority (98.44%) of the participating tribals accepted that they had given increased drinking water availability, reduced soil erosion and flood control (95.31%), recharging of wells in the locality and pollution control (93.75%), increased ground water level and protection against winds (92.19%), increased rains (84.38%), increased river flows (65.63%), finally increased temperature (59.38%). It could be seen from the table that the ecological changes orbiting around the mean value of 79.69 of low and high ranks.

### 2. Change in Socio-economic condition:

Majority of the participating tribals found that 98.44 per cent improvement in clothing, along with increased communal solidarity, improved skills and knowledge, change in living standards were 89.10% each, while increased usage of crop technology (79.69%), dietary habits and entrepreneurial behaviours were 65.63 per cent each followed by improved skills and knowledge 56.25 per cent.

It could be seen from the table that the socio-economic constraints orbiting around 79.69 per cent of low and high ranks.

### 3. Institutional changes:

Majority (79.69%) of the participating tribals expressed that decentralized planning and self-reliant instructions followed by improper programming 54.69 per cent as institutional changes.

It could be seen from the table that the institutional changes orbiting around the mean value of 71.88 per cent of high and low ranks.

Table 22: Item-wise distribution of participating tribals in accordance with agreement / disagreement due to indirect changes.

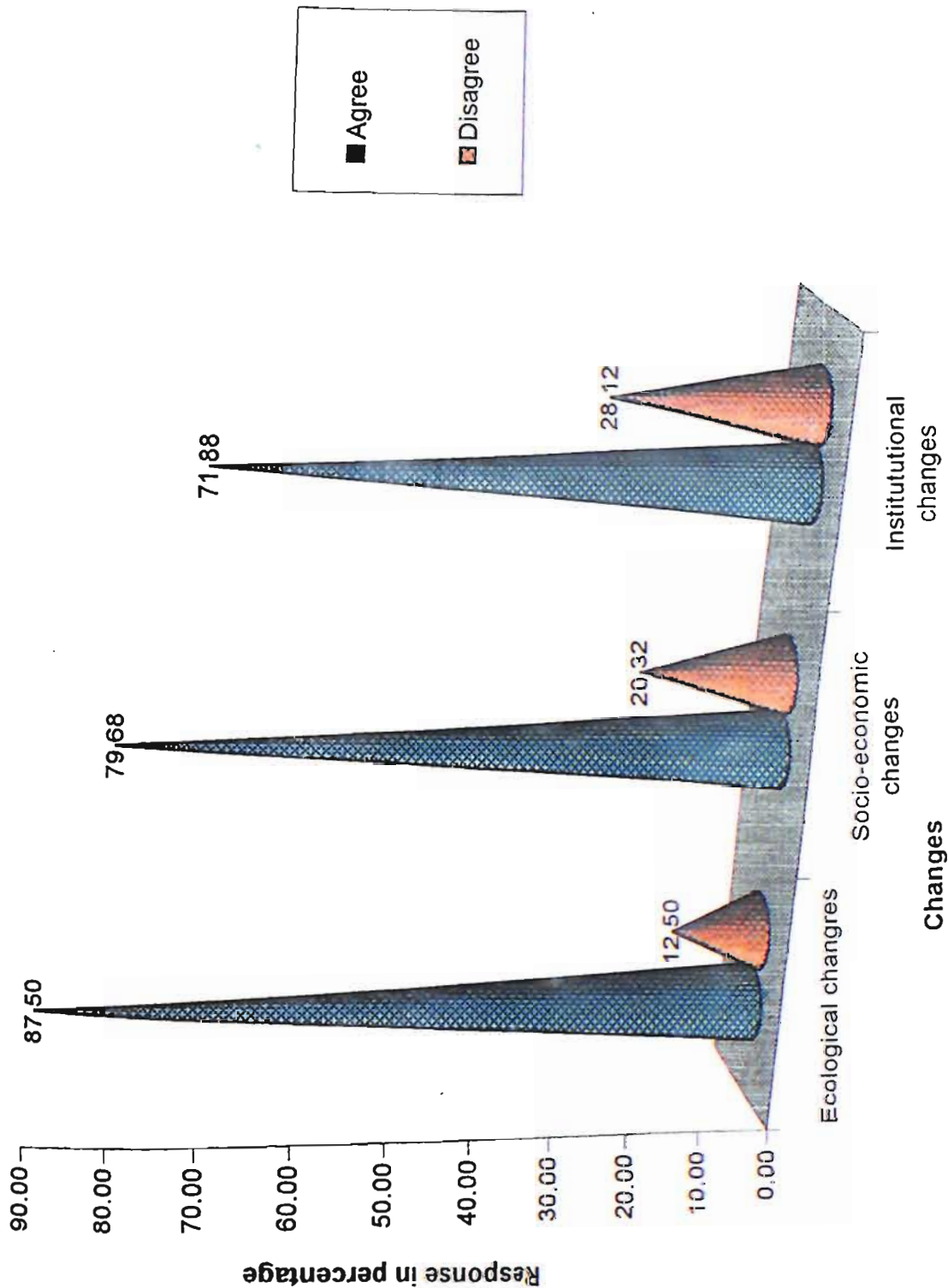
(n = 64)

S. No	Indirect changes	Response	
		Agree	Disagree
1	Ecological changes	56 (87.50)	8 (12.50)
2	Socio-economic changes	51 (79.68)	13 (20.32)
3	Institutional changes	46 (71.88)	18 (28.12)
	Total	153	39
	Frequency	51	13
	Percentage	(80.00)	(20.00)

Figures in the parentheses are in percentages.

Table 22 depicts that majority of respondents (80.00%) were in agreement with item wise indirect changes viz., Ecological, Socio-

Fig 2.24 - Item-wise distribution of participating tribals in accordance with agreement / disagreement due to indirect changes



economic and Institutional while 20.00 per cent respondents disagreed with the indirect changes which occurred due to increased forest coverage because of participation in JFM.

#### 4.4 SUCCESSFUL AND UNSUCCESSFUL CASE STUDIES / FEW TYPICAL CASES IN JFM

Fifth objective of the study was to make case study of few typical cases among participating tribals in JFM. To fulfil the fifth objective, 8 cases (case 1 to 6 are successful and case 7 and 8 are unsuccessful) were selected to reinforce the main findings of the study. Preliminary information regarding these cases was presented in "Discussion" chapter.

#### CASE - LET I

##### 1. Personal Profile

Village	:Kodeli
Mandal	:Hukumpeta of Paderu range
Name of the VSS	Srirama VSS
Extent of VSS	:200 Ha
No. of dependent families	:100 families
Type of plantation taken	up:Tamarind, Amla, Seetha Phal, Hill Mango, Guava, Jafra, Jack, Karakai, Sapota.
Irrigation source	: Farm pond

**2. Prior status to JFM assistance**

1. Entire valley was totally devoid of trees.
2. Direct exposure of hills and hillocks without any vegetation with soil erosion.
3. Acute drinking water problem
4. No field sanitation.
5. Interest in health and sanitation was nominal.
6. Low crop yields.
7. Low employment and migration of labour to neighbouring state.

**3. Information about the JFM**

The VSS was started in the year 1995. At that time very few families were participated. Proper awareness, motivation, benefits derived was not known.

**4. Undertaken activities by participants in JFM**

1. Seed and root stock procurement.
2. Participating in nursery raising.
3. Jungle clearance, pitting and planting of Tamarind, Mango, Guava, Amla, Seetha Phal.
4. Soil and water conservation measures.
5. Boundary identification and fencing.
6. Watering, weeding and inter-cultural operations.
7. Construction of farm pond and drinking water cistron.
8. Maintenance of health and hygiene as well as field sanitation.
9. Wet land conversion by making bench terracing.
10. Maintenance of common land for cattle, sheep and goat grazing.
11. Maintenance of common land for timber and fuel wood plantations.

12. Thrift society formed with 80 female members.

13. "Adda leaf plate making" by thrift and self-help groups.

14. Raising of Tellamaddi plantations for Tasser silk rearing in 5 Ha. By thrift and self-help group persons.

15. Participating in trainings and tours to model VSS.

16. Participating in Janmabhoomi, Sramadhan works in their village.

**5. Funding position and utilization**

1. Conducting general body meetings.
2. Elect and select Chairman by local tribals.
3. Joint bank account opening on chairman and concerned forest official in the bank.
4. Deposition of funds by both State Forest Department and Central Govt. through NABARD, EAS funds.
5. Participation of members in forest activities and works.
6. Taking resolution and approval for the executed works in the committee.
7. Enrolling the names of participated VSS members.
8. Disbursement of wages to the members by chairman in the presence of all other members and concerned forest officials.

**6. Number of participants participated in each activity**

- |  |          |
|--|----------|
| 1. Collection of jungle earth  | 20 men   |
| 2. Sieving and bag filling   | 50 women |
| 3. Nursery bed formation, pendal construction and fencing to the nursery | 20 men   |
| 4. Planting in poly bags and   |          |

watering	20 women
5. Weeding and gap filling in the nursery	10 women
6. Jungle clearance and pitting	25 men
7. Transplanting in the forest	25 men
8. Boundaries identification and fencing	20 men
9. Weeding and intercultural operations	10 men
10. Watch and ward	10 men

**7. Underwent changes due to JFM programme**

1. Youth also participating along with elders.
2. Increased forest coverage with decreased waste land.
3. Executed soil and moisture conservation works.
4. Scientific harvesting of hill stream water by constructing farm pond.
5. Clean drinking water by constructing of cistron and flat form around the tank.
6. Sanitation of villages and field by weeding roguing.
7. Planted minor forest plants and now the participants harvesting the produce.
8. Cooperation and coordination with neighbouring village tribals.
9. Excess water after drinking they are using for cultivation.
10. Land levelling and bench terracing.
11. Planted Non-Timber Forest Plants like

Tamarind, Mango, Guava, Amla, Seetha Phal.

12. Gap filling plantations have been taken up like Jaffra, Jack, Karakai, Soapnut and now produce is selling in the market.

13. No scarcity of grass and fuel wood in the village for their cattle.

14. Women empowerment programmes like thrift societies and self-help groups were started in the village.

15. Adda leaf plate making, Tassar silk rearing was started and deriving benefits.

**8. Opinion of tribals about JFM**

1. Got good opinion on forestry.

2. Deriving income and employing through forestry.

3. Reduced migration of labour to neighbouring states in lean season.

4. Increasing socio-economic status by reduced debts, and purchasing of household material.

5. Increased awareness about food, clothing and education.

6. Facing personal constraints like lack of freedom in selection and choosing of forest species.

7. Facing organizational constraints like proper training and field visits to neighbouring states are insufficient.

**9. Opinion of forest department officials about JFM**

1. Got favourable opinion on JFM.

2. Tribals are actively participating in forestry programmes.

3. The major constraint they facing is inadequate funding and improper distribution of wages.

## CASE-LET II

### 1. Personal Profile

Village	Gudalamveedhi
Mandal	G-Madula of Paderu range
Name of the VSS	Gudalam Veedhi Vana Samrakshana Samithi
Extent of VSS	270 Ha
No. of dependent families	173 families
Type of plantation taken up	Silver Oak, Seetha Phal, Jaffra, Bamboo, Mango, Guava, Eucalyptus, Tamarind.
Irrigation source	Check dam

### 2. Prior status to JFM assistance

1. Interior and remote village.
2. No transportation facilities.
3. Barren hill slopes and eroded soils.
4. Scarcity of drinking water.
5. Indiscriminate felling of trees and podu cultivation
6. Shortage of food materials.
7. SMC works was not taken up resulting in soil erosion and run off.
8. No irrigation source.
9. No school and marketing facilities.

### 3. Information about the JFM

It was started in 1996 with a local participation

### 4. Undertaken activities by participants in JFM

1. Excavated and formed 15 Km road.
2. Executed Soil and Moisture Conservation works on hill slopes.
3. Taken up plantations with NTFP and MFP.

4. Participated in nursery raising, jungle clearance, pitting, planting, tree guarding, watering and ward, weeding and intercultural operations.
5. Constructed check dam for irrigation and taking two paddy crops.
6. Dug out 2 drinking water wells.
7. Socio-economic status improved by increased yields and income.
8. Education awareness improved.
9. Cultivating summer vegetables.
10. Land levelling and bench terracing was adopted
11. Increased availability of MFP and Non-timber produce.
12. Increased extent of Horticultural plantations.
13. Distributed agricultural implements at free of cost.
14. They have provided and constructed Gram Chavidi.
15. Constructed one temple in the village by Sramadanam.

**5. Funding position and utilization**

The State Forest Department funding, maintained and utilized by Joint bank account of VSS members (Chairman and Forest Official)

**6. Number of participants participated in each activity**

- |  |   |          |
|--|---|----------|
| 1. Jungle clearance and pitting                | — | 40 men   |
| 2. Collection of jungle earth and sieving      | — | 20 men   |
| 3. Poly bag filling with jungle earth          | — | 25 women |
| 4. Nursery bed preparation, pendal and fencing | — | 10 men   |

5. Sieving, planting and weeding and watering	—	10 women
6. Transplanting in forest, fencing and tree guarding	—	20 men
7. Watch and ward of forest	—	15 men
8. Participation in SMC works	—	30 men

**7. Underwent changes due to JFM programme**

1. Avoided podu cultivation.
2. The forest coverage increased with MFP and non-timber plants.
3. Due to execution of SMC works, the soil run-off and erosion was arrested.
4. Flowing of perennial hill streams.
5. Availability of drinking water.
6. Recharging of wells in the locality.
7. Increased yield and incomes in agriculture.
8. Formed thrift society.
9. Increased employment with reduced labour migration in lean seasons.
10. Improved status by clothing, education and living standards.
11. Purchase household articles.
12. Increased rains.
13. Consumption of fresh, healthy vegetables.
14. Participating in Jannabhoomi, Clean and Green and Meeru - Neeru programmes.

**8. Opinion of tribals about JFM**

1. They had favourable opinion.
2. Major personal constraints are high drudgery and lack of resources.

**9. Opinion of forest department officials about JFM**

3. Lack of continuous monitoring and evaluation was another constraint.
4. Lack of quality seed, fertiliser and plant protection chemicals.
1. Favourable opinion.
2. Funding is the major constraint.
3. Inadequate allocation of funds.
4. Transplantation and accommodation creates them troubles for continuous monitoring and supervision.

**CASE-LET III**

**1. Personal Profile**

Village	Dippala Gonduru
Mandal	Paderu range
Name of the VSS	Moda Mamba Vana Samrakshana Samithi
Extent of VSS	250 Ha
No. of dependent families	119 families
Type of plantation taken up	Jaffra, Adda leaf, Jack, Guava, Seetha phal
Irrigation source	Hill stream

**2. Prior status to JFM assistance**

1. Illicit felling and smuggling of valuable tree species like Rose wood, sandal wood and Teak.
2. Soil run-off and erosion due to exposure of barren soil.
3. Unemployment and under nutrition.
4. Migration of labour to neighbouring places.
5. Small holdings with very low yields.
6. No thrift societies or functioning of self-help groups.

7. Conflicts and local politics plays major role for destruction and spoilage of village development activities.

8. Podu cultivation.

This VSS was started in the year 1995 with 237 members out of which 118 female and 119 male members. All members are illiterate to semi-literate with age group of 20 to 45 years

**3. Information about the JFM**

**4. Undertaken activities by participants in JFM**

1. Avoided podu cultivation.
2. Treated hills with SMC works.
3. Done land levelling and bench terracing for wet land cultivation.
4. Excavated drinking water well.
5. Nursery raising with NTFP species.
6. Constructed grama chavidi.
7. Provided man days and reduced migration of labour.
8. Distributed smokeless chulhas at free of cost.
9. Women empowerment through establishment of thrift society.
10. Planted Silver Oak as a shade plant for raising Coffee.

**5. Funding position and utilization**

Funds deposited by state forest government after opening of joint account in the name of elected chairman and Forest Official. Disbursement of wages after completion of each work.

**6. Number of participants participated in each activity**

- |                                 |   |        |
|---------------------------------|---|--------|
| 1. Execution of SMC works       | — | 20 men |
| 2. Silver oak nursery raising   | — | 10 men |
| 3. Jungle clearance and pitting | — | 25 men |

- |  |                        |   |          |
|--|------------------------|---|----------|
|  | 4. Excavation of well  | — | 20 men   |
|  | 5. Poly bag filling    | — | 12 women |
|  | 6. Watch and ward      | — | 12 men   |
|  | 7. MFP nursery raising | — | 20 men   |
7. Underwent changes due to JFM programme
1. Increased forest canopy.
  2. Reduced soil erosion.
  3. Recharging of wells in the locality.
  4. Increased rains and flowing of perennial hill stream
  5. Full employment in lean season.
  6. Purchased plough bullocks.
  7. Land levelling and bench terracing for paddy cultivation.
  8. Availability of grass and fodder.
  9. Formed approach road.
  10. Complete transparency in financial transactions and hence reduced corruption.
  11. Samithi members have formed protection groups patrolling the forest areas and apprehending the smugglers.
  12. Women empowerment through micro-enterprises by using seasonal products.
8. Opinion of tribals about JFM
1. Favourable opinion on JFM.
  2. The major constraint they are facing is marketing and storage.
  3. Lack of awareness about potential gains.
9. Opinion of forest department officials about JFM
1. Favourable opinion.
  2. The major constraints are non-availability of good local leader.
  3. Heterogeneity of group
  4. Lack of confidence on Forest Officials.
  5. Caste conflicts in the members.

### CASE-LET IV

#### 1. Personal Profil

Village :	Irukuvalasa.
Mandal	H. Peta of Paderu range
Name of the VSS	Sri Seethamma Vana Samrakshana Samithi.
Extent of VSS	120 Ha
No. of dependent families	32 families
Type of plantation taken up	Jaffra, Jack, Silver-oak, Mango, Eucalyptus, Tamarind, Bamboo, Hill brooms, Myrobalans
Irrigation source	Hill stream

#### 2. Prior status to JFM assistance

1. Agriculture is insufficient for their livelihood.
2. Jungle clearance and podu cultivation.
3. Highly degraded soil with soil erosion.
4. Deprived of benefits of the tribal development plant.

#### 3. Information about the JFM

It was started in the year 1997. The participants not only in works but also maintaining records. There are 64 members with age group of 15 to 45 years.

#### 4. Undertaken activities by participants in JFM

1. Raising of Silver-oak plantations.
2. Execution of Soil and Moisture conservation works.
3. Gully plugging structures.
4. Taken NTFP and medicinal plants like Tamarind, Jaffra, Bomboo, Hill brooms, Myrobalans.
5. Taking up pisciculture.
6. Capacity building of the members by recording and book keeping.
7. Providing employment in lean season.

**5. Funding position and utilization**

Funds deposited by state forest government after opening of joint account in the name of elected chairman and forest official. Disbursement of wages after completion of each work.

**6. Number of participants participated in each activity**

- |                                 |          |
|---------------------------------|----------|
| 1. Execution of SMC works       | 15 men   |
| 2. Nursery raising              | 10 men   |
| 3. Jungle clearance and pitting | 15 men   |
| 4. Watch and ward               | 5 men    |
| 5. Participated in pisciculture | 5 men    |
| 6. Maintenance of records       | 4 men    |
| 7. Watering and weeding         | 10 women |

**7. Underwent changes due to JFM programme**

1. Unity and cooperation in the village.
2. Wetland cultivation by diverting water and formed land levelling and benches making.
3. Increased agricultural yields.
4. Completely avoided podu cultivation.
5. Participated and executed SMC works.
6. Increased forest coverage and brought original glory.
7. Afforestation with MFP, non-timber and medicinal plants and enhanced yield of 25%.
8. Availability of drinking water.
9. Flowing of perennial hill streams.
10. Cultivating medicinal plant of *piper longum*.
11. Encouraged Coffee plantations and pisciculture
12. Transparency in accounts and book keeping.

13. Stopped migration of labour to other places in lean seasons by increased employment.
14. Increased grass yield for cattle feeding and thatching.
- 8. Opinion of tribals about JFM**
1. Favourable opinion on JFM.
  2. Through participation cleared of their debts from money lenders and purchased house hold material.
  3. The constraint facing by them are seeking for subsidized quality seed and fertilizers.
  4. Seeking crop loans for purchase of material.
  5. Illiteracy was their another constraint.
- 9. Opinion of forest department officials about JFM**
1. Constraints facing are timely deposition of funds was not done.
  2. Improper allocation of funds.
  3. Requires frequent motivation and monitoring.
  4. Supply of high yielding varieties of NTFP species.
- CASE-LET V**

### 1. Personal Profile

Village	Getuvalasa
Mandal	Araku range
Name of the VSS	Eswara Vana Samrakshana Samithi
Extent of VSS	252 Ha
No. of dependent families	200 families
Type of plantation taken up	Jamun, Amla, Hill mango, Marking nut, Pongamia, Jaffra, Tamarind, Silver-oak, Eucalyptus, Bamboo, etc.

Irrigation source

2. Prior status to JFM assistance

Hill streams

1. Scarcity of food, fuel, fodder.
2. Habituated to podu cultivation.
3. Non-cooperative to the governmental schemes.
4. Highly individualistic and very difficult to reform.
5. Highly eroded soils.
6. Scarcity of drinking water.
7. No irrigation facilities.
8. Low yield of agriculture.

