

**A STUDY ON LIVELIHOOD SECURITY OF FARMERS
IN VIRUDHUNAGAR DISTRICT OF TAMIL NADU**

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**DEPARTMENT OF AGRICULTURAL EXTENSION
UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE**

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Thesis submitted to the
UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE
in partial fulfillment of the requirements
for the award of the degree of
MASTER OF SCIENCE (AGRICULTURE)
in
AGRICULTURAL EXTENSION

Dedicated

to

My Beloved Parents

Thiru Sakṭhi vel

and

Thirumathi Gnanasakṭhi

**DEPARTMENT OF AGRICULTURAL EXTENSION
UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE**

CERTIFICATE

*This is to certify that the thesis entitled "A STUDY ON LIVELIHOOD SECURITY OF FARMERS IN VIRUDHUNAGAR DISTRICT OF TAMIL NADU" submitted in partial fulfillment of the requirement for the Degree of **MASTER OF SCIENCE (Agriculture)** in **AGRICULTURAL EXTENSION** to the **University of Agricultural Sciences, Bangalore**, is a bonafide record of research work done by her during the period of her study in this University under my guidance and supervision and that no part of thesis has previously formed a basis for the award of any degree, diploma, associateship, fellowship or other similar titles.*


BANGALORE
June 10, 2009




(T. N. Anand)

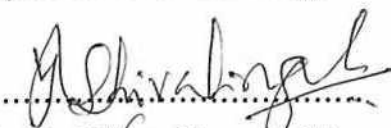
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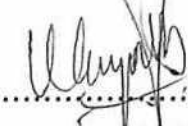
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INTRODUCTION

CHAPTER I

INTRODUCTION

At the time of our Independence, Jawaharlal Nehru said, *“Everything else can wait, but not agriculture”*. Unfortunately this profound truth is yet to be converted into concrete policies and action on an adequate scale.

The geographical area of India is 328.7 million hectares, net sown area is 142 million hectares and gross cropped area is 190 million hectares. According to 2001 census, the population of India is 1027 millions, of which 742 million constitutes rural population and 285 million constitutes urban population. Our country’s population is increasing at a rate of 1.90 per cent. In our total population, 128 million constitutes cultivators, 107 million constitutes agricultural labourers and other workers constitute 167 million.

Of the world’s six billion people, 2.8 billion live on less than two dollars a day, of whom 1.2 billion live on less than one dollar a day. Unemployment and underemployment are endemic in the economies of the developing world and up to 815 million people are unable to obtain the food they need for an active and healthy life (FAO, 2001). Progress over the last ten years in reducing the number of people living in absolute poverty has been mixed. In East Asia and the Pacific, the number of people in absolute poverty has been reduced by 192 million, but the gains have not been evenly spread between countries. In Africa during the same period, the number actually rose by 58 million (Anonymous, 2002). Put crudely, almost half of the world’s population does not have the socio-economic and political means to realize their economic and social rights. One of the major causes of poverty is the lack of viable livelihoods in the developing world.

India is one of the developing countries, where 57 per cent of people depend on agriculture for their livelihoods. Indian economy is agriculture based economy. In simple, agriculture is the backbone of India. Now-a-days, there has been a change in the attitude among farming community. Farming, traditionally, has been viewed as a source of subsistence living and livelihood by growing food crops like rice, maize, wheat, millets and pulses etc for meeting the food requirements of the family. This attitude of the farming community has been age old and the farmers / villagers in large number migrated / moved to towns and cities for earning money for meeting other requirements of the family.

The time has now come when farming is no more to be considered only as a source of livelihood but as a commercial venture and profitable business enterprise. Besides doing farming, the farmer should become an entrepreneur by integrating animal husbandry, dairy, poultry, fisheries, apiculture, mushroom growing and sericulture for better living.

For Farmers, farming is a way of life as well as the principal means of livelihood for 57 per cent of India's population of 110 crores. Our farm population is increasing annually by 1.84 per cent. The average farm size is becoming smaller each year and the cost-risk-return structure of farming is becoming adverse, with the result that farmers are getting increasingly indebted. Marketing infrastructure is generally poor, particularly in perishable commodities. No wonder, a recent National Sample Survey Organization (NSSO) survey revealed that nearly 40 per cent of farmers would like to quit farming, if they have the option to do so. Unfortunately, there is little option for them except moving into urban slums. Small farmers are forced to borrow money from local money lenders at high rates of interest, since only 51 per cent of the credit requirements of farmers are being met by financial institutional sources. Only 27 per cent of cultivator households receive institutional credit. The major assets available to farm

families are land, water, livestock, bio-diversity, fisheries and forestry. The ownership of land is highly skewed, 60 per cent of the rural households owning less than one hectare, nearly 28 per cent of them owning over one hectare. The landless population amounts to 11.24 per cent of rural households.

Entrepreneurship development apart from being job and income oriented activities will also help in inculcating risk-taking, achievement motivation and venturesomeness in people, self-employment security and will also raise the socio-economic status of the farmers and rural people. By these different ways, farmers can attain the livelihood security. A livelihood comprises the capabilities, assets (resources, claims and access) and activities required for means of living.

As mentioned by Acharya (2006), there are four principal ways of acquiring livelihoods by the rural households. They are production based livelihoods, labour based livelihood, exchange or market based livelihood and transfer based entitlements. In transfer based entitlements, people mainly depend upon social security and food assistance programmes of the government for fulfilling their livelihood requirements.

“India’s agriculture is now at the crossroads,” says visionary farm scientist and food policy expert Dr. M.S. Swaminathan. Though India is a grain-surplus country and has over 45 million tonnes of wheat and rice in its godowns, over 250 million people go to bed partially hungry stomach every day. From being food-secure, India needs to become livelihood-secure. And that is the biggest challenge facing the country today.

The performance of Indian agriculture in transforming India from a begging bowl status in food grain in the mid -1960s to self sufficiency during 1990s is remarkable. However, owing to many reasons including

the re-emergence of climate risks in recent years, national food self sufficiency is not sufficiently stable. Moreover, food self – sufficiency has not been achieved at the household level and many cases at intra household level.

The growth of agricultural GDP during IX and X plan is about 2 per cent per annum, which is very low in comparison to other sectors. India has a quarter of the world's poor and two third of its population are rural. A family of five requires an income of atleast Rs. 1,150/- (Rural) or Rs. 1300/- (Urban) per month. Those who have less income than this are considered as living below poverty line. In general, agricultural labourers, small and marginal farmers are poor.

As per UNO, women account for almost 50 per cent of the world's population, comprise 33.30 per cent of official labour force, perform nearly 66.60 per cent of all working hours, receive 10.00 per cent of the world income and own less than one per cent of the world property. Statistics show that 93 per cent of all workers in India are in informal employment, the percentage is even higher for women, at 96 per cent. Nearly, 99 per cent of agricultural workers are in informal employment. Sustainable livelihoods are possible only if the attention is paid to the improvement of women relative to men.

Government plays a major role in attaining secured livelihood by the farming community and rural poor. Earlier programmes implemented by the Government were mainly aimed at poverty alleviation. Once the poverty is eradicated, rural poor especially farmers can have improved livelihood. For eliminating chronic hunger and poverty, two broad strategies – growth mediated security and support led security have been followed which have the common feature of marshalling public action (Dreze and Sen, 1989). Any programmes or support extended by the Government should be in

such a way that it should provide / create employment opportunities to the people.

A large number of programmes have been initiated by the Government of India for generating livelihood opportunities and creating infrastructure in the rural areas in India during the 10th Five Year Plan and the 11th Five Year Plan. Even various state governments have started their own schemes for creating livelihood opportunities. Some of the schemes which have been started by the Government of India are as follows:

- a) Bharat Nirman Project (2005).
- b) Jawaharlal Nehru National Urban Renewal Mission (JNNURM, 2005).
- c) IT Mission 2007.
- d) National Rural Employment Guarantee Act (NREGA, 2005).
- e) Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY, 2005).
- f) National Rural Health Mission (NRHM, 2005-12).
- g) National Social Assistance Programme (1995).

One of the important steps taken by the Government in recent years is NREGA. The National Rural Employment Guarantee Act (NREGA) notified on 7th September, 2005, aims at enhancing the livelihood security of the people in rural areas by guaranteeing hundred days of wage employment in a financial year, to a rural household whose adult members volunteer to do unskilled manual work. This NREGA was able to provide employment to 2.10 crore rural households, in the first phase districts during 2006-07.

The Government of India set up the National Commission on Farmers in 2004, which is headed by Dr. M. S. Swaminathan especially for improving

the farmers' livelihood. The following are the strategies suggested by the commission

- Work out a comprehensive medium-term strategy for food and nutrition security in the country in order to move towards the goal of universal food security over time.
- Propose methods of enhancing the productivity, profitability, stability and sustainability of the major farming systems of the country based on an agro-ecological and agro-climatic approach and the harnessing of frontier technology.
- Bring about synergy between technology and public policy and recommend measures for enhancing income and employment potential in rural areas through diversification, application of appropriate technology including IT for information on market, weather, credit facilities and e-commerce, training and market reforms.
- Suggest measures to attract and retain educated youth in farming and recommend for this purpose, methods of technological upgrading of crop husbandry, horticulture, animal husbandry, fisheries (inland and marine), agro-forestry and agro-processing and associated marketing infrastructure.
- Suggest comprehensive policy reforms designed to enhance investment in agri-research, substantially increase flow of rural credit to farmers including small and marginal, triggering agricultural growth led economic progress, which can lead to opportunities for a healthy and productive life to rural families.
- Formulate special programmes for dry land farming for farmers in the arid and semi-arid regions as well as for farmers in hilly and coastal areas in order to link the livelihood security of the farming communities living in such areas with the ecological security of such regions. Review in this context, all ongoing Technology Missions like those

relating to pulses, oilseeds, maize, cotton, watershed etc. and recommend methods of promoting horizontal integration of vertically structured programmes. Also suggest credit-linked insurance schemes which can protect resource poor farm families from unbearable risks. Further, suggest methods of strengthening and streamlining the National Horticulture Development Board.

- Suggest measures for enhancing the quality and cost competitiveness of farm commodities so as to make them globally competitive through providing necessary facilities and application of frontier sciences and promote quality literacy for codex alimentarius standard, sanitary and phyto- sanitary measures among farmers through reorienting and retooling extension machinery. Also suggest methods of providing adequate protection to farmers from imports when international prices fall sharply.
- Recommend measures for the credit, knowledge, skill, technological and marketing empowerment of women taking into consideration the increasing feminization of agriculture and the proposed conferment of right to land ownership.
- Suggest methods of empowering male and female members of elected local bodies to discharge effectively their role in conserving and improving the ecological foundations for sustainable agriculture like land, water, agro-biodiversity and the atmosphere with priority attention to irrigation water.
- Consider any other issue, which is relevant to the above or is specially referred to the Commission by Government.

When these strategies are implemented properly with adequate financial support, the options on which farmers are depending for their livelihoods can be improved and farmers will be in a position to attain food security, economic security, social security.

Statement of the problem

The farming community in developing country like India is leading poor and unhealthy life especially the small and marginal farmers. They are not getting adequate income to meet their essential livelihood requirements. This may be due to various reasons like crop failure, pest and disease attack, high cost of inputs, marketing problem etc. Even sometimes, they are not able to get back the invested amount. In recent years, our country is facing the problem of farmers' suicides due to debt, crop failure, etc. The existing pathetic situation makes difficult for the farmers to obtain secured livelihood. Hence, the best way is to live with the situation and to find out the ways and means of getting sustainable livelihood security of farmers. With this background, the study was conducted with the following **objectives**.

1. To ascertain the livelihood requirements of farmers.
2. To measure the livelihood security of farmers.
3. To know the different sources of livelihood of farmers.
4. To find out the relationship between the independent variables and the dependent variable.
5. To elicit the problems faced by the farmers and their suggestions.

Scope of the study

The present study is aimed at studying the livelihood security of farmers. It is important to study the different livelihood requirements of farmers to acquire better living conditions. This study also measures the level of livelihood security attained by the farmers. Besides this, it also compares the livelihood security of three categories of farmers i.e., small,

medium and big farmers. And this study analyses the different sources of income from which farmers derived their livelihood. Once the existing level of livelihood security of farmers is known, it will be helpful for offering suggestions for further improvement. Hence, this study will be useful for policy makers to design appropriate programs, which helps the farmers to attain high level of livelihood security.

Limitations of the study

The study has been confined only to Virudhunagar district of Tamil Nadu. Hence, the results cannot be generalised to other areas where the environmental conditions, farming systems, government programmes etc. varies.

Operational definitions

Livelihood security: Livelihood security of the farmers is operationally defined as the ability of the farmer to spend his income on all basic and other necessities which are essential for their livelihood, as per the requirement and thus by attaining the secured livelihood.

Hypotheses

1. There is no difference in livelihood requirements of small, medium and big farmers.
2. There is no difference in amount spent on different items of livelihood by small, medium and big farmers.
3. There is no difference in livelihood security index of small, medium and big farmers.
4. There is no relationship between the independent variables of small, medium and big farmers and their livelihood security.

Presentation of the study

The report of the study was presented in seven chapters. The first chapter deals with the introduction consisting of specific objectives, statement of the problem, scope and limitations of the study. The second chapter is on review of literature related to this study. The third chapter deals with material and methods used in the process of investigation. The fourth chapter deals with presentation of findings. The fifth chapter deals with discussion of findings. Summary and conclusions have been presented in sixth chapter, followed by references in seventh chapter and appendices.

REVIEW OF LITERATURE

HEALTH CARE, MINDS AND LIVELIHOODS SECURITY

The Maslow's hierarchy of needs in the context of health care
and development of the levels: the first lower level is the physiological
needs, while the upper levels are termed psychological needs
and self-actualization needs. Deficiency needs tend to be met first,
near as they are, leading to safety growth needs (growth needs).
Higher needs in this hierarchy only come into focus when the lower
needs in the pyramid are met. Once an individual has moved upwards to
a next level, needs in the lower level will no longer be prioritized. If a lower
level of needs is no longer being met, the individual will temporarily re-
turn those needs by focusing attention on the unfulfilled needs, but
not permanently regress to the lower level. For instance, a businessman
(or a person) who is diagnosed with cancer will spend a great deal of

CHAPTER II

REVIEW OF LITERATURE

Keeping in view the objectives of the study, an attempt was made to include the review of related studies and presented under the following headings in this chapter.

2.1 Concept of livelihood and livelihood security.

2.2 Measurement of livelihood security.

2.3 Sources of livelihood

2.4 Relationship of characters farmers with livelihood security.

2.5 Constraints and suggestions of farmers in getting livelihood.

2.6 Conceptual frame work of the study.

2.1 CONCEPT OF LIVELIHOOD AND LIVELIHOOD SECURITY

Maslow (1943) depicted hierarchy of needs in the order of importance as a pyramid consisting of five levels: the first lower level is being associated with physiological needs, while the upper levels are termed as growth needs associated with psychological needs. Deficiency needs must be met first. Once these are met, seeking to satisfy growth needs drives personal growth. The higher needs in this hierarchy only come into focus when the lower needs in the pyramid are met. Once an individual has moved upwards to the next level, needs in the lower level will no longer be prioritized. If a lower set of needs is no longer being met, the individual will temporarily re-prioritize those needs by focusing attention on the unfulfilled needs, but will not permanently regress to the lower level. For instance, a businessman at the esteem level who is diagnosed with cancer will spend a great deal of

time concentrating on his health (physiological needs), but will continue to value his work performance (esteem needs) and will likely return to work during periods of remission.

To be able to live above the poverty line, one must possess assets and skills which can produce enough food, or income to buy the food needed for above subsistence living (Dantwala, 1984).

Livelihood security means secured ownership or access to resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies (Chambers, 1988).

The concept of sustainable livelihood security (SLS) as defined by Swaminathan (1991) is livelihood options which leads to ecological security, economical efficiency and social equitability.

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets presently and in the future, while not undermining the natural resource base (Chambers and Conway, 1992).

Drinkwater and McEwan (1992) defined household livelihood security as adequate and sustainable access to income and resources to meet basic needs such as adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration. Livelihoods can be made up of a range of on farm and off-farm activities which together provide a variety of procurement strategies for food and cash. Thus each household can have several possible sources of entitlement which constitute its livelihood. These entitlements are based

on the household's endowments and its position in the legal, political and social fabric of society.

Livelihood adaptation, vulnerability, and resilience: It means the ability of a livelihood to be able to cope with and recover from stresses and shocks. Those who are unable to cope (temporary adjustments in the face of change) or adapt (longer time shifts in livelihood strategies) and inevitably vulnerable and unlikely to achieve sustainable livelihoods (Davies, 1996).

Household livelihood security has been defined as adequate and sustainable access to income and resources to meet basic needs including adequate access to food, potable water, health facilities, educational opportunities, housing and time for community participation and social integration (Frankenberger, 1996).

The term *livelihood strategies* according to DFID's sustainable livelihoods glossary denotes: "the range and combination of activities and choices that people make in order to achieve their livelihood goals. Livelihood strategies include: how people combine their income generating activities; the way in which they use their assets; which assets they chose to invest in; and how they manage to preserve existing assets and income. Livelihoods are diverse at every level, for example, members of a household may live and work in different places engaging in various activities, either temporarily or permanently. Individuals themselves may rely on a range of different income-generating activities at the same time" (Anonymous, 2001).

Jayakumar *et al.* (2001) revealed that, in kanchipuram district about 40.00 per cent of agricultural laborers, 28.57 per cent of farmers performed non agricultural activities and 16.66 per cent of respondents were below the poverty line was estimated to be 30.83 per cent as per the head cōunt ratio, thus the non agricultural workers are the least affected by poverty in rural areas when compared to farmers and agricultural labourers.

Archana Sinha (2006) reported that income is one of the pull factors responsible for shift of the households from farm to non farm sector. The agriculture led growth has suggested that a sustained rise in farm output and income can act as a prime mover in initiating the development of non farm activities in rural areas. Similarly, urbanization, proximity to urban and development of infrastructure, which emanates outside agriculture, can also lead to growth of non farm activities. Both these lead to shift of rural workers to productive employment in the non farm sector for their livelihood.

2.2 MEASUREMENT OF LIVELIHOOD SECURITY

Swaminathan (1991) stated that Sustainable Livelihood Security Index would be a useful tool to test whether the necessary condition for sustainable development; economic efficiency and social security are present in a region. The joint report by the World Resource Institute, UNEP and UNDP showed similar consistency with the four interacting dimensions; environmental, economic, human and technological. The dimension of sustainability of livelihoods as identified by the Sustainable Livelihood Unit if UNDP (1993) include;

- The ability to cope with and recover from stress and shocks.
- Economic effectiveness or the use of minimal inputs to generate a given amount of outputs.
- Ecological integrity, ensuring that livelihood activities do not irreversibly degrade natural resources within a given ecosystem;
- Social equity, which suggests that promotion of livelihood opportunities for one group should not foreclose options for other groups either now or in the future.

In other words, sustainable livelihood is the capability of people to make living and improve their quality of life without jeopardizing the livelihood options of others now or in the future.

Dahl (1995) used the following indicators for assessing the sustainable livelihood security of farming community;

- Economic efficiency in terms of the cost effectiveness of crop specific farming practices and the employment opportunities both on farm and off-farm sector.
- Ecological security was assessed in terms of water use by farmers. It includes an examination of a) irrigation practices for different crops. b) laws and regulations that affect water use practices and c) possibilities and efforts regarding water management.
- Social security included both equity between classes and across genders.

There were three strategic shifts in development thinking that led to the adoption of a livelihood approach (Frankenberger, 1996).

1. A study from a concern for regional and national food security to a concern of the food security and nutritional status of households and individuals.
2. A shift from a food perspective to a livelihood perspective, which focus not only on production of food but also the ability of households and individuals to procure additional food they require for an adequate diet.
3. A shift from material perspective on food production to social perspective, which focuses on the enhancement of people's capacities to secure their livelihood.

The Sustainable Livelihoods Approach place a heavy stress on the access to and control over various types of assets or livelihood resources. Amartya Sen's concept of 'entitlement' can be helpful in understanding the extent of people's access to and control over resources. Entitlement is the

ability to command access to different forms of capital assets through the use of financial resources, formal and informal relationships with other groups and individuals (Farrington *et al.*, 1999): the various categories of assets (capital) identified are:

- *Human capital* : Skills, knowledge, ability to labour, good health
- *Social capital* : the social resources upon which people dare in pursuit of livelihood objectives (e. g. networks and connections, membership of groups, relationships of trust etc.)
- *Natural capital* : The natural resource stocks from which resource flows and services are derived (land, forest, water resources, protection from drought and flood etc.).
- *Physical Capital* : The basic infrastructure and producer goods needed to support livelihoods. Infrastructure components include affordable transport, secure shelter, adequate water supplies and sanitation and access to information. Producer goods are the tools and equipment that people use to function more productively.
- *Financial capital* : Includes savings and credit

Wickramsinghe (1998) adopted a participatory approach to develop indicators of sustainability of rural development in Sri Lanka; in which the farmers could introduce sets of criteria/indicators to measure the sustainability of livelihoods accomplished through rural development. A composite index of Habitat security was developed using these indicators, with four major domains;

- *Socio-cultural security* : The criteria in this domain were related to food security, a secure place or dwelling for living and family functioning, services and a secure status in the society.

- *Economic security* : It includes access to productive assets, stable production and employment, availability of public services and access to market outlets.
- *Environmental security* : It included the bio- diversity, stability of soil, water availability and physical space availability for crop production.
- *Political security* : It indicated empowerment of local community in every aspects of life and included the criteria like local leadership, community organization and local authority over productive assets.

The study pointed out that the habitat security should be achieved at two levels, one at the household level- the livelihood security of families and the other at community level

Assessing vulnerability/ security of livelihoods at household level is the central point of poverty reduction strategies (Anonymous, 2000/2001). The indicators proposed for assessing vulnerability of households include:

- *Physical assets* : A household's physical assets- those that can be sold compensate for temporary loss of income – are a measure of its capacity to self-insure.
- *Human capital* : Households with limited education tend to be more subjected to income fluctuations and less able to manage risk.
- *Income diversification* : In rural settings analysts might look at non-farm income, which tends to fluctuate less than farm income, provides a measure of protection against weather related risks.
- *Links to community network* : Family based networks, occupation based groups or associations to which a household belongs to. This is called the social capital of the households.

The Disaster Mitigation Institute (DMI) developed a Victim Security Model for analysis of livelihood and vulnerability to disaster (Twiggy, 2001). The key elements of the model include:

- *Food security* : considers the material elements of production, distribution and consumption including the wider socio-economic dimension of access to food.
- *Water security* : includes physical aspects (source, supply, quality, use) and socio-economic aspects (access, ownership).
- *Habitat security* : encompasses the quality and location of housing and wider issues such as financing and planning.
- *Occupational security* : includes income, employment, assets production, productivity and working conditions.

Anil Rai *et al.* (2008) had developed a livelihood index for different agro climatic zone of India. Six different sub indices such as infrastructure status, Agricultural status, Nutritional status, Economic status, Health and sanitation status and food availability status in respective zones were obtained finally, a composite integrated livelihood index has been developed which indicates the livelihood status of different agro climatic zones in the country.

The Sustainable Livelihood Security Index (SLSI) generalization of relative approach underlying the Human development Index developed by UNDP, it is a cross sectional measure to evaluate the relative sustainability status of a given set of entities (Anonymous, 1992).

The sustainable livelihood security index (SLSI) has been proposed by Swaminathan (1991) to serve as an educational as well as policy making tool to evaluate the potential of sustainable development (SD).

2.3 SOURCES OF LIVELIHOOD

Wolf (1966) indicated that the majority of rural population in both developed and developing countries has survived and reproduced by growing a mix of staple and cash crops, keeping some livestock, fishing, and gathering forest products. Subsistence production, aimed at meeting food needs, combined with selling of small surpluses on the local market (including often labor surpluses). The latter was instrumental to access the manufactured goods and other commodities that can not be produced by the household, as well as to pay taxes and ceremonial expenses.

A study conducted by NABARD reported that for 10 per cent of the beneficiary households per household incremental income from IRDP in different states were upto Rs.500. For another 13 per cent, it ranged between Rs.501 – 1500 (Anonymous, 1984).

Kutty Krishnan (1984) reported that 39 per cent of the participants in IRDP schemes in his study villages in Kerala did not have any change in their income. Another 29 percent of the families got incremental income of less than Rs.400 per family.

According to PEO study, the per household incremental income from IRDP ranges from Rs.1069 – Rs.2770. However, in several areas the incremental income from different schemes was less than or around Rs.600 per family (Anonymous, 1985).

Jodha (1986) reported that common property resource (CPR), though neglected by policy makers and planners, play a significant role in the life of rural poor. The study reveals significant contribution of CPRs towards the employment and income generation for the rural poor i.e., labour and

small farm households. The per household per year income derived from CPRs ranged between Rs.530 and Rs.830 in different areas which is higher than income generated by a number of anti – poverty programmers in some areas.

Asghoir Mohiddin (1987) conducted a study on rural entrepreneurs in Andhra Pradesh and Kerala states. The study revealed that, in Andhra Pradesh rural people took enterprises such as basket and coir making, tailoring, embroidering, candle and papad making. They marketed their produce in open market with lower profit margin, whereas forward castes took enterprises such as crockery, painting. Food processing and packing while, the backward caste people took handloom work, basket making and they sold their products in open market at higher profit margin.

Veena *et al.* (1987) conducted a study in Mahendragarh district, revealed that in scheme villages' dairy making tailoring, soap making and knitting were the most preferred activities in the order of importance whereas in non-scheme villages tailoring, knitting. Soap making and dairy making were the most preferred activities in the order of importance.

Punjrao (1989) while studying below poverty line people in dairy co-operatives in Andhra Pradesh, found that dairy co-operatives provided employment to the extent of 70 to 80 per cent and dairy farming, had proved to be a powerful enterprise for economic progress and social change among below poverty line people.

Meera Reddy (1990) conducted a case study on TRYSEM programme in Kurnool Samithi of Andhra Pradesh, and the findings revealed that in case of tailoring, annual income was increased to Rs. 10,700/- from Rs. 1120/- in poultry Rs. 940/- to Rs. 9100/-. Increase in the annual income

of carpenters, potters, and others from pre training assistance period to post training assistance period is Rs. 8400/-, Rs. 6840/- and Rs. 6940/-, respectively, by and large TRYSEM proved very useful in study area.

Verma and Malik (1991) revealed that the majority of the poor prefer dairying activity, whereas the emphasis in development budgets has always been in favour of crop enterprises. Although agriculture is the main source of livelihood of the rural poor, the income derived from crop enterprises was not satisfactory.

Mamatha (1993) revealed that the most rural people performing economic activity had hired labour for on farm and off farm activities, as laborers did not possess capital to start any other productive activity, she also revealed that rural women performed the subsidiary activities like dairy, poultry, sericulture, weaving pottery, leaf plates making, rope making, tailoring, basket making for income generation.

Cremers (1994) revealed that high unemployment and high proportion of people living below the poverty line were practicing kitchen garden production for home consumption and for the market. So this made an important contribution to well being.

Gertel (1997) indicated that in Cairo, out of 13 million inhabitants, one fifth of all Egyptians, and 35 per cent of the populations are below the poverty line, most of the urban agricultural activity in the city concerns the raising of small animals for food, especially poultry is dominated by women.

Hartwig (1999) noted that the SHG of Africa have increased the family income thereby ensuring food security and children education.

Bonger (2000) reported that Ugandan rural households balance the number of consumers, labourers and the size of cultivated holdings. The socially and spatially better offs, who have more investments in livestock and family labour, enjoy higher levels of land productivity and modest improvement in their per capita income. A quarter of the total income from non-agricultural sectors.

Manimekalai and Rajeswari (2000) found that majority of the respondents engaged in petty shops business and the rest distributed across processing, production and service units.

Prasad *et al.* (2000) reported that about 74 per cent of agricultural labour households had an annual income of less than Rs. 15000, and thus were below the poverty line so there was a need to create employment in the non crop sector by diversifying agriculture through dairying, fish culture and agro based activities.

Sarkar (2001) reported that employment increased by 17 per cent from 320 person days to 375 person days per household between pre and post – SGSY situations.

Deb *et al.* (2002) reported that agriculture remains the most important source of livelihood, though the relative importance of crop cultivation has decreased as real income from crops. Agriculture has become an increasingly risky pursuit and households have sought other sources of income, most notably through migration of agricultural labourers to other villages or to urban areas such as Hyderabad.

The goat rearing adopted by landless households in South Western semiarid region of UP provided an opportunity for efficient utilization of

family labour. 57 per cent of income from goat rearing spent in procuring food for family. 39 per cent of the respondents gave first priority for goat rearing as enterprise and 54 per cent selected goat rearing as second in the priority of enterprises. Income from goats was lost by 15-29 per cent due to various constraints. The share of income from goat rearing to total income was estimated to be 33.3, 71.53 and 81.47 per cent for small, medium and large categories, respectively (Shalander Kumar and Deoghar, 2003).

Arul Prakash (2004) reported that around one third of the SGSY beneficiaries had incremental income in the range of Rs. 2001 to Rs. 3000, whereas, 27.50 per cent had generated net income in the range of Rs. 1001 to Rs. 2000, 15.83 per cent of the beneficiaries were able to earn upto Rs. 1000. About 5.83 and 2.50 per cent of them had incremental income of Rs. 4001 to Rs. 5000 and Rs. 5001 to Rs. 6000, respectively. And also after getting assistance from SGSY, 72.00 per cent were fully employed and 28.00 per cent changed from wage earner to self employed.

Chetana (2005) reported that after joining "Stree Shakti" group, 51.67 per cent of beneficiaries have undertaken dairy as source of income, 31.67 per cent have started goat rearing enterprise, 5.83 per cent and 3.33 per cent have started piggery and papad making as their source of income. 4.17 per cent and 3.33 per cent have indulged in agarbathi making and leaf plate making.

Indira Devi (2006) found that agribusiness enterprises such as processing units, vermicomposting enterprises, and commercial nursery of ornamental fisheries as sustainable livelihood options. By identifying the rural home scale agri-enterprises based on the efficiency of sustainability attributes of development of effective management packages for their effective functioning, rural prosperity can be achieved.

Shalander Kumar, *et al.* (2006) showed that goat rearing was (irrigated) contributing significantly to the family's livelihood security. Goat alone contributed 49 to 86 per cent of the household's total income in semi arid parts of UP and Rajasthan (un irrigated). Hence instead of depending on agriculture alone for income, adapting integrated farming system will be helpful for better livelihood.

