CAUSE- CONSEQUENCE ANALYSIS OF INDEBTEDNESS AMONG FARMERS IN PULPALLY PANCHAYAT OF WAYANAD DISTRICT

BHAVYA.B

Thesis submitted in partial fulfillment of the requirement
for the degree of

MASTER OF SCIENCE IN AGRICULTURE

Faculty of Agriculture
Kerala Agricultural University, Thrissur.

2008

Department of Agricultural Extension
COLLEGE OF AGRICULTURE
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DECLARATION

I hereby declare that this thesis entitled "**Cause– consequence analysis of indebtedness among farmers in Pulpally panchayat of Wayanad district**" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or similar title, of any other university or society.

21.11.08
Vellayani

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CERTIFICATE

Certified that this thesis entitled "**Cause – consequence analysis of indebtedness among farmers in Pulpally panchayat of Wayanad district**" is a record of research work done independently by Miss. Bhavya.B (2006-11-131) under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to her.

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Acknowledgement

With great pleasure I express my sincere gratitude to the people without whom the modest endeavor of this PG research work would not have accomplished.

I am thankful to my Major Advisor Dr. S. Mothilal Nehru, Professor and Head, Department of Agricultural Extension for the guidance, constant encouragement, ingenious suggestions, constructive criticisms and genuine interest for the successful completion of this thesis work.

I place on record my profound gratitude to Dr. S. Bhaskaran, Professor, Department of Agricultural Extension, COA, Vellayani, for his potent and critical suggestions, expert advices, valuable helps and critical scrutiny of the manuscript.

My heartfelt thanks are due to Dr. Elsamma Job, Associate Professor, Department of Agricultural Economics, COA, Padannakkad for the kind helps rendered during the study and for the thorough scrutiny of the manuscript despite her busy schedule. Her novel ideas and valuable suggestions re-shaped this thesis.

I express my thanks to Dr. S. Chellammal, Professor, Department of Home Science and Nutrition for her guidance and constructive suggestions for the research work.

I thank Dr. Anil Kumar, A. for the valuable help and suggestions throughout the study period. I would like to place my special thanks to Dr. Jiju Alex, Associate Professor, for his valuable suggestions during the construction of the questionnaire.

The Teaching and Non-teaching staff of the Department of Agricultural Extension is remembered with gratitude.

I thank Sri. C.E. Ajithkumar, Programmer of Department of Agricultural Extension for the interest shown in my work and for helping with the statistical analysis.

Sathyettan, Baijuchechi and sweet Aiswarya are remembered with much gratitude for their care and kindness. Their innumerable helps and efficient planning made my pilot study and field visit in Wayanad a lovely and memorable experience.

Mr. M. J. Baby, Manager, South Malabar Grameen Bank is gratefully remembered for explaining the nuances of banking procedures and schemes in Wayanad. I also thank Managers of the Canara Bank, South India Bank and cooperative banks in Pulpally for explaining the agenda of their banks and for sharing their view on the crisis.
Sri. Janakan Master, Panchayat President, Pulpally was kind to spare many valuable hours of his busy schedule to provide a holistic insight into the crisis in Pulpally. I also thank the Agriculture Officer and Agricultural Assistants of Pulpally Grama Panchayat.
Amma, nuns, and helpers of Sacred Heart Convent, Pulpally are remembered with gratitude for their benevolence and affability and for bending the rules of convent to suit my schedule during field visit.
I am deeply indebted to the Respondents of my study for sharing the story of their lives. Though unpleasant, they recounted their hardships and changes in their lifestyle in detail; with great dignity.
I thank Divya for the friendship. The happy times we spent together will always be cherished.
I'd like to thank Gopika Chechi, Nazreen Chechi, Priya Chechi and Smitha Chechi for their support, camaraderie, advices and for all the laughs we shared. Mercy Chechi and Prasidha Chechi is also remembered. The R.As who has worked in the Department for the last two years especially Anuja and Raji Chechi is remembered for the company.
I am grateful to Rani Chechi for her friendship and for always helping at times of need. I also thank Vidya, Vimarsh, Prabhu ,Selvaraju, Saritha. The days with Tulsi Di and Sadaf Di will never be forgotten. Help done by Rajalakshmi and Saranya is also remembered.
I thank my dear Salini for everything, forever.

I also fondly remember my friends **Jinju**, **Nimmy**, **Sapota**, **Vidya**, **Binu**, **Sandya**, **Manu**, **Anil**, **Kiran**, **Jabir**, **Divya**, **Shijil**, **Vijith**, **Suni**, **Liya**, **Silpha**, **Sumayya**, **Bijy Chechi**, **Jamini**, **Nej**, **Poorni**, **Rema**, **Lidya** and **Malar** for their precious friendship and for those many phone calls which helped me out of my blue days. I owe them the beautiful memories of my life.

My wonderful cousins **Anoopettan**, **Abhi**, **Arunettan**, **Sreekuttan**, **Sudhiyettan**, **Lallu**, **Anu**, **Kingini**, **Anju**, and li'l **Kukku** never fail to make me happy and always lift my mood up. I also fondly remember the support of my dear **Relatives** especially my dear **Ammoomma**.

I am luckiest to have a wonderful family. The love, care and companionship of my li'l bro-cum-best friend, **Abhay**, makes my life much richer, livelier and happier. And his presence in Trivandrum added colour to my days here. I'll never be able to express in words my deep gratitude and indebtedness to my **Parents** for always being for me. Their love and care strengthens me. Without their sacrifices and blessings I would not have succeeded in this venture. With no frustration, they bore all hardships to complete my visits and stay in Pulpally successfully. Special thanks to Amma for accompanying me patiently in all those field visits. **I Dedicate My Thesis To Them**.

And most importantly, I bow before **God** for showering **His** blessings upon me.

Bhavya

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DEDICATED TO MY FAMILY

INTRODUCTION

1. INTRODUCTION

"It is a shame that our country allows its people, especially farmers, the right to suicide."
-Justice V.R. Krishna Iyer

Indian economy is going through a momentous phase. The secondary and tertiary sectors are growing at an unprecedented rate. In the tenth plan period the rate of growth of Gross Domestic Product was an unbelievably high seven per cent. The growth rates of industry and service sector were eight and 8.9 per cent respectively. The Indian economy is now much more integrated with the world economy and there is an increased inflow of Foreign Direct Investment. Urban India is developing at a fast pace in terms of investments made, growth in infrastructure as well as the increase in earning and purchasing power of people.

But rural India portrays entirely different story. The rural population, with agriculture as the main stay for livelihood, is facing an acute crisis. The rate of growth of agriculture - which supply food to billions of people and support many industries - during tenth five year plan was only 1.8 per cent. Sivaramakrishnan, A (2008) stated that India's agricultural condition poses fundamental challenges to its credibility as a democracy. Decreasing production and productivity of crops, low market prices, pest and disease attack and vagaries of climate has led to unforeseen distress in farmer's lives. Dwindling public expenditure by the Government in agriculture has accentuated the state of distress in rural India. The percentage of allocation for agriculture and allied sectors to total plan outlay has decreased from 14.9 per cent in 1951-56 to 5.2 per cent in 2002-2007. Even though 68 per cent of India's workforce still depends on agriculture for its livelihood, contribution of agriculture to the Gross Domestic Product fell from 40 per cent in 1951-56 to 18.6 per cent in 2002-07. Indian agriculture has also undergone some structural changes over the years. Over 40 per cent of land is now operated by small and marginal farmers as compared to 29 per cent in 1985-86. There is a shift in crops cultivated from food crops to non food crops and within food crops from coarse to fine grain crops. During the last quarter of nineteenth century the area under food grains declined by 10 per cent. With the institution of the World Trade Organization and subsequent signing of the Agreement on Agriculture and other international agreements like South Asian Free Trade Agreement Indian farmers are

exposed not only to the vagaries of domestic market, but to price fluctuations in the international markets also. And as a result the farmer is in an acute distress unprecedented in India.

In independent India the incomes of farmers have risen by a measly 0.28 per cent as compared to 4 per cent in other sectors. More than 48.6 per cent farm households in India are indebted and 50 per cent of indebted farmers had taken loans for current or capital expenditure in agriculture. The most important source of loans was banks (36 per cent) followed by money lenders (26 per cent). Other sources accounted for much lesser proportion (NSSO, 2005a). The most extreme and unfortunate manifestation of agrarian crisis is farmer's suicides. Total number of farmer's suicides in India from 1997 to 2005was estimated as 1,49,244 (Sainath 2007a). Non availability of quality seeds, inadequate post harvest management, lack of sufficient irrigation water, fluctuations in domestic and international prices, decline in soil fertility etc. have added to the woes of Indian cultivator. Not surprisingly a recent national survey showed that 40 per cent of the farmers wanted to opt out of farming (Chengappa and Vinayaka, 2007).

Agricultural scenario in Kerala

Highly fragmented and small sized holdings, homestead farming with mixed crops, high proportion of perennial crops like rubber, pepper, coffee etc differentiates Kerala's unique agricultural sector from that of other States. Nearly 20 per cent of the entire population of the State depends on agriculture, especially the plantation sector, for their livelihood. The total agricultural area in Kerala is 3,88,6287 hectares of which the total cropped area is 2,98,5727 hectares. The total agricultural income of the State in 2006-07 was 15,539 crores and this accounted for only 14.55 percent of gross income of the State.

The area under rice in the Kerala has fallen drastically over last few years. The decline was to the extent of 2.76 lakh ha. in 2005-06 to 2.64 lakh ha. in 2006-07. In case of tapioca the area has declined from 0.91 lakh ha. to 0.87 lakh ha during this period. Kerala's share in area as well as production of coconut in the country is declining over time. The state continues to enjoy a near monopoly in area and production of pepper, accounting for 98 per cent each in the country. The productivity of pepper achieved its peak level of 376kg. per ha during 1998-99. But by 2006-07 it was only 284 kg, per ha. The production declined from

87,605 MT during 2005-06 to 64,264 MT in 2006-07. The import of pepper to Kerala increased from 40,28MT in 2000-01 to 15,750 MT in 2006-07 affecting the interests of pepper farmers of the State. Production of coffee during the year was only 0.59 lakh MT against 2.82 lakh MT for the country. Average productivity of coffee in Kerala (703 kg/ha) is lower than the national average of 860 kg. /ha. A declining trend in production of coffee in the State was also observed for the last six years. Against the total area of 5.11 lakh ha under tea in the country Kerala accounts for only 0.35 lakh ha (Government of Kerala, 2008a). All these facts point to the precarious situation of agriculture in Kerala.

Wayanad is a hilly district situated in the Western Ghats with a unique biological diversity. Etymologically Wayanad signifies "Vayal Nadu" (land of paddy fields). It later evolved as "Vazha Nadu" (land of banana fields) and then "Vanilla Nadu" (land of vanilla). At present it is once more known as "Vazha Nadu" since vanilla has lost its market. The present crisis in agriculture sector is considered to be the result of such fluctuations in production and marketing (Sreyas, 2007). The district contributes significantly to the foreign exchange earnings of the state through it cash crops like pepper, coffee, areca nut, cardamom, tea, ginger, turmeric etc. Wayanad was once known as "Gulf of Kerala" due to the highly profitable and remunerative nature of agriculture. Pulpally, a Panchayat in Sultan Bathery Taluk of North East Wayanad is one of the most severely crisis hit Panchayats of Kerala. Pulpally and adjoining Mullankolly Panchayats together were known as the pepper belt of Kerala. The area had large tracts of pepper grown as mono crop and marketed as dried berries. But about 40 per cent of pepper crop in Pulpally vanished due to disease attack and drought. The severity of drought in Pulpally is evident from the state of pepper plantations - only dried up wines are left of it. Kerala has always had a high rate of general suicides in the country and Wayanad is no exception. However farmer's suicide due to extensive economic crisis was not widespread. But since 2001-02 farmer's suicide attributable to agricultural crisis and debt trap has dramatically shot up in Wayanad. Large scale suicides happened in the Pulpally area on account of the sole dependence of the farmers on a single crop like pepper and sudden crash in its price in the international market and the resultant failure of farmers to cope up with the situation (George and Krishnaprasad, 2006). The crops which were more integrated with international market were more severely

crisis ridden. This can be accounted to variations in international prices. The incidence of pest and diseases coupled with vagaries of climate led to ultimate disaster.

Credit and agriculture have always gone hand in hand. Farmers borrowed before the cropping season and repaid loans after harvesting season. But when agriculture failed severely, the grimmest outcome was the drastic increase in the indebtedness of farmers. Even those farmers, who were always prompt in repaying, found it impossible to clear off their debts. The mounting financial insecurity along with social and psychological pressures induced many of them to commit suicide. The present study is an attempt to investigate the indebtedness of farmers.

1.1 Need for the study

The farmers in Wayanad are undergoing agricultural crisis unparalleled in the history of the state. Farmer's suicides are yet to subside and indebtedness continues to be the major problem of farmers. Even though the Central and State Governments have implemented debt relief measures, the governmental interventions have not shown the desired effect and the crisis remains largely unresolved. The once prosperous village of Pulpally is in the spate of farmer's distress. The crisis has altered the social environment of the area as the failure of agriculture has ultimately led to subsiding living standards of an entire population. In this background the present investigation has been designed with the following objectives.

1. To study the nature and extent of indebtedness of farmers in Pulpally Panchayat of Wayanad district.
2. To delineate the factors leading to indebtedness.
3. To delineate the consequences of indebtedness of farmers.
4. To examine perception of farmers on governmental interventions in resolving agrarian crisis
5. To find the survival stress for livelihood security of farmers in Pulpally.

1.2 Scope for the study

The study is an attempt to undertake a cause-consequence analysis of indebtedness among farmers in one of the most severely crisis ridden Panchayats of the state. The first post graduate study to be undertaken on the topic, it is hoped that the results of the study

would serve as guidelines for planned interventions to mitigate the crisis and to bring effective and meaningful positive changes in the lives of the distressed.

1.3 Limitations of the study

As the study was undertaken as a part of requirement of post graduate program, there were limitations of time and resources at the disposal of the student investigator. These limitations were taken into consideration in deciding the variables and fixing the sample size. Moreover, since a major part of the study is based on the perceptions and opinions of respondents, it may not be free from individual biases and prejudices.

1.4 Organization of the study

The thesis is presented in five chapters. The first chapter 'Introduction' highlights the background of the study, its need, scope and limitations. The second chapter 'Theoretical orientation' deals with concepts and related findings of the study. The third chapter 'Methodology' encompasses the details on the selection of the study area, methods used in measurement of variables, sampling procedure for data collection, statistical tools used, conceptual model of study etc. In the fourth chapter, the results of the study in relation to the objectives with interpretations of findings and their discussion are presented. The fifth chapter summarizes the study highlighting the salient findings and implications of the study.

THEORETICAL ORIENTATION

2. THEORETICAL ORIENTATION

The main objective of this chapter is to portray in broad outlines the conceptual frame of references that has been used for the study. A review of the existing literature helps the researcher to develop theoretical framework for the study and to assess the nature and quantum of research studies already undertaken in the area of selected research topic. This will provide a theoretical basis for empirical investigation. It will also assist in evaluating one's own research effort by comparing it with related effort by others. Since relevant studies relating profile characteristics of farmers with indebtedness were not available, general references have been included for them.

The review has been presented under the following heads.

2.1 Agricultural crisis in Kerala
2.2 Brief profile of Wayanad district.
2.3 Agricultural scenario in Wayanad.
2.4 Indebtedness of farmers.
2.5 Delineation of factors leading to indebtedness of farmers.
2.6 Delineation of consequences of indebtedness.
2.7 Perception of farmers on governmental interventions to mitigate crisis.
2.8 Survival stress for livelihood security.
2.9 Profile characteristics of farmers.

2.1 Agricultural crisis in Kerala.

According to Krishnaprasad (2004a) in recent years, Wayanad, a hilly district in Kerala, famous for its spices and coffee plantations has been in news for the widespread suicides by distressed farmers. All sections of people, including agricultural labourers, traders, workers in the service sector etc. have become victims of the crisis in agrarian sector. Plantation sector is also facing serious crisis. Dozens of big and medium estates are currently under either formal lockout or illegal shutdown.

The farmers of Wayanad region in North East Kerala are in grave indebtedness and misery. They failed to pay back their loans from public and private lending agencies. This

has brought social, financial and psychological problems in their life, indescribable in words. This is the background of the critical phenomena of peasant suicides looming at large in this region (Krishnaprasad, 2004b).

Raman (2005) reported that thousands of spice farmers in India are in the midst of a major crisis, threatening one of the country's best known trades. The worst affected are black pepper farmers in the southern state of Kerala. Pepper is grown on 70,000 hectares of land in Kerala, although most farmers have small holdings of less than one acre. But a drop in global prices and competition from Vietnam has made them vulnerable. Changes in the global economy have led to the present agrarian crisis.

Mohankumar and Sharma (2006) opined that the agrarian crisis and farmers' distress in Kerala over the past one decade are closely linked to the neo liberal policy regime implemented in the country in the recent past. The relation between the two is more in regions of state like Wayanad which are heavily depended on export oriented crops, such as coffee and pepper. The agrarian crisis was reported by the distressed households in different dimensions, in the form of huge debts accumulated (on account of price fall or crop loss or both) acting as the immediate provocation for resorting to the extreme step of suicide.

Vaidyanathan (2006) suggested that import liberalization has had a strong dampening effect on the prices of several crops, especially plantation crops. This has caused considerable distress in regions with prominent farm economy. He also opined that Indian agriculture might be facing a wider and deeper crisis due to the slowing down in long term growth trend in production and productivity of agriculture considerably less than required to sustain the projected high overall growth rates in coming decades and the growing economic and social disparities between agriculture and rest of the economy between rural and urban sectors.

The National Commission on Farmers while submitting its final report in October 2006 has noticed the crisis faced by the agrarian sector in the country. The report makes it clear that the most extreme manifestation of the crisis is suicide of farmers, who are typically driven to the desperate act by the inability to repay debt incurred in the process of cultivation and allied activities. The incidence of suicide of farmers is not uncommon in Kerala also. There were 371 suicides by farmers in Wayanad district alone from 1999-2006, as per the

details furnished by the Department of Agriculture. This prima facie shows that the entire district is facing heavy crisis (Debt Relief Commission, 2007).

Following trade liberalization and due to a host of other factors like deficient rainfall, excessive concentration on export-oriented perennial crops, decline in production and productivity, fall in prices, etc. the agricultural sector of Kerala has been facing a crisis during the last one decade, which led to a rise in farmers indebtedness and suicides. While farm distress continued, there was a significant rise in loans issued by the formal financial institutions in the recent period, especially short-term loans, thus, raising the indebtedness of farmers further (Jeromi, 2007).

Kerala has been facing crisis in agricultural sector in recent years. Among the districts which face the crisis, Wayanad has been facing acute crisis. As majority of farmers are marginal and poor, the crisis has severely affected the well being of majority of population of the district (Prakash, 2007).

The total number of farmers' suicides in Kerala was 11,516 in 1997-2005. Many of these occurred in small districts like Wayanad. The years 1998-2003 were clearly the worst period. More than 70 .00 per cent of farm suicides occurred in that period (Sainath, 2007a).

In Kerala the general suicide rate (per 100000 population) is 30.1 while the rate of farmers' suicide per 100000 population is 142.9. While the number of farmers' suicides keeps increasing, the numbers of farmers have fallen since 2001, with countless thousands abandoning agriculture in distress. This would mean that farm suicides are mounting even as farm population is slowly declining (Sainath, 2007b).

Sainath (2007c) opined that for the last decade the Wayanad economy is suffering from severe devastation and the people in the district are facing various problems. The total destruction in the agricultural sector crushed the economic background of almost all of the families.

Radhakrishnan (2008) reported that the spices and coffee-rich Wayanad, where 90.00 per cent of the population depends on agriculture for a living, was the epicenter of the state's agrarian crisis and accounted for 90.00 per cent of the state's suicides in the state. A fall in crop prices and plant epidemics pushed several farmers into debt, driving them to death and destruction. Wayanad farmers have lost an estimated Rs 5,000 crore between 2001-2005 due to a crash in the prices of coffee, pepper, ginger, areca nut etc.

2.2 Brief profile of Wayanad district.

Wayanad came into existence on first November, 1980 as the twelfth district in Kerala. It lies at an average elevation of 780 m above sea level, lying on the eastern slope of Western Ghats. The district is bounded by Nilgiris and Mysore in the east and Kozhikode, Kannur and Malappuram districts on other sides. With a total geographic area of 2131 sq.km the district is inhabited by several hill tribes and settlers from different parts of the State. For administrative purposes, the district is divided into three blocks viz. Vythiri, Mananthavady and Sulthan Bathery and 25 Grama Panchayats. The district is basically a rural economy with only one municipality, Kalpetta. Bulk of the population is in rural areas and is engaged in agricultural activities. Phsyiographically the area is a hilly undulating terrain nestled in the Western Ghats. The entire Wayanad is drained by Kabani river and its three tributaries, the Panamaram river, the Mananthavady river and the Kalindy river (Government of Kerala, 2008b).

The total population of Wayanad is 7,80,619. As per the 2001 census the relative share of population dependent on agriculture in the district is 47.44 per cent while the state average was only 23.00 per cent. Further agriculture sector contributed 21.39 per cent to the district income in Wayanad where as the share of agriculture sector in Net State domestic Product was only 14.00 per cent. It is also important to note that 12.00 per cent of the agriculture dependent population in the state is concentrated in Wayanad while the relative share of the district in the state's total population is only 2.47 per cent. When only 3.85 per cent of total population of the district reside in urban areas, 26.00 per cent of total population of the state resides in urban areas. In terms of Human Development Index, Wayanad ranked 13th among the Kerala (Jeromi, 2007). When Kerala has an average of 25.83 emigrants per hundred households, the number is only 4.4 in Wayanad (Zachariah and Rajan, 2004). Even though these statistics point that Wayanad is a backward district, until recently the district was one of the major foreign exchange earners of the state thanks to its cash crops of pepper, coffee, cardamom, coffee, tea, spices and other condiments

Wayanad has a powerful history. Historians are of the view that organized human life existed in these parts, at least ten centuries before the Christ. Recorded history of this district is available from the 18th century. Wayanad fell into the hands of British and with it came a new turn in the history of this area. The British authorities opened up the plateau for

cultivation of tea and other cash crops. Roads were laid across the dangerous slopes of Wayanad, from Kozhikode and Thalassery and were extended to the cities of Mysore and Ooty through Gudalur. Through these roads settlers poured in from all parts of Kerala and the virgin forestlands proved to be a veritable goldmine with incredible yields of cash crops. When the state of Kerala came into being in November 1956, Wayanad was part of Kannur district. Later, south Wayanad was added to Kozhikode district. In order to fulfill the aspirations of the people of Wayanad for development, north Wayanad and south Wayanad were carved out and joined together to form the present district of Wayanad (Government of Kerala, 2008b).

2.3 Agricultural scenario in Wayanad.

The total geographical area of Wayanad district is 2,12,560 ha and the total cropped area is 2,05,027 ha. The major crops cultivated in the district are coffee, pepper, banana and other plantains, coconut, paddy, and areca nut. The other important crops are rubber, tea, ginger, cardamom, jack and mango. Coffee is the most important crop having the largest area of cultivation and accounts for nearly 80.00 per cent of total area of cultivation in the state. It is grown both as a pure crop and as mixed crop with pepper. Pepper is the second major crop in the district and accounts for 17.00 per cent of total area of cultivation of the state. Pepper is grown largely as a sole crop in the north eastern regions of the district and is marketed as dried berries (George and Krishnaprasad, 2006). Pulpally and Mullankolly area in North East Wayanad is known as the pepper belt of the state. Paddy is cultivated in 19,308 hectares. The rice fields of Wayanad are in the valleys formed by hillocks and in majority of paddy lands only a single crop is harvested. Ginger cultivation in Wayanad has also substantially increased in recent times and the ginger produced is marketed mainly in the form of green ginger. Homestead farming has importance in this district. The average size of holdings is 0.68 ha. The crop patterns/ crop combinations prevalent in this district are not based on any scientific norms (Government of Kerala, 2008a).

According to the Directorate of Economics and Statistics total area of operational holdings in the district was estimated at 1.59 lakh hectares. Of the total holdings, 74.00 per cent had a size below 0.5 hectare. Another 12.00 per cent of the operational holdings had a size of 0.50 to one hectare. Thus 86 per cent of holdings came under the category of

marginal holdings having an area less than one hectare. Only 1.20 per cent of total operational holdings have an area more than 4 hectares.

2.4 Indebtedness of farmers.

Chauhan et al. (1987) observed that majority of farmers had taken loans for agricultural purpose, which is a good indication of development of agricultural enterprise.

Lakshmi (2000) in her study found that 52.00 per cent of respondents came under medium level of indebtedness followed by low and high levels with 40.00 per cent and eight per cent respectively.