3. Information about the JFM

The "Eswara Vana Samrakshana Samithi" has been formed in 1996 with 485 men and women VSS members, with an extent of 252 Ha. of degraded forest land has been handed over to VSS for improvement and regeneration

4. Undertaken activities by participants in JFM

1. SMC works.
2. Raising of nurseries.
3. Plantation works in the hills.
4. Planted NTFP plants.
5. Taken up Silver-oak plantations for raising Coffee and Pepper
6. Planted high yield Tamarind.
7. Constructed grama chavidi and drinking water well.
8. To augment income they are provided with agricultural implements.
9. Supplied with Horticulture plants and vegetable mini kits.
10. Women empowerment programmes like thrift societies and grain banks.
11. Giving training to the women in nursery

techniques, leaf plate making.

12. Exposure trips have been taken up.

Deposited by Forest Officials after opening a joint account by Chairman (elected members from the village) and concerned Forest Officials. With drawl and disbursement in the presence of committee members after completion of each activity

1. Collection of jungle earth	30 men
2. Sieving	20 women
3. Bag filling	30 women
4. Staking in nursery	10 women
5. Pandal construction and fencing to the nursery	5 men
6. Nursery bed preparation and sowing	10 men
7. Watering and weeding in the raised nursery beds	10 women
8. Weeding and watering to poly bags	5 women
9. Jungle clearance	20 men
10. Pitting and fencing	25 men
11. Shift of plants to main field	30 women
12. Planting	20 men
13. Watering weeding	10 women, 10 men
14. Watch and ward	5 men

**5. Funding position and utilization**

**6. Number of participants participated in each activity**

**7. Underwent changes due to JFM programme**

1. Self sufficiency of food grains.
2. Sufficient fuel and fodder.

3. Completely avoided podu cultivation.
4. No migrants to outer places.
5. The forests coverage achieved its original glory.
6. Availability of drinking water and flowing of perennial hill streams due to frequent rains.
7. The VSS providing man days with equal wages to both men and women.
8. Harvesting and selling NTFP.
9. Exposure trips gave them good knowledge and awareness about their forests, village and about their family.
10. Educating their children in Ashram schools.
11. Their status increased by wearing good clothes, purchased household material and cleared off debts.
12. Women cultivating vegetables and selling in the shandies. The women achieving supportive employment to their family.

**8. Opinion of tribals about JFM**

1. Lack of resources, untimely funding and inadequate funding.
2. Requires constant supervision and monitoring.
3. Requires frequent training on how to sell their produce in the big markets to avoid involvement of middlemen.
4. Requires training on agriculture, procurement of good quality seed and fertilizers from department.

**9. Opinion of forest department officials about JFM**

1. The constraints they facing are shortage of staff.
2. Lack of funds for execution of works.

3. Transportation and accommodation problems.
4. Lack of separate funds for training and short exposure trips.

#### CASE-LET VI

#### 1. Personal Profile

Village	Titingivalasa
Mandal	Paderu range
Name of the VSS	Titingivalasa Vana Samrakshana Samithi
Extent of VSS	200 Ha
No. of dependent families	32 families
Type of plantation taken up	Nallamaddi, Vegisa, Mango, Jaman, Amla, Adda leaf, Kagu, Hill brooms, Casuiarina, Silver-oak, Eucaliptus
Irrigation source	Farm pond

#### 2. Prior status to JFM assistance

1. Deprived of benevolent schemes of the Govt.
2. Destruction of forests to podu cultivation.
3. Shortage of fodder/grass.
4. Shortage of drinking water.
5. Migration of labour in lean seasons.
6. Most eroded soils with run-off.
7. Illiteracy is a major problem.
8. Small and scattered land holdings with poor agricultural yield.

#### 3. Information about the JFM

"Titingivalasa Vana Samrakshana Samithi" was started in the year 1998 with 32 men and 32 women.

**4. Undertaken activities by participants in JFM**

1. Participation and execution of SMC works on priority basis.
2. Provided employment through various forest development activities.
3. Construction of grama chavidi.
4. Encouraged members to cultivate vegetables.
5. Upliftment of women through thrift societies.
6. Taken up pineapple plantations.
7. To augment income they are provided with agricultural implements.
8. Preparation of micro plant for various developmental works.
9. Major attention was paid to natural regenerations through strict control on fire, grazing, hacking, smuggling and encroachment.

**5. Funding position and utilization**

Deposited by forest officials after opening a joint account by Chairman (elected members from the village) and concerned Forest Officials. With drawn and disbursement in the presence of committee members after completion of each activity.

**6. Number of participants participated in each activity**

1. Execution of SMC works	10 men
	4 women
2. Constructed farm pond	8 men
	4 women
3. Nursery raising	5 men
	4 women
4. Jungle clearance and pitting	5 men
	4 women

5. Weeding and watering 2 men
6. Watch and ward 2 men
7. Vegetable cultivation 16 women
1. Self sufficiency of food grains with four folds increase.
  2. Sufficient fuel and fodder.
  3. Completely avoided podu cultivation.
  4. No migrants to outer places.
  5. The forests coverage achieved its original glory.
  6. Availability of drinking water and flowing of perennial hill streams due to frequent rains.
  7. The VSS providing man days with equal wages to both men and women.
  8. Harvesting and selling NTFP with additional gain of 55 per cent.
  9. Educating their children.
  10. Harvesting and selling Pineapple fruits.
  11. Their status increased by wearing good clothes, purchased household material and cleared off debts.
  12. Women cultivating vegetables and selling in the shandies. The women achieving supportive employment to their family.
  13. Increased yield of agriculture by brining more land under agriculture.

**7. Underwent changes due to JFM programme**

**8. Opinion of tribals about JFM**

1. Lack of resources, untimely funding and inadequate funding.
2. Requires constant supervision and monitoring.

3. Requires frequent training on how to sell their produce in the big markets to avoid involvement of middlemen.
4. Requires training on agriculture, procurement of good quality seed and fertilizers from department.

**9. Opinion of forest department officials about JFM**

1. Constraints they facing are shortage of staff.
2. Lack of funds for execution of works.
3. Transportation and accommodation problems.
4. Lack of separate funds for training and short exposure trips.

**CASE-LET VII**

**1. Personal profile**

Village	Kadeli
Mandal	Paderu
Name of the VSS	Srirama Krishna Vana Samrakshna Samithi
Extent of VSS	50 ha
No. of dependent families	30
Type of plantations taken up	Silier-oak, Jaffra, Neeredu, Amla, Euclyptus
Irrigation source	Percolation tank

**2. Prior Status to JFM assistance**

1. Majority of the participating tribals are waged labours with poor socio-economic status.
2. Destruction of forests by fringe dwellers.
3. Podu cultivation.
4. Low soil fertility due to severe soil erosion.

### 3. Information about JFM

### 4. Undertaken activities

### 5. Reasons for failure of VSS

### 6. Constraints expressed by the tribals

5. Scarcity of drinking water.
  6. Scarcity of drinking water.
  7. Non-availability of Timber, Fuel-wood, Foder, Green manure and other MFP.
- VSS was formed in 1997 with 60 members.

1. Taken up SMC works.
2. Constructed percolation tank.
3. Formed village road
4. Constructed school building and VSS community hall.
  - a. Disputes aroused in the committee
    1. The VSS is of heterogeneous group of 3 to 4 castes.
    2. Disputes aroused for power distribution and wage disbursement after few years of smooth running.
    3. The upper caste group struggled for power and president position in the VSS.
  - b. Consequences of conflicts
    1. The virgin dense afforestation was failed due to lack of watch and ward.
    2. Allowed cattle into the young plantations for grazing.
    3. The poor landless labour again migrating to other place for their livelihood.
1. The failure of VSS was mainly due to lack of forest official continuity for monitoring and supervision.
2. Lack of commitment in the tribals regarding the development of their VSS and their village.
3. Political interference played a major role in the destruction and spoilage of VSS and mis-utilization of funds.

## CASE -LET VIII

**1. Personal Profile**

Village	Jankariguda
Mandal	Dumbriguda of Araku range
Name of the VSS	Jankariguda VSS
Extent of VSS	10 ha
No. of dependent families	50
Type of plantations taken up	Silier-oak, Jaffra, Hill broom, Amla, Tamarind, Neerudu
Irrigation source	Natural spring.

**2. Status Prior to JFM assistance**

1. Large-scale destruction of forests through illicit felling and encroachment of land for podu cultivation.
2. The soil was completely eroded and denuded due to excessive cattle grazing.
3. Exposure of rocks as a result of unscientific ploughings and cultivation

**3. Information about JFM**

1. The eroded soils was treated with SMC works.
2. The SMC works has provided 1200 man days employment to the poor and landless.

**4. Land constraint**

1. The villagers had insufficient land to supply food to meet the needs of villagers and their cattle.

**5. Constraint as perceived by the tribals**

1. The villagers reported and requested the revenue department officials and forest department officials to allot some land in the near by villages for raising fuel wood and fodder.
2. The forest officials never visited the villages as it is un-approachable.

#### 4.5 CONSTRAINTS IN IMPLEMENTATION OF JFM AS PERCEIVED BY PERSONNEL OF FOREST DEPARTMENT AND PARTICIPATING TRIBALS

##### 4.5.1 Constraints as perceived by the Forest Department Officials

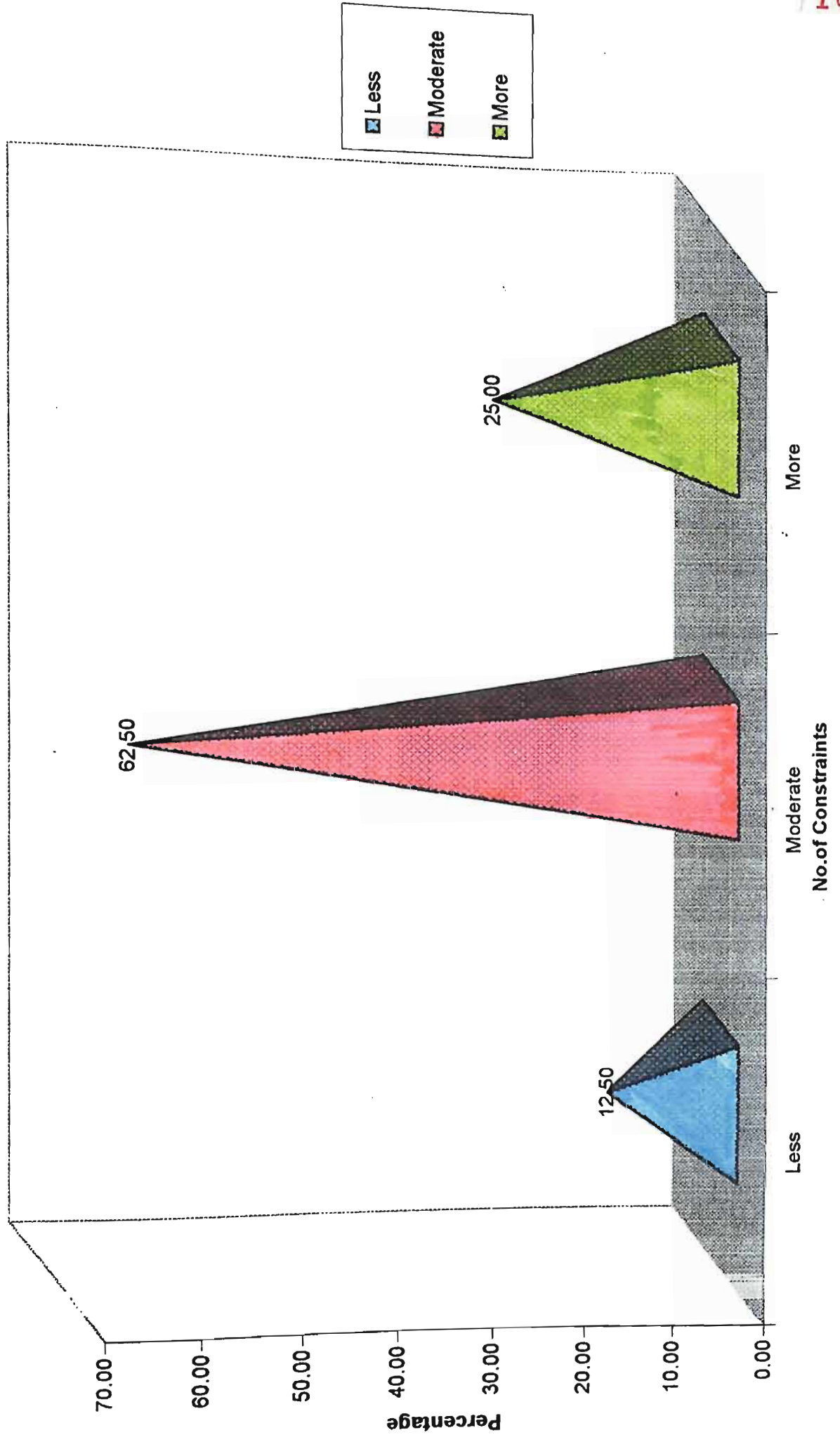
The Forest Department officials perceived the following constraints and they are divided into administrative, organizational, financial, situational and legal constraints.

The frequency of the constraints in accordance with the number of Forest Department officials facing particular constraint(s) and ranking was given accordingly.

**Table 23: Distribution of Forest Officials according to the extent of constraint.** (n = 16)

S. No	Category	Frequency	Percentage
1	Less number of constraints (low)	2	12.50
2	Moderate number of constraints (Medium)	10	62.5
3	High number of constraints (More)	4	25.00
Total		16	100.00
Mean 57.00		SD 8.284	

Fig :25 - Distribution of forest officials according to the extent of constraint.



It could be observed from the Table 23 that majority of the Forest Officials experienced less to more number of constraints. In fact, it was at increasing trend from less (12.50%) to moderate (62.50%) number of constraints followed by the category with more number of constraints (25.00%).

**Table 24: Sub-item-wise distribution constraints as perceived by Forest Department Officials in implementation of JFM.**

(n = 16)

S No	Constraints	Frequency	Percentage	Rank
<b>I Administrative constraints</b>				
1	Inadequate forest extension staff	2	12.50	IV
2	Lack of decentralized planning	3	18.75	III
3	Lack of transportation facilities	6	37.50	I
4	Lack of accommodation	5	31.25	II
Average		4	25.00	

No	Constraints	Frequency	Percentage	Rank
<b>II Organizational constraints</b>				
1	Lack of coordination within the department	2	12.50	II
2	Lack of coordination with other departments	7	43.75	I
3	Politics in the selection of leaders for FPC	1	6.25	III
	Average	3	18.75	
<b>III Financial constraints</b>				
1	Lack of funds	1	6.25	II
2	Inappropriate allocation of funds	2	12.50	I
	Average	1	6.25	
<b>IV Situational constraints</b>				
1	Inadequate participation	3	18.75	V
2	Prevalence of mis-concepts about rights and privileges among members of FPC	4	25.00	IV
3	Heterogeneity among members	7	43.75	III
4	Non-availability of good local leader	8	50.00	II
5	Preferential interest of members of FPC in selection of species	15	73.75	I

S No	Constraints	Frequency	Percentage	Rank
6	Lack of confidence among the members of FPC on the forest officials	3	18.75	V
7	Caste conflicts among members of FPC	1	6.25	VII
8	Less tribal participation about rights of FPC	2	12.50	VI
Average		5	31.25	
<b>V Legal constraints</b>				
1	Strict JFM rules and regulations	5	31.25	I
2	Strong forest acts	4	25.00	II
3	Compulsory rights to participate by tribals in JFM	1	6.25	III
Average		3	18.75	

#### I. Administrative constraints

It could be seen from the Table 24 that 37.50 per cent of the forest officials stated that transportation facilities were a major constraint. Lack of accommodation (31.25%), lack of decentralized planning (18.75%) and inadequate forest extension staff (12.50%) were the other constraints perceived by them.

It could be observed from the above table that the administrative constraints from inadequate forest extension staff (12.50%) to lack of transportation facilities (37.50%) were more in number indicating the increasing trend followed by 31.25 per cent of decrease towards the constraints like accommodation.

## **2. Organizational constraints**

Majority of the Forest officials (43.75%) perceived lack of coordination with other departments as their major organizational constraint. Lack of coordination within the department (12.50%) and politics in the selection of leaders for FPC (6.25%) were the other organizational constraints.

It could be seen from the table that the organizational constraints are in increasing order from lack of coordination within the department (12.50%) to lack of coordination with other departments (43.75%) followed by diminishing trend with 6.25 per cent of the constraints like politics in the selection of leaders for FPC.

## **3. Financial constraints**

About 12.50 per cent Forest officials stated that inappropriate allocation of funds was a constraint. Very low of 6.25

per cent of Forest officials stated that the lack of funds was the other constraint faced by them.

In other words, the financial constraints are severe depicting the increasing trend from inappropriate allocation of funds (12.50%) to lack of funds (6.25%).

#### **4. Situational constraints**

About 93.75 per cent of the Forest officials stated that preferential interest of members of FPC in selection of species was a constraint. Non-availability of good local leader (50.00%), heterogeneity among members (43.75%), prevalence of misconceptions about rights and privileges among members of FPC (25.00%), inadequate participation (18.75%), lack of confidence among the members of FPC on the Forest officials (18.75%), less tribal participation about rights of FPC (12.50%) and caste conflicts among members of FPC (6.25%) were the other situational constraints faced by them.

It is vivid from the table that the situational constraints are increasing in trend from inadequate participation (18.75%) to preferential interest of members of FPC in selection of species

(93.75%) followed by decreasing trend of 6.25 per cent of caste conflicts.

### 5. Legal constraints

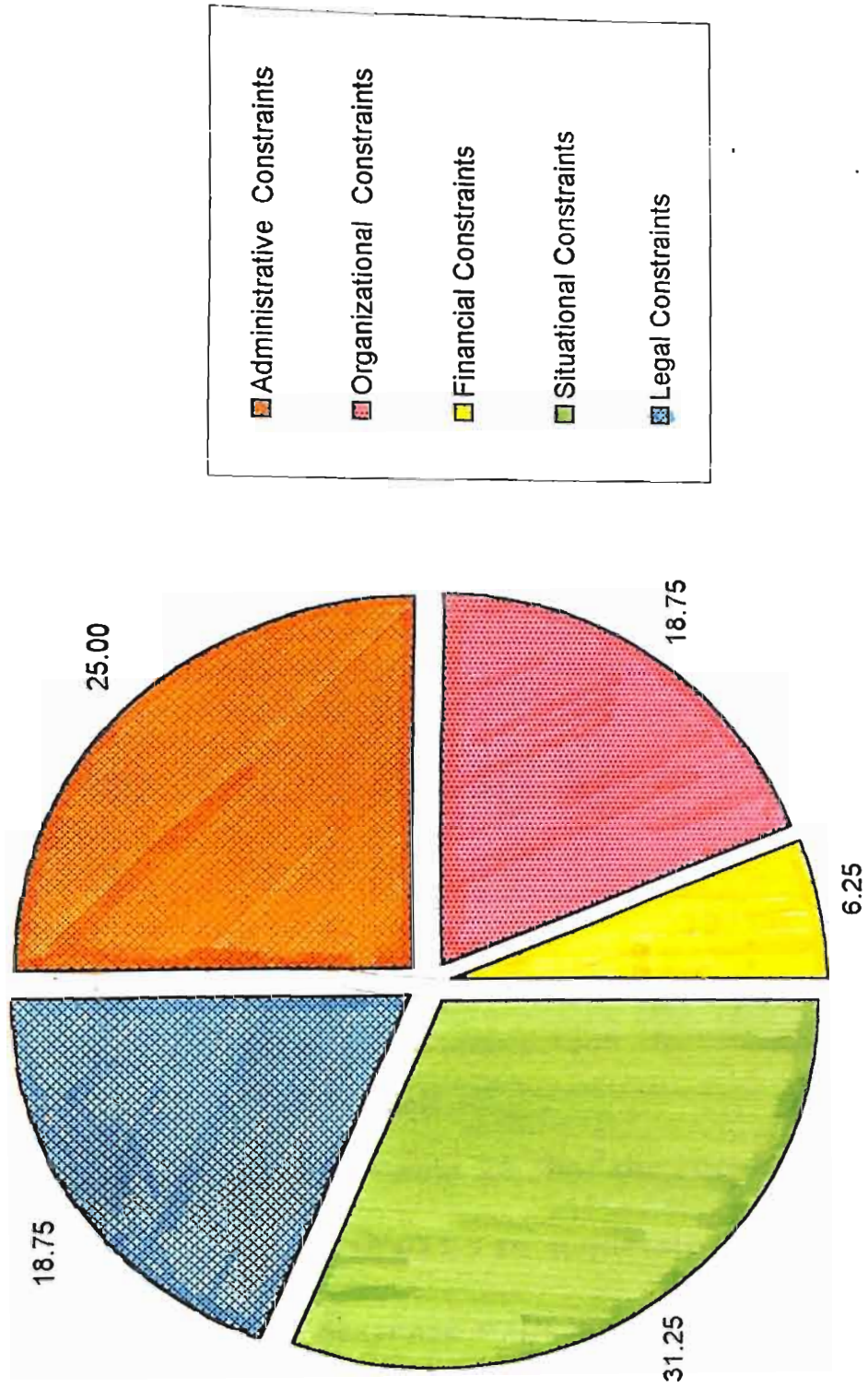
The analysis of response could be observed that 31.25 per cent of Forest officials perceived strict JFM rules and regulations as their major constraint. Strong forest acts (25.00%), compulsory rights to participate by tribals in JFM (6.25%) were the other legal constraints.

However, the legal constraints are at decrease from strict JFM rules and regulations (31.25%) to compulsory rights to participate in JFM by tribals (6.25%).