Singh (2006) reported that Livestock – crop production is a sustainable production system for the economic development and livelihood in a study conducted in Bihar and Jharkhand. According to this study, Buffalo and crop production system is the most sustainable production system for generating income and employment followed by cross bred cow & crop production system. Besides these, nearly 48-52 % adopted Goat + Crop production system and it had very great potential in rising income & employment on landless, marginal and small farmers / households.

Steward (2007) reported that income diversification has increased livelihood security of farmers. Over the past 15 years, income sources in Amazonian community of Carvao have diversified to include government salaries, retirement, welfare benefits of wages from an evolving informal service sector.

2.4 RELATIONSHIP OF INDEPENDENT VARIABLES WITH LIVELIHOOD SECURITY

Ravindra (1987) reported that extension contact and extension guidance were positively related to employment generation of Antyodaya beneficiaries while education, family size, land holding status and organizational participation were not related.

Lele *et al.* (1989) described some of the complex interactions among education, employment, income, health, family planning, population growth, increase in food production and food security.

Meti (1990) conducted a study in Dharwad district and observed that 64 per cent of respondents possessed sprayer and only small number of respondents possessed tractor and improved iron plough.

Kaur (1991) conducted a study in Hissar district of Haryana on the agricultural labourers and stated that agricultural labourers had hardly any luxury items like bicycle, transistor, chairs and sewing machines were rarely found.

Manimekalai and Rajeswari (2000) revealed that most of the poor had primary education, while a few engaged in production units and services and majority of them in petty business were illiterates.

Ajmer Singh and Kulwanth Singh (2002) reported that buffalo keeping was most profitable for the landless as the animal population decreases with increase in land holding size because of the involvement of the farmers in other activities in Gurgaon district of Haryana.

Madhulika Sharma and Abha Ahuja (2003) conducted study in Udham Singh Nagar district of Uttaranchal to gain insight into the family size preferences and reasons behind them. The results showed that various family size variables including actual and derived family size were greater in case of rural families as compared to urban families. Although a greater percentage of parents both in rural and urban areas preferred small to large family size, the percentage of parents preferring large family size was almost double in rural area as compared to urban area. Reasons for both large and small family were cited in terms of economic value of children in rural areas.

Kamal Vatta *et al.* (2008) conducted a study in the rural areas of Punjab to know the relationship between the employment pattern and income sources. The results have revealed a negative relationship between employment diversification and size of land holding. The dependence on non farm sector as a major source of income has revealed a negative relationship with the land size.

Sidhu *et al.* (2008) studied incidence and depth of food and nutritional and its determinants. The consumption expenditure has been found to be directly associated with the levels of income/assets in both rural and urban areas. The study has revealed that the food and nutritional security prevails even in the food surplus areas, with low income households being more vulnerable to this, hence, increase in production alone does not ensure food and nutrition security. The access to food determined by the level of income and family size has been found as the most important factor influencing food and nutritional security in food surplus areas.

2.5 CONSTRAINTS AND SUGGESTIONS OF FARMERS IN GETTING LIVELIHOOD

It has been felt that the public purchase agencies should buy the produce from farmers directly and not through any intermediaries. The concept of farmers' service societies, as suggested by the National Commission on Agriculture may be suitably utilized for group action by farmers in rural areas in marketing their produce (Joshi Navin Chandra, 1993).

The intimate conceptual, casual and operational linkages between SLS and other welfare goals like poverty alleviation, meeting basic needs for human development and quality of life (Saleth and Swaminathan, 1993) justify SLSI as a basic requirement for sustainable development of agriculture.

Naghabushana (2001) conducted a study in Kolar district in Karnataka to analyse the problems faced by the vegetable growers. The major problems faced by farmers were high cost of transportation (100.00 per cent), fluctuation in market price (100.00 per cent), high commission charges (100.00 per cent), markets are far away (44.28 per cent), lack of market information (97.14 per cent) and lack of processing facilities (72.85 per cent).

The World Bank's World Development Report 2000 / 2001 addressing poverty observed that the experience in rural India show that information and communication technology can enhance poor people's opportunities by improving their access to markets and health care. It can empower them by expanding their use of Government services and it can increase security by widening access to micro finance (Anonumous, 2002).

Nathan and Ashok Kumar (2003) reported that in Gujarat, there is serious drinking water problem as half of the population gets water once in a week. The women folk trek daily few kilometers to fetch drinking water. Since water is the one of essential thing for livelihood and substance of agriculture, farmers of Gujarat in number of villages involved in participatory approach for solving water scarcity.

FAO established World Agricultural Information Center (WAICENT) as its strategic framework for agricultural information which is essential to eradicate poverty and achieving food security and sustainable rural development (Riggs, 2003).

Nirmala *et al.* (2004) majority of the respondents engaged in non-farm activities, which were largely traditional and less remunerative in nature. The results of regression revealed that nature of occupation, higher

asset possession and larger credit amount significantly reduced the respondents monthly earnings.

Singh *et al.* (2004) conducted a study on constraints and strategies in rural livestock farming in Sevara district of hilly Uttranchal and revealed that the major constraints were shortage of feeds and fodders during dry season, traditional method of feeding scattered and low land holding and poor extension services.

Pushpa (2006) conducted a study on livestock production systems of Rural and Periurban areas. She found that the monthly net returns from livestock production system in rural and periurban areas were Rs. 2691 and Rs. 4649, respectively. The B:C ratio of 2.354:1 and 1.01:1 were obtained in rural and periurban categories, respectively from the livestock production system in study area.

Shalander Kumar *et al* (2006) reported that livelihood security of rural people of arid Rajasthan was under threat. Faced with low productivity and high uncertainty in crop production, rural resources (CPRS) based livestock rearing, particularly of small ruminants. And also the quality and quantity of CPRs as source of feed and fodder have been severely depleted.

Steward (2007) reported that farmers cite low market prices (the result of vertical integration of local markets) as one cause of this decline production. Small farmers who are interested in diversifying agricultural production are limited by inadequate extension services and credit.

Mandeep Singh and Joshi (2008) reported that majority of marginal and small farmers in Punjab are not able to meet their requirements from their income from crops only. Further, dairy farming has emerged as a

major allied enterprise for supplementing the income for marginal and small farmers. Income from off farm sources has been identified as another important factor contributing significantly to the disposable income of farm households.

2.6 Conceptual frame work of the study

The conceptual frame work was developed to provide a perspective reference for systematic analysis of the process of livelihood security.

It is accepted from the studies that the livelihood security is a multivariate phenomenon explained by a wide spectrum of personal, situational, motivational and extension variables. The conceptual frame work is expected to facilitate theoretical and empirical analysis of livelihood security. The conceptual model depicting all the variables is represented in Fig. 1.

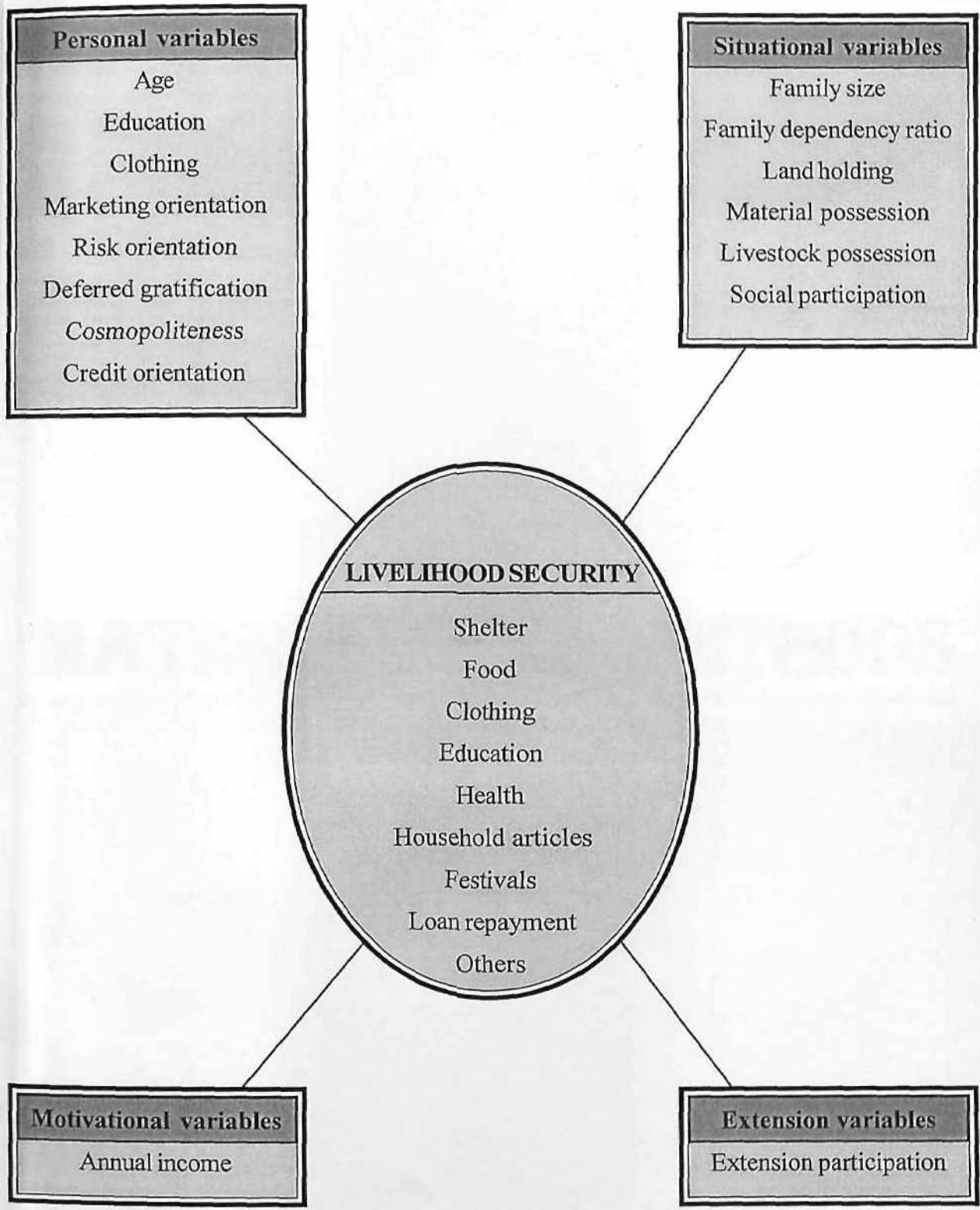


Fig. 1 : Conceptual frame work of the study

MATERIAL AND METHODS

The material and methods employed in carrying out the study are presented in this chapter under the following headings:

- 3.1. Population of the study.
- 3.2. Location of the study.
- 3.3. Selection of the sample.
- 3.4. Research design.
- 3.5. Variables used in the study.
- 3.6. Instruments used for Measurement of variables.
- 3.7. Measurement of variables.

MATERIAL AND METHODS

3.1. POPULATION OF THE STUDY

3.1.1. POPULATION OF THE STUDY

The purpose of a research project is to find out the relationship between two or more variables. The population of the study is the group of individuals from which the sample is drawn.

3.2. LOCATION OF THE STUDY

The study was conducted in the Department of Health, Education and Family Welfare, Government of Karnataka, Bangalore.

3.3. SELECTION OF THE SAMPLE

From each of the selected families, the children were selected randomly for the study. The list of all the selected families is given in the appendix.

CHAPTER III

MATERIAL AND METHODS

The material and methods employed in conducting the study are presented in this chapter under the following sub-headings:

- 3.1 Population of the study.
- 3.2 Locale of the study.
- 3.3 Selection of the sample
- 3.4 Research design.
- 3.5 Variables used in the study.
- 3.6 Instruments used for Measurement of variables.
- 3.7 Measurement of variables.
- 3.8 Instrument used for data collection
- 3.9 Collection of data
- 3.10 Analysis of data

3.1 POPULATION OF THE STUDY

The farmers of Virudhunagar district of Tamil Nadu formed the population for the study.

3.2 LOCALE OF THE STUDY

Virudhunagar district consists of eight taluks, out of which, Srivilliputtur and Virudhunagar taluks were selected, randomly (Fig. 2).

3.3 SELECTION OF THE SAMPLE

From each of the selected taluks, five villages were selected randomly for the study. The list of villages selected were as follows.

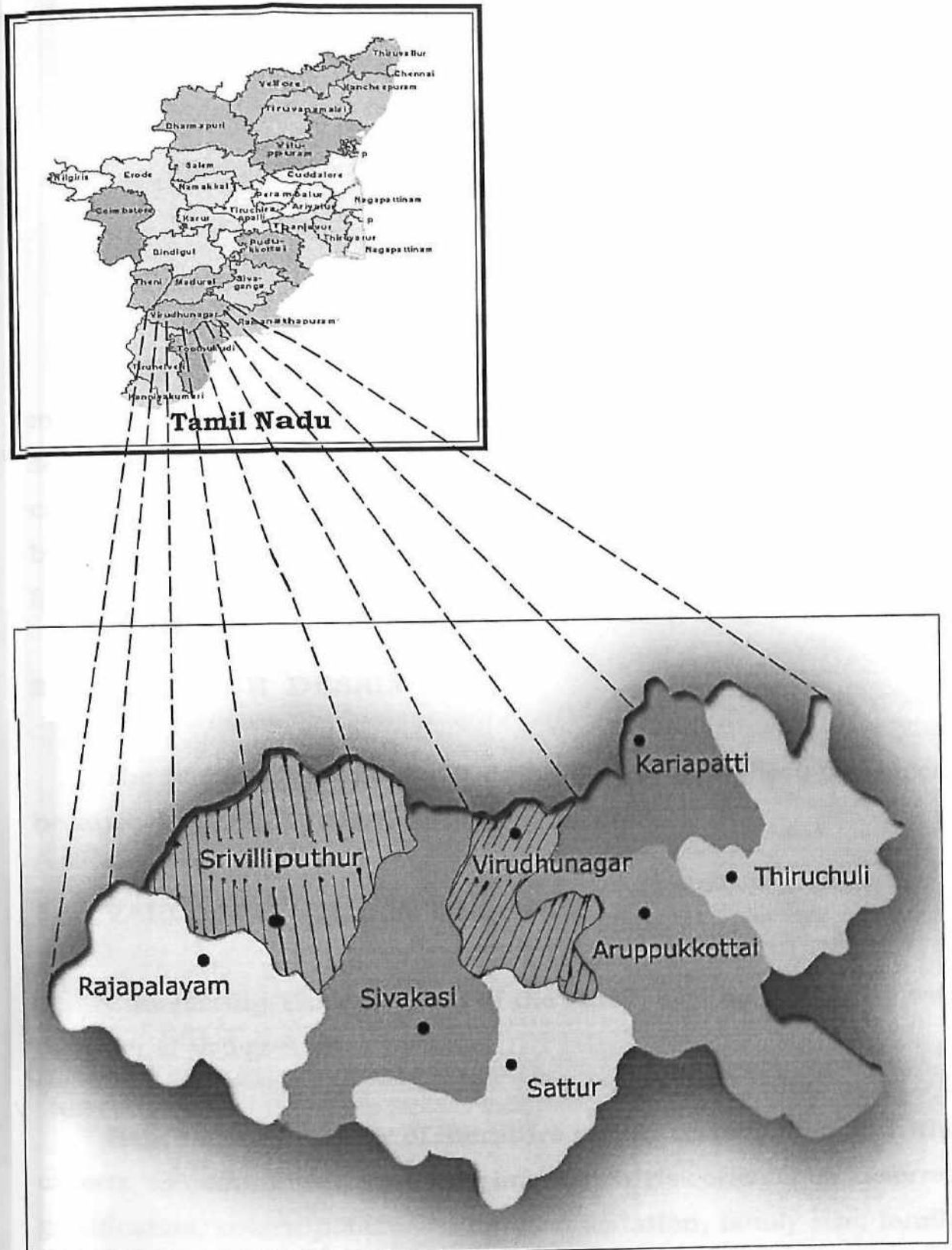


Fig 2 : Study area in Virudhunagar district of Tamil Nadu

a) Srivilliputtur Taluk

Akkanapuram

Kottaiyur

Mamsapuram

Sokkalampatti

Vatrap

b) Virudhunagar Taluk

Chandragiripuram

Chinnaperali

Sengundrapuram

Sennelkudi

Thathampatti

From each of the selected villages, the list of small (< 5 acres), medium (5 to 10 acres) and big farmers (> 10 acres) was prepared separately. Among them four farmers each from small, medium and big categories were selected randomly. Thus, 40 small, 40 medium and 40 big farmers from 10 villages were selected which, constituted the sample for the study.

3.4 RESEARCH DESIGN

The ex-post-facto research design (cause and effect) was used, because the phenomenon had already occurred.

3.5 VARIABLES USED IN THE STUDY

Considering the objectives of the study, livelihood security was considered as dependent variable.

Based on the review of literature and in consultation with the experts, age, education, marketing orientation, risk orientation, deferred gratification, cosmopolitanism, credit orientation, family size, family dependency ratio, land holding, material possession, livestock possession, social participation, annual income and extension participation were selected as independent variables.

3.6 INSTRUMENTS USED FOR MEASUREMENT OF VARIABLES

Sl. No.	Variables	Instruments used
I. Dependant variables		
1.	Livelihood security	Schedule developed for the study
II. Independent Variables		
a) Personal variables		
1.	Age	Structured schedule was used
2.	Education	Scale developed by Trivedi (1963)
3.	Marketing orientation	Scale developed by Samantha (1977)
4.	Risk orientation	Scale developed by Rame Gowda (1991)
5.	Deferred gratification	Scale developed by Rame Gowda (1991)
6.	Cosmopolitaness	Scale developed by Desai (1975)
7.	Credit orientation	Scale developed by Bale and Sibley (1967)
b) Situational variables		
8.	Family size	Structured schedule was used
9.	Family dependency ratio	Structured schedule was used
10.	Land holding	Structured schedule was used
11.	Material possession	Scale developed by Mansingh (1994)
12.	Livestock possession	Structured schedule was used
13.	Social participation	Procedure suggested by Trivedi(1963)
c) Motivational variables		
14.	Annual income	Structured schedule was used
d) Extension variables		
15.	Extension participation	Structured schedule was used

3.7 MEASUREMENT OF VARIABLES

3.7.1 Measurement of dependent variable

The livelihood security is the extent to which an individual is capable of purchasing his needs. It was measured by considering the amount required for different livelihood items and the actual amount spent for different livelihood items by the farmers.

3.7.1.1 Amount required for different livelihood items

The average amount required for each of the livelihood item was worked out for each of the livelihood items by small, medium, big and pooled sample of farmers separately.

The minimum and maximum amount (in Rupees per year) required by small, medium, big and pooled sample of farmers for different livelihood items were as detailed below.

Livelihood Items	Small farmers		Medium farmers		Big farmers		Pooled	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Shelter	0	16000	0	15000	0	20000	0	20000
Food	25000	50000	18250	60000	18250	60000	18250	60000
Clothing	4000	12000	3000	13000	4000	14000	3000	14000
Education	0	40000	0	25000	0	40000	0	40000
Health	0	12000	0	12000	0	10000	0	12000
Household articles	0	15000	0	12000	0	8000	0	15000
Festivals	0	14000	0	12000	5000	12000	0	14000
Loan repayment	0	50000	0	65000	0	35000	0	65000
Other items	0	6500	0	10200	0	10000	0	10200
Total	37000	118000	37250	153000	50000	125000	37000	153000

The mean and standard deviation of amount required by small, medium, big and pooled sample of farmers for different livelihood items were as detailed below.

Livelihood Items	Small farmers		Medium farmers		Big farmers		Pooled	
	Mean	S. D.	Mean	S.D.	Mean	S. D.	Mean	S. D.
Shelter	1850	4332	925	3339	1175	3700	1317	3800
Food	37600	7182	43625	8937	46575	7299	42600	8638
Clothing	7588	2230	9025	2860	9588	2799	87330	2755
Education	3563	7344	2425	4490	4200	7623	3396	6624
Health	5500	2136	5788	2166	6513	1838	5933	2079
Household articles	2155	2981	2488	3062	2650	3051	2431	3013
Festivals	5560	2934	6475	3458	8700	1742	6912	3081
Loan repayment	7413	12491	13040	18341	1825	6823	7426	14064
Other items	2813	1957	3985	2854	5238	1840	4012	2454
Total	74040	17880	87775	39413	86463	14461	82759	20805

Based on the mean and standard deviation of amount required for different livelihood items as a measure of check the farmers were categorised as low, medium and high level of requirement of different livelihood items by small, medium, big and pooled sample of farmers for each of the livelihood item as follows.

Category	Criteria
Low	$< (\bar{X} - 1/2 \text{ SD})$
Medium	$(\bar{X} - 1/2 \text{ SD}) \text{ to } (\bar{X} + 1/2 \text{ SD})$
High	$> (\bar{X} + 1/2 \text{ SD})$

3.7.1.2 Amount spent for different livelihood items

The average amount spent for each of the livelihood item was worked out by calculating the mean amount spent for each of the livelihood items by small, medium, big and pooled sample of farmers separately.

The minimum and maximum amount spent by small, medium, big and pooled sample of farmers for different livelihood items were as detailed below

Livelihood Items	Small farmers		Medium farmers		Big farmers		Pooled	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Shelter	0	13000	0	12000	0	15000	0	15000
Food	10000	48000	16000	55000	23000	54000	10000	55000
Clothing	1500	9000	2000	12000	3500	12000	1500	12000
Education	0	25000	0	20000	0	36000	0	36000
Health	0	10000	0	8000	0	8000	0	10000
Household articles	0	4200	0	8000	0	7500	0	8000
Festivals	0	10000	0	9000	4000	11000	0	11000
Loan repayment	0	12000	0	42000	0	30000	0	42000
Other items	0	3500	0	8800	0	7500	0	8800
Total	15700	77000	29300	112000	47000	116000	15700	116000

The mean and standard deviation of amount spent by small, medium, big and pooled sample of farmers for different livelihood items were as detailed below

Livelihood Items	Small farmers		Medium farmers		Big farmers		Pooled	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Shelter	1385	3415	663	2443	925	2868	991	2926
Food	28450	7903	37375	8969	43500	7114	36442	10096
Clothing	4250	1787	6300	2323	8465	2514	6338	2806
Education	3563	4928	1742	3443	3978	7151	2611	5438
Health	2113	1581	3825	1659	5688	1793	40927	2061
Household articles	898	1145	1663	2061	2213	2604	1591	2083
Festivals	2710	1812	4407	2648	7663	1508	4927	2894
Loan repayment	550	2438	1250	6628	1200	5469	1000	5166
Other items	1218	906	2610	2197	4408	1602	2745	2108
Total	44335	13587	59835	2623	78038	13566	60736	23206

Considering the mean and standard deviation of amount spent on different livelihood items as a measure of check the farmers were categorised as low, medium and high level of amount spent on different livelihood items by small, medium, big and pooled farmers as follows.

Category	Criteria
Low	$< (\bar{X} - 1/2 \text{ SD})$
Medium	$(\bar{X} - 1/2 \text{ SD}) \text{ to } (\bar{X} + 1/2 \text{ SD})$
High	$> (\bar{X} + 1/2 \text{ SD})$

3.7.1.3 Livelihood security index

Livelihood security index was worked out separately for each of the livelihood item by considering the actual amount spent and the average amount required for each of the livelihood items by small, medium, big and pooled sample of farmers by using the formula

$$\text{Livelihood security index} = \frac{\text{Amount spent on particular livelihood item by an individual farmer}}{\text{Average amount required for particular item by the farmers}} \times 100$$

Based on the livelihood security index, the farmers were categorised into different groups for different livelihood items for small, medium, big and pooled sample of farmers.

The minimum, maximum, mean and standard deviation of livelihood security index of different items of small, medium, big and pooled sample of farmers were as detailed below

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	26.6	33.38	54.36	18.97
Maximum	127.66	127.6	134.16	225.96
Mean	59.88	68.17	90.26	74.65
S. D.	18.35	19.13	15.61	28.04

Based on the mean and standard deviation of livelihood security index, the respondent farmers were classified into three categories.

Category	Criteria
Low	$< (\bar{X} - 1/2 \text{ SD})$
Medium	$(\bar{X} - 1/2 \text{ SD}) \text{ to } (\bar{X} + 1/2 \text{ SD})$
High	$> (\bar{X} + 1/2 \text{ SD})$

3.7.2 Measurement of independent variables

3.7.2.1 Age

It refers to the chronological age of the respondent in completed years at the time of investigation.

The minimum, maximum, mean and standard deviation of age of small, medium, big and pooled sample of farmers were as detailed below

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	30	32	27	27
Maximum	66	68	68	68
Mean	51.25	51.53	50.30	51.03
S. D.	10.48	9.35	10.16	9.93

3.7.2.2 Education

It refers to the formal education completed by the respondent at the time of investigation. The scores were assigned as per the scale developed by Trivedi (1963) to measure the educational level as detailed below.

Educational level	Scores
Illiterate	0
Can read and write	1
Primary school	2
Middle school	3
High school	4
College	5
Graduate	6

The minimum, maximum, mean and standard deviation of education of small, medium, big and pooled sample of farmers were as detailed below

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	0	1	1	0
Maximum	6	4	6	6
Mean	2.30	2.65	3.55	2.53
S. D.	1.20	0.83	6.02	3.58

3.7.2.3 Marketing orientation

It is operationalised as the degree to which the farmer is oriented towards marketing functions of scientific farm management. The scale developed by Samantha (1977) with slight modifications was used to measure the marketing orientation. The scale consists of seven statements with two responses as agree and disagree. The first and fourth statements were negative and remaining statements were positive. The total possible score ranged from 0 to 7 for an individual.

The minimum, maximum, mean and standard deviation of marketing orientation of small, medium, big and pooled sample of farmers were as detailed below

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	3	3	4	3
Maximum	7	7	7	7
Mean	3.93	4.25	4.83	4.33
S. D.	0.83	1.37	0.90	1.12

3.7.2.4 Risk orientation

Risk orientation is operationalised as the ability of a farmer to withstand risk and uncertainty in agriculture and allied activities. The scale developed by Ramegowda (1991) with slight modifications was used to measure the risk orientation of the respondents.

The scale consisted of six statements, of which one statement was negative and the rest positive. The responses were scored on a five point continuum with scores 4, 3, 2, 1 and 0 for their responses 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' respectively. However, the scores for the negative item were reversed. The scores obtained on each statement were cumulated to obtain the total score of a respondent. The total possible score ranged from 0 to 44 for an individual.

The minimum, maximum, mean and standard deviation of risk orientation of small, medium, big and pooled sample of farmers were as detailed below

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	10	11	15	10
Maximum	24	26	32	32
Mean	15.68	19.18	23.70	19.52
S. D.	4.86	4.01	3.65	5.32

3.7.2.5 Deferred gratification

It is operationalised as the postponement of immediate satisfaction in anticipation of future rewards. Deferred gratification was measured by using the scale developed by Ramegowda (1991).

The scale consisted of 10 statements with 5 point continuum of 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree'

with the scoring of 4,3,2,1 and 0, respectively for positive statements and reverse scoring pattern was followed for negative statements. There were 5 positive and 5 negative statements in the scale. The total possible score ranged from 0 to 40 for an individual.

The minimum, maximum, mean and standard deviation of deferred gratification of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	10	15	19	10
Maximum	34	35	37	37
Mean	21.53	28.45	29.40	26.46
S. D.	5.37	3.80	3.59	5.55

3.7.2.6 Cosmopolitaness

It is the degree to which an individual is oriented to his immediate social system outside.

The variable was measured by using the scale developed by Desai (1975). Two dimensions *viz.*, frequency of visit to the nearest town and purpose of visit were considered as detailed below.

a) Frequency of visit to the nearest town

Frequency	Score
1. Two or more times a week	5
2. Once in a week	4
3. Once in 15 days	3
4. Once in a month	2
5. Occasionally	1
6. Never	0

b) Purpose of visit

1. Majority related to agriculture & allied activities	5
2. Some related to agriculture and allied activities	4
3. Personal/ Domestic	3
4. Entertainment	2
5. Others	1
6. No response	0

The total possible score ranged from 0 to 10 for an individual.

The minimum, maximum, mean and standard deviation of cosmopolitanism of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	4	4	6	4
Maximum	10	10	10	10
Mean	7.65	7.53	8.90	8.03
S. D.	1.89	1.52	1.15	1.66

3.7.2.7 Credit orientation

Credit orientation was operationalised as the favourable and positive attitude of an individual farmer towards obtaining credit from institutional sources for enterprise purposes. The measurement and scoring procedure of Bale and Sibley (1967) was used in the present study to measure credit orientation.

The scale consisted of 5 statements, out of which three statements were having 4 alternative responses with the scoring pattern 0, 1, 2 and 3 and two statements having 2 alternative responses with the scoring pattern 0 and 1. The total possible score ranged from 0 to 11 for an individual.

The minimum, maximum, mean and standard deviation of credit orientation of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	2	2	2	2
Maximum	8	5	9	9
Mean	3.58	3.25	5.93	4.25
S. D.	1.36	0.93	1.51	1.75

3.7.2.8 Family size

It refers to the total number of persons in the family. However, children below 12 years and persons above 65 years of age were not considered for the purpose, with an assumption that their contribution and involvement in entrepreneurial activities is considerably less. One score was assigned for every member in the family irrespective of sex and age, who were aged from 12 to 65 years.

The minimum, maximum, mean and standard deviation of family size of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	2	2	2	2
Maximum	7	7	6	7
Mean	3.80	3.85	3.88	3.84
S. D.	1.20	1.17	1.14	1.16

3.7.2.9 Family dependency ratio

It refers to family members who do not participate in any economic or income generating activity and are entirely dependent on head of the

family for their life's requirement. The children below 12 years and senior citizens above 65 years and handicapped were treated as dependents. The dependency ratio was operationalised as the ratio of number of non-earning family members to the number of earning members of the family.

The family dependency ratio was calculated by using the formula

$$\text{Family dependency ratio} = \frac{\text{Number of dependent members}}{\text{Number of earning members}} \times 100$$

The minimum, maximum, mean and standard deviation of family dependency ratio of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	0	0	0	0
Maximum	1.5	1	1	1.5
Mean	0.23	0.18	0.29	0.23
S. D.	0.38	0.27	0.38	0.35

3.7.2.10 Land holding

It refers to the extent of land actually possessed by the family of the respondent. This was converted into standard acres based on Karnataka Land Reforms Act 1966. According to this act, one acre of garden or wet land was considered as equal to two acres of dry land.

