

**FARM POVERTY IN KERALA :
A CASE STUDY OF ALAPPUZHA, TRISSUR,
PALAKKAD AND WAYANAD**



THESIS SUBMITTED TO :

THE COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

**FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY
IN ECONOMICS**

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DECLARATION

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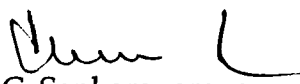


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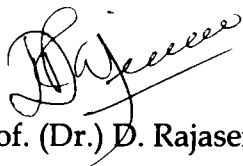
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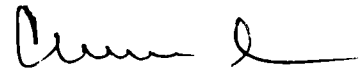

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ACKNOWLEDGMENT

I extend my sincere thanks and gratitude to Prof. (Dr.) K.C. Sankaranarayanan, former Head of the Department of Applied Economics and Dean, Faculty of Social Sciences, Cochin University of Science and Technology, for guiding the preparation of this thesis.

My sincere thanks are also due to Prof. (Dr.) D. Rajasenan, Present Head of the Department of Applied Economics and Dean, Faculty of Social Sciences, Prof. (Dr.) M.K. Sukumaran Nair, Dr. P. Arunachalam and Dr. Meera Bai, faculty members of the department of Applied Economics, Prof. (Dr.) Mohandas, Associate Dean, Dept. of Banking and Commerce, Agricultural University, Trichur, and Planning Board, Trivandrum, for their co-operation, encouragement and assistance in completing this work.

I also take this opportunity to extend my sincere thanks to the Director, Collegiate Education, the University Grants Commission, Cochin University of Science and Technology, Principles of Government Womens College, Trivandrum and Panampilly Govinda Menon Memorial College, Chalakkudi, my colleagues and well-wishers, staff and students of the department of Applied Economics, CUSAT; Librarian, Centre for Development Studies, Trivandrum, Ms. Elizabeth Abraham, Librarian; Department of Applied Economics for the facilities, assistance and encouragement in completing this thesis.

I wish to express my deep sense of gratitude to my husband and members of the family for the inspiration and support as well as for the readiness to accept deprivation.

MAYA I.

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Chapter 1

Introduction

1.1. The complex multi dimensional problem of poverty with its origins in both national and international domains still gains a pivotal position in the agenda for effective and extensive discourse among elite academicians, (to revive the process of theorization) active researchers (to renovate and upgrade the analytical pursuits) and ambitious policy-makers (to create a supportive environment for its speedy alleviation). The necessity to design a broader strategy to tackle the problem of poverty, (by incorporating (i) conservation of resources, (ii) promotion of economic growth and (iii) implementation of country-specific anti-poverty programmes as its base) gained adequate stress and recognition at the global level. The resonance of such an emphatic plea¹ to combat poverty with all possible means still radiates vibrancy and transmits spirit of dynamism to all concerted action against this major challenge. A decade after Rio Conference (92), international community², at large, slightly perturbed by the slow pace of progress attained by many countries in leveling down the prevalence ratio of poverty, collectively and strongly subscribed to the general consensus that 'increased targeted funding' is highly indispensable and absolutely essential to fight poverty vigorously on a massive scale. Among alternative means (adopted by many countries to reduce substantially the prevalence of hunger) the twin track strategy of comprehensive

¹ Agenda 21-3, Combating Poverty, Rio Conference, 92.

² In a joint report, the United Nations (U.N.), Food and Agricultural Organization (FAO), the International Fund for Agricultural Development (IFAD) and World Food programme (WFP) said, "without increased targeted funding to fight world poverty and hunger, the most basic obstacles to human and economic potential will remain" (Business line, Vol.9, No. 78, March 2002).

rural development and increased investment in agriculture¹ received wide acceptance at the international level². In a way, it becomes all the more visible that the vision of policy-makers to a large extent is sharpened by the process of profound theorization and elegant analytical endeavor.

Hence it becomes all the more visible that if viewed pragmatically, poverty identified as a global phenomenon, requires multi thronged and concerted action for its absolute elimination. Moreover, intricacies involved in the theoretical elucidation of the concept of poverty, should fully be unearthed, before suggesting an effective and practical mode of operation to cure it. Though the distance between abstract theorization and lucid concretization cannot be narrowed down, broader canvas encompassing 'entitlement approach'³, provides a solid framework for analytically approaching the problem of poverty.

The problem of poverty, being an outward manifestation of structural⁴ and systemic deformity, gets aggravated in unparalleled magnitudes and assumes new proportion and dimensions in a broader context of absolute exclusion of people from land and labor market. Hence an alternative view of wider popularity subscribing to the

¹ Recent report (U.N, 2002) has identified increased investment in agriculture as the sole factor which paved the way for realizing substantial reduction in the prevalence of hunger by many nations between 1975 and 1999. (Business Line, vol.9, No. 78, 2002).

² International Conference on Financing for Development (2002)

³ Sen, A.K. (81).

⁴ An indepth and comprehensive analytical approach towards establishing a favourable and confirmatory view on this argument has been accepted by Keith Griffin (81)

belief that intensity of poverty can be diluted through the transfer of land¹ (the landless being the beneficiaries) and generation of employment opportunities² is received with a spirit of optimism. But the contentious proposition that the task of poverty eradication can be successfully completed by relying on land (as a mere asset³) distribution

¹ Basic tenet presumed to have formed the solid base of land reforms implemented in Kerala and elsewhere. Importance of land reform as a redistributive policy, is highlighted (Basely and Burgess, 2000) by precisely calculating its positive impact on reduction in poverty gap by 1 per cent (which is equal to one – tenth of actual reduction in poverty over the period 1958-92') or a 10 percent increase in per capita income in India. Again the indirect effect of land reform on the landless is measured in terms of a rise in agricultural wages. Ravallion and Sen (94) favour the view that redistribution from land-rich to land-poor will reduce aggregate poverty in rural Bangladesh even without productivity effects.