**Table 25: Item-wise rank distribution of constraints as perceived by Forest Officials. (n = 16)**

S No	Constraint	Total Score	Frequency	Percentage	Rank
1	Administrative	232	4	25.00	II
2	Organizational	145	3	18.75	III
3	Financial	83	1	6.25	IV
4	Situational	299	5	31.25	I
5	Legal	153	3	18.75	III
Total		912	16	100.00	

Fig:26 - Item-wise rank distribution of constraints as perceived by Forest Officials



So, the constraints were in decreasing order from administrative (25.00%) to financial (6.25%) followed by 31.25 per cent of situational constraints which were at increasing order.

#### 4.5.2 Constraints as Perceived by Participating Tribals in JFM

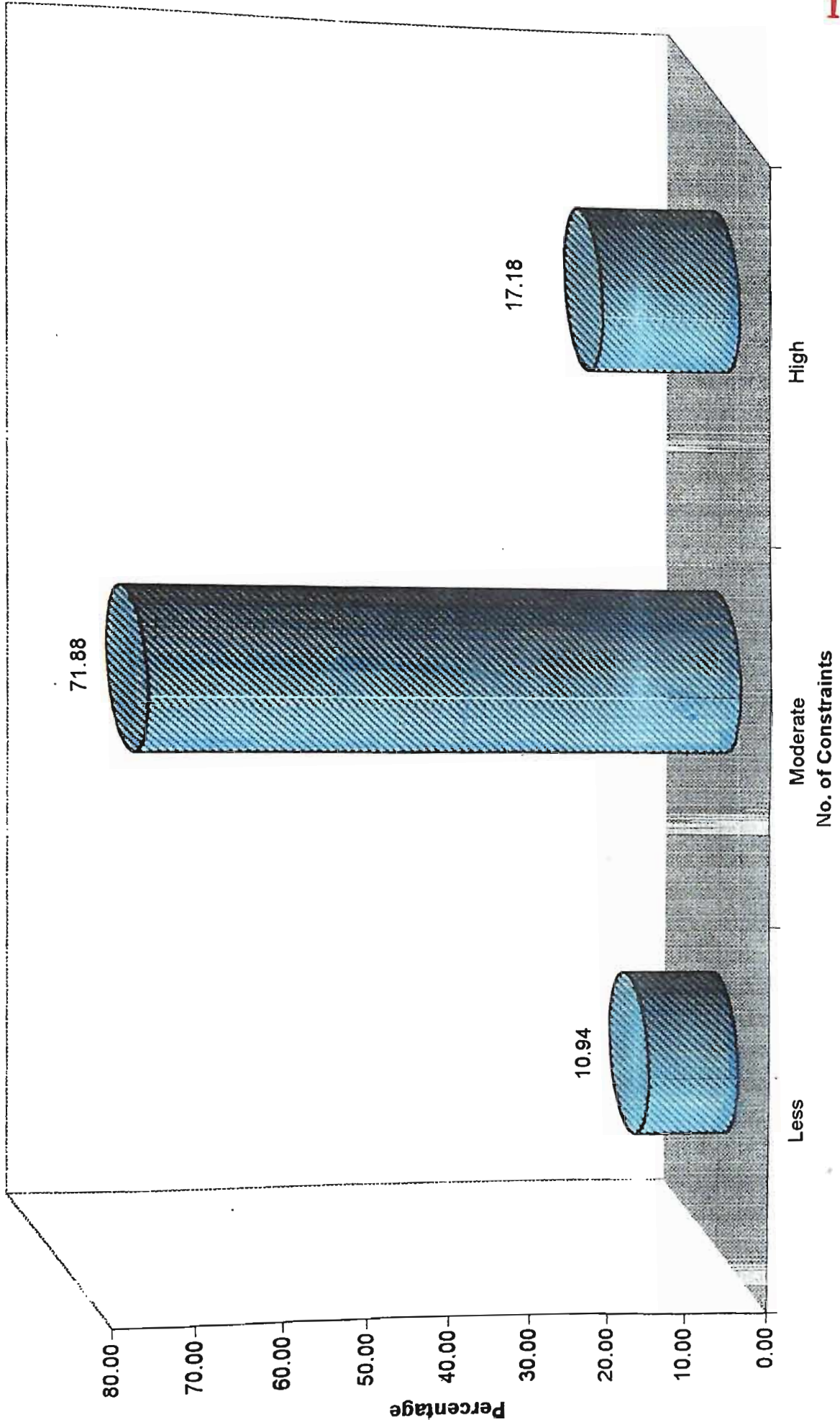
Table 26: Distribution of participating tribals according to the number of constraints.

(n = 64)

S. No	Category	Frequency	Percentage
1	Less constraints (low number)	7	10.94
2	Moderate constraints (Medium number)	46	71.88
3	High constraints (More number)	11	17.18
Total		64	100.00
Mean 53.51		SD 13.728	

It could be observed from the Table 26 that the constraints were at increasing order from less (10.94%) to moderate (71.88%) number of constraints followed by decrease with 17.18 per cent of the constraints occupying the high category.

Fig : 27 - Distribution of participating tribals according to the extent (number) of constraints



## Constraints

The participating tribals perceived the following constraints and they are divided into personal, social, situational, financial, organizational, administrative and marketing constraints.

The frequency of the constraints in accordance with the number of participating tribals facing particular constraint and ranking was given accordingly.

**Table 27: Sub-item-wise distribution of constraints as perceived by participating tribals in implementation of JFM.**

(n = 64)

S No	Constraints	Frequency	Percentage	Rank
<b>I Personal constraints</b>				
1	Lack of awareness about potential gains from JFM	21	32.81	IV
2	Lack of freedom in choosing forest species	26	40.63	I
3	High drudgery involved	14	21.88	V
4	Lack of resources	24	37.50	II
5	Lack of motivation	22	34.38	III
6	Inadequate employment	12	18.75	VI
7	Negative attitude of Forest Department officials towards tribal people	10	15.63	VII
	Average	18	28.13	

Constraints	Frequency	Percentage	Rank
<b>Physical constraints</b>			
Lack of community cooperation	5	7.81	I
Discouragement from the neighbours	3	4.69	II
Average	4	6.25	
<b>Political constraints</b>			
Political rivalries in villages	3	4.69	IV
Improper distribution of profits	9	14.06	II
Inadequate technologies	14	21.88	I
Conflict on distribution of employment opportunities	7	10.94	III
Average	8	12.50	
<b>Financial constraints</b>			
Lack of adequate funding	6	9.38	I
Inadequate payment of wages	2	3.13	II
Average	4	6.25	
<b>Organizational constraints</b>			
Power conflicts between FPC and Forest officials	5	7.81	V
Lack of required legal status for Protection Committee	8	12.50	IV
Dissemination of market information to tribals on a regular basis	11	17.19	III
Lack of proper training	14	21.88	II
Lack of continuous monitoring and supervision	19	29.69	I
Average	11	17.19	

S No	Constraints	Frequency	Percentage	Rank
<b>VI Administrative constraints</b>				
1	Improper attitude of officials towards tribals	7	10.94	III
2	Centralized administration	11	17.19	II
3	Complicated transit rules	15	23.44	I
4	Lack of collection depots	4	6.25	IV
	Average	9	14.06	
<b>VII Marketing constraints</b>				
1	Marketing of non-timber produce	17	26.56	I
2	Marketing of produce by Forest Protection Committee	14	21.88	II
3	Storage of marketable produce	10	15.63	III
4	Establishment of processing unit	7	10.94	IV
5	Lack of supportive price	4	6.25	V
	Average	10	15.63	

### 1. Personal constraints

It could be seen from the Table 27 that 40.63 per cent of the participating tribals stated that the lack of freedom in choosing forest species was a major constraint. Lack of resources (37.50%), lack of motivation (34.30%), lack of awareness about potential gains from JFM (32.81%), high drudgery (21.88%), inadequate employment (18.75%) and negative attitude of Forest Department officials

towards tribal people with 15.63 per cent were the other constraints perceived by the participating tribals.

It could be seen from the table that the personal constraints are in increasing trend from lack of awareness about potential gains (32.81%) to lack of freedom in choosing forest species (40.63%) followed by decreasing trend from lack of resources (37.50%) to negative attitude of Forest Department officials towards tribal people (15.63%).

## **2. Social constraints**

About 7.81 per cent of the participating tribals stated that lack of community cooperation was a major constraint. Discouragement from neighbours (4.69%) was the other social constraint faced by them. The social constraints indicated in Table 27 are at decreasing trend.

## **3. Situational constraints**

It could be seen from the table that 21.88 per cent of the participating tribals stated that inadequate technology was a major constraint. Improper distribution of profits (14.06%), conflicts on distribution of employment opportunities (10.94%) and political

rivalries in villages (4.69%) were the other constraints as perceived by the respondents.

The situational constraints follow an increasing trend from political rivalries in village (4.69%) to inadequate technologies (21.88%) followed by decrease with 10.94 per cent conflicts on distribution of employment opportunities.

#### **4. Financial constraints**

It could be seen from table that 9.38 per cent of the participating tribals stated that lack of adequate funding was a major constraint. Inadequate payment of wages (3.13%) was the other constraint perceived by them.

However, the decreasing trend was observed from lack of adequate funding (9.38%) to inadequate payment of wages (3.13%).

#### **5. Organizational constraints**

About 29.69 per cent of the respondents stated that lack of continuous monitoring and supervision was a constraint. Lack of proper training (21.88%), dissemination of market information to tribals on a regular basis (17.19%), lack of required legal status for protection committee (12.50%), power conflicts between FPC and

Forest officials (7.81%) were the other organizational constraints faced by them.

Increasing trend from power conflicts between FPC and Forest officials (7.81%) to lack of continuous monitoring and supervision (29.69%) was also observed in Table 27.

#### **6. Administrative constraints**

About 23.44 per cent of the respondents stated that complicated transit rules was the major administrative constraint. Centralized administration (17.19%), improper attitude of officials towards tribals (10.94%) and setting of collection depots (6.25%) were the other administrative constraints faced by them.

So, the improper attitude of officials towards tribals (10.94%) to complicated transit rules (23.44%) were at increase in trend followed by decreasing trend with 6.25 per cent of the constraints like setting of collection depots.

#### **7. Marketing constraints**

About 26.56 per cent of participating tribals stated that marketing of non-timber produce was a major constraint. Marketing of produce by Forest Protection Committee (21.88%), storage of

marketable produce (15.63%), establishment of processing unit (10.94%) and lack of supportive price (6.25%) were the other constraints.

It could be seen that the marketing constraints are in decreasing order from marketing of non-timber produce (26.56%) to lack of supportive price (6.25%).

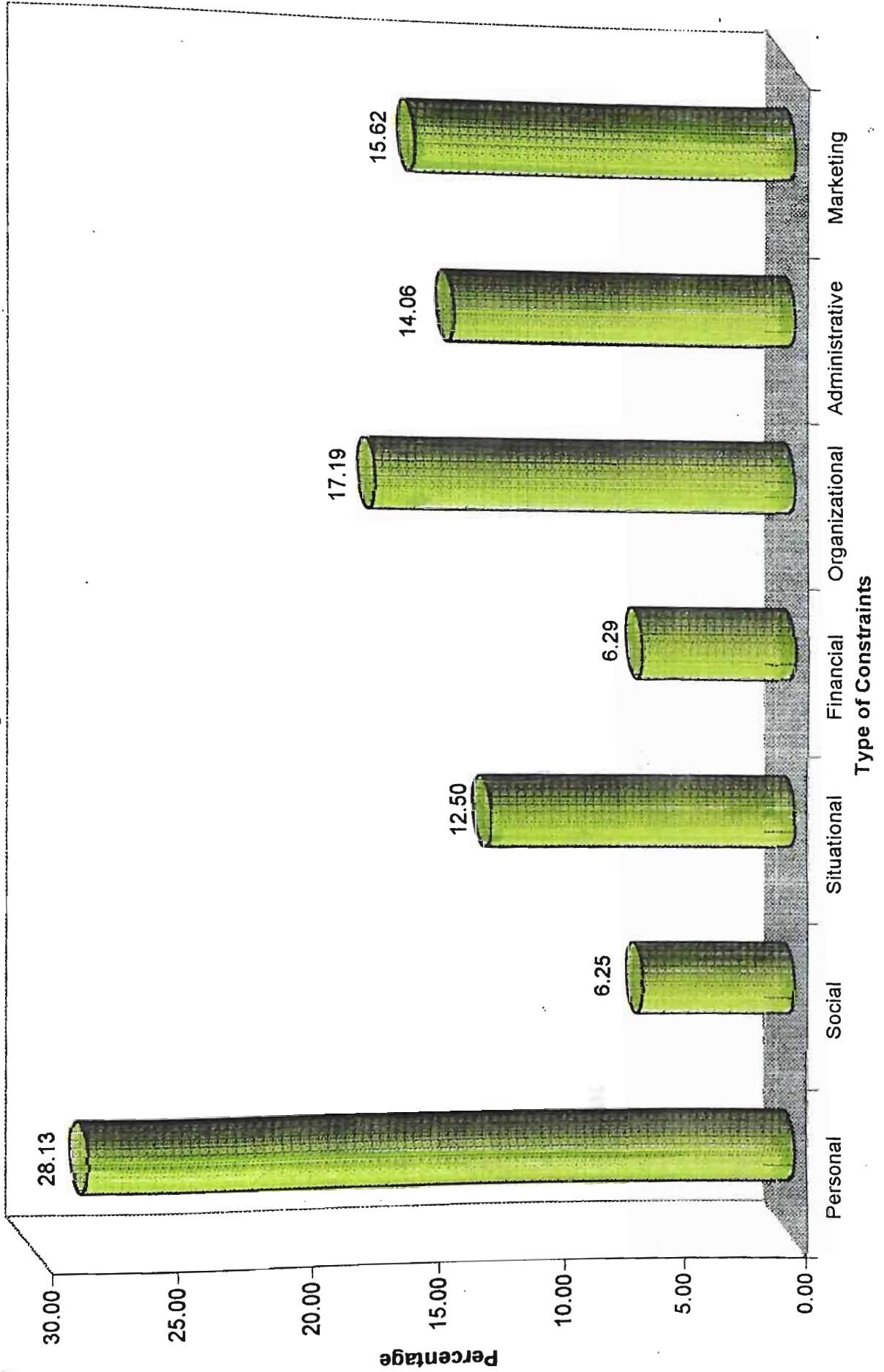
**Table 28: Item-wise distribution of constraints as perceived by participating tribals in implementation of JFM.**

(n = 64)

S No	Constraint	Frequency	Percentage	Rank
1	Personal constraints	18	28.13	I
2	Social constraints	4	6.25	VII
3	Situational constraints	8	12.50	V
4	Financial Constraints	4	6.29	VI
5	Organizational constraints	11	17.19	II
6	Administrative constraints	9	14.06	IV
7	Marketing constraints	10	15.62	III
Total		64	100.00	

It could be seen from Table 28 that 28.13 per cent of the participating tribals indicated the personal constraints as a major. Organizational (17.19%), marketing (15.62%), administrative

Fig 28 - Item-wise distribution of constraints as perceived by participating tribals in implementation of JFM



(14.06%), situational (12.50%), financial (6.29%) and social constraints (6.25%) were the other constraints perceived by them.

In a way, the constraints are in decreasing trend from personal (28.13%) to financial (6.29%) followed by 15.62 per cent marketing constraints which were at increase in order.

# DISCUSSION

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## CHAPTER - V

### DISCUSSION

In this chapter results are discussed for which, contents of Chapter - IV used as base material. These findings were examined in relation to the reported findings of other investigations with plausible reasons wherever possible. The results of the study that emerged from analytical framework have been presented in the following sub-heads.

#### 5.1 MOTIVATIONAL PATTERN OF PARTICIPATING TRIBALS IN JOINT FOREST MANAGEMENT

It could be observed from the Table 1 that more than half of the participating tribals belong to medium followed by low and high category of motivational patterns. Majority of the tribals are participating in forestry programmes for economic, utilitarian, security motives.

The finding was in line with the findings of Francis (1993).

##### 5.1.1 Motives

The participating tribals expressed the following motives and were divided into utilitarian, affiliation, security, economic, prestige and achievement motives.

The various motives of participating tribals with rankings were presented in Table 2.

### 5.1.1.1 Utilitarian motives

An overview of Table 2 revealed that nearly 42.19 per cent of the participating tribals expressed that clothing, home and education was the main utilitarian motive. This was due to continuous availability of employment thereby reduced migration of tribals to other places in lean season and distribution of equal wages to men and women, collection and sale of minor forest produce and non-timber forest produce. About 35.94 per cent of the participating tribals stated that increased water recharge capacity in the wells, reduced run-off (34.38%), increased availability of MFP (31.25%), increased Non-Timber Forest produce (29.69%) and food security 28.13 per cent were the other utilitarian motives. This might be through increased forest canopy, reduced run-off due to scientific conservation of soil. Increased area under MFP and NTFP plantations. Recharge of well through increased water infiltration by soil and moisture conservation works.

The finding was in line with the findings of Chandukar and Thomas (1990), Gow (1992) and Shah (1993).

### 5.1.1.2 Affiliation motives

About 15.63 per cent of the participating tribals stated that participation of all family members was their affiliation motive. Participation along with neighbourhood members (10.44%) and government officials (7.81%) were the other affiliation motives.

This may be due to the fact that awareness about forests and its benefits like increased forest canopy, rains, recharge of water in the wells, availability of drinking water, increased employment and income coupled with the participation of family members.

The finding was in line with the findings of Ahmed (1994) and Krishna *et al.* (1994).

### 5.1.1.3 Security motives

Table 2 clearly indicated that about (46.88%) of the participating tribals expressed that increased employment was a major security motive. Availability of continued work in the forest programmes, including nursery raising, pitting, planting, watering, intercultural operations, harvesting, soil and moisture conservation works, execution and excavation of approach roads, wells and construction of grama chavidi might have strengthened their inclination towards security motives.

Around (39.06%) of the tribals expressed that getting instant food for ready consumption, getting membership in thrift and self-help groups (29.69%), produce security (26.56%) were the other II, III, IV security motives preferred by the respondents. About 21.88 per cent of respondents expressed participation in developmental schemes, security at old age (9.38%) and getting government subsidies (4.69%) were the other security motives expressed by them. This might be due to increased food, clothing

and shelter non-participation followed by another plausible reason highlighting the increased employment to the old age persons in the forest programmes.

The findings and the trend of investigation gathered support from the finding of Tewari (1991) Dey (1997), Naik (1997) and Gupta *et al.* (2000).

#### **5.1.1.4 Economic motives**

Majority (46.88%) of the tribals reported that they had increased returns, 29.69 per cent of them stated that they had increased yield and free from debts (25.00%) were the other economic motives.

The finding was in line with the findings of Cohen and Uphoff (1980), Mundra and Kothari (1988) and Francis (1993).

It may be due to increased awareness and motivation about forestry, availability of continues employment in the forestry programmes, participation, collection and sale of MFP, NTFP and Medicinal plants.

#### **5.1.1.5 Prestige motives**

A close look from Table 2 indicated that 6.25 per cent of the tribals revealed that, have better social recognition was the primary prestige motive. 4.69 per cent regarded to be the best farmer in the village, exert leadership (3.10%), become affluent to get command

over others (1.56%) were the other prestige motives. This was due to increase in income, yield, returns and living conditions like food habits, clothing and educating their children.

The finding was in conformity with findings of Richardson (1983), Saradhi (1989) and Malik (2000).

#### 5.1.1.6 Achievement motives

Around 12.50 per cent of participating tribals expressed that development for better extension contact was their prime achievement motive. This might be due to increased socio-economic status and improved standard of living. Participation in training (7.81%), participating in developmental programmes (6.25%), holding key posts (4.69%), making use of ability and resources (3.13%) were the other achievement motives. It could be attributed to better extension contacts with forest officials and other departmental officials through trainings, holding key posts in thrift and self help groups.

The finding was in line with the findings of Banki (1981) and Santhanam (1982). Further the findings were quite nearer to the philosophy of Achievement Motivation (Nach) as enunciated by McC Lland (1961) emphasising the motives behind excel over others.

An over all view of the Table 3 and 4 revealed that, the participated tribals ranked increasing economic motives (28.13%) as first due to increased yields, returns, free from debts, sustainable life, increased socio-economic status and standard of living. While 26.50 per cent of tribals ranked utilitarian motives as second because of increased fodder, fuel, drinking water MFP, NTFP, medicinal plants, healthy environment, increased rains and reduced run-off. About 25.00 per cent of tribals ranked the security motives (25.00%) as third for the reasons attributed due to government subsidies, seeking participation in developmental schemes, membership in thrift and self-help groups, getting food for ready consumption, produce security and increased employment.

Least preference with last rank (Rank VI) was due to the fact attributed to social recognition and leadership. Quite interestingly, the findings of the study gather strength from the inferences of Case-let III drawn and presented under Chapter V of this thesis.

A perusal of the data from Tables 5 and 6 indicated that 64.00 per cent of tribals were in agreement with motivational patterns. This might be due to increased employment, yields, returns, socio-economic status, purchase of household materials, leadership in the forestry programmes, sufficient food, clothing and shelter etc.,

A line in conformity of the above said findings also observed by Francis (1993).

## 5.2 OPINION OF FOREST DEPARTMENT OFFICIALS AND PARTICIPATING TRIBES ABOUT JFM

Table 7 depicted that a greater majority (81.25%) of forest officials have fallen under the moderately favourable followed by favourable (12.50%) and unfavourable (6.25%) opinion.

It could be inferred from Table 10 that, a majority (68.75%) of participating tribals have fallen under moderately favourable category. While 20.31 per cent had favourable followed by 10.94 per cent unfavourable opinion about JFM.