The minimum, maximum, mean and standard deviation of land holding of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	1	5	10.5	1
Maximum	4.38	10	22.5	22.5
Mean	2.74	6.92	13.23	7.63
S. D.	0.89	1.55	2.80	4.73

3.7.2.11 Material possession

It refers to the possession of farm and non-farm materials and other household appliances possessed and used by the farmers. The information of the value of the material possessed was enquired to arrive at the total value of materials possessed by respondents. The scale developed by Mansingh (1994) was used with slight modifications. The scoring procedure for material status was based upon the economic value of the materials. The score was assigned to the material value at the rate of one score for 1000 rupees.

The minimum, maximum, mean and standard deviation of material possession of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	2.2	1.95	7.5	1.95
Maximum	46	253.5	368.4	368.4
Mean	14.34	25.01	120.99	55.11
S. D.	10.00	38.39	108.89	83.39

3.7.2.12 Livestock possession

It refers to the number of livestock possessed by the respondents. The scoring pattern considered was as follows

Livestock	Score (for each number)
Cow / Buffalo / Bullock	3
Sheep / Goat / Pig	2
Poultry bird	1

The minimum, maximum, mean and standard deviation of livestock possession of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	0	0	0	0
Maximum	50	40	46	50
Mean	6.55	4.13	7.05	5.91
S. D.	11.47	8.83	13.03	11.22

3.7.2.13 Social participation

It refers to membership and participation of the farmer in local organizations and their active involvement in civic/community work and their representation in political committees. The variable was measured with the help of 6 items as shown in the appendix and a score of 1 was given for each item. The total possible score ranged from 0 to 10 for an individual.

The minimum, maximum, mean and standard deviation of social participation of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	0	0	0	0
Maximum	8	9	10	10
Mean	3.50	3.63	5.88	4.33
S. D.	1.97	1.73	2.23	2.26

3.7.2.14 Annual income

It refers to the total family income of an individual received from all sources per annum. It was expressed in terms of rupees.

The minimum, maximum, mean and standard deviation of annual income of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	14400	29000	57500	14400
Maximum	111050	261000	214000	261000
Mean	50906	83610	107305	80582
S. D.	22728	48775	37283	44063

3.7.2.15 Extension participation

It refers to the extent to which a farmer participated in various extension activities since three years. For each extension activity, a score of 2 was assigned for regular participation, 1 was assigned for occasional participation and 0 was assigned for non participation.

The minimum, maximum, mean and standard deviation of extension participation of small, medium, big and pooled sample of farmers were as detailed below.

Particulars	Small farmers	Medium farmers	Big farmers	Pooled
Minimum	0	0	0	0
Maximum	8	6	8	8
Mean	2.88	3.15	3.80	3.28
S. D.	1.70	1.81	2.15	1.92

Based on the mean and standard deviation as a measure of check, the their profile characteristics of respondent farmers were classified into low, medium and high categories with criteria as detailed below.

Category	Criteria
Low	$< (\bar{X} - 1/2 SD)$
Medium	$(\bar{X} - 1/2 SD)$ to $(\bar{X} + 1/2 SD)$
High	$> (\bar{X} + 1/2 SD)$

3.8 INSTRUMENT USED FOR DATA COLLECTION

Keeping the objectives of the study in view, a draft interview schedule was prepared after perusal of the available literature and consultation with the experts. The variables were grouped into different parts based on the objectives and the questions were framed logically. The pre-testing of the schedule was done in the non-sample area involving 30 respondents to detect the ambiguity and confusion in the statements. The questions / statements were revised in the context of respondents views and the final schedule (Appendix-I) was administered for eliciting the response from the respondent farmers.

3.9 COLLECTION OF DATA

The data were collected with the help of pre-tested schedule. The researcher personally visited the respondent farmers to obtain the data. The respondents were assured of the secrecy of the data and were encouraged to give unbiased answers.

3.10 ANALYSIS OF DATA

The statistical tests used for analysis of data included frequency, percentage, mean, standard deviation, correlation and multiple regression.

Correlation co-efficient

The correlation co-efficient was used to know the nature of relationship between the independent variables and the livelihood security.

Multiple regression analysis

The Multiple regression analysis was used to measure the extent of contribution of independent variables on the livelihood security.

RESULTS

... requirements of ...
... average amount ...
... (Rn. 35462, 50 ... (Rn. 74040, 00) for ...
... of ... 120 ... the average amount ...
... for their ... was Rn. 22759, 17.

RESULTS

The results of the present study are presented under the following headings.

- 4.1 Livelihood requirement of farmers.
- 4.2 Amount spent by farmers for their livelihood.
- 4.3 Livelihood security index of farmers.
- 4.4 Livelihood sources of farmers.
- 4.5 Profile of farmers.
- 4.6 Relationship between independent variables of farmers and their livelihood security.
- 4.7 Contribution of independent variables of farmers to their livelihood security.
- 4.8 Utilisation of government programmes by farmers.
- 4.9 Constraints faced by farmers in getting their livelihood.
- 4.10 Suggestions of farmers to improve their livelihood.

4.1 LIVELIHOOD REQUIREMENT OF FARMERS

4.1.1 Livelihood requirement of farmers for different items and their importance

The data in Table 1 indicate the livelihood requirement of farmers for different items and their importance. The average amount required by medium farmers for their livelihood was Rs. 87775. 00 per annum followed by big (Rs. 86462. 50) and small (Rs. 74040. 00) farmers. In case of pooled sample of 120 farmers, the average amount required per annum for their livelihood was Rs. 82759. 17.

TABLE 1

Average amount required by farmers for different items of livelihood and their importance

Sl. No.	Livelihood Items	Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)		F Value
		Amount required (Rs./annum)	Rank	Amount required (Rs./annum)	Rank	Amount required (Rs./annum)	Rank	Amount required (Rs./annum)	Rank	
1.	Shelter	1850.00	IX	925.00	IX	1175.00	IX	1316.67	IX	0.630
2.	Food	37600.00 ^a	I	43625.00 ^b	I	46575.00 ^b	I	42600.00	I	13.593 *
3.	Clothing	7587.50 ^a	II	9025.00 ^b	III	9587.50 ^b	II	8733.33	II	6.084 *
4.	Education	3562.50	VI	2425.00	VIII	4200.00	VI	3395.83	VII	0.734
5.	Health	5500.00	V	5787.50	V	6512.50	IV	5933.33	V	2.586
6.	Household articles	2155.00	VIII	2487.50	VII	2650.00	VII	2430.83	VIII	0.277
7.	Festivals	5560.00 ^a	IV	6475.00 ^a	IV	8700.00 ^b	III	6911.67	IV	13.256 *
8.	Loan repayment	7412.50 ^{ab}	III	13040.00 ^b	II	1825.00 ^a	VIII	7425.83	III	7.000 *
9.	Other items	2812.50 ^a	VII	3985.00 ^b	VI	5237.50 ^b	V	4011.67	VI	11.488 *
	Total	74040.00^a		87775.00^b		86462.50^b		82759.17		5.731 *

* Significant at 5 per cent level.

Superscript with same alphabet indicates non-significant difference.

Superscript with different alphabet indicates significant difference.

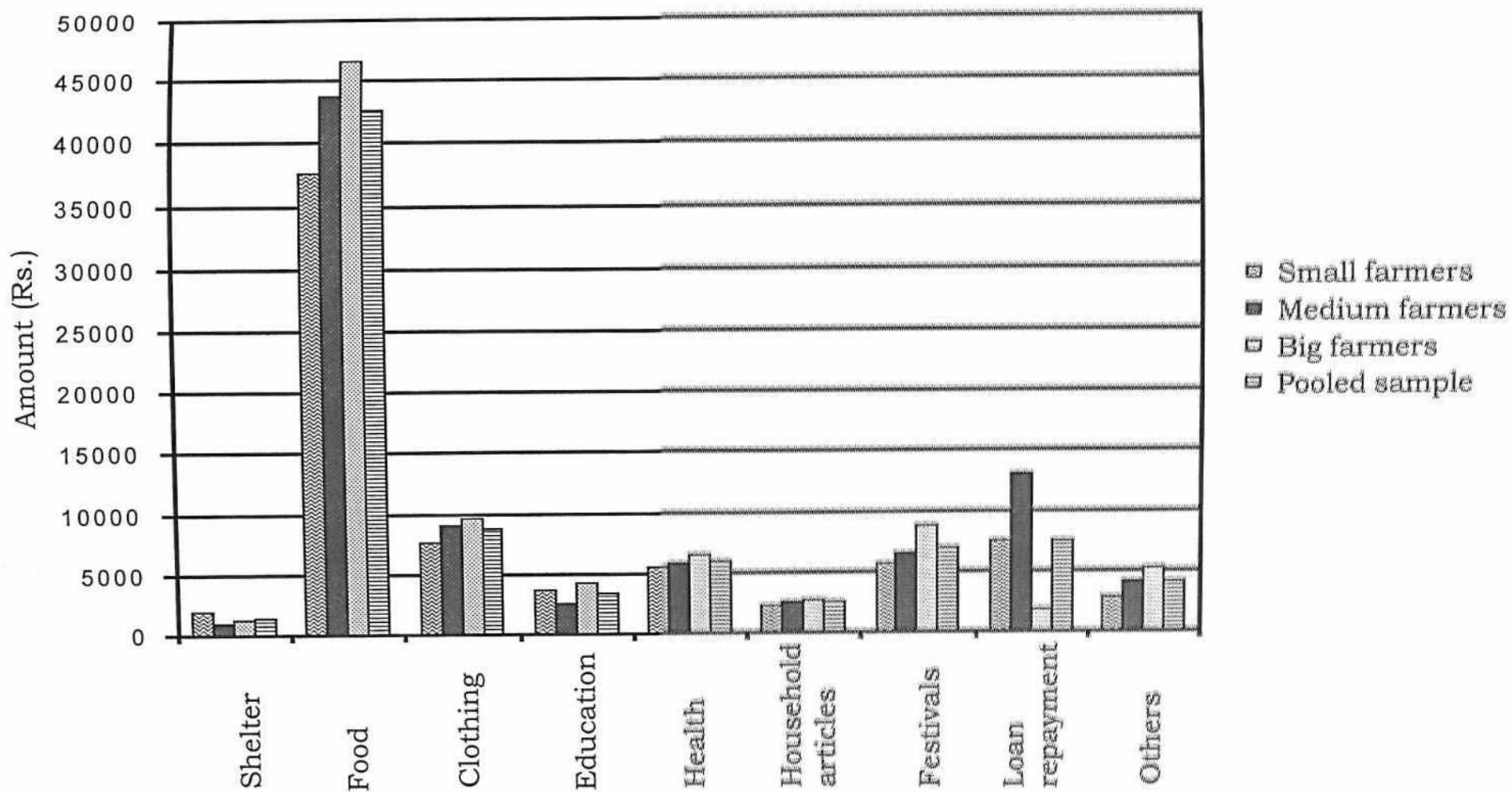


Fig 3 : Amount required by farmers for different items of livelihood

The results revealed that food was given first importance by all three categories of farmers followed by clothing in case of small and big farmers, and loan repayment in case of medium farmers. In case of pooled sample also the most important livelihood requirement was food followed by clothing and shelter.

As the data was subjected to its level of significance by F test, the results showed that there was significant difference in livelihood requirement for food, clothing and others among small and medium farmers. Whereas, significant difference was observed in livelihood requirement for festivals and loan repayment among medium and big farmers. The significant difference was observed in livelihood requirement for food, clothing, festivals and also other items among small and big farmers. The non-significant difference was observed among small, medium and big farmers in livelihood requirement for shelter, education, health and household articles.

4.1.2 Livelihood requirement level of farmers

The data in Table 2 reveal the livelihood requirement level for different items. The livelihood requirement for shelter was medium for small (82.50 %), medium (92.50 %) and big (87.50%) farmers. The livelihood requirement of majority of small (75.00 %) and big (77.50%) farmers for food was low to medium, whereas, it was medium in case of majority (52.50 %) of medium farmers. The livelihood requirement for clothing was low to medium in case of majority of small farmers (72.50 %), it was medium in case 55.00 per cent of medium farmers, and it was medium to high in case of majority (77.50 %) of big farmers. The livelihood requirement for education was low to medium in case of majority of small (92.50%), medium (87.50 %) and big (90.00%) farmers. The livelihood requirement for health was medium to high in case of majority of small (75.00 %), medium (82.50 %) and big (67.50%) farmers. The livelihood requirement for household articles was low in case of majority of small

TABLE 2

Classification of farmers based on their livelihood requirement level for different items

Sl. No.	Livelihood Items	Require- ment level	Respondents							
			Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
			No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Shelter	Low	0	0.00	0	0.00	0	0.00	0	0.00
		Medium	33	82.50	37	92.50	35	87.50	105	87.50
		High	7	17.50	3	7.50	5	12.50	15	12.50
2.	Food	Low	11	27.50	7	17.50	12	30.00	36	30.00
		Medium	19	47.50	21	52.50	19	47.50	42	35.00
		High	10	25.00	12	30.00	9	22.50	42	35.00
3.	Clothing	Low	13	32.50	9	22.50	9	22.50	32	26.67
		Medium	16	40.00	22	55.00	14	35.00	62	51.67
		High	11	27.50	9	22.50	17	42.50	26	21.67
4.	Education	Low	19	47.50	20	50.00	21	52.50	60	50.00
		Medium	18	45.00	15	37.50	15	37.50	47	39.17
		High	3	7.50	5	12.50	4	10.00	13	10.83
5.	Health	Low	10	25.00	7	17.50	13	32.50	20	16.66
		Medium	16	40.00	19	47.50	10	25.00	50	41.67
		High	14	35.00	14	35.00	17	42.50	50	41.67
6.	Household articles	Low	20	50.00	21	52.50	21	52.50	62	51.67
		Medium	11	27.50	7	17.50	5	12.50	19	15.83
		High	9	22.50	12	30.00	14	35.00	39	32.50
7.	Festivals	Low	13	32.50	8	20.00	10	25.00	35	29.17
		Medium	18	45.00	17	42.50	14	35.00	47	39.17
		High	9	22.50	15	37.50	16	40.00	38	31.66
8.	Loan repayment	Low	26	65.00	23	57.50	0	0.00	86	71.50
		Medium	2	5.00	7	17.50	37	92.50	4	3.33
		High	12	30.00	10	25.00	3	7.50	30	25.00
9.	Other items	Low	11	27.50	14	35.00	8	20.00	32	26.67
		Medium	14	35.00	14	35.00	24	60.00	64	53.33
		High	15	37.50	12	30.00	8	20.00	24	20.00
	Total	Low	11	27.50	10	25.00	9	22.50	36	30.00
		Medium	16	40.00	20	50.00	19	47.50	52	43.33
		High	13	32.50	10	25.00	12	30.00	32	26.67

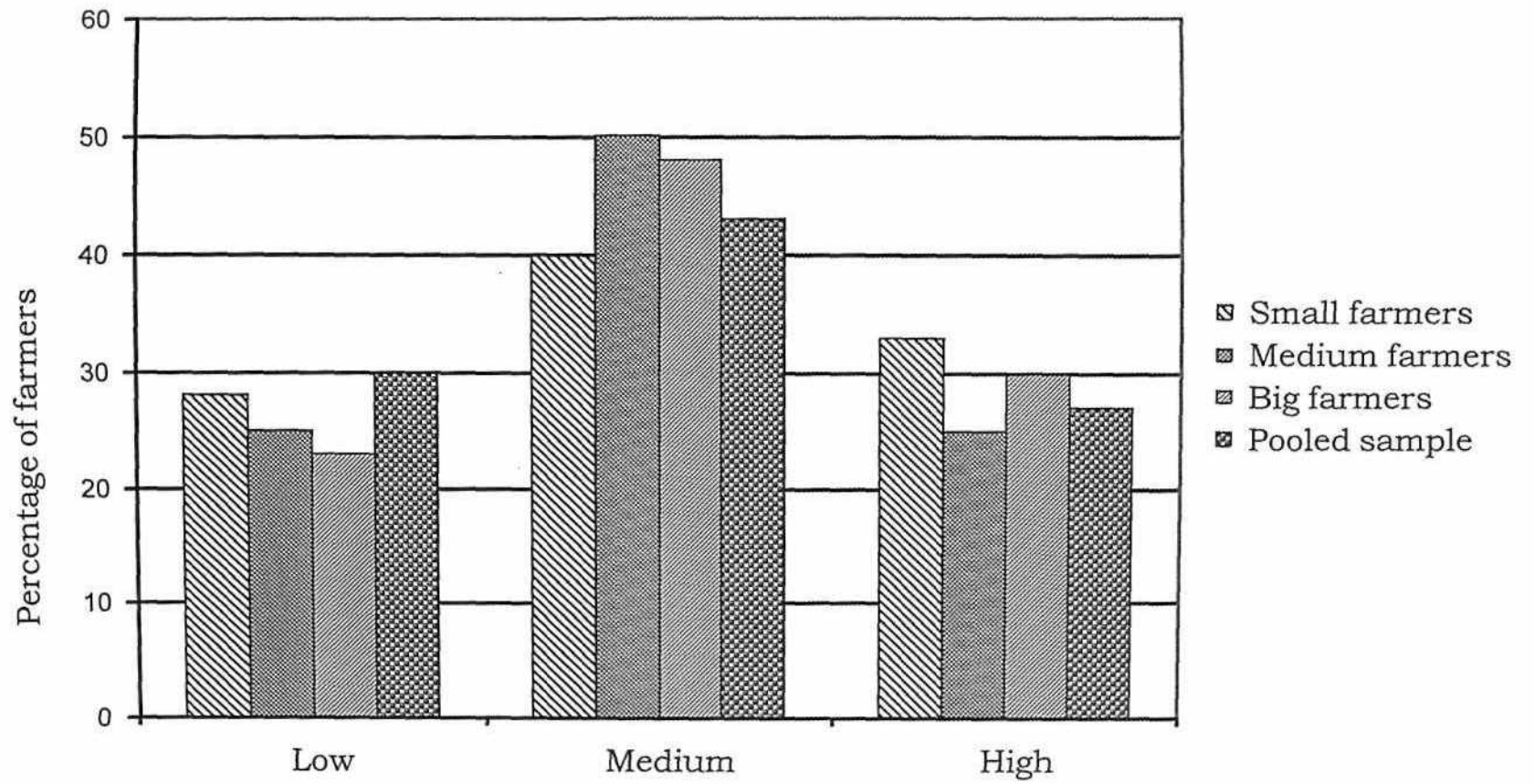


Fig 4 : Total livelihood requirement level of farmers for different items

(50.00 %) and 52.50 per cent each of medium and big farmers. The livelihood requirement for festivals was low to medium in case of majority of small farmers (77.50 %), whereas, it was medium to high in case of 80 per cent of medium and 75 per cent of big farmers. The livelihood requirement for repayment was low in case of majority of small (65.00 %), medium (57.50 %) and big (92.50%) farmers. The livelihood requirement for other items was medium to high in case of majority of small farmers(72.50 %), whereas, it was low to medium in case of majority of medium farmers(70.00 %), and it was medium in case of majority of big farmers (60.00%).

The total livelihood requirement level of majority (around 70 %) of small, medium and big farmers was medium to high. Whereas, the livelihood requirement of majority of pooled sample (73.00 %) was low to medium

4.2 AMOUNT SPENT BY FARMERS FOR THEIR LIVELIHOOD

4.2.1 Amount spent by farmers for different items of livelihood and their importance

The amount spent by farmers for different items of livelihood are presented in Table 3. The average amount spent by big farmers was found to be Rs. 78037.50 per annum followed by medium (Rs. 59835.00) and small (Rs. 44335.00) farmers. In case of pooled sample of 120 farmers, the average amount spent per annum was found to be Rs. 60735.83.

The results revealed that the amount spent on food was given first importance followed by clothing by all three categories of farmers. Further, education was third important item in case of small farmers, whereas, festivals was the third important item in case of medium and big farmers. In case of pooled sample, the food, clothing and festivals were the most important livelihood items on which farmers spend more.

TABLE 3

Average amount spent by farmers on different items of livelihood and their importance

Sl. No.	Livelihood Items	Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)		F Value
		Amount spent (Rs./annum)	Rank	Amount spent (Rs./annum)	Rank	Amount spent (Rs./annum)	Rank	Amount spent (Rs./annum)	Rank	
1.	Shelter	1385.00	VI	662.50	IX	925.00	IX	990.83	IX	0.62
2.	Food	28450.00 ^a	I	37375.00 ^b	I	43500.00 ^c	I	36441.67	I	35.52*
3.	Clothing	4250.00 ^a	II	6300.00 ^a	II	8465.00 ^c	II	6338.33	II	35.77*
4.	Education	3562.50	III	1742.00	VI	3977.50	VI	2610.83	VI	1.97
5.	Health	2112.50 ^a	V	3825.00 ^b	IV	5687.50 ^c	IV	4091.67	IV	31.08*
6.	Household articles	897.50 ^a	VIII	1662.50 ^{ab}	VII	2212.50 ^b	VII	1590.83	VII	4.24*
7.	Festivals	2710.00 ^a	IV	4407.00 ^b	III	7662.50 ^c	III	4926.67	III	60.46*
8.	Loan repayment	550.00	IX	1250.00	VIII	1200.00	VIII	1000.00	VIII	0.23
9.	Other items	1217.50 ^a	VII	2610.00 ^b	V	4407.50 ^c	V	2745.00	V	39.85*
	Total	44335.00^a		59835.00^b		78037.50^c		60735.83		52.63*

* Significant at 5 per cent level.

Superscript with same alphabet indicates non-significant difference.

Superscript with different alphabet indicates significant difference.

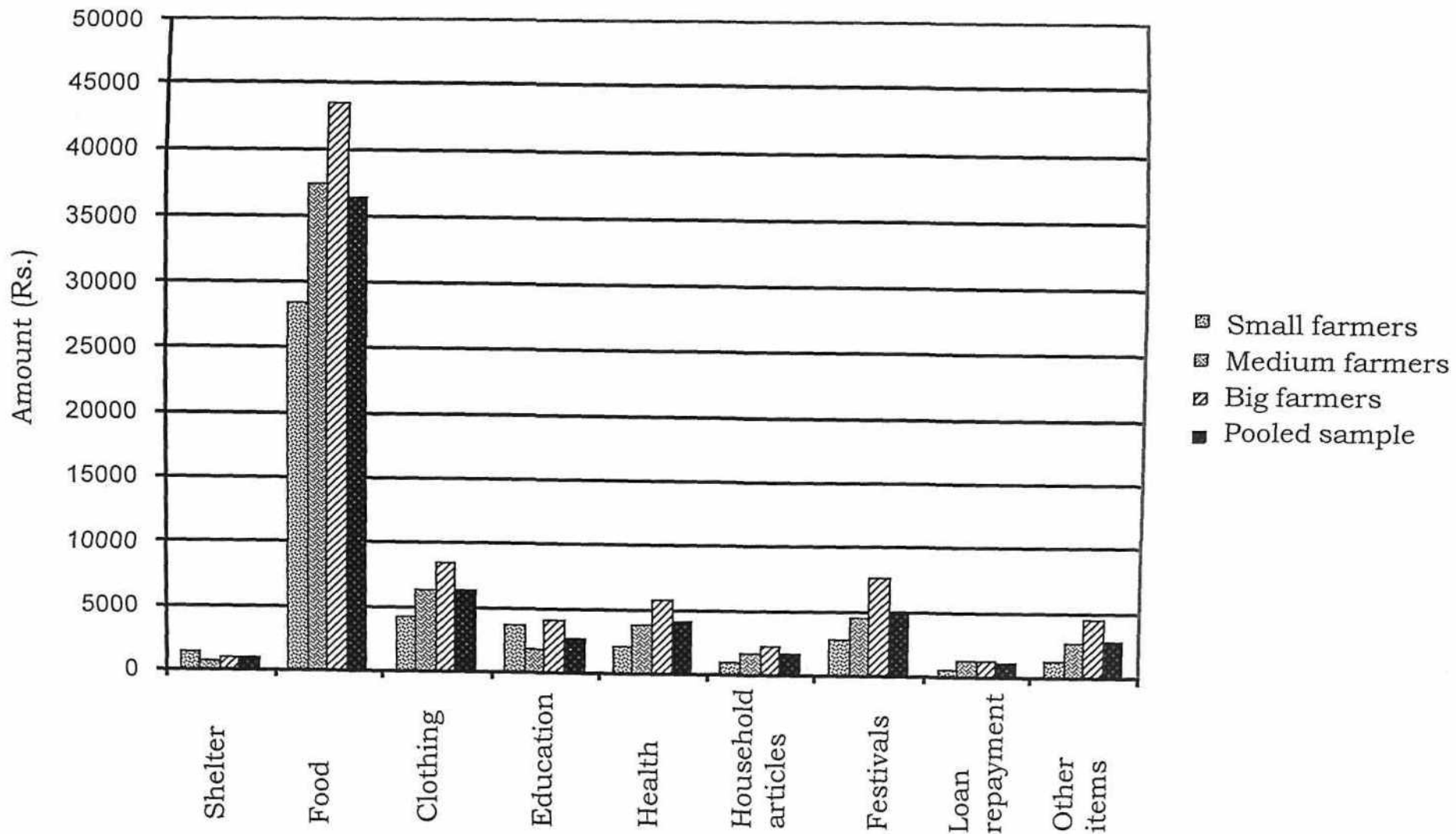


Fig 5 : Amount spent by farmers for different items of livelihood

As the data were subjected to its significance by F test, the results showed that there was significant difference in amount spent on food, clothing, health, festivals and others in addition to total amount spent on different items of livelihood among small, medium and big farmers. Whereas, significant difference was observed in amount spent on clothing and household articles among small and big farmers.

4.2.2 Level of amount spent by farmers for different items of livelihood

The data in Table 4 reveal the level of amount spent for different items of livelihood. The amount spent by majority of small (85.00 %), medium (92.50 %) and big (87.50%) farmers for shelter was medium. The amount spent by majority of small (77.50 %), medium (85.00 %) and big (82.50%) farmers for food was medium to high. In case of clothing, the amount spent by majority of small farmers (77.50 %) was low to medium, whereas, it was medium to high in case of majority of medium and big farmers (72.50% each). The amount spent on education by majority (95.00 %) of small farmers was medium, whereas, it was low in case of medium (50.00 %) and big (52.50 %) farmers. The amount spent by majority of small (75.00 %) and medium (57.50 %) farmers on health was medium, whereas, it was medium to high in case of majority (70.00 %) of big farmers. As high as 47.50 per cent of small and 52.50 per cent each of medium and big farmers spent low level of amount on household articles. The amount spent for festivals was medium in case of majority of small farmers (62.50 %), whereas, it was low to medium in case of 67.50 per cent of medium farmers and medium to high in case of 75.00 per cent of big farmers. The amount spent for loan repayment was medium in case of majority of small, medium and big farmers (95.00 % each). The amount spent for other items was low to medium in case of majority of small (67.50 %) and medium (72.50 %) farmers, whereas, it was medium in case of majority (65.00 %) of big farmers.

Classification of farmers based on their level of amount spent for different items of livelihood

Sl. No.	Livelihood Items	Level of amount spent	Respondents							
			Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
			No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Shelter	Low	0	0.00	0	0.00	0	0.00	0	0.00
		Medium	34	85.00	37	92.50	35	87.50	106	88.33
		High	6	15.00	3	7.50	5	12.50	14	11.67
2.	Food	Low	9	22.50	6	15.00	7	17.50	40	33.33
		Medium	21	52.50	19	47.50	19	47.50	38	31.67
		High	10	25.00	15	37.50	14	35.00	42	35.00
3.	Clothing	Low	14	35.00	11	27.50	11	27.50	42	35.00
		Medium	17	42.50	18	45.00	16	40.00	36	30.00
		High	9	22.50	11	27.50	13	32.50	41	34.17
4.	Education	Low	0	0.00	20	50.00	21	52.50	0	0.00
		Medium	38	95.00	16	40.00	14	35.00	108	90.00
		High	2	5.00	4	10.00	5	12.50	12	10
5.	Health	Low	4	10.00	7	17.50	12	30.00	52	43.33
		Medium	30	75.00	23	57.50	11	27.50	38	31.67
		High	6	15.00	10	25.00	17	42.50	30	25.00
6.	Household articles	Low	19	47.50	21	52.50	21	52.50	62	51.67
		Medium	12	30.00	5	12.50	6	15.00	23	19.17
		High	9	22.50	14	35.00	13	32.50	35	29.17
7.	Festivals	Low	7	17.50	14	35.00	10	25.00	43	35.83
		Medium	25	62.50	13	32.50	18	45.00	33	27.50
		High	8	20.00	13	32.50	12	30.00	44	36.67
8.	Loan repayment	Low	0	0.00	0	0.00	0	0.00	0	0.00
		Medium	38	95.00	38	95.00	38	95.00	114	95.00
		High	2	5.00	2	5.00	2	5.00	6	5.00
9.	Other items	Low	9	22.50	13	32.50	6	15.00	46	38.33
		Medium	22	45.00	16	40.00	26	65.00	29	24.17
		High	9	22.50	11	27.50	8	20.00	45	37.50
	Total	Low	11	27.50	8	20.00	9	22.50	40	33.33
		Medium	18	45.00	26	65.00	20	50.00	40	33.33
		High	11	27.50	6	15.00	11	27.50	40	33.33

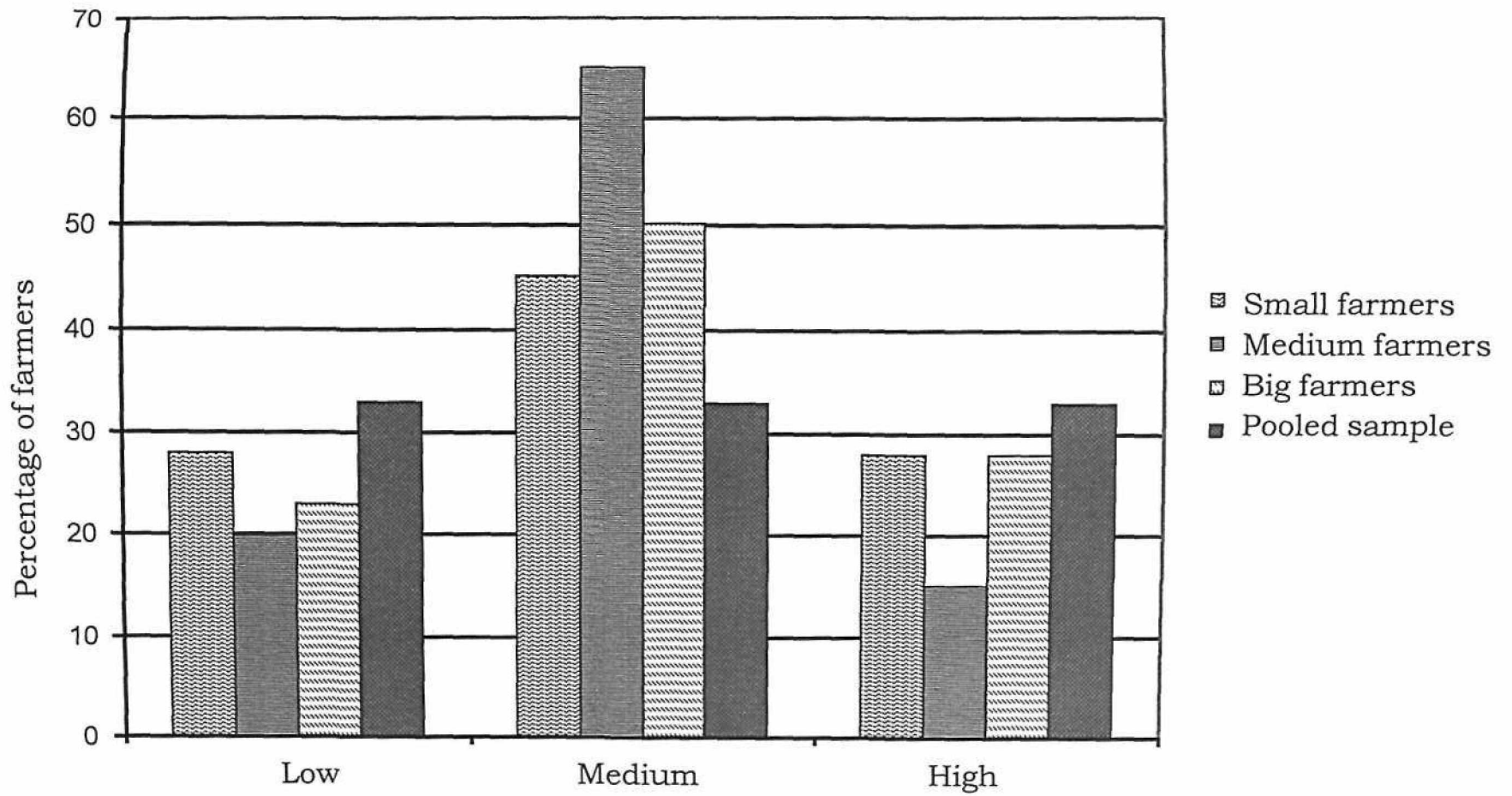


Fig 6 : Level of total amount spent by farmers for different livelihood items

The total amount spent on different items of livelihood by majority (72.50 %) of small farmers was low to medium, whereas, the total amount spent by majority (65.00 %) of medium farmers was medium and it was medium to high in case of majority (77.50 %) of big farmers. In case of pooled sample, the total amount spent on different items of livelihood was distributed equally (33.33 % each) among low, medium and high category.