² Generation of adequate employment in the economy and ensuring a basic standard of living to the poor have been among the principal objectives of planning in India. Govt. of India introduced Self - employment programmes [Small Farmers Development Agency, (SFDA). Marginal Farmers and Agricultural Labourers Development Agency (MPALDA), initiated during the 4th Plan period], Wage employment programmes, (Rural manpower programme in operation between 1960-61- to 68-69, the Crash Scheme for Rural Employment, CSRE, launched for a period of 3 years from 1971-72, Pilot Intensive Rural Employment Project, PIREP, operated for a period of three years ending in 1975, Food for Works Programme started in 1977, National Rural Employment programme , NREP and Rural Landless Employment Guarantee Programme, RLEGP, introduced in the 6th Plan) and Employment Guarantee Scheme as anti-poverty target group oriented programmes.

³ Land as a productive and hence an income generating asset receives due recognition in this context.

mechanism has frequently secured a position of prime importance in the agenda for effective discourse and further dissection¹. Previous analytical exercises drilled towards measuring the efficiency and adequacy of the instrument of land transfer as a genuinely designed weapon to fight poverty leaves lacunae of serious gravity. Slight deviation from the orthodox mode of interpretation of land- poverty nexus transparentizes the route² to a more realistic analysis. Any effort to provide a more meaningful interpretation to land - poverty nexus requires an appropriate theoretical format constituting broader analytical framework. Elegant theorization projecting the well-knit inverse size-productivity link³ forms an ideal base for the conduct of further analytical endeavor.

¹ An elaborate discussion on the inferences from earlier studies is conducted in Chapter II

² Absolute absence of productivity effects as a variable strengthening land-poverty nexus steals away the merit of earlier studies. Failure to incorporate land as a physical asset capable of generating income to its holder (to be viewed as a serious deficiency of such studies) has necessitated more realistic analytical pursuits. Visaria's (81) finding that "differences in per capita land can explain only a very small proportion of the variance in the monthly per capita expenditure (MPCE) of households" (P.2) does not actually accommodate the productivity effects. But Ravallion and Sen (94) while arguing that 'lack of land and poverty are not perfectly correlated' (P.1) search for the "rich" among the landless and the poor amongst those with ample land.

³ A.K. Sen (64). Pointing to the evidence of higher productivity on small farms, it is argued that land transfer (from land-rich to the land-poor) can yield pro-poor productivity effects (Dorner, 72). Evidence collected from a number of countries support the view that output per acre decreases with the size of farm. Evidence for Bangladesh can be found in Hossain (77). A qualified, but broadly supportive evidence for India is found in Krishna Bharadwaj (74).

In this context, conceptualization of farm poverty, the core of the present study, gathers more analytical significance. The phenomenon of farm poverty, apparently a simple term, seeks interpretation in terms of a given size of operational holding adequate enough to generate net farm income (gross farm income minus cost of cultivation) which ensures minimum standard of living to a family of standard size¹. Conventional norms of analysis of poverty based on a poverty line (defined in terms of cut-off expenditure) are slightly disturbed to design an alternative analytical procedure to estimate the prevalence of farm poverty. Computational procedure used to estimate the magnitude of farm poverty is rather simplified by converting its base to poverty line income measured in physical units (say, acre) of operational holdings². Hence the analytical study on farm poverty is a specific and alternative attempt at approaching the problem of poverty from an entirely different angle. Moreover, such a discourse on poverty indirectly helps in designing the minimum size of operational holding necessary to guarantee poverty line income to the farmers. To be more precise, concrete elucidation of the concept of farm poverty seeks a more realistic interpretation of its association with resource (land) utilization rather than its allocation³.

¹ Usually the cut-off expenditure defining the poverty line is estimated by considering a family of five members.

² Since land, being a productive asset, constitutes the base of the present study, both ownership operational holdings and leased in land are considered.

³ Possibility of an allegation that the mechanism of land distribution designed by Kerala Land Reform Act (1969) served the purpose of building an asset base rather than securing a regular source of (farm) income for the beneficiaries cannot be totally ruled out. An alternative analytical approach focusing more on measuring the extent of poverty reduction caused by intensive utilization of land would provide adequate proof to substantiate the above argument. But such an analysis does not fall within the scope of the present study.

1.2 Background of the study

The proposition that absence of an absolutely essential and favorable environment¹ to fully exploit the available land to generate a steady and sustainable farm income forms a suitable conceptual background to proceed further with the present study.

Secondly, Kerala's unique position which can be equated to an unprecedented increase in the number of small and marginal holdings assumes contextual relevance and forms a conjectural proposition to be tested empirically to examine whether the present study on farm poverty fits into a framework upholding an inverse size productivity nexus. Hence the direction of the present study, to a certain extent, is indirectly controlled by the practical dimensions of such a theoretical formulation².

Thirdly, the fact that the agrarian scenario of Kerala, though under the grip of stagnation³, has secured remarkably higher standards in terms of productivity (Kerala

¹ All major constraints which stand in the way of maximum exploitation of land are given due consideration in this context.

² The significance of such a theorization should not remain unexamined in Kerala since the magnitude of its practical validity assumes new proportions when the strength of marginal and small holdings in terms of number and area is paid proper attention. Recent Survey (95-96) informs that about 73.70 per cent of operational area comes under 98.93 per cent of our marginal and small farms.

³ Reference is made of the inferences from extensive analytical studies on the performance of the agrarian sector of Kerala conducted by Kannan et.al. (88,90). It is argued that Kerala has lost two decades of growth in agriculture (p.48). Recent data indicate that Kerala's agrarian sector, under the liberalized trade regime is at present passing through a grim phase of change (for the worst). The fall in the prices of plantation crops such as rubber, tea, coffee, cardamom and also coconut has substantially subdued the agrarian economy of the state.

leads other states in the country in respect of gross farm income per hectare of cultivated land. (Economic Review, 2000) has led to the formation of an impressionistic idea regarding the estimation of a minimum size of holding (break-even holding size, hereafter) adequate enough to generate the poverty line income for a family of five members¹.