Array of reasons could be attributed for this type of trend. However the very significant reasons acclaimed because of awareness building, better motivation, decentralisation of power, creation of community assets, involvement of participants in planning and decision-making.

Table 8 indicated that, 18.75 per cent of forest officials ranked nursery raising and forest boundary identification as first and the rest of the opinions like awareness building, conducting general body meetings, tree guarding and watering, weeding and inter cultural operations and marketing occupied second rank with 12.5 per cent each.

centralised power between forest and participating tribals, strict forest rules and linkage of participation with other agencies and environmental stability. Though the related findings were not over a thorough search in this regard, the study of past Pros and Cons in the form of Case-let VI under Chapter supported the said findings and trend in all spirit and . The case revealed that the respondent forest officials moderately favourable with all direction and duty.

Table 11 indicated that, the majority (21.87%) of the tribals ranked about nursery rising as first followed by forest identification (17.19%) as second.

gains marking momentum due to the cause of cooperation among tribals in plant species jungle clearance, pitting and transplanting operations.

On cursory observation of Table 9 and 12, it is evident that the forest department officials and the same number of participating tribals opined very positively about JFM whereas the number of forest officials and quite less number of participating tribals expressed negative enough.

Equitable distribution of benefits, improved socio-economic status, sustainable life and environmental stability like forest canopy, healthy climate were the plausible reasons

points were also figured  
context of studying the Case-let V on departmental officials  
the same was depicted and the inferences were drawn there  
, which runs from Page 210 to 214 under Chapter V of this  
s.

It could be inferred that, the favourable opinion on JFM  
t be due to better awareness, motivation, involvement of  
en in forest activities, increased forest cover, fodder and fuel,  
oyment opportunity, reduced migration of local labour,  
ership rights, participation of tribals and forest officials in  
ning and decision making.

The finding was in accordance with the findings of the  
hopadhyay (1987), Gronow (1992), Shanker (1995), Menone  
) , Rastogi (1995), Rajakutty and Gaur (1997), Saxena (2000);  
dhar and Bhaskar (2000).

Other school of thought could also be attributed due to the  
ons culled out from a case-let observation in one of the Forest  
nals indicating constraint analysis covering colossal reasons for  
all moderately favourable expressed opinion. Of-course the  
e school of thought was also recorded by the researcher while  
illing in a case study entitled "Tribal VSS members triggers  
endous participation in implementation of other Governmental

RECORDED  
INDEXED

Programmes too - A mile stone of success" under Case II of Chapter V.

### 5.3 CHANGES DUE TO JFM

A close look from Table 13 indicated that majority (68.75%) of the participating tribals belonged to medium (moderate) followed by high (more) (18.75%) and low (less or meagre) (12.50%) category of changes as perceived by the respondents when glanced through over-all scenario of changes or a bird's eye view of changes occurred due to JFM in the form of consequences.

Further the over-all changes also occurred due to the reaping of benefits out of participation in JFM in different forms like grass, fodder, timber and fuel-wood. This cursory overall look facilitates the forest functionaries and users in modulating the participatory learning action among the tribals. The conformity with the findings of the study could be churned out of valid observations reported in Case-let I and consequence of the case-let in Chapter V.

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**DIRECT AND INDIRECT CHANGES IN TERMS OF  
ECOLOGICAL, SOCIO-ECONOMIC AND INSTITUTIONAL  
CHANGES DUE TO JFM**

**5.3.1 Direct Changes**

**5.3.1.1 Ecological changes**

On perusal of Table 17 revealed that 96.88 per cent of participating tribals agreed the requirement of change in lieu of reduction in waste land area over forest coverage and 93.75 per cent were in agreement with the increased forest coverage as a consequence of participation in JFM, which results in limited run-off by high forest canopy followed by increased awareness and motivation.

**5.3.1.2 Socio-economic changes**

From Table 17, it could be seen that cent per cent of participating tribals experienced increase in their income and 96.88 per cent with increased employment due to their participation in JFM. This was improved their saving rate and the same amount was utilised for different activities to improve their family living conditions and socio-economic status, which in-turn got a bearing on increased nutrition, purchasing power there by debt free conditions.

### 5.3.1.3 Institutional changes

About 82.81 per cent of the tribals participated in forest activities, because of economic motives and sufficient awareness about forests. This could be achieved through frequent contacts with extension agency.

In precise, the overview of the Table 17, exhibits grand share towards socio-economic changes over ecological followed by institutional changes. The attributed reasons were clustered around family living conditions like food, clothing, shelter, education, household material purchase, debt freeness etc., which were accounted for high at percentage.

The finding was in conformity with the findings of Cohen and Uphoff (1980), Siva *et al.* (1981), Santhanam (1982), Setty (1985), Tewari (1991), Singh (1993), Francis (1993), Tewari (1993), Shanker (1995), Bahuguna and Hilaluddin (1995).

It could also be related to the case-let observations as given below:

Increased forest coverage with decreased waste land, execution of soil moisture conservation works, scientific harvesting of hill stream water by constructing farm pond, land levelling by wet land conversion, planting of non-timber forest produce, women empowerment programmes like thrift and self-help group

activities, rearing of Tussor silk and Adda leaf plate making, awareness about education and summer vegetable cultivation was observed.

### 5.3.2 Indirect Changes

#### 5.3.2.1 Ecological changes

A greatest majority (98.44%) in Table 21, depicting the indirect changes accrued in the form of availability of drinking water, reduced run-off (95.31%) flood control (95.31%), recharging of wells (93.75%) pollution control (93.75%), recharging of ground water (92.17%), protection against winds (92.19%), rains (84.38%), perennial river flows (65.63%) as they were mostly accepted when compared to the least accepted indirect changes like increase in temperature which enhanced the environmental awareness, health and standard of living.

In support to the above main findings of the study case reinforcement was also under taken and the observations related enough were as follows.

Reduced run-off by execution of soil and moisture conservation works, increased forest canopy by planting of non-timber forest produce plants like Tamarind, Mango, Guava, Amla, Seethaphal and gap filling was done with minor forest produce species like Jaffra, Jack, Karakai, Soapnut, flowing of perennial hill

...lands into wet for paddy  
n, increased yield and income of agricultural crops,  
silver oak as a shade plant for raising coffee plantations  
e the significant changes.

### **Socio - economic changes**

Majority of the participating tribals felt that there was an  
ment in their socio-economic conditions with reference to  
standard of living, children's education, communal  
y, dietary habits and entrepreneurial skills.

Venkata Ramaiah (1990) an architect of socio-economic  
ale construction measured the socio-economic changes in a  
mmunity and quite interestingly the findings were similar  
with the findings of the present study. Similar trend was  
erved in a well-documented case-let VI under Chapter V.

### **Institutional changes**

A great majority (79.69%) of the participating tribals  
that they had decentralised planning, self - reliant  
ons (79.69%) followed by improper programming (54.69%)  
utional changes.

An overview of the Table 21 revealed that the participating  
of JFM resulted in increasing ecological changes which in-  
de them to participate in JFM. This might be due to the

ability of drinking water, reduced soil erosion, flood control, digging of wells, pollution control, ground water recharge, protection against winds and rains.

The findings regarding indirect changes were in conformity with the findings of Chaturvedi (1991), Tewari (1991), Poffenberger and Ralit (1997), Patnaik and Brahmachari (1996), Mukherji and Mesare *et al.* (1999), Sreedhar and Bahaskar (2000), Verma and Gupta (2000) and case-let illustrations (2001) presented in this chapter under Chapter V.

## CASE STUDY OF FEW TYPICAL CASES IN JFM

To reinforce the major findings of the study, case study of typical cases about JFM were undertaken and inferences were drawn from each case-let to get an integrated insight over a case study illustration.

### Successful Case-lets in JFM

#### Case-let I

### PARTICIPATORY LEARNING ACTION

Srirama Vana Samrakshana Samithi, Kodeli was 10km away from near by town Paderu. The participants are youth and women with an age group between 18 to 40 years. Majority of them are illiterates and introvert. Small to marginal farmers, with a

of minor millets and dry paddy was their  
total population was 200 villagers.

### to the case-let

Starting of VSS, the entire valley was totally devoid  
of cutting and felling trees for "podu" cultivation  
and grazing of cattle without any soil and moisture  
conservation works, which led to exposed rocks and severe run-off.  
The water problem in the village was not only for  
drinking water also for their cattle. Un-scientific ploughing and  
cultivation on hill slopes causing rill and gully erosion of fertile  
soil every season. They are not doing the operations like  
soil conservation and plant protection causing low yield and  
poor health of li villagers frequently facing conflicts with the  
neighbouring villagers for getting fuel wood.

### Motivation

Whenever they visit their relatives and friends of  
other villages, where the VSS programmes are strongly  
operating, they got motivated and felt awareness. They  
understood the procedure and pattern of the programme and  
decided to start VSS in their village by meeting forest officials.  
They held meetings with the villagers in the presence of  
forest officials and elected one person as a chairman to look after  
the activities of the village. It was started in the year 1995.

## Forest rejuvenation

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They are actively involving in nursery raising, jungle clearance, pitting, planting, gap filling, water and ward, weeding and intercultural operations. They completely arrested soil erosion and run-off by active execution and maintenance of soil and moisture conservation works. The forest canopy increased ten folds than that of previous period by various forest species. Because of thick forest canopy, they are receiving rains with perennial flow of hill streams. This water stored by diverting into farm ponds at valley and channelizing to village by constructing cistron for drinking water. The excess water using for paddy cultivation by scientific land levelling and bench terracing. Now they are harvesting two crops with bumper yields per annum. They are maintaining separate common land for cattle grazing and fuel wood collection.

## Status increased

Their status increased through reduced debts by increased yield and returns. Migration of local labour to neighbouring states was reduced. Now they realized the awareness about clothing and education. The school drop outs reduced to a greater percentage.

Eighty women formed into thrift by mobilising their savings. They received matching grant from government. They started Adda leaf plate making and Tassar silk rearing in 5 ha of land.

Finally they got favourable opinion in the forestry programmes. They learnt many things by voluntary participation and reaping benefits from forestry.

**Constraints**

They are facing constraints like, lack of freedom in choosing forest species, insufficient trainings and field visits.

**Follow-up**

So, it requires follow - up by giving choice in species selection, frequent training on various developmental activities. Field visits and conducted tours to long distances will go a long way by creating more enthusiasm and interest.

#### 5.4.1.2 Case-let II

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### TRIBAL VANA SAMRAKSHNA SAMITTI MEMBERS TRIGGERS TREMENDOUS PARTICIPATION IN IMPLEMENTATION OF OTHER GOVERNMENT PROGRAMMES TOO - A MILE STONE OF SUCCESS

Gudalam Veedhi VSS was started in the year 1996 with an extent of 270 ha. The village is remote, interior with meagre facilities. They are completely aloof of developmental programmes. They never met Government officials regarding their village development or participation in any activity. This village comprises of 40 households with three major sects. The total village population is around 250 members. No road or transportation facilities were provided to this village. The villagers are illiterates. The participating tribals in the VSS with an age group of 20 to 50 years.

#### **Before inception of VSS concept**

The villagers are suffering acute drinking water problem. They never had sufficient food because of lower income and low yields. No educational, marketing, transportation facilities. The hills are devoid of vegetation, led to severe soil erosion and runoff. Poor and neglected cultivation was due to lack of irrigation facilities for wetland cultivation.

After introduction of VSS, they have participated in 270 ha plantations with MFP and Non-Timber Forest Plants. Silver-oak, Seethaphal, Jaffra, Bamboo, Mango, Guava, Eucalyptus, Tamarind. Treated hills with SMC works and prevented run-off and erosion. The villagers constructed one check-dam. They levelled the land by bench terracing in 50 acres and growing two paddy crops per annum. By using check dam water, they are cultivating vegetables in summer season. The forest department has sanctioned and dugout two drinking water wells. The villagers are enjoying with safe drinking water with sound health. They excavated and formed one earthen road of 15 km. They constructed one village Goddess temple and compound wall by their own interest and participated as a component of Sramadhanam. They took horticultural plantation in their Patta lands, supplied by forest department officials. They were supplied with agricultural implements free of cost.

### **Effect of increased forest canopy**

The geographical situation was changed completely. A thick forest canopy developed with increased protection. As a result of this rains increased than that of previous seasons and flowing of hill streams through out the year. So the farmers reaping good yields of two to three folds by two paddy crops per

annum. The increase in grain quality, there by the villagers became not only self-sufficient but also become pivotal for market empowerment. The tribals are not only cultivating paddy but also vegetables too in the summer season. Those vegetables serve the purpose of both local tribals and others by selling in the local shandies. Their socio-economic status, children's education improved and debts cleared. They are actively participating in Janmabhoomi, Clean and Green, Neeru - Meeru programmes.

### **Women empowerment with seasonal products**

Women started thrift society and saved Rs.15,000/- from their wages. The DRDA also sanctioned a matching grant of Rs.15,000/- in addition to their savings. Women, thrift society members going for business in accordance with seasonal products at shandies and earning extra money in the shape of profits after equal distribution. So, women giving extra support to their family in addition to the earnings from VSS.

### **Constraints**

The major constraints are lack of quality seed, fertilizers and Plant Protection chemicals, lack of proper trainings not only in agriculture but also in forestry operations too.

## Remedy

This could be implemented through timely supply of quality seed, fertilisers and Plant Protection chemicals on subsidy basis by the department. This avoids the tribals to escape from clutches of bogus seed and fertiliser companies. Another solution is to conduct training on various operations of agriculture and forestry by supplying improved tools and implements. This will improve their knowledge and skills. Strengthening of knowledge should be done through demonstrations, field visits and short tours of success villages.

## Follow-up

It is better to have separate wing of extension officers different from the uniformed services staff to motivate villagers to protect and rejuvenate the forest by giving trainings in nursery raising techniques and use of improved implements in various operations.

### 5.4.1.3 Case-let III

#### MOTIVATING TRIBALS TO MARCH FORWARD TOWARDS FOREST PROTECTION

Dippala Gonduru VSS called "Modamamba Vana Samrakshna Samithi" with an extent of 250 ha. Total habitations in that village are 119 with 237 members. Out of which 118 women

men are the members of VSS. All participating tribals are illiterate to illiterates with an age group of 19 to 50 years. Socio-economic status was very poor.

### **Indiscriminate felling**

Because of severe unemployment and severe food problem, tribals had their feed by indiscriminate cutting and selling of forest trees to the near by big town for timber and fuel wood. As a result the land was directly exposed to soil erosion with a fallen top soil on hill slopes accompanied by severe cattle grazing, led to soil fertility and productivity of crops, results in poor crop yield. Poor moisture retentive capacity of soil due to severe runoff of water. The villagers faced severe drinking water problem and chronic health disorders due to drinking of polluted water. They also lost highly valuable forest species like Rosewood, Sandalwood and Teak by timber smuggling at very cheaper rates. As a result of this, giving troubles to tribals against forest acts and the middlemen. Now, we cannot see even one such tree in the vicinity. To give an example of recent times the destruction of forests in the district may be considered teak trees worth Rs.5.00 crores felled and the encroachers cleared for cultivation.

## **Motivation**

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VSS was started in the year 1995, due to hectic efforts of forest officials in motivating the tribals. To-day VSS members ensured that no timber is allowed to go from their village. VSS has provided through joint account, complete transparency in financial transactions and hence reduced scope of corruption to a degree. The Samithi members have formed protection groups patrolling the forest areas and apprehending the smugglers. The Samithi members have seized illicitly cut and smuggled timber and handed over to the department. After building of awareness towards forestry works, the tribals started actively participating in forestry works, it includes nursery raising, jungle clearance, pitting, transplanting, execution of soil and moisture conservation works, formation of approach road and digging of well. The forest gap filling was done by Bamboo, Silver oak, Neerudu, Kanuga, Jaffra, Adda leaf, Jack, Guava, Sethaphal etc.

## **Changed due to VSS**

After implementation of VSS works, drastic changes were observed in building up of forest canopy. The significant contribution for this is due to avoidance of "podu" cultivation and flowing of perennial hill streams after frequent rains.

## **Employment assurance**

The villagers are cooperative in forest works, it provides employment in lean periods and sharing benefits. Each VSS supplied with smokeless chullahs that has saved 50 per cent of the time of the women in collection of firewood. The fuel wood consumption has come down by at least 50 per cent of the women in collection of firewood. The improved chullahs avoid pollution and saves the health by controlling eye diseases to the women. The VSS providing employment to landless Samithi members in regeneration works, soil conservation works, collection of MFP, NTFP etc., which has resulted in arresting migration of members to other towns and places. The women feel happy as work is available close to villages and family can live together.

## **Women managed thrift societies**

Tribals are generating income through micro enterprises by using the seasonal products. The activities in the said enterprise include the de-seeding of tamarind and cake making. Such value added products are sold at different super bazaars at Visakhapatnam, there by they are getting not only the good prices but also instrumental for additional income to the women, which support their family.

## Constraints

VSS members expressed marketing and storage constraints. Of-course they lack awareness about potential gains which calls for upgradation of skills in varied enterprises for their profits on potential gains. This could also be achieved by frequent trainings, demonstrations and field visits to successful VSS of the district.

## Follow-up

Forest officials are regularly attending to follow-up activities for the sustainability of VSS. Visit schedules are formulated to visit VSS at frequent interval of time and in certain cases rejuvenation of different VSS was also observed.

In precise, tribals developed themselves and having intrinsically motivated towards forest programmes. They are acting as watchdogs by not allowing others either to cut trees or fell trees. Forming into small groups curbed exploitation of middlemen in selling the farm produce. It is not exaggerated to say that the tribals are fining or collecting fine from the forest culprits. Oh ! There was echo March forward - Tribals: Motivated to protect the forests.

#### 4.1.4 Case-let IV

### INCREASED LIVELIHOOD THROUGH NON-TIMBER FOREST PRODUCE - A TRIUMPH FOR TRIBALS

Irukuvalasa is one of the tribal village of Visakhapatnam agency. There are 32 households consisting of 64 members. It is a homogenous community. The tribal participants in this village are illiterates with an age group of 15 to 55 years. This village community is specialised by very hard working.

#### Occupation

Though, this village situated on the main road, they are deprived of benefits of the tribal development plan and their activities are basically land based. As the area under agriculture is insufficient for their livelihood, they used to practice "podu" cultivation on the hill slopes by cutting down of trees and burning of stubbles. The soils are highly degraded and eroded by rills and gullies.

#### Realization

After realising popularity of the concept, they got motivated and started VSS in the year 1997 by name Sree Seethamma Vana Samrakshna Samithi, with an extent of 120 ha.

After starting of VSS, they stopped "podu" cultivation and participating in the forest activities and endeavour their bring back the degraded forest to its original glory. The degraded lands were afforested with Jaffra, Jack, Silver-oak, Eucalyptus etc.

**l moisture conservation works**

The hills are sloppy and treated with soil and moisture conservation works like stone terracing, contour bunds, trenching, border bunds and gully plugging structure, in order to conserve soil and moisture in the degraded soils. This has given a positive impact by recharging of wells in the locality by supplying ground water, flowing of perennial hill streams due to conservation.

**Non Timber Forest Produce (NTFP)**

To augment sustainable production of NTFP, planting of Jaffra, Bomboo, Hill brooms, Myrobalans etc., were carried out. One hectare of the VSS area has been planted with Piper (Pippallus) a medicinal plant which gives very high economic returns of Rs.50,000/- to 60,000/- per annum.

## Enhanced yield of NTFP

After the formation of the VSS it is estimated that the yield of NTFP has enhanced by about 25 per cent. To encourage coffee, silver oak seedlings have been planted as a shade tree. Due to availability of water through out the year pisciculture is being taken up. With better forest protection from grazing, fire and illicit felling, the anticipated yield of NTFP was increased. VSS members are given 100 per cent rights to collect NTFP. They are entitled to collect fallen twigs, dry firewood, grass, thorny fencing material, fruits and flowers etc. The protection provided by the people resulted in good yield of grass, which VSS members are cutting and carrying for stall-feeding. Earlier tribals used to cut the branches and fell the trees for collecting of NTFP, which is now totally stopped. A yield of NTFP has gone up from the existing trees as the foliage is developing undisturbed.

The Samithi members are enjoying the forest produce such as grass as fodder and for thatching purpose. Sethaphal in the fruiting season is for additional source of income as well as self-consumption. The massive programme to afforest the degraded forest was provided gainful employment to the rural youth, women and poor in the village.

Transparency in the implementation of the programme is ensured by enabling the VSS members' capacity building, in book keeping, maintenance of records. The VSS has empowered from planning and execution of works. Funds are deposited in the banks to enable the VSS members to utilise in planned manner. The VSS members acquired skills in decision-making and responsibility shouldering by participation in various projects to successful JFM areas.

#### **Forest management assurance**

Due to various forest operations which are cent per cent forest oriented, the VSS members no longer migrated to other areas in lean periods of 3-6 months for getting livelihood. It is observed that the implementation of the project has generated employment for many days of works and now the migration was stopped.

#### **Improvement in socio-economic conditions in the villages**

The community development works and the family benefits have resulted in providing additional income for the economic empowerment of committee members. In villages where employment was scarce during the non-agricultural seasons, the members are able to participate in the forest activities and earn livelihood.

## Constraints

The major constraints they are facing illiteracy, so they are asking more frequent trainings for identification of quality seed, fertilisers and supply of agricultural inputs on subsidy basis. They are interested more in income generating activities.