In Wayanad most farmers take separate loans for various crops in the same piece of land. Agricultural loans were offered even for non agricultural purposes. Of the bank loans in the district, 76.50 per cent have been disbursed in priority sector. State average for the same is 52.50 per cent. While the average credit deposit ratio in Kerala is 46.00 per cent, it is 188 per cent in Wayanad. Farmers were very much enthusiastic to obtain loans and they often borrowed beyond their means (Krishnakumar, 2004).

From1997 there was a rapid increase in indebtedness in India. Debt is a reflection of negative economy, a losing economy. Two factors that have transformed the positive economy of agriculture into a negative economy for peasants – the rising cost of production and the falling prices of farm commodities. Both these factors are rooted in the policies of trade liberalization and corporate globalization (Shiva, 2004).

Atteri et al.(2005) in their study of indebtedness in farm business in India found that principal source of income of above fifty per cent of farmers in most of the regions in the country is from cultivation of field crops and above 45.00 per cent of farmers pursuing cultivation activity were indebted. The average amount of loan per farm in India was Rs.12,585 while it was highest at Rs.17,000 and Rs. 25,000 in Southern and Western India, respectively. With increase in farm size by one hectare, the average amount of loans taken by the farms increased by Rs.7100

Jagannath (2005) studied the indebtedness of rural farm households based on secondary data and found that nearly half of the rural farm house in the country was indebted in various degrees. He also reported agriculturally prosperous states were found to have more indebted farmer households than less prosperous sates. Of the 60.00 per cent of

indebted farmers who have borrowed for agricultural pursuits, as high as forty per cent had availed loans for unproductive purposes.

NSSO (2005a) reported that out of 89.35million farmer households in India, 43.42 million were indebted having a liability either in cash or kind. Households with one hectare or less land accounted for 66.00 per cent of all farmer households and 45.00 per cent of them were indebted. Average outstanding loan per farmer household was highest in Kerala.

In India, the average amount of debt as on 30th June 2002 was about Rs. 7539 for a rural household and about Rs. 11,771 for an urban household. In rural India, Kerala has the second highest incidence of indebtedness at 39.00 per cent. The average amount of debt per rural household was also highest in Kerala (Rs. 19,663). In urban areas the highest incidence of indebtedness (37.00 per cent) and the highest average amount of debt (Rs. 28,446) was found in Kerala (NSSO 2005b).

Ramesh (2005) reported that the level of indebtedness depended on the level of development of the area in which the farmers reside and the proportion of indebted farmers decreased from less developed area to more developed area. Another reason he found for indebtedness was due to the inability of farmers to use all borrowed credit in production to realise the potential level of output. As a measure to reduce the indebtedness, farmers should diversify their production and engage in on farm income generating activities to earn extra income to reduce burden of debt.

George and Krishnaprasad (2006) opined that inability of farmers to remit back the interest on their loans has aggravated since 2001 in Wayanad. As on 31st March 2004, the amount overdue in banks in Wayanad was Rs.133 crores. The loan disbursed to agricultural sector in 2004-05 financial year was over Rs.430 crores. This shows that the overdue is a small portion of the real losses suffered in each year by farmers due to price crash.

Mohankumar and Sharma (2006) opined that accumulation of debt beyond repaying capacity for a few years is reported to be the immediate reason for resorting to extreme step of suicides by aggrieved farmers. The amount borrowed increased with the scale of operation, indicating the long established association between credit worthiness and borrowing. The average amount of debt of farmers in Wayanad is Rs.79,385. The average loan from nationalized banks is Rs. 33,183, cooperative societies are Rs.39,408 and that

from moneylenders is Rs. 30,503. The average amount indebted to friends and relatives is Rs.28,018.

NSSO (2006) published that in Kerala the proportion of households reporting cash borrowings during 2002-03 was very high- in both rural (33.00 and 42.00 per cent) and urban (30.00 and 35.00 per cent) areas. It was also published that Southern states like Kerala, Tamil Nadu, Andhra Pradesh reported high average amount of borrowings.

Rao (2006 a) reported that the most important cause for farmers' suicides is their inability to pay back the loans they have taken, often from private money lenders. The worst affected states are Maharashtra, Karnataka, Andhra Pradesh and Kerala.

Rao (2006 b) examined the differences in estimates of incidence of debt and extent of indebtedness emanating from Situation Assessment Survey (SAS), 2003 and All India Debt and Investment Survey (AIDIS), 2003. The results showed that the percentage of farm households under indebtedness were 49 per cent and 30.00 per cent respectively in SAS and AIDIS. Also the incidence of indebtedness was more than 50.00 per cent in most of the states for SAS, as against less than 25.00 per cent for AIDIS. The average debt per reporting households for the country, as a whole was Rs.31,182 as per AIDIS and RS.25,895 in SAS. While the share of debt of cultivators owed to institutional agencies was 61 per cent in both surveys.

Sindhu and Sucha (2006) using National Sample Survey (NSSO) data found that, if farmers engaged in allied agricultural activities were added to cultivators, the proportion of indebted farmers at all India level could reach 48.60 per cent which was higher than that estimated in 1971.

Jeromi (2007) stated that the sluggishness in production and decline in prices, inter alia, due to lower exports and higher imports, increased the debt of farmers in Kerala. The higher indebtedness is due to the factors like concentration of cash crops, higher value of assets per households, and availability of credit through good network of both formal and informal network. When farm distress continued, there was a significant rise in the loans issued by formal financial institutions in the recent period, especially in the short term loans, thus raising the indebtedness of farmers.

Prakash (2007) found that eighty five percent of the households in Wayanad had taken loans from various sources like commercial banks, cooperative banks, kudumbasree,

moneylenders, private financial firms, friends, relatives and others. The amount borrowed ranged between Rs.20000 and 4 lakhs and above.

Sreyas (2007) found that the majority of suicide victims were indebted to an amount of RS.20000 to Rs.1, 00,000.

Kaushal (2008) found that there was no direct link between indebtedness and farmers suicides.

Table 1. Various estimates of outstanding loans of farmers in Kerala

Author	Year	Details of estimates	Amount (Rs.)
Kurup	2005	Average debt of farmers in Wayanad district	36,191
NSSO	2005c	Average outstanding loan per farmer household in Kerala	33,907
KSSP	2006	Average amount of loan taken	44,310
Mohankumar and Sharma	2006	Average debt of farmers who committed suicide in Wayanad district	79,385
KAU	2006	Average debt of farmers in Wayanad district	1,89,153
Jeromi	2007	Average borrowing per farmer who committed suicide in Wayanad district	72,000
Nair et al.	2007	The average amount of loan outstanding per household	65,000
SLBC	2007	Average amount of loans written off by commercial banks belonging to farmers who committed suicide	31,037
Sreyas	2007	Average debt of farmers who committed suicide in Wayanad district	50,632

2.4.1 Source of credit

Singh and Singh (2005) in their study on the sources, pattern and utilization of agricultural credit in Varanasi district of Uttar Pradesh found that major financing to the farmers were contributed by commercial banks followed by Uttar Pradesh Rural Development Bank and PACS. The extent of productive credit was found to be maximum for marginal farmers followed by medium, small and marginal farmers and the extent of unproductive credit showed significant amount diverted for other purposes.

Sinha et al. (2005) analyzed the flow of credit to different categories of farmers in Nalanda district in Bihar. The results showed that the marginal farmers constituted 49.33 per cent of the total sample households and owned 22.95 per cent of total land. The loan advanced by institutional and non institutional agencies accounted for about 77.00 per cent and 23.00 per cent of total loans respectively and Commercial banks provided highest loan comprising 50-60 per cent followed by RRBs and Co-operatives.

George and Krishnaprasad (2006) reported that there are 130 private institutions functioning in Wayanad district registered under All Kerala Moneylenders Act. There were only three such institutions in 1982 and by 2000, the number went up to 60. During 2003-04, forty three new blade bank institutions mushroomed in the district. The number of unregistered institutions will be five times more than the registered ones. They observed that the constraints to get loans from mainstream financial institutions compelled the hapless farmers to depend on blade banks.

Borrowing from public sector banks and cooperative sector together continues to be a major source for farmers in Wayanad. The relative share of village money lenders in the total borrowings of farmers constituted only 20.00 per cent. Farmers resorted to this informal source of money lenders only when the possibility of lending money from other sources exhausted (Mohankumar and Sharma 2006).

Jeromi (2007) opined that in Wayanad farmer households in rural areas borrowed mostly from institutional agencies than from non institutional sources. In 2003, 82.30 per cent of outstanding loans of farmer households were taken from formal agencies. Farmers had lower dependence on money lenders, which was only 7.40 per cent as against national average of 25.70 per cent.

Naidu and Sivasankar (2007) examined the factors influencing agricultural credit in Chittoor district in Andhra Pradesh and found that the major portion of the total credit came from institutional agencies, accounting for about 70.00 per cent. The functions of commercial banks were most credible followed by cooperative banks and RRBs. There was much more involvement of institutional agencies in meeting credit requirement of farmers and the role of moneylenders in financing was comparatively reduced.

Prakash (2007) found that 68.40 per cent of farmers in Wayanad took loan from commercial banks and 60.3 per cent took loan from cooperative banks. When 41.20 per cent of farmers availed loan from Kudumbasree, 7.30 per cent took loan from money lenders. He also reported that another 7.3 per cent of farmers availed credit from private financial firms and 28.00 per cent of farmers got credit from friends, relatives and others.

Sreyas (2007) reported that 46 per cent of farmers who committed suicide in Wayanad district borrowed loan from money lenders while 61.00 per cent borrowed loan from banks and 9.00 per cent took loan as micro credit.

Vasudevulu and Reddy (2007) analysed agricultural credit in India and pointed out that 60.00 per cent of credit requirement of farmers was met by informal sources like money lenders who charge very high interest rates. They also reported that small land marginal farmers, including tenants, who accounted nearly 80.00 per cent of holdings and one-third of area operated, depended more heavily on informal sources. Among the formal credit institutions, commercial banks emerged as a major player in agricultural credit followed by cooperatives and RRBs.

2.4.2 Year of borrowing

Prakash (2007) reported that 60.00 per cent of the bank loans were taken prior to the agricultural crisis of 2003. Between 2003 and 2008 forty per cent of loans were taken. He also found that the farmers were not able to repay the interest or principal amount during the post crisis period.

2.4.3 Credit renewal pattern

Bonde (2005) in his study on the overdue pattern in agriculture in Amaravathy district of Maharashtra found that the percentage of defaulters in the total borrowers was 85.77 per cent in cooperatives and 79.04 per cent in commercial banks. The amount of overdue per defaulter had been observed to be Rs.19,201.71 in cooperatives and Rs.22,606.15 in Commercial Banks. It was also concluded that the amount of overdue increased with the size of holding in both financial institutions and overdue showed direct relationship with total amount borrowed.

Hatai and Sen (2005) found from their study on overdue pattern in different parts of Uttar Pradesh that the major reasons cited by willful defaulters was slackness in the timely recovery by banks, followed by diversion of income and uncertainty about fresh loans while in the case of non willful defaulters it was low crop yield, crop failure due to natural calamities and inadequate finance

Sanjay (2005) in his study on the overdue in tribal areas of Jharkhand indicated that characters like literacy, percentage of income from other sources, percentage of cash expenditure for production purpose total expense, number of visit to officials, percentage of borrowing from different institutions to total production credit, percentage of productive utilization of credit, irrigation potential and cropping intensity helped in differentiating borrowers into defaulters and non defaulters. Similarly, the defaulters could be classified into willful and non willful defaulters on the basis of factors like literacy, percentage of income from other sources, size of holdings etc.

Narsiah (2006) conducted a study to analyse the size of overdue in cooperative banks, factors influencing overdue and its pattern with reference to different size of farms. It was revealed that the entire sample unit except 31.70 per cent of farmers enjoys the fruits of both farm and non farm income. He also found that the source of income and default size of loan amount were statistically independent while the extent of credit gap and loan default were statistically related.

2.4.4 Credit repayment pattern

Arunachalam and Palanisamy (1991) examined the magnitude of diversion of crop loan and reasons for non repayment in Salem district of Tamil Nadu. Crop failure due to drought accounted 52.00 per cent of non repayment, low production to the extent of 34.00 per cent and increasing family expenditure are difficulties which obstruct payment.

Rambabu et al. (1991) examined the repayment behaviour of farmers in Guntur district of Andhra Pradesh which contributed to the high rate of default of farm credit. Eighty percent of borrowers repaid the borrowed amount in time, 12.00 per cent repaid partly and two percent did not repay. Desire for getting future loan, wish to be honest and prompt and good market price for the produce were some of the important reasons for regular payment.

Sate et al. (2005) examined repayment pattern of borrowers in western Maharashtra and found that average repayment of crop loan was to the extent of 63.00 per cent while the proportion repaid was highest in medium sized holdings followed by small and large groups. The main reasons for non repayment of loans were low income, non-remunerative prices and crop failure. They suggested proper appraisal of loan proposal, follow up and supervision after disbursal and legal action to be taken against willful defaulters

Prakash (2007) in his study on indebtedness in Wayanad found that 89.00 per cent of households had not made any repayment of loan taken. Some farmers had renewed loans by adding interest amount to be paid to the principal amount. The agricultural crisis due to fall in production and prices has destroyed the financial stability of the farmers and their ability to repay loans.

Sreyas (2007) found that 54.00 per cent of the family members of the deceased farmers did not take any measures for loan repayment.

2.4.5 Credit disbursement pattern

Lekshmi (1993) reported that 33.3 per cent of marginal farmers, 62.69 per cent of small farmers and 92.31 per cent of large farmers could avail loans coinciding with the beginning of crop season. Timely disbursement of credit coinciding with credit season was more in the case of large farmers when compared to small and marginal farmers.

Sajan (1996) studied the crop loan system for farmers in India and concluded that in many cases, after disbursal of loan to farmers, there was no supervision over the end use of loan and borrowers had not been persistently asked to repay loan. The study also showed that 21.9 per cent of farm household reported that after loan disbursal no officer/ staff from banks visited them. On the other hand, bank officials had an opinion that above problem was due to inadequate staff strength and due to this frequent field visits were not possible.

Bridar and Jayasheela (2002) in their study of rural finance suggested that the procedures involved in sanctioning and disbursement of credit should be simplified and every farmer should be provided with passbook containing all the details of the farmers. This should be periodically reviewed and should be the basis for all decisions regarding the sanctioning of credit.

2.4.6 Credit utilization pattern

Rajput et al. (1980) in their study of farm credit availability and its utilization found that marginal farmers and small farmers diverted credit for unproductive purposes.

Mazumdar and Boruah (1998) studied the utilization pattern of loan disbursed to allied activities by the farm borrowers in Nargoan district of Assam and opined that the success of credit institutions and prosperity of farmers depended on productive use of loan.

Saikia (1988) in his study conducted in Jorhat district of Assam found that the extent of diversion of crop loan for unproductive purpose was 42.96 per cent in both cash and kind loan.

Surajit(1999) in his study of financing rural credit by commercial banks in Assam found that loan amounts sanctioned to poor farmers were generally diverted to meet their family needs like housing, marriage of their children and repaying the amount borrowed from the village money lenders. These resulted in the non-utilization of loan amount in the field for which the amount was sanctioned.

Srinivasa (2000) while examining the default pattern in agricultural sector pointed out that one of the major factors causing the overdue was the fear or delay of non-sanctioning of new loans. He further stressed that majority of the farmers were diversifying their loan amount for consumption purpose, building house, marriages etc

Birdar and Jayasheela (2002) stated that many empirical studies in agricultural credit revealed that loans are being utilized for other than specific purpose. The misutilization of loans increases the burden on the burrowers because they are not in position to generate enough income to repay the loan, which they have availed from banks.

Jeromi (2005) opined that only 44 per cent of loan amount was used for productive purposes and the rest 56 per cent was utilized for non productive purposes like consumption, social purposes etc. Credit flow to farmer households is more in tune with their household expenditure than farming activity. This kind of borrowing sustained over a period, will lead to high level of indebtedness disproportionate to the level of economic activity undertaken by the farmer households.

Sreyas (2007) found that among farmers who committed suicide in Wayanad, 82.30 per cent had agricultural loans, out of which 52.90 per cent used the loan amount for the same purpose while the remaining 23.1 per cent used loan for medical treatment, marriage, housing and other personal purposes.

2.4.7 Perception of source of credit.

To assess the perception of farmers with respect to credit facilities Bhaskaran (1978) took into account their interest rate, adequacy of credit, timely credit, repayment of credit, and recovery procedure in credit. In his study among paddy growers, Intensive Paddy Unit got the maximum score followed by cooperative bank, commercial bank, relatives, land mortgage bank, money lenders and neighbors in the descending order.

2.5 Delineation of factors leading to indebtedness of farmers

The agrarian crisis and the resultant indebtedness of farmers can be fundamentally attributed to three basic facts. Factors which led to indebtedness delineated in the study have been directly or indirectly influenced by these basic reasons.

1. Decline in public expenditure in agriculture sector

The deceleration in the growth of agriculture in the 1990s was mainly due to inadequate investment. This is supported by the fact that the share of agriculture in the Gross Capital Formation (GCF) has progressively come down from 15.40 per cent in 1980-81 to about 8.00 per cent by the end on Ninth Plan (2001-02) and that as a per cent of GDP it has declined from 3.50 in 1980-81 to 1.60 in 2001-02. The share of agriculture and allied sectors was only 3.9 per cent of the total Tenth Plan outlay as against 4.90 per cent in the ninth plan. It was 14.9 per cent of total plan outlay of first five year plan. And despite increase in the share of irrigation, the total share of agriculture, irrigation and rural development stood reduced from 20.10 per cent in Ninth plan to 18.70 per cent in the Tenth plan (Dandekar, 2006).

2. Impact of agricultural trade liberalization

Trade liberelisation has adversely affected the farmers in Kerala because more than 80 per cent of the commodities produced in the State depend on domestic and international market conditions. With the removal of quantitative restrictions on imports and lowering tariff levels after the WTO and subsequent Agreement on Agriculture, farmers cultivating commercial crops have been adversely affected by increased imports and competition in the international market. When the local economy became integrated with international market, fluctuations of price in the international level affected the farmers severely. In a liberalized trade environment, small and marginal farmers in particular, are not able to compete with other countries due to persistent lower yields and high cultivation cost as no restructuring programme was undertaken by the Government or other stake holders to improve export competitiveness in the new trade environment. Pepper produced in Kerala fetched a premium price in international market in view of its intrinsic quality. However, consequent to the liberalization of imports, low quality pepper was imported from other countries. This pepper was mixed with indigenous pepper of Kerala adversely affecting its quality, and was

exported. As a result, the demand and price of Kerala pepper in international market decreased.

3. Cropping rigidity

The farmers growing export oriented perennial commercial crops like pepper, coffee, tea etc. have been most affected by the crisis. These crops take four to seven years to yield after they are planted. Then their production continues for decades. This imparts inflexibility to agriculture as, unlike cereals or vegetables, it is difficult for farmers to change swiftly to other crops. Hence the plummeting of price in market and the incidence of pests and diseases which led to destruction of crops cost the farmers dearly.

Table 2. Delineation of factors leading to indebtedness of farmers

Author	Year	Factors
Government of Kerala	2003	Decrease in income, fall in prices, stiff competition for exports and imports after trade liberalization.
Krishnakumar	2004	Fall in prices, continuous drought, and widespread crop disease.
Krishnaprasad	2004a	Crash in prices, persistent droughts, unrestrained imports and changes in tariff brought by neo liberal economic policies.
Shiva	2004	Rising cost of production and falling prices of farm commodities caused by trade liberalizations and corporate globalization.
Vyas	2004	Structural changes in Indian agriculture like shift from food to cash crops and purchase of inputs, liberalization of external trade policies, decreasing rate of growth of agricultural production, failure of extension agencies etc.

Jeromi	2005	Fall in domestic price of commodities and the increase in the volatility of prices.
Joseph and Joseph	2005	Effect of international price fluctuations, export of bulk items value addition, increasing costs and decreasing income.
Mohankumar and Binny	2005	Coffee and pepper farmers are fulltime workers in agriculture and depend solely on these crops for livelihood. The price crash of these crops led to indebtedness.
Patnaik	2005	Decline in government expenditure in rural areas, lack of private investment in food crops, drastic fall in prices of crash crops, drought.
Sainath	2005c	Large scale import of Sri Lankan pepper, as well as pepper produced in Indonesia, Vietnam etc which was routed through Sri Lanka led to decrease in demand as well as price of the crop in the international market and devastation of farmers.
George and Krishnaprasad	2006	Price crash of agricultural produce, drought, diseases and depletion of water sources.
Katakam	2006	Repeated crop failure, inability to meet rising cost of production, utilization of loans for non productive purposes.
Mohankumar and Sharma	2006	Shift in cropping pattern, higher integration of crops to world market, fluctuation in prices, implementation of neo liberal policies, severe drought and high interest rates.
Narayanamoorthy	2006	Unremunerative price for crops, frequent droughts, and non profitability of agriculture as income from agriculture is less than agricultural expenditure.
Pal et al.	2006	Opening up of agricultural sector to international trade, surge in imports and high volatility of prices.

Rao	2006a	Frequent crop failure due to climate changes, pest or disease attack and inability to meet cultivation cost
Sainath	2006	Rising debt, soaring input costs, plummeting output prices and credit crunch leading to financial collapse and crushing levels of debt.
Vaidyanathan	2006	Sub normal rainfall, fall in prices, disparity in public services, low production and productivity, investment failure in agriculture.
Anon.	2007	Stagnation, increasing risks in production and marketing of crops, collapse of agricultural extension system, growing institutional vacuum and lack of alternative livelihood opportunities for the rural population.
Chengappa and Vinayaka	2007	Fragmented holdings, over-dependence on agriculture due to slow growth of non farm sector in villages, adverse effect of drought, lack of irrigation facilities, vagaries in rainfall, soil fatigue due to over exploitation.
Debt Relief Commission	2007	Crop damage due to drought and excess rainfall, fall in prices, decrease in agricultural income, rise in cultivation costs, increase in consumption expenditure of farmer
Government of Kerala	2007a	Long agricultural production cycle, lack of access to credit, high cost of borrowing, excessive reliance on money lenders, problems of marketing, adverse terms of trade.
Jeromi	2007	Stagnant agricultural income, disease of main crop and support crops, cropping rigidity, stagnant production and productivity, decline in exports and rise in imports, lower growth and higher volatility of prices and declining profitability of cultivation.

Prakash	2007	Fluctuations in climate, lack of manure and irrigation facilities, disease and pest attack, fall in price during last five years and absence of price stabilization.
Sreyas	2007	Fluctuations in the market, crop failure due to unpredictable weather, diseases, increasing expenditure on health and education.

2.6 Delineation of consequences of indebtedness

Table 3. Delineation of consequences of indebtedness

Author	Year	Consequence
Anon.	2004	With the family income dwindling in most homes in Wayanad, young boys and girls had to migrate to Tamil Nadu, Andhra Pradesh and Karnataka in search of jobs.
Krishnakumar	2004	Many farmers turned to labourers. Young women of farm families move to other districts in search of unfamiliar jobs.
Vasavi	2004	Stress and mental agony of farmers increased due to fluctuations in price and loss in agriculture coupled with social pressures.
Sainath	2005a	Farmers of Pulpally once owned hundreds of motor vehicles. Now many of these are off roads, sold or lost in repayment.
Sainath	2005b	Buss traffic from Wayanad to Karnataka has grown up 400 per cent as farmers go there daily seeking work. A number of marginal farmers and landless worker are engaged in illicit brewing. Many cinema halls and tea shops have closed.

Sainath	2005c	Agrarian crisis had a profound impact on institution of marriage. The number of weddings has fallen sharply in Pulpally area. Many cannot afford them. Weddings are down almost 50.00 per cent down as compared to 5 years ago.
George and Krishnaprasad	2006	Sudden or gradual slide down in the standard of life and related stress and strain in social life invaded the social life of farmers. The stress and tension in family due to economic insecurity created an atmosphere of utter hopelessness and disarray. This led to mental depression, alcoholism and to social isolation among farmers.
Mohankumar and Sharma	2006	Twenty two per cent of farmers sold land between 2000 and 2004. More than 8 acres of land was sold per 100 acres in Wayanad. Distress sale of land was considered as the last resort by some farmers.
Jeromi	2007	Sixty four per cent of farmers were living in isolation from society with no association with political, social, cultural or religious organizations. Sixty two per cent of farmers who committed suicide consumed alcohol. Farmers also resorted to cutting trees and selling them.
Sainath	2007c	Growing debts forced many to fell countless trees on their land to sell timber. In the ecologically fragile zone of Pulpally that has only doubled the damages.
Sainath	2007d	Churches have lost crores of rupees in a very short time. Sunday collections of many churches fell to ten per cent below normal. Monthly contributions are also down badly.

4.5 2.7 Perception of farmers on governmental interventions in resolving agrarian crisis

Government of Kerala (2007a) stated that the rehabilitation package by the government of India is not attractive for the vulnerable group of farmers because it does not address the fundamental issues leading to the extreme step of suicide. Addressing the principal portion of loan is very much essential for which constitution of a credit risk fund is essential. Instead of preparing uniform package for all 31 districts, state specific support system need to be required with more support from the Government of India.