4.3 LIVELIHOOD SECURITY INDEX OF FARMERS

4.3.1 Livelihood security index of farmers and its importance

The data in Table 5 indicate the livelihood security index of farmers for different items and their importance. The average livelihood security index of big farmers was 90.26 per cent of their requirement followed by medium (68.17 %) and small (59.88 %) farmers. In case of pooled sample, the average livelihood security index was 74.65 per cent.

The results revealed that the livelihood security index of food (75.00 %) was highest in case of small farmers followed by shelter (74.64 %) and education (59.29 %). In case of medium farmers, the livelihood security index of shelter (89.19 %) was highest followed by food (85.67 %) and education (71.86 %). In case of big farmers, the livelihood security index of education (94.70 %) was highest followed by food (93.40%) and clothing (88.29 %). In case of pooled sample, the livelihood security index of food (85.54 %) was highest followed by education (75.28 %) and shelter (75.25 %).

As the data was subjected to its significance by F test, the results showed that there was significant difference in livelihood security index for clothing, health, festivals, others and also total livelihood security index among small, medium and big farmers. Whereas, the significant difference was observed in livelihood security index for food among small

TABLE 5

Mean livelihood security index (MLSI) of farmers for different items and its importance

Sl. No.	Livelihood items	Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)		F Value
		MLSI	Rank	MLSI	Rank	MLSI	Rank	MLSI	Rank	
1.	Shelter	74.64	II	89.19	I	79.16	VIII	75.25	III	0.038
2.	Food	75.00 ^a	I	85.67 ^b	II	93.40 ^b	II	85.54	I	9.380*
3.	Clothing	56.01 ^a	IV	69.81 ^b	IV	88.29 ^c	III	66.98	VI	16.530*
4.	Education	59.29	III	71.86	III	94.70	I	75.28	II	0.567
5.	Health	50.20 ^a	V	66.09 ^b	VII	87.33 ^c	V	67.87	V	17.321*
6.	Household articles	39.39 ^a	VIII	66.83 ^{ab}	VI	83.49 ^b	VII	63.24	VIII	3.087*
7.	Festivals	48.76 ^a	VI	68.07 ^b	V	88.07 ^c	IV	68.30	IV	15.274*
8.	Loan repayment	7.42	IX	9.59	IX	65.75	IX	27.59	IX	1.403
9.	Other items	43.20 ^a	VII	65.50 ^b	VIII	84.15 ^c	VI	64.28	VII	10.756*
	Total	59.88^a		68.17^b		90.26^c		74.65		31.26*

* Significant at 5 per cent level.

Superscript with same alphabet indicates non-significant difference.

Superscript with different alphabet indicates significant difference.

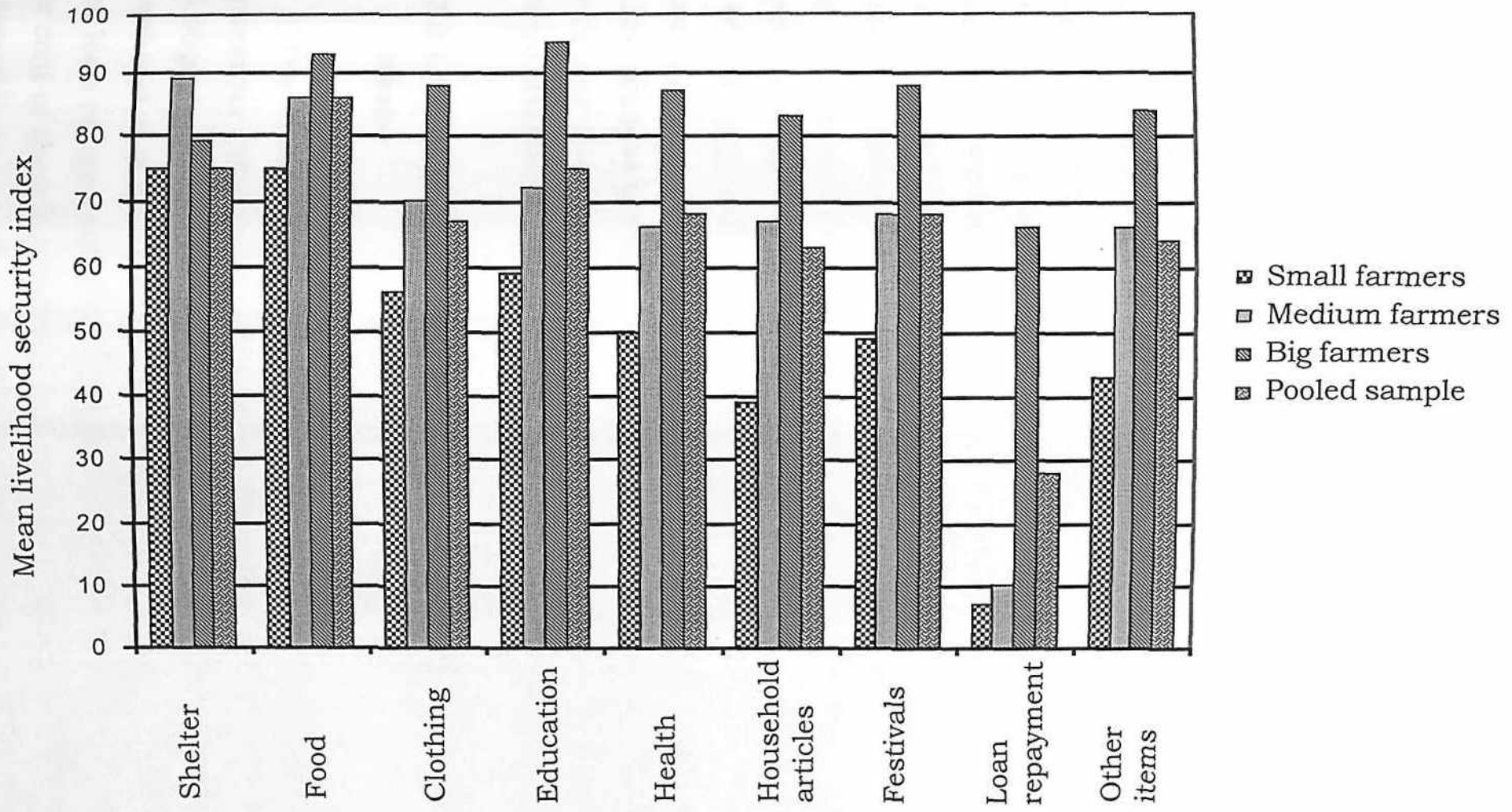


Fig 7 : Mean security index of farmers for different items of livelihood

and medium farmers. The significant difference was observed in livelihood security index for household articles among small and big farmers.

4.3.2 Livelihood security index of small farmers for different items

The data in Table 6 reveals the livelihood security index of small farmers for different items. It is observed that 82.50 and 95.00 per cent of small farmers attained less than 10 per cent of their livelihood requirement in case of shelter and loan repayment respectively. A majority of them attained 50-80 per cent of their livelihood requirement in case food (62.50 %) and clothing (50.00 %). In case of education and household articles, 47.50 per cent of them attained less than 10 per cent of their livelihood requirement. In case of health, festivals and other items respectively, 75.00, 55.00 and 50.00 per cent of them attained 30-60 per cent of their livelihood requirement. In case of total livelihood security index, 27.50 per cent of small farmers attained 50-60 per cent of their livelihood requirement, 20.00 per cent of them attained 70-80 per cent of their livelihood requirement, whereas, 15.00 per cent each of them attained 40-50 and 60-70 per cent of their livelihood requirement.

4.3.3 Livelihood security index of medium farmers for different items

The data in Table 7 reveals the livelihood security index of medium farmers for different items. It is observed that 90.00, 50.00, 52.50 and 95.00 per cent of medium farmers attained less than 10 per cent of their livelihood requirement in case of shelter, education, household assets and loan repayment respectively. A majority of them attained 60-100 per cent of their livelihood requirement in case food and clothing, it is interesting to note that 30.00 per cent of them attained more than 100 per cent of their average livelihood requirement of food. 22.50 per cent of the medium farmers attained more than 100.00 per cent of their

TABLE 6

Distribution of small farmers based on their livelihood security index of different items

(n=40)

Sl. No.	Livelihood Security Index	Shelter		Food		Clothing		Education		Health		Household articles		Festivals		Loan repayment		Other items		Pooled small farmers	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	< 10	33	82.50	0	0.00	0	0.00	19	47.50	1	2.50	19	47.50	4	10.00	38	95.00	9	22.50	0	0.00
2.	10 - 20	0	0.00	0	0.00	2	5.00	0	0.00	2	5.00	0	0.00	0	0.00	0	0.00	2	5.00	0	0.00
3.	20 - 30	0	0.00	1	2.50	5	12.50	6	15.00	1	2.50	2	5.00	3	7.50	0	0.00	0	0.00	2	5.00
4.	30 - 40	0	0.00	1	2.50	6	15.00	0	0.00	15	37.50	3	7.50	12	30.00	0	0.00	6	15.00	4	10.00
5.	40 - 50	0	0.00	1	2.50	0	0.00	2	5.00	2	5.00	4	10.00	5	12.50	0	0.00	5	12.50	6	15.00
6.	50 - 60	0	0.00	6	15.00	12	30.00	4	10.00	13	32.50	3	7.50	5	12.50	0	0.00	9	22.50	11	27.50
7.	60 - 70	0	0.00	10	25.00	5	12.50	0	0.00	0	0.00	2	5.00	3	7.50	0	0.00	0	0.00	6	15.00
8.	70 - 80	0	0.00	9	22.50	3	7.50	1	2.50	3	7.50	0	0.00	5	12.50	0	0.00	5	12.50	8	20.00
9.	80 - 90	0	0.00	3	7.50	1	2.50	4	10.00	0	0.00	0	0.00	1	2.50	0	0.00	2	5.00	1	2.50
10.	90 - 100	0	0.00	5	12.50	5	12.50	0	0.00	1	2.50	3	7.50	0	0.00	0	0.00	0	0.00	1	2.50
11.	> 100	7	17.50	4	10.00	1	2.50	4	10.00	2	5.00	4	10.00	2	5.00	2	5.00	2	5.00	1	2.50
	Total	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00

TABLE 7

Distribution of medium farmers based on their livelihood security index of different items

(n=40)

Sl. No.	Livelihood Security Index	Shelter		Food		Clothing		Education		Health		Household articles		Festivals		Loan repayment		Other items		Pooled medium farmers	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	< 10	36	90.00	0	0.00	0	0.00	20	50.00	2	5.00	21	52.50	6	15.00	38	95.00	8	20.00	0	0.00
2.	10 - 20	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	2.50	0	0.00	0	0.00	0	0.00
3.	20 - 30	0	0.00	0	0.00	1	2.50	0	0.00	2	5.00	0	0.00	0	0.00	0	0.00	2	5.00	0	0.00
4.	30 - 40	0	0.00	1	2.50	7	17.50	0	0.00	2	5.00	0	0.00	2	5.00	0	0.00	3	7.50	3	7.50
5.	40 - 50	0	0.00	1	2.50	3	7.50	3	7.50	1	2.50	1	2.50	5	12.50	0	0.00	1	2.50	5	12.50
6.	50 - 60	0	0.00	3	7.50	1	2.50	0	0.00	8	20.00	0	0.00	0	0.00	0	0.00	6	15.00	4	10.00
7.	60 - 70	0	0.00	5	12.50	7	17.50	2	5.00	13	32.50	1	2.50	5	12.50	1	2.50	0	0.00	6	15.00
8.	70 - 80	0	0.00	3	7.50	10	25.00	0	0.00	2	5.00	0	0.00	8	20.00	0	0.00	7	17.50	15	37.50
9.	80 - 90	0	0.00	12	30.00	4	10.00	6	15.00	4	10.00	3	7.50	0	0.00	0	0.00	2	5.00	4	10.00
10.	90 - 100	0	0.00	3	7.50	4	10.00	0	0.00	0	0.00	0	0.00	4	10.00	0	0.00	0	0.00	1	2.50
11.	> 100	4	10.00	12	30.00	3	7.50	9	22.50	6	15.00	14	35.00	9	22.50	1	2.50	11	27.50	2	5.00
	Total	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00

livelihood requirement for education. A majority (82.50 %) of medium farmers attained more than 50.00 per cent of their health requirements. A majority (77.50 %) of them attained more than 45 per cent of their livelihood requirement for festivals. In case of other requirement, 65.00 per cent of them attained more than 50 per cent of their requirement, whereas, 27.50 per cent of them attained more than 100 per cent of their other requirement.

In case of total livelihood security index, 37.50 per cent of medium farmers attained 70-80 per cent of their livelihood requirement, 15.00 per cent of them attained 60-70 per cent of their livelihood requirement, whereas, 10.00 per cent each of them attained 50-60 and 80-90 per cent of their livelihood requirement.

4.3.4 Livelihood security index of big farmers for different items

The data in Table 8 reveals the livelihood security index of big farmers for different items. It is observed that 85.00, 52.50 and 95.00 per cent of big farmers attained less than 10 per cent of their livelihood requirement for shelter, household articles and loan repayment respectively. A majority of them attained more than 80 per cent of their livelihood requirement in case of food (85.00 %) and clothing (72.50 %). In case of education and health, 80.00 and 55.00 per cent of big farmers attained more than 90 per cent of their requirement, respectively. A majority (75.00 %) of them attained more than 80 per cent of their livelihood requirement for festivals, 85.00 per cent of them attained more than 70 per cent of other requirements.

In case of total livelihood security index, 37.50 per cent of big farmers attained 90-100 per cent of their livelihood requirement, 27.50 per cent of them attained 80-90 per cent of their livelihood requirement, whereas, 17.50 per cent of them attained more than 100 per cent of their livelihood requirement.

TABLE 8

Distribution of big farmers based on their livelihood security index of different items

(n=40)

Sl. No.	Livelihood Security Index	Shelter		Food		Clothing		Education		Health		Household articles		Festivals		Loan repayment		Other items		Pooled big farmers	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	< 10	34	85.00	0	0.00	0	0.00	6	15.00	1	2.50	21	52.50	0	0.00	38	95.00	2	5.00	0	0.00
2.	10 - 20	1	2.50	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
3.	20 - 30	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
4.	30 - 40	0	0.00	0	0.00	2	5.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
5.	40 - 50	0	0.00	1	2.50	3	7.50	0	0.00	2	5.00	0	0.00	1	2.50	0	0.00	0	0.00	0	0.00
6.	50 - 60	0	0.00	0	0.00	3	7.50	1	2.50	1	2.50	1	2.50	1	2.50	0	0.00	4	10.00	1	2.50
7.	60 - 70	0	0.00	4	10.00	0	0.00	0	0.00	8	20.00	0	0.00	5	12.50	0	0.00	0	0.00	4	10.00
8.	70 - 80	0	0.00	1	2.50	3	7.50	1	2.50	6	15.00	0	0.00	3	7.50	0	0.00	18	45.00	2	5.00
9.	80 - 90	0	0.00	10	25.00	8	20.00	0	0.00	0	0.00	0	0.00	11	27.50	0	0.00	4	10.00	11	27.50
10.	90 - 100	0	0.00	9	22.50	7	17.50	3	7.50	5	12.50	0	0.00	7	17.50	0	0.00	4	10.00	15	37.50
11.	> 100	5	12.50	15	37.50	14	35.00	29	72.50	17	42.50	18	45.00	12	30.00	2	5.00	8	20.00	7	17.50
	Total	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00	40	100.00

4.3.5 Livelihood security index of farmers for different items

The data in Table 9 reveals the livelihood security index of farmers for different items. It is observed that 85.83, 50.00, 50.83 and 95.00 per cent of farmers attained less than 10 per cent of their livelihood requirement for shelter, education, household articles and loan repayment respectively. A majority (75.83 %) of them attained 60-100 per cent of their livelihood requirement for food. A majority (55.00 %) of them attained 50-100 per cent of their livelihood requirement for clothing. In case of livelihood requirement of health, 53.33 per cent of them attained more than 50 per cent of their requirement. A majority (57.50 %) of them attained more than 40 per cent of their livelihood requirement for festivals. In case of other requirement, 52.49 per cent of them attained more than 70 per cent of their requirement. It is interesting to note that around 20.00 to 25.00 per cent of farmers attained more than 100 per cent of their livelihood requirement for food, clothing, education, health, household articles, festivals and others.

In case of total livelihood security index, 19.17 per cent of farmers attained 90-100 per cent of their livelihood requirement, 17.50 per cent of them attained 70-80 per cent of their livelihood requirement, whereas, 15.00 per cent of them attained 80-90 per cent of their livelihood requirement. As high as 11.67 per cent of farmers attained more than 100 per cent of total livelihood requirement.

4.3.6 Livelihood security index level of farmers

The data in Table 10 indicates the livelihood security index level of farmers. It shows that 42.50 per cent each of small and medium farmers and also 52.50 per cent of big farmers attained medium level of total livelihood security, whereas, only 30.00 per cent each of small and medium and 25.00 per cent of big farmers attained high level of total livelihood security.

TABLE 9

Distribution of farmers based on their livelihood security index of different items

(n=120)

Sl. No.	Livelihood Security Index	Shelter		Food		Clothing		Education		Health		Household articles		Festivals		Loan repayment		Other items		Pooled farmers	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	< 10	103	85.83	0	0.00	0	0.00	60	50.00	4	3.33	61	50.83	10	8.33	14	95.00	19	15.83	0	0.00
2.	10 - 20	1	0.83	0	0.00	2	1.67	0	0.00	2	1.67	0	0.00	1	0.83	0	0.00	2	1.67	0	0.00
3.	20 - 30	0	0.00	1	0.83	4	3.33	6	5.00	3	2.50	2	1.67	3	2.50	0	0.00	2	1.67	1	0.83
4.	30 - 40	0	0.00	2	1.67	12	5.00	0	0.00	17	14.17	3	2.50	14	11.67	0	0.00	9	7.50	6	5.00
5.	40 - 50	0	0.00	3	2.50	7	10.00	5	4.17	5	4.17	5	4.17	11	9.17	0	0.00	6	5.00	8	6.66
6.	50 - 60	0	0.00	9	7.50	11	9.17	5	4.17	22	18.33	4	3.33	6	5.00	0	0.00	19	15.83	16	13.33
7.	60 - 70	0	0.00	19	15.83	11	9.17	2	1.67	21	17.50	3	2.50	13	10.83	1	0.83	0	0.00	13	10.83
8.	70 - 80	0	0.00	13	10.83	13	10.83	2	1.67	11	9.17	0	0.00	16	13.33	0	0.00	30	25.00	21	17.50
9.	80 - 90	0	0.00	25	20.83	13	10.83	10	8.33	4	3.33	3	2.50	12	10.00	0	0.00	7	5.83	18	15.00
10.	90 - 100	0	0.00	17	14.17	18	15.00	3	2.50	6	5.00	3	2.50	11	9.17	0	0.00	4	3.33	23	19.17
11.	> 100	16	13.33	31	25.83	29	24.17	27	22.50	25	20.83	36	30.00	23	19.17	5	4.17	22	18.33	14	11.67
	Total	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00	120	100.00

TABLE 10

Classification of farmers based on their livelihood security index level

Sl. No.	Livelihood security index	Respondents							
		Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Low	11	27.50	11	27.50	9	22.50	40	33.33
2.	Medium	17	42.50	17	42.50	21	52.50	45	37.50
3.	High	12	30.00	12	30.00	10	25.00	35	29.17
Total		40	100.00	40	100.0	40	100.00	120	100.00

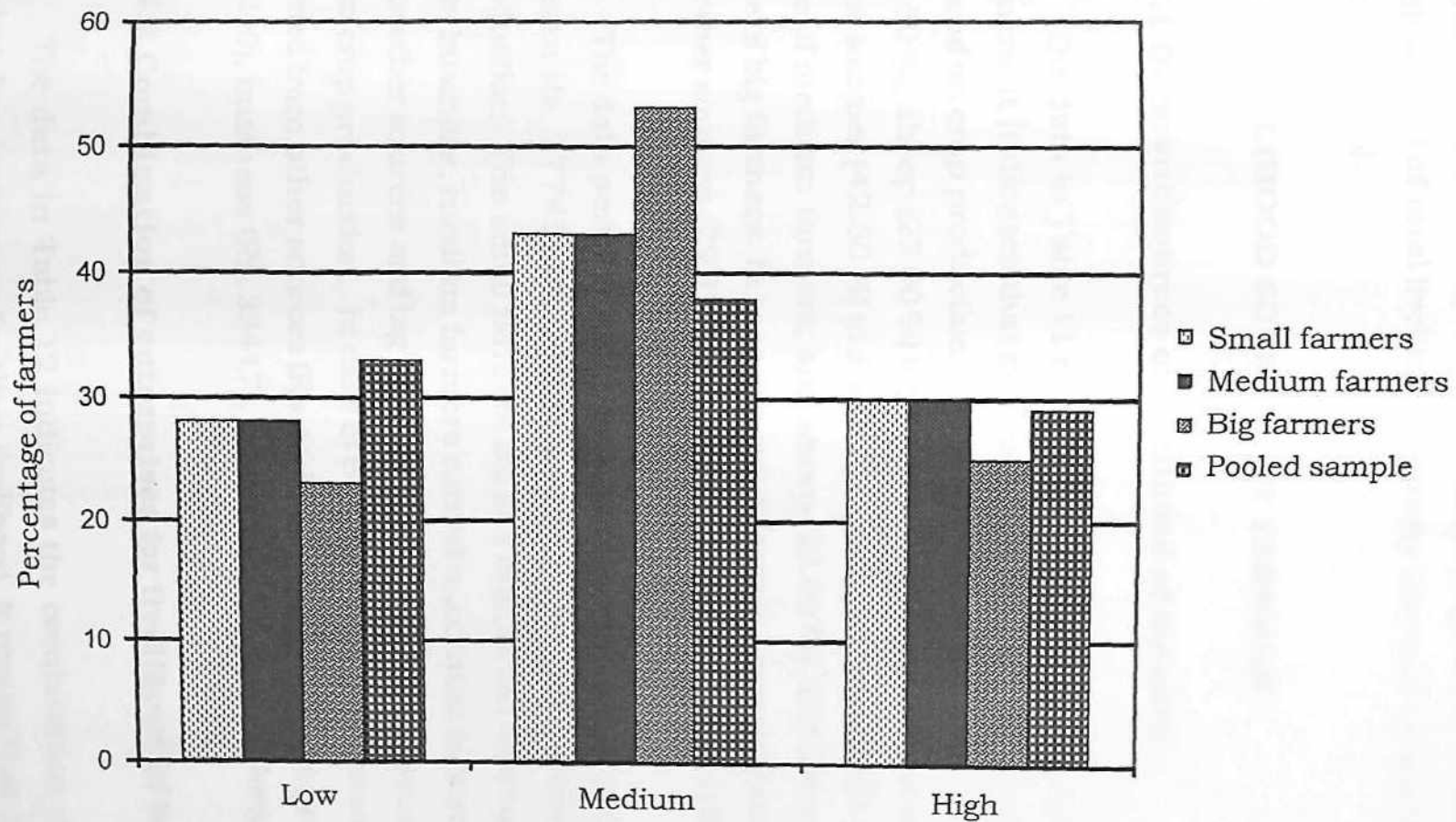


Fig 8 : Livelihood security index level of farmers

In case of pooled sample of farmers, 37.50 per cent of farmers attained medium level of total livelihood security followed by low (33.33 %) and high (29.17 %).

4.4 LIVELIHOOD SOURCES OF FARMERS

4.4.1 Different sources of livelihood of farmers

The data in Table 11 reveals the different sources of livelihood of farmers. It indicates that cent per cent of all the category of farmers depend on crop production for their livelihood followed by other sources (37.50 %), sheep (25.00 %) and dairy (17.50 %) in case of small farmers; other sources (42.50 %) in addition to dairy and sheep (12.50 % each) in case of medium farmers; and sheep (20.00 %) and dairy (17.50 %) in case of big farmers. In case of pooled sample, crop production followed by other sources (29.17 %), sheep (19.17 %) and dairy (15.83 %).

The data portrays that small, medium and big farmers were found to earn Rs. 27745, Rs. 50426 and Rs.93849, respectively from crop production. The small farmers earned maximum income (Rs. 40250) from business, medium farmers earned maximum income (Rs. 67176) from other sources and big farmers earned maximum income (Rs.93849) from crop production. In case of pooled sample, maximum income was earned from other sources (Rs. 60570) followed by crop production (Rs. 57340), business (Rs. 33417), dairy (Rs. 25124) and sheep (Rs. 9848).