## Suggestions

Supply and distribute high yielding, multipurpose trees like Tamarind. All parts of this tree are useful. The leaves and the fruit pulp are eaten, the seed kernel yields valuable industrial starch, the seed coat contains tannins, the wood and the root wood are of very high calorific value and used as fuel. It is popular as an avenue tree for its shade. Scientific management of forests provide more yields than mismanaged forests.

## Follow - up

The tribals are lag behind in important information and seasonal fluctuations, lead to crop failures with severe attack of pests and diseases. So the forest department should alert in this regard by establishing one information centre, it not only helps the villagers but also spreads information to the neighbouring villagers too. Arrange short term crop loans and loans for seasonal business with NTFP and medicinal plants. It make the tribals free

from clutches of money lenders supply and of quality seed and fertilisers on subsidy basis, there by at least they can reap yields for livelihood and survival.

#### 5.4.1.5 Case-let V

### PRIMITIVE TRIBALS - NOT DISTRUCTORS BUT FOREST REGENERATORS

#### History about PTG

The Gatevalasa village was comprises of only one homogenous community of Primitive Tribal Groups (PTG) called "Khondu". These Primitive Tribals always been very afraid of interacting with any officials at least to get for their minimum needs. These PTG's are confirmed destroyers of forests by way of illicit felling and encroachment of forest for "podu" cultivation. In the past they used to migrate from place to place leaving a trail of destruction behind them. The forest department and rules could not protect the forests from PTG's. Because of this reason antagonistic relationship existed between them. They were highly illiterate, non co-operative to the government schemes, highly individualistic and very difficult to reform.

#### Condition of hills before VSS

In the agency tracts of Paderu due to increased population the needs of the tribals for agricultural land, fuel and grazing have

increased manifolds. The magnitude of this problem is more pronounced in the villages, which are inhabited by the Primitive Tribal Groups.

Before starting VSS, the hills are highly soil eroded due to illicit felling of trees, and excessive grazing of cattle leads to exposed rocks and gully-eroded soils. As a result of which, acute drinking water shortage due to lack of rains.

### **Reforms**

It was a case of PTG's thinking, forests belonging to everybody without responsibility of caring future generation which has not been slowly transformed into thinking by PTG's that forest is theirs and it has to be managed well for sustained benefits from forests for their own well being. This has led to the formation of VSS by members of the village.

### **Concept of VSS**

VSS was started during 1996 with 485 men and women members with an extent of 252 ha by name "Eswara Vana Samrakshna Samithi. The JFM concept could break the shackles of traditional "podu" cultivation and reformation has taken place in the minds of the tribals towards the need for forest preservation.

## Non-Timber Forest Produce (NTFP)

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The degraded forest allotted to the VSS has been found to be in surplus of NTFP species. Such as Jamun, Amla, Hill mango, Marking nuts etc. This programme, it is contemplated to concentration on selection and propagation of improved variety of non-timber species is the mixed plantations on sustainable basis. The "podu" and the vacant area have been planted with Pongamia, Jaffra, Tamarind, Silver-oak, Eucalyptus, Bamboo etc., for production of usufruct at intermittent periods. The high yielding Tamarind was planted in the entire VSS area. NTFP yields are remarkably increased over 55 per cent and additional income of Rs.1.15 lakhs was benefited.

### Soil and moisture conservation works

The badly degraded hill treated with SMC works of 230 ha. Regeneration activities have been taken up, which yielded spectacular results and with in a span of 2-3 years. Because of afforestation and SMC works the hill streams became perennial.

### Sustainability of VSS

To sustain the concept, certain works like Grama chavidi, digging of drinking water well were taken-up. To augment the income, they are provided with agricultural implements, horticultural plants, vegetable minikits. Empowerment has been

ensured by imparting trainings in nursery techniques, Adda leaf plate making, processing of NTF products etc. Exposure trips have been made to near by big cities.

### **Reduced migration**

The migration has been stopped and the VSS members are getting employment round the year in forest operations. The male and female members are paid equal amounts for all the forestry operations.

### **Increased status**

Now, the villagers are taking daily quality diet, good shelter and clothing. They got motivated and sending children to schools, thereby school dropouts were reduced. The villagers saved some money from the wages and kept it in the bank account for use in a later date.

### **Thrift societies and value added products**

The tribal women were formed into thrift society by saving an amount of Rs.10,000/- by way of forest operations for taking up value added activities like Adda leaf plate making, hill from manufacturing, vegetable cultivation etc.

### **Constraints**

Inadequate guidance and monitoring in choosing the species with the greatest economic value and that are most popular

with the people. Another constraint was lack of proper implements for processing and up gradation of non-timber forest produces.

#### **Follow - up**

The forest staff showed aware of the up-gradation technology of various products and demonstrated to the tribals. The distributions of early bearing NTFP species with high economic value served the purpose of tribals. In addition to this, add medicinal plants, it plays an important role in our Indian market.

#### **5.4.1.6 Case-let VI**

### **WATER CONSERVATION THROUGH FARM POND: A BOON FOR TRIBALS**

Titingivalasa is a small village inhabiting 32 families. Total population was 64 comprising of 32 men and 32 women. It is a homogeneous community "Kotiyas" by caste. The villagers are highly illiterate. The participants' age grouping was between 18 to 55 years, with poor socio-economic conditions.

#### **Prior situation**

Degradation of forests as a result of indiscriminate felling, firing and grazing. Thereby, the sloppy hills exposed to nature and severe run-off of topsoil with fallen raindrop. It was observed that reduced recharge of water in the wells due to severe run-off as a result of which acute drinking water problem was prevailed. The

ings are small and scattered reaping poor yields due to lack of  
tion facilities. The cattle facing severe problems of fodder  
rinking water. Poor nutrition of children with more school  
uts and migration of labour to neighbour places was  
ved. As a result of above-mentioned items, the tribals were at  
ocio-economic status. There were chronic health problems  
nutritional disorders.

### **tion of committees**

The VSS was started in the year 1998 with an area of 10,940  
The general body consisting of two members from each  
old was enrolled. Total members comprised of 64. The  
ing committee, consisting of 10 members elected by the VSS  
l body, out of which there were three women  
entatives. For operationalising the development of forests a  
count was opened between the VSS president, elected by the  
ng committee and concerned forest officials of the  
tion. As per the approved micro-plan and the estimate of  
he funds deposited into the joint account. The funds draw  
cally and paid to workers.

### **plan preparation**

A micro plan was prepared in consultation with the  
ating members. They decided the type of treatment to be

to the degraded forests and identify the species to be  
ed.

ction

Major attention was paid to natural regeneration through  
control on fire, grazing, hacking, smuggling and  
achment with the help of VSS members going for patrolling by  
duty. Soil conservation forms essential component of the  
ment.

s given to VSS

Forest protection committees are legally recognised by the  
nment and are eligible for all the benefits. The practice of  
ng the forest and keep people away from reserve forest has  
way to a partnership under VSS in which the government and  
pating tribals equal or co-partners to help in the sustainable  
ement of the forests. Cent per cent of NTFP was given to the  
e who protects the forest.

es due to VSS

After inception of VSS, the plantations have been taken up  
amun, Eucalyptus and Kagu. The members prioritised and  
l out the SMC works on the degraded forests. On the lower  
f the contour trenches they have planted Casuarina, Agave,  
ple on the mound. It not only provides additional income

but also strengthens the SMC works. Even on the lower side and upper side of the check bunds they have given vegetative support.

### **Construction of farm pond**

They planned themselves to harvest the stream let water which is flowing from hill top with a view to bring their dry lands under wet cultivation. They have been constructed one water harvesting structure with an amount of Rs.45,000/-. Presently, they are using water not only for irrigation but also drinking for themselves and for their cattle. Transparency is being maintained for payments of the works carried out by the members. By construction of water harvesting structure, an additional dry land area of 20 acres was brought under irrigation. Earlier 5 bags of paddy harvested per acre of land. Now due to additional irrigation 20 bags per acre is being harvested every year. An additional income of 4.50 lakhs was benefited to the VSS members per year. NTFP yields are also remarkably increased over 70 per cent and an additional income of Rs.1.90 lakhs was benefited.

### **Employment generation**

There is assumed employment and hope for better future. 11,793 number of man days are generated for the VSS members. This has stopped migration of VSS members to work in far of

distances. The work is available at their doorsteps and family could live together. The implementation of VSS is a success in this village and upliftment of their financial status.

### **Constraints**

The participating tribals facing major constraints like rigid hierarchal structure and procedure for implementation of JFM. This leads to time taking process for early execution of works. The lower level forest staff was not communicative. The government was not recognising extraordinary talented persons. This results in poor commitment of tribals in work as well as in the programme. Deficit budgeting and poor infrastructure facilities, making troubles for smooth running of the programme.

### **Suggestions and follow-up**

It is better to have separate wing of extension officers to motivate villagers to protect forests. The departmental officials should identify the talent and skills and encourage them by providing incentives; thereby improvement in commitment of participants.

### **Current status and response**

The participants felt extremely happy with this programme that has given back the forest that their father cherished. After seeing the advantage of VSS, the adjoining villagers are demanding

the formation of VSS in their village. They are attracted for twin reasons (1) getting employment in forestry operation close the village (2) village development is taking place.

#### 5.4.2 Unsuccessful Case-lets in the JFM

##### 5.4.2.1 Case-let VII

### DEFUNCT VSS DELIBERATELY DOWN WITH CASTE CONFLICTS

Srirama Krishna Vana Samrakshana Samithi, Kadeli, Paderu range was started in the year 1997. It comprising of 30 household with 60 members. The participating tribals are illiterate with an age group of 18 to 45 years. Majority of the participating tribals are waged labours with poor socio-economic status.

#### Denudation of forest

The forest and its condition of any particular area is a culmination or destruction depends upon the near by fringe dwellers. In course of time with the increase of cattle and human population, the biotic pressure on forest has increased manifolds resulting in severe degradation and encroached by fringe dwellers and used for "podu" cultivation. This type of degradation could not provide much of essential intangible benefits like fertile soil, pure drinking water, fresh air etc. Even direct benefits like small timber, fuel wood, fodder, green manure and other MFP were also

not available to the local population for their use. This led to migration of local villagers to neighbouring states for getting employment in lean season.

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### **Changes due to VSS**

After starting of VSS, the major priority was given to degraded hills by treating SMC works thereby improvement of water resources in the treated areas. The rainwater was harvested in percolation tanks and supplies the same to tribals during the pinch periods. These percolation tanks improved the vegetative cover in the surroundings by improving general moisture regime of the area.

### **Community programmes**

The community as a whole improved the village road, constructed school building and VSS community hall.

### **Disputes aroused in the committee**

The VSS is of heterogeneous group of 3 to 4 castes. As a result of which disputes aroused for power distribution and wage disbursement after few years of smooth running. The upper caste group struggled for power and president position in the VSS. The opposite group encouraged other minor sects of tribals not to cooperate and co-ordinate in the forestry operations and even not to attend committee meetings. This dispute in the villagers brought

into a notice of forest officials, but the officials neither visit village nor conducted any meeting at village level to settle down this dispute. With a span of time, this disputes severed and total progress of regeneration was destroyed due to negligence.

### **Consequences due to conflicts**

The virgin dense afforestation was failed due to lack of watch and ward. The opposite group of rivalries allowed cattle into the young plantations for grazing. It not only destroyed the plantations but also the SMC works by trampling. Maintenance of forest was not observed. Even under neglected conditions also, some of the species are rejuvenating with height. The community building was not using and maintained properly. No body could take responsibility for maintenance though they invested higher amounts. The committee members also not attending, review meetings conducting at divisional level. The poor landless labour again migrating to other places for getting livelihood.

### **Constraints expressed by the tribals**

The failure was VSS was mainly due to lack of forest official continuity for monitoring and supervision. And another reason is lack of commitment in the tribals regarding the development of their VSS and their village. Political interference played a major role in the destruction and spoilage of VSS and misutilization of funds. Ultimately lack of cooperation and

appreciation from forest department as well as from politicians side.

### **Lessons learnt**

Caste should not play a major role for implementation of any programme. The political interference always in positive and paved path for development by bridging back of hindrances through narrowing down the gap while implementation of any type of developmental activity. The forest department also should post a specialized wing of officials for settle down this type of disputes by make them motivate, interact them, guide them and monitoring them with good incentives.

### **Suggestions**

The protection, regeneration and development of forests is expected to improve the productivity not only develops forests, but also agriculture due to soil and moisture conservation.

The interest and involvement of the highest executive in the programme is a must. This could be achieved by training programmes, visits to successful VSS, involvement of Non-Governmental Organisations, transparency are some of the essential ingredients for the success of the programme.

## LAND CONSTRAINT LEAD TO MONITORING MELODY - AN UNSUCCESSFUL CASE EXPERIENCE

The Jankariguda VSS was started in the year 1997. It is under jurisdiction of Araku range. It comprises 50 households with 100 members. The participants were illiterate with an age group of 20 to 55 years. Majority are landless, marginal with poor socio-economic status and migrating to other places for getting livelihood in pinch periods.

### **Destruction of forests**

Large-scale destruction of forest through illicit felling and encroachment of land for podu cultivation. The soil was completely eroded and denuded due to excessive cattle grazing and exposure of rocks as a result of unscientific ploughings and cultivation.

### **Soil and moisture conservation works**

The eroded soil was treated with SMC works like stone terraces, contour bunds, contour trenches and gully plugging structures like brush wood dams, stone checks and stone pitching which results in reduced run-off of top fertile soil by increased ground water recharge by fallen rain drop. This treatment resulted positively by availability of drinking water and rejuvenation of

ted plants. This SMC works has provided 1200 man-days  
ment to the poor and landless.

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The indirect changes like increased agriculture yield by two  
e folds by making benches and diverting water through field  
els.

### onstraint

The villagers had insufficient land to supply food to meet  
eds of villagers and their cattle. This creates troubles for  
awal of programme. Dispute arose between two  
ouring villagers regarding cattle. And destroyed the  
ouring VSS by grazing and trampling. The Jankariguda  
rs reported and requested the Revenue department officials  
orest department officials to allot some land in the near by  
for raising fuel wood and fodder. With repeated requests,  
venue officials did not allot any common land for the village.  
orest officials never visited the village, as it is un-  
chable. As a result of this, they have stopped VSS and using  
available land for agriculture, fuel wood collection and cattle  
g.

Though this SMC treated hills were giving positive results  
ge investment by the Forest Department. The land constraint



make them unsuccessful. Repeated changing of forest officials who had been the motivating force was not taken any interest which led to failure of VSS. The villagers are ready to continue the VSS, if the Revenue or Forest officials visit their village and assign any wasteland for them.

### **Suggestion**

It is better to have conscious selection of the villagers in the beginning and make the programme successful. A conscious effort is required to bring uplift poorest of the poor and women groups keeping their convenience into view. Finally appoint dedicated forest officer, who can convince the tribals on the new approaches of participation.

## **5.5 CONSTRAINTS IN IMPLEMENTATION OF JFM AS PERCEIVED BY PERSONNEL OF FOREST DEPARTMENT AND PARTICIPATING TRIBALS**

### **5.5.1 Constraints as Perceived by the Forest Department Officials**

The perceived constraints differed from forest department official to participating tribals. The constraints were categorised to facilitate the reader. Following brief up is on addendum depicting different categories of constraints with ranking viz., Administrative, Organisational, Financial, Situational and Legal

Constraints (Table 24). The detailed discussion about the constraints is as follows:

On perusal of Table 23, it was revealed that a majority of the forest officials fallen under medium category followed by high and low as far as constraints involved in JFM implementation was concerned.

#### 5.5.1.1 Administrative constraints

An overview of Table 24 visualised that nearly 37.50 per cent of the forest officials scoring the first rank indicated the constraints such as lack of transportation facilities. It could be attributed to larger jurisdiction, lack of mobility for forest department officials. However about 31.25 per cent (rank II) of them stated that lack of accommodation followed by decentralised planning (18.75% & rank III) and inadequate forest extension staff with IV rank (12.50%). This calls for a strategy of providing Mobikes over liberal loans, balancing the incentives and disincentive system, reducing the area jurisdiction and span of control. Further preference be given to the technically qualified persons to refine the human resource through need based training programmes. Of course, it is better to provide staff quarter's near by to the work spot, so as to gear-up the work efficiency.

### 5.5.1.2 Organisational constraints

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Among the organisational constraints about 43.75 per cent expressed the lack of coordination with other departments, lack of coordination with in the department (12.50%) and lastly the local politics in selection of local leaders (6.25%) were the constraints as perceived by the officials.

The probable reasons that could be attributed for lack of inter and intra departmental cooperation was due to in-sufficient staff, improper planning pertinent to various developmental activities and lastly the communication gap followed by an unsuccessful experience observed in case-let VIII entitled "Land constraint lead to monitoring melody - An unsuccessful case experience" under chapter V of this thesis.

### 5.5.1.2 Financial constraints

About 12.50 per cent found that inappropriate allocation of funds was a major financial constraint and the lack of funds (6.25%) was another constraint.

Given suggestions could provide insight into the attributed reasons like deficit financing and budgeting, allotment of funds by prioritisation and accessibility of the operational area.

It is in line with the findings of Korten (1986), Gronow (1992), Das (1994) and lessons learnt through case observations (case-let VIII, Chapter V).

### 5.5.1.3 Situational constraints

Two-thirds of the majority (73.75%) indicated the members preferential interest about forest protection committee in species selection was the major situational constraint. About half of the respondents opined that there was no good local leadership (50.00%), heterogeneity among members (43.75%) and mis-concepts about rights and privileges among members (25.00%).

### 5.5.1.4 Legal constraints

Around (31.25%) of the respondents expressed the difficulty in following the present strict JFM rules and regulations. About one fourth of the respondents (25.00%) indicated the strong forest act itself is a big constraint.

It calls for consensus on revision of forest act and smoothening of rules and regulations of JFM. It was certainly a herculean task but need to be climbed up with all vision by reaching the committed officials, revealing the focus behind the JFM and thereby building up the image of the forest officials.

It could be observed from Table 24 and 25 that, the forest officials ranked situational constraints (31.26% and I) as first, while

administrative (25.00% and II), organisational (18.75% and III), legal (18.75% and IV) and financial (6.25% and V) constraints perceived in percentage along with ranks.

The forest officials ranked situational constraints as first might be due to preferential interest of FPC members. Because of the group heterogeneity among the villagers, lead to caste conflicts which in-turn resulted in non-availability of local leaders.

This finding was in conformity with the findings of Mukhopadhyay (1987) and reinforced with case illustrations (Case-let VIII) as evinced in Chapter V of this thesis.

#### **5.5.2 Constraints as Perceived by Participating Tribals in JFM**

The inference could be drawn from the Table 26 with a dent on the majority (71.88%) of participating tribal occupying with medium category of participation with a high (17.18%) and low (10.94%) category of constraints. The constraints classification includes Personal, Social, Situational, Financial, Organisational, Administrative and Marketing constraints. The detailed discussion on constraints is given below.

##### **5.5.2.1 Personal constraints**

An over view of Table 27 revealed that nearly 40.63 per cent lack freedom in choosing forest species which was the main personal constraint. It may be due to non-availability and variety

suitability of preferred species by the participating tribals. Another reason may be cattle grazing, tress passing and high cost of cultivation. About 27.50 per cent of respondents stated that lack of resources, lack of motivation (34.88%), lack of awareness about potential gains from JFM (32.81%), high drudgery (21.88%), inadequate employment (18.75%) and negative attitude (15.63%) were the other personal constraints.

This might be due to insufficient funding from government, improper planning of resource mobilisation in forestry programmes. Another reason could be attributed towards the gap of continuous awareness and motivation about potential gains from the forest activities, which results in low risk bearing ability of tribals.

This finding was in line with the finding of Shanker (1995) and Menon (1995).

#### **5.5.2.2 Social constraints**

About 7.81 per cent of participating tribals were felt lack of community co-operation and discouragement from neighbours (4.69%).

The reason might be group heterogeneity due to different sect of people in the village. Because of this, there is a scope for group conflicts for various power-pounded posts like VSS

president, wage disbursement in the forestry programmes. The participating tribals neither supported nor encouraged the neighbours to take part in performing the role (s) or participating in the forest activities (Case-let VII).

### 5.5.2.3 Situational constraints

In-adequate technology (21.88%) was considered as the prime constraint. The attributed reasons could be lack of fully qualified technical forest staff in forestry programmes like nursery raising, grafting, pruning and bushing operations of forest species. Another attributing reason was improper, untimely training of tribals in forest operations lead to failure in different operations. Few respondents (14.06%) expressed the improper distribution of profits, conflicts on distribution of employment (10.94%) and political rivalries (4.69%) were the other situational constraints as perceived by them.

The probable reasons for this trend could be attributed to lack of gender sensitisation at work distribution and wage payment to the participants. Another reason may be caste conflicts among tribals and improper cooperation in carryout different forestry activities.

About 9.38 per cent of the respondents revealed the lack of the fund as the prime constraint and inadequate payment of (3.13%) as another constraint perceived by them.

It may be due to inadequate budgetary allocation of funds by the Government and excess availability of participating tribals during lean seasons. This results in payment of wages partial.

### **Organisational constraints**

Lack of continuous monitoring and supervision (29.69%) was the prime constraint. Lack of proper training (21.88%), non-availability of market information to tribals on a regular basis (15.62%), insufficient legal status for protection committees (10.81%) and power conflicts (7.81%) were the other Organisational constraints.

The reason might be low and insufficient qualified forest staff for conducting trainings and low educational level of tribals in understanding the forest act and its implementation.