An Act was passed by the Government of Kerala to provide relief to those farmers who are in distress due to indebtedness, by constituting a Debt Relief Commission with power to pass awards after adjudication and to recommend appropriate measures for the redressal of the grievances of such farmers through conciliation and negotiation and for matters connected therewith or incidental thereto. The act passed on Dec 29, 2006 set up a commission with power to adjudicate petitions relating to debt to fix outstanding debt and negotiate settlement of dispute. The commission also had power to recommend cases to Government to write off loans. (Government of Kerala, 2007 b)

Jeromi (2007) opined that the impact of measures by government, in terms of actual relief received by farmers and creating conditions for persistence of agricultural operations on ground was not felt in significant way, as evident from the continuation of suicides. Reasons for lack of effectiveness of schemes could be lack of critical minimum effort in redressing the problem, money spent for ad hoc schemes and subsidies went down drain, schemes of banks only got postponed and increased debt burden of farmers, some measures like watershed management may takes years to fructify and several of the relief measures were announced very late and implemented very slowly. Hence people are calling these as paper packages. In short the measures could not address the issue of debt burden of farmers in its totality.

Prakash (2007) found that the NREGS implemented in the district in 2006 had resulted in the shortage of agricultural labour and rise in wage rate. The wage rate given in NREGS is Rs. 125 for male and female per day. This led to enhancement of female wage rate in the district which was much lower than male wage rate.

Swaminathan (2007) reported that an expert group led by Professor R. Radhakrishna of the Indira Gandhi Institute of Development Research has identified the inadequacies and

inappropriateness of several components in the package introduced by several Central and State governments that seek to stop the suicides. Some of the major conclusions are

i. The design of relief measures is not based on felt needs of households
ii. There is a lack of region and household specific flexibility built into packages
iii. Implementation structures tend to be fragmented and there is little convergence and synergy among different components

As a part of the package, the pepper farmers who lost their crop in the Panchayat were given a total amount of Rs 1.30 crores as compensation. It was distributed as Rs. 65 lakhs in cash and Rs. 65 lakhs as fertilizers.

National Rural Employment Guaranty Scheme (NREGS) has triggered scarcity of farm labourers in Wayanad district of Kerala causing consternation among farmers. The farmers say the scheme has also resulted in a steep rise in wages in the district, which is in the grip of an agrarian crisis (Anon., 2008).

Gopakumar (2008) reported that the Debt Relief Commission had tried to justify its mandate, but, in retrospect, perhaps its interventions and the government's response to them were dwarfed by the demand it generated. Soon after the commission was constituted on March 19, 2007, it was overwhelmed by petitions from farmers from all over Kerala. But the initial enthusiasm the commission generated as it effectively deferred eviction proceedings began to wane when the anticipated loan waiver or debt transfer to the government did not happen. The commission's 'orders' proved to be mere 'recommendations' to banks to reschedule loans, at best, among other less attractive measures. Of the nearly six lakh applications the commission received, it was able to consider only about 6,000 on a case by case basis as of March 2008. For several months it worked without a proper office, staff, or funds. Thousands of petitions remain unopened in the commission's new office, which it occupied in late February 2008. In August 2007 the government accepted the commission's recommendation, made in June, that the entire Wayanad district be declared distress–affected and that the government take over loans of up to Rs.25,000 given by cooperative credit institutions until June 30, 2006 to small farmers owning up to one acre. Though the government issued orders sanctioning nearly Rs.50 crore for this measure, which would have helped nearly 70,000 of over a lakh or more of petitioners from Wayanad, the money has not been disbursed so far. The commission's mandate was confined mostly to adjudicating

disputes involving mostly cooperative banks but not nationalised or scheduled banks. The commission could issue directions in cases where nationalised banks were involved, but these were not binding on the banks (Gopakumar, 2008).

A series of steps, including a two-year long moratorium on farm loans since 2005 and the stoppage of recovery proceedings by banks, helped abate suicides. The government also took over the debts of the families of 412 deceased farmers and gave Rs 50,000 each as compensation. This was followed by writing off of the interest- totaling Rs 88 crore in Wayanad- on all bank farm loans- availed by farmers up to 2001 (Radhakrishnan, 2008) .

2.8 Survival stress for livelihood security.

Dillner (1984) inferred that the high suicide rates associated with farming are indicative of the stress currently faced with the occupation.

Walker and Walker (1987) found that farmers scored higher than non farmers on a range of stress related symptoms, including chronic tiredness, difficulty in relaxing, forgetfulness, los of temper, problems concentrating back pain and sleep disruption.

Mann (2002) identified that most farm suicide victims have a diagnosable psychiatric illness or disorder and the most common disorder are mood swings.

Vasavi (2004) stated that farmers undergo a great deal of financial stress and mental agony due to uncertainty of yield and violent fluctuations in prices of agrarian produce.

Sakthivel (2008) reported that too much stress make it harder to face life and may cause life style changes, increased medical expenses and elevated concern about future.

Sengupta (2008) reported that farmers kill themselves by consuming pesticides due to extreme conditions stress and economic assets loss.

2.9 Profile characteristics of farmers

2.9.1 Age

Anantaraman (1993) reported that age alone cannot influence as it has to go with knowledge and mass media participation.

Reddy (2003) found that majority of respondents (57.33 per cent) were middle age grouped followed by young age group (28 per cent) and old age group (16.71) per cent .

Murali and Jhamtam (2003) reported that majority of respondents (68.75 per cent) belonged to middle aged group followed by old age group (16.25 per cent) and young age group (16.00 per cent).

Sharma et al. (2006) on their study on indebtedness found that majority of the respondents (46.00 per cent) were from middle aged group followed by young aged and old aged.

2.9.2 Education

Viju (1985) found positive and significant relationship between education and knowledge.

Gosh (1995) found positive or more or less high relationship between educational status and group cohesiveness.

Subramanyeswari and Reddy (2003) reported that there was positive and significant relationship between educational status and entrepreneurial behaviour.

Rezvanfer and Vaisy (2006) found that educational level had positive and significant relationship with job satisfaction.

2.9.3 Type of family

Kumar (1980) reported that joint family system is not prevalent among agricultural labourers.

Mansingh (1990) stated that two third of the woman agricultural labourers lived in nuclear families having up to five members.

Geetha (2007) found in her study that 73.33 per cent of settler farmers in Wayanad lived in nuclear families. She also reported positive and significant relationship between size of family and risk preference.

2.9.4 Family educational status

Ranganathan (1984) reported that educational level had positive relationship with the attitude of farm youth towards farming.

Alex (1994) reported that education was not associated with the role performance of labourers with regard to their participation in decision making with farmers in paddy cultivation.

2.9.5 Extent of holding

Kurup (2005) opined that in Wayanad when the land holding size is less than one acre, cultivation was marginally profitable and in case of landholdings above one acre it was a loss, perhaps because of hiring labour.

Jeromi (2007) reported that the size of land holding of 77.00 per cent of distressed people in Wayanad was between 10 cents and 2 acres. Nearly 60 per cent of farmers who committed suicide had land area below one acre. About 35.00 per cent of farmers were marginal or small farmers and had land area between 11 to 50 cents. Nearly 42.00 per cent of deceased farmers had cultivation in leased land

Mohankumar and Sharma (2006) reported that wetlands are leased in for cultivation of banana, other plantains and vegetables by marginal and sub marginal farmers who have lost their crop in dry land.

Sreyas (2007) reported that 1.30 per cent of the farmers who committed suicides in Wayanad were landless. While 10.10 per cent of farmers who committed suicide had below 10 cents of land, 35.10 per cent had 11 to 50 cents of land, 13.30 per cent had 51-99 cents of land, 28.80 per cent had 1-2 acres of land and 11.4 per cent had more than 2 acres of land. Hence, it is evident that majority (60 per cent) of the deceased were considered poor with below one acre of land. This means that the basic resource for sustainable agriculture, a reasonable land holding size is lacking among the majority of farmers who committed suicide.

2.9.6 Migration

According to Mohandas (1992) the principal motivation of settlers was to pursue cultivation in the rich soils of Wayanad district. Nevertheless the nature of acquiring land ranged from direct cash purchases to illegal purchases.

Krishnakumar (2004) reported that most of the farmers in Wayanad region are descendents of settlers from other parts of Kerala, who moved into virgin soil, fertile forests in large numbers.

George and Krishnaprasad (2006) stated that there was a sudden influx of settlers into Wayanad after the Second World War due to low land prices. They had to wage war with cold conditions, diseases like malaria. But those who succeeded transformed the jungle district of Wayanad into a prosperous agricultural district.

Geetha (2007) observed that large scale influx of migrant settlers into Wayanad district resulted in progressive depletion of common property including forests. She found in her study in Wayanad that 60.00 per cent of respondents had a history of more than 40 years in the district. Twenty per cent belonged to the range of 31-40 years, 14 .00 per cent to 16-30 years and only 2 .00 per cent had a history of less than 15 years of migration

2.9.7 Shift in cropping pattern

There was a shift in cropping pattern in the regional economy of Kerala marked by a decline in the labour intensive food crops and a corresponding increase in the less labour intensive and high value commercial crops. This may be seen in the light of increasing cost of cultivation and reduced profitability inter alia on account of high agricultural wages in the state. (Kannan and Pushpangadan, 1990)

Chekkutty (2005) reported that when the price of vanilla increased in 2002-03, farmers who once grew vanilla as an intercrop in coconut, banana etc greedily cut out their traditional crop varieties and took up vanilla farming in a big way, confident that prices would remain high for a long time.

Joseph and Joseph (2005) opined that from 1974 -75 to 1986-87 there was a stagnation or decline in the production of all commercial crops except rubber, pepper and ginger. 1987-88 to 1995-96 saw a major change in the cropping pattern of the regional economy of Kerala due to the unprecedented growth in production of all commercial crops.

But the period of 1996-97 to 2002-03 was marked by a decline in rate of output of most crops, with some crops like coconut, tea and pepper recording negative output growth.

In the early periods the settler farmers of Wayanad were cultivating food crops like paddy, tapioca, vegetables, oranges etc. However they later switched to perennial and cash crops like coffee, pepper, arecanut, cocoa, cardamom, ginger etc. and slowly started depending on cash crops alone. This was due to better price they got and less labour intensive nature of agriculture. (George and Krishnaprasad, 2006)

Kerala's agricultural economy is undergoing structural transformation from the mid seventies by switching over a large proportion of its traditional crop area which was devoted to subsistence crops like rice and tapioca to more remunerative crops like coconut and rubber. Kerala state which had a low base in food production is facing serious challenges in retaining even this meagre area (Government of Kerala, 2008b).

2.9.8 Exposure to mass media

Saravanan (1992) found that respondents had mass media exposure in the order of medium (58.34 per cent), low (26.66 per cent) and high (15.00 per cent) category.

Reddy (2003) revealed that majority of respondents (37.33 per cent) had medium level of mass media exposure followed by low (22.67 per cent) and high level of mass media exposure.

Ahire and Shenoy (2005) in their study regarding the utilization of communication channels by mango growers of Andhra Pradesh observed that newspaper, T.V and agricultural magazines were the most important sources among mass media channels.

Sengupta (2008) stated that many farmers were extremely vulnerable to misinformation about crop prospects due to lack of mass media exposure.

2.9.9 Extension participation

Bandagoankar (1983) reported that there existed no relationship between extension participation and adoption behaviour.

Reddy (1983), Nataraju and Gowda (1986) and Pandurangaiah (1987) reported a positive relationship between extension participation and adoption behaviour

John (1991) found that mere membership in group itself enhanced the extension participation of the members and he also found that extension participation had positive and significant influence on adoption of pepper cultivation practices.

Sindhu (2002) reported that the old farmers are likely to lose interest in active participation within and outside social system.

2.9.10 Extension contact

Khaleel (1978) found positive and significant relationship between contact with extension agency and knowledge.

Ravi (1979) found that majority of cassava cultivators (70.83 per cent) had medium degree of contact with extension agency, followed by one fifth (19.17 per cent) with high degree of extension contact and one tenth (10 per cent) had low degree of contact with extension agency.

Nizamuddin (1996) reported that a vast majority of respondents had higher contact with extension agency.

2.9.11 Economic motivation

Sriram (1996) observed that majority of farmers (58.34 per cent) had medium level of economic motivation followed by high and low levels.

Sivaprasad (1997) found that economic motivation was an important character that persuades people to adopt improved practices that are proven worthy.

Sabapathi (1988) observed that those who are economically motivated would try to improve their farming practices by acquiring knowledge from locality sources or cosmopolitan sources.

Thomas (1998) reported that the more one is motivated by economic ends, the more he will try to adapt to practices which are aimed at increasing sustainable returns

2.9.12 Risk orientation

Basram (1966) found that farmers after using old varieties of tools and traditional implements for years feel secure in the outcome of these implements. They have small land holdings and thus cannot take risk in trying new ideas.

Sivaprasad (1997) reported that by imparting proper training orientation, risk bearing ability of individual could be increased.

Chandran (1989) found that there is a positive and significant relation between risk orientation and awareness of farmers.

2.9.13 Credit orientation

Jaleel (1992) observed positive and significant relationship between credit orientation and extent of adoption.

Sindhu (1997) reported a non significant relationship between credit orientation and conceptual skills of cut flower owners.

Jeyalekhshmi (2001) reported negative and significant relationship between credit orientation and empowerment.

2.9.14 Progressiveness

Singh et.al (1971) reported that the large proportion of less progressive farmers borrowed money for the purchase of bullocks followed by fertilizers where as in the case of their progressive counterparts the majority obtained credit for investment in developing owned irrigation equipment

Geetha (2007) found that 57.70 per cent of settlers in Wayanad had high levels of progressiveness while 42.22 per cent of them had low levels of progressiveness.

2.9.15 Perception of profitability

Bhaskaran (1978) conceptualized perception of profitability as that characteristic which places high importance on economic ends and alternatives. All behavior of farmers is not economically motivated and different individuals possess different degree in their perception of profitability. In his study he found that there is no relationship between farmers' perception of profitability, extent of adoption and credit utilization.

2.9.16 Level of aspiration

Seema (1986) found that level of aspiration had no significant relationship with role performance.

Jeyalekshmi (1996) found that there was a significant relationship between level of aspiration and entrepreneurial behaviour of rural women.

2.9.17 Income expenditure pattern

Pandey (1976) observed that when the annual income was just sufficient to meet the consumption expenditure of the sample, the amount of outstanding debt was kept more or less the same either by not repaying them or by incurring new debts to repay the old ones.

Rajendran (1981) found that income from food crops formed major source of income of the farm households and it formed about 82.00 per cent of the gross income of the farmers.

Rao (1982) revealed that there was no significant relationship between income and family size. But wide variations were observed in the income levels of different farms

Unnikrishnan (1994) reported that annual income of the household can be said to be the total retains of the farmer in monetary terms during one year. Household expenditure was defined as the financial commitments involved typically in the manner of living by the household. It takes into account three aspects viz. food expenditure, noon food expenditure and total expenditure of families.

Prakash (2007) reported that 32.00 per cent of total expenditure in Wayanad was on medical treatment. When 25.60 per cent of total expenditure was on purchase of consumer durables, 16.20 per cent was on marriage expenses. 9.40 per cent of total expenses were on major repair of house, 7.00 per cent educational expenses and 5.60 per cent on construction of house.

METHODOLOGY

3. METHODOLOGY

This chapter deals with the materials used and methods employed in this study and the same are presented in the following sections.

3.1 Locale of the study

The study was conducted in the Pulpally Panchayat of Wayanad district. The locale was purposively selected on well found grounds. Wayanad is the district most severely affected by the agricultural crisis in Kerala and the manifestation of crisis is the rise of number of farmers who committed suicides (Jeromi, 2007). Large scale suicides happened in Pulpally panchayat of Wayanad district on account on the sole dependence of farmers on a single crop like pepper and sudden crash in its price in the international market along with the resultant failure of farmers to cope up with the crisis (George and Krishnaprasad, 2006).

Pepper is the crop which witnessed the largest fall in yield since 2001 in Pulpally (Prakash, 2007). Pulpally which was earlier known as Gulf of Kerala and Kuwait of Kerala for the prosperity that came with booming pepper and coffee prices, now has farmers distraught with tales of woe (Krishnakumar, 2004). Every acre in Mullankolly- Pulpally region carries a debt of Rs. 2-3 lakhs (Sainath, 2005c). Hence to study the agrarian crisis and resultant indebtedness of farmers, Pulpally Panchayat in Wayanad district was selected as the ideal location.

3.2 Selection of samples

Since the study pertains to indebtedness, the farmers who availed credit from both institutional and non-institutional sources were considered. The addresses of farmers were collected from the Agricultural Officer of Pulpally panchayat. From the list sixty respondents were randomly selected for the study. Since these respondents took multiple loans from various sources the total numbers of loans taken by the sixty respondents were ninety eight.

3.3 Measurement of variables

3.3.1 Profile characters of farmers including personal and socio-economic variables.

3.3.1.1 Age

Age was operationally defined as number of years completed by the respondent at the time of study. It was measured by directly asking the years they had completed at the time of the study.

Depending upon the age of the individual they were classified into three groups less than 35 years, 36 to 50 years and more than 50 years taking frequency and percentage.

3.3.1.2 Education

Education refers to the extent of literacy obtained by the respondent at the time of the study. The level of education was measured with the help of scale developed by Trivedi (1963) with slight modifications.

Scoring procedure is as follows

Sl. No	Level of education	Score
1.	Illiterate	0
2.	Primary level	1
3.	Secondary level	2
4.	Higher secondary level	3
5.	College level	4

Frequency and percentage analysis was done.

3.3.1.3 Type of the family

The respondent was asked about the type of family he belonged to, whether unmarried, nuclear or joint family. The respondents were classified taking the frequency and percentage into the three corresponding categories.

3.3.1.4 Family educational status

The family educational status was measured by the procedure adopted by Ray (1967) where the total educational status was averaged with effective family size. The effective family size was the number of members above the age of five. Accordingly, they were classified into high, low and medium groups based on the mean and standard deviation values.

3.3.1.5 Extent of holding

In this study extent of holding was operationalised as the total area owned by the farmer and the total area cultivated by him. This was measured by directly asking respondents their extent of holding. Based on their land area owned the respondents were classified into marginal, small and large farmers. Total area cultivated was calculated by taking leased land cultivation into account. On the basis of area cultivated, farmers were

further classified into low, medium and high groups taking mean and standard deviation values. Frequency and percentage analysis was done separately on leased in and leased out land.

3.3.1.6 Crops grown

This was operationalised as the crops grown by the respondent in the past year. The intercrops grown by the respondent were also recorded. Frequency and percentage analysis was done.

3.3.1.7 Migration

Migration was operationally defined as the number of years since the respondent has settled in Wayanad. The procedure followed by Geetha (2007) was adopted and the years were recorded as such. Taking frequency and percentage into account, the respondents were classified into four groups of less than 15 years, 16 to 30 years, 31 to 40 years and more than 40 years.

3.3.1.8 Shift in cropping pattern

In Wayanad district there has been a shift in cropping pattern from food crops to cash crops across years (George and Krishnaprasad, 2006). To measure the shift an arbitrary scale was used. The respondent was asked to indicate the major crop cultivated by him in the 1970's, 1980's, 1990's, 2000-2005 and after 2005. Frequency and percentage analysis was done.

3.3.1.9 Exposure to mass media

Refers to the degree to which the respondent had exposure to various mass media available. The procedure used by Predeepkumar (1993) was used with slight modifications.

Sl. No	Medium	Daily	Twice/ more in a week	Once in a week	Fortnightly	Once in a month	Never
		5	4	3	2	1	0
1.	Newspaper						
2.	Radio						
3.	TV						
4.	Farm magazines						
5.	Other magazines related to agriculture						

The total score was obtained by summing the scores obtained by the respondent. The scores ranged from 0 to 25. The respondents were classified into high, medium and low groups on the basis of mean and standard deviation of scores. Frequency and percentage analysis was done.

3.3.1.10 Extension participation

Extension participation is operationally defined as the extent of participation of respondent in different extension activities during past one year. The procedure followed by Jaiswal et al. (1971) was used. Frequency and percentage analysis was done.

Sl. No	Activities	Twice/ more in a week	Once in a week	Fortnightly	Once in a month	Never
		4	3	2	1	0
1.	Seminar					
2.	Study tour					
3.	Exhibition					
4.	Campaign					
5.	Lecture					

The total score was arrived by summing the scores obtained by the respondent. The scores ranged from 0 to 20. The respondents were classified into high, medium and low groups taking the mean and standard deviation into consideration. Frequency and percentage analysis was done.

3.3.1.11 Extension contact

Refers to the extent of contact of respondent with various agricultural personnel. The procedure followed by Hemalatha (1997) was used.

The total score was arrived by summing up the scores obtained by the respondent. The scores ranged from 0 to 12. The respondents were classified into high, medium and low groups taking the mean and standard deviation of the scores. Frequency and percentage analysis was done.

Sl. No	Personnel	Twice/ more in a week	Once in a week	Fortnightly	Once in a month	Never
		4	3	2	1	0
1.	Agricultural officer					
2.	University scientists					
3.	Others					

3.3.1.12 Economic motivation

Economic motivation is operationally defined as the extent to which respondent is oriented towards profit maximization and the relative value he places on monetary gains.

The scale adopted by Supe (1969) was used to measure economic motivation. The scale had six statements and the responses were collected on a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree. The first four were positive statements and were scored five, four, three, two and one respectively. Fifth and sixth were negative statements and were scored in the reverse manner. The total score for a respondent was obtained by summing up the score for each statement. The score ranged from 5 to 30. The respondents were classified into high, medium and low groups on the basis of mean and standard deviation. Frequency and percentage analysis was done.

3.3.1.13 Risk orientation

Risk orientation was operationalised as the degree to which the respondent is oriented towards risk and uncertainty and portrayed courage to face problems occurring.

To measure this variable, risk preference scale developed by Supe (1969) was adopted. The scale consisted of six statements of which two were negative and rest was

positive. The responses were collected on a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree. The positive statements were scored five, four, three, two and one respectively. For negative statements the reverse pattern of scoring was followed. The total score for a respondent was obtained by summing up the score for each statement. The score ranged from six to thirty. The respondents were classified into high, medium and low groups on the basis of mean and standard deviation. Frequency and percentage analysis was done.

3.3.1.14 Credit orientation

It refers to the orientation to avail credit by the respondent. It was measured by using the scale developed by Beal and Sibly (1967) with slight modifications. The scale consisted of five statements. The responses were collected on a three point continuum of fully agree, partially agree and disagree. Scoring was three, two and one for positive statements and one, two and three for negative statements. Summation of all the scores was the credit orientation of the respondent. The score ranged from five to fifteen. On the basis of mean and standard deviation values, respondents were classified into low, medium and high groups. Frequency and percentage analysis was done.

3.3.1.15 Progressiveness

Progressiveness was operationalised as the degree to which the respondent is relatively earlier to adopt new ideas than other members of the social system. The scale used by Bhaskaran (1978**)** was used with modifications. The scale consisted of eight statements regarding the technology used by the farmer, the recommendations and cropping pattern followed as well as value addition. All statements were rated on two point scale as 'Yes' or 'No' to which score as one and zero assigned respectively. The scores ranged from zero to eight. Summation of the scores gave the progressiveness of the farmer. The respondents were divided into low, median and high groups based on the mean and standard deviation of the scores. Frequency and percentage analysis was done.

3.3.1.16 Perception of profitability

To assess the respondent's perception of profitability, ten negative statements reflecting the perception of respondent on cultivation of commercial crops was used. The responses were measured on a five point continuum of strongly agree, agree, undecided, disagree and strongly disagree with the score of 1, 2, 3, 4 and 5. The summation of scores for all the statements gave the perception of profitability score on a respondent. The scores ranged from 10 to 50. The total scores were categorised under high, medium and low perception of profitability using the mean and standard deviation for all scores obtained from each respondent. Frequency and percentage analysis was done.

3.3.1.17 Level of aspiration

Level of aspiration can be operationalised as the overall life goals in his reality world that the respondent is striving for. The procedure followed by Ashalatha (2000) was used. Six statements indicating the aspirations of farmers were administered for rating on a two point continuum as 'Yes' or 'No'. The scores given were one and zero for 'Yes' and 'No' respectively. Summation was done to get the total level of aspiration score of a respondent. Score ranged from zero to six. Respondents were divided into groups of high, medium and low level of aspiration based on the mean and standard deviation of the scores. Frequency and percentage analysis was done.

3.3.1.18 Income expenditure pattern

The income expenditure pattern of the respondent was measured using a simple check method. The total income of the respondent in the previous year from agriculture, government job, private job, business and other sources was collected. The total expenditure of the respondent in the previous year for various items like food, clothes, fuel, medical expenses, tax, educational expenses, marriage, houses, purchase of consumer durables and other items was also collected. Average income and expenditure corresponding to different items were found out. Average income and average expenditure of different classes of respondents were also found out.