4.4.2 Combination of enterprises for livelihood of farmers

The data in Table 12 indicates the combination of enterprises undertaken by farmers for their livelihood. It reveals that 30.00 per cent of small farmers were depending on crop production + other sources for their livelihood followed by crop production (27.50 %), crop production + dairy and crop production + sheep (10 % each). In case of medium

TABLE 11
Distribution of farmers based on their different sources of livelihood

Sl. No.	Source of Livelihood	Small farmers (n=40)			Medium farmers (n=40)			Big farmers (n=40)			Pooled (n=120)		
		No.	Per cent	Av. amount (Rs./year)	No.	Per cent	Av. amount (Rs./year)	No.	Per cent	Av. amount (Rs./year)	No.	Per cent	Av. amount (Rs./year)
1.	Crop production	40	100.00	27744.88	40	100.00	50426.00	40	100.00	93849.00	120	100.00	57339.96
2.	Dairy	7	17.50	26111.43	5	12.50	23376.00	7	17.50	25885.71	19	15.83	25124.38
3.	Sheep	10	25.00	12467.50	5	12.50	8696.00	8	20.00	8380.00	23	19.17	9847.83
4.	Business	4	10.00	40250.00	1	2.50	25000.00	1	2.50	35000.00	6	5.00	33416.67
5.	Other sources	15	37.50	30533.33	17	42.50	67176.47	3	7.50	84000.00	35	29.17	60569.93

Multiple responses are possible

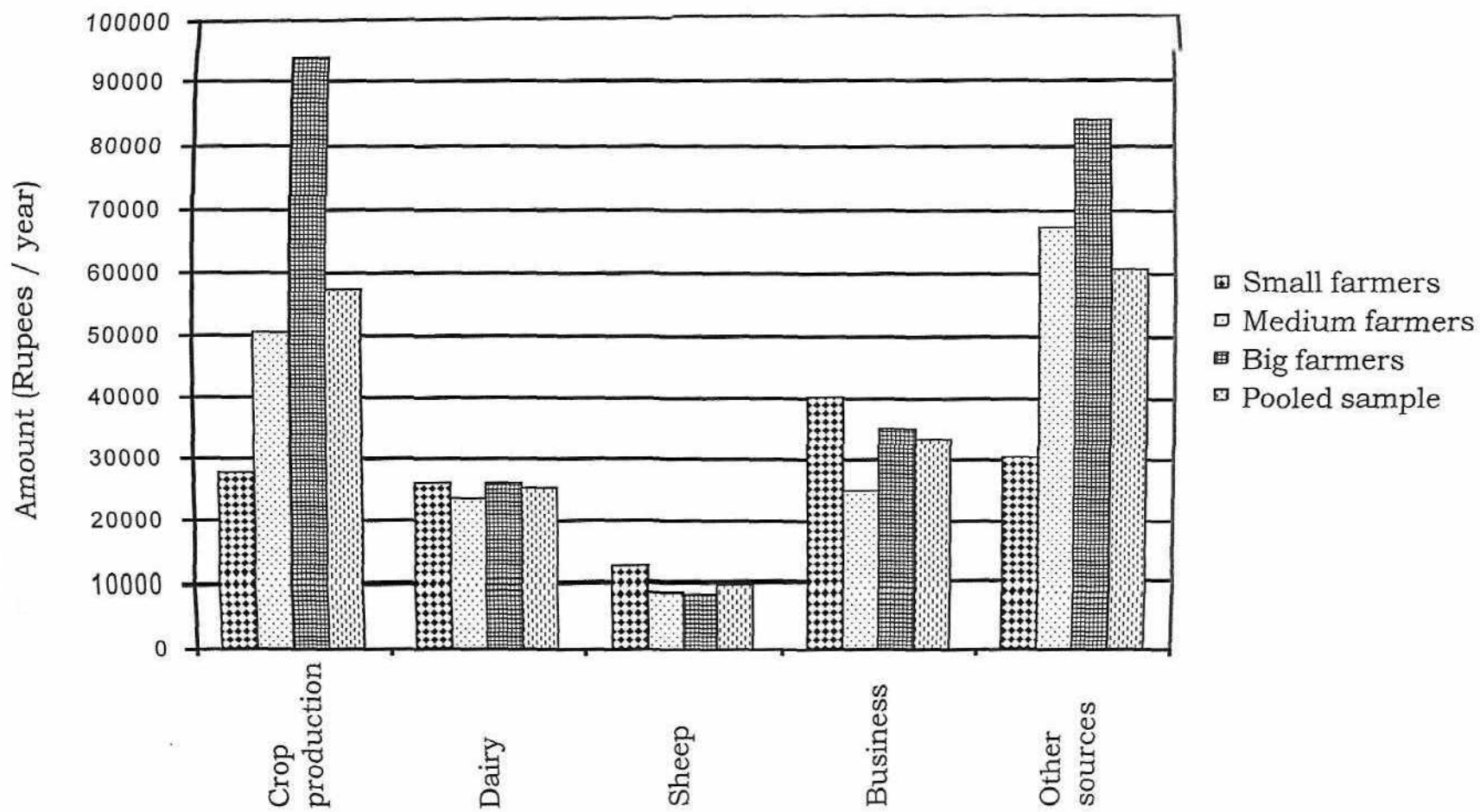


Fig 9 : Amount earned by farmers from different sources of livelihood

TABLE 12

Distribution of farmers based on their combination of enterprises for livelihood

Sl. No.	Combination of enterprises	Small farmers (n=40)		Medium farmers (n=40)		Big farmers (n=40)		Pooled (n=120)	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Crop production (CP)	11	27.50	16	40.00	24	60.00	51	42.50
2.	CP + Dairy	4	10.00	2	5.00	4	10.00	10	8.33
3.	CP + Sheep	4	10.00	2	5.00	5	12.50	11	9.17
4.	CP + Business	2	5.00	1	2.50	1	2.50	4	3.33
5.	CP + Other sources	12	30.00	15	37.50	3	7.50	30	25.00
6.	CP + Dairy + Sheep	2	5.00	2	5.00	3	7.50	7	5.83
7.	CP + Dairy + Other sources	1	2.50	1	2.50	-	-	2	1.67
8.	CP + Sheep + Business	2	5.00	-	-	-	-	2	1.67
9.	CP + Sheep + Other sources	2	5.00	1	2.50	-	-	3	2.50

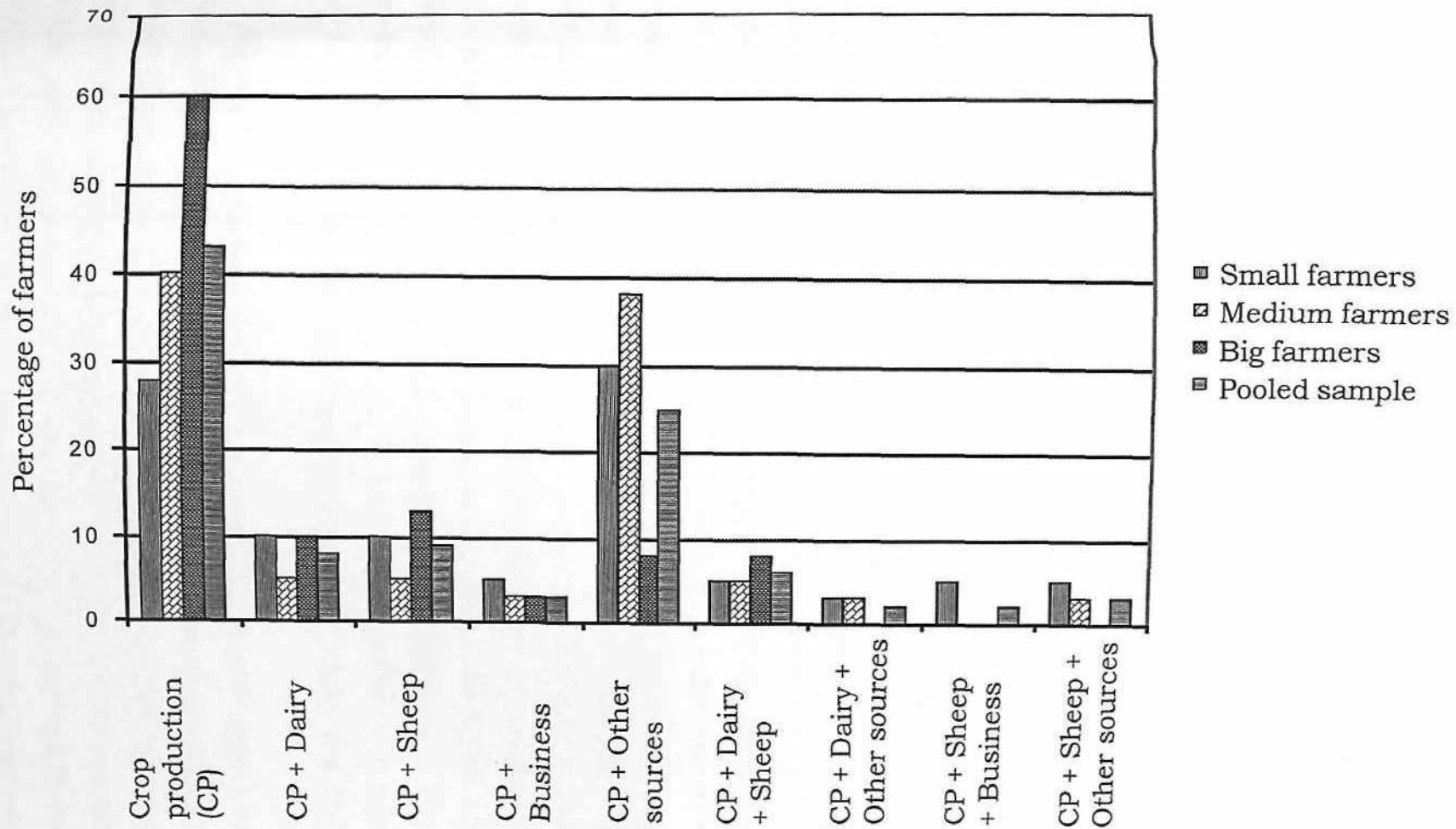


Fig 10 : Combination of enterprises undertaken by farmers for their livelihood

farmers, 40.00 per cent of them depending on crop production followed by crop production + other sources (37.50 %). In case of big farmers, majority (60.00 %) of them depending on crop production followed by crop production + sheep (12.50 %) and crop production + dairy (10.00 %). In case of pooled sample of farmers, 42.50 per cent of them depending on crop production followed by crop production + other sources (25.00 %) and crop production + sheep (9.17 %).

4.4.3 Livelihood of farmers from different combination of enterprises and its importance

The Table 13 indicates the average amount earned from different combination of enterprises. It shows that the small farmers earned maximum income of Rs. 82625 from crop production + sheep + other sources followed by crop production + dairy + other sources (Rs. 71150) and crop production + sheep + business (Rs. 70245). In case of medium farmers, combination of crop production + other sources earned maximum income of Rs. 118111 followed by crop production + dairy + other sources (Rs. 78930) and crop production + dairy (Rs. 77625). In case of big farmers, the combination of crop production + other sources earned maximum income of Rs. 175983 followed by crop production + dairy + sheep (Rs. 147871) and crop production + dairy (Rs. 105605). In case of pooled sample, the combination of crop production + other sources earned maximum income of Rs. 115423 followed by crop production + dairy + sheep (Rs.88299) and crop production + dairy (Rs. 80911).

As the data was subjected to its significance by F test, the significant difference was observed in income earned from crop production, crop production + dairy, crop production + sheep, crop production + other sources and crop production + dairy + other sources among small, medium and big farmers. The average amount earned from different sources of livelihood among small, medium and big farmers was Rs. 57557, 74398 and 117846, respectively and the difference was found to be significant.

TABLE 13

Distribution of farmers based on their livelihood from different combination of enterprises and its importance

Sl. No.	Items	Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)		F Value
		Average amount (Rs./annum)	Rank	Average amount (Rs./annum)	Rank	Average amount (Rs./annum)	Rank	Average amount (Rs./annum)	Rank	
1.	Crop production (CP)	35170.00 ^a	IX	58936.25 ^b	VIII	97164.79 ^a	IV	63757.01	IX	24.01*
2.	CP + Dairy	59502.50 ^a	IV	77625.00 ^b	III	105605.00 ^c	III	80910.83	III	29.07*
3.	CP + Sheep	52467.50 ^a	VI	65095.00 ^b	V	96453.00 ^c	V	70838.50	VI	15.93*
4.	CP + Business	45625.00	VIII	63400.00	VII	84000.00	VI	66008.33	VIII	6.67
5.	CP + Other sources	53090.83 ^a	V	118111.33 ^b	I	175983.33 ^c	I	115422.94	I	10.13*
6.	CP + Dairy + Sheep	48135.00	VII	68890.00	IV	147871.67	II	88298.89	II	4.01
7.	CP + Dairy + Other sources	71150.00 ^a	II	78930.00 ^b	II	-	-	75040.00	IV	65535*
8.	CP + Sheep + Business	70245.00	III	-	-	-	-	70245.00	VII	2.63
9.	CP + Sheep + Other sources	82625.00	I	64200.00	VI	-	-	73412.50	V	1.43
	Total	57556.76^a		74398.45^b		117846.30^c		78214.89		22.41*

* Significant at 5 per cent level.

Superscript with same alphabet indicates non-significant difference.

Superscript with different alphabet indicates significant difference.

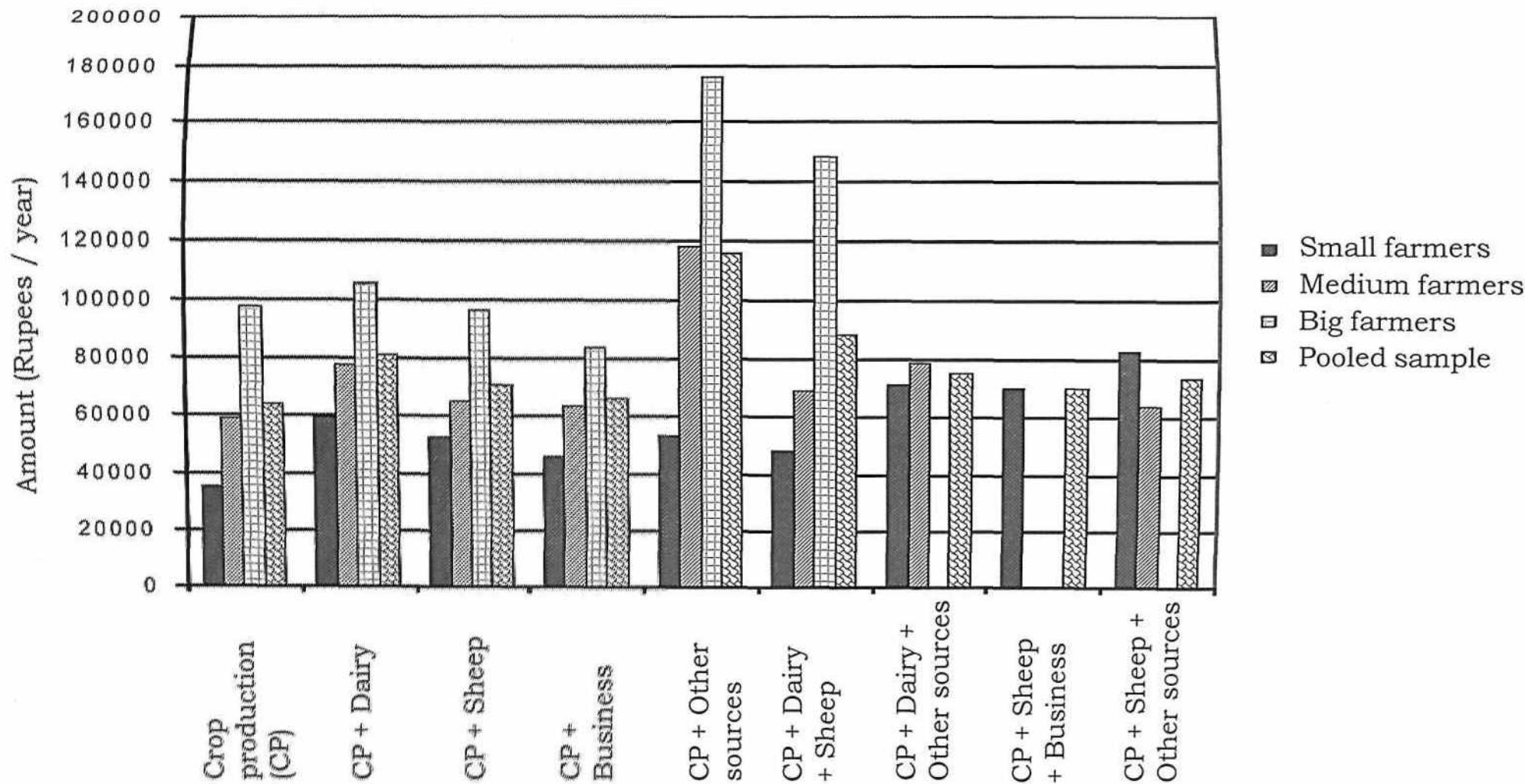


Fig 11 : Income earned by farmers from different combination of enterprises for their livelihood

4.4.4 Livelihood level of farmers

The data in Table 14 indicates the level of income of farmers for their livelihood. It shows that 42.50 per cent of small, 57.50 per cent of medium and 55.00 per cent of big farmers obtained medium level of income for their livelihood. Whereas, 32.50, 30.00 and 37.50 per cent of small, medium and big farmers, respectively obtained low level of income for their livelihood.

In case of pooled sample of farmers, 43.33 per cent of farmers obtained medium level of income for their livelihood followed by low (34.17 %) and high (22.50 %).

4.5 PROFILE OF FARMERS

The data in Table 15 shows the profile of farmers. In case of small farmers, the age and educational level of 70.00 and 75.00 per cent of farmers was medium to high, respectively. The family size of 70.00 per cent of the farmers was low to medium, whereas, 62.50 per cent of the farmers had low family dependency ratio and land holding, 57.50 and 52.50 per cent each of the farmers had low livestock possession and risk orientation respectively. A majority (52.50 %) of them had medium level of marketing orientation. A majority of them had low to medium material possession (80.00 %), social participation (70.00 %), extension participation (70.00 %), deferred gratification (82.50 %) and income (75.00 %), whereas, 80.00 and 75.00 per cent of them had medium to high cosmopolitaness and credit orientation, respectively.

In case of medium farmers, the educational level, family size, land holding, marketing orientation extension participation and

TABLE 14

Classification of farmers based on their level of income for livelihood

Sl. No.	Level of income	Respondents							
		Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Low	13	32.50	12	30.00	15	37.50	41	34.17
2.	Medium	17	42.50	23	57.50	22	55.00	52	43.33
3.	High	10	25.00	5	12.50	3	7.50	27	22.50
	Total	40	100.00	40	100.00	40	100.00	120	100.00

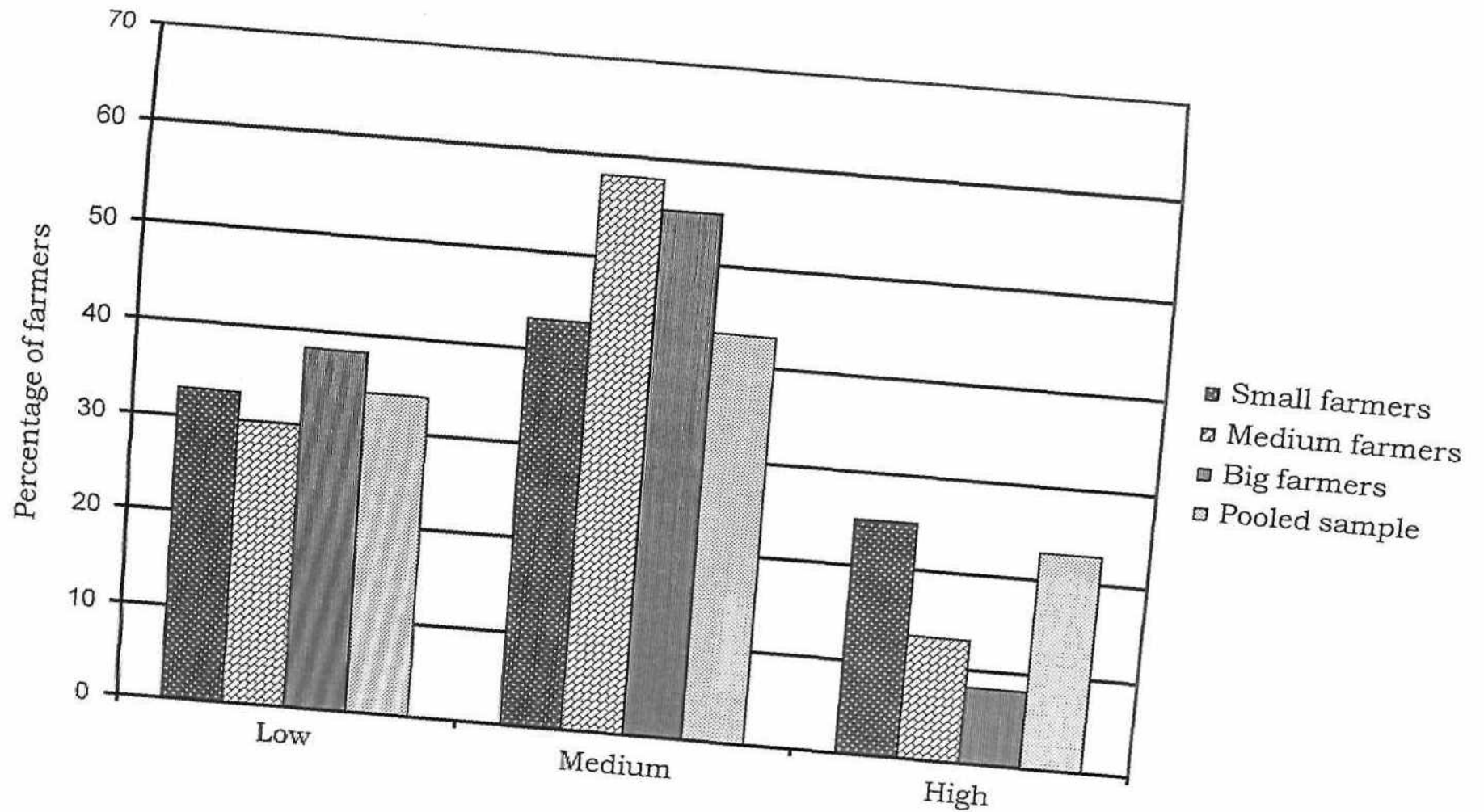


Fig 12 : Livelihood income level of farmers

TABLE 15
Profile of farmers

Sl. No.	Profile	Category	Respondents							
			Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
			No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
1.	Age	Low	12	30.00	13	32.50	15	37.50	41	34.17
		Medium	13	32.50	12	30.00	11	27.50	36	30.00
		High	15	37.50	15	37.50	14	35.00	43	35.83
2.	Education	Low	10	25.00	17	42.50	0	0.00	20	16.67
		Medium	15	37.50	17	42.50	39	97.50	96	80.00
		High	15	37.50	6	15.00	1	2.50	4	3.33
3.	Family size	Low	14	35.00	14	35.00	14	35.00	42	35.00
		Medium	14	35.00	15	37.50	13	32.50	42	35.00
		High	12	30.00	11	27.50	13	32.50	36	30.00
4.	Family dependency ratio	Low	25	62.50	24	60.00	20	50.00	69	57.50
		Medium	6	15.00	6	15.00	7	17.50	23	19.17
		High	9	22.50	10	25.00	13	32.50	28	23.33
5.	Land holding	Low	25	62.50	13	32.50	13	32.50	43	35.83
		Medium	3	7.50	17	42.50	20	50.00	32	26.67
		High	12	30.00	10	25.00	7	17.50	45	37.50
6.	Material possession	Low	14	35.00	1	2.50	20	50.00	37	30.83
		Medium	18	45.00	38	95.00	4	10.00	63	52.50
		High	8	20.00	1	2.50	16	40.00	20	16.67
7.	Livestock possession	Low	23	57.50	0	0.00	28	70.00	81	67.50
		Medium	10	25.00	32	80.00	4	10.00	17	14.17
		High	7	17.50	8	20.00	8	20.00	22	18.33
8.	Marketing orientation	Low	12	30.00	18	45.00	18	47.50	30	25.00
		Medium	21	52.50	5	12.50	10	25.00	45	37.50
		High	7	17.50	17	42.50	11	27.50	45	37.50

Contd.

TABLE 15 (Contd.)

Sl. No.	Profile	Category	Respondents							
			Small Farmers (n=40)		Medium Farmers (n=40)		Big Farmers (n=40)		Pooled (n=120)	
			No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
9.	Social participation	Low	13	32.50	9	22.50	11	27.50	59	49.17
		Medium	15	37.50	19	47.50	25	57.50	28	23.33
		High	12	30.00	12	30.00	14	35.00	33	27.50
10.	Extension participation	Low	17	42.50	16	40.00	9	22.50	42	35.00
		Medium	11	27.50	11	27.50	14	35.00	42	35.00
		High	12	30.00	13	32.50	17	42.50	36	30.00
11.	Risk orientation	Low	21	52.50	8	20.00	6	15.00	16	13.33
		Medium	5	12.50	21	52.50	19	47.50	101	84.17
		High	14	35.00	11	27.50	15	37.50	3	2.50
12.	Deferred gratification	Low	14	35.00	11	27.50	8	20.00	33	27.50
		Medium	19	47.50	20	50.00	31	77.50	37	30.83
		High	7	17.50	9	22.50	1	2.50	50	41.67
13.	Cosmopolitaness	Low	8	20.00	12	30.00	13	32.50	43	35.83
		Medium	14	35.00	17	42.50	11	27.50	21	17.50
		High	18	45.00	11	27.50	16	40.00	56	46.67
14.	Credit orientation	Low	10	25.00	9	22.50	13	32.50	49	40.83
		Medium	18	45.00	26	65.00	14	35.00	43	35.83
		High	12	30.00	15	37.50	13	32.50	28	23.33
15.	Income	Low	13	32.50	12	30.00	15	37.50	41	34.17
		Medium	17	42.50	23	57.50	22	55.00	52	43.33
		High	10	25.00	5	12.50	3	7.50	27	22.50

cosmopolitanism of 85.00, 72.50, 75.00, 57.50, 67.50 and 72.50 per cent of farmers was low to medium, respectively. The age of 67.50 per cent of them was medium to high, whereas, 60.00 per cent of the farmers had low family dependency ratio. The material possession, livestock possession, risk orientation, deferred gratification, credit orientation and income of 95.00, 80.00, 52.50, 50.00, 65.00 and 57.50 per cent of the farmers was medium, respectively. A majority (72.50 %) of them had medium to high social participation.

In case of big farmers, age, family size and marketing orientation of 65.00, 67.50 and 72.50 per cent of the farmers was low to medium. The educational level of majority (97.50 %) of the farmers was medium. The family dependency ratio and material possession level was low (50.00 % each). The land holding, social participation, deferred gratification, and income of 50.00, 57.50, 77.50 and 55.00 per cent of them was medium, respectively. The extension participation, risk orientation, cosmopolitanism and credit orientation of 77.50, 85.00, 67.50 and 67.50 per cent of them was medium to high, respectively.

In case of pooled sample of farmers, 70.00 per cent of them had low to medium level of family size. The age, land holding and marketing orientation of 65.83, 64.17 and 75.00 per cent of farmers was medium to high, respectively. The educational level of 80.00 per cent of them was medium, family dependency ratio of 57.50 per cent of them was low, material possession of 52.50 per cent of them was medium and livestock possession of 67.50 per cent of them was low. The social participation, extension participation, credit orientation and income of 72.50, 70.00, 76.66 and 77.50 per cent of the farmers was low to medium, respectively. They had medium level of risk orientation (84.17 %). They had medium to high level of deferred gratification (72.50 %) and cosmopolitanism (64.17 %).

cosmopolitanism of 85.00, 72.50, 75.00, 57.50, 67.50 and 72.50 per cent of farmers was low to medium, respectively. The age of 67.50 per cent of them was medium to high, whereas, 60.00 per cent of the farmers had low family dependency ratio. The material possession, livestock possession, risk orientation, deferred gratification, credit orientation and income of 95.00, 80.00, 52.50, 50.00, 65.00 and 57.50 per cent of the farmers was medium, respectively. A majority (72.50 %) of them had medium to high social participation.

In case of big farmers, age, family size and marketing orientation of 65.00, 67.50 and 72.50 per cent of the farmers was low to medium. The educational level of majority (97.50 %) of the farmers was medium. The family dependency ratio and material possession level was low (50.00 % each). The land holding, social participation, deferred gratification, and income of 50.00, 57.50, 77.50 and 55.00 per cent of them was medium, respectively. The extension participation, risk orientation, cosmopolitanism and credit orientation of 77.50, 85.00, 67.50 and 67.50 per cent of them was medium to high, respectively.

In case of pooled sample of farmers, 70.00 per cent of them had low to medium level of family size. The age, land holding and marketing orientation of 65.83, 64.17 and 75.00 per cent of farmers was medium to high, respectively. The educational level of 80.00 per cent of them was medium, family dependency ratio of 57.50 per cent of them was low, material possession of 52.50 per cent of them was medium and livestock possession of 67.50 per cent of them was low. The social participation, extension participation, credit orientation and income of 72.50, 70.00, 76.66 and 77.50 per cent of the farmers was low to medium, respectively. They had medium level of risk orientation (84.17 %). They had medium to high level of deferred gratification (72.50 %) and cosmopolitanism (64.17 %).

4.6 RELATIONSHIP BETWEEN INDEPENDENT VARIABLES OF FARMERS AND THEIR LIVELIHOOD SECURITY

4.6.1 Relationship between independent variables of small farmers and their livelihood security

The Table 16 indicates the relationship between independent variables of small farmers and their livelihood security. The variables such as family size (0.469) and annual income (0.485) had positive and significant relationship with livelihood security at 1 per cent level of significance. Whereas, cosmopolitaness (0.369) had positive and significant relationship at 5 per cent level of significance. Other variables such as age, education, marketing orientation, deferred gratification, credit orientation, family dependency ratio, land holding, material possession, livestock possession, social participation, extension participation were found to have non significant relationship with livelihood security.

4.6.2 Relationship between independent variables of medium farmers and their livelihood security

The Table 17 indicates the relationship between independent variables of medium farmers and their livelihood security. The variables such as family size (0.573) and social participation (0.497) had positive and significant relationship with livelihood security at 1 per cent level of significance. Annual income (0.391) had positive and significant relationship at 5 per cent level of significance. Other variables such as age, education, marketing orientation, deferred gratification, cosmopolitaness, credit orientation, family dependency ratio, land holding, material possession, livestock possession, extension participation were found to have non significant relationship with livelihood security.

TABLE 16
**Relationship between the independent variables of small farmers
 and their livelihood security**

(n=40)

Sl. No.	Independent variables	Correlation (r) with livelihood security
a)	<i>Personal variables</i>	
1.	Age	-0.097
2.	Education	-0.261
3.	Marketing orientation	-0.048
4.	Risk orientation	0.062
5.	Deferred gratification	0.107
6.	Cosmopoliteness	0.369 [*]
7.	Credit orientation	0.049
b)	<i>Situational variables</i>	
8.	Family size	0.469 ^{**}
9.	Family dependency ratio	-0.093
10.	Land holding	-0.033
11.	Material possession	-0.085
12.	Livestock possession	-0.050
13.	Social participation	-0.147
c)	<i>Motivational variables</i>	
14.	Annual income	0.485 ^{**}
d)	<i>Extension variables</i>	
15.	Extension participation	-0.062

* Significant at 5 per cent level

** Significant at 1 per cent level

Other values were found non-significant

TABLE 17

Relationship between the independent variables of medium farmers
and their livelihood security

(n=40)

Sl. No.	Independent variables	Correlation (r) with livelihood security
a)	<i>Personal variables</i>	
1.	Age	-0.196
2.	Education	-0.042
3.	Marketing orientation	-0.116
4.	Risk orientation	0.095
5.	Deferred gratification	-0.077
6.	Cosmopolitaness	0.079
7.	Credit orientation	0.004
b)	<i>Situational variables</i>	
8.	Family size	0.573**
9.	Family dependency ratio	-0.029
10.	Land holding	0.169
11.	Material possession	0.066
12.	Livestock possession	0.017
13.	Social participation	0.497**
c)	<i>Motivational variables</i>	
14.	Annual income	0.391*
d)	<i>Extension variables</i>	
15.	Extension participation	0.077

* Significant at 5 per cent level

** Significant at 1 per cent level

Other values were found non-significant

4.6.3 Relationship between independent variables of big farmers and their livelihood security

The Table 18 indicates the relationship between independent variables of big farmers and their livelihood security. The variables such as family size (0.588) had positive and significant relationship with livelihood security at 1 per cent level of significance. Other variables such as age, education, marketing orientation, deferred gratification, cosmopolitaness, credit orientation, family dependency ratio, land holding, material possession, livestock possession, social participation, annual income, extension participation were found to have non significant relationship with livelihood security.