Fourthly, analytical procedure² adopted to define poverty line in terms of physical units of ownership holding does not fully reflect the importance of land as an income earning asset. More significantly land is assigned only a passive role to play in the overall poverty alleviation mechanism.

Fifthly, lack of any concrete effort in the direction of designing a suitable poverty line holding size for Kerala leaves behind a visible vacuum and hence adds strength to the conduct of a study of such a dimension in Kerala. Moreover, the fact that inter-regional variations in cropping pattern (solely a discretionary exercise of cultivators governed partially by the farm price structure and geographical specificities providing locational advantages) too acted as a critical force behind the extension of this study to capture regional dimensions of farm poverty. The above mentioned factors individually and collectively influenced and indirectly paved the way for the conduct of an independent analytical study on farm poverty in Kerala both at the state level and regional level.

¹ Latest (99-2000) state-specific cut-off expenditure defining poverty-line (rural) for a family of five members per annum is used for further analysis.

² But Sanyal, by using an indirect method of linking poverty line (nutritional specificities equated to monthly per capita consumption expenditure (MPCE) to the ownership holding size, has computed 2.50 acres as the poverty line size of holding for Kerala. Basing the study on the data from NSS, trends in both land holdings and poverty are estimated for the period from 1954-55 to 1971-72. A shift in the base of the study from ownership holdings to operational holdings constitutes the difference between the Sanyal's study and the present study.

1.3 Objectives of the study

The present study has the following objectives with reference to farm poverty at the regional level.

1. To document the dimensions of inter-regional variations in farm productivity.
2. To study analytically the inter - farm cost differentials across regions.
3. To examine the nature of size-productivity nexus at the regional level.
4. To estimate a region-wise break-even holding size.
5. To measure the incidence and depth of farm poverty at the regional level.

In nutshell, this study intends to make an attempt to analytically approach and dissectively comprehend the problem of farm poverty by highlighting a detailed picture of its incidence (measured in terms of operational holdings below the poverty - line size of holding estimated on the basis of net farm income) across regions (against the background of overall performance of agriculture at the regional level)

1.4 A note on data and methodology

Proper co-ordination and consolidation of the data published by various departments (a task to be managed with extra caution), has in a sense, created a constructive base and conducive background for conducting a healthy discourse and comprehensive analytical exercise at different stages of the present study.

This study has extensively and exhaustively made use of the data on the size-wise distribution of operational holdings both at the state and district levels¹. Analytical exercise on examining the structure of operational holdings and its change over the period between 90-91 and 95-96 is facilitated by the highly disaggregated data on land

¹ Inter-temporal comparison of size-wise distribution of operational holdings at the district level (between 90-91 and 95-96) becomes totally impossible due to the lack of data for 95-96.

holdings (categorized into five broad classes viz, marginal (<1 hectare), small (1-2 hectares), semi-medium (2-4 hectares), medium (4-10 hectares) and large (>10 hectares) collected from various issues of Agricultural Census Reports published quinquennially by the Department of Economics and Statistics.

At another stage, this study has used the data regularly published through various issues of Farm Guide (Farm Information Bureau), Economic Review (State Planning Board), Statistics for Planning (Department of Economics and Statistics) and Data Book on Agriculture (Agriculture Division / State Planning Board).

However, on critical evaluation, certain deficiencies, meriting serious consideration, observed in the data (their scattered and incomparable nature) collected from various governmental publications, have constrained the process of their coordination. Gravity of lapses visible in secondary data has turned to be a critical issue at a stage when data on net farm income¹ per hectare have to be compared with the poverty-line income to estimate a poverty -line size of holding for Kerala. Obviously critical bottleneck of such a dimension is effectively eliminated by basing the core of the present study (Chapter V) on primary data collected from a sample of 400 farm households spread over four panchayats of four districts of Kerala, viz Alappuzha, Trissur, Palakkad and Wayanad.

Selection of districts as the broad base of this study is monitored by a well defined set of criteria, i.e, the objective of capturing a geographical coverage along with variations in cropping pattern powerfully influenced this study in the selection of four districts, viz. Alappuzha, Trissur, Palakkad and Wayanad, Multi stage random sampling

¹ An analytical exercise to estimate poverty line holding size, at the aggregate level is conducted on the basis of gross farm income per hectare whereas net farm income per acre constitutes its base at the regional level.

design is adopted from blocks to panchayats. Selection of farm households¹, possessing and operating different size classes of operational holdings² is absolutely guided by proportionate random sampling technique where each sample represents any of the four - fold classification of operational holdings. (i.e, <1 acre, 1-2 acres, 2-3 acres and >3 acres) designed independently for the sake of the present study. Broader classification of operational holdings into five, viz <1 hectare³, 1-2 hectares, 2-4 hectares 4-10 hectares and >10 hectares is not acceptable at a micro level study. A pre-tested questionnaire is used to collect data pertaining to all necessary variables, viz land utilization and cropping pattern of the sample area, mode of cultivation, farm income and cost of cultivation, for the conduct of this study.

Summary statistics like percentages, averages, coefficient of variation, Gini Coefficient, annual average growth rate, simple correlation⁴ and multiple

¹ The broad category of cultivators who have reported agriculture as their main source of income is treated as farm household by this study.

² All land which is used wholly for agricultural production and is operated as one technical unit comes under the category of operational holdings. But land owned and operated (leased land used for cultivation) is considered as operational holdings whereas agricultural production includes growing of field crops, fruits, vegetables, sugar crops, spices and condiments, plantation crops, fodder grass etc. Grass is treated as a crop if special efforts are made to raise it.

³ 1 hectare = 2.471 acres or 1 acre = .405 hectare.

⁴ Simple correlation is worked out to examine the size-productivity nexus in the sample regions is question.

regression¹ are used in subsequent chapters of this study.