3.3.2 Indebtedness of farmers

Indebtedness was operationally defined as the total debt in terms of money the respondent owes to various money lending sources at the time of investigation. Indebtedness of farmer was measured in terms of nature of indebtedness and extent of indebtedness

Nature of indebtedness was operationally defined as period in which a person is indebted. It was measured by directly asking the respondent the number of years for which he was indebted. Based on the number of years indebtedness was arbitrarily classified into short term indebtedness (< 1.5 years), medium term indebtedness (1.5 to 5 years) and long term indebtedness (>5 years). Extent of indebtedness was operationally defined as the amount for which a person is indebted. The amount of money indebted by a respondent to any of the sources was taken into account. It was measured as actual amount itself. The source of credit was also measured by directly asking the respondent to indicate the same.

3.3.2.1 Amount due per acre

To measure the indebtedness of farmers, the amount due per acre of land was calculated taking into account the principal loan amount, number of years since loan has been taken, rate of interest of loan, number of acres of land owned, number of acres of land leased in and leased out for cultivation.

Total amount due, $A = P (1+ r/100)^{n}$

Where P = principal loan amount

R = rate of interest

n= no. of years since loan has been taken.

Amount due per acre, $A' = A/ (a_1+a_2)-a_3$

Where A= total amount due

a_1 = no. of acres of land owned

a_2 = no of acres of leased in land.

a_3 = no of acres of land leased out land.

3.3.2.2 Details of loan taken

The details of the loan taken including the interest paid, year of borrowing, security given, number of years of being creditor and number of years of being a defaulter were studied. Interest paid, year of borrowing and security given was measured by directly asking the respondent. Frequency and percentage analysis was done. Number of years of being a creditor was measured by asking the respondent the number of years since the loan was taken. The number of years of being a defaulter was measured by asking the respondent the number of years for which he has defaulted repaying the loan. Average numbers of years of being a creditor and defaulter for different classes of farmers were found out.

3.3.2.3. Perception of respondents on the source of credit

To assess the perception of respondents regarding the institutional and non-institutional sources of credit with respect to the interest rate of credit, timeliness, adequacy of credit, flexibility in repayment and renewal of loan and the ease of operation, the procedure followed by Bhaskaran (1978) was used. They were asked six questions reflecting the above characteristics of lending institutions viz. cooperative banks, commercial banks, Kudumbasree, private financial firms, moneylenders and friends, neighbours and relatives. The respondents were asked to choose an institution for each question and the total times of preference by all respondents were summed up. Thus the total frequencies for each institution for all statements were obtained.

3.3.2.4 Credit utilization pattern

Credit utilization pattern was assessed by a simple check method. Total credit amount availed and total amount used for agricultural and non agricultural practices by the respondents were collected. The reasons for misutilization of agricultural loan were also collected. Frequency and percentage analysis was done.

3.3.2.5 Credit repayment pattern

Credit repayment pattern was operationalised as the promptness with which credit is repaid by the farmer. This was measured by directly asking the farmer the details of repaid credit and the promptness with which credit was repaid. Frequency analysis was done.

3.3.2.6 Credit renewal pattern

Credit renewal pattern was operationally defined as the promptness and frequency with which credit was renewed by farmers. All commercial and cooperative banks in Pulpally panchayat were visited and information was collected on credit renewal procedure. A checklist was formed based on the information collected and was administered on farmers. Frequency analysis was done.

3.3.2.7 Credit disbursement procedure

This can be operationally defined as the procedure followed by banks in distributing loans. All commercial and cooperative banks in Pulpally Panchayat were visited and information was collected on credit disbursement procedure. A checklist was formed based on the information collected and was administered on farmers. Frequency and percentage analysis was done.

3.3.3 Delineation of factors leading to indebtedness

To delineate factors leading to indebtedness of farmers, the rating technique was followed. Thirty factors that led to agrarian crisis and subsequent indebtedness of farmers in Pulpally were identified by going through related literature. Discussions were held with the Panchayat President, Panchayat members, Agriculture Officer and Agricultural Assistants of Pulpally as well as with managers of the three commercial banks and one cooperative bank in Pulpally Panchayat and a list of fifteen important factors leading to indebtedness were finalised. This list was administered to respondents and was asked to indicate the intensity with which each cause led to thier indebtedness. Responses were collected on a four point continuum of very severe, severe, not severe and no effect at all. A severity index was calculated to rank the statements.

Severity index = $\sum S_i / N$

Where $\sum S_i$ is the total score given to statements and N is the total number of entries.

Based on the severity index, ranks were assigned to statements. The statement with maximum severity index score was given first rank. Subsequently, all fifteen statements were ranked following the same procedure. Thus, the most important factors that led to indebtedness of farmers were found out. The statements were then arranged in the descending order of their severity in leading to indebtedness

3.3.4 Delineation of consequences of indebtedness

To delineate the consequences of indebtedness of farmers, rating technique was followed. Thirty socio-economic and psychological consequences of indebtedness of farmers in Pulpally were identified by going through related literature. Discussions were held with the Panchayat President, Panchayat members, Agriculture Officer and Agricultural Assistants of Pulpally as well as with managers of the three commercial banks and one cooperative bank in Pulpally Panchayat and a list of fifteen important consequences of indebtedness were finalised. This was administered to farmers to indicate the severity of consequence of indebtedness. Responses were collected on a four point continuum of very severe, severe, not severe and no effect at all. A severity index was calculated to rank the statements.

Severity index = $\sum S_i / N$

Where $\sum S_i$ is the total score given to statements and N is the total number of entries.

Based on the severity index, ranks were assigned to statements. The statement with maximum severity index score was given first rank. Subsequently, all fifteen statements were ranked following the same procedure. Thus the most important consequences of indebtedness of farmers were found out and the statements were arranged in descending order of their severity of consequences.

3.3.5 Perception of farmers on governmental interventions in resolving agrarian crisis

To find the perception of respondents on governmental interventions in mitigating the crisis, rating technique was followed. Six important interventions by the Government in Pulpally to mitigate agricultural crisis were identified by going through literature and by holding discussion with Panchayat President, Panchayat members, Agriculture Officer and Agricultural Assistants of Pulpally as well as with managers of the three commercial banks and one cooperative bank in Pulpally Panchayat. This was administered to respondents to indicate the usefulness of interventions. Responses were collected on a three point continuum of very useful, useful and not useful. A usefulness index was calculated to rank the statement.

Usefulness index = $\sum S_i / N$

Where $\sum S_i$ is the total score given to statements and N is the total number of entries.

Based on the usefulness index, ranks were assigned to statements. Statement with maximum usefulness index score was given first rank. Subsequently governmental interventions were ranked following the same procedure. Based on the ranks the statements were arranged in the descending order of their usefulness.

3.3.6 Survival stress for livelihood security

Survival stress for livelihood security was measured using the scale followed by Menon (2003). The scale had fifty statements regarding symptoms of survival stress. The responses were collected on a three point continuum of usually, sometimes and never with score two, one and zero respectively. The summation of the scores of the four parts gave the stress score of the respondent. On the basis of the mean and standard deviation value of the scores, respondents were divided into groups of high, medium and low amount of stress.

3.4 Method of data collection

Data was collected from the study area by direct interview with the respondents. The list of farmers in the study area was collected from the Department of Agriculture. Random selection of respondents was done. An interview schedule was used for the purpose.

3.5 Statistical tools used

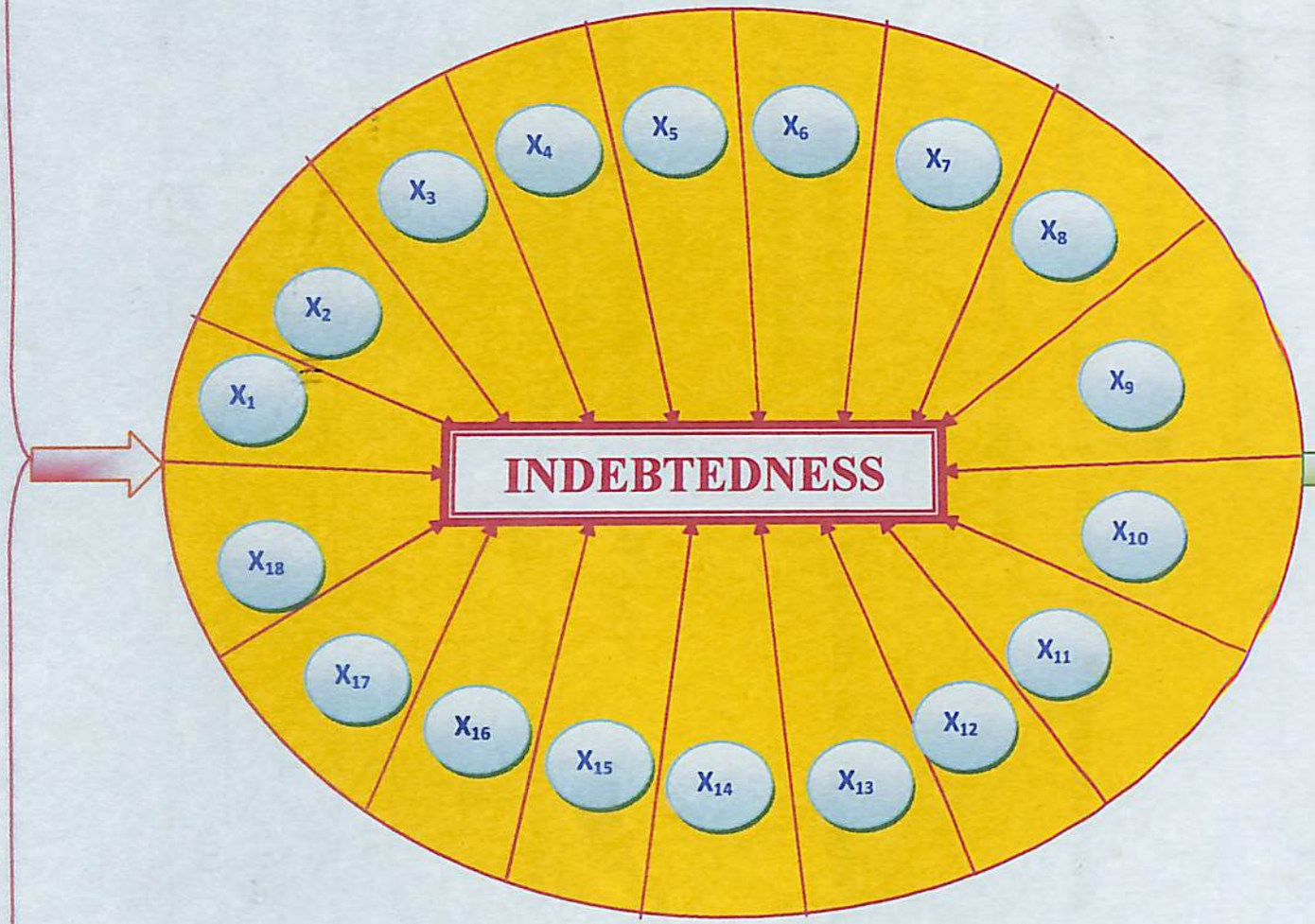
The statistical tools used in the analysis of data collected for the study were mean, standard deviation, frequency analysis, percentage analysis, correlation analysis, rating technique and severity index and usefulness index developed for the study.

3.6 Conceptual model of the study

The main objective of developing a conceptual model of the study is to provide an abstract view of the causes and consequence analysis of indebtedness and about the profile characters which affect indebtedness. The model depicted in Fig 1. is based on the review of literature related to the study. Thirty factors that lead to indebtedness of farmers as identified by going through literature (appendix 1) are given in left column. It is assumed that socio economic variables have an effect on indebtedness and they are shown in the circle. Thirty consequences of indebtedness identified (appendix 2) are given in the right column.

RESULTS AND DISCUSSION

CONCEPTUAL MODEL OF STUDY



A_1 A_2 A_3 A_4 A_5 A_6 A_7 A_8 A_9 A_{10} A_{11} A_{12} A_{13} A_{14} A_{15} A_{16} A_{17} A_{18} A_{19} A_{20} A_{21} A_{22} A_{23} A_{24} A_{25} A_{26} A_{27} A_{28} A_{29} A_{30}

B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8 B_9 B_{10} B_{11} B_{12} B_{13} B_{14} B_{15} B_{16} B_{17} B_{18} B_{19} B_{20} B_{21} B_{22} B_{23} B_{24} B_{25} B_{26} B_{27} B_{28} B_{29} B_{30}

A_1 TO A_{15} - FACTORS LEADING TO INDEBTEDNESS

B_1 TO B15 – CONSEQUENCES OF INDEBTEDNESS

X_1 TO X_{18} – SOCIO ECONOMIC VARIABLES

4. RESULTS AND DISCUSSION

Keeping the objectives of the study in view, the results are presented under the following headlines.

4.1 Distribution of the respondents with respect to profile characteristics including personal and socio-economic variables.

4.2 Indebtedness of respondents

4.3 Delineation of factors leading to indebtedness

4.4 Delineation of consequences of indebtedness

4.6 Perception of farmers on governmental interventions in resolving agrarian crisis

4.6 Survival stress for livelihood security of respondents

4.7 Empirical model of the study

4.1 Distribution of the respondents with respect to profile characteristics including personal and socio-economic variables.

4.1.1 Age

Table 4. Distribution of the respondents with respect to age

Age Category	Frequency	Percentage
Up to 35 years	4	6.66
36-50 years	23	38.34
> 50 years	33	55.00
Total	60	100

Distribution of the respondents with respect to age is presented in Table 4. It reveals that majority of respondents (55 per cent) were more than 50 years of age. Nearly seven per cent of respondents were less than 35 years of age while 38.34 per cent of respondents were of 36 to 50 years of age. The agrarian crisis which gripped Pulpally for the past few years might have forced many youngsters to move away from farming. This observation is in agreement with the findings of Murali and Jhamtam (2003) and Geetha (2007).

4.1.2 Education

Table 5. Distribution of the respondents with respect to education

Educational status Category	Frequency	Percentage
Illiterate	3	5.00
Primary level	18	30.00
Secondary level	13	21.66
Higher secondary level	26	43.34
Total	60	100

Distribution of the respondents with respect to educational status (Table 5) shows that more than 43 per cent of respondents studied up to higher secondary level. It was also observed that only 5 per cent of respondents were illiterate and that none of the respondents had received collegiate level of education. In the eighties and nineties Pulpally was a prosperous village and farming was a highly lucrative business. The general practice was to get into the agricultural business after getting nominal education. This may be the reason why the people of the area did not try for higher education.

4.1.3 Type of the family

Table 6. Distribution of the respondents with respect to type of the family

Size of the family Category	Frequency	Percentage
Nuclear	46	76.66
Joint	14	23.34
Total	60	100

A perusal of Table 6 indicated that in the study area about 77 per cent of respondents lived in nuclear families as compared to 23.34 per cent of respondents who lived in joint families.

4.1.4 Family educational status

Table 7. Distribution of the respondents with respect to family educational status

Educational status Category	Frequency	Percentage
Low	12	20.00
Medium	2	3.34
High	46	76.66
Total	60	100

On perusal of Table 7, it is apparent that nearly 77 per cent of farm families had high level of education as opposed to 20 per cent with low level of education. In majority of the cases the young members of the respondent's family had attained a much higher education than the respondent and this is the reason for the maximum per cent of farm families in high educational status category.

4.1.5 Extent of holding

a. Land owned

Table 8. Distribution of the respondents with respect to land owned

Land owned Category	Frequency	Percentage
Marginal farmers	20	33.34
Small farmers	24	40.00
Large farmers	16	26.66
Total	60	100

Distribution of the respondents with respect to land owned (Table 8) reveals that more than 33 per cent of respondents were marginal farmers and 40 per cent were small farmers. Nearly 27 per cent of respondents of the study had more than 5 acres of land and they belonged to the category of large farmers.

b. Leased land cultivation

Table 9. Distribution of the respondents with respect to leased in and leased out land

Category	Frequency	Percentage
Leased in land	8	13.34
Leased out land	7	11.66
Others	45	75.00
Total	60	100

Leasing in and leasing out of land for cultivation purposes was observed in the study area. Table 9 shows that 13.34 per cent of respondents leased in land for cultivation whereas nearly 12 per cent of respondents leased out some portion of their land to other farmers for cultivation. Leasing out was done by respondents for obtaining payment in advance to meet their immediate cash requirements. It was also observed that the farmers from Pulpally

generally leased land in Karnataka, because of its proximity, for cultivating crops like ginger and cardamom. Wet land was generally leased out on annual rental basis, mainly for cultivating banana. Findings of Mohankumar and Sharma (2006) corroborate this.

c. Land cultivated

Table 10. Distribution of the respondents with respect to land cultivated

Land cultivated Category	Frequency	Percentage
Low	17	28.34
Medium	33	55.00
High	10	16.66
Total	60	100

An analysis of cultivated land was done considering the leased in and leased out land of respondents and is presented in Table 10. It can be observed that maximum number of respondents belonged to medium category of cultivated land. It is to be noted that while more than 26 per cent of respondents actually belonged to the category of large farmers, only about 17 per cent belonged to high category when cultivated land is taken into account. This shows that many of the large farmers were not actually cultivating the entire land owned. It was observed during the course of study that majority of large farmers had lost huge tracts of pepper plantations due to disease attack of support plant, and had left those fields barren as they could not afford to buy artificial supports.

4.1.6 Crops grown

Table 11. Crops grown in Pulpally panchayat.

Crops grown	Frequency	Percentage
Paddy	4	6.66
Pepper	4	6.66
Rubber	39	65.00
Banana	6	10.00
Coffee	4	6.66
Ginger	6	10.00
Coconut	11	18.33
Respondents growing intercrops	41	68.33

Data furnished in Table 11 reveals that in the study area, the major crops grown by respondents were paddy, pepper, rubber, banana, coffee, ginger and coconut. Rubber as a mono crop was observed in maximum number (65%) of holdings. Paddy and banana was grown mostly in leased land. Ten per cent of respondents grew banana while 6.66 per cent of respondents were engaged in paddy cultivation. Another 6.66 per cent respondents grew coffee, mostly as minor crop. More than 18 per cent of respondents grew coconut. Rather than being treated as a crop, coconut was considered by the respondents as a permanent fixture in their fields and no special care was given for it. The once prestigious and ubiquitous crop of Pulpally, pepper, has lost its glory and is now grown only by less than seven per cent of respondents. The area under pepper fell drastically due to disease and pest incidence of main crop as well as its standard.

More than 68 per cent of respondents grew intercrops like yam, turmeric etc. especially in coconut gardens. Earlier inter cropping was not common in study area and pepper was grown as mono crop. But after the enormous loss of pepper farmers caused inter alia due to price fall and pest and disease attack, mono cropping gradually gave way to crop

diversification. Intercropping was broadly practiced. But of late it is seen that respondents are shifting to cultivation of rubber as mono crop.

4.1.7 Migration

Table 12. Distribution of the respondents with respect to years of migration

Years of migration Category	Frequency	Percentage
16-30 years	6	10.00
31- 40 years	33	55.00
>40 years	21	35.00
Total	60	100

On perusal of Table 12, it is observed that majority of the respondents (55 per cent) in Pulpally had settled there 30 to 40 years ago. Thirty five per cent of respondents of Pulpally panchayat settled there more than 40 years ago. Similar trend in migration was observed by of Geetha (2007).

Respondents migrated to forest lands of Pulpally from parts of South Kerala due to the low land prices in the study area. In the initial years respondents had to fight adverse conditions of weather. But those who survived transformed the study area into a highly flourishing agricultural haven. Mohandas (1992), Krishnakumar (2004), George and Krishnaprasad (2006) and Geetha (2007) commented on the migration of respondents into Wayanad.

4.1.8 Shift in cropping pattern

Table 13. Shift in cropping pattern in Pulpally panchyat

Crops	Frequency				
	1970s	1980s	1990s	2000-05	After 2005
Lemon grass	5(10.20)	3(5.87)	–	–	–
Orange	3 (6.12)	2 (3.94)	–	–	–
Tapioca	12 (24.49)	10 (19.62)	–	–	–
Vegetables	9 (18.37)	8 (15.68)	–	–	–
Paddy	20 (40.82)	17 (33.34)	10 (16.60)	6 (10.00)	6 (10.00)
Banana	–	3 (5.87)	5 (8.30)	5 (8.30)	4 (6.60)
Coffee	–	–	6 (10.00)	4 (6.68)	4 (6.60)
Vanilla	–	–	–	16 (26.67)	–
Pepper	–	8 (15.68)	38 (63.50)	24 (40.00)	7 (11.62)
Rubber	–	–	1 (1.60)	5 (8.30)	39 (65.00)
Total	49 (100)	51 (100)	60 (100)	60 (100)	60 (100)

(Figures in parenthesis denote percentage)

The cropping pattern in the study area for the past few decades is shown in Table 13 and Fig 2. A very striking shift from food crops to perennial commercial crops is evident from it. In 1970s the only cash crop grown in the village was lemon grass (10.20 per cent). Maximum number of respondents (40.82 per cent) grew paddy followed by tapioca, vegetables, and orange. In the 1980s there was a slight change in cropping pattern as a few respondents started cultivating banana and pepper as major crops. The inherent tendency of

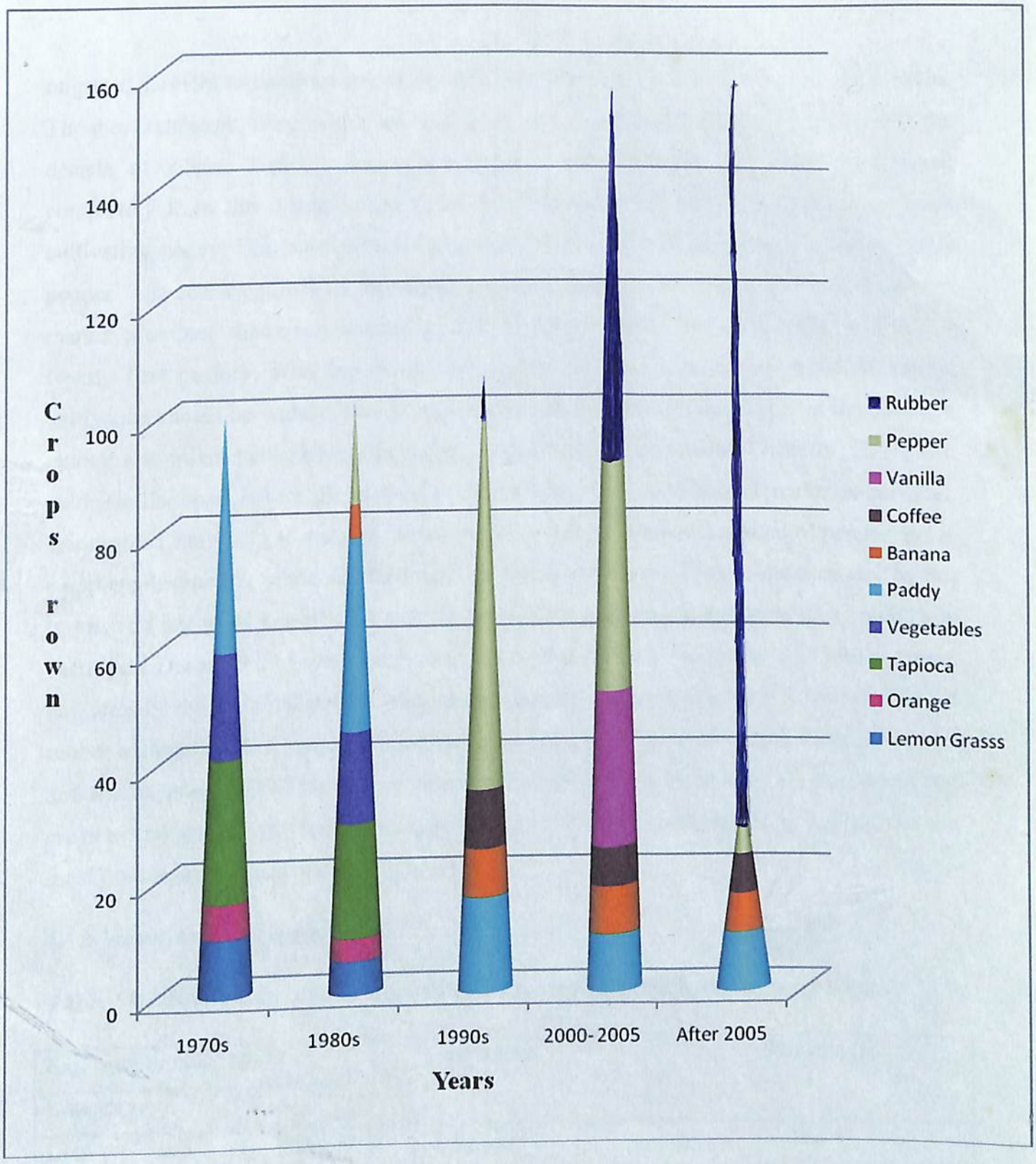


Fig 2. Shift in cropping pattern

migrated farmers to confront risk is evident from the shift in cropping pattern after 1990s. The most remarkable and permanent shift from food to perennial cash crops was seen in the decade of 1990s. Tapioca, lemongrass, orange and vegetable cultivation disappeared completely from the scenario. There was a steep decline in the number of respondents cultivating paddy. The most noteworthy feature is the colossal increase in the area under pepper. The soaring prices of the superior quality Wayanadan pepper in the international market prompted many respondents to shift to pepper cultivation. In the first half of the twenty first century, with the sharp increase of vanilla prices, a new trend of vanilla cultivation caught up widely. The drop in demand and price of Indian pepper in international market also might have influenced the respondents to shift to vanilla. Chekutty (2005) also made similar observations. But soon the prices of vanilla in international market plummeted. Widespread attack of gall wasp on *Erithrina indica*, the ubiquitous standard of pepper, led to complete destruction of the standard tree. As respondents were already under misery by fall in prices, they could not afford the artificial supports and plantations were thus completely destroyed. During field visits, it was observed that majority of respondents (65.00 per cent) had already shifted to rubber, or were in the process of converting their fields suitable for rubber cultivation. The findings on shift in cultivation corroborate that of findings of George and Krishnaprasad (2006) and Government of Kerala (2008b). Such absolute shift from food crops to cash crops and later within cash crops for the want of accelerated money gains is the most fundamental factor that led to the crisis.