4.6.4 Relationship between independent variables of farmers and their livelihood security

The Table 19 indicates the relationship between independent variables of pooled farmers and their livelihood security. The variables such as deferred gratification (0.297), cosmopolitaness (0.345), credit orientation (0.404), family size (0.450), land holding (0.545), material possession (0.370), social participation (0.373) and annual income (0.517) had positive and significant relationship with livelihood security at 1 per cent level of significance. Risk orientation (0.197) had positive and significant relationship with livelihood security at 5 per cent level of significance. Other variables such as age, education, marketing orientation, family dependency ratio, livestock possession, extension participation were found to have non significant relationship with livelihood security.

4.7 CONTRIBUTION OF INDEPENDENT VARIABLES OF FARMERS TO THEIR LIVELIHOOD SECURITY

4.7.1 Contribution of independent variables of small farmers to their livelihood security

The Table 20 indicates the contribution of independent variables of small farmers to their livelihood security. The results of multiple linear

TABLE 18
**Relationship between the independent variables of big farmers
 and their livelihood security**

(n=40)

Sl. No.	Independent variables	Correlation (r) with livelihood security
a)	<i>Personal variables</i>	
1.	Age	0.001
2.	Education	-0.137
3.	Marketing orientation	-0.223
4.	Risk orientation	0.046
5.	Deferred gratification	-0.069
6.	Cosmopolitaness	-0.001
7.	Credit orientation	0.091
b)	<i>Situational variables</i>	
8.	Family size	0.588**
9.	Family dependency ratio	-0.186
10.	Land holding	-0.028
11.	Material possession	0.040
12.	Livestock possession	0.281
13.	Social participation	0.082
c)	<i>Motivational variables</i>	
14.	Annual income	0.160
d)	<i>Extension variables</i>	
15.	Extension participation	0.180

** Significant at 1 per cent level

Other values were found non-significant

TABLE 19
**Relationship between the independent variables of farmers
 and their livelihood security**

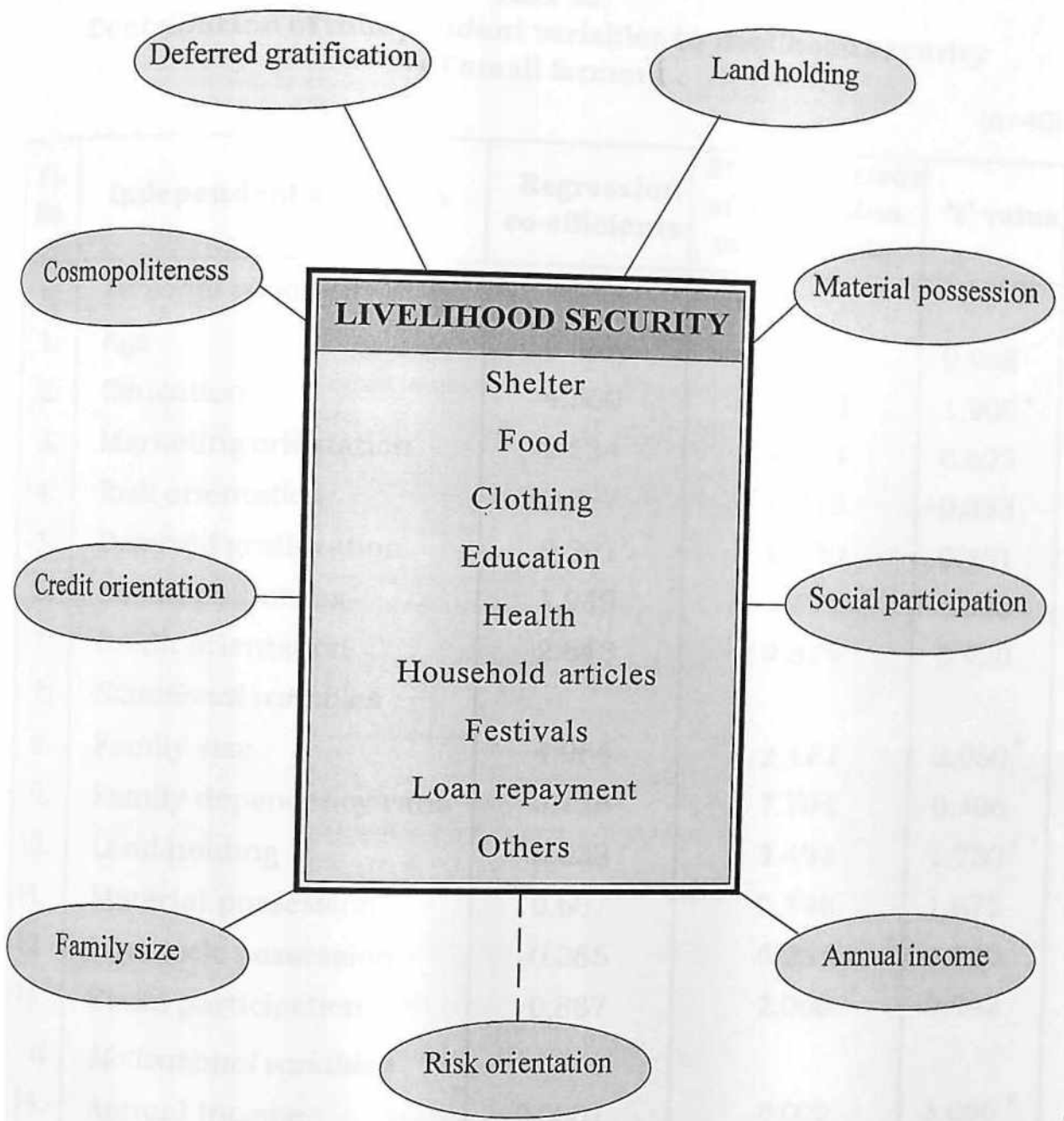
(n=120)

Sl. No.	Independent variables	Correlation (r) with livelihood security
a)	<i>Personal variables</i>	
1.	Age	-0.109
2.	Education	0.006
3.	Marketing orientation	0.103
4.	Risk orientation	0.197*
5.	Deferred gratification	0.297**
6.	Cosmopolitaness	0.345**
7.	Credit orientation	0.404**
b)	<i>Situational variables</i>	
8.	Family size	0.450**
9.	Family dependency ratio	-0.022
10.	Land holding	0.545**
11.	Material possession	0.370**
12.	Livestock possession	0.093
13.	Social participation	0.373**
c)	<i>Motivational variables</i>	
14.	Annual income	0.517**
d)	<i>Extension variables</i>	
15.	Extension participation	0.173

* Significant at 5 per cent level

** Significant at 1 per cent level

Other values were found non-significant



————— significant at 1 % level
 - - - - - significant at 5 % level

Fig. 13 : Empirical model showing the relationship between independent variables and livelihood security of farmers

TABLE 20
 Contribution of independent variables to livelihood security
 of small farmers

(n=40)

Sl. No.	Independent variables	Regression co-efficients	Standard error of Regression co-efficients	't' value
a)	<i>Personal variables</i>			
1.	Age	-0.365	0.369	0.988
2.	Education	-4.560	2.393	1.905 *
3.	Marketing orientation	-2.534	4.064	0.623
4.	Risk orientation	-0.287	0.813	0.353
5.	Deferred gratification	0.291	0.630	0.461
6.	Cosmopolitaness	1.949	1.471	1.325
7.	Credit orientation	-2.648	2.879	0.920
b)	<i>Situational variables</i>			
8.	Family size	4.964	2.422	2.050 *
9.	Family dependency ratio	-3.128	7.701	0.406
10.	Land holding	-6.038	3.491	1.730 *
11.	Material possession	0.667	0.398	1.675
12.	Livestock possession	-0.385	0.255	1.510
13.	Social participation	0.887	2.006	0.442
c)	<i>Motivational variables</i>			
14.	Annual income	0.0001	0.000	3.066 *
d)	<i>Extension variables</i>			
15.	Extension participation	-1.113	1.991	0.559

* Significant at 5 per cent level
 Other values were found non-significant

 $R^2 = 0.601$
 $F = 2.406^*$

regression analysis showed that variables such as education, family size, land holding and annual income had significantly contributed to the livelihood security of small farmers.

The R^2 value of 0.601 indicated that all the fifteen variables had contributed to the tune of 60.10 per cent of variation in livelihood security.

4.7.2 Contribution of independent variables of medium farmers to their livelihood security

The Table 21 indicates the contribution of independent variables of medium farmers to their livelihood security. The results of multiple linear regression analysis showed that variables such as cosmopolitaness, family size, social participation and annual income had significantly contributed to the livelihood security of medium farmers.

The R^2 value of 0.764 indicated that all the fifteen variables had contributed to the tune of 76.40 per cent of variation in livelihood security.

4.7.3 Contribution of independent variables of big farmers to their livelihood security

The Table 22 indicates the contribution of independent variables of big farmers to their livelihood security. The results of multiple linear regression analysis showed that the family size had significantly contributed to the livelihood security of big farmers.

The R^2 value of 0.457 indicated that all the fifteen variables had contributed to the tune of 45.70 per cent of variation in livelihood security.

TABLE 21
Contribution of independent variables to the livelihood security
of medium farmers

(n=40)

Sl. No.	Independent variables	Regression co-efficients	Standard error of Regression co-efficients	't' value
a)	<i>Personal variables</i>			
1.	Age	-0.303	0.244	1.244
2.	Education	-3.542	2.793	1.268
3.	Marketing orientation	-2.198	3.038	0.723
4.	Risk orientation	0.721	1.132	0.637
5.	Deferred gratification	-0.695	0.883	0.786
6.	Cosmopolitaness	3.189	1.677	1.901*
7.	Credit orientation	-0.931	2.842	0.328
b)	<i>Situational variables</i>			
8.	Family size	7.106	2.010	3.535*
9.	Family dependency ratio	-6.363	10.435	0.610
10.	Land holding	0.070	1.408	0.050
11.	Material possession	-0.073	0.073	1.016
12.	Livestock possession	-0.081	0.293	0.278
13.	Social participation	5.643	1.352	4.174*
c)	<i>Motivational variables</i>			
14.	Annual income	0.0001	0.000	3.270*
d)	<i>Extension variables</i>			
15.	Extension participation	-0.225	1.538	0.146

 $R^2 = 0.764$

F = 5.176*

* Significant at 5 per cent level
Other values were found non-significant

TABLE 22
**Contribution of independent variables to the livelihood security
of big farmers**

(n=40)

Sl. No.	Independent variables	Regression co-efficients	Standard error of Regression co-efficients	't' value
a)	<i>Personal variables</i>			
1.	Age	0.247	0.316	0.783
2.	Education	-0.486	0.505	0.962
3.	Marketing orientation	-2.640	3.509	0.752
4.	Risk orientation	0.791	0.087	0.910
5.	Deferred gratification	0.604	0.853	0.708
6.	Cosmopoliteness	-2.859	2.952	0.969
7.	Credit orientation	-0.189	2.085	0.091
b)	<i>Situational variables</i>			
8.	Family size	8.066	3.014	2.676*
9.	Family dependency ratio	-2.776	8.105	0.342
10.	Land holding	-0.935	1.033	0.091
11.	Material possession	0.012	0.032	0.394
12.	Livestock possession	0.186	0.209	0.893
13.	Social participation	0.048	1.340	0.036
c)	<i>Motivational variables</i>			
14.	Annual income	-0.0001	0.000	0.096
d)	<i>Extension variables</i>			
15.	Extension participation	-0.893	1.658	0.054

* Significant at 5 per cent level
Other values were found non-significant

 $R^2 = 0.457$

F = 1.346

4.7.4 Contribution of independent variables of farmers to their livelihood security

The Table 23 indicates the contribution of independent variables of pooled sample of farmers to their livelihood security. The results of multiple linear regression analysis showed that variables such as marketing orientation, cosmopolitaness, family size, land holding and annual income had significantly contributed to the livelihood security of pooled sample of farmers.

The R^2 value of 0.583 indicated that all the fifteen variables had contributed to the tune of 58.30 per cent of variation in livelihood security.

4.8 UTILISATION OF GOVERNMENT PROGRAMME BY FARMERS

The Table 24 shows the utilisation of government programme by farmers. It indicates that 30 per cent of small farmers, 12.5 per cent of medium farmers and 22.5 per cent of big farmers were availed the benefits of Government programmes. In case of small farmers, 20.00 per cent of the farmers availed the benefits of National Rural Employment Guarantee Act followed by Tamil Nadu Women in Agri Business. In case of medium farmers, 5.00 per cent each of the farmers availed the benefits of National Rural Employment Guarantee Act and National Agricultural Development programme followed by Tamil Nadu Women in Agri Business (2.50 %). In case of big farmers, 22.50 per cent of the farmers availed the benefits of National Agricultural Development programme. In case of pooled sample farmers, 9.17 per cent of the farmers availed the benefits of National Agricultural Development programme followed by National Rural Employment Guarantee Act (8.33 %) and Tamil Nadu Women in Agri Business (2.50 %).

TABLE 23
 Contribution of independent variables to the livelihood security
 of farmers

(n=120)

Sl. No.	Independent variables	Regression co-efficients	Standard error of Regression co-efficients	't' value
a)	<i>Personal variables</i>			
1.	Age	-0.132	0.162	0.815
2.	Education	-0.575	0.414	1.387
3.	Marketing orientation	-2.539	1.462	1.737*
4.	Risk orientation	0.041	0.077	0.541
5.	Deferred gratification	0.093	0.319	0.293
6.	Cosmopoliteness	1.675	0.997	1.680*
7.	Credit orientation	0.997	1.080	0.923
b)	<i>Situational variables</i>			
8.	Family size	6.438	1.334	4.826*
9.	Family dependency ratio	-5.616	4.543	1.236
10.	Land holding	1.531	0.496	3.088*
11.	Material possession	-0.003	0.023	0.135
12.	Livestock possession	-0.044	0.130	0.343
13.	Social participation	0.791	0.774	1.023
c)	<i>Motivational variables</i>			
14.	Annual income	0.0001	0.000	3.204*
d)	<i>Extension variables</i>			
15.	Extension participation	0.042	0.888	0.047

* Significant at 5 per cent level

 $R^2 = 0.583$ $F = 9.711^*$

Other values were found non-significant

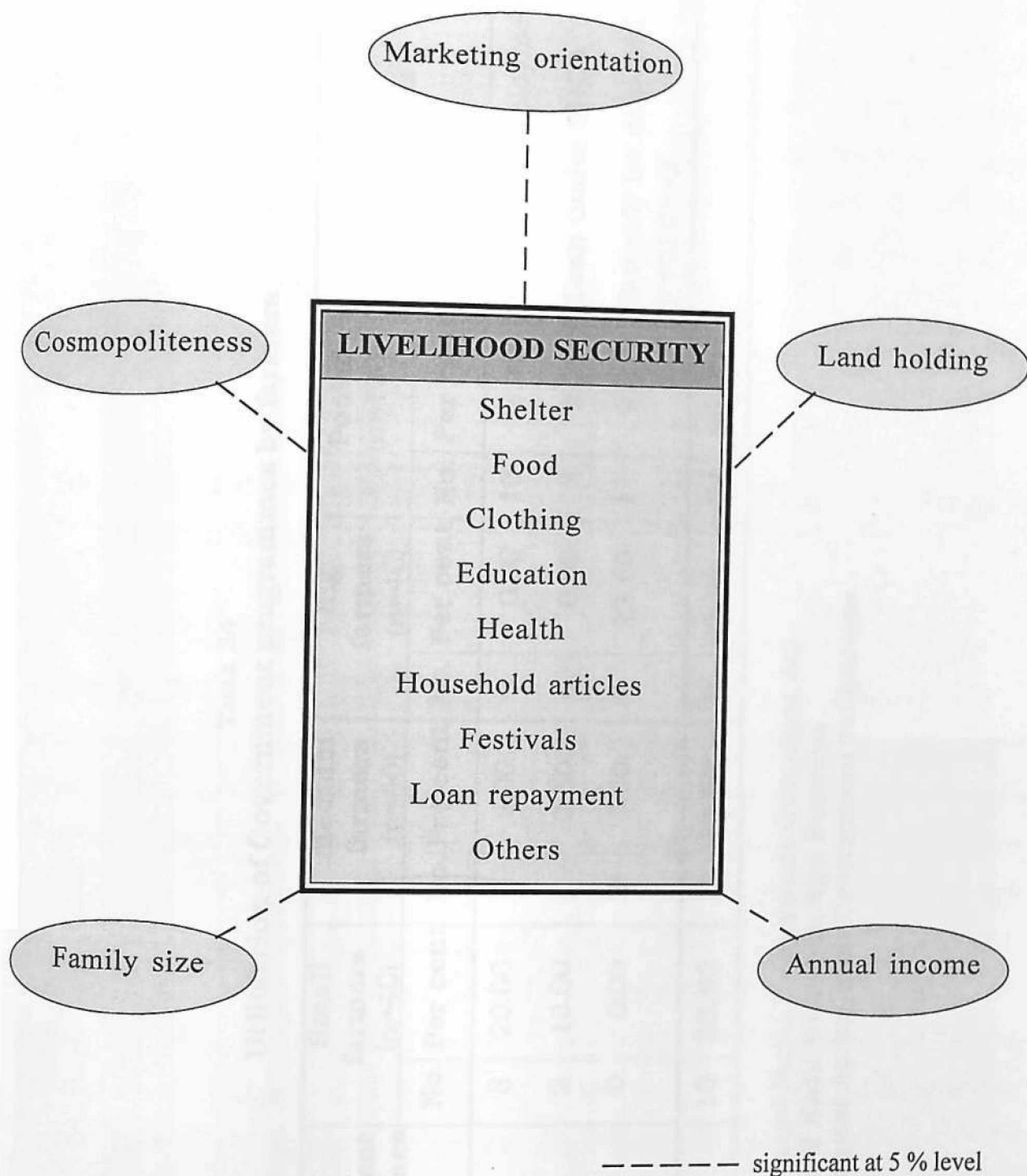


Fig. 14 : Empirical model showing the contribution of independent variables to livelihood security of farmers

TABLE 24
Utilisation of Government programmes by farmers

Sl. No.	Government programmes	Small farmers (n=40)		Medium farmers (n=40)		Big farmers (n=40)		Pooled (n=120)		Benefits
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	
1.	NREGA	8	20.00	2	5.00	0	0.00	10	8.33	Providing employment
2.	TANWAB	2	10.00	1	2.50	0	0.00	3	2.50	Loan under SHGs
3.	NADP	0	0.00	2	5.00	9	22.50	11	9.17	Subsidy for drip and machinery
	Total	10	30.00	5	12.50	9	22.50	24	20.00	

NREGA = National Rural Employment Guarantee Act
TANWAB = Tamil Nadu Women in Agri Business
NADP = National Agricultural Development Programme

4.9 CONSTRAINTS FACED BY FARMERS IN GETTING THEIR LIVELIHOOD

Table 25 shows constraints faced by farmers in getting their livelihood from different sources such as crop production, dairy and sheep. In crop production, high cost of inputs (65.00 %), problem of pest and diseases (51.66 %) and non availability of labour (46.66 %) were the major constraints faced by the farmers. In dairy, 63.16 per cent of farmers faced the problem of diseases. In sheep, 60.87 per cent of farmers faced the problem of not getting the good price followed by difficulty in management (39.13 %).

4.10 SUGGESTIONS OF FARMERS TO IMPROVE THEIR LIVELIHOOD

Table 26 indicates the suggestions as perceived by farmers in improving the livelihood from different sources. In crop production, they have suggested for development of cost effective technology (36.66 %) followed by monitoring the crop production activities by the government (35.00 %), mechanization of crop production and strengthening extension services (33.34 % each). In dairy, 42.10 per cent of them suggested for development of disease tolerant and high yielding breeds followed by cost effective technology and providing quality feed (31.58 %) each. In sheep, 52.18 per cent of the farmers suggested that the allied activities should be encouraged and supported by the government followed by marketing should be improved and more labour should be involved (34.78 % each).

TABLE 25
Constraints faced by farmers in getting the livelihood
from different sources

Sl. No.	Constraints	Respondents	
		No.	Per cent
I	Crop production (n=120)		
1.	High cost of inputs	78	65.00
2.	Problem of pest and disease	62	51.66
3.	Non availability of labour	56	46.66
4.	Reduction in ground water level	44	36.66
5.	High labour cost	32	26.66
6.	Irregularity in monsoon	32	26.66
7.	Middlemen involvement in marketing	30	25.00
8.	No good price for the produce	30	25.00
9.	Low yield	24	20.00
10.	Lack of awareness	22	18.34
11.	Less profit	20	16.66
12.	Non availability of quality inputs	12	10.00
13.	Government schemes are not reaching farmers	12	10.00
II	Dairy (n=19)		
1.	Problem of diseases	12	63.16
III	Sheep (n=23)		
1.	No good price	14	60.87
2.	Difficulty in management	9	39.13

TABLE 26
**Suggestions as perceived by farmers in getting the livelihood
 from different sources**

Sl. No.	Suggestions	Respondents	
		No.	Per cent
I	Crop production (n=120)		
1.	Development of cost effective technology	44	36.66
2.	Monitoring crop production activities by the Government	42	35.00
3.	Mechanisation of crop production	40	33.34
4.	Strengthening extension services	40	33.34
5.	Predetermined prices for the produce	34	28.34
6.	Machines can be provided at subsidised cost	32	26.66
7.	Popularisation & adoption of IFS, IPM, INM	24	20.00
8.	Popularisation & adoption of organic farming	24	20.00
9.	Improvement in marketing system	20	16.66
10.	Prior forecasting of weather	14	11.66
II	Dairy (n=19)		
1.	Development of disease tolerant and high yielding breeds	8	42.10
2.	Development of cost effective technology	6	31.58
3.	Providing quality feed	6	31.58
III	Sheep (n=23)		
1.	Allied activities should be encouraged and supported by the government	12	52.18
2.	Marketing should be improved	8	34.78
3.	More labour should be involved	8	34.78

DISCUSSION

DISCUSSION

The findings of the present study are discussed under the following headings.

- 5.1 Livelihood requirement of farmers.
- 5.2 Amount spent by farmers for their livelihood.
- 5.3 Livelihood security index of farmers.
- 5.4 Livelihood sources of farmers.
- 5.5 Profile of farmers.
- 5.6 Relationship between independent variables of farmers and their livelihood security.
- 5.7 Contribution of independent variables of farmers to their livelihood security.
- 5.8 Utilisation of government programmes by farmers.
- 5.9 Constraints faced by farmers in getting their livelihood.
- 5.10 Suggestions of farmers to improve their livelihood.

5.1 LIVELIHOOD REQUIREMENT OF FARMERS

5.1.1 Livelihood requirements of farmers for different items and their importance

The average amount required by medium farmers for their livelihood was Rs. 87775.00 per annum followed by big (Rs. 86462.50) and small (Rs. 74040.00) farmers. In case of pooled sample of 120 farmers, the average amount required per annum for their livelihood was Rs. 82759.00. The food was given first importance by all the three categories

of farmers followed by clothing in case of small and big farmers, and loan repayment in case of medium farmers. In case of pooled sample also the most important livelihood requirement was food followed by clothing and shelter. The significant difference was observed in livelihood requirement for food, clothing, others and total amount among small and medium farmers. Similarly, significant difference was also observed in livelihood requirement for festivals and loan repayment among medium and big farmers. The significant difference was observed in livelihood requirement for food, clothing, festivals and others among small and big farmers. The total amount required for their livelihood by medium and big farmers was significantly higher than small farmers (Table 1).

The total amount required for livelihood by medium and big farmers was higher than the amount required by small farmers may be due to their higher income as compared to small farmers. Medium farmers requirement is high in case of loan repayment. The possible reason might be that, medium farmers had availed more loan when compared to big farmers because of insufficient income to meet their requirements. And also the food was given primary importance by all the farmers. Because, it was one of the most essential need of all human beings followed by clothing with all the farmers except loan repayment of medium farmers, where it is most important requirement after food.

These findings are in line with the findings of Maslow (1943), Sidhu *et al.* (2008) and Dantwala (1984).

5.1.2 Livelihood requirement level of farmers

The livelihood requirement for shelter was medium for small (82.50 %), medium (92.50 %) and big (87.50%) farmers. The livelihood requirement of majority of small (75.00 %) and big (77.50%) farmers for food was low to medium, whereas, it was medium in case of majority (52.50 %) of medium farmers. The livelihood requirement for clothing

was low to medium in case of majority of small farmers (72.50 %), it was medium in case 55.00 per cent of medium farmers, and medium to high in case of majority (77.50 %) of big farmers. The livelihood requirement for education was low to medium in case of majority of small (92.50 %), medium (87.50 %) and big (90.00%) farmers. The livelihood requirement for health was medium to high in case of majority of small (75.00 %), medium (82.50 %) and big (67.50%) farmers. The livelihood requirement for household articles was low in case of majority of small (50.00 %) and 52.50 per cent each of medium and big farmers. The livelihood requirement for festivals was low to medium with majority of small farmers (77.50 %), whereas, it was medium to high in case of 80 per cent of medium and 75 per cent of big farmers. The livelihood requirement for repayment was low with majority of small (65.00 %), medium (57.50 %) and big (92.50%) farmers. The livelihood requirement for others was medium to high with 72.50 per cent of small farmers, whereas, it was low to medium with 70.00 per cent of medium farmers and it was medium in case of 60.00 per cent of big farmers. The total livelihood requirement level of around 70 per cent of small, medium and big farmers was medium to high (Table 2).

The total amount required by most of the small, medium and big farmers were in the range of medium to high category for all livelihood items. The reasons might be the desire of farmers to achieve higher or better standard of living than what they are possessing. In case of education and household articles, the requirement of majority of the farmers was in the low to medium category. The farmers might have not given much importance for household articles and education of their children. The farmers children may be studying in rural government schools and colleges which are less expensive.

The findings are supported by the findings of Manimekalai and Rajeswari (2000)

5.2 AMOUNT SPENT BY FARMERS FOR THEIR LIVELIHOOD

5.2.1 Amount spent by farmers for different items of livelihood and their importance

The average amount spent for different items of livelihood by big farmers was found to be Rs. 78037.50 per annum followed by medium (Rs. 59835.00) and small (Rs. 44335.00) farmers. In case of pooled sample of 120 farmers, the average amount spent per annum was found to be Rs. 60735.83. The amount spent on food was given first importance followed by clothing by all the three categories of farmers. Further, education was third important item in case of small farmers, whereas, festivals was the third important item in case of medium and big farmers. In case of pooled sample, the food, clothing and festivals were the most important livelihood items on which farmers spent. There was a significant difference in amount spent on food, clothing, health, festivals and others in addition to total amount spent on different items of livelihood among small, medium and big farmers. Whereas, significant difference was observed in amount spent on household articles among small and big farmers (Table 3).

The total amount spent by the big farmers was higher than the amount spent by the medium and small farmers. Though requirement of medium farmers is higher than big farmers, the actual amount spent by the medium farmers is lesser. The possible reasons might be the income earned might not be sufficient to fulfill their requirements. Small farmers spent lesser than both medium and big farmers. The amount spent by all the farmers on food was higher than the amount spent on other livelihood items irrespective of their land holding. This shows that food was the basic requirement to be given prime importance by all the farmers. Because, it was one of the most essential basic need of all human beings. Next to food, amount spent on clothing was higher. Again it proved that food and clothing are the most essential things for the existence of human society.

5.2.2 Level of amount spent by farmers for different items of livelihood

The amount spent by majority of small (85.00 %), medium (92.50 %) and big (87.50%) farmers for shelter was low to medium. The amount spent by majority of small (77.50 %), medium (85.00 %) and big (82.50%) farmers for food was medium to high. In case of clothing, the amount spent by majority of small farmers (77.50 %) was low to medium, whereas, it was medium to high in case of majority of medium and big farmers (72.50% each). The amount spent on education by majority (95.00 %) of small farmers was medium, whereas, it was low to medium in case of majority of medium (50.00 %) and big (52.50 %) farmers. The amount spent by majority of small (75.00 %) and medium (57.50 %) farmers on health was medium, whereas, it was medium to high in case of majority (70.00 %) of big farmers. As high as 47.50 per cent of small and 52.50 per cent each of medium and big farmers spent low level of amount on household articles. The amount spent for festivals was medium in case of majority of small farmers (62.50 %), whereas, it was low to medium in case of 67.50 per cent of medium farmers and medium to high in case of 75.00 per cent of big farmers. The amount spent for loan repayment was medium in case of majority (95.00 %) of small, medium and big farmers. The amount spent for others was low to medium in case of majority of small (67.50 %) and medium (72.50 %) farmers, whereas, it was medium in case of majority (65.00%) of big farmers. The total amount spent on different items of livelihood by 45.00 per cent of small farmers was medium, whereas, the total amount spent by majority (85.00 %) of medium farmers was low to medium and it was medium to high in case of majority (77.50 %) of big farmers. In case of pooled sample, the total amount spent on different items of livelihood was distributed equally (33.33 % each) among low, medium and high category (Table 4).

The total amount spent by majority of small, medium and big farmers was in the range of medium to high category for all the livelihood items except education, household articles. The reasons might be that all the livelihood items selected were considered important and essential by the farmers. Hence, it was felt necessary by all the farmers to spend on these items to satisfy their requirements. In case of education and household articles, the amount spent by majority of the farmers was in the low category. The possible reasons might be less importance given to the items, or family members who are at the age of going to schools or colleges may be less or nil, and also the expenditure involved in education is less in government schools and colleges in rural areas.

5.3 LIVELIHOOD SECURITY INDEX OF FARMERS

5.3.1 Livelihood security index of farmers and its importance

The average livelihood security index of big farmers was 90.26 per cent of their requirement followed by medium (68.17 %) and small (59.88 %) farmers. In case of pooled sample, the average livelihood security index was 74.65 per cent. The livelihood security index of food was highest in case of small farmers followed by shelter and education. In case of medium farmers, the livelihood security index of shelter was highest followed by food and education. In case of big farmers, the livelihood security index of education was highest followed by food and clothing. In case of pooled sample, the livelihood security index of food was highest followed by education and shelter. The significant difference was observed in livelihood security index for clothing, health, festivals, others and also total livelihood security index among small, medium and big farmers. Whereas, the significant difference was observed in livelihood security index of food among small and medium farmers and also significant difference was observed in case of household articles among small and big farmers (Table 5).

The livelihood security of big farmers was more followed by medium and small farmers in all the items of livelihood. It is well known fact that big farmers livelihood security should be more than medium and small farmers because they are getting more income to spend as compared to small and medium farmers. And also they can adopt new technologies and avail other benefits. Next to big farmers, medium farmers are secured because they are medium in their possession of assets and other benefits. The average livelihood security index of farmers (pooled sample) was three-fourth of their requirement, although small farmers average livelihood security index is less. The livelihood security of most of the important livelihood items was more than 60.00 per cent because of there basic necessity for any human being.