### **Administrative constraints**

Majority (23.44%) of the respondents expressed that the rigid transit rules as the prime constraint. Centralised



administration (17.19%) negative attitude of officials (10.94%) and lack of collection depots were the other administrative constraints.

This might be due to illiteracy of participants and low technical expertise of forest officials and there by they were not in a position to teach them effectively.

#### 5.5.2.7 Marketing constraints

Marketing of non-timber forest produce was the prime constraint. The reason was lack of demand for the harvested produce in the local markets. The government has not started collection depots and storage godowns. This results in low price to the produce.

On perusal of Table 27 and 28, it was observed that majority (28.13%) of respondents expressed the personal constraints. It may be due to illiteracy of tribals in choosing unsuitable, un-economical forest species and improper guidance of forest officials in decision-making.

Organisational (17.19%) and marketing (15.62%) were the other constraints expressed by them. This may be due to inefficient monitoring and supervision of forest officials, resulting in conflicts between forest officials and participating tribals. The unqualified forest staffs were not in a position to explain the forest rules and

regulations to the tribals, which lead un even understanding about JFM.

This finding is in line with the findings of Pathan (1994), Sarkar (1994), Pawar and Kadam (1995), Desai *et al.* (1997), Prakash (2000), Teteja (2000); Verma and Rajput (2000).

Similar constraints were expressed by the tribal farmers in couple of Case-lets VII and VIII developed to reinforce the major findings of the study.

# SUMMARY

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## CHAPTER - VI

### SUMMARY

Out of India's 329 million hectare geographical land area, nearly 75 million hectares (about 22%) was under forests. According to the latest official estimates, it has been put at 19.52 per cent of land area.

Forests have been the cherished homes of the tribals through generations. The tribal communities could subsist for thousand of years with reasonable standards of health mainly because forests provided them food, water, shelter, cloths, medicines and employment.

In spite of the best possible management practices and regulations, our forests are fast degrading and getting depleted. Action need to be taken under the provisions of the forest act and the rules made. There under have not completely successful in protection and rejuvenation of forests.

Protection of our forests is very difficult without the cooperation of the local community. The policing approach to forest protection has resulted in a continual conflict between the forest staff and the local people. This leads to frequent confrontations, a feeling of insecurity and helplessness among the forest staff, and lack of sympathy for the forest department. As population in

villages near the forest boundary increases, it becomes more and more difficult for the forest department to protect forests solely by physical force. The alternative is to give villagers, a stake in the benefits, from the forests, so that they become a partner in protecting the resources. Villagers are likely to protect forests when they have a say in forest management and receive a significant proportion of the benefits.

The National Forest policy of 1988 envisages people's involvement in development, conservation, protection and management. This has given birth to the Joint Forest Management (JFM) programme as an important mode for rehabilitation of degraded forests (Pachauri, 1998).

The Government of Andhra Pradesh, through their EFES & TC (Department), G.O.Ms.No.224; dt.11<sup>th</sup> November, 1993 have issued orders for implementation of Joint Forest Management prescribing certain modalities, throughout the state.

Since JFM is a new system of Management partnership, the forestry staff not only has to reorient their working strategies and procedures but also have to equip themselves with new skills of working with the people and for the people.

It is generally accepted that the local people who have a genuine stake in the health of the local resources must effectively

participate in the planning and implementation of the development process.

The present study namely "Joint Forest Management (JFM) for sustainable development in Tribal areas of Visakhapatnam District, Andhra Pradesh - A study" was designed with the following specific objectives.

### 6.1 SPECIFIC OBJECTIVES

1. To trace the Historical Profile of Joint Forest Management.
2. To analyse motivational pattern of participating tribal in Joint Forest Management.
3. To know the opinion of forest department officials and participating tribals of Vana Samrakshana Samithes (FPC) about Joint Forest Management.
4. To assess direct and indirect changes in-terms of ecological, socio-economic and institutional due to Joint Forest Management.
5. To study the successful and unsuccessful typical cases of Vana Samrakshana Samithies (FPC) of Joint Forest Management.
6. To identify the constraints in implementation of Joint Forest Management (FPC/VSS) as perceived by personnel of forest department and participating tribals.

## 6.2 MATERIALS AND METHODS

Based on an extensive review of literature and discussion with extension experts, certain components were selected under each objective.

The study was conducted in Visakhapatnam District of Andhra Pradesh. It was purposefully selected, as the researcher hails from that place. Exploratory research design reinforced with case illustrations was adopted for the study.

Two mandals were randomly selected from 11 tribal mandals of Visakhapatnam. From each mandal four VSS were selected randomly. A total number of 80 respondents were selected by using multi-stage random sampling techniques from two mandals. Further eight typical case illustrations were selected from the above mentioned two mandals.

Preference was given for eliciting qualitative and descriptive data through respondents in either written or spoken form through personal documents and unstructured interviewing.

The participant observation was faced through pre-fieldwork, field work and data analysis. Data were collected through a well structured interview schedule and questionnaire which were developed keeping in view the objectives of the study. The schedule was pre-tested with 18 per cent sample in non-sampling area, for

establishing necessary rapport with tribal participants and forest department officials. The collected data was, coded, classified and tabulated. Finally, the statistical tests like, mean, standard deviation, frequency, percentage and rankings were used for meaningful interpretation of findings and for drawing conclusions.

### **6.3 SALIENT FINDINGS**

The following are the salient findings of the study.

#### **6.3.1 Historical Profile of Joint Forest Management**

The people have traditionally close association and love for forests. Ever since the time of Emperor Ashoka or even earlier, forests belong to the state, except for a few royal trees. However, people were permitted to obtain their requirement from the forest, which were used as an "Open access resource" without having any stake in their management (Arnold and Steward, 1991). In Western and Southern regions of the country, the local ruler owned all the un-cultivated land including forest and grazing lands, where as in Northern and Eastern regions, local landlords owned the un-cultivated parts around the villages. There are instances where in the absence of the state officials, the local temple priest managed the forests with the help of the people.

For a rational and intelligible description, the history of forest management was divided into 4 distinct periods.

### **1. Pre-British period (Early 1750)**

In great contrast to the apparent health of India's forests, there was total deforestation in England by the time the British established their rule in India. Thus, the forests of India acquired a special significance through the rulers for meeting their timber needs, particularly for ship-building.

Pre-British is characterised by community ownership and community management of forests, which ensured forest conservation. There was plenty of fuel, fodder, non-woody products for personal consumption and barter.

### **2. Early British Period (1750-1900)**

The British needed large quantities of teak for the Royal Navel, as well as expanding railways network. Heavy exploitation of this species took place during the period. In 1866 the local people passed first Indian Forest Act to legitimate the restriction regarding the users of forests.

### **3. Late British Period (1900-1947)**

Natural regeneration was relied up on environment and every attempt was made to preserve it. World war II caused major destruction of forests. This resulted in radical interference with the ecology of forests leading to reduction in the population of all non-timber species.

Deprivation and marginalisation of forest dwellers reached a new light leading to their migration, under mining of tribal culture and breaking down of mutually reinforcing relationship between forest and forest dweller.

#### **4. a. Early Post Independence Period (1947-1975)**

Independent India inherited forests over-exploited during the World War-II. Around 1960 Dr Von Mon Roy recommended creation of large-scale plantations of quick growing species such as Eucalyptus. In the process, the question of ecological suitability was over looked.

#### **b. Mid post independence period (1975-1985)**

National Commission on Agriculture (1976) focussed on the conversion of mixed miscellaneous forests, which contained highest bio-diversity into man made forests of commercial species, through Social Forestry Programmes.

#### **c. Late post independence period (1985 to to-date)**

Environment awareness was the international response to the wide spread destruction of forests. The National Forest Policy was revised in 1988, which emphasised prohibition of clear-cutting banning of plantations of exotics.

## History of JFM in A.P

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The National Forest Policy 1988 recommended to have one third of land area under tree cover. Government of Andhra Pradesh have launched the joint Forest Management (JFM) programme to involve this people in reversing this trend of forest degradation. This was started in the year 1992 wide G.O.Ms.No.218, Environment, Forest Science and Technology, dated 22<sup>nd</sup> August 1992.

### 6.3.3 Motivational pattern of participating tribals in Joint Forest Management

Majority (64.07%) of the participating tribals belong to medium motivational pattern followed by low (20.30%) and high (15.63%) respectively.

- a. Motives of highest order of priority observed were clothing, home, education (42.19%), participation along with their family members (15.63%) and better social recognition (6.25%) under Utilisation, Affiliation, Security, Economic, Prestige and Achievement motives respectively.
- b. Around 28.13 per cent of Economic motives got highest percentage with rank first, followed by Utilitarian (26.56% & II) and Security (25.00% & III) motives.

c. Majority (64.00%) of respondents agreed for the motivational pattern followed by undecided (22.00%) and disagreed (14.00%) patterns respectively.

d. A greater majority (76.57%) of the respondents agreed the Economic motives as prime motives in-addition to Utilitarian (70.31%), Affiliation (62.50%), Security (54.68%), Achievement (35.94%) and Prestige (17.19%) motives respectively.

### **6.3.3 Opinion of Forest Department Officials and Participating Tribals of Vana Samrakshna Samithies (FPC) about Joint Forest Management**

#### **6.3.3.1 Opinion of forest department officials**

A greater majority (81.25%) opined moderately favourable followed by favourable (12.50%) and unfavourable (6.25%) opinion about JFM.

a. Regarding the opinions of Forest Officials about JFM, prime-priority was given to nursery raising, boundary identification by 18.75 per cent each and the rest like tree guarding and watering, weeding and intercultural operations, marketing, awareness and conducting general body meetings by 12.5 per cent each forest activity respectively.

- b. Half of the respondents (50.00%) strongly agreed with the participation followed by agree (18.75%) and strongly disagree (12.50%) respectively.

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#### 6.3.3.2 Opinion of participating tribals about JFM

Majority (68.75%) of the respondents were with moderately favourable opinion followed by favourable (20.31%) and unfavourable (10.94%) opinion.

- a. Opinion of highest order of priority observed were nursery raising, jungle clearance, pitting, shifting and planting (21.87%), coordination and cooperation, species selection, boundaries identification (17.19%), awareness and committee formation (14.06%), registration, joint bank account opening, conducting general body meetings (12.50%), tree guarding (12.50%), weeding and intercultural operations (10.94%) and harvesting, grading, marketing (10.94%) and ranked starting from I to V respectively.
- b. About 34 per cent of the respondents strongly agreed and the equal percentage of respondents were just in agreement (10.00%) with their opinion about Joint Forest Management.

#### **6.3.4 Direct and Indirect Changes in terms of Ecological, Socio-economic and Institutional due to JFM**

- a. Majority (68.75%) of the respondents changed moderately followed by the overall changes more (18.75%) and less (12.50%) enough.
- b. Around 26.56 per cent of respondents ranked direct socio-economic changes as I followed by Indirect ecological changes (23.44%), Direct ecological changes (20.31%), Indirect socio-economic changes (18.75%) and Indirect institutional changes (6.25%) and Direct institutional changes (4.69%) with appropriate rankings starting from II to VI respectively.

##### **6.3.4.1 Direct changes due to participation in JFM**

- a. A great majority (70.00%) of the respondents changed moderately followed by more (16.00%) and less (14.00%) of direct changes.
- b. Half of the respondents (52.00%) ranked as I towards socio-economic changes followed by ecological (39.00%) and institutional (9.00%) changes with II and III ranks.
- c. Direct changes of highest order of priority observed were the changes in wasteland area (96.88%), income (100%), increased participation of tribals in forest protection (82.81%), under

ecological, socio-economic and institutional changes respectively.

- d. A greater majority (85.94%) of respondents agreed to socio-economic changes followed by ecological (81.25%) and institutional changes (76.56%) due to participation.

#### 6.3.4.2 Indirect changes due to participation in JFM

- a. A greater majority (83.00%) of the respondents changed moderately due to the influence of indirect changes accrued because of participation in JFM whereas the rest 17.00 per cent of the respondents indicated the meagre or less changes.
- b. Half of the respondents (48.98%) ranked the ecological changes as first followed by the socio-economic (37.55%) and institutional changes (13.47%) as II and III ranks.
- c. Following changes like drinking water availability (98.44%), improvement in clothing (98.44%) and self-reliant instructions (79.69%) were also observed under ecological, socio-economic and institutional changes due to participation in JFM.
- d. A greater majority (87.50%) of the respondents were in agreement with Ecological changes followed by Socio-economic (79.68%) and Institutional (71.88%) changes respectively.

## Prakshna Samithies (FPC) of JFM

During the conduct of case study, all the eight case-let  
ons which includes both successful (6 nos) and  
successful (2 nos) depicted the age as young, middle and old with  
literacy and were possessing the medium size land

prior status of observed case-let illustrations before  
tion in JFM include the problems viz., unemployment, low  
poor socio-economic conditions, non availability of  
water facilities, no wetlands for paddy cultivation, low  
al yields, low literacy and migration of labourers to  
ring states. But the inception of forestry programme and  
tion resulted in increased forest coverage, more availability  
mber forest produce, flowing of perennial hill streams,  
y of drinking water, employment generation during lean  
wetland conversion, increased agricultural yields,  
income, higher literacy levels and finally the improvement  
economic conditions.

### 6.3.6 Constraints in Implementation of JFM as Perceived by Personnel of Forest Department and Participating Tribals

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#### 6.3.6.1 Constraints as perceived by the forest department officials

- a. Majority (62.50%) of respondents experienced moderate number of constraints followed by experiencing of more number of constraints by 25.00 per cent and less or meagre number of constraints 12.50 per cent by the respondents in implementing the forestry programmes.
- b. Other constraints in accordance with the order of priority and the one that bagged the highest rank were lack of transportation facilities (37.50%), lack of coordination with other departments (43.75%), inappropriate allocation of funds (12.50%), preferential interest of members of FPC in selection of species (73.75%) and strong forest acts (25.00%) under Administrative, Organizational, Financial, Situational and Legal constraints.
- c. About 31.25 per cent of the respondents ranked the situational constraints as first followed by Administrative (25.00%), Organisational (18.75%), Legal (18.75%) and Financial 6.25% as II, III and IV respectively.

### 3.6.2 Constraints as perceived by participating tribals in JFM

- a. A greater majority (71.88%) of the respondents faced moderate number of constraints followed by more number (17.18%) and less number (10.94%) of constraints by the tribals in implementation of JFM.
- b. In accordance with the order of priority and the highest scored rank the constraints observed were lack of freedom in choosing forest species (40.63%), lack of community coordination (7.81%), inadequate technologies (21.88%), lack of adequate funding (9.38%), lack of continuous monitoring and supervision (29.69%), complicated transit rules (23.44%) and marketing of non-timber produce (26.56%) under Personal, Social, Situational, Financial, Organisational, Administrative and Marketing constraints respectively.
- c. About 28.13 per cent of the respondents ranked Personal constraints as first in addition to other constraints like Organisational (17.19%), Marketing (15.62%), Administrative (14.06%), Situational (12.50%), Financial (6.29%) and Social (6.25%) as experienced by the participant tribals.

study revealed that, the majority of participating tribals had a similar motivational pattern. Economic motives were the prime motives followed by utilitarian and security motives. Majority of forest officials and participating tribals were in agreement with motivational patterns.

Majority of the forest officials and participating tribals opined that they were moderately favourable towards JFM while they experienced the following activities: tree raising, jungle clearance, pitting, shifting and planting of species and boundary identification as the major constraints which score the first rank. Majority of the forest officials and participating tribals indicated a strong and positive attitude towards JFM.

Majority of participating tribals experienced charges that were moderate enough due to the participation. The socio-economic constraints were ranked first.

A moderate number of Forest Officials moderately experienced the following constraints in general and situational constraints in specific by ranking them as first.

A moderate number of participating tribals stated moderate number of constraints followed by prime personal constraints.

## 6.5 IMPLICATIONS OF THE STUDY

The study highlighted several implications, which contribute towards the implementation of JFM.

1. The study indicated that the majority of the participating tribals had moderate motivational pattern(s). So, efforts are required on the part of forest officials to increase their participation by repeated visits in order to encourage them through continuous employment generation one could refresh the participating tribals through frequent trainings, film shows, group discussions with experts, followed by conducting short educational tours to nearby villages where JFM programmes are implemented successfully as a model programme.
2. Majority of forest officials and participating tribals opined moderately favourable on forest activities, keeping in view their opinion. The state government should recruit fully qualified, well-trained forest officials. Efforts need to be taken by the forest officials for increase in participation by conducting training programmes and inculcating skills right from nursery rising to harvesting and processing of produce. Further they are required to be educated through informally on gender sensitisation and other related issues, not only for enhancing the women's participation in JFM activities, but also for ultimate women's empowerment.

3. Direct changes were experienced moderate enough in-terms of forest cover, employment generation, more income and higher yields. This leaves the potentiality in triggering to varied larger number of direct changes by virtue of alteration or changed programme strategy by allocating adequate continuous and timely funds.
4. Moderate numbers of indirect changes were experienced by the participating tribals in-terms of ecological, socio-economic and institutional dimensions. So, to experience large number of changes, which could facilitate the implementation of JFM programme activities, the forest officials were required making the provision for awards, rewards and incentives for recognised achievement and for best participation in JFM.
5. The identified major constraints of forest officials such as inadequate participation, prevalence of mis-concepts, heterogeneity among members, non-availability of efficient local leader, lack of confidence, caste conflicts. The budgetary allocation by the state government for Forestry Department therefore needs to be enhanced towards staff quarters, accommodation and mobility to facilitate their stay in the territorial jurisdiction for effective supervision, monitoring and evaluation.

6. The identified major constraints of participating tribals were lack of awareness about potential gains, lack of freedom in choosing forest species, high drudgery, lack of proper and sufficient motivation, insufficient employment, negative attitude of tribals towards forest officials. Efforts are required to solve the problems and reduce the number of constraints either by conducting need based training programmes or by enhancing the participation by encouraging them through incentives. Further efforts are made on to the tribal participants aware of the long range benefits due to participation in JFM by modulating certain powers in favour of tribals for protection, rejuvenation and their involvement in planning, implementing, decision making and imparting skills in varied forestry activities, these efforts could go a long way in effective implementation of JFM and in reaping the benefits by participating tribals.

7. There is strong need to put an end to the middlemen menace by creating an efficient net work of marketing and storage facilities to sell and store the produce by the participants.

The implications reported above are indicative rather than suggestive.

### 6.6 FUTUROLOGY OF RESEARCH

The results of the present study revealed further research endeavours in several directions. They are as follows :

1. Future studies need to be conducted over a larger sample for greater generalizations, since the present study covered only a smaller sample resulted in restricted generalizations.
2. It is worthwhile to conduct comparative studies to know the impact of JFM programme between VSS organised and adjacent non-VSS organised villages.
3. Studies specifically related to analysing the constraints involved in JFM may be taken up, so as to prioritise and make the participants successful in their endeavour.
4. Link studies need to be developed in different agro-climatic conditions or regions or inter state or intra state regions of the country where forestry programme is highly successful and also where this programme was not so successful.
5. A detailed study is required to know the role ambiguity and role conflict of forest officials involved in JFM.
6. Feasibility studies are required to be attended to see whether Andhra Pradesh model of JFM can be replicated in other states.
7. Participatory management in execution of Forest Department schemes and maintenance of assets should be explored.
8. Women role in forestry related activities and functioning of VSS managed by women need to be study.