4.1.9 Exposure to mass media

Table 14. Distribution of the respondents with respect to exposure to mass media

Exposure to mass media Category	Frequency	Percentage
Low	11	18.34
Medium	30	50.00
High	19	31.66
Total	60	100

The Distribution of the respondents with respect to exposure to mass media, as presented in Table 14 shows that 50 per cent of respondents had medium level of exposure to mass media followed by 31.66 per cent of respondents with high level of exposure to mass media. This goes in line with the findings of Reddy (2003) who revealed that majority of respondents had medium level of mass media exposure followed by low level of mass media exposure. Respondents who once enjoyed high agricultural income had more exposure to mass media channels like television and newspaper.

4.1.10 Extension participation

Table 15. Distribution of the respondents with respect to extension participation

Extension participation Category	Frequency	Percentage
Low	22	36.66
Medium	28	46.66
High	10	16.68
Total	60	100

A perusal of Table 15 reveals that majority of respondents (46.66 per cent) had medium level of extension participation followed by low level of extension participation (36.66 per cent). It should be remembered that the then rich and prosperous farmers of Pulpally were not in the habit of participating in extension activities in the past. The present situation shows slight improvement in the state of matters as respondents take part in such activities with the hope of finding a way to redeem their crisis ridden farming. Officers of the agriculture department revealed that extension participation and contact with extension agencies has more than doubled in the post crisis period.

4.1.11 Extension contact

Table 16. Distribution of the respondents with respect to extension contact

Extension contact Category	Frequency	Percentage
Low	21	35.00
Medium	30	50.00
High	9	15.00
Total	60	100

It can be observed from Table 16 that majority of respondents had medium level (50 per cent) of extension contact, followed by low (35 per cent) and high (15 per cent) levels. Before the present crisis, the rich and successful respondents hardly kept any contact with extension agencies.

4.1.12 Economic motivation

Table 17. Distribution of the respondents with respect to economic motivation

Economic motivation Category	Frequency	Percentage
Low	11	18.33
Medium	36	60.00
High	13	21.67
Total	60	100

Distribution of the respondents with respect to economic motivation (Table 17) reveals that 60 per cent of respondents in Pulpally Panchayat had medium level of economic motivation followed by high (21.67 per cent) level of economic motivation. Thomas (1998) reported that the more one is motivated by economic ends, the more he will try to adapt to practices which are aimed at increasing sustainable returns. Nearly 82 per cent of

respondents in the study area had medium to higher levels of economic motivation. This might have persuaded them to shift from food crops to cash crops in pursuit of better profits.

4.1.13 Risk orientation

Table 18. Distribution of the respondents with respect to risk orientation

Risk orientation Category	Frequency	Percentage
Low	9	15.00
Medium	35	58.34
High	16	26.66
Total	60	100

Data furnished in Table 18 shows that 58.34 per cent of respondents had medium level of risk orientation whereas more than 26 per cent had high level of risk orientation. A large majority (85 per cent) of respondents had medium to higher levels of risk orientation. This along with the high economic motivation of farmers might have influenced the sharp shift in the cropping pattern in the panchayat from food to cash crops, that too from pepper to vanilla and then to rubber. Respondents are ready to face the risk associated with adopting entirely new crops in their fields. Currently farmers in Pulpally panchayat are taking the risk of felling trees and removing other plants in their land to grow rubber.

4.1.14 Credit orientation

Table 19. Distribution of the respondents with respect to credit orientation

Credit orientation Category	Frequency	Percentage
Low	8	13.34
Medium	33	55.00
High	19	31.66
Total	60	100

A perusal of Table 19 indicates that 55 per cent of respondents had medium levels of credit orientation. About 32 per cent of respondents had high level of credit orientation. Pulpally is a panchayat where more than ninety five per cent of population is engaged in farming and credit is an indispensable part of the farmers' life. It is impossible to find a farmer who has never taken agricultural loans in the panchayat. The medium to high credit orientation of majority (86.66 per cent) of respondents supports this observation in study area.

4.1.15 Progressiveness

Table 20. Distribution of the respondents with respect to progressiveness

Progressiveness Category	Frequency	Percentage
Low	6	10.00
Medium	44	73.34
High	10	16.66
Total	60	100

An analysis of progressiveness of respondents (Table 20) shows that more than 73 per cent of respondents had medium level of progressiveness and about 17 per cent of respondents had high level of progressiveness. Progressive farmers are more inclined towards trying new ideas. But the fact that only a minority of respondents had high progressiveness is evident from the absence of adoption of post harvest processing and value addition technologies by farmers in the study area.

4.1.16 Perception of profitability

Table 21. Distribution of the respondents with respect to perception of profitability

Perception of profitability	Frequency	Percentage
Category		
Low	12	20.00
Medium	38	63.33
High	10	16.67
Total	120	100

Table 21 reveals that about 17 per cent of respondents had high levels of perception of profitability. More than 63 per cent of respondents had medium levels of perception of profitability while 20 per cent of respondents had low levels of the same.

4.1.17 Level of aspiration

Table 22. Distribution of the respondents with respect to level of aspiration

Level of aspiration	Frequency	Percentage
Category		
Low	6	10.00
Medium	49	81.67
High	5	8.33
Total	120	100

A perusal of Table 22 reveals that nearly 82 per cent of respondents had medium level of aspiration. Ten per cent of respondents had low level of aspiration. It was found that the aspirations of respondents ranged from improving agriculture to starting business. Basically all respondent aspired for improvements in their present standard of life.

4.1.18 Income expenditure pattern

Table 23. Average family income from various sources

Category	Average income (in Rs.)	Percentage of total
Agricultural income	58,250	86.30
Business	3,250	4.86
Government jobs	2,750	4.07
Private jobs	1,393	2.06
Other sources	1,833	2.71

Average family income of respondents in the study area from various sources is presented in Table 23. The main source of livelihood of respondents in Pulpally panchayat is agriculture (86.32 per cent). When respondents received highest income from agriculture, income derived from other sources is meagre. This is because the respondents started searching for other sources of income only after the collapse of agricultural sector and are yet to get established succesfully in such alternate professions.

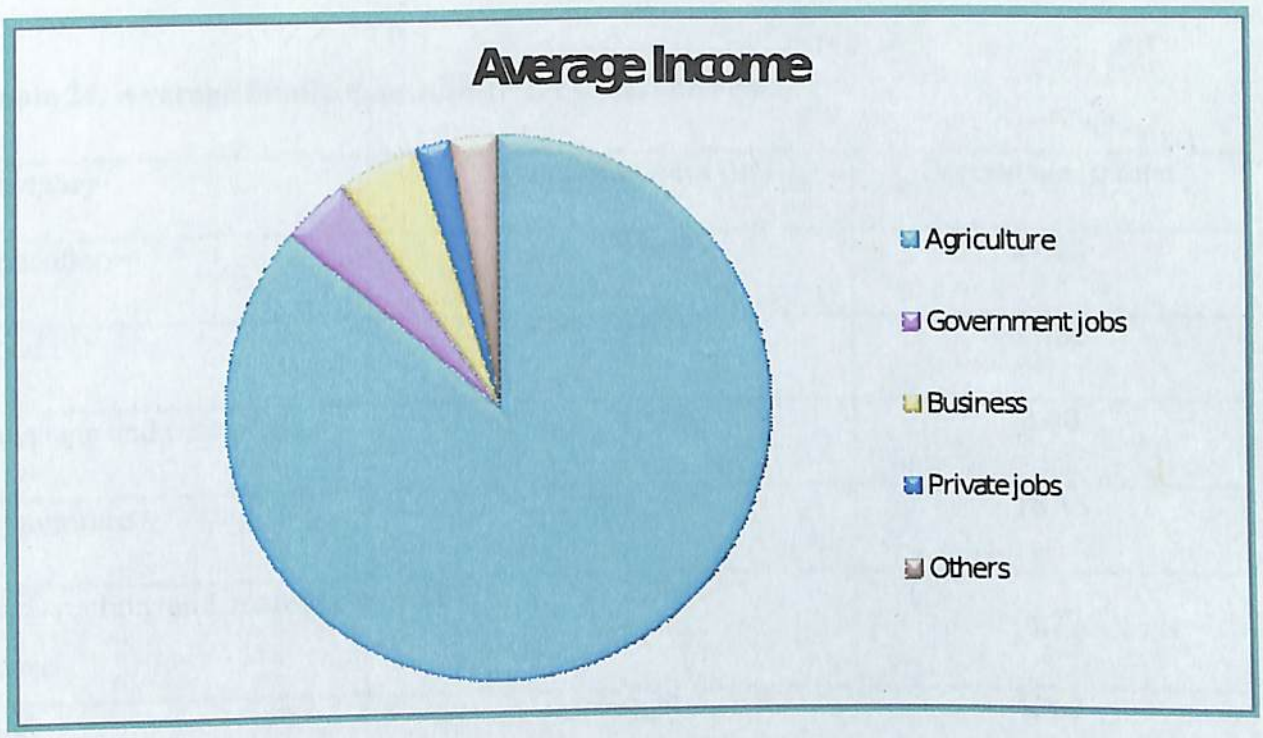


Fig 3. Average income of farmers from different sources

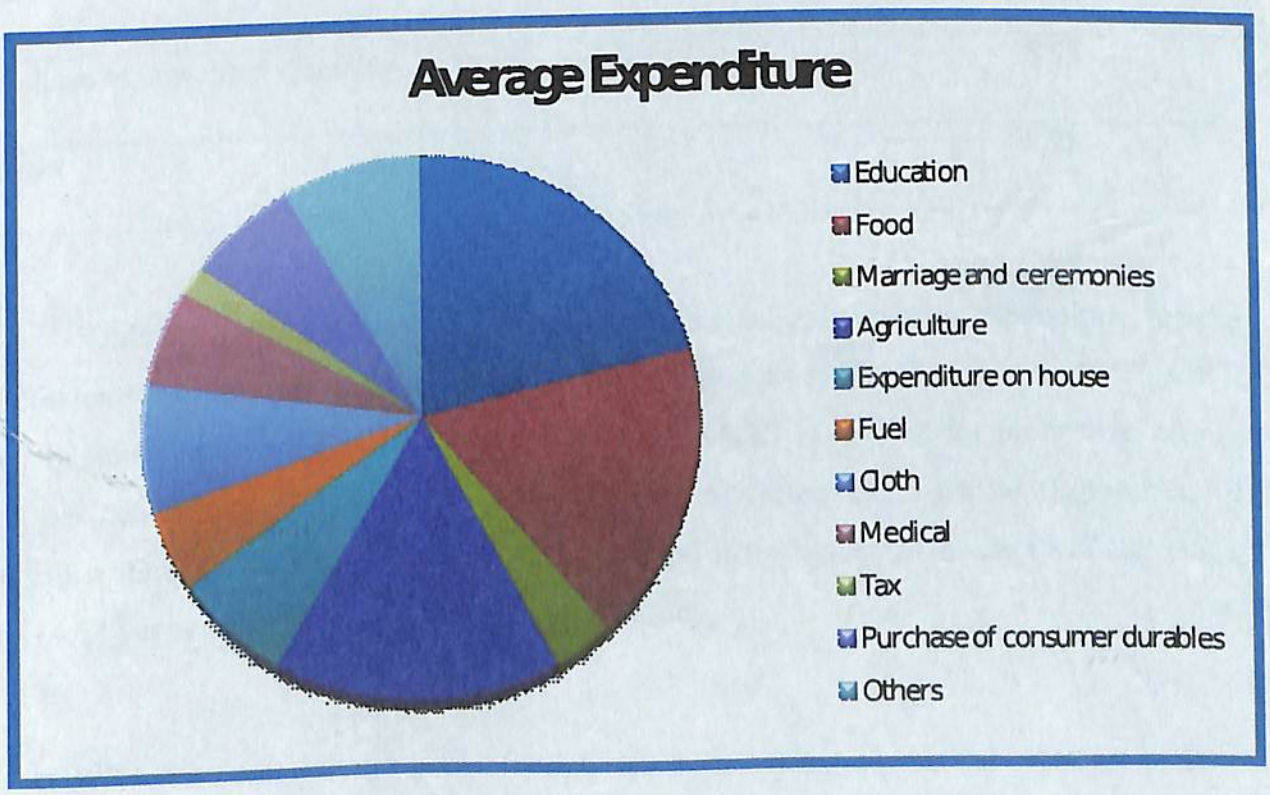


Table 24. Average family expenditure for different items

Category	Average amount (in Rs.)	Percentage to total
Education	9,997	21.23
Food	8,313	17.66
Marriage and ceremonies	1,600	3.40
Agriculture	7,607	16.15
Construction and maintenance of house	3,191	6.77
Fuel	2,201	4.67
Clothes	3,559	7.55
Medicine	2,768	5.87
Tax	844	1.79
Purchase of consumer durables	3,117	6.63
Others	3,898	8.28

Table 24 shows that in the previous year, maximum expenditure for the respondents was for education (21.23 per cent) followed by food (17.66 per cent). This was closely followed by expenses in agricultural sector which accounted for more than 16 per cent per cent of the total expenditure. Expenditure on clothes (7.55 per cent), purchase of consumer durables (6.63 per cent), construction and maintenance of house (6.77 per cent), fuel (4.67 per cent), others (8.28 per cent) etc. follow.

Table 25. Average income and expenditure of different classes of respondents

Category	Average income (in Rs.)	Average expenditure (in Rs.)
Marginal farmer	38,552	36,108
Small farmer	52,739	50,202
Large farmer	73,563	72,059

Table 25 gives the average income and expenditure of marginal, small and large farmers among the respondents. It can be observed that there was a progressive increase in the average income as well as expenditure as the land area owned by the respondents increased. It is also noteworthy that the average expenditure of respondents in all the three categories was only slightly lower than their average income. This could be the reason behind the default in repayment of loans. Morover during the years of acute crisis (2003-06), the agricultural income of respondents was very low and it was during those years the respondents started deferring repayment. The present situation is in agreement with the findings of Pandey (1976) who observed that when the annual income was just sufficient to meet the consumption expenditure of farmers, the amount of outstanding debt was kept more or less the same either by not repaying them or by incurring new debts to repay the old ones. Even though the income in absolute terms looks higher, it should be remembered that income is far too lower than of what they used to get a few years ago. As Krishnakumar, (2004) reported, Pulpally which was earlier known as Gulf of Kerala and Kuwait of Kerala for the prosperity that came with booming pepper and coffee prices, now has respondents distraught with tales of woe.

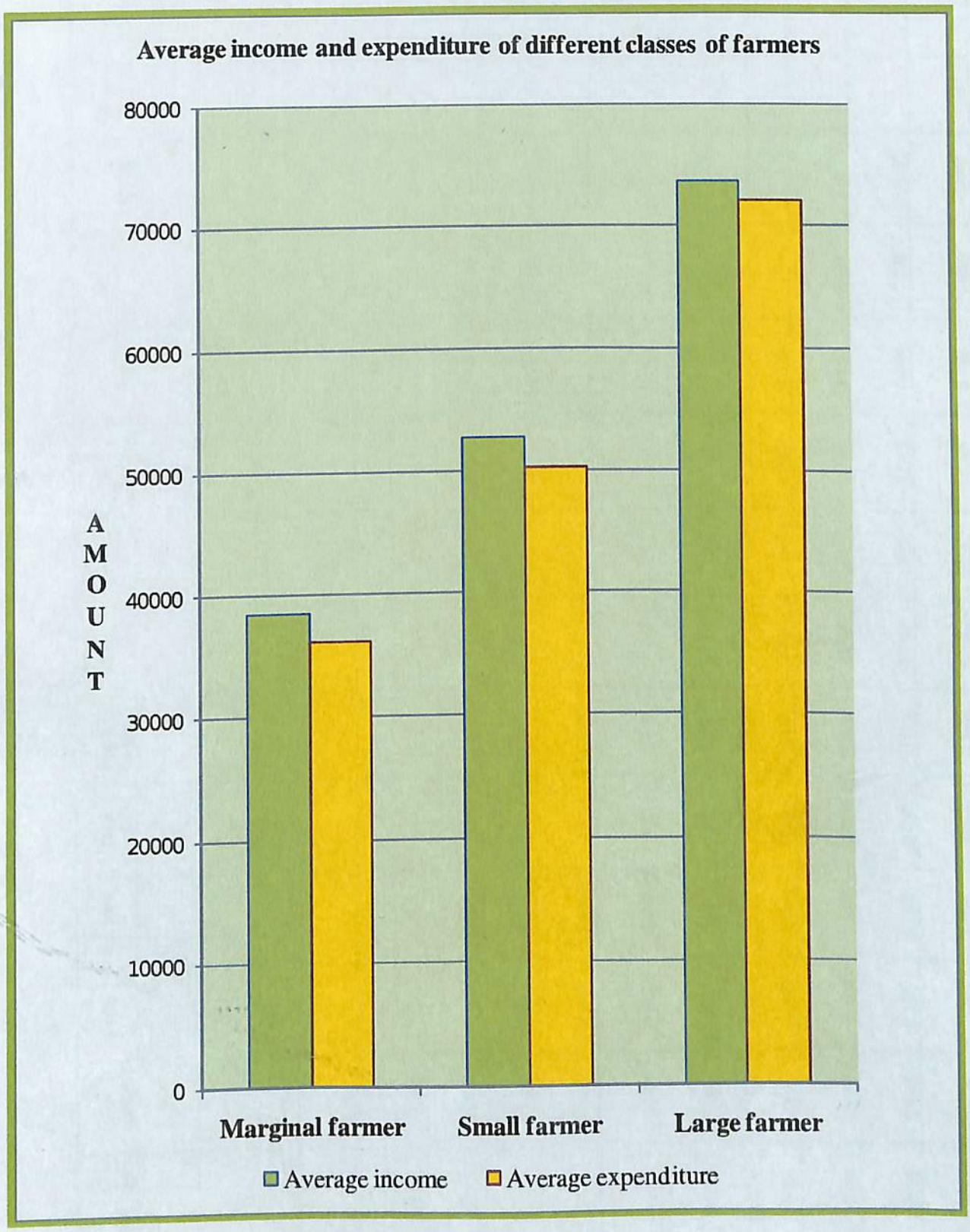


Fig 5. Average income and expenditure of different classes of farmers

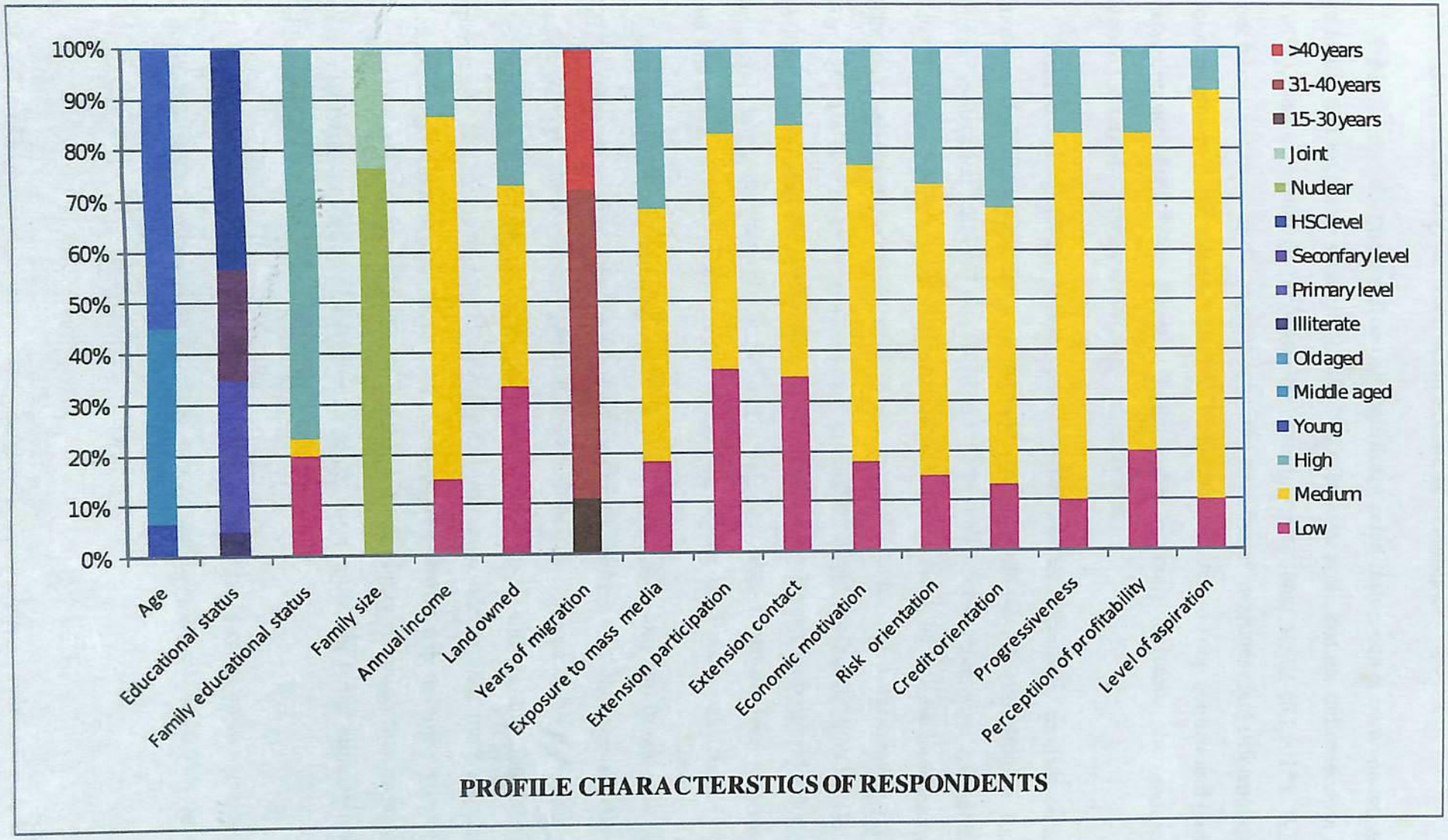
Table no: 26. Inter correlation matrix of socio economic variables

	Exp m.mdia	Extn prtpn	Extn contact	Econ motvn	Rsk orient	Credit orientation	Progressiveness	Ppn. of prftblty	Lvl of asprn	Land ownd	Age	Edcn	Fmly Edcn	Size of fmly	Years of mgm
Exp m.mdia	1														
Extn prtpn	0.16	1													
Extn contact	0.7296**	0.316**	1												
Econ motvn	-0.325**	-0.1227	-0.1467	1											
Rsk orient	-0.0213	-0.0014	0.053	0.643**	1										
Credit orient	-0.0429	0.0317	-0.1686	-0.0029	0.1758	1									
Progres vns	-0.0209	0.154	0.0253	-0.0434	0.0139	0.0167	1								
Ppn. of prftblty	-0.0947	0.0024	0.0102	0.404**	0.2211	-0.0442	0.1295	1							
Lvl of asprn	0.0057	0.1147	-0.0281	-0.1045	-0.1115	0.21	0.2346	-0.0736	1						
Land ownd	-0.0858	-0.0024	-0.0677	0.413**	0.547**	0.185	-0.1627	0.2187	-0.1197	1					
Age	0.0134	0.1089	0.1127	0.1111	0.1305	-0.2226	-0.0909	0.1018	-0.1004	0.401**	1				
Edcn	-0.0276	0.1056	0.016	-0.2281	-0.0167	0.145	0.152	-0.0932	0.0594	-0.293**	-0.3184	1			
Fmly Edcn	0.0463	0.2501*	0.1968	-0.0308	0.0988	0.1834	0.1519	0.0505	0.0878	-0.1742	-0.0951	0.423**	1		
Size of fmly	0.1654	0.0806	0.1456	0.2235	0.2343	0.0665	-0.1643	0.1743	0.1002	0.2115	0.1784	-0.276**	0.0767	1	
Years of mgm	-0.127	0.1831	-0.0191	0.1462	-0.0991	-0.0993	0.0308	0.0551	0.0222	-0.163	0.1666	-0.0627	-0.1893	0.035	1

** - 5% significance level

* - 1% significance level

Fig 6. PROFILE CHARACTERISTICS OF RESPONDENTS



PROFILE CHARACTERSTICS OF RESPONDENTS

4.1.13 Inter relationship between socio economic variables

Table 26 reveals that positive and significant relationship exists between exposure to mass media and extension contact (0.7296**), extension participation and extension contact (0.316**), and extension participation and family educational status (0.2501*). When the farmer have more mass media exposure, he will have better awareness and information about various programmes and schemes and will be more motivated to keep contact and participate in extension activities. When the educational status of family increases, the members may influence the farmer to take part in extension activities.