The findings are supported by the findings of Lanjouw and Stern (1998), Mandeep Singh and Joshi (2008).

5.3.2 Livelihood security index of small farmers for different items

It is observed that 82.50 per cent of small farmers attained less than 10 per cent of their livelihood requirement in case of shelter. A majority of them attained 50-80 per cent of their livelihood requirement in case food (62.50 %) and clothing (50.00 %). In case of education and household articles, 47.50 per cent of them attained less than 10 per cent of their livelihood requirement. In case of health and other items, 75.00 per cent of them attained 30-60 per cent of their livelihood requirement. In case of festivals, 55.00 per cent of small farmers have attained 30-60 per cent of their livelihood requirement. In case of loan repayment, 95.00 per cent of them attained less than 10 per cent of their requirement. In case of total livelihood security index, 27.50 per cent of small farmers attained 50-60 per cent of of their livelihood requirement, 20.00 per cent of them attained 70-80 per cent of their livelihood requirement, whereas, 15.00 per cent each of them attained 40-50 and 60-70 per cent of their livelihood requirement (Table 6).

Eventhough, the livelihood requirement of small farmers was low, the livelihood security index of small farmers was as also low as compared to medium and big farmers because of their low income to spend. While analysing the distribution of small farmers livelihood security index between 0 to 100 per cent, distribution was more in the region of 50 to 100 per cent security. In other words, that region was crowded. Hence, it shows that majority of small farmers have attained more than 50 per cent security. It may be either because they have depended on various sources of income other than crop production. Farmers who have depended only on crop production, might have attained less than 50 per cent security.

One interesting thing is 82.50 and 95.00 per cent have attained less than 10 per cent security in case of shelter and loan repayment, respectively. The possible reasons might be, in case of shelter, the requirement is more, but the farmers may not be in a position to spend such a huge amount on shelter and also the farmers might have their own house, there is no need to spend on shelter frequently. Whereas, in case of loan repayment, the farmers were not in a position to repay the loan amount or may be their negligence. Usually, any human being may think of loan repayment only after meeting all other basic livelihood requirements.

5.3.3 Livelihood security index of medium farmers for different items

It is observed that 90.00 per cent of medium farmers attained less than 10 per cent of their livelihood requirement in case of shelter. A majority of them attained 60-100 per cent of their livelihood requirement in case food and clothing, it is interesting to note that 30.00 per cent of them attained more than 100 per cent of their average livelihood requirement of food. In case of education, 50.00 per cent of them attained less than 10 per cent of their educational requirement, whereas, 22.50

per cent of them attained more than 100.00 per cent of their educational requirement. A majority (82.50 %) of medium farmers attained more than 50.00 per cent of their health requirements. In case of livelihood requirement of household articles, 52.50 per cent of them attained less than 10 per cent of their requirement, whereas, 35.00 per cent of them attained more than 100 per cent of their requirement. A majority (77.50 %) of them attained more than 45 per cent of their livelihood requirement for festivals. In case of loan repayment, 95.00 per cent of them attained less than 10 per cent of their requirement. In case of other requirement, 65.00 per cent of them attained more than 50 per cent of their requirement, whereas, 27.50 per cent of them attained more than 100 per cent of their other requirements. In case of total livelihood security index, 37.50 per cent of medium farmers attained 70-80 per cent of their livelihood requirement, 15.00 per cent of them attained 60-70 per cent of their livelihood requirement, whereas, 10.00 per cent each of them attained 50-60 and 80-90 per cent of their livelihood requirement (Table 7).

While analyzing the distribution of medium farmers between 0 to 100 per cent, the distribution was more in the region of more than 60 per cent security. Hence, we can say that the livelihood security of medium farmers is better than small farmers. It may be either because they have depended on various sources of income other than crop production or because their land holding is higher than small farmers. Farmers, who have depended only on crop production, might have attained less than 50 per cent security.

Among other items, 90.00 per cent and 95.00 per cent have attained less than 10 per cent security in case of shelter and loan repayment, respectively. The possible reasons might be same as small farmers, in case of shelter, most of the farmers might have their own house and there is no need to spend on shelter every month or frequently. Whereas,

in case of loan repayment, the farmers were not in the position to repay the loan amount because of their livelihood income. The farmers may think of loan repayment after meeting all the basic livelihood requirements.

5.3.4 Livelihood security index of big farmers for different items

It is observed that 85.00 per cent of big farmers attained less than 10 per cent of their livelihood requirement for shelter. A majority of them attained more than 80 per cent of their livelihood requirement in case food and clothing. In case of education and health, 80.00 and 55.00 per cent of big farmers attained more than 90 per cent of their requirement, respectively. In case of livelihood requirement of household articles, 52.50 per cent of them attained less than 10 per cent of their requirement, whereas, 45.00 per cent of them attained more than 100 per cent of their requirement. A majority (75.00 %) of them attained more than 80 per cent of their livelihood requirement for festivals. In case of loan repayment, 95.00 per cent of them attained less than 10 per cent of their requirement. In case of other requirements, 85.00 per cent of them attained more than 70 per cent of their requirement. The total livelihood security index of 37.50 per cent of big farmers was 90-100 per cent, 27.50 per cent of them attained 80-90 per cent of their livelihood requirement, whereas, 17.50 per cent of them attained more than 100 per cent of their livelihood requirement (Table 8).

While analysing the spread of big farmers between 0 to 100 per cent, distribution was more in the region of more than 70.00 per cent security. It shows that livelihood security index of big farmers is better than medium farmers. It may be due to their higher land holding and also sufficient resources to invest as compared to small and medium farmers leads to higher level of livelihood security.

In case of shelter and loan repayment, 85.00 per cent and 95.00 per cent have attained less than 10 per cent security, respectively. The possible reasons might be, in case of shelter, almost all the farmers might have their own house, and hence there was no need to spend on shelter every month or frequently. Whereas in case of loan repayment, many of the big farmers might not be in a position to depend on loan amount for their crop production activities. The livelihood security index was more in case of food and clothing because to fulfil basic necessity.

5.3.5 Livelihood security index of farmers for different items

It is observed that 85.83 per cent of farmers attained less than 10 per cent of their livelihood requirement for shelter. A majority (75.83 %) of them attained 60-100 per cent of their livelihood requirement for food. A majority (55.00 %) of them attained 50-100 per cent of their livelihood requirement for clothing. In case of education and household articles, 50.00 and 50.83 per cent of them attained less than 10 per cent of their requirement. In case of livelihood requirement of health, 53.33 per cent of them attained more than 50 per cent of their requirement. A majority (57.50 %) of them attained more than 40 per cent of their livelihood requirement for festivals. In case of loan repayment, 95.00 per cent of them attained less than 10 per cent of their requirement. In case of other requirement, 52.49 per cent of them attained more than 70 per cent of their requirement. It interesting to note that around 20.00 to 25.00 per cent of farmers attained more than 100 per cent of their livelihood requirement for food, clothing, education, health, household articles, festivals and others. In case of total livelihood security index, 19.17 per cent of farmers attained 90-100 per cent of their livelihood requirement, 17.50 per cent of them attained 70-80 per cent of their livelihood requirement, whereas, 15.00 per cent of them attained 80-90 per cent of their livelihood requirement. As high as 11.67 per cent of farmers attained more than 100 per cent of total livelihood requirement (Table 9).

While analysing the spread of farmers between 0 to 100 percent, spread was more in the region of 50 to 100 per cent livelihood security. In other words, that region was crowded more. Hence it is observed that majority (80.00 %) of farmers have attained more than 50 per cent security. It may be because they have depended on various sources of income like dairy, sheep, business and other sources, instead of depending only on crop production probably. Farmers who might have depended only on crop production are not in a position to manage properly, have attained less than 50 per cent security.

One thing to be noted that the majority of the farmers have attained less than 10 per cent security in case of shelter, education, household articles and loan repayment. The possible reasons might be, in case of shelter, most of the farmers might have their own house, then there was no need to spend on shelter every month or frequently. In case of education and household articles, farmers might not be in a position to spend on these items, because of their limited resources. Whereas in case of loan repayment, the farmers might not be in a position to repay the loan because of their requirement to spend on basic livelihood needs such as food, shelter, clothing etc.

5.3.6 Livelihood security index level of farmers

As high as 42.50 per cent each of small and medium farmers attained medium level of total livelihood security, whereas, 52.50 per cent of big farmers were also attained medium level of total livelihood security. Only, 30.00 per cent each of small and medium and 25.00 per cent of big farmers attained high level of total livelihood security. In case of pooled sample of farmers, 37.50 per cent of farmers attained medium level of total livelihood security, whereas, 33.33 per cent of farmers attained low livelihood security and 29.17 per cent attained high livelihood security (Table 10).

Table portrayed that maximum per cent of all categories of farmers had attained medium level of livelihood security. One thing to be noted here is the distribution of small and medium farmers into low, medium and high categories is similar and indicates that there was not much difference in the livelihood security attained by both small and medium farmers. The possible reasons might be, medium farmers might have not utilized land properly.

5.4 LIVELIHOOD SOURCES OF FARMERS

5.4.1 Different sources of livelihood of farmers

The cent per cent of all the category of farmers depend on crop production (CP) for their livelihood followed by other sources (37.50 %), sheep (25.00 %) and dairy (17.50 %) in case of small farmers; other sources (42.50 %) and in addition to dairy and sheep (12.50 % each) in case of medium farmers; and sheep (20.00 %) and dairy (17.50 %) in case of big farmers. In case of pooled sample, the farmers depend on crop production followed by other sources (29.17 %), sheep (19.17 %) and dairy (15.83 %). The data portrays that small, medium and big farmers were found to earn Rs. 27745, Rs. 50426 and Rs.93849, respectively from crop production. The small farmers earned maximum income (Rs. 40250) from business, medium farmers earned maximum income (Rs. 67176) from other sources and big farmers earned maximum income (Rs.93849) from crop production. In case of pooled sample, maximum income was earned from other sources (Rs. 60570) followed by crop production (Rs. 57340), business (Rs. 33417), dairy (Rs. 25124) and sheep (Rs. 9848) (Table 11).

It is clear from this table that, still crop production is the major source of income for all farmers. And also according to the land holding, income from crop production also gets varied. Even though all the farmers carried out crop production activities for their livelihood security, the

maximum income earned by the small and medium farmers was from other sources such as salary, wages etc., This clearly indicated that the farmers today are not depending only on crop production and also they are ready to integrate various enterprises for improving their livelihood options. One more reason to depend on other sources may be now-a-days, very rarely youths are involved in agriculture. Instead, they might be depending on other jobs due to industrialization and urbanization.

These findings are supported by the findings of Pushpa (2006) and Steward (2007).

5.4.2 Combination of enterprises for livelihood of farmers

As high as 30.00 per cent of small farmers were depending on crop production + other sources for their livelihood followed by crop production (27.50 %), crop production + dairy and crop production + sheep (10 % each). In case of medium farmers, 40.00 per cent of them depending on crop production followed by crop production + other sources (37.50 %). In case of big farmers, majority (60.00 %) of them depending on crop production followed by crop production + sheep (12.50 %) and crop production + dairy (10.00 %). In case of pooled sample of farmers, 42.50 per cent of them depending on crop production followed by crop production + other sources (25.00 %), whereas, 9.17 per cent of them depending on crop production + sheep (Table 12).

Other than crop production small farmers had integrated different sources of income and also tried with different combination of enterprises. The possible reasons might be that the land holding possessed by the farmers was too little to earn their secured livelihood. And also majority of big farmers earned their livelihood from crop production alone. One important thing we can found here was that maximum number of small and medium farmers depended on crop production + others combination,

and also in case of pooled sample, next to crop production, the maximum number of farmers earned their livelihood from crop production + others combination. Hence, this table once again clearly supported the view point of Integrated Farming System (IFS). Next to CP + other sources, CP + sheep were the mainly adopted combinations, because sheep was the very popular enterprise adopted and also it may be area specific.

These findings are in line with the results of Shalander Kumar *et al.* (2006).

5.4.3 Livelihood of farmers from different combination of enterprises and its importance

The small farmers earned maximum income of Rs. 82625 from crop production + sheep + other sources followed by crop production + dairy + other sources (Rs. 71150) and crop production + sheep + business. In case of medium farmers, combination of crop production + other sources earned maximum income of Rs. 118111 followed by crop production + dairy + other sources (Rs. 78930) and crop production + dairy (Rs. 77625). In case of big farmers, the combination of crop production + other sources earned maximum income of Rs. 175983 followed by crop production + dairy + sheep (Rs. 147871) and crop production + dairy (Rs. 105605). In case of pooled sample, the combination of crop production + other sources earned maximum income of Rs. 115423 followed by crop production + dairy + sheep (Rs.88299) and crop production + dairy (Rs. 80911). The significant difference was observed in income earned from crop production, crop production + dairy, crop production + sheep, crop production + other sources and crop production + dairy + other sources among small, medium and big farmers. The average amount earned from different sources of livelihood among small, medium and big farmers was Rs. 57557, 74398 and 117846, respectively and the difference was found to be significant (Table 13).

This table clearly portrayed that big farmers were earning higher income, followed by medium and small farmers. In case of small farmers, CP + sheep + other sources was proved to be the very promising enterprise followed by CP + dairy + other sources. In case of medium farmers, CP + other sources were proved to be the very promising enterprise followed by CP + dairy + other sources. In case of big farmers, CP + other sources were proved to be the very promising enterprise followed by CP + dairy + sheep. Crop production alone was given least importance by small and medium farmers. This shows their importance to integration of different enterprises with crop production to earn their adequate livelihood.

These findings are in line with results of Kamal Vatta (2008), Verma and Malik (1991) and Punjrath (1989).

5.4.4 Livelihood level of farmers

As high as 42.50 per cent of small, 57.50 per cent of medium and 55.00 per cent of big farmers obtained medium level of income for their livelihood. Whereas, 32.50, 30.00 and 37.50 per cent of small, medium and big farmers, respectively obtained low level income for their livelihood. In case of pooled sample of farmers, 43.33 per cent of farmers obtained medium level of income for their livelihood, around one- third and one-fourth of them obtained low and high level of livelihood security, respectively. (Table 14).

Table portrayed that maximum number of all categories of farmers had attained medium level of income for their livelihood. In case of pooled sample, maximum number of farmers are in the category of medium level of income followed by low and high category. The possible

reasons might be, income earned was not sufficient to include all the farmers in the high category, which mean they attained medium level of livelihood security, because income is the major indicator of measuring livelihood security.

5.5 PROFILE OF FARMERS

In case of small farmers, the age and educational level of 70.00 and 75.00 per cent of farmers was medium to high, respectively. The family size of 70.00 per cent of the farmers was low to medium, whereas, 62.50 per cent each of the farmers had low family dependency ratio and land holding and material possession, 57.50, 60.00 and 52.50 per cent of the farmers had low livestock possession, marketing orientation and risk orientation, respectively. A majority of them had low to medium livestock possession, social participation, extension participation, deferred gratification and income, whereas, 80.00 and 75.00 per cent of them had medium to high cosmopolitanism and credit orientation. In case of medium farmers, the educational level, family size, land holding and marketing orientation of 85.00, 72.50, 75.00 and 57.50 per cent of farmers was low to medium, respectively. The age of 62.50 per cent of them was low to medium, whereas, 60.00 per cent of the farmers had low family dependency ratio. The material possession, livestock possession, risk orientation, deferred gratification, credit orientation and income of 95.00, 80.00, 52.50, 50.00, 65.00 and 57.50 per cent of the farmers was medium, respectively. They had low to medium level of extension participation and cosmopolitanism. A majority of them had medium to high social participation. In case of big farmers, the age of 37.50 per cent of the farmers and marketing orientation of 47.50 per cent of the farmers was low, whereas, the age of 35.00 per cent of the farmers and marketing orientation of 27.50 per cent of the farmers was high. The educational level of majority (97.50 %) of the farmers was medium. The family size of 67.50 per cent of them was low to medium.

The family dependency ratio and material possession level was low (50.00 % each). The land holding of 50.00 per cent of them was medium. The livestock possession 70.00 per cent of them was low. The social participation, deferred gratification, and income of 57.50, 77.50 and 55.00 per cent of them was medium, respectively. The extension participation, risk orientation, cosmopolitaness and credit orientation of 77.50, 85.00, 67.50 and 67.50 per cent of them was medium to high, respectively. In case of pooled sample, 70.00 per cent of them had low to medium level of family size. The age, land holding and marketing orientation of 65.83, 64.17 and 75.00 per cent of farmers was medium to high, respectively. The educational level of 80.00 per cent of them was medium, family dependency ratio of 57.50 per cent of them was low, material possession of 52.50 per cent of them was medium and livestock possession of 67.50 per cent of them was low. The social participation, extension participation, credit orientation and income of majority of farmers was low to medium. They had medium level of risk orientation (84.17 %). A majority (72.50 %) of them had medium to high level of deferred gratification and 64.17 per cent of them had medium to high level of cosmopolitaness (Table 15).

5.6 RELATIONSHIP BETWEEN INDEPENDENT VARIABLES OF FARMERS AND THEIR LIVELIHOOD SECURITY

5.6.1 Relationship between independent variables of small farmers and their livelihood security

The variables such as family size (0.469) and annual income (0.485) had positive and highly significant relationship with livelihood security at 1 per cent level. Whereas, cosmopolitaness (0.369) had positive and significant relationship at 5 per cent level of significance (Table 16).

From this table, we can observe that family size and annual income were highly correlated with livelihood security of small farmers. The

higher the family size might have helpful in personal involvement of family members in enterprises for their livelihood. The personal involvement may result in getting the better livelihood. Of course, the annual income is concretely influencing the livelihood security of farmers as they can spend the income for their livelihood. The annual income is the major determinant of livelihood security. These variables will affect livelihood security of the farmers. Similarly, cosmopolitaness also has significant relationship with livelihood security of small farmers. The cosmopolitaness of small farmers helps to provide an exposure to outside world which might have helped to get opportunity to obtain better livelihood.

5.6.2 Relationship between independent variables of medium farmers and their livelihood security

The variables such as family size (0.573) and social participation (0.497) had positive and highly significant relationship with livelihood security at 1 per cent level of significance. Annual income (0.391) had positive and significant relationship at 5 per cent level of significance in cas medium farmers (Table 17).

From this table, we can say that family size and social participation were highly correlated with livelihood security of medium farmers and if any changes occur in these variables, it will affect livelihood security of the farmers. Similarly, annual income also has significant relationship with livelihood security of medium farmers. The possible reasons might be livelihood security and utility of income greatly depends on family size and annual income is the major determinant of livelihood security. Social participation might also helpful for the farmers to increase their awareness about the Government programmes and other new schemes, which might have increased their livelihood security.

5.6.3 Relationship between independent variables of big farmers and their livelihood security

In case of big farmers, the variables such as family size (0.588) had positive and highly significant relationship with livelihood security at 1 per cent level of significance (Table 18).

From this table, we can say that family size is the only variable which may affects the livelihood security of big farmers. The possible reasons might be livelihood security of big farmers greatly depends only on family size, since annual income may not be the major determinant of livelihood security of big farmers.

5.6.4 Relationship between independent variables of farmers and their livelihood security

In case of pooled sample, the variables such as deferred gratification (0.297), cosmopolitaness (0.345), credit orientation (0.404), family size (0.450), land holding (0.545), material possession (0.370), social participation (0.373) and annual income (0.517) had positive and highly significant relationship with livelihood security at 1 per cent level of significance. Risk orientation (0.197) had positive and significant relationship with livelihood security at 5 per cent level of significance (Table 19).

It can be inferred that deferred gratification, cosmopolitaness, credit orientation, family size, land holding, material possession, social participation and annual income had highly significant relationship with livelihood security of farmers and if any changes occur in these variables, it will affect livelihood security of the farmers to the greater extent. The postponement of present satisfaction to the future needs might have limit their livelihood requirement. The exposure to outside because of cosmopolite nature and social participation might have created awareness of government programmes and other schemes. The family

size, land holding and material possession might have influenced in getting more income, the income in turn influence the livelihood security. The credit orientation might have influenced in getting the credit required for investment in different enterprises which may influence the livelihood security. Similarly, risk orientation is the quality of any individual to excel in their activity, which might have influenced the livelihood security of farmers.

5.7 CONTRIBUTION OF INDEPENDENT VARIABLES OF FARMERS TO THEIR LIVELIHOOD SECURITY

5.7.1 Contribution of independent variables of small farmers to their livelihood security

The results of multiple linear regression analysis showed that variables such as education, family size, land holding and annual income had significantly contributed to the livelihood security of small farmers. The R^2 value of 0.601 indicated that all the fifteen variables had contributed to the tune of 60.10 per cent of variation in livelihood security (Table 20).

It could be seen that nearly 60 per cent of variation in livelihood security of small farmers was explained by 15 variables. Among the selected independent variables, education, family size, land holding and annual income had highly significant contribution to livelihood security. The possible reasons might be the personal, situational variables are the deciding factors of livelihood security. And also, motivational factor like annual income is the major determinant of livelihood security.

5.7.2 Contribution of independent variables of medium farmers to their livelihood security

The results of multiple linear regression analysis showed that variables such as cosmopolitaness, family size, social participation and

annual income had significantly contributed to the livelihood security of medium farmers. The R^2 value of 0.764 indicated that all the fifteen variables had contributed to the tune of 76.40 per cent of variation in livelihood security (Table 21).

It could be seen that nearly 76 per cent of variation in livelihood security of medium farmers was explained by 15 variables. Among the selected independent variables, cosmopolitaness, family size, social participation and annual income had highly significant contribution to livelihood security. The possible reasons might be the personal, situational variables are the deciding factors of livelihood security. Here also, motivational factor like annual income is the major determinant of livelihood security.

5.7.3 Contribution of independent variables of big farmers to their livelihood security

The results of multiple linear regression analysis showed that the family size had significantly contributed to the livelihood security of big farmers. The R^2 value of 0.457 indicated that all the fifteen variables had contributed to the tune of 45.70 per cent of variation in livelihood security (Table 22).

It could be seen that nearly 46 per cent of variation in livelihood security of big farmers was explained by 15 variables. Among the selected independent variables, family size had highly significant contribution with livelihood security. The possible reasons might be the situational variable is the major deciding factors of livelihood security of big farmers. The model may not be adequate to explain the livelihood security of big farmers.

5.7.4 Contribution of independent variables of farmers to their livelihood security

The results of multiple linear regression analysis showed that variables such as marketing orientation, cosmopolitaness, family size, land holding and annual income had significantly contributed to the livelihood security of pooled sample of farmers. The R^2 value of 0.583 indicated that all the fifteen variables had contributed to the tune of 58.30 per cent of variation in livelihood security (Table 23).

It could be seen that nearly 58 per cent of variation in livelihood security was explained by 15 variables. Among the selected independent variables, marketing orientation, cosmopolitaness, family size, land holding and annual income had highly significant contribution to livelihood security of farmers. The possible reasons might be the personal and situational variables are the deciding factors of livelihood security of any human being. And also, motivational factor like annual income is the major determinant of livelihood security of farmers irrespective of size of their land holding.

5.8 UTILISATION OF GOVERNMENT PROGRAMMES BY FARMERS

Only 30 per cent of small farmers, 12.5 per cent of medium farmers and 22.5 per cent of big farmers were availed the benefits of Government programmes. In case of small farmers, 20.00 per cent of them availed the benefits of National Rural Employment Guarantee Act followed by Tamil Nadu Women in Agri Business. In case of medium farmers, 5.00 per cent each of the farmers availed the benefits of National Rural Employment Guarantee Act and National Agricultural Development programme followed by Tamil Nadu Women in Agri Business (2.50 %). In case of big farmers, 22.50 per cent of the farmers availed the benefits of

National Agricultural Development programme. In case of pooled sample farmers, 9.17 per cent of the farmers availed the benefits of National Agricultural Development programme followed by National Rural Employment Guarantee Act (8.33 %) and very negligible per cent (2.50 %) of farmers availed the benefits of Tamil Nadu Women in Agri Business (Table 24).

It could be clearly understood that very less number of farmers had availed the benefits of Government programmes. It may be either due to lack of awareness among farmers about Government schemes and benefits or may be the limitation of extension system in reaching the farmers distributed in different villages.

5.9 CONSTRAINTS FACED BY FARMERS IN GETTING THEIR LIVELIHOOD

In crop production, high cost of inputs (65.00 %), problem of pest and diseases (51.66 %) and non availability of labour (46.66 %) were the major constraints faced by the farmers. In dairy, 63.16 per cent of farmers faced the problem of diseases. In sheep, 60.87 per cent of farmers faced the problem of not getting the good price and 39.13 per cent of them faced the problem of difficulty in management (Table 25).

These are major constraints faced by the farmers. The possible reasons might be lack of availability of cost effective inputs, lack of awareness of the farmers about new technology to control pests and diseases, labourers are not available because of industrialisation and urbanisation, overuse of chemicals etc., in case of crop production. These also hold good for other enterprises such as dairy and sheep. -

These findings are in line with results of Keshava and Mandape (2001), Singh *et al* (2004), Naghabushana (2001)

5.10 SUGGESTIONS OF FARMERS TO IMPROVE THEIR LIVELIHOOD

The farmers have suggested for development of cost effective technology (36.66 %) followed by monitoring the crop production activities by the government (35.00 %), mechanization of crop production and strengthening extension services (33.34 % each) in crop production. In dairy enterprise, 42.10 per cent of the farmers suggested for development of disease tolerant and high yielding breeds followed by cost effective technology and providing quality feed (31.58 % each). In sheep rearing, 52.18 per cent of the farmers suggested that the allied activities should be encouraged and supported by the government, whereas, 34.78 per cent of them suggested for improvement of marketing and involvement of more labour (Table 26).

There were good number of suggestions offered by the farmers for improving their livelihood. The possible reasons might be insecurity felt by the farmers or having the feeling of lack of Government support and also the need to use cost effective new technologies to get more income by reducing the cost of production. Monitoring the crop production activities by the government might have helped to avoid glut in the market, so that the farmers can get better price throughout the year. And also they realized that mechanization is the need of the hour to tackle labour problem which is the major constraint in agriculture. The extension services need to be strengthened to provide timely information to farmers. In case of dairy, since they are facing the problem of diseases, they might be in need of disease tolerant and high yielding breeds.

These findings are supported by the findings of Samal (1997).

SUMMARY

CHAPTER VI

SUMMARY

The geographical area of India is 328.7 million hectares, net sown area is 142 million hectares and gross cropped area is 190 million hectares. According to 2001 census, the population of India is 1027 millions, our country's population is increasing at a rate of 1.90 per cent. In India, majority of people depend on agriculture for their livelihoods. Indian economy is agricultural based economy. The time has now come when farming is no more to be considered only as a source of livelihood, but as a commercial venture and profitable business enterprise. Besides doing farming alone, he should become an entrepreneur by integrating animal husbandry, dairy, poultry, fisheries, apiculture, mushroom growing and sericulture with crop farming for better living. A livelihood comprises the capabilities, assets and activities required for means of living. The livelihood security is the biggest challenge facing the country today.

Government plays a major role in attaining secured livelihood by the farming community and rural poor by eliminating chronic hunger and poverty. The existing pathetic situation makes difficult for the farmers to obtain secured livelihood. Hence, the best way is to overcome this situation and to find out the ways and means of getting sustainable livelihood security of farmers.

With this background the research has been conceptualized with the following specific objectives.

1. To ascertain the livelihood requirements of farmers.
2. To measure the livelihood security of farmers.
3. To know the sources of livelihood of farmers.
4. To find out the relationship between the independent variables and the dependent variable
5. To elicit the problems faced by the farmers and their suggestions.

1. The livelihood requirement of medium farmers was Rs. 87775 followed by big (Rs. 86463) and small (Rs. 74040) farmers. The significant difference was observed in case of food, clothing, festivals and other items of livelihood requirements of small, medium and big farmers.

2. Around 75 per cent of the farmers had medium to high level of total livelihood requirements.

3. The big farmers spent Rs. 78038 on different items of livelihood followed by medium (Rs. 59835) and small (Rs. 44335) farmers. The significant difference was observed in case of amount spent on food, clothing, health, festivals and other items of livelihood requirements of small, medium and big farmers.

4. Around 75 per cent of the small, medium and big farmers had medium to high level of amount spent on livelihood requirements. Whereas, 1/3 each of the pooled respondents had low, medium and high level of amount spent on livelihood requirements.

5. The mean livelihood security index of big farmers was 90.26 per cent followed by medium (68.17 %) and small (59.88 %) farmers. The highest livelihood security index (75.00 %) was observed in food followed by shelter and education in case of small farmers. The highest livelihood security index (89.19 %) was observed in shelter followed by food and education in case of medium farmers. The highest livelihood security index (94.70 %) was observed in education followed by food and clothing in case of big farmers. The significant difference was observed in livelihood security index of small, medium and big farmers in case of food, clothing, health and festivals.

6. The livelihood security index of majority (87.50 %) of the small farmers was between 30 and 80 percent. The livelihood security index of 70 per cent of the small farmers was more than 50 per cent. It was more than 100 per cent for 2.50 per cent of small farmers.

7. The livelihood security index of majority (85.00 %) of the medium farmers was between 40 and 90 percent. The livelihood security index of 80 per cent of the medium farmers was more than 50 per cent. It was more than 100 per cent for 5 per cent of medium farmers.

8. The livelihood security index of majority (80.00 %) of the big farmers was between 60 and 100 percent. The livelihood security index of all the big farmers was more than 50 per cent. It was more than 100 per cent for 17.50 per cent of big farmers.

9. In case of pooled sample, the livelihood security index of majority (75.00 %) of the farmers was between 50 and 100 percent. The livelihood security index of 87.50 per cent of the farmers was more than 50 per cent. It was more than 100 per cent for 12 per cent of farmers.

10. Around 75 per cent of the small, medium and big farmers had medium to high level of livelihood security index. Whereas, almost equal percentage of the pooled respondents had low, medium and high level of livelihood security index.

11. All the farmers depend on crop production for their livelihood in addition to dairy, sheep, business and other sources such as salary, wages and incentives. The livelihood of small farmers was maximum from other sources followed by business and crop production. The livelihood of medium farmers was maximum from other sources followed by crop production and business. The livelihood of big farmers was maximum from crop production followed by other sources and business.