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# ***APPENDICES***

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# APPENDIX - I

ACHARYA N. G. RANGA AGRICULTURAL UNIVERSITY  
DEPARTMENT OF AGRICULTURAL EXTENSION  
AGRICULTURAL COLLEGE :: BAPATLA - 522 101

TITLE: "JOINT FOREST MANAGEMENT (JFM) FOR SUSTAINABLE DEVELOPMENT  
IN TRIBAL AREAS OF VISAKHAPATNAM DISTRICT, AP - A STUDY"

1	Name of the Respondent	:	
2	Village	:	
3	Mandal	:	
4	Name of the Joint Protection Committee	:	
5	District	:	
6	Sex	:	
7	Age	:	
8	Occupation	:	Primary:                      Secondary:

S. No. of respondent

## PART - A

Objective: To analyze the motivational pattern of participating tribals in Joint Forest Management

Please give your agreement, disagreement or undecidedness about the following statements

S No	Motivation Pattern	Response		
		Agree 3	Undecided 2	Disagree 1
<b>A. Utilitarian Motives:</b>				
	I am participating in JFM for			
1	Grass/Fodder and fuel wood	( )	( )	( )
2	Minor forest produce	( )	( )	( )
3	Medicinal plants	( )	( )	( )
4	Compost and FYM	( )	( )	( )
5	Wild grass for thatching	( )	( )	( )
6	Reducing rate of run-off	( )	( )	( )

7	Developing healthy climate	( )	( )	( )
8	Non-timber forest produce	( )	( )	( )
9	Dry leaves	( )	( )	( )
10	Increasing water recharge capacity in the vicinity wells	( )	( )	( )
11	Increasing ground water level	( )	( )	( )
12	Food security	( )	( )	( )
13	Clothing, home education security	( )	( )	( )

<b>B. Affiliation Motives:</b>				
I am participating in JFM with my				
1	Family members	( )	( )	( )
2	Neighbourhood members	( )	( )	( )
3	Government Officials	( )	( )	( )

<b>C. Security Motives:</b>				
I am participating in JFM for				
1	Government subsidies	( )	( )	( )
2	Seeking participation in development schemes	( )	( )	( )
3	Getting membership in groups like	( )	( )	( )
	a) Thrift	( )	( )	( )
	b) Self-help groups	( )	( )	( )
4	Getting instant food for ready consumption	( )	( )	( )
5	Produce security	( )	( )	( )
6	Increased employment	( )	( )	( )
7	Security at old age	( )	( )	( )

<b>D. Economic Motives:</b>				
I am participating in JFM for				
1	Improvement in economic status	( )	( )	( )
2	Sustainable life	( )	( )	( )

3	Increased yield	( )	( )	( )
4	Increased the returns	( )	( )	( )
5	Freed from debts	( )	( )	( )

<b>E. Prestige Motives:</b>				
I am participating in JFM to				
1	Exert the leadership	( )	( )	( )
2	Become affluent and to get command over others	( )	( )	( )
3	Have better social recognition	( )	( )	( )
4	Be regarded as a best farmer in the village	( )	( )	( )

<b>F. Achievement Motives:</b>				
I am participating in JFM to				
1	Participate in training	( )	( )	( )
2	Get participation in programme planning of development programmes	( )	( )	( )
3	Develop better extension contacts	( )	( )	( )
4	Have the accessibility to key posts of			
	a) Thrift groups	( )	( )	( )
	b) Self-help groups	( )	( )	( )
5	To make use of abilities and resources	( )	( )	( )

**Objective:** To know the opinion of forest department officials and participating tribals of Vana Samrakshana Samithies (FPC) about Joint Forest Management

Please give your opinion of Forest Department Officials on a five point continuum about the following statements

S No	Statement	Opinion				
		Strongly agree 5	Agree 4	Un- decided 3	Dis- agree 2	Strongly disagree 1
<b>A) Awareness programmes for motivating tribals</b>						
1	Inadequate	( )	( )	( )	( )	( )
2	Not up to date	( )	( )	( )	( )	( )
3	Untimely	( )	( )	( )	( )	( )
4	Employment organized	( )	( )	( )	( )	( )
<b>B) Committee Formation</b>						
1	Not done appropriately	( )	( )	( )	( )	( )
2	Number of committee members are not adequate	( )	( )	( )	( )	( )
3	Committee formation is not timely	( )	( )	( )	( )	( )
4	Committee formation is not as per the existing guidelines	( )	( )	( )	( )	( )
5	Corruption is affecting the process of committee formation	( )	( )	( )	( )	( )
6	Women component is neglected in committee formation	( )	( )	( )	( )	( )
<b>C) Registration of Formed Committees</b>						
1	Not done timely	( )	( )	( )	( )	( )
2	Corruption is affecting the process of registration	( )	( )	( )	( )	( )
<b>D) Joint Account Opening</b>						
1	It is not done timely	( )	( )	( )	( )	( )
2	Its maintenance is not done as per the laid out procedure	( )	( )	( )	( )	( )
3	Deposition of funds is timely	( )	( )	( )	( )	( )

4	Deposition of funds is not appropriate	( )	( )	( )	( )	( )
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**E) Conducting of General Body Meetings**

1	It is without any agenda	( )	( )	( )	( )	( )
2	It is not conducted timely	( )	( )	( )	( )	( )
3	It is done without any quorum	( )	( )	( )	( )	( )

**F) Coordination and Cooperation**

1	Coordination among various development departments are not adequate	( )	( )	( )	( )	( )
2	Coordination among various development departments are not appropriate	( )	( )	( )	( )	( )
3	Cooperation among the participating tribals are proper	( )	( )	( )	( )	( )
4	Cooperation among participating tribals and forest officials are not adequate	( )	( )	( )	( )	( )

**G) Species Selection**

1	Not done with the involvement of local tribals	( )	( )	( )	( )	( )
2	Done in accordance with the local needs	( )	( )	( )	( )	( )
3	Not location specific	( )	( )	( )	( )	( )
4	Not done timely	( )	( )	( )	( )	( )

**H) Boundary Identification**

1	Not in accordance with the laid out procedure	( )	( )	( )	( )	( )
2	Untimely	( )	( )	( )	( )	( )
3	Inadequate	( )	( )	( )	( )	( )
4	Without participation of tribals	( )	( )	( )	( )	( )

**I) Nursery Raising**

1	Inadequate	( )	( )	( )	( )	( )
2	Untimely	( )	( )	( )	( )	( )
3	With appropriate facilities	( )	( )	( )	( )	( )

**J) Jungle Clearance**

1	Done timely to facilitate economic forest plantation	( )	( )	( )	( )	( )
2	Done adequately	( )	( )	( )	( )	( )

**K) Pitting**

1	Done in accordance with spacing	( )	( )	( )	( )	( )
2	Done timely	( )	( )	( )	( )	( )
3	Done as per the specifications	( )	( )	( )	( )	( )

**L) Shifting and Transplanting**

1	Done as per the specifications	( )	( )	( )	( )	( )
2	Not done in time	( )	( )	( )	( )	( )
3	Women participation is nominal	( )	( )	( )	( )	( )

**M) Selling of Excess Seedlings**

1	Done without any prior instructions	( )	( )	( )	( )	( )
2	Untimely	( )	( )	( )	( )	( )

**N) Tree Guarding and Watering**

1	Done as per the specification	( )	( )	( )	( )	( )
2	Not done timely	( )	( )	( )	( )	( )
3	Survival is poor because of no watering	( )	( )	( )	( )	( )
4	Good survival due to timely watering	( )	( )	( )	( )	( )
5	Watering is not adequate	( )	( )	( )	( )	( )
6	Watering with bad quality of water	( )	( )	( )	( )	( )

**O) Weed and Intercultural Operations**

1	Not done timely	( )	( )	( )	( )	( )
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2	Inadequate	( )	( )	( )	( )	( )
3	Not through proper methods	( )	( )	( )	( )	( )
4	Weeding & intercultural operations not at all done	( )	( )	( )	( )	( )
5	Gap filling is not done	( )	( )	( )	( )	( )
6	Gap filling is not adequate	( )	( )	( )	( )	( )
7	Gap filling is not timely	( )	( )	( )	( )	( )

**P) Fertilization and Plant Protection**

1	Not done	( )	( )	( )	( )	( )
2	Not done timely	( )	( )	( )	( )	( )
3	Done inadequately	( )	( )	( )	( )	( )

**Q) Harvesting of Produce**

1	Harvesting of produce is not as per the laid out procedure	( )	( )	( )	( )	( )
2	Harvesting of produce is not as per the specifications	( )	( )	( )	( )	( )

**R) Grading**

1	Grading is not at all given importance	( )	( )	( )	( )	( )
2	Grading is not done as per the specifications	( )	( )	( )	( )	( )

**S) Marketing under the Present Conditions after Globalization/WTO**

1	Marketing of the produce is not timely	( )	( )	( )	( )	( )
2	Marketing facilities are not adequate	( )	( )	( )	( )	( )
3	There were no remunerative prices for produce	( )	( )	( )	( )	( )
4	Distribution of surplus product sale and profit amount is not as per laid out procedure	( )	( )	( )	( )	( )

**Objective:** To assess direct and indirect changes in terms of ecological, socio-economic and institutional due to Joint Forest Management

S No	Type of Change	Agree	Disagree
<b>I. (a) Direct Ecological Changes:</b>			
1	Increased forest coverage	( )	( )
2	Increased fodder production	( )	( )
3	Increased forest food produce	( )	( )
4	Increased availability of fire wood/fuel wood	( )	( )
5	Increased availability of dry plant leaf litter	( )	( )
6	Decreased run-off rate	( )	( )
7	Increased availability of medicinal plants	( )	( )
8	Increased grass availability of thatching	( )	( )
9	Change in waste land area	( )	( )

<b>I. (b) Indirect Ecological Changes:</b>			
1	Increased ground water level	( )	( )
2	Increased drinking water availability	( )	( )
3	Increased perennial river flows	( )	( )
4	Increased rains	( )	( )
5	Increased temperature	( )	( )
6	Recharging of wells in the locality	( )	( )
7	Reduced soil erosion	( )	( )
8	Protection against winds	( )	( )
9	Flood control	( )	( )
10	Pollution control	( )	( )

<b>II. (a) Direct Socio-economic Changes:</b>			
The direct socio-economic changes have increased in			
1	Income	( )	( )
2	Employment	( )	( )

3	Nutrition	( )	( )
4	Status	( )	( )
5	Transportation facilities	( )	( )
6	Storage facilities	( )	( )
7	Yield	( )	( )
8	Purchased household materials	( )	( )
9	Cleared off the outstanding debts	( )	( )
10	Wholesale & retail market	( )	( )
11	Disposal of agricultural products	( )	( )
12	Demand for labour	( )	( )

<b>II. (b) Indirect Socio-economic Changes:</b>			
1	Increased communal solidarity	( )	( )
2	Improved skills and knowledge	( )	( )
3	Change in children education	( )	( )
4	Change in dietary habits	( )	( )
5	Change in the living standards	( )	( )
6	Change in the entrepreneurial behaviour	( )	( )
7	Increased usage of crop technologies	( )	( )
8	Improvement in clothing	( )	( )

<b>III. (a) Direct Institutional Changes:</b>			
1	Increased participation of tribals in forest protection committees	( )	( )
2	More contacts by extension agency	( )	( )

<b>III. (b) Indirect Institutional Changes:</b>			
1	Decentralized planning	( )	( )
2	Improper programme	( )	( )
3	Self-reliant instructions	( )	( )

## Case study of few typical cases in JFM

- 1 Personal profile
  - a) Village :
  - b) Mandal :
  - c) Name of the respondent :
  - d) Name of the VSS :
  - e) Extent of VSS :
  - f) No. of dependent families :
  - g) Type of plantations taken up :
  - h) Irrigation source :
- 2 Prior status to JFM assistance :
- 3 Information about the JFM :
- 4 Undertaken activities by participants in JFM :
- 5 Funding position and utilization :
- 6 No. of participants participated in each activity :
- 7 Underwent changes due to JFM programme :
- 8 Opinion of tribals about JFM :
- 9 Opinion of Forest Officials about JFM :
- 10 Others, if any :

**Objective:** To identify the constraints in the implementation of Joint Forest Management (FPC/VSS) as perceived by Personnel of Forest Department

S No	Constraints	Opinion				
		Extremely severe 5	Severe 4	Can't say 3	Less severe 2	Not at all severe 1
<b>A) Administrative Constraints</b>						
1	Inadequate Forest Extension staff	( )	( )	( )	( )	( )
2	Lack of decentralized planning	( )	( )	( )	( )	( )
3	Lack of transportation facilities	( )	( )	( )	( )	( )
4	Lack of accommodation	( )	( )	( )	( )	( )
<b>B) Organizational Constraints</b>						
1	Lack of coordination within the department	( )	( )	( )	( )	( )
2	Lack of coordination with other departments	( )	( )	( )	( )	( )
3	Politics in the selection of leaders for FPC	( )	( )	( )	( )	( )
<b>C) Financial Constraints</b>						
1	Lack of funds	( )	( )	( )	( )	( )
2	Inappropriate allocation of funds	( )	( )	( )	( )	( )
<b>D) Situational Constraints</b>						
1	Inadequate participation	( )	( )	( )	( )	( )
2	Prevalence of misconceptions about rights and privileges among members of FPC	( )	( )	( )	( )	( )
3	Heterogeneity among members	( )	( )	( )	( )	( )

4	Non-availability of good local leadership	( )	( )	( )	( )	( )
5	Preferential interests of members of FPC in selection of species	( )	( )	( )	( )	( )
6	Lack of confidence among the members of FPC on the forest officials	( )	( )	( )	( )	( )
7	Caste conflicts among members of FPC	( )	( )	( )	( )	( )
8	Less tribal participation about rights of FPC	( )	( )	( )	( )	( )
<b>E) Legal Constraints</b>						
1	Strict JFM rules & regulations	( )	( )	( )	( )	( )
2	Strong forest acts	( )	( )	( )	( )	( )
3	Compulsory rights to participate by tribals in JFM	( )	( )	( )	( )	( )

**Objective:** To identify the constraints in the implementation of Joint Forest Management (FPC/VSS) as perceived by participating farmers (tribals)

S No	Nature of Constraint	Opinion				
		Extremely severe 5	Severe 4	Can't say 3	Less severe 2	Not at all severe 1
<b>A) Personal Constraints</b>						
1	Lack of awareness about potential gains from JFM	( )	( )	( )	( )	( )
2	Lack of freedom in choosing forest species	( )	( )	( )	( )	( )
3	High drudgery involved	( )	( )	( )	( )	( )
4	Lack of resources	( )	( )	( )	( )	( )
5	Lack of motivation	( )	( )	( )	( )	( )
6	Inadequate employment	( )	( )	( )	( )	( )
7	Negative attitude of forest department officials towards tribal people	( )	( )	( )	( )	( )
<b>B) Social Constraints</b>						
1	Lack of community cooperation	( )	( )	( )	( )	( )
2	Discouragement from the neighbours	( )	( )	( )	( )	( )
<b>C) Situational Constraints</b>						
1	Political rivalries in villages	( )	( )	( )	( )	( )
2	Improper distribution of profits	( )	( )	( )	( )	( )
3	Inadequate technologies	( )	( )	( )	( )	( )
4	Conflict on distribution of employment opportunities	( )	( )	( )	( )	( )

**D) Financial Constraints**

1	Lack of adequate funding	( )	( )	( )	( )	( )
2	Inadequate payment of wages	( )	( )	( )	( )	( )

**E) Organizational Constraints**

1	Power conflicts between FPC and Forest Officials	( )	( )	( )	( )	( )
2	Lack of required legal status for protection committee	( )	( )	( )	( )	( )
3	Dissemination of market information to tribals on a regular basis	( )	( )	( )	( )	( )
4	Lack of proper training	( )	( )	( )	( )	( )
5	Lack of continuous monitoring and supervision	( )	( )	( )	( )	( )

**F) Administrative Constraints**

1	Improper attitude of officials towards tribals	( )	( )	( )	( )	( )
2	Centralized administration	( )	( )	( )	( )	( )
3	Complicated transit rules	( )	( )	( )	( )	( )
4	Setting of collection depots	( )	( )	( )	( )	( )

**G) Marketing Constraints**

1	Marketing of non-timber produce	( )	( )	( )	( )	( )
2	Marketing of produce by Forest Protection Committee	( )	( )	( )	( )	( )
3	Storage of marketable produce	( )	( )	( )	( )	( )
4	Establishment of processing units	( )	( )	( )	( )	( )
5	Lack of support prices	( )	( )	( )	( )	( )

విశాఖ జిల్లా గిరిజన ప్రాంతాలలో ఉమ్మడి అటవీ యాజమాన్యము ద్వారా ధృఢమైన అభివృద్ధి - పరిశీలన

1.	ప్రత్యుత్తర వాధి పేరు	:	ప్రత్యుత్తర వాధి సంఖ్య :
2.	గ్రామము పేరు	:	
3.	మండలం పేరు	:	
4.	ఉమ్మడి కావల కమిటీ పేరు	:	
5.	జిల్లా	:	
6.	స్త్రీలు / పురుషుడు	:	
7.	వయస్సు	:	
8.	వృత్తి	:	

విభాగము - ఏ

ఉద్దేశ్యము: భాగస్వామ్య ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుటలో గిరిజనుల ఉద్దేశ్యము లేదా తలంపు.

క్రమ సంఖ్య	ఉద్దేశ్యము లేదా తలంపు	జవాబు		
		సమ్మతించు చున్నాను	తీర్మానించ లేదు	సమ్మతించ లేదు.
		3	2	1
ఎ.	<b>లాభోద్దేశ్యము :</b>			
	నేను ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుట వలన			
1.	పశుగ్రాసము గడ్డి దొరుకుతుంది.	( )	( )	( )
2.	అటవీ ఫలసాయము దొరుకుతుంది.	( )	( )	( )
3.	అటవీ మందు మొక్కలు దొరుకును.	( )	( )	( )
4.	గతం లభిస్తుంది.	( )	( )	( )
5.	ఇంటికి నేనుకొనుటకు గడ్డి లభిస్తుంది.	( )	( )	( )
6.	నేల కోతను అరికడుతుంది.	( )	( )	( )
7.	ఆరోగ్యమైన వాతావరణం లభ్యమౌతుంది.	( )	( )	( )
8.	అటవీ చెట్ల నుండి జిగురు లభిస్తుంది.	( )	( )	( )
9.	ఎండుటాకులు లభిస్తుంది.	( )	( )	( )
10.	గ్రామము దగ్గరలో ఉన్న బావులలో నీటి మట్టము పెరుగుతుంది.	( )	( )	( )
11.	నేలలో భూగర్భ జల మట్టము పెరుగుతుంది.	( )	( )	( )
12.	ఆహారము పొందుచున్నాను.	( )	( )	( )
13.	వస్త్రములు, గృహము, విద్య పొందుచున్నాను.	( )	( )	( )
14.	ఇంక ఏమైనా ఉన్నవా ?			
	1.	( )	( )	( )
	2.	( )	( )	( )

క్రమ సంఖ్య	ఉద్దేశ్యము లేదా తలంపు	జవాబు		
		సమ్మతించు చున్నాను	తీర్మానించ లేదు	సమ్మతించ లేదు.
		3	2	1
బి.	<b>తన సంఘములో సభ్యత్వము పొందే ఉద్దేశ్యము :</b>			
	నేను ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుచున్నాను.			
1.	నా కుటుంబ సభ్యుల వలన	( )	( )	( )
2.	ఇంటి ప్రక్కవారి వలన	( )	( )	( )
3.	స్నేహితుల వలన	( )	( )	( )
4.	బంధువుల వలన	( )	( )	( )
5.	ప్రభుత్వ అధికారుల వలన	( )	( )	( )
6.	ఇంకా ఎవరి వలనైనా ?			
	1.	( )	( )	( )
	2.	( )	( )	( )
సి.	<b>నమ్మకము కల్గించే ఉద్దేశ్యము :</b>			
	నేను ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుట వలన			
1.	ప్రభుత్వ సబ్సిడీలు పొందుట కొరకు	( )	( )	( )
2.	రేషన్ కార్డు రద్దు కాకుండా	( )	( )	( )
3.	ప్రభుత్వ అభివృద్ధి పథకముల కొరకు	( )	( )	( )
4.	ఎ. పొదుపు సంఘములో సభ్యత్వము కొరకు	( )	( )	( )
	బి. డ్వాక్రా సంఘములో సభ్యత్వము కొరకు	( )	( )	( )
	సి. మహిళా మండలిలో సభ్యత్వము కొరకు	( )	( )	( )
	డి. యువజన సంఘములో సభ్యత్వము కొరకు	( )	( )	( )
	ఇ. స్వయం సహాయక సంఘములో సభ్యత్వము కొరకు	( )	( )	( )
	ఎఫ్. ఇంకా ఏమైనా ఉన్నవా ?			
	1.	( )	( )	( )
	2.	( )	( )	( )
5.	వెంటనే భుజించుటకు అటవీ ఫలములు దొరుకుతాయి.	( )	( )	( )
6.	ప్రభుత్వము అటవీ ఫలసాయము కొనుగోలు చేస్తుంది.	( )	( )	( )
7.	ఫలసాయము భద్రత ఉండును.	( )	( )	( )
8.	నిరంతరము పని దొరుకుతుంది.	( )	( )	( )
9.	ఐక్యమత్యము సంఘీభవము పెరుగుతుంది.	( )	( )	( )
10.	వృధాప్యములో కూడా పని దొరుకుతుంది.	( )	( )	( )
11.	ఇంకా ఏమైనా ఉన్నవా ?			
	1.	( )	( )	( )
	2.	( )	( )	( )

క్రమ సంఖ్య	ఉద్దేశ్యము లేదా తలంపు	జవాబు		
		సమ్మతించు చున్నాను	తీర్మానించ లేదు	సమ్మతించ లేదు.
		3	2	1
డి.	<b>సంపద పెరుగుతుందన్న ఉద్దేశ్యముతో :</b>			
	నేను ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుట వలన			
1.	ఆర్థిక స్తోమత పెరుగుతుందని	( )	( )	( )
2.	ధృఢమైన భరించగలిగిన జీవితము కొరకు	( )	( )	( )
3.	ఫలసాయము పెరుగుతుందని	( )	( )	( )
4.	ఆదాయము పెరుగుతుందని	( )	( )	( )
5.	అప్పుల భారీ నుండి విముక్తి పొందుట కొరకు	( )	( )	( )
6.	ఇంకా ఏమైనా			
	1.	( )	( )	( )
	2.	( )	( )	( )
ఇ.	<b>గౌరవము / ఖ్యాతి మరియు జయప్రదముగా నెరవేర్చే ఉద్దేశ్యముతో :</b>			
	నేను ఉమ్మడి అటవీ యాజమాన్యములో పాల్గొనుట వలన			
1.	ఆదర్శమైన పాత్ర పోషించుట కొరకు	( )	( )	( )
2.	నాయకత్వము వహించుట కొరకు	( )	( )	( )
3.	సభ్యత్వము పొంది ఇతర సభ్యులను శాసించుటకు	( )	( )	( )
4.	తర్ఫీదు పొందుట కొరకు	( )	( )	( )
5.	అభివృద్ధి కార్యక్రమాల ప్రణాళిక తయారీలో పాల్గొనుట కొరకు	( )	( )	( )
6.	విస్తరణ సంబంధములు మెరుగు పడుట కొరకు	( )	( )	( )
7.	సంఘములో గుర్తింపు పొందుట కొరకు	( )	( )	( )
8.	ఋణ సదుపాయములు పొందుట కొరకు	( )	( )	( )
9.	కూలీ డబ్బులు పంచుకొనుట ద్వారా సంఘములో స్థానము పొందుట కొరకు	( )	( )	( )
10.	ఈ దిగువ వాటిలో కీలక పదవులు పొందుట కొరకు			
	ఎ. యువజన సంఘములో	( )	( )	( )
	బి. మహిళా మండలి సంఘములో	( )	( )	( )
	సి. పాదుపు సంఘములో	( )	( )	( )
	డి. స్వయం సహాయక సంఘములో	( )	( )	( )
	ఇ. ఇంకా ఏమైనా			
	1.	( )	( )	( )
	2.	( )	( )	( )
11.	శక్తి సామర్థ్యము మరియు వనరులను వినియోగించుకొనుట కొరకు	( )	( )	( )
12.	గ్రామములో మంచి రైతుగా గుర్తింపు పొందుట కొరకు	( )	( )	( )
13.	ఇంకా ఏమైనా			
	1.	( )	( )	( )
	2.	( )	( )	( )