Positive and significant relation was observed between economic motivation and risk orientation (0.643**), economic motivation and perception of profitability (0.404**) economic motivation and land owned (0.413**) as well as risk orientation and land owned (0.547**). When the economic motivation of a farmer is more, he will be more enthusiastic to face risk and uncertainties to escalate his monetary gains. An economically motivated farmer will also be having more favourable perception about profitability, as he will try his level best at increasing the profitability of his enterprise. A farmer with more land will grow remunerative crops for maximizing the profit from unit land. When the land area owned by farmer increases, he will feel more secured and will be more inclined to take risks.

Age and land area owned (0.401**) as well as education and family educational status (0.423**) also showed positive and significant relationship. As the age of the farmer increases, it is probable that the area of land he owns also increase. As agriculture was a highly profitable venture in Pulpally a few years back and as the land price was comparatively low compared to other parts of state, respondents with more experience in cultivation might have bought more land. An educated farmer will naturally encourage his successors to achieve better education. As agriculture is highly risky job that needs constant care and maintenance, educated respondents might have hoped for better education and non agricultural profession for their successors.

A negative and significant relationship was found between exposure to mass media and economic motivation (-0.325**), land owned and education (-0.293**) as well as

education and size of family (-0.276**). A farmer with more mass media exposure will be more aware, alert and informed. Rather than being focused on profit maximization and monetary gains, he would try to optimize profit. This might be the reason behind the inverse relation between exposure to mass media and economic motivation. The respondents having more land area might have encouraged their successors to take up farming as it would yield more profit. Negative relation behind family size and education might be because larger families had more elderly members with lower education.

4.2 Indebtedness of respondents

4.2.1 Nature of indebtedness

Table 27. Distribution of the respondents with respect to nature of indebtedness

Nature	Frequency	Percentage
Short term indebtedness	3	3.06
Medium term indebtedness	21	21.42
Long term indebtedness	74	75.52
Total	98	100

It is observed from Table: 27 that maximum numbers of respondents were indebted for long term which accounted for about 76 per cent. About 22 per cent of respondents were indebted for medium term. It implies that 75.52 per cent of respondents have been indebted for more than five year.

4.2.2 Extent of indebtedness

Table 28. Distribution of the respondents with respect to extent of the indebtedness

Category	Respondents		Loans		Amount (in Rs.)	Average indebtedness per farmer (in Rs.)
	Number	Percentage	Number	Percentage		
< 50,000	20	33.34	34	34.69	5,33,000	26,650
50,000 – 1,00,000	16	26.66	27	27.56	10,95,000	68,437.50
1,00,000 – 2,00,000	14	23.33	24	24.49	16,98,000	1,21,285.72
2,00,000 – 3,00,000	9	15.00	12	12.24	20,85,000	2,31,666.66
3,00,000 – 4,00,000	1	1.67	1	1.02	4,00,000	4,00,000
Total	60	100	98	100	58,11,000	96,850

Extent of indebtedness presented in Table 28 reveals that more than 33 per cent of respondents were indebted for less than fifty thousand rupees. About 27 per cent of respondents had taken loan for an amount between 50,000 to one lakh rupees while 23.33 per cent of respondents were indebted for one to two lakh rupees. Fifteen per cent of respondents were indebted for two to three lakh rupees. It can be observed that 83.33 per cent of respondents had taken loan for less than two lakh rupees. It is also to be noted that the total number of loans taken (98) was 1.63 times higher than the number of respondents (60). This is because many respondents took separate loans for various crops on the same piece of land from diverse sources pledging different securities. In some cases loans were taken by different members of the same family. The medium to high levels of credit orientation of respondents support this observation.

Data from Table 28 also reveals that the total amount of indebtedness in the study area was Rs. 58,11,000. It also reveals that average amount of loan across the panchayat of

Pulpally is Rs. 96,850. The value is higher than the findings of Kurup (2005), NSSO(2005c), KSSP (2006), Mohankumar and Sharma (2006), Nair et al. (2006) and is lower than findings of KAU (2006).

4.2.3 Source of credit

Table 29. Distribution of the nature of loans with respect to source of credit

Source	Short term indebtedness	Medium term indebtedness	Long term indebtedness	Total	Percentage to total
Commercial banks	1	2	32	35	35.71
Cooperative banks	-	5	24	29	29.59
Private financial firms	-	3	5	8	8.16
Kudumbasree	-	7	-	7	7.14
Money lender	-	2	3	5	5.10
Friends, neighbors and relatives	2	2	10	14	14.28
Total	3(3.06)	21(21.43)	74(75.51)	98 (100)	100

(Figures in parenthesis denote percentage)

Data presented in Table 29 reveals that majority of the loans were availed from institutional sources of credit. When 35.71 per cent of the loans were taken from commercial banks, about 30 per cent loans were taken from cooperative banks. It was also found that only 5.10 per cent of loans were availed from money lenders. The percentage of loans borrowed money from friends, neighbours and relatives were 14.28 per cent. It is noteworthy

that all the loans taken from Kudumbasree belonged to the category of medium term indebtedness. These observations are in sync with the observations of Mohankumar and Sharma (2006), Jeromi (2007), Naidu and Sivasankar (2007), Prakash (2007) and in contradiction to that of Sreyas (2007).

Table 30. Distribution of loan amount among different classes of respondents

Category	Average loan amount (in Rs.)
Marginal farmer	47,612
Small farmer	93,449
Large farmer	1,48,680
Average amount of indebtedness per farmer	96,850

The Table 30 shows that marginal farmers had taken an average of Rs. 47,612 as credit. The average amount of credit of small farmers were Rs. 93,449 while large farmers had an average amount of credit of Rs. 1,48,680. The average amount of loan across the panchayat of Pulpally is Rs. 96,850.

4.2.4 Amount due per acre

Table 31. Distribution of different classes of respondents with respect to amount due per acre

Category	Amount due per hectare (in Rs.)
Marginal farmer	81,992
Small farmer	69,084
Large farmer	35,827
Average amount of loan in panchayat	64,518

Table 31 reveals that the average amount due per acre for marginal farmer was Rs. 81,992 while that for small farmer was Rs.69,084. The amount due per acre for large farmer was Rs. 35,827. The average amount due per acre for entire sample area was Rs. 64,518. As the due loan amount was divided by the land owned by respondents, it was found that amount due per acre decreased as the land area increased and it was also found to be lower than the average loan amount for the same categories.

4.2.5 Interest paid

Table 32. Distribution of loans with respect to interest paid

Category	Number	Percentage
<10 per cent	16	16.33
10-15 per cent	72	73.47
>15 per cent	10	10.20
Total	98	100

Data from Table 32 show that 16.33 per cent of respondents paid an interest of less than 10 per cent. While more than 73 per cent of respondents paid an interest rate between 10 to 15 per cent, only 10.20 per cent of respondents admitted to paying an interest rate higher over 15 per cent. Some respondents said that they had to pay interest rate up to 25 per cent.

4.2.6 Security given

Table 33. Distribution of respondents with respect to security given

Category	Number	Percentage
Land	63	64.30
Gold	25	25.50
Personal	10	10.20
Total	98	100

It is evident from Table 33 that 64.3 per cent of loans were taken by keeping land as security. While 25.50 per cent of loans were taken with gold as security and more than 10 per cent of loans were taken with personal security.

4.2.7 Year of borrowing

Table 34. Distribution of respondents with respect to year of borrowing

Year	No of loans	Percentage
1998	1	1.02
2000	12	12.24
2001	18	18.36
2002	20	20.41
2003	17	17.35
2004	12	12.24
2005	15	15.32
2007	3	3.06
Total	98	100

Table 34 revels that nearly 70 per cent of loans were taken before 2004. Prakash (2007) also observed that respondents took more loans before the agricultural crisis of 2003-04 and this might be because of their agricultural prosperity at that time. They might have taken loans with the expectation that they could easily repay it with the income generated from agriculture. The inability to take loans in post crisis period acted as a hurdle in revitalizing agriculture in the study area.

Table 35. Distribution of respondents with respect no of years of being creditor and defaulter

Category	No of years of being creditor	No of years of being defaulter
Marginal farmer	6.23	3.19
Small farmer	7.65	3.21
Large farmer	6.85	2.93
Average value for entire sample	6.91	3.11

Table 35 reveals the number of years for which the respondent has been creditor and defaulter. On an average, when a marginal farmer has been a creditor for 6.23 years, he was a defaulter for 3.19 years. For a small farmer the average number of years of being creditor was 7.65 and the average number of years being a defaulter was 3.21 years. The average number of years of being a creditor and defaulter for the entire sample area is 6.91 and 3.11 respectively.

4.2.8 Perception of respondents on source of credit

Table 36. Distribution of respondents with respect to perception of source of credit

Sources	Commercial bank	Cooperative bank	Private financial firms	Kudumbasree	Money lenders	Friends, neighbors & relatives.
Which provides lowest interest?	14	11	5	2	0	25
Which provides loan at proper time?	13	10	10	12	8	3
Which gives adequate credit?	17	14	11	10	10	5
Which is flexible in repayment?	12	10	4	3	2	25
Which renew loan?	14	15	4	6	0	17
Which has maximum ease of operation?	12	11	8	4	4	16
Total score	79	74	41	38	24	91

Table 36 shows the perception of credit by respondents. With respect to the source that provides credit with lowest interest, friends, nieghbours and relatives received maximum score followed by commercial and cooperative banks. The score reveals that maximum number of respondents perceived that commercial banks provide loans at proper time followed by Kudumbasree, private financial firms and cooperative banks. On account of provision of adequate credit, commercial banks topped the list followed by cooperative banks and private financial firms. As far as flexibility in repayment is concerned, friends, neighbours and relatives topped the list with a much higher score than the commercial and cooperative banks. In case of renewing of loans also friends, neighbours and relatives got maximum score closely followed by cooperative and commercial banks. Respondents perceived that loans could be received from friends, neighbours and relatives with maximum ease of operation, followed by commercial and cooperative banks. In totality, friends, neighbours and relatives received maximum score, followed by commercial banks, cooperative banks, private financial firms, Kudumbasree and money lenders respectively, in the decreasing order. Even though the source of friends, neighbours and relatives received maximum score, it can be seen that only 14.28 per cent of respondents have availed loan from the source. As agricultural crisis hit the area as whole, it was probable that majority of respondents were not in a position to help their fellow farmers.

4.2.9 Credit utilization pattern

Table 37. Distribution of respondents with respect to credit utilization pattern

Category	Amount	Percentage to total
Agricultural purpose	29,79,300	51.27
Non agricultural purpose	28,31,700	48.73
a. Education	7,03,960	24.86
b. Medical	2,63,070	9.29
c. House construction and maintenance	3,59,350	12.69
d. Purchase of consumer durables	7,88,920	27.86
e. Marriage and ceremonies	3,83,980	13.56
f. Other expenses	3,32,420	11.74

Credit utilization pattern of respondents (Table 37) shows that only about 51 per cent respondents used loan amount for agricultural purposes. The total amount used for agricultural purposes was nearly three crore rupees. For non agricultural purposes nearly 2.83 crores of rupees was used. The major non agricultural purpose for which credit was used was the purchase of consumer durables (27.86 per cent) followed by education (24.86 per cent), marriage and ceremonies (13.56 per cent), house construction and maintenance (12.69 per cent) and other purposes (11.74 per cent). The reason unanimously quoted for misutilization of loans by the respondents was the faith they had in agriculture. They never imagined that their vocation would ever fail or would give them anything less than maximum profit.

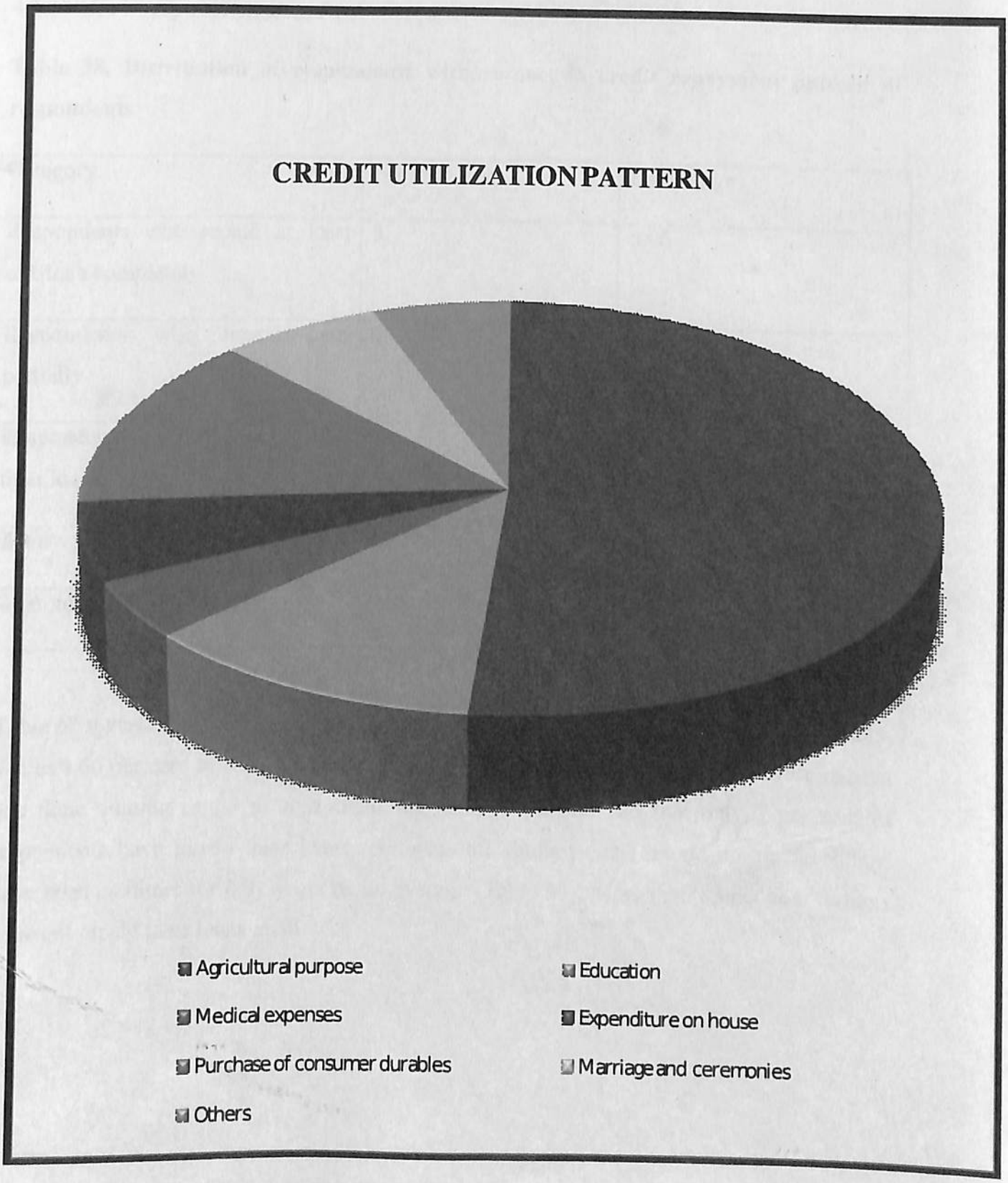


Fig 7. Credit utilization pattern of farmers

4.2.10 Credit repayment pattern

Table 38. Distribution of respondents with respect to credit repayment pattern of respondents

Category	Number	Percentage
Respondents who repaid at least one loan completely	3	5.00
Respondents who repaid loan partially	4	6.66
Respondents who did not repay their loans at all	53	83.34
Total	60	100
Reasons for non repayment	Decrease in agricultural income	

Table 38 reveals that only 5 per cent of respondents have repaid at least one loan completely. While 6.66 per cent of respondents have repaid their loans partially, the rest of respondents had done nothing as far as repayment was concerned. The fact that only 5 per cent of respondents have repaid their loans reinforces the finding that respondents in the village have been creditors for 6.91 years on an average (Table 32). More than 83 per cent farmers have not repaid their loans at all.

4.2.11 Credit renewal pattern

Table 39. Distribution of respondents with respect to credit renewal pattern of respondents

Category	Number	Percentage
Respondents who regularly renew loan	2	3.33
Respondents who renewed loans once	8	13.34
Respondents who renewed loans twice	17	28.33
Respondents who renewed loans thrice	10	16.66
Respondents who have never renewed loans	23	38.34
Total	60	100

Table 39 reveals that only 3.33 per cent of respondents renewed their loans regularly. When 13.34 per cent of respondents had renewed their loans once, 28.33 per cent of respondents had renewed their loans twice. About 17 per cent of respondents had renewed their loans thrice. More than 38 per cent of respondents had never renewed their loans.

4.2.12 Credit disbursement procedure

Table 40. Distribution of respondents with respect to credit disbursement pattern

Category	Number	Percentage
Respondents who received loan in lump sum	53	88.34
Respondents who received loan in installments	7	11.66
Total	60	100

It is evident from Table 40 that more than eighty eight per cent of respondents had received their loans in lump sum. Even though 11.6 per cent of respondents received their loans in installments, the numbers of installments were fixed in advance and respondents did not have to face any difficulties because of that.

4.2.13 Relationship of dependent variable with socio economic variables

Table 41. Relationship of dependent variable with socio economic variables

Socio economic variables	Correlation coefficient	Relationship
Exposure to mass media	-2.17E-02	NS
Extension participation	-9.87E-02	NS
Extension contact	-5.46E-03	NS
Economic motivation	0.653836**	PS
Risk orientation	0.691028**	PS
Credit orientation	0.188006	NS
Progressiveness	-0.06358	NS
Perception of profitability	0.185181	NS
Level of aspiration	6.99E-02	NS
Land owned	0.532238**	PS
Age	0.146293	NS
Education	-3.96E-02	NS
Size of the family	0.304495**	PS
Years of migration	1.04E-02	NS

(**- Significant at 5% level, NS – Not Significant, PS – Positively Significant)

Data presented in Table 41 reveal that there is a positive and significant relationship between economic motivation, risk orientation, land owned, size of the family and indebtedness. When the economic motivation of the farmer increases, he gets more orientated towards monetary gains and profit maximization, which in turn induces the farmer to take credit. As the risk orientation increases, the farmer becomes more ready to face the consequences of availing credit and hence the significant positive relation. When the land area increases, it becomes possible for the farmer to get more amount of loan from institutional and non institutional sources of credit. This may be the reason behind the

positive and significant relationship. The fact that 64.28 per cent of loans were taken by keeping land as security support the relation. As the size of family increases, the pressure for achieving maximum profit from agriculture increases because the farmer has to support his family. Moreover it was also observed that different members of a family availed separate loans from different sources. Even though not significant, a positive trend was observed between credit orientation, perception of profitability, level of aspiration, age, years of migration and indebtedness. A negative but non significant relation was found between the variables viz. exposure to mass media, extension participation, extension contact, progressiveness, education and indebtedness.

4.3 Delineation of factors leading to indebtedness

Table 42. Delineation of factors leading to indebtedness

Cause	Severity index	Rank
Low market price of produce	3.72	1
Disease/ pest of support crop	3.47	2
Decline in agricultural income	3.43	3
Disease of main crop	3.38	4
Absence of other sources of income	3.33	5
Decrease in produce demand	2.97	6
Crop failure due to climatic variations	2.63	7
High rate of interest	2.58	8
Absence of value addition	2.57	9
Misutilization of loans	2.55	10
Pest attack of crop	2.52	11
Deficiency of irrigation water	2.47	12
Decrease in soil fertility	2.32	13
Inefficient marketing	2.30	14
Low export price	2.05	15

Factors that led to indebtedness of respondents were delineated and arranged in the decreasing order of their severity in Table 42. They are

1. Low market price of produce

The most important factor that led to indebtedness of respondents was low market price of their agricultural products. Respondents were growing export oriented capital intensive commercial crops like pepper, which experienced wide fluctuation in their prices. In 2003 prices of cash crops touched their record trough point. Unrestrained imports and hostile changes in tariff regimes brought in by neo liberal economic reforms led to steep crash of agricultural products. Similar observations were made by George and Krishnaprasad (2006), Mohankumar and Sharma (2006), Pal et al. (2006), Prakash (2007) and Jeromi (2007).

2. Disease/pest of support crop

Erythrina indica is universally used as the standard of pepper in Pulpally. The attack of erythrina gall mites led to complete devastation of standard crop which in turn resulted in collapse of wines. Respondents could not afford large number of artificial supports like bamboo or concrete poles. As the numbers of other trees in the plantations to trail the wines were few, even plantations with healthy pepper vines were completely destroyed. During field visits, not even a single plantation with Erythrina as support was found. Even though new standards like Moringa, Glyricidia etc were tried, respondents opined that none matched Erythrina.

3. Decline in agricultural income

Reduction in market price and the devastation of the major crop, pepper resulted in drastic decline in income of respondents as major share of the total income (86.32 per cent) of respondents in Pulpally panchayat was generated from agricultural sector. Government of Kerala (2007a) reported that the rate of growth of price received by respondents (2.4 per cent) was much lower than the growth rate of price paid by respondents (6.5 per cent), the growth rate of farm cultivation cost (7.5 per cent) and growth rate of domestic expenditure (4.2 per cent).

4. Disease of main crop

Disease attack of crop also created havoc in farmer's life. About 40 per cent of pepper crop in Pulpally area was destroyed due to diseases like quick wilt. Soft rot of ginger, Mahali and bud rot of arecanut and Eriophid mite attack in coconut was also widely reported. Sainath (2005a) also reported on the adverse effect of disease attack on the lives of the farmers of Wayanad.

5. Absence of other sources of income

Agriculture is the mainstay for the entire farming population in the study area and they had no other major sources of income. Till recent past the lucrativeness of agriculture was more alluring than any other business in the area and respondents were never inclined to venture into any other occupation. This factor turned out to be major lacunae which intensified the misery of the agrarian crisis. Even though many respondents are trying out new ventures after crisis, a stable income is yet to be generated from many of them.

6. Decrease in produce demand

Pulpally panchayat was the pepper tract of Kerala. Pepper was grown as mono crop and was marketed as dried berries. Pepper was known for its superior quality and had a distinctive place in market. But large scale imports of pepper from Sri Lanka which was simply routed through that country but not produced there adversely affected the respondents. The imported pepper was mixed with indigenous pepper and then exported. This decreased the demand as well as price of pepper in international market.

7. Crop failure due to climatic variations

The aberrant climatic conditions faced by the district adversely affected the crops grown. The acute and unprecedented drought during last quarter of 2003 and first quarter of 2004 resulted in widespread damage to all perennial crops in Wayanad. Drought affected the health and life of the plant and caused a decrease in productivity in succeeding years. In 2005, entire district of Wayanad was declared drought affected by the Government of Kerala, while in 2006 it was estimated by Government of Kerala that there was a total loss of

more than 11 crores due to heavy rains in Wayanad district alone. Crop loss due to vagaries of climate was dealt in detail by Krishnakumar (2004) and Prakash (2007).

8. High rate of interest

A higher interest rate was charged on borrowers of dubious credit worthiness by non institutional sources of credit. This study reveals that about 34.7 per cent loans were taken from non institutional sources (Table: 29). Due to high interest rates, respondents were unable to pay back the debt. Mohankumar and Sharma (2006) reported that an interest rate of 36 per cent to 60 per cent was charged upon farmers.

9. Absence of value addition

Post harvest processing and value addition was practically absent in the panchayat. The only form in which pepper was marketed was as dried berries. Though the price of value added products of pepper like white pepper, oleoresins and oils was high even during the severe decline in price of dried pepper, respondents could not exploit the situation. Had such facilities been present, it would have helped to annul the intensity of the crisis. Joseph and Joseph (2005) reported on the absence of value addition and its contribution to aggravating the crisis.

10. Misutilization of loans

The results of this study revealed that respondents in the panchayat used more than 48 per cent of their loans for non productive purposes (Table: 37). Even though respondents have been using their agricultural loans for non remunerative purposes for a long time, before the agrarian crisis in the area, they could derive enough turnovers from farming to cover the entire loan. But when agriculture failed, income generated was not sufficient to cover the loan amount and respondents were forced into the debt trap.