Chapter V, the core chapter of the present study, tries to base its analytical exercises on the tool of averages to estimate crucial variables like cost per acre, yield per acre, average size of households etc. But at a later stage, the technique of simple correlation is applied to examine the nature of size-productivity nexus in the sample regions. Again, multiple regression analysis is carried out to identify the crucial determinants of net farm income per acre in each of the study area. For estimating the incidence and depth of farm poverty in the sample regions, the popular measures of poverty, viz, Head Count Index (HCI) and Poverty Gap Index (PGI) are used. In conclusion, the analytical framework of the present study is so designed as to constitute a broader base for conducting an elaborate discussion on farm poverty against the background of inter-regional variations in farm productivity.

1.5 Scope and Limitations of the study

At the aggregate level, this analytical study on farm poverty is constrained by the non-availability of data on the size distribution of operational holdings at the district level for 95-96. Secondly, due to the lack of disaggregated data on operational holdings, macro level analysis on farm poverty is restricted to the estimation of poverty -line size of holding for Kerala for 90-91 and 95-96. Thirdly and more significantly, analytical exercise to compute poverty line holding for Kerala is based on gross farm income per hectare from agriculture for the corresponding years under consideration. To capture a more realistic picture of farm poverty in Kerala, a shift in the base of the study from gross farm income to net farm income is effected in the regional level study. To be more precise, an alternative attempt at examining the problem of farm poverty at the regional

¹ Cost of cultivation is computed on the basis of different items of individual cost incurred on hired male and female labour, fertilizers, pesticides, machine labour, and animal labour. Regression analysis is used to examine the impact of each of component of cost on net farm income per acre of the sample regions.

level is made by basing it on net farm income. Fourthly, for estimating net farm income per acre, certain items of costs, viz, imputed value of family labour, and home - made fertilizers, repair and maintenance charges of implements are not included. All these issues deserve special mention as the major lapses of the present study.

1.6 Scheme of the study

The thesis is organized under six chapters. The first chapter explains the analytical back ground against which the present study is designed along with its major objectives and limitations. Special attention is paid in providing a brief description about the data used and methodology. Chapter II, provides a review of relevant literature on the subject. It has two sections. The first section reviews briefly the earlier studies conducted both at the international and national levels to identify the major determinants of poverty and Section II examines more specifically the intricacies involved in the association between land and poverty. Section 1 has three subsections also.

Chapter III has four sections. Section 1 provides brief discussion on the various concepts of poverty and Section II provides a close examination of the subtle and complex procedure adopted in the construction of poverty lines. Section III presents an elaborate account of the profound theoretical formulations, in vogue, as measures of poverty while Section IV presents the trends and structure of rural poverty in Kerala.

Chapter IV, is structured under three sections. Section I is designed mainly to examine the structural changes in operational holdings in Kerala over a period of five years between 90-91 and 95-96. Section II makes a detailed analysis of the current land utilization and cropping pattern at the state and district levels, variability in productivity of selected major crops extensively cultivated in Kerala and the trends in their farm prices during the period 85-2000 and inter-temporal changes in (90-91 to 96-97) gross income per hectare from agriculture across states (to confirm the belief and to consolidate the position of Kerala as the topper in terms of per hectare income among

other states). Section III, makes an attempt in designing a poverty line size of holding for Kerala for 90-91 and 95-96¹.

Chapter V, the core of this study, presents a detailed picture of the gravity of inter-farm variations in productivity across regions. It also attempts a computational procedure to estimate a break-even holding in order to highlight the incidence and depth of farm poverty at the regional level.

Chapter VI, provides the concluding observations.

1. These two years are selected as the base of analysis on the presumption that an effective inter-temporal comparison between the distribution of average size of operational holdings (both at the state and district levels) and poverty line size of holding can be made by exhaustively using the data from Agricultural Census Reports (quinquinneally published by the Department of Economics and Statistics)



Chapter II

Review of Literature

A diagnostic study on poverty requires an elaborate exercise of stock-taking of previous analogous contributions directed towards enriching the literature on poverty. The fact that, in the process of thematic elucidation of development economics, the concept of poverty still enjoys a pivotal place, does not mean that no aggressive action has been taken in the past against the already identified crucial factors compounding the intensity and severity of the problem of poverty. The over-flooded literature on poverty proves itself to be a lasting testimony to the multi-faceted and determined effort made so far to unearth those vital factors.

Section 1¹ of this chapter makes an attempt in probing deep into the elegant intellectual exercises drilled towards unleashing the salient determinants of poverty in general. In the succeeding sections, (Section II), specific attention is devoted to unlock a limited number of early studies² exhibiting powerful analytical caliber in sorting out the nature of association between landholdings and poverty.

Section I is schematized in such a way as to obtain a three-fold classification of the accessible³ literature on poverty, viz, (i) International, (ii) National and (iii) State (Kerala) levels.

¹ Chronological order is slightly disturbed when country-wise classification of the studies is accepted on the base of evaluation.

² Barring a few studies, at the national and international level not much attention has been paid to examine the nature of landholdings-poverty nexus at a micro level.

³ All available literature on poverty is not fully reviewed in this study.

Section II. 1.1

The whole edifice of the study on poverty¹ is erected on a firm theoretical foundation intertwined to lucid quantitative framework. A full-fledged package of policy prescriptions to eradicate poverty in terms of accelerated growth, effective and equitable distribution of the benefits of growth or a judicious assimilation of both and a deceleration² in the growth rate of population emerges from the simulations and extrapolations of past trends. But the conventional mode of treatment³ on an experimental basis has only aggravated the gravity of the problem of poverty.

¹ M.S. Ahluwalia, et. al (1978). With an aim of presenting a quantitative framework for examining global poverty and the feasibility of ways of reducing it, they developed a projection model covering a panel of 36 countries (including India) under different assumptions about GNP growth, population growth and changes in income distribution. They provide comparative estimates of Head Count measure for 36 countries. This study unfolds a wide range of constraints and possibilities of growth of developing countries enlisted and uses a Poverty Line (PL) based on calorie requirements and consumption behavior observed in the Indian economy.