మార్పు	జవాబు	
	సమ్మతి	అసమ్మతి
	2	1

పాటియైన ప్రకృతి సంబంధమైన మార్పులు:

స్థిరము పెరుగుట వలన	( )	( )
సము పెరుగుట వలన	( )	( )
ఫలసాయము పెరుగుట వలన	( )	( )
కలప మరియు వంట చెరకు లభ్యమగుట వలన	( )	( )
కాకులు మరియు కుళ్ళిన ఆకులు ఎక్కువగా లభ్యమౌతాయి.	( )	( )
బ్ల్యుకొని పోవుట తగ్గుతుంది.	( )	( )
మొక్కలు ఎక్కువగా లభిస్తాయి.	( )	( )
రుకుతుంది.	( )	( )
సు భూముల అభివృద్ధి	( )	( )
నా ఉన్నాయా ?	( )	( )
	( )	( )
	( )	( )

పాటి కాని ప్రకృతి సంబంధమైన మార్పులు:

జలాల పెరుగుదల	( )	( )
టి లభ్యత	( )	( )
లువలు ప్రవహించుట	( )	( )
ం పెరుగుదల	( )	( )
క పెరుగుదల	( )	( )
రో నీటి మట్టం పెరుగుట	( )	( )
క అరికడుతుంది.	( )	( )
మును తగ్గిస్తుంది.	( )	( )
నివారిస్తుంది.	( )	( )
రణ కాలుష్య నివారణ	( )	( )
నా ఉన్నాయా ?	( )	( )
	( )	( )
	( )	( )

క్రమ సంఖ్య	మార్పు	జవాబు	
		సమ్మతి	అసమ్మతి
		2	1
<b>II.</b>	<b><u>ఎ. సూటియైన సాంఘిక ఆర్థిక పరమైన మార్పులు:</u></b>		
1.	ఆదాయము పెరుగుదల	( )	( )
2.	ఉద్యోగ అవకాశములు పెరుగును.	( )	( )
3.	ఆహార పోషణ పెరుగుతుంది.	( )	( )
4.	అంతస్తు మార్పులో పెరుగుదల	( )	( )
5.	రవాణా సౌకర్యములో మెరుగుదల	( )	( )
6.	నిల్వ సౌకర్యములు	( )	( )
7.	పంట ఉత్పత్తులు పెరుగును.	( )	( )
8.	గృహోపకరణ వస్తువులు పెరుగును.	( )	( )
9.	పాత బాకీలు తీర్చబడినవి.	( )	( )
10.	మార్కెట్ సదుపాయములు	( )	( )
11.	వ్యవసాయ ఉత్పత్తుల అమ్ముదల పెరుగుతుంది.	( )	( )
12.	కార్మికుల కొరకు డిమాండు	( )	( )
13.	ఇంకేమైనా ఉన్నాయా ?		
	1.	( )	( )
	2.	( )	( )
	3.	( )	( )
	<b><u>బి. సూటికాని సాంఘిక ఆర్థిక పరమైన మార్పులు:</u></b>		
1.	ఐక్యమత్యము / సాంఘి భావము పెరుగును.	( )	( )
2.	జ్ఞానము, పని తనము పెరిగినది.	( )	( )
3.	పిల్లల విద్యలో మార్పులు	( )	( )
4.	ఆహార పదార్థాలు భుజించుటలో మార్పులు	( )	( )
5.	జీవన విధానములో మార్పులు	( )	( )
6.	నడవడికలో మార్పులు	( )	( )
7.	పండించుటలో ఆధునిక పద్ధతులు పాటించుట	( )	( )
8.	వస్త్రధారణలో మార్పులు	( )	( )
9.	ఇంకేమైనా ఉన్నాయా ?		
	1.	( )	( )
	2.	( )	( )
	3.	( )	( )

క్రమ సంఖ్య	మార్పు	జవాబు	
		సమ్మతి	అసమ్మతి
		2	1
<b>III.</b>	<b><u>ఎ. సూటియైన శిక్షణ పరమైన మార్పులు:</u></b>		
1.	గిరిజనులు ఎక్కువ సంఖ్యలో పాల్గొనుట	( )	( )
2.	విస్తరణ విభాగముతో ఎక్కువ సంబంధాలు కలిగియుండుట.	( )	( )
3.	ఇంకేమైనా ఉంటే తెలియజేయుము.		
	1.	( )	( )
	2.	( )	( )
	3.	( )	( )
	<b><u>బి. సూటికాని శిక్షణ పరమైన మార్పులు:</u></b>		
1.	వికేంద్రీకరణ ప్రణాళిక	( )	( )
2.	కార్యక్రమములు సరియైనవి కావు	( )	( )
3.	స్వయం సంతృప్తి	( )	( )
3.	ఇంకేమైనా ఉంటే తెలియజేయుము.		
	1.	( )	( )
	2.	( )	( )
	3.	( )	( )

ఉమ్మడి అటవీ యాజమాన్యము పాల్గొను గిరిజన రైతుల నుండి వన సంరక్షణ సమితుల గురించి అభిప్రాయ సేకరణ.

ఈ దిగువ వివరణను టిక్కు చేయుట ద్వారా అభిప్రాయములు తెలుపుము.

క్రమ సంఖ్య	వివరణ	అభిప్రాయము				
		పూర్తిగా సమ్మతి లేకుండుచున్నాను.	సమ్మతింపు చున్నాను.	నిర్ణయించుకొనలేదు	అసమ్మతి తెలుపుచున్నాను.	పూర్తిగా అసమ్మతి తెలుపుచున్నాను.
		5	4	3	2	1
<b>ఎ.</b>	<b><u>వన సంరక్షణ సమితుల గురించి ఎరుగుదల :</u></b>					
1.	సరిపడ లేదు.	( )	( )	( )	( )	( )
2.	సమయస్ఫూర్తిగా లేదు.	( )	( )	( )	( )	( )
3.	సకాలములో లేదు.	( )	( )	( )	( )	( )
4.	పని దినములు సమకూర్చడమైనది.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>బి.</b>	<b><u>వన సంరక్షణ సమితి కమిటీలు ఏర్పరచుట. :</u></b>					
1.	సరిగా జరుగలేదు.	( )	( )	( )	( )	( )
2.	సభ్యుల కొరత ఉంది.	( )	( )	( )	( )	( )
3.	కమిటీ సకాలములో ఏర్పడలేదు.	( )	( )	( )	( )	( )
4.	కమిటీలు ప్రభుత్వ సూచనల మేరకు ఏర్పడలేదు.	( )	( )	( )	( )	( )
5.	కమిటీల ఏర్పాటులో అవినీతి అగుపడుచున్నది.	( )	( )	( )	( )	( )
6.	కమిటీ ఏర్పాటులలో స్త్రీలను నిర్లక్ష్యము చేసినారు.	( )	( )	( )	( )	( )
7.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>సి.</b>	<b><u>ఏర్పాటైన కమిటీలను నమోదు చేయించుట :</u></b>					
1.	సకాలములో జరుగలేదు.	( )	( )	( )	( )	( )
2.	నమోదు చేయుటలో అవినీతి	( )	( )	( )	( )	( )
3.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>డి.</b>	<b><u>ఉమ్మడి బ్యాంకు ఖాతా తెరచుట :</u></b>					
1.	సకాలములో జరుగలేదు.	( )	( )	( )	( )	( )
2.	పద్ధతి ప్రకారము జరుగలేదు.	( )	( )	( )	( )	( )
3.	సకాలములో నిధి ఖాతాలో జప్తి చేయుచున్నారు.	( )	( )	( )	( )	( )
4.	తగినంత నిధి ఖాతాలో జప్తి చేయుట లేదు.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

క్రమ సంఖ్య	వివరణ	అభిప్రాయము				
		పూర్తిగా సమ్మతింపడుమన్నాను.	సమ్మతింపడుమన్నాను.	నిర్ణయించుకొనలేదు	అసమ్మతి తెలుపుచున్నాను.	పూర్తిగా అసమ్మతి తెలుపుచున్నాను.
		5	4	3	2	1
<b>ఇ.</b>	<b><u>కమిటీ మీటింగు ఏర్పాటు చేసుకొనుట :</u></b>					
1.	సభ తీర్మాన ప్రకారము జరువ బడలేదు.	( )	( )	( )	( )	( )
2.	సకాలములో జరువ బడలేదు.	( )	( )	( )	( )	( )
3.	సభకు హాజరు కావలసిన వారి అదమ వక్షపు సంఖ్య ప్రకారము జరుగలేదు.	( )	( )	( )	( )	( )
4.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>ఎఫ్.</b>	<b><u>సహాయ సహకార కలయికలు :</u></b>					
1.	వివిధ అభివృద్ధి కార్యక్రమాల మధ్య సహకారము లేదు.	( )	( )	( )	( )	( )
2.	వివిధ అభివృద్ధి కార్యక్రమాల మధ్య సహకారము సరియైనదిగా లేదు.	( )	( )	( )	( )	( )
3.	కార్యక్రమాలలో పాల్గొనే సభ్యుల మధ్య సరియైన సహకారము గలదు.	( )	( )	( )	( )	( )
4.	కార్యక్రమాలలో పాల్గొనే గిరిజన సభ్యులు మరియు అటవీ సిబ్బంది మధ్య సహకారము తగినంత లేదు.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>జి.</b>	<b><u>మొక్కల రకాల ఎంపిక:</u></b>					
1.	గిరిజనుల అభిరుచుల మేరకు సరఫరా చేయుట లేదు.	( )	( )	( )	( )	( )
2.	మొక్కల ఎంపిక వారి అవసరములకనుగుణముగా లేదు.	( )	( )	( )	( )	( )
3.	సరఫరా చేసిన మొక్కలు ఆ ప్రాంతమునకు అనువైనవి కావు.	( )	( )	( )	( )	( )
4.	సకాలములో సరఫరా చేయలేదు.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>హెచ్.</b>	<b><u>అటవీ సరిహద్దులను గుర్తించుట:</u></b>					
1.	ఉద్దేశించిన పద్ధతి ద్వారా జరుగలేదు.	( )	( )	( )	( )	( )
2.	సకాలములో జరుగలేదు.	( )	( )	( )	( )	( )
3.	తగినంతగా జరుగులేదు.	( )	( )	( )	( )	( )
4.	రైతుల భాగస్వామ్యము లేదు.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

పూర్తిగా సమ్మతింపమన్నాను.	సమ్మతింపమన్నాను.	స్వీయంపకం లేదు	అసమ్మతి తెలుపుమన్నాను.	పూర్తిగా అసమ్మతి తెలుపుమన్నాను.
5	4	3	2	1

**నర్పరీ పెంపకము :**

తగినంతగా జరుగలేదు.

సకాలములో జరుగలేదు.

తగినన్ని వసతులతో జరిగినది.

ఇంకేమైనా ఉంటే తెలుపుము.

1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )

**అటవీ తుప్ప కొట్టుట :**

సకాలములో జరిపినారు.

తగినంతగా జరిపినారు.

ఇంకేమైనా ఉంటే తెలుపుము.

1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )

**గోతులను త్రవ్వట :**

నిర్దేశించిన దూరములో త్రవ్వినారు.

సకాలములో త్రవ్వినారు.

నిర్ధారించిన ప్రమాణాలను అనుసరించినారు.

ఇంకేమైనా ఉంటే తెలుపుము.

1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )

**మొక్కలను మోయుట మరియు నాటుట :**

పద్ధతి ప్రకారము జరిగినది.

సకాలములో జరిగినది.

స్త్రీలు సహకరించలేదు.

ఇంకేమైనా ఉంటే తెలుపుము.

1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )

**నర్పరీలో ఎక్కువైన మొక్కలను అమ్ముట :**

ముందుగా సూచనలు లేకుండా జరిగినది.

సకాలములో జరుగలేదు.

ఇంకేమైనా ఉంటే తెలుపుము.

1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )



క్రమ సంఖ్య	వివరణ	తీర్చిదిద్దడము				
		పూర్తిగా సమ్మతి అనుచున్నాను.	సమ్మతింప చున్నాను.	స్వయంకొనలేదు	అసమ్మతి తెలుపుచున్నాను.	పూర్తిగా అసమ్మతి తెలుపుచున్నాను.
		5	4	3	2	1
<b>ఆర్.</b>	<b>ఎంచుట :</b>					
1.	ప్రాముఖ్యతనివ్వలేదు.	( )	( )	( )	( )	( )
2.	పద్ధతి ప్రకారము జరుగలేదు.	( )	( )	( )	( )	( )
3.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )
<b>ఎస్.</b>	<b>ప్రపంచీకరణ ద్వారా మార్కెటింగ్ :</b>					
1.	సకాలములో జరుగలేదు.	( )	( )	( )	( )	( )
2.	తగిన విధముగా జరుగలేదు.	( )	( )	( )	( )	( )
3.	సరియైన ధర లభించలేదు.	( )	( )	( )	( )	( )
4.	లాభాలను సరియైన పద్ధతుల ద్వారా పంచుకోలేదు.	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

ఈ దిగువ వివరణను టిక్కు చేయుట ద్వారా ఆటంకములను తెలుపుము.

క్రమ సంఖ్య	వివరణ	ఆటంకములు				
		అత్యంత ప్రమాద భరితము	ప్రమాద భరితము	చెప్పలేము.	తక్కువ ప్రమాద భరితము	ప్రమాద భరితము కాదు
		5	4	3	2	1
<b>ఎ.</b>	<b><u>వ్యక్తిగత ఆటంకములు :</u></b>					
1.	అటవీ సంపాదన గూర్చి ఆశక్తి లేదు.	( )	( )	( )	( )	( )
2.	మొక్కలను ఎంచుకొనుటలో స్వతంత్రత లేదు.	( )	( )	( )	( )	( )
3.	కష్టతరమైన జీవనము సాగించుట.	( )	( )	( )	( )	( )
4.	వనరుల కొరత	( )	( )	( )	( )	( )
5.	ఆశక్తి చూపకపోవుట	( )	( )	( )	( )	( )
6.	తగినంత ఉపాధి లేకపోవుట	( )	( )	( )	( )	( )
7.	అటవీ సిబ్బంది, గిరిజన రైతులను తక్కువగా చూచుట.	( )	( )	( )	( )	( )
8.	ఇంకేమైనా ఉంటే తెలుపుము.					
	1.	( )	( )	( )	( )	( )
	2.	( )	( )	( )	( )	( )
<b>బి.</b>	<b><u>సాంఘిక ఆటంకములు :</u></b>					
1.	సామూహిక సహకారము లేకపోవుట	( )	( )	( )	( )	( )
2.	ప్రక్కవారినుండి నిరుత్సాహము	( )	( )	( )	( )	( )
3.	ఇంకేమైనా ఉంటే తెలుపుము.					
	1.	( )	( )	( )	( )	( )
	2.	( )	( )	( )	( )	( )
<b>సి.</b>	<b><u>స్థితి లేక స్థానము వలన ఆటంకములు :</u></b>					
1.	గ్రామములో రాజకీయ భద్రత్వము	( )	( )	( )	( )	( )
2.	లాభములను సమానముగా పంచుకొనలేకపోవుట	( )	( )	( )	( )	( )
3.	సాంకేతిక పరమైన సమస్యలు	( )	( )	( )	( )	( )
4.	ఉపాధి కొరకు విరోధములు	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
	1.	( )	( )	( )	( )	( )
	2.	( )	( )	( )	( )	( )

క్రమ సంఖ్య	వివరణ	ఆటంకములు				
		అత్యంత ప్రమాద భరితము	ప్రమాద భరితము	చెప్పలేము.	తక్కువ ప్రమాద భరితము	ప్రమాద భరితము కాదు
		5	4	3	2	1

**డి. ఆర్థిక పరమైన ఆటంకములు :**

1.	తక్కువ నిధులు	( )	( )	( )	( )	( )
2.	సకాలంలో కూలీ డబ్బులు పంచకపోవుట	( )	( )	( )	( )	( )
3.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

**ఇ. పౌండుపర్చబడిన ఆటంకములు :**

1.	పదవుల కొరకు కమిటీ సభ్యుల మరియు సిబ్బంది మధ్య విరోధములు	( )	( )	( )	( )	( )
2.	కమిటీలకు సరియైన న్యాయము జరుగకపోవుట	( )	( )	( )	( )	( )
3.	సరియైన శిక్షణ లేకపోవుట	( )	( )	( )	( )	( )
4.	సరియైన తనిఖీ లేకపోవుట	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

**ఎఫ్. పరిపాలన సంబంధమైన ఆటంకములు:**

1.	గిరిజనుల పట్ల సిబ్బంది యొక్క నడవడిక సరిగా లేకపోవుట	( )	( )	( )	( )	( )
2.	కేంద్రీకృత పరిపాలన	( )	( )	( )	( )	( )
3.	కష్టతరమైన తరమైన సూత్రములు	( )	( )	( )	( )	( )
4.	ఫలసాయమును కొనుగోలు చేయు డిపోలు	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

**జి. మార్కెట్ పరమైన ఆటంకములు:**

1.	ఫలసాయమును అమ్ముటలో	( )	( )	( )	( )	( )
2.	ఫలసాయమును అమ్ముటలో అటవీ సిబ్బంది యొక్క పాత్ర	( )	( )	( )	( )	( )
3.	ఫలసాయమును నిలువ చేయుట.	( )	( )	( )	( )	( )
4.	ప్రోసెసింగ్ యూనిట్లను నెలకొల్పుట	( )	( )	( )	( )	( )
5.	సరియైన మద్దతు ధర లేక పోవుట	( )	( )	( )	( )	( )
5.	ఇంకేమైనా ఉంటే తెలుపుము.					
1.		( )	( )	( )	( )	( )
2.		( )	( )	( )	( )	( )

## APPENDIX - III

### General information

<b>† Date of Starting of I.T.D.A</b>	<b>04-12-1975</b>
<b>† Geographical area of the District. In Sq.Kms.</b>	<b>11,167</b>
<b>† Area of the I.T.D.A. in Sq. Kms. (56.38 % of the District area)</b>	<b>6,293</b>
<b>† Population of Paderu Division</b>	<b>5,42,482</b>
<b>† Population of Scheduled Tribes (12.83% of the District Population)</b>	<b>4,93,886</b>

### General information

<b>Density of Population per Sq.Km</b>	<b>75</b>
<b>Average rain fall</b>	<b>1,234 mm</b>
<b>No.of Agency Mandals</b>	<b>11</b>
<b>No.of Tribal Sub-Plan Mandals</b>	<b>6</b>
<b>No.of Agency Gram Panchayats</b>	<b>244</b>
<b>No.of tribal villages</b>	<b>3399</b>
<b>a) Inhabited</b>	<b>175</b>
<b>b) Un-Inhabited</b>	<b>236</b>
<b>c) Tribal villages in TSP area</b>	<b>3810</b>
<b>TOTAL</b>	<b>3810</b>
<b>No.of House holds</b>	<b>1,19,238</b>

# APPENDIX - IV

## LAND UTILISATION IN I.T.D.A., PADERU DIVISION

Sl.No	Name of the Mandal	Geographical area in Hects	Net area sown in Hects	Total cropped area in Hects	Area sown more than once in Hects	Forest in Hects	Barren un-cultivable land in Hects	Land put to Non Agril. Uses	Permanant pastures & other grazing land in Hects	Miscallance tree crops in Hects	Cultivable Waste land in Hects	Other fallon land in Hects	Current fallow land in Hects
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Munchingiput	51497	13123	17223	4100	20708	16813	578	28	108	135	0	6
2	Pedabayalu	46039	12918	16595	4041	18350	12540	1607	25	125	450	0	24
3	Hukumpeta	42910	12577	14475	1898	22253	6739	727	36	308	270	0	0
4	Dumbriguda	33592	10947	15347	4400	15266	5839	640	89	389	302	0	120
5	Arakuvalley	34347	12377	15727	3350	15366	4468	1575	91	45	182	0	282
6	Anarthagiri	62010	8960	12147	3187	41889	9455	991	131	238	346	0	0
7	Paderu.	45433	9867	10947	630	29819	2771	946	36	311	485	302	896
8	G.Madugula	55600	9219	9861	642	42961	2047	789	40	120	418	4	2
9	Chinthapalli	69242	12935	17742	4807	50021	3600	945	919	582	240	0	0
10	G.K.Veedhi	95254	8811	12279	3488	83384	1869	827	332	202	117	12	0
11	Koyyuru	64428	10379	11071	962	46497	4576	811	461	103	311	0	1290
	<b>TOTAL</b>	<b>600352</b>	<b>122113</b>	<b>153414</b>	<b>31505</b>	<b>386512</b>	<b>70717</b>	<b>10436</b>	<b>2188</b>	<b>2531</b>	<b>3256</b>	<b>318</b>	<b>2620</b>

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