11. Pest attack of crop

Coffee was the second most commonly grown crop in the panchayat and it was most seriously affected by attack of stem borer and scale insect. Eriophid mite of coconut was

another major problem for respondents. The measures taken by respondents had not succeeded in containing pest attack and this worsened the crisis.

12. Deficiency of irrigation water

For the past few years there is considerable drop in the quantity of irrigation water available to respondents of Wayanad district. After the severe drought of 2004-05, ground water was not recharged to original levels in Pulpally area. Even though Kabani river flows in proximity of the village, lift irrigation facilities are not available and respondents are unable to make use of river water in the area.

13. Decrease in soil fertility

Another problem that added to the woes of respondents was the decrease in the fertility of soil. Indiscriminate use of chemical fertilizers with the expectation of maximization of yield, without any ameliorative measures to maintain the quality of soil led to the gradual reduction of fertility status of soil.

14. Inefficient marketing

Respondents of the area sell their products to local whole sale dealers who act as middle men to exporters. The respondents are unaware of markets where they can sell their products at remunerative prices. The presence of an efficient and direct marketing system would have helped to fetch better prices and to ameliorate the crisis to a certain extent.

15. Low export price

Another reason that aggravated the crisis of respondents was the decline in export prices of the products. The decrease in export price of the crop particularly due to the mixing of low quality imported pepper directly resulted in the fall in the income of the farmer.

All these factors plunged the respondents into debt trap and mounting overdue prevented them from thinking of any other alternate ways of escape.

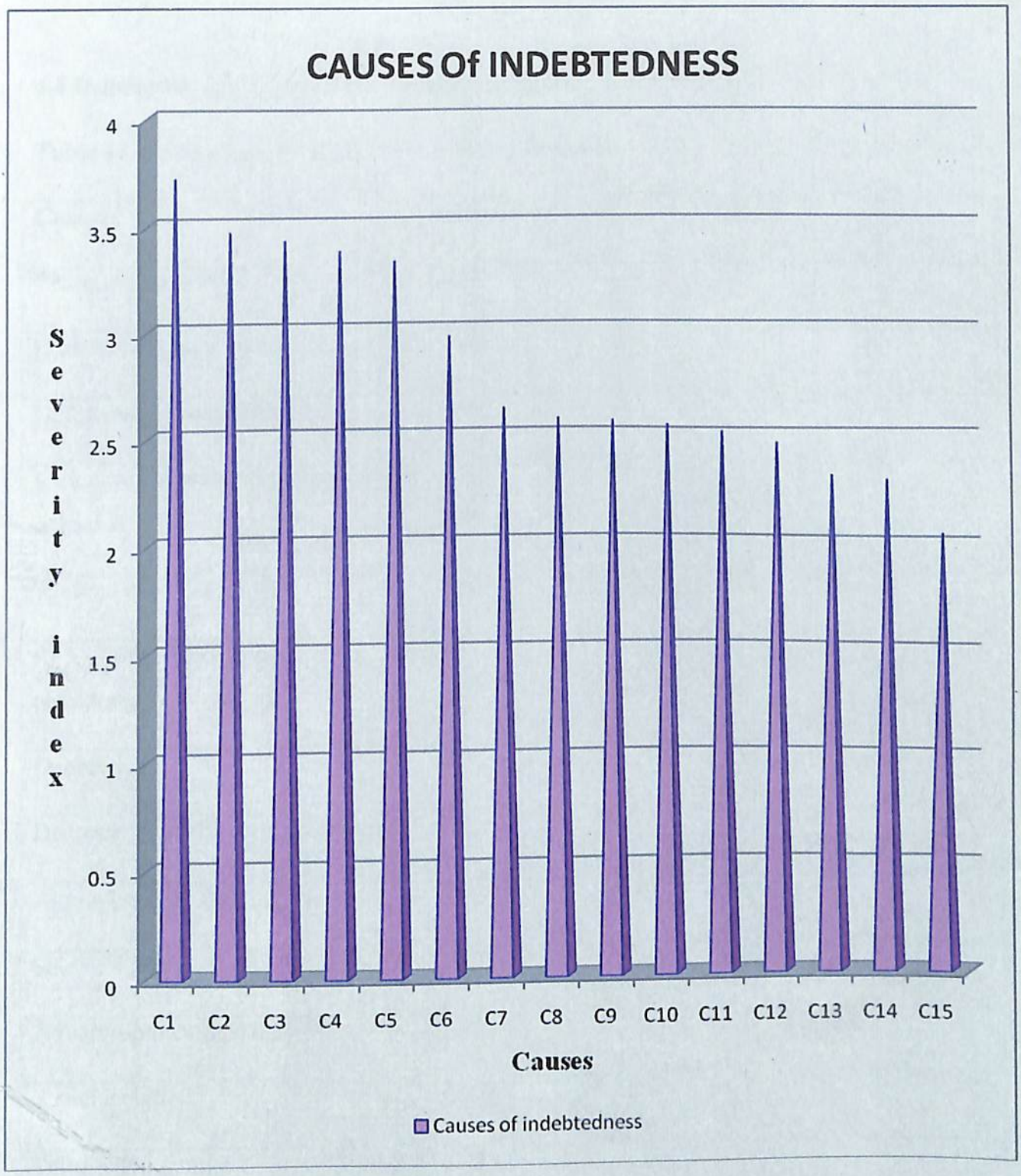


Fig 8. Delineation of factors leading to indebtedness

4.4 Delineation of consequences of indebtedness

Table 43. Delineation of consequences of indebtedness

Consequence	Severity index	Rank
Changes in lifestyle	3.37	1
Hunt for alternate jobs	3.08	2
Deforestation in holdings	2.97	3
Reduction in money spent on social purposes	2.90	4
Selling land	2.62	5
Reduction in money spent on recreation	2.52	6
Depression	2.37	7
Decrease in health consciousness	2.32	8
Aggravation of drinking habit	2.20	9
Sale of vehicles	2.17	10
Adverse impact on education	2.12	11
Social isolation	2.03	12
Tensions in family	1.85	13
Impact on marriages	1.43	14
House construction and maintenance affected	1.38	15

Consequences of indebtedness in their decreasing order of severity are presented in Table 43. They are

1. Changes in lifestyle

A logical corollary of the agrarian crisis was the sudden slide down in the standard of life of respondents. Agriculture was the mainstay of majority of population of the panchayat and the soaring income generated from agriculture ensured that people enjoyed a high standard of life for a long period of time. But when agriculture failed suddenly life style of people was completely changed and it became difficult for respondents to meet the both ends.

2. Hunt for alternate jobs

When agriculture failed many respondents had to go in search for other jobs. Many respondents had to work as labourers and later many of them enrolled under National Rural employment Guarantee Scheme. Family members were forced to migrate to other districts and states in search of other jobs. Krishnakumar (2004) reported about migration of family members in search of jobs.

3. Deforestation in holdings

When respondents could not sustain their family from agricultural income, they started to cut trees from their land and sell it as an alternate source of income. Even though it fetched good price, the grave environmental hazards of the act was never considered by farmer. Wayanad is famous for its pleasant climate and biodiversity. But widespread felling of trees can result in increased soil erosion and lead to less infiltration of rain water into ground. This will further aggravate the problem of deficiency in irrigation water. The biodiversity of the ecosystem would also be adversely affected due to felling of tree species.

4. Reduction in money on spent social purposes

With decrease in the income of respondents the money spent on social and religious purposes reduced considerably. The contributions to church decreased and the grandeur of festivals celebrated in the area also showed a decline.

5. Selling land

When the income from agriculture touched rock bottom, respondents often fell prey to the trap of moneylenders. And when the crop failed, respondents were forced to sell their land to repay loans and meet day to day expenditure. Mohankumar and Sharma (2006) and Sainath (2007e) reported on distress sale of land in Wayanad district.

6. Reduction in money spent on recreation

When the mainstay of respondents failed and the income decreased, an expected outcome was the decreases in the money spent for recreational purposes like outings and movies. The farmers were constrained to have minimum level of life style.

7. Depression

Respondents had to undergo a great deal of financial stress and mental agony due to the uncertainty of yield and violent fluctuations in price of agricultural produce. As the crisis saw no respite in subsequent years, respondents were often driven to mental depression which led to suicide in the area. This is in line with the report of Vasavi (2004).

8. Decrease in health consciousness

As an after effect of collapse of agrarian sector and the resultant disdain and doom in the life of respondents, their consciousness about their health decreased. Moreover many of them were not in a position to afford expensive treatments.

9. Aggravation of drinking habit

There was an increase in the rate of alcohol consumption in the area after the crisis. Alcohol consumption was regarded like a last resort by many of them. Illicit brewing of alcohol and trade of arrack from across the border was also found to increase.

10. Sale of vehicles

The once rich respondents in Pulpally owned many motor vehicles, especially jeeps during the agriculturally prosperous times to transport their products. Many of these vehicles are now off roads. They were sold during distress period. During field visits many houses were seen with garages that have remained vacant for last few years.

11. Adverse impact on education

It was reported that many respondents could not afford to continue education of their children. As Pulpally is very close to Karnataka border, many families used to sent their children to private educational institutions in Karnataka. After the crisis many of the students had to stop their education as the fee structure became unbearable for farmer. The practice of sending children outside for higher studies also decreased.

12. Social isolation

The general atmosphere of distress in the rural area resulted in alienation of farmer from the society. Reduction of standard of living due to low income, mental depression and dejection induced many respondents to stay away from the society. It was also found that the association of respondents with social, political or religious organization reduced drastically.

13. Tensions in family

The mental and social tensions along with the stress of the family owing to the crisis and resultant economic insecurity created an atmosphere of hopelessness and disdain in family. The failure of the farmer to meet the basic requirements during the peak period of the crisis often led to tensions in the family.

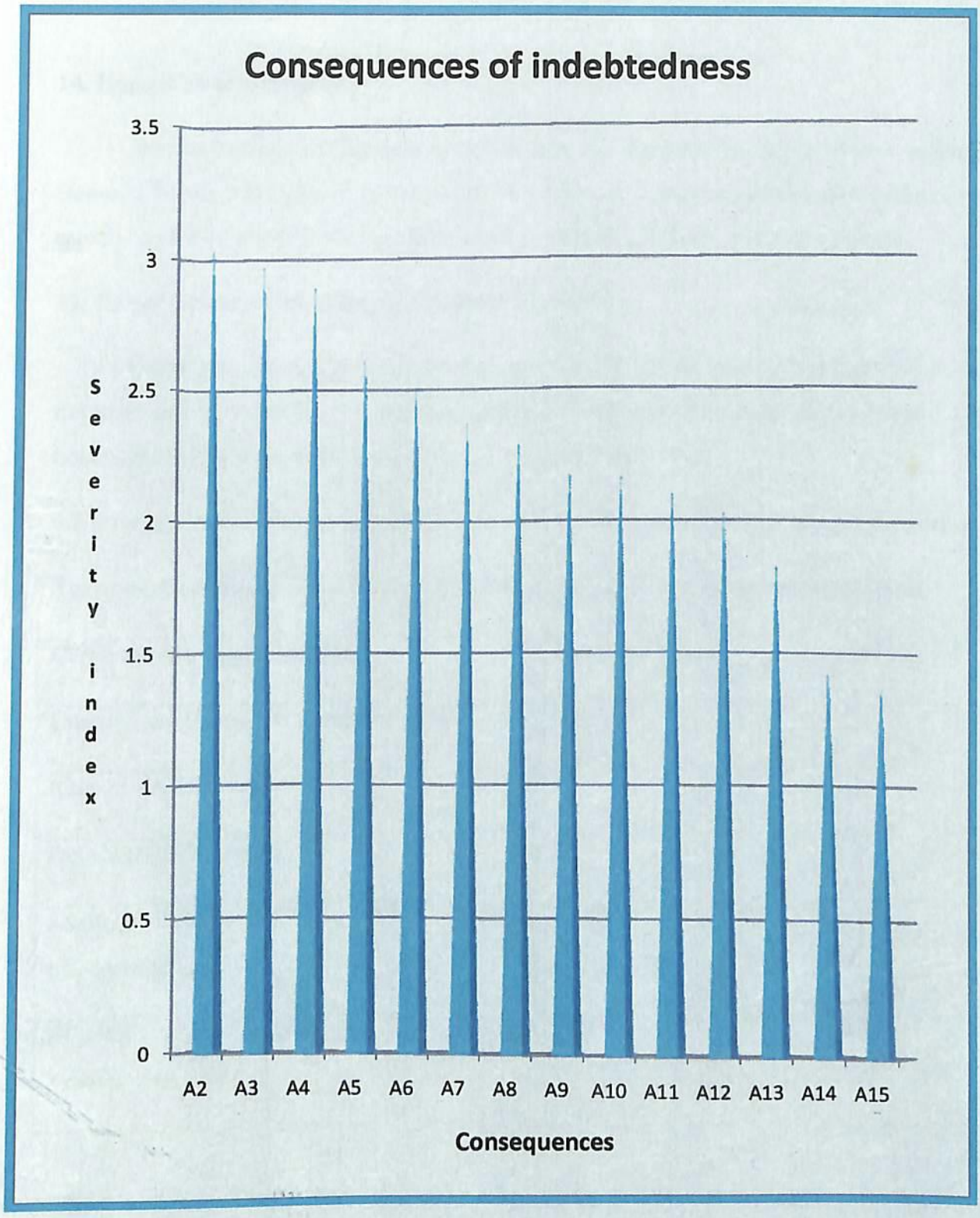


Fig 9. Delineation of consequences of indebtedness

14. Impact on marriages

A consequence of the agrarian crisis was the adverse effect it had on weddings of farmer's family members. It was reported that after the crisis the number of weddings in the region has fallen sharply and the extravagant nature of weddings also disappeared.

15. House construction and maintenance affected

As a result of crisis those respondents who were in the process of building houses could not continue their activity. Unfinished houses are not a strange sight in the village. Many houses without any maintenance for many years were also seen.

4.5 Perception of farmers on governmental interventions in resolving agrarian crisis

Table 44. Perception on governmental interventions in resolving agrarian crisis

Governmental Intervention	Usefulness index	Rank
Compensation cash for destroyed pepper	2.38	1
Interest waiver scheme	1.48	2
Debt Relief Commission	1.35	3
Saplings and fertilizers for pepper respondents	1.33	4
National Rural Employment Guarantee Scheme (NREGS)	1.32	5

Table 44 gives the perception of respondents on governmental interventions. The usefulness as perceived by respondents is given in their decreasing order and it is as follows.

1. Compensation cash for destroyed pepper

The respondents were given cash as compensation for destroyed pepper plantations. Even though respondents claimed that compensation money was meagre as compared to the actual loss in terms of cash, the intervention was ranked first on a comparative basis.

2. Interest waiver scheme

The waiver of interest of farm loans was helpful to respondents. Although respondents were unable to repay loans completely, the waiver of loans was a relief to them and reduced their tensions considerably.

3. Debt Relief Commission

Debt Relief Commission of the Government of Kerala held sittings in Sulthan Bathery and Kalpetta in Wayanad to find the eligible cases for reconciliation of debt. Other than dispatching notice to some respondents that their loans would be written off, effective action is yet to be taken by the commission and the respondents have lost faith in the promises.

4. Saplings and fertilizers for pepper farmers

After the collapse of pepper cultivation, the respondents were given saplings and fertilizers from the Department of Agriculture. Respondents unanimously opined that the biofertilizer (neem cake) provided was worthless without any quality and the chemical fertilizer were ineffective. Respondents were given free saplings as compensation. But the numbers of saplings were measly and were of no relief at all to crisis ridden respondents.

5. National Rural Employment Guarantee Scheme

NREGS was a bane for the respondents in Pulpally as it drove away farm laboureres. After the implementation of the scheme, wage rate of laboureres also increased. As labourers preferred to do work provided under the scheme than working in field, respondents found it extremely difficult to get their field work done.

4.6 Survival stress for livelihood security

Table 45. Distribution of respondents with respect to survival stress for livelihood security

Category	Frequency	Percentage
Very high (>80)	32	53.34
High (80- 65)	16	26.66
Medium (50-65)	8	13.33
Low (<50)	4	6.67

Survival stress for livelihood security presented in Table 45 shows that majority of respondents (53.34 per cent) had very high level of stress. About 27 per cent of respondents had high levels of stress. Only 6.67 per cent of respondents belonged to the category of low stress. The failure of crops coupled with pest and disease attack and discrepancy in climatic conditions forced the respondents of Pulpally into fragile economic condition. This along with the pressures of the society and family resulted in enormous stress as is evident from the study. More than 50 per cent of respondents in Pulpally live under very high stress. This might be the reason of high suicide rate in the area. Dillner (1984) and Sengupta (2008) reported on survival stress of respondents.

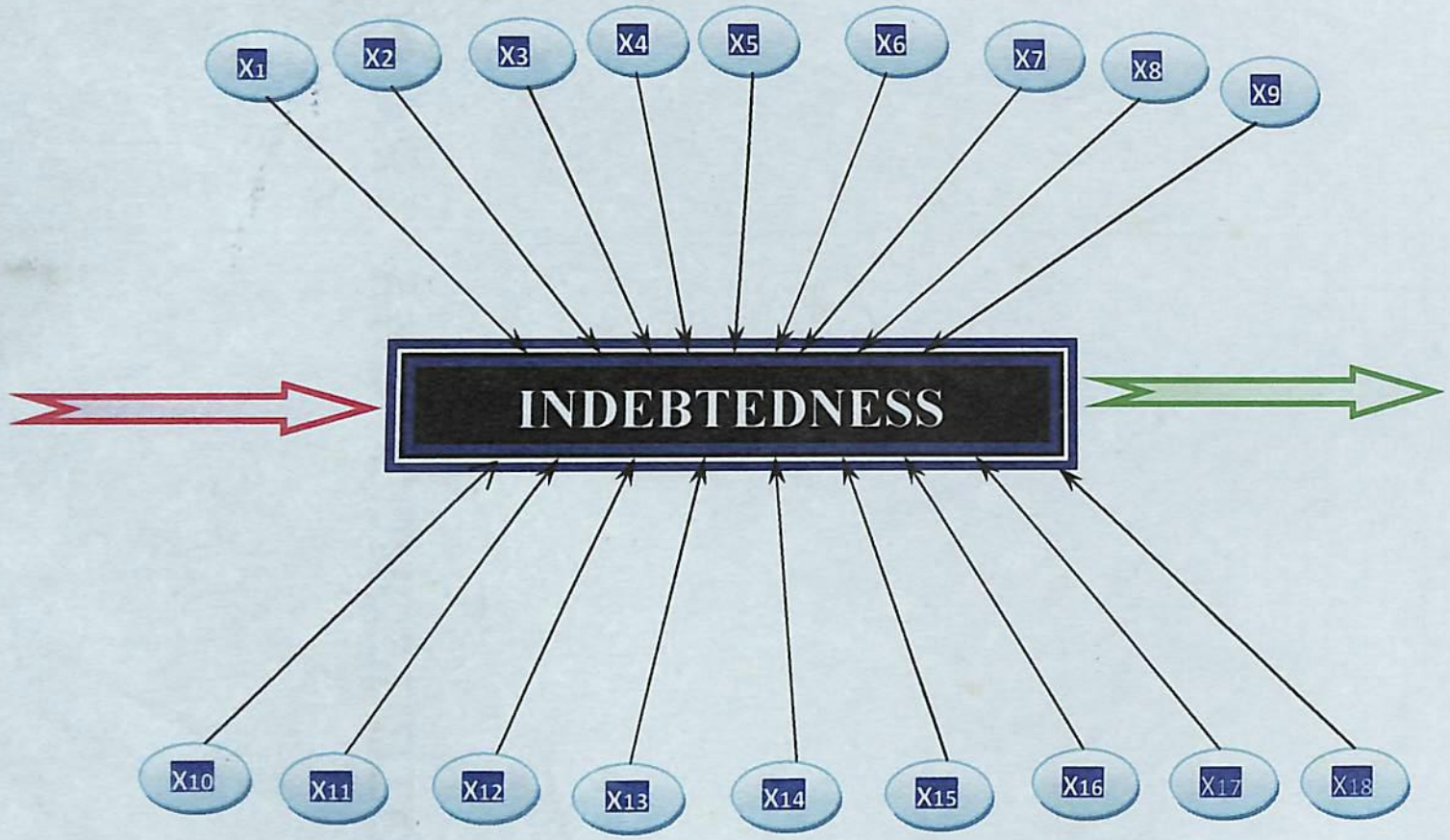
Relationship between survival stress for livelihood security and indebtedness.

A simple correlation was done between survival stress and indebtedness. It was found that both were positively and significantly correlated ($r = 0.4777^{**}$). Hence it can be inferred that as the indebtedness of respondents increase, their stress also increases. An indebted farmer becomes financially obliged to a person or an institution and the obligation remains till the money has been paid back. Since many respondents had no other sources of income than agriculture, with the collapse of agriculture they could not pay back loans. Thus the increased financial stress, mounting overdue of borrowed money, inability to maintain standard of living and family tensions led to many suicides in that area.

4.7 Empirical model of the study

The empirical model of the study is formulated on the basis of results obtained from the investigation. Fig 3 depicts the empirical model of the study. The fifteen major factors which led to indebtedness of respondents are given in the left column in the descending order of severity. Indebtedness is influenced by the socio economic variables. The state of indebtedness leads to certain consequences, which are shown in the right column in their descending order of severity.

EMPIRICAL MODEL OF STUDY



A_1 TO A_{15} - FACTORS LEADING TO INDEBTEDNESS

B_1TO B_{15} – CONSEQUENCES OF INDEBTEDNESS

X_1 TO X_{18} – SOCIO ECONOMIC VARIABLES

SUMMARY AND CONCLUSION

5. SUMMARY AND CONCLUSION

Pulpally is an agricultural village lying in the North Eastern part of Wayanad district. The farmers of the village cultivated export oriented commercial crops like pepper. Due a series of reasons ranging from fall in price of crops, pest and disease attack and fluctuations in import and export, the farmers have been facing a severe agrarian crisis. The crisis forced farmers into a state of indebtedness.

The present study was an attempt to carry out a cause consequence analysis of indebtedness of farmers in Pulpally panchayat of Wayanad district. The objectives of the study were

6. To study the nature and extent of indebtedness of farmers in Pulpally Panchayat of Wayanad district.
7. To delineate the factors leading to indebtedness.
8. To analyse the consequences of indebtedness of farmers.
9. To examine the perception of farmers on governmental interventions to mitigate crisis.
10. To find the survival stress for livelihood security of farmers in Pulpally

The study was confined to Pulpally Panchayat of Wayanad district. The dependent variable selected for the study was indebtedness. The independent variables were age, education, family educational status. size of the family, extent of holding, years of migration, annual income, extension contact, extension participation, mass media exposure, economic motivation, level of aspiration, risk orientation, perception of profitability, progressiveness, income expenditure pattern and survival stress for livelihood security. Statistical tools used were percentage and frequency analysis, mean and standard deviation, correlation analysis. A simple severity index and usefulness index was formulated for the study.

5.1 The salient findings of the study are presented below

1. Majority of respondents were above 50 years of age and had higher secondary level of education. Majority of respondents belonged to nuclear families with high level of educational status. More than 33 per cent of respondents were marginal farmers, 40 per cent small farmers and nearly 27 per cent were large farmers. While about 14 per cent respondents cultivated in leased land, 11.66 per cent leased out their land for cultivation. The major crops grown were rubber, coconut, banana, paddy, pepper and coffee. More than 68 per cent of respondents carried out inter cultivation. Fifty five per cent of respondents migrated to Wayanad 31- 40 years ago. There is an clear-cut shift in cropping pattern from food crops to cash crops and within cash crops from pepper to vanilla and then to rubber.
2. As far as socio economic variables like exposure to mass media, extension participation, extension contact, economic motivation, risk orientation, credit orientation, progressiveness, perception of profitability and level of aspiration is concerned, majority of respondents belong to medium level. A positive and significant relationship exist between exposure to mass media and extension contact, extension participation and extension contact, extension participation and family educational status, economic motivation and risk orientation, economic motivation and perception of profitability, economic motivation and land owned, risk orientation and land owned, age and land owned as well as education and family educational status. A negative and significant relationship was found between exposure to mass media and economic motivation, land owned and education as well as education and size of family.

3. Respondents derive maximum income from agriculture (86.32 %), followed by business (4.86 %), government jobs (4.07 %) and private jobs (2.06 %). In the previous year, maximum expenditure for the respondents was for education (21.23 %) followed by food (17.66 %). This was closely followed by expenses in agricultural sector which accounted for 16.15 per cent of the total expenditure. Expenditure in clothes (7.55 %), construction and maintenance of house (6.77 %),

purchase of consumer durables (6.63 %), fuel (4.67 %), others (8.28 %) etc. follows. There was a progressive increase in the average income as well as expenditure of respondents with increase in land area.