² Ibid. P. 32. The limited impact of reduced population growth on global poverty is analytically proved by shifting the blame to the 'lead time required for population control policies to take effect'.

³ The trickle-down theorist views the malaise of poverty on a global basis. The relevance of macro dimensional study on poverty is losing its ground in an era of highly discriminatory multifarious relief operations, now in vogue, to combat poverty at the micro level.

Sen¹ applies his innovational skill to pursue the endeavor of thoroughly analyzing the prominent issue of 'YPC (per capita income)-poverty paradox' visibly revealed by the relevant data for 36 countries. Revised estimates of poverty computed on the basis of upgraded data with additions on life expectancy at country level and assisted by newly devised index enabled him to classify these countries in terms of their achievements and supporting systems² in the shape of export-led capitalist countries (Taiwan and S. Korea), of socialist country (Yugoslavia) and of mixed economy (Sri Lanka). To give an account of the inter-temporal changes in the levels of performance on a global basis, Sen resorts to the composite index of Physical Quality of Life Index (PQLI)³, due to lack of poverty estimates of such dimensions. The excellent performance by four countries⁴ (screened out from the long list of 100 countries) in removing poverty

¹ Sen (1980). Based on the data compiled by Ahluwalia et. al (78) for 36 countries, his observation is angled towards examining the tendency of some countries to have poverty levels a good deal lower than their income would suggest. An index of 'net excess of poverty score' is developed to compare reverse poverty ranks with the per capita income (YPC) ranks. An attempt at upgrading this data is made by adding life expectancy at birth of each country for 1977.

² Ibid. p. 15. Refer Table 2 in this study to make acquaintance with the criteria used for such classification and cross country comparisons on the performance of political and economic systems. Attention is paid to make a comparative study of the performance of other socialist countries (other than Yugoslavia), outward looking Asian early capitalist economies and mixed economy committed to Govt-led social policy.

³ Ibid. pp 16-28. Elaborations on compilation of data and computational procedures are given and a separate list of countries presenting best performance in terms of longevity and literacy is prepared.

⁴ Ibid. Taiwan, Hong kong, Korea and Singapore

at an appreciable rate is attributed to their export-led expansion strategy and the qualitative change in growth with no accentuation in inequality. Citing the novel feature of Korean growth experience during the 70s, Sen documents the successful role played by expansionary employment strategy and simultaneous expansion of real wages as the twin reasons for fast reduction of poverty.

Taiwan too exhibits the same trend in the expansion of employment coupled with reasonable wage rate to provide a reliable record of operations against poverty. Both countries owe same degree of obligation to their respective governments for extending assistance in promoting the qualitative content of growth.

Govt. supported social welfare programmes in SriLanka reduced concentration of income distribution quite significantly and went a long way in removing poverty and providing remarkably higher quality of life in terms of literacy, health etc.. Tanzanian experience revolves around the determined effort undertaken by a dedicated govt. to effect substantial impact on particular aspects of poverty and deprivation by manipulating certain crucial levers on which it has control.

In the concluding part of his analysis, Sen diverts his attention from the success stories of varying countries to the customary explanation of entitlement failure as a causation of poverty and deprivation.

In an attempt to derive a suitable definition of poverty based on the theory of welfare economics from the household survey data from Cote d'Ivoire, Glewwe et. al

(88)¹ recognize the obvious influence of poverty definition on the process of designing poverty alleviation measures. Practical considerations of poverty alleviation policies coupled with real experiences of individual countries² (in their implementation) are discussed with adequate amount of analytical vigour and precision. This study makes an emphatic note on the necessity of collecting valid data from Household Surveys to analyze the determinants of poverty and to formulate policies to remove its causes in developing countries. Transparency imbued into the methodological sequence of incorporating the most basic characteristics of the poor³ for finding some relevant

¹ Glewwe and Gaag (88). pp. 11-15. Alternative definitions of poverty in terms of income per capita, total household consumption, per capita consumption, per capita food consumption, food ratio, average weight for height, average height for age, floor area of dwelling per capita, average education level of adult household members and agricultural land per capita and the procedure for comparing the poverty definitions in rural and urban Co[^]te d'Ivoire are presented in detail. Inferences from this analytical study prove the validity of poverty definitions in identifying the poor. Three types of poverty alleviation policies-direct transfers, change in relative prices, change in the characteristics of the poor - are evaluated precisely. Data from Cote d'Ivoire Living Standards Survey (CILSS) are used to measure the extent of influence survey data can exert on policy formulations.

² Ibid. pp. 30-44. Citing of a few examples in this regard requires the inclusion of food rationing scheme (78) and its substitute of food stamp scheme (1979) in SriLanka, Child feeding Programme in Tamil Nadu (India), complex system of food rations and price subsidies in Egypt.

³ Crystallization of the picture of the poor is complete when certain simple questions are answered by them. Such an exercise is done in the concluding part of this study with an intention of mobilizing certain valid information regarding their geographical location, structure of employment, specifications regarding crops cultivated by them, their health and educational status and its impact on work participation.

avenues to eliminate poverty in Co[^]te d'Ivoire is the most fascinating merit of this study (which accounts for its weakness too since procedural clarity is overshadowed by the apparently exhibited enthusiasm for getting policies formulated¹ and financed.)

In a country-specific inter-temporal study on poverty from 1984/85 to 87/88, Malik (93) has revealed, through his analytical competence, the positive impacts of higher income growth in terms of real production, private income and 'public incomes' in the form of social services and infrastructure on the incidence and intensity of poverty. Inferences favour the view that trickle-down effects seem to operate in Pakistan and they strongly support the applicability of Kuznet hypothesis². But Malik's study is weak in its approach towards framing certain policy prescriptions to redress poverty in Pakistan.