12. The small farmers had more diversified combination of enterprises for their livelihood as compared to medium and big farmers. Crop production and other sources (30.00 %) and crop production

(27.50 %) were the major combination of enterprises of small farmers, crop production (40.00 %) and crop production and other sources (37.50 %) were the major combination of enterprises of medium farmers, and only crop production was the major source of enterprise of big farmers. In case of pooled sample, crop production (42.50 %) and crop production and other sources (25.00 %) were the major combination of enterprises.

13. CP + sheep + other sources was the maximum income earning combination of enterprise in case of small farmers, whereas, crop production + other sources was the maximum income earning combination of enterprise in case of medium and big farmers. The significant difference was observed in combination of enterprises *viz.*, Crop production, CP + Dairy, CP + Sheep, CP + Other sources, CP + Dairy + Other sources between small, medium and big farmers.

14. The majority (57.50 and 55.00 %, respectively) of medium and big farmers were getting medium level of income for livelihood, and 42.50 per cent of small farmers were also getting medium level of income for livelihood.

15. The majority of the farmers had medium level of education, low dependency ratio, medium material possession, low livestock possession and medium risk orientation.

16. In case of small farmers, family size and annual income had highly significant positive relationship with the livelihood security, whereas, cosmopolitanism had significant positive relationship.

17. In case of medium farmers, family size and social participation had highly significant positive relationship with the livelihood security, whereas, annual income had significant positive relationship.

18. In case of big farmers, family size had highly significant positive relationship with the livelihood security.

19. In case of pooled sample, deferred gratification, cosmopolitanism, credit orientation, family size, land holding, material possession, social participation and annual income had highly significant positive relationship with the livelihood security, whereas, risk orientation had significant positive relationship with the livelihood security.

20. In case of small farmers, education, family size, land holding and annual income had contributed significantly to the livelihood security. The total variation contributed by all the variables was found to be 60.00 per cent.

21. In case of medium farmers, cosmopolitanism, family size, social participation and annual income had contributed significantly to the livelihood security. The total variation contributed by all the variables was found to be 76.00 per cent.

22. In case of big farmers, family size had contributed significantly to the livelihood security. The total variation contributed by all the variables was found to be 46.00 per cent.

23. In case of pooled sample, marketing orientation, cosmopolitanism, family size, land holding and annual income had contributed significantly to the livelihood security. The total variation contributed by all the variables was found to be 58.00 per cent.

24. Only 25.00 per cent of small farmers utilised the benefits of NREGA and TANWAB programmes, 12.50 per cent of medium farmers utilised the benefits of NREGA, TANWAB and NADP, and 22.50 per cent of big farmers utilised the benefits of NADP.

25. The high cost of inputs; and problem of pests and diseases were the major constraints expressed by the farmers in crop production. The problem of diseases and less profit were the major constraints expressed by the farmers in dairy and sheep rearing, respectively.

26. Monitoring crop production activities by the government; developing cost effective technologies; mechanisation; and strengthening extension services were the suggestions as perceived by the farmers to improve the livelihood from crop production activities. Developing disease tolerant and high yielding breeds and encouraging sheep rearing as subsidiary enterprise were the suggestions as perceived by the farmers to improve their livelihood from dairy and sheep rearing activities, respectively.

Implications

The income is the major contributing factor for livelihood security of farmers. The income can be increased by encouraging the farmers to take up diversified combination of enterprises. The government should consider the monitoring of crop production activities right from the planning stage itself. Government should see that employment generation programmes which are developed for small farmers have reached them or not and should support the farmers who are carrying out allied activities along with crop production.

Summary

The big farmers are more secured as compared to small and medium farmers. The family size, land holding and income are the major contributing factors for livelihood security. The small farmers are engaged in more diversified combination of enterprises for their livelihood as compared to medium and big farmers. The farmers who are engaged in different combination of enterprises are getting more income as compared to the farmers who depends only on crop production activity. The farmers are more secured in food and less secured in loan payment. Other income earning sources adopted by the farmers are dairy, sheep, business

and other sources such as salary, wages etc., However, crop production is the source of livelihood of all the farmers. The employment generation programme was utilised by small farmers and agricultural development programme was utilised by big farmers. High cost of inputs, problem of pest and diseases and non availability of labour are the major constraints faced by farmers in crop production activity. Monitoring crop production activities by the Government, developing cost effective technology, mechanisation, strengthening extension services are the major suggestions of the farmers to improve the livelihood from different sources.

Suggestions for future research

The livelihood security of small farmers is less compared to medium and big farmers. There is a need for conducting exhaustive study on livelihood security of small farmers by considering the various extension approaches for improving livelihood security of small farmers. This study did not concentrate on landless labourers who constituted 11 per cent of the rural population, which will be an interesting and inevitable area to do future research.

REFERENCES

CHAPTER VII

REFERENCES

- ACHARYA, S. S., 2006, Sustainable Agriculture and Rural Livelihoods. *Agricultural Economics Research Review*, Vol. 19, July - December, 205-217
- AJMER SINGH AND KULWANTH SINGH., 2002, Economic Feasibility of Dairy Farms Financed by IRDP in Harayana. *Indian Journal of Dairy and Biosciences*, **13** (2) : 69-76.
- ANIL RAI, SHARMA, S. D., PRACHI MISRA SAHOO AND MALHOTRA, P. K., 2008, Development of livelihood Index for Different Agro Climatic Zones of India, *Agricultural Economics Research Review*, **21** : 173-182.
- ANONYMOUS, 1984, *Study of Implementation of Integrated Rural Development Programme*, Bombay, India : NABARD (Limited distribution).
- ANONYMOUS, 1985, *Evaluation Report on Integrated Rural Development Programme*, New Delhi, India : Plan Organization, Planning commission, Government of India.
- ANONYMOUS, 1992, *Human Development Report-1992*, New York : Oxford University Press.
- ANONYMOUS, 1992, M.S. Swaminathan Research Foundation, *Annual Report*. Madras, India.
- ANONYMOUS, 2000 / 2001, *Attacking Poverty*, World Bank, Oxford University Press Inc., New York.
- ANONYMOUS, 2001, Department for International Development, *Sustainable Livelihoods Guidance Sheets*. Electronic edition.

- Anonymous, 2002, Using Information and Communication Technology to Reduce Poverty in Rural India, *The World Bank No. 70*, June 2002.
- ARCHANA SINHA, 2006, Farm Sector, Non- farm Employment and Rural Livelihood : A Study, *Agricultural Economics Research Review*, **19** (conf.).
- ARUL PRAKASH, R., 2004, Analysis of Swarnajayanthi Gram Swarozgor Yojana in Salem and Thiruvallur Districts of Tamil Nadu. *M. Sc. (Agri.) thesis (unpub.)*, University of Agricultural Sciences, Dharwad
- ASGHORI MOHIDDIN, 1987, Entrepreneurship in Rural People. *Kurukshetra*, **9** : 293-296.
- BALE. G. M. AND SIBLEY, D. N., 1967, Adoption of agricultural technology by the Indians of Gautemela. *Rural Sociology*. 62: Department of Sociology and Anthropology, Lowan State, University of Ames, Iowa.
- BONGER, T., 2000, Resources, Poverty and Human Development in Rural Uganda. *Afriquet Development*, **25** (3-4) : 31-76.
- CHAMBERS, R., 1988, Sustainable Rural Livelihoods : A Key Strategy for People, Environment and Development. *In The greening of AIDS*, (eds) C. Conroy & M. Lituinoff, London, Earth Scan.
- CHAMBERS, R. AND CONWAY, G., 1992, Sustainable Rural Livelihoods : Practical Concepts for the 21st Century. *IDS Discussion Paper 296*. Brighton: IDS.
- CHETANA, M. P., 2005, Impact of "Stree Shakthi" Programme on Farm Women in Tumkur district, *M. Sc. (Agri.) thesis (unpub.)*, University of Agricultural Sciences, Bangalore.
- CREMERS, 1994, Urban Agricultural in Latin America and the Caribbean (Reconnaissance of the Green Areas in the Towns), *Berliger Beitrage Zur Agrarantwielung*, **13** (32).

- DANIEL, S., 1995, Sustainable Livelihood Security: A Case Study in Sivaranthakam Village Working Paper 4, MSSRF, Chennai
- DANTWALA, M. L., Agrarian Structure : Relevance to India's Food and Poverty Situation, *Economic Times* (June 8, 1984).
- DAVIES, S., 1996, Adaptable Livelihoods: Coping with Food Insecurity in the Malian Sahel. Macmillan Press, London.
- DEB, U. K., RAO, G. D. N., RAO, Y. M. AND SLATER, R., 2002, Diversification and Livelihood Options : A Study of two Villages in Andhra Pradesh, *Socio-Economic and Policy Programme*, ICRISAT, Patanchery, Andhra Pradesh, India.
- DESAI, A. R., 1975, A Study on the Adoption of Recommended Practices and Information Sources Consulted by Potato Farmers of Belgaum Taluk of Karnataka State. *M. Sc. (Agri.) thesis. (Unpub.)*, UAS, Bangalore.
- DREZE JEAN AND AMARTYA SEN, 1989, Hunger and Public Action, OUP, New York.
- DRINKWATER, M. AND MCEWAN, M., 1992, Household Food Security and Environmental Sustainability in Farming System Research : Developing Sustainable Livelihoods. Paper presented to the Adaptive Planning Research Team. *Bi-annual Review Meeting*. Mangu, Zambia, 13-16 April.
- FARRINGTON, J., CARNEY, D., ASHLEY, C. AND TURTON, C., 1999, Sustainable Livelihoods in Practice Early Applications of Concepts in Rural Areas. Overseas Development Institute, *Natural Resource Perspectives*, No. 70, London.
- FRANKENBERGER, T., 1996. Measuring Household Livelihood Security : An Approach for Reducing Absolute Poverty. *Food Forum*, No.34 : 6, Washington, DC, Food Aid Management.

- GRETEL, 1997, Food Production in Restricted Spaces , *The Example of Agricultural Rural Development*, **4** (2) : 53-55.
- HARTWIG, E., 1999, Women's Organization and SHGs – A Step towards Independence. *Agricultural Rural Development* : 31-34.
- INDIRA DEVI, P., 2006, Sustainable Livelihood Options for Rural Prosperity – Evidence from Kerala, *Agricultural Economic Research Review*, **19** (conf. No.).
- JAYAKUMAR, K. N., RAVI KUMAR AND RAO, K. P. C., 2001, Estimation of Rural Poverty in Kanchepuram District of Tamil Nadu, *Manage Extension Research Review*, **11** (82-89).
- JODHA, N. S., 1986, Common Property Resources and Rural Poor in Dry Regions of India, *Economic and Political weekly*, Vol XX1, No. 27.
- JOSHI NAVIN CHANDRA, 1993, Rehasting Agricultural Marketing System. *Kurukshetra*, : 5-7.
- KAMAL VATTA, GARG, B. R. AND SIDHU, M, S., 2008, Rural Employment and Income : The Inter-household Variations in Punjab, *Agricultural Economics Research Review*, **21** : 201-210.
- KAUR, S., 1991, Plight of Women Agricultural Labourers, *Kurukshetra*, **8** (30) : 15-17.
- KESHAVA AND MANDAPE, M. K., 2001, Analysis of Potentials and Problems of Dairy Farming in North Bihar. *Indian Journal of Animal Sciences*, **71** (6) : 577-579.
- KHAN, M. A. AND AYESHA, N., 1987, Status of Rural Women in India, *Kurukshetra*, **9** (12).
- KUTTY KRISHNAN, A. C., 1984, A Case Study of Integrated Rural Development Programme in a Kerala Village, *Indian Journal of Agricultural Economics*, **39** (3) : 419 – 426.

- LANJOUW, P. AND STERN, N., 1998, (Eds.) *Economic Development in Palampur over Five Decades*, Oxford University Press, New Delhi.
- LELE, U., HIRSCHOFF, P. M., KOTLER, N. G., 1989, Completing the Food Chain Strategies for Combating Hunger and Malnutrition. *Papers and Proceedings of a Colloquium organized by Swaminathan Institution*, 18-27.
- MADHULIKA SHARMA AND ABHA AHUJA, 2003, Family Size Preferences and their Reasons : A Comparative Study of Rural and Urban Areas of Udhan Singh Nagar District, *Patna Nagar Journal of Research*, **1**.
- MAMATHA, T. G., 1993, Socio- Economic Dimensions of Rural People in Tiptur Taluk of Tumkur District, *M. Sc. (Agri.) thesis (unpub.)*, University of Agricultural Sciences, Dharwad.
- MANDEEP SINGH AND JOSHI, A. S., 2008, Economic Analysis of Crop Production and Dairy Farming on Marginal and Small Farms in Punjab, *Agricultural Economics Research Review*, **21** : 251-257.
- MANIMEKALAI, N. AND RAJESWARI, 2000, Empowerment of Women through Self-help Groups. *Margin*, **32** (4), Jul Sep, 74-87.
- MANSINGH J. PAUL, 1994, Socio- economic Status Scale Construction. *Ph. D. thesis (unpub.)*, Tamil Nadu Agricultural University, Coimbatore.
- MASLOW, A. H., 1943, A Theory of Human Motivation, *Psychological Review*, **50** (4) : 370-96.
- MAXWELL, S., 1996, Food Security : Post Modern Perspective, *Food Policy*, **21** (2) : 155-170.
- MEERA REDDY, V., 1990, TRYSEM programme : A Case Study in Kurnool Samithi of Andhra Pradesh. *Journal of Rural Development*, **9** (2) : 435-443.

- METI, S. K., 1990, Altitude towards Improved Farm Implements and their Extent of use of the Farmers of Dharwad, *M. Sc. (Agri.) thesis (Unpub.)*, University of Agricultural Sciences, Dharwad.
- MILLS, B. F., 2002, Changes in the well being of no Metropolitan Single-Mother families: A semi-parametric analysis. *Journal of Agricultural and Resource Economics*. 27(2), 515-538
- NAGHABUSHANA, M., 2001, Marketing Practices and Problems of Vegetable Growers in Kolar District, Karnataka. *M. Sc. (Agri.) thesis*, University of Agricultural Sciences, Bangalore.
- NATHAN, K. K. AND ASHOK KUMAR, 2003, Solving Water Scarcity in the Dry Regions through Farmer's Participation, *Agriculture Today*.
- NIRMALA, V., SHAM BHA, K. AND BUVANESHWARI, P., 2004, SHG for Poverty Alleviation in Pondichery, *Journal of Rural Development*, 23 (2) : 203-215.
- PANTH, A. S., 1996, Food Security of the Rural Poor in India- A Case Study of Karnataka. *Ph.D. thesis (unpub.)*, JNU, New Delhi.
- PRASAD, K. M., 1991, India's Rural Problems, *Indian Journal of Extension Education*, 8 (5) : 12-15.
- PRASAD, SYRESH, SINGH, R. K. P., CHOUDARY, A. K., PRASAD, S., 2000, Employment and Income pattern of Agricultural Labour Households of Bihar- A village level study. *Economic Affairs- Calcutta.*, 45(3), 174-182
- PUNJARAT, 1989, Low Income Families Participating in Fewer Assistance Programme. *Food Review*, 24 (2) : 38-44.
- PUSHPA, P., 2006, A Study on Livestock Production Systems of Rural and Periurban Livestock Owners. *M. Sc. (Agri.) thesis (unpub.)*, University of Agricultural Sciences, Dharwad.

- RAMEGOWDA, B. L., 1991, Crisis Management by Farmers -An Analysis. *Ph. D. thesis (unpub.)*, University of Agricultural Sciences, Bangalore.
- RAVINDRA, R., 1987, A Critical Analysis of Antyodaya Programme in Karnataka. *M.Sc. (Agri.) thesis (unpub.)*, University of Agricultural Sciences, Bangalore.
- RIGGS MICHAEL, 2003, Agricultural Information Management for Food Security and Sustainable Agricultural Development in the Asia-Pacific Region. *Presented at the Asian Productivity Organisation Study Meeting on Application Information for Effective Agricultural Extension*, 8 Jan. 2003, New Delhi.
- SALETH, R. M., AND SWAMINATHAN, M. S., 1993, Sustainable Livelihood Security at the Household Level : Concept and Evaluation Methodology, In: *Proceedings of an Interdisciplinary Dialogue on Ecotechnology and Rural Employment*, Chennai, 12-15 April : 105-122.
- SAMAL, 1997, Role of Informal Credit Sector and Service Cooperation Society in Rural Credit Market in Baidyeneeth Misra. (ed) *Cooperative Movement in India: A Case Study of an Indian State*, APH publishing Cooperation, New Delhi : 189-98.
- SAMANTHA, R. K., 1977, Some Agro-economic, Socio-psychological and Communication Variables associated with Repayment Behaviour of Agricultural Credit Users of National Bank. *Ph. D. thesis (unpub.)*, Bidhan Chandra Krishi Viswavidhyalaya, Kalyani, West Bengal.
- SARKAR, A. N., 2001, Innovation in Micro Finance : Linked Development Programmes. *Kurukshetra*, **50** (2) : 2-8
- SEN, K.L., 1969, Status Inconsistency and Modernization in Four Indian Villages in Choudar. *Selected Readings in Community Development*, National Institute of Community Development, Hyderabad.

SHALANDER KUMAR AND DEOGHARE, P. R., 2003, Goat Production System and Livelihood Security of Rural Landless Households, *Indian Journal of Small Ruminants*, **9** (1) :19-24.

SHALANDER KUMAR, A. D., UPADHYEY AND SURENDRA SINGH, 2006, Emergence of Goat based Sustainable Farming Systems in Arid Rajasthan: Farmer's Strategies and Livelihood Security, *Agricultural Economics Research Review*, **11** (Conf. No.).

SIDHU, R. S., INDERPREET KUMAR AND KAMAL VATTA, 2008, Food and Nutritional Insecurity and its Determinants in Food Surplus Area : The Case Study of Punjab State, *Agricultural Economics Research Review*, **21**.

SINGH, A. K. SHARMA, J. S. AND SINGH, D. K., 1989 Socio Economic Characters of People in the Hill of Utter Pradesh, *Journal of Rural Development*, **7**(3) : 289-297.

SINGH, P. R., SINGH, M. AND JASWAL, R. S., 2004, Constraints and Strategies in Rural Livestock Farming in Almara District of Hilly Uttaranchal. *Indian Journal of Animal Research*, **38** (2) : 91-96.

SINGH, R. P., 2006, Sustainable Production System for Livelihood – A Micro Approach. *Agricultural Economic Research Review*, **19** (Conf. No.).

Singh, S. K., 1989, TRYSEM and Rural Employment Generation, *Kurukshetra*, **37** (7) : 8-11.

STEWART, A., 2007, Nobody Farms Here Anymore : Livelihood Diversification in the Amazonian Community of Carvao, A Historical Perspective, *Agriculture and Human Value*, **24** (1): 75-92.

SWAMINATHAN, M. S., 1991, From Stockholm to Riode Janeiro : The Road to sustainable Agriculture, *Monograph No. 4*, M. S. Swaminathan, Research Foundation, Chennai, India.

- TRIVEDI, G., 1963, Measurement and Analysis of Socio economic Status of Rural Families. *Ph. D. thesis (unpub.)*, Division of Agricultural Extension., IARI, New Delhi.
- TWIGG, J., 2001, Sustainable Livelihoods and Vulnerability to Disasters. Benfield Grieg Hazard Research Center, *Disaster Management Working Paper 2*.
- VEENA SANGAWAN, AMITA YADAV AND SAVITASINGAL, 1987, Availability, Awareness and Utilization of Community Facilities by Activities, *Haryana Agricultural University Journal of Research*, **15** (1) : 86-92.
- VENKATARAMANI, G., 1997, Active Role for Corporates. *The Hindu Survey of Indian Agriculture* : 33-35.
- VERMA, O. S. AND MALIK, B. S., 1991, Rural Down-Trodden : Pinning Hopes on Dairying for Survival, *Journal of Extension Systems*, **7** (2) : 69-73.
- WICKRAMSINGHE, A., 1998, Habitat Security: A Composite Index of Sustainability of Rural Development In Gupta, A. K. (ed.), Criteria and indicators of sustainability in Rural Development: A Natural Resource Perspective. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
- WOLF, 1966, *Peasants*. Englewood Cliffs, N. J.: Prentice-Hall.

APPENDIX



DEPARTMENT OF AGRICULTURAL EXTENSION
COLLEGE OF AGRICULTURE
UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE

A Study on Livelihood Security of Farmers in Virudhunagar District of Tamil Nadu

INTERVIEW SCHEDULE

1. Name of the respondent : _____
2. Father's name : _____
3. Village : _____
4. Taluk : _____
5. Farming experience : _____ years

6. Family profile of the Respondent

Sl. No.	Name	Age (Yrs.)	Sex	Relation-ship with Head	Educa-tion	Occupation			
						Main	Annual Income	Subsid-iary	Annual Income
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

(Education : Illiterate = 0, Can read and write = 1, Primary School = 2, Middle School = 3, High School = 4, College = 5, Graduate = 6)

7. Land holding

150

Please indicate the type of land you have owned / leased

Sl. No.	Type of land	Owned		Leased in		Leased out		Total	
		Acres	Cents	Acres	Cents	Acres	Cents	Acres	Cents
1.	Dry land								
2.	Wet land								
3.	Garden land								
4.	Uncultivated land								
	Total								

8. Cropping pattern

Please provide the details of crops grown in different seasons during last year

Sl. No.	Season	Type of land	Crops	Area(acres)	Yield (kgs.)
1.	Kharif (Samba)	Dry land	a)		
			b)		
			c)		
		Wet land	a)		
			b)		
			c)		
		Garden land	a)		
			b)		
			c)		
2.	Rabi (Kuruvai)	Dry land	a)		
			b)		
			c)		
		Wet land	a)		
			b)		
			c)		
		Garden land	a)		
			b)		
			c)		
3.	Summer (Thaladi)	Dry land	a)		
			b)		
			c)		
		Wet land	a)		
			b)		
			c)		
		Garden land	a)		
			b)		
			c)		

9. Type of house owned (Please mention the type of house owned)

Sl. No.	Purpose	Type of house	Owned	Value of the owned house (Rs.)	Rented	Rent / month (Rs.)
1.	Dwelling					
2.	Cattleshed					
3.	Sericulture rearing					
4.	Others (Specify)					
	a)					
	b)					

(Types of house : 1= RCC, 2=Tiles, 3=Asbestos, 4=Thatched, etc.)

10. Household assets (Please indicate the assets you are possessing)

Sl. No.	Type	Numbers	Year of purchase	Value (Rs.)
1.	Radio			
2.	Television			
3.	Fan			
4.	Bicycle			
5.	Scooter / Motor cycle			
6.	Car			
7.	Bullock cart			
8.	Power tiller			
9.	Tractor			
10.	Threshing machine			
11.	Irrigation pumps			
12.	Others (Specify)			
	a)			
	b)			

11. Details of Livestock possessed (Please provide the details of livestock possessed)

Sl. No.	Particulars	Breed	Number	Amount (Rs.)
1.	Cow	a) Local		
		b) Cross breed		
2.	Buffalo	a) Local		
		b) Cross breed		
3.	Sheep/ Goat	a) Local		
		b) Cross breed		
4.	Poultry	a) Local		
		b) Cross breed		
5.	Piggery	a) Local		
		b) Cross breed		
6.	Others (Specify)			
	a)			
	b)			

12. Details of income generated from different enterprises during last one year

Sl. No.	Enterprises	Area / Unit (Acres / No.)	Total Production (Kgs./ Lts.)	Own Consumption (Kgs.)	Quantity Sold (Kgs.)	Rate (Rs.)	Amount (Rs.)	Cost of Production (Rs.)	Net Income (Rs.)
1.	Crop								
	a)								
	b)								
	c)								
	d)								
	e)								
	f)								
2.	Sericulture								
3.	Dairy								
4.	Poultry								
5.	Piggery								
6.	Sheep								
7.	Business								
8.	Others								
	a)								
	b)								
	c)								
	d)								

13. Other sources of income (Please indicate the details of other sources of income during last year) **153**

Sl. No.	Sources	Details	Amount (Rs.)
1.	Sale of assets	a)	
		b)	
		c)	
2.	Loans	a)	
		b)	
		c)	
3.	Savings	a)	
		b)	
		c)	
4.	Others (Specify)	a)	
		b)	
		c)	

14. Provide the details of savings during last one year (if any)

Sl. No.	Type of saving	Amount (Rs.)	Rate of interest (%)
1.	Savings Bank		
2.	Fixed Deposit		
3.	Recurring Deposit		
4.	Others (Specify)		
	a)		
	b)		

15. Provide the details of loans availed during last one year (if any)

Sl. No.	Type of loan	Source of loan (Rs.)	Amount (Rs.)	Rate of interest (%)	Amount repaid (Rs.)	Balance outstanding (Rs.)
1.						
2.						
3.						
4.						

16. Marketing orientation (Indicate whether you agree or disagree with the following statements)

Sl. No.	Statements	Agree	Disagree
1.	Market news is not useful for livelihood security.		
2.	A farmer can get more income by grading his produce.		
3.	Proper storage facilities can help to get good price for the produce		
4.	One should sell his produce in the nearest market irrespective of the price.		
5.	Though it is of little value, one should record costs and returns of particular enterprise.		
6.	One should go for such enterprise, which has more market demand.		
7.	It is not profitable to sell to a middleman locally.		

17. Details of amount required and spent on different items during last one year

Sl. No.	Items	Details	Amount Required (Rs.)	Amount Spent (Rs.)	Are you feeling safe or assured of getting the money to the items listed (1 to 11)		Percentage of amount spent against amount required
					Yes	No	
1.	Shelter						
2.	Food						
3.	Clothing						
4.	Education						
5.	Health						
6.	Household articles						
7.	Land purchase						
8.	Marriages						
9.	Festivals						
10.	Loan repayment						
11.	Others (Specify)	a)					
		b)					
		c)					

18. Social Participation

Please indicate your participation in the social organisations either as member or office bearer

Sl. No.	Organisation	Member	Office bearer	Extent of participation		
				Regular	Occasional	Never
1.	Gram Panchayat					
2.	Taluk Panchayat					
3.	Zilla Panchayat					
4.	Co-operative Society					
5.	MPCS					
6.	Youth Club					
7.	Mahila Mandal					
8.	Self help group					
9.	Others (Specify)					
	a)					
	b)					

19. Extension Participation

Please provide the details of your participation in the extension activities during last one year

Sl. No.	Extension activities	Participation		Frequency of participation		
		Yes	No	Regular	Occasional	Never
1.	Demonstrations					
2.	Tours					
3.	Field visits					
4.	Field days					
5.	Training programmes					
6.	Exhibitions					
7.	Campaigns					
8.	Krishimela	-				
9.	Others (Specify)					
	a)					
	b)					

Please give your response to the following statements by putting (✓) mark in the appropriate column.

Sl. No.	Statements	Response				
		SA	A	UD	D	SD
1.	I feel risk taking is an important quality of a farmer to progress.					
2.	I prefer growing larger number of crops, to provide insurance against risk involved in cultivating mono crop.					
3.	I take greater risks in farming than my fellow farmers to do financially better.					
4.	I take chance in making a big profit in framing by adopting innovations without caring for their consequences.					
5.	Foreseeing events and planning based on past experiences is a must in farming.					
6.	I believe that those who take risk in farming their chance of success is fairly high.					
7.	I does not try new farming enterprises and methods before other farmers have used with success.					
8.	Trying on entirely new method in farming involve risks but it is worth.					
9.	I usually try a new farm technology on a small scale before it is introduced on a larger area to avoid risks.					
10.	When I am convinced about a farm innovation, I try again and again even early trials are met with complete failure.					
11.	I feel going only for sure thing is the best way to get ahead					

21. Deferred gratification

Please give your response to the following statements by putting (✓) mark in the appropriate column.

Sl. No.	Statements	Response				
		SA	A	UD	D	SD
1.	I am good at saving money rather than spending it straight away.					
2.	When I am in a market place, I tend to buy a lot which I had not planned.					
3.	I agree with the philosophy eat, drink and be merry for tomorrow we may be all dead.					
4.	I often feel that it is worthwhile to wait and think over before deciding anything.					
5.	I like to spend my money for family as soon as I get it.					
6.	I am good at planning things well in advance.					
7.	I do not save food grains to face future uncertainties.					
8.	I somehow manages to keep at least a little fodder in reserve for future uncertain weather.					
9.	I sell farm produce immediately without waiting for good price.					
10.	I invest more on farm to expect handsome return in long run.					

22. Cosmopolitaness

a) Please indicate the number of times you visit the nearest town

- 1. Two or more times a week :
- 2. Once in a week :
- 3. Once in 15 days :
- 4. Once in a month :
- 5. Occasionally :
- 6. Never :

b) What generally would be the main purpose of your visit?

- 1. Majority of the visits related to agriculture and allied activities :
- 2. Some related to agriculture and allied activities :
- 3. Personal/ Domestic :
- 4. Entertainment :
- 5. Others :
- 6. No response :

23. Credit orientation

Please indicate your response for the following statements

Sl. No.	Statements	Response			
		Yes		No	
1.	Do you think that a person like you should borrow money for agriculture / allied / business activities.				
2.	In your opinion how difficult it is to secure credit for agriculture / allied / business activities.	Very easy	Easy	Difficult	Very difficult
3.	How a person is treated when he goes to secure credit for agriculture / allied / business activities.	Very fairly	Fairly	Badly	Very badly
4.	There is nothing wrong in taking credit from institutional sources for increasing production from agriculture / allied / business activities.	Strongly Agree	Agree	Disagree	Strongly disagree
5.	Did you avail credit in the last two years for agriculture / allied / business activities.	Yes		No	

24. Are you a beneficiary of any Government programmes?

Yes / No

If yes, indicate the following details

- 1. Name of the programme :
- 2. Year :
- 3. Benefits derived :

.....

.....

.....

.....

25. What are the constraints you faced in different livelihood options

Sl. No.	Livelihood options	Constraints
1.	Crop production	a)
		b)
		c)
2.	Sericulture	a)
		b)
		c)
3.	Dairy	a)
		b)
		c)
4.	Poultry	a)
		b)
		c)
5.	Piggery	a)
		b)
6.	Sheep	a)
		b)
7.	Others	a)
		b)
		c)

26. What are your suggestions for further improvement of livelihood options

Sl. No.	Livelihood options	Suggestions
1.	Crop production	a)
		b)
		c)
2.	Sericulture	a)
		b)
		c)
3.	Dairy	a)
		b)
		c)
4.	Poultry	a)
		b)
		c)
5.	Piggery	a)
		b)
6.	Sheep	a)
		b)
7.	Others	a)
		b)
		c)