4. More than 3 per cent of respondents were indebted for short term, while 21.42 per cent of respondents were indebted for medium term. About 75.52 per cent of respondents belonged to the category of long term indebtedness. Nearly 34 per cent of respondents were indebted for less than 50,000 rupees. More than 26 per cent of respondents had taken loan for an amount between 50,000 to one lakh rupees while 23.33 per cent of respondents had a loan between one to two lakh rupees. When 15.00 per cent of respondents were indebted for two to three lakh rupees, 1.67 per cent of respondents had a loan amount between three and four lakh rupees. Nearly 84 per cent of respondents were indebted for less than two lakh rupees.

5. Majority of respondents took loan from banks. When 35.71 per cent of respondents took loan from commercial banks, nearly 30 per cent took loans from cooperative banks. More than eight per cent of respondents took loan from private financial firms, while 7.14 per cent took loans from Kudumbasree. It was also found that only 5.10 per cent of respondents took loans from money lenders. The percentage of respondents who loaned money from friends, neighbours and relatives were 14.28 per cent.

6. Marginal farmers had taken an average of Rs. 47,612 of credit. The average amount of credit of small farmers was Rs. 93,449 while large farmers had an average amount of credit of Rs. 1,48,680. The average amount of loan across the panchayat of Pulpally is Rs. 96,850. Average amount due per hectare for marginal farmer was Rs. 81,992 while that for small farmer was Rs.69,084. The amount due per acre for large farmer was Rs. 35,827. The average amount due per acre for entire sample area was Rs. 64,518.

7. Nearly 17 per cent of respondents paid an interest of less than 10 per cent. When 73.46 per cent of respondents paid an interest rate between 10 to 15 per cent, only 10.20 per cent of respondents admitted to paying an interest rate higher than 15 per

cent. About 65 per cent of loans were taken by keeping land as security. While 25.50 per cent of loans were taken with gold as security, 10.20 per cent of loans were taken with personal security. Almost 70 per cent of loans were taken before 2004.

8. The average number of years of being a creditor and defaulter for the entire sample area is 6.91 and 3.11 respectively. As far as perception of respondents on source of credit is concerned, friends, neighbours and relatives received maximum score, followed by commercial banks, cooperative banks, private financial firms, Kudumbasree and money lenders respectively, in the decreasing order.

9. Respondents used 51.27 per cent of total loan amount for agricultural purposes. Nearly 49 per cent of loan amount was used for non productive purposes. Those purposes included education (24.86 %), purchase of consumer durables (27.86 %), marriage and ceremonies (13.56 %), house construction and maintenance (12.69 %) and other purposes (11.74 %)

10. Only 5 per cent of respondents have repaid at least one loan completely. While 6.66 per cent of respondents have repaid their loans partially, the rest of respondents had done nothing as far as repayment was concerned. More than three per cent of respondents renewed their loans regularly. When 13.34 per cent of respondents had renewed their loans once, 28.33 per cent of respondents had renewed their loans twice. More than 16 per cent of respondents had renewed their loans thrice. About 39 per cent of respondents had never renewed their loans. Nearly 88.34 per cent of respondents had received their loans in lump sum. Even though 11.66 per cent of respondents received their loans in installments, the numbers of installments were fixed in advance and respondents did not have to face any difficulties because of that.
11. There is a positive and significant relationship between economic motivation, risk orientation, land owned, size of the family and indebtedness.

12. The factors leading to indebtedness were delineated and arranged in descending order of severity. They are low market price of produce, disease/pest of support,

decline in agricultural income, disease of crop, absence of other sources of income, decrease in produce demand, crop failure due to climatic variations, high rate of interest, absence of value addition, misutilization of loans, pest attack of crop, deficiency of irrigation water, decrease in soil fertility, inefficient marketing, low export price.

13. The consequences of indebtedness were delineated and arranged in descending order of severity. They are changes in lifestyle, hunt for alternate jobs, deforestation in holdings, reduction in money on social purposes, selling land, reduction in money spent on recreation, depression, decrease in health consciousness, aggravation of drinking habit, sale of vehicles, adverse impact on education, social isolation, tensions in family, impact on marriages and house construction and maintenance affected.

14. The usefulness of governmental interventions in resolving the crisis was measured on the basis of perception of farmers and was arranged in decreasing order of importance. They are compensation cash for pepper, interest waiver, Debt Relief Commission, saplings and fertilizers for pepper farmers and NREGS.

15. Majority of respondents (53.34 per cent) had very high level of stress. When 26.66 per cent of respondents had high amount of stress, 13.33 per cent of them had medium amount of stress. Only 6.67 per cent of respondents belonged to the category of low stress. A positive and significant relationship was found between indebtedness and survival stress for livelihood security.

5.2 Conclusion

The farmers in the Pulpally panchayat were in the throes of indebtedness. Albeit the fact that farmers in Pulpally have benefitted from debt waiver and one time settlement scheme amounting to Rs. 60,000 crores by the Government of India, debt waiving is not the end of the crisis. Even though it provides a relief to farmers, the crisis remains largely unresolved. Moreover waiving off loans will adversely affect the repayment behaviour of farmers in the future severely, jeopardizing agriculture as an economic activity. An attitude of slackness will be induced towards repayment of loans in people as even financially well off farmers abstain from repaying loans expecting to get it waived off. It is also evident from the study that a great majority of respondents misutilized their loan. Such tendency is widely observed among farmers all over. Hence massive campaigning should be done to create awareness among farmers about proper utilization and repayment of loans. Effort should be taken to socially engineer the attitude of farmers by a credit literacy crusade.

The credit structure should be revitalized by ensuring that the loans advanced are serviced and supervised by banks. Procedures should be developed to guarantee that new farm loans are provided only for viable agricultural purposes. But most vital action to be taken up by lending agency is to ensure that farmers use the loans for the purpose for which it is taken. Banks should provide credit counseling to farmers. They should also have provisions to technically supplement the ventures of farmers. Close monitoring through field visits by bank officials should be made mandatory to ensure proper use of loans. The cooperative credit societies should be revitalized and their functioning should be made more effective. Reorientation of mindset of people is crucial for regeneration of agriculture in the area. Relief measures of the state Government should be effectively distributed on the basis of the magnitude of actual loss of agriculture. All the farmers' suicides in the panchayat cannot be attributed to indebtedness or failure of agriculture. In order to avail the benefits of Governmental policies, suicides due to other reasons were also classified as farmer's suicides due to agrarian crisis.

A complete restructuring is imperative for the renaissance of agriculture. An alternate cropping pattern suitable for the present soil and climatic conditions of the area should be developed. Instead of practising mono cropping and cultivation of perennial crops like

pepper and rubber, farmers should be encouraged to grow vegetables, medicinal crops etc which will be of constant demand in market. Organic farming should be promoted as this fetches better prices. The NREGS scheme should be restructured so that workers would be allotted to farmers' fields for undertaking agricultural activities. The labour cost can be shared between the farmer and Panchayat, so that the burden of increased wages on farmers would be lightened. Employment generation should also be attempted in non agricultural areas. Vocational training should be given to young people in small scale industries, services etc. Value addition and post harvest processing and storage should be encouraged among farmers. Domestic market should be identified for commodities as this will reduce the over dependence on international market. Production should be estimated at early stages of crop growth and based on that marketing activities should be initiated.

Another vital element for resurgence of agriculture is the strengthening of extension activities. It should be ensured that the schemes and programmes of Government reach farmers. A reorientation of approach of extension personnel like Agriculture Officers and Agricultural assistants should also be undertaken. A combined effort of the farmer and the government can help to bring back the lost agricultural prosperity to the panchayat.

5.3 Suggestion for future research

The present study covered only one panchayat of the State. A broad study encompassing the entire crisis ridden area should be undertaken. The interventions of all stakeholders of agriculture to mitigate the crisis should also be studied. The effectiveness of loan waivers and the impact of Debt Relief commission should also be studied in an extensive level. A study on the impact of shift in cropping pattern in the socio economic conditions of respondents would be highly relevant. The environmental conditions in Wayanad is undergoing a change due to alterations in climate conditions, decreasing soil fertility etc. A study can be done about evolving new cropping patterns for the area. The methods of administering credit awareness and repayment behaviour among farmers should also be studied. A study can also be conducted in the efficiency in the functioning of cooperative credit societies in Kerala

5. SUMMARY AND CONCLUSION

Pulpally is an agricultural village lying in the North Eastern part of Wayanad district. The farmers of the village cultivated export oriented commercial crops like pepper. Due a series of reasons ranging from fall in price of crops, pest and disease attack and fluctuations in import and export, the farmers have been facing a severe agrarian crisis. The crisis forced farmers into a state of indebtedness.

The present study was an attempt to carry out a cause consequence analysis of indebtedness of farmers in Pulpally panchayat of Wayanad district. The objectives of the study were

1. To study the nature and extent of indebtedness of farmers in Pulpally Panchayat of Wayanad district.
2. To delineate the factors leading to indebtedness.
3. To analyse the consequences of indebtedness of farmers.
4. To examine the perception of farmers on governmental interventions to mitigate crisis.
5. To find the survival stress for livelihood security of farmers in Pulpally

The study was confined to Pulpally Panchayat of Wayanad district. The dependent variable selected for the study was indebtedness. The independent variables were age, education, family educational status. size of the family, extent of holding, years of migration, annual income, extension contact, extension participation, mass media exposure, economic motivation, level of aspiration, risk orientation, perception of profitability, progressiveness, income expenditure pattern and survival stress for livelihood security. Statistical tools used were percentage and frequency analysis, mean and standard deviation, correlation analysis. A simple severity index and usefulness index was formulated for the study.

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APPENDICES

APPENDIX I

List of causes of indebtedness

1. Crop failure
2. Lack of marketing facilities
3. Disease incidence of main crop
4. Disease incidence of supporting crop
5. Pest attack of main crop
6. Pest attack of supporting crop
7. Low market price
8. Demand for produce decreased
9. Crop could not be marketed at the right time
10. Low export prices
11. Drought adversely affected crops leading to loss
12. High rainfall affected the crops leading to loss
13. Loss in business
14. Increased cost of cultivation
15. Loan amount had to be spent for medical expenses
16. High labour cost
17. Decreasing productivity of crops
18. Soil fertility decreased
19. Technologies applied in the field is outdated leading to low production
20. Rejuvenation of crops not done
21. Income from agriculture decreased over years
22. Lack of efficient storage system
23. No sources of income other than agriculture
24. Loan spent for marriage/ educational expenses
25. Sufficient subsidies not available
26. High rate of interest from moneylenders
27. Lack of irrigation facilities affected crop growth
28. Perennial and rigid nature of main crop
29. Decrease in public investment in agriculture.
30. Lack of adequate help by the government.

APPENDIX II

List of consequence of indebtedness

1. Education of family members affected
2. Increased stress of farmer
3. Money spent on food decreased.
4. Money spent on clothes decreased
5. Automobiles had to be sold
6. Land had to be sold
7. Life style changed
8. Money spent on recreation decreased
9. Marriage of family members delayed
10. Trees had to be cut and sold
11. Income of churches/ temples/ mosques decreased
12. Farmers had to go out to other states to find job
13. Drinking habit got intensified/ started
14. Cinema halls got closed
15. Private hospitals got closed
16. Illegal trade of arrack across border increased
17. Illicit brewing of arrack increased.
18. Had to pawn ornaments.
19. Left land barren
20. Could not afford labourers
21. Maintenance of house could not be done
22. Mental tension increased.
23. Money spent on purchase of consumer durables decreased.
24. Dowry given decreased
25. Private schools got closed
26. Construction of houses affected.
27. Started lease land cultivation
28. Shops in town got closed due to decreased sales.
29. Younger members of the family were encouraged to go for private jobs.
30. Number of buses to neighbouring states increased.

APPENDIX III
INTERVIEW SCHEDULE
Cause- consequence analysis of indebtedness among farmers in Pulpally panchayat of wayanad district

1. Name

2. Age

3. Type of family- unmarried/ nuclear family/ joint family

4. Educational status

Category	
Illiterate	
Literate	
Primary level	
Secondary level	
Higher secondary level	
Collegiate level	

5. Family educational status

Family members	Educational status

6. Extent of holding

(a) owned (ha)
(b) cultivated (ha)
(c) leased in (ha)
(d) leased out (ha)

7. Crops grown

a.
b.
c.
d. inter crops grown -

8. Did your family migrate to Wayanad?

If yes, numbers of years since you have migrated

9. Shift in cropping pattern

Please indicate the major crops grown over years since you started cultivation

Year	Major crops grown
1970's	
1980's	
1990's	
2000-2005	
After 2005	

10. Exposure to mass media

Please indicate (√) the extent of exposure to mass media.

Medium	Daily	Twice/more in a week	Once in a week	Fortnightly	Once in a month	Never
Newspaper						
Radio						
TV						
Farm magazines						
Other magazines related to agriculture						

11. Extension contact

Please indicate (√) how often you often you visit the following personnel in connection with agricultural activities

Sl no	Personnel	Twice or more a week	Once in a week	Once in a fortnight	Once in a month	Never
1	Agricultural Officer					
2	University scientist					
3	Others					

12. Extension participation

Please indicate (√) how often you take part in following activities

Sl no	Activities	Twice or more a week	Once in a week	Once in a fortnight	Once in a month	Never
1	Field visits					
2	Study tours					
3	Trainings					
4	Seminars					
5	Campaigns					
6	Exhibitions					
7	Others					

13. Economic motivation

Certain statements regarding the economic motivation are given below. Please check (√) at the appropriate column.

Statements	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
Farmer should work towards larger yield and economic return					
Most successful farmer is one who makes maximum profit					
A farmer should try new farming areas which may give more money					
A farmer should grow each crop to increase monetary profit in comparison to growing food crops for home consumption.					
A farmer must earn his living but the most important thing in life cannot be defined in economic terms.					
It is difficult for farmers children to make good start, unless he provides them with economic assistance					

14. Risk orientation

Certain statements regarding to risk orientation are given below. Please check (√) at the appropriate column.

Statements	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
One should cultivate different crops to overcome the failure of cultivating one or two crops					
One should try to make more profit facing challenges rather than doing small scale farming with very low risk					
Only rich farmers can do large scale farming taking high risks than an average farmer					
If the chance for success is assured one should take any risk involved in farming					
One should not adopt innovative techniques before observing the experience of others					
Trying an innovative farming technique is beneficial even though an element of failure is involved in it.					

15. Credit orientation.

Certain statements regarding the credit orientation are given below. Please check (√) at the appropriate column.

Statements	Fully agree	Partially agree	Disagree
A farmer like you should not borrow for agricultural purpose			
It is very difficult to get loan for agricultural purpose			
Lending organization/person has indifferent attitude towards borrowing farmer			
There is nothing wrong in getting loan from financial institution for agricultural purpose			
You have taken loan for agricultural purpose			

16. Progressiveness

1. Do you keep yourself up-to-date in technology?
   a. high yielding plant variety…….Y/N
   b. application of organic inputs….Y/N
   c. use of plant protection chemicals….Y/N

2. Do you generally try to adopt the following recommendations?
   a. recommended bio fertilizers and bio control agents…….Y/N
   b. recommended inter cultivation……Y/N
   c. recommended field operations…….Y/N

3. Are you growing intercrops as per the season recommendations?.....Y/N?

4. Do you go for value addition?.....Y/N

17. Perception of profitability

Certain statements regarding the perception of profitability are given below. Please check (√) at the appropriate column.

Sl. no	Statements	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Growing commercial crops is not economical					
2.	Commercial crops fail in some years due to adverse weather conditions. So relying on them alone is not profitable					
3.	Cultivation cost of commercial crops is more. So it is not economical					
4.	Commercial crops need rejuvenation which is not economical.					
5.	Low market price of commercial crops makes it uneconomical					
6.	Diseases of support plants make growing commercial crops a loss					
7.	Commercial crops need more labor force. So cultivating it is not profitable					
8.	The high cost of plant protection chemicals and increased incidence of diseases makes growing commercial crops a loss					
9.	Lack of adequate marketing facilities make growing commercial crops a loss					
10.	Lack of export opportunities leads to a loss in commercial crop cultivation.					

18. Level of aspiration

Please indicate (√) your aspiration with respect to the following.

Items	Yes	No
Earn higher income		
Develop agricultural land		
Get a good job		
It start a small enterprise other than agriculture		
To run a petty shop		
Others 1. 2.		

19. Income expenditure pattern during the previous year

Please indicate (√) your income from the following sources

Source of income	Income
Agriculture	
Business	
Government job	
Private job	
other	

Please indicate (√) your expenditure from the following sources

Items	Amount
Food	
Cloths	
Fuel	
Medical expenses	
Tax	
Education	
Marriage in family	
Purchase of consumer durable	
Construction of house	
Agriculture	
others	

20. Indebtedness of farmers

Source	Number of loans	Amount	Year of borrowing	Interest paid	Security given	No. of years since defaulted	Repaid amount
Commercial bank							
Cooperative bank							
Private financial firm							
Kudumbasree							
Money lender							
Friends, neighbors, relatives							

21. Perception of source of credit

Certain statements regarding the perception of source of credit are given below. Please check (√) at appropriate column

Sources	Commercial bank	Cooperative bank	Private financial firms	Kudumbasree	Money lenders	Friends, neighbors & relatives.
Which provides lowest interest?						
Which provides loan at proper time?						
Which gives adequate credit?						
Which is flexible in repayment?						
Which renew loan?						
Which has maximum ease of operation?						
Total score						

22. Credit utilization pattern

a. Total credit amount

b. Amount and percentage used for the purpose for which you have taken loan.

c. Amount and percentage used for other purposes
   1.
   2.
   3.

d. Reasons for utilization for other purposes

23. Credit repayment pattern

Please check (√) at the appropriate column.

a. Did you repay your loan fully?

b. Did you repay loan partially?

c. Number of loans repaid

d. Reasons for non repayment
   i.
   ii.

24. Credit renewal pattern

Please check (√) at the appropriate column.

Category	
Was your loan renewed?	
Do you regularly renew your loans?	
Number of times loan was renewed	
a. Once	
b. Twice	
c. Thrice	
d. Never	

25. Credit disbursement pattern

Please check (√) at the appropriate column.

Category	
Did you get loan in lump sum?	
If no, the total number of installments	
Was the number of installments fixed in advance?	
Did you face any difficulty due to disbursement pattern?	

26. Causes of indebtedness

Certain statements regarding the causes of indebtedness are given below. Please check (√) at appropriate choice showing the intensity at which the cause leads to indebtedness.

Sl. No	Causes	Very severe	Severe	Not severe	No effect at all
1	Low market price for produce				
2	Disease/pest of support				
3	Decline in agricultural income				
4	Disease of crop				
5	Absence of other source of income				
6	Produce demand decreased				
7	Crop failure due to climatic variations				
8	High rate of interest				
9	Absence of value addition				
10	Misutilization of loans				
11	Pest attack of crop				
12	Deficiency of irrigation water				
13	Decrease in soil fertility				
14	Inefficient marketing				
15	Low export price				
16	Others				
	1.				
	2.				

27. Consequences of indebtedness

Certain statements regarding to consequences of indebtedness is given. Please check (√) at appropriate choice denoting the intensity of the consequence on indebtedness

Sl. no	Consequences	Very severe	Severe	Not severe	No effect at all
1	Changes in lifestyle				
2	Hunt for alternate jobs				
3	Deforestation in holdings				
4	Reduction in money on social purpose				
5	Selling land				
6	Reduction in money spent on recreation				
7	Depression				
8	Decrease in health consciousness				
9	Aggravation of drinking habit				
10	Sale of vehicles				
11	Adverse impact on education				
12	Social isolation				
13	Tensions in family				
14	Impact on marriages				
15	House construction and maintenance affected				
16	Others				
	1.				
	2.				

28. Perception of respondents on governmental interventions to mitigate crisis

Certain statements regarding to perception on governmental interventions is given. Please check (√) at appropriate choice denoting the usefulness of the governmental intervention.

Sl. No	Governmental interventions	Very useful	Useful	Not useful
1	Compensation cash for destroyed pepper			
2	Interest waiver scheme			
3	Debt Relief Commission			
4	Saplings and fertilizers for pepper respondents			
5	National Rural Employment Guarantee Scheme (NREGS)			

29. Survival stress of farmer

Certain statements regarding to symptoms of survival stress is given. Please check (√) at appropriate item as experienced by you.

Part 1

Sl. no	Items	Usually	Sometimes	Never
1	I sweat a lot			
2	I gat head ache			
3	I get tired easily			
4	I cannot stand loud noise			
5	I have very poor appetite			
6	I get giddiness			
7	I have disturbed sleep			
8	I have nausea			
9	I suffer from one health problem or other everyday			
10	I have difficulty in falling sleep			
11	I get back ache			
12	I get pain in my joints			
13	I get pain in my neck and shoulders			

Part 2

Sl. no	Items	Usually	Sometimes	Never
1	I am in a low mood			
2	I am highly irritable			
3	I feel helpless			
4	I loose my temper easily			
5	I don't enjoy activities which I used to enjoy			

6	I am worried about my future			
7	I am worried about my poor health			
8	I find others too demanding			
9.	I get provoked very easily			
10	I feel upset when I have to take some responsibility			
11	I worry about my past			
12	I become aggressive			
13	I am afraid that I would break down			

Part 3

Sl. no	Items	Usually	Sometimes	Never
1	I take a long time to decide			
2	I am distracted very easily			
3	I cannot think clearly			
4	I think my future is dark			
5	I get disturbing thoughts			
6	I find it difficult to be attentive			
7	I think life I am overtaxing myself			
8	I keep forgetting things			
9	I cannot cope with sudden changes around me			
10	I think life is a mess			
11	I am pre occupied			
12	I become blank			

Part 4

Sl. no	Items	Usually	Sometimes	Never
1	I throw things around			
2	I am not bothered about my appearance			
3	I leave things incomplete			
4	I have a strained posture			
5	I don't pay attention to what I eat			
6	I do not speak much to anyone in the family			
7	I strive hard to achieve more and more			
8	I argue a lot			
9	I have little time for exercise/walk/jog			
10	I have very little time to be with my family members			
11	I shout at others for small matters			
12	I have no time for relaxation			

CAUSE- CONSEQUENCE ANALYSIS OF INDEBTEDNESS AMONG FARMERS IN PULPALLY PANCHAYAT OF WAYANAD DISTRICT

BHAVYA.B

Abstract of the

thesis submitted in partial fulfillment of the requirement

for the degree of

MASTER OF SCIENCE IN AGRICULTURE

Faculty of Agriculture
Kerala Agricultural University, Thrissur.

2008

Department of Agricultural Extension
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ABSTRACT

The agrarian sector in Kerala is facing a crisis unparalleled in its history. Fall in prices, decreasing production and productivity of crops, diminishing soil fertility and irrigation water availability, climatic aberrations, pest and disease attack of crops etc. have resulted in a manifold decline in the financial viability of agriculture. This has in turn led to a steep increase in indebtedness of farmers and increasing number of farmer's suicides. In this background, the present investigation has been designed to attempt a cause- consequence analysis of indebtedness of farmers. The study was conducted in Pulpally panchayat of Wayanad district where maximum number of farmer's suicides due to indebtedness were reported. Sixty respondents were randomly selected for the study. A simple severity index was used to rank the causes and consequences of indebtedness and a usefulness index was used to measure the perception of farmers on governmental interventions in resolving the crisis.

Majority of farmers belong to medium category as far as socio economic variables like exposure to mass media, extension participation, extension contact, economic motivation, risk orientation, credit orientation, progressiveness, perception of profitability and level of aspiration is concerned. Agriculture was the main source of income for more than 86 per cent of farmers. Nearly 84 per cent of respondents were indebted for less than two lakh rupees. The average amount of loan across the panchayat of Pulpally is Rs. 96,850. The average amount due per acre for entire sample area was Rs. 64,518. The total number of loans taken was 1.63 times higher than the number of respondents. More than 65 per cent of respondents took credit from institutional sources. For respondents the average number of years of being a creditor and defaulter is 6.91 years and 3.11 years respectively. More than 48 per cent respondents used agricultural loan for non agricultural purposes.

The factors leading to indebtedness were delineated and arranged in descending order of severity. They are low market price of produce, disease/pest of support, decline in agricultural income, disease of crop, absence of other sources of income, decrease in produce demand, crop failure due to climatic variations, high rate of interest, absence of value addition, misutilization of loans, pest attack of crop, deficiency of irrigation water, decrease in soil fertility, inefficient marketing, low export price.

A similar analysis was done on consequences of indebtedness. The descending order of consequences is changes in lifestyle, hunt for alternate jobs, deforestation in holdings, reduction in money on social purposes, selling land, reduction in money spent on recreation, depression, decrease in health consciousness, aggravation of drinking habit, sale of vehicles, adverse impact on education, social isolation, tensions in family, impact on marriages and house construction and maintenance affected. The usefulness of governmental interventions was measured on the basis of perception of farmers and was arranged in decreasing order of importance. They are compensation cash for pepper, interest waiver, Debt Relief Commission, saplings and fertilizers for pepper farmers and NREGS. It was also found that majority of farmers had high levels of stress.