Analytical exercises on poverty carried out on an aggregate dimension by Louise Fox et.al. (93) really failed in representing the pulse of the poor in Brazil. It reminds one of the facts that any realistic study on poverty should pierce the mask of superficiality to reach the depth of deprivation. But the concluding part of their analysis stresses the need for policies that would increase the efficiency of growth and hence the speed of trickle-down. The emphasis laid on growth in private formal sector and on the need to strengthen the growth potentialities of the economy as the panacea for poverty is attributed to the growth experience of Brazil prior to 70s and during the 80s.

¹ This study seems to have given undue weight on the task of designing a proper definition to the concept of poverty, formulating poverty eradication policies and financing them.

² Kuznets (1955) suggests that as an economy grows, income inequality will first increase and at a later stage decreases again, following an inverted U'. The relevance of this proposition is proved by a number of empirical studies by verifying cross-country data.

The decompositional exercise done by Datt et. al. (92)¹ to show how changes in poverty measures can be decomposed into growth and distribution components can be considered as an improvement on previous studies. Brazilian experience in combating poverty can be comfortably explained by both growth and redistribution components depending on the period² under consideration. The adverse distributional effects on poverty are related to the relatively slow growth of employment in the formal sector whereas decline in mean income is associated to the recessionary phase during 81-83.

More or less same view emerges from an analytical study related to the evolution of the distribution of income and poverty in Brazil in the 1980s, conducted by Ferreira et. al. (96) on the basis of a large and comprehensive data set from the Brazilian Statistical Office's Annual National Household Survey. Decadal changes in poverty from 81-90 are measured in terms of Foster-Greer-Thorbecke (FGT) measures. Macro economic instability, recessionary trends during the early 80s and macro economic aggregates like unemployment, inflation, GDP change, real wages etc.. are brought to the realm of discussion to analyze poverty.

¹ Datt and Ravallion (92). Rather sophisticated tool of decomposition methodology is used to estimate poverty measures for India by using the data from the National Sample Survey (N.S.S) of 1977-78, 83, 86-87 and 1988 and for Brazil from data on five Household income surveys during the 1980s provided by Louise Fox. Alternative decomposition techniques have been used by Kakwani and Subbrao (90) and Jain and Tendulkar (90) on data for India using Foster-Greer-Thorbecke (FGT) poverty measures.

² Ibid. (90). P. 289 . Fluctuations and trends in poverty over the period 81-83 are explained by the ebb and tide of macroeconomic aggregates like national income. But the estimates of the decomposition of changes in poverty over the same period favour the strong counter active effect of both growth and redistributive components on poverty.

Rather a sharper treatment of poverty with powerful explanatory variables is obtained from Scott's study¹ on poverty mobility among small farm households in Chili over a period of 20 years. The entire study is set against the background of profound structural transformations in Chili. But the gap between the period chosen for this study is too wide to accommodate the impact of interim changes on poverty. Concluding note stresses the option that small farmers are left to the mercy of governmental benevolence alone².

An elaborate account of the possible impact of development achieved during the reform period on poverty in China is given by Yao (2000). An ever-widening regional and sectoral income disparity with its positive impact on rural poverty is identified as the

¹ Scott (2000). This study, based on a panel sample of small farm households in Chili collected in 1968 and 1986 adopts an entirely different approach for its thematic exposition. Inter-temporal comparison of poverty estimates helps in assessing the impact of incremental income on poverty. Poverty measures are computed on the basis of four concept of income – Primary income (farm income+ business+ off-farm income), Secondary income A: (primary income+ remittances from relatives and friends) Secondary income B: (secondary income A+ benefits from public works programmes) and Total income (Secondary income B+ public transfers in cash). But the policy implications of such an innovative computational procedure remains undiscussed.

² Inference from the analysis lays much stress on the role of public transfers in reducing poverty. But nothing is mentioned about the scope of an effective land/employment policy as a part of poverty alleviation programme.

major disquieting feature of Chinese development experience¹. The extent of rural poverty is examined by confining the analysis to a conventional format² with mean income and Gini co-efficients as explanatory variables. Successful fight against poverty during 1978-84 has been facilitated by both rapid growth in income and controlled income inequality whereas the picture is reversed to add to the misfortune of the poor. It is estimated that due to the slow growth of rural income compounded by declining agricultural production and failure to contain growing income inequality, China lost one decade of development efforts, to eradicate poverty between 1984 and 1995³.

Recent literature is too liberal in using a broader canvas to picturize the multifarious dimensions of poverty. This is sustained by a set of sophisticated analytical devices which instill confidence in researchers to accommodate commonly identified and seemingly adequate indicators of poverty for analysis. Jalan et. al (2000) use a panel

¹ An overall assessment of the major achievements in terms of GDP growth, higher living standards, reduction in poverty and inequality is made and the emergence of other powerful economic forces, State-owned Enterprises (SOEs) and Township and Village Enterprises (TVEs) during the agrarian reform period (from 1978 till date) is treated as the analytical background of this study.

² Elasticities of incidence of poverty with respect to mean income and changes in inequality are estimated by running a log-linear regression of poverty incidence against these two explanatory variables.

³ The fact that factual narration is a catalytic agent in enhancing analytical power but constitutes only a fragile base for policy formulation is proved by this study which keeps silence in showing the trajectory towards sustainable growth and fairer distribution of income.

data set mobilized through the Rural Household Budget Surveys (conducted by China's State Statistical Bureau) to measure transient poverty (defined as $T_i = P(Y_{i1}, Y_{i2} \dots Y_{iD}) - P(\bar{Y}_i, \dots \bar{Y}_i)$ where \bar{Y}_i = expected value of consumption over time for house hold i) and chronic poverty (defined as $C_i = p(\bar{Y}_e, \bar{Y}_e \dots \bar{Y}_e)$). Since squared poverty gap index does satisfy the conditions of additive and transfer axioms, the authors accept FGT index as the empirical measure of transient and chronic poverty¹ Highly disaggregated approach in designing poverty alleviation policies is recommended at the concluding part of this analytical exercise².

In an effort to account for the possible effects of common shocks such as rainfall and idiosyncratic shocks related to crops, livestock and illness on poverty transitions, Dercon et. al. (2000)³ conducted an exploratory analysis within the framework of standard inter-temporal optimization model of consumption on the basis of the survey data collected in 94-95 from Ethiopia. The regression analysis records quite remarkable responsiveness of consumption to seasonal incentives related to prices and agricultural activities and the adverse impact of shocks in agricultural activities on the capacity of

¹The censored regression estimation techniques like the Tobit model is used to estimate the specifications in the model of transient and chronic poverty.

² Doubt still persists whether the harsh reality of acute deprivation and absolute exclusion of a certain section of population should be obscured by a subtle dialect of numerical verbosity - a common parlance used in counting the poor and not consoling them.

³A closer look at the transitions in and out of poverty of Ethiopian agrarian households is facilitated by accepting a theoretically sound empirical model in which consumption is assumed to be determined by different types of shocks (Δ_{st}), changes in returns to labour (Δ_{wt}), and changes in prices (Δ_{pt}). Changes in consumption (or poverty) are related to the values of α, β, γ in the empirical model $(\Delta_{ct}) = \alpha\Delta_{st} + \beta\Delta_{wt} + \gamma\Delta_{pt}$.

households to keep consumption smooth and on the desired path. But practical suggestions for supplementing the existing safety-net (operates in the form of food-for-work and food-aid distribution and registers only a relatively marginal effect on these vulnerable households) to improve the lot of these vulnerable agrarian households whose fortunes are tied to the common and idiosyncratic shocks are not forthcoming at the expected level.

In a study on 'spatial poverty traps,' Jalan et. al (97)¹ implemented a regression test on farm - household panel data for rural areas of Southern China to find strong evidence of divergent impacts of geographical capital on consumption growth at the micro level. 'The empirical significance of 'poverty traps' is proved by the results derived from this analytical exercise which discloses that households in certain areas of rural China with poor geographical capital (physical, human and social capital) exhibit tendencies of declining consumption in comparison with their counterparts in better off areas.

More or less a visibly twisted approach² towards incorporating various non-geographic household characteristics conducive to poverty (presuming that geographical effects on living standards may be stable overtime) stresses the necessity to

¹ Jalan and Ravallion enrich their study with the valuable inferences highlighting the critical role played by both private and publicly provided goods and services to enhance the living standards. It is argued that the disequilibrating forces which hamper the prospects of poor areas can be suppressed by active intervention of both govts. and community organizations.

² Ravallion et. al (97) examine the relevance of an alternative approach to disclose the personal household characteristics conducive to poverty rather than effects of geographical specification on poverty in Bangladesh by using the data from Household Expenditure Surveys of the Bangladesh Bureau of Statistics for 1988/89 and 91/92.

divert the attention of governmental and non-governmental agencies to target resources to households with specific attributes that foster poverty.

By way of distinguishing induced growth from growth-elasticity arguments for examining the explanatory power of initial inequality to account for subsequent rates of reduction in poverty, Ravallion¹ (97a) tries to test the hypothesis that rates of poverty reduction becomes less responsive to growth in average income and reaches zero at sufficiently high inequality against the data from two household surveys conducted overtime in 23 developing countries. The results of the regression test suggest that the distribution- corrected mean matters more to poverty reduction than ordinary growth rate. It is concluded that poverty reduction is highly insensitive to growth effects at subsequently high levels of inequality which by the same token diminishes the adverse impact on the poor of overall contraction.

A multi dimensional dissective study² on growth and distribution of rural income in Bangladesh leaves behind a concluding note to remind that effective policies aiming at providing better access of capital and education to the poor would make a dent on poverty. The study focuses more on conducting a decompositional exercise based on the data from '88 and '95 surveys to probe deep into the various determinants of rural household income- its growth and distribution during the period.

¹ Induced growth argument stresses the fact that higher inequality may entail a lower subsequent rate of growth of average income and hence lower rate of progress in reducing absolute poverty whereas growth elasticity argument considers the impact of initial distribution on the rate of poverty reduction.

² Hossain et. al (2000)

An elaborate computational procedure is adopted by Wodon (99a) to analyze the relationship between growth, inequality and poverty in Bangladesh¹. The simulation exercise done by combining the inferences² of this study with a consistent macro economic model³ for Bangladesh demonstrates that :-

1. Significant gains in poverty reduction in Bangladesh in future depends on higher growth.
2. Requirement of large volume of savings for attaining high growth impedes poverty reduction.
3. Rural development via pro-rural investment strategy is more effective in combating poverty.

As an adjunct to the previous study Wodon's (99b)⁴ analysis is focused more on identifying the micro determinants of consumption, poverty, growth, and inequality in Bangladesh for the period from 1983-1996.

¹ Ravallion 97(a). Op. Cit. P.10. A cursory reference to the valid suggestions made by Ravallion throws light into the necessity of considering initial inequality as a strong base for future estimations of poverty.

² Twin effects of growth on poverty- higher growth enables the poor close to Poverty Line to emerge from poverty, benefits of growth reach the poorest of the poor- are referred in this study. But it is mentioned that both groups are severely hit by high value changes in Gini.

³ World Bank's RMSM- x consistency macro economic model for Bangladesh assumes a relatively stable relationship between current investment and future G.D.P. growth.

⁴ Five Rounds of the nationally representative Household Expenditure Surveys of the Bangladesh Bureau of Statistics spanning the years 1983 to 1996 are used to elucidate the latent relationship between all the four variables.

The sectoral decompositional approach¹ is used in tracing the inter-temporal movement of urban and rural poverty and inequality. A single set of regression² is used for each Household Expenditure Survey (HES) to get a clear view of the determinants of poverty, inequality, per capita consumption and growth in average consumption

¹ Equation for poverty takes the following form :

$$P^{t+1} - P^t = W_u^t (P_u^{t+1} - P_u^t) + W_r^t (P_r^{t+1} - P_r^t) + \varepsilon_k (w_k^{t+1} - w_k^t P^t) + \varepsilon_k (w_k^{t+1} - w_k^t) (P_k^{t+1} - P_k^t)$$

where P= National Head Count Ratio (HCR)
k= sector(urban, rural)
w_k= population share of sector k

Equation for inequality:

$$G = \varepsilon_k S_k G_k + \varepsilon_k S_k G_k Q_k (P_k - 1) + 2 \text{Cov}(y_k, F_k) \gamma_T$$

where

Y = Per capita mean consumption of households.

F = Their rank in the cumulative distribution of consumption of their group.

Cov (Y_k, F_k) = Covariance between Y and F over the members of the group k.

G_k = Gini index ;

Q_k = stratification index

S_k = Consumption share of group k ; P_k = Population share of group k

y_T = Mean consumption in the country as a whole.

² Semi-log specification is used here. Regressions for urban and rural areas are given as follows:

$$\text{Log } Y_{U_i} = \beta_U' x_i + \varepsilon_{U_i} \dots (\text{urban equation})$$

$$\text{Log } Y_{R_i} = \beta_R' x_i + \varepsilon_{R_i} \dots (\text{Rural equation})$$

Here the dependent variable is log welfare ratios i.e, log of nominal per capita consumption divided by the area specific poverty line. Independent variables include geographic location, household size variables, demographic and gender variables, education variables, occupation variables, land ownership and religion. Another feature of this study is the introduction of a new methodology- Conditional between Group Gini (CBGG)

overtime. Statistically robust relationship between all the variables forms a strong foundation for future policy formulations.

In an extensive study on poverty in Bangladesh, Hossain et. al. (94) present an elaborate account of broader dimensions of rural poverty against the background of inter-temporal changes in the macro economic indicators of economic growth (vital determinants of rural poverty coupled with income distribution, landownership, demographic and allied features, poverty alleviation policies are placed in the agenda for discussion). Apart from the methodological aspects, this analytical exercise tries to present high concentration of agricultural income and increased inequality in the distribution of land as factors which add fuel to the problem of ever -widening disparity in rural income . Distributional effects of income on poverty are measured by a fine array of poverty indices like poverty gap ratio(I) Gini ratio of income/expenditure inequality among the poor(G^*), Sen index of poverty (P_s), indices of poverty (P and P_1) suggested by Kakwani and an elasticity of poverty index (n) .A general profile of rural poor en- compassing a wide range of complex multidimensional variables (non-income dimensions of poverty like housing status ,availability and source of drinking water ,clothes, and sanitation, education and health status ,land ownership, demographic features are incorporated) as a better representation of quality of life coupled with a self-evaluation of their consumption needs is traced on the basis of cross-section data generated by the Bangladesh Institute of Development Studies (BIDS) during 87/88 through repeat survey of 62 villages in Bangladesh. Disquieting consequences of skewed distribution of land and its uneconomic size are recorded in the form of higher rural income inequality and poverty. Active tenancy market, efficient utilization of marginal and small farms and size neutral diffusion of agricultural technology provide Bangladesh a unique position in fetching moderate effects on adverse consequences of high concentration of landownership. But non-inclusion of size-productivity nexus in analyzing land-poverty relation is to be considered as a serious lapse of their study which presumes size of ownership holding as the reliable yardstick to measure the prevalence of poverty. Subsequent analysis labels owner-cum-tenant group as the worst affected lot. This study recommends a properly designed development strategy to

enhance employment-generating capacity of agriculture , to provide health facilities to the rural poor, to supplement their food consumption and income through Public Food Distribution System (PFDS), to expand non-farm employment in rural industries and to enhance productivity through investment in human capital¹

The urge for a totally committed action towards combating poverty from every possible angle is manifested through the synergism between the determinants of household income². But a thin package of poverty alleviation measures supported by a highly distorted allocation of public sector investment can hardly promote the developmental initiatives and self-help drives of the poor in Bangladesh.

The role of an extensive welfare state structure supported by a fragile production base is discussed rather antagonistically in an elaborate study on rural poverty in SriLanka by Gunatilleke (94). The weak link between the two forms an ideal topic for a vibrant discussion on rural poverty in SriLanka. But this study failed miserably in choosing an appropriate tool to analyze paradoxical situation, characterized by high living standards measured by PQLI/ high HDI and a low per capita income³. The dual character of the SriLankan agrarian sector-plantation and peasant sector-has been

¹ But a descriptive evaluation of the pressing requirements of the economy does not provide a congenial background for an impressive analytical discourse on poverty. A realistic approach warrants a dissective exercise to precede policy formulations.

² Multivariate regression model has been estimated to analyze the determinants of rural income using 62 village household level data collected in 1987 and a repeat survey of the same households in 1989.

³ Not much effort has been taken in conducting an extensive analytical study on casual factors which directly contributed to build up a strong welfare structure on a weak production base.

introduced to represent its structural disequilibrium and inegalitarian framework and to form a conducive background for analyzing the real plight of farmers and tenants in Sri Lanka. But these broader dimensions of agrarian structure seem to be totally hesitant in and absolutely incapable of bringing the root cause of poverty to the limelight. Lapses add a dissident note to this part of analysis. It is shown that lack of occupational diversification in rural areas, inflation induced depressed real wages, inelasticity in rural labour mobility with respect to the relative decline in the share of agriculture in total employment, producer's drive for profitability in food crop production and lack of additional employment avenues in different sectors have assumed independent and collective roles in steepening the over all poverty in Sri Lanka during the period under study¹. But contrary to the common belief, an unemployment - poverty nexus is absolutely absent whereas under-employment emerged as a crucial factor designing the fate of the Sri Lankan poor households. An in-depth study at a micro level is essential in making a comparison between the achievements of the poverty alleviation programmes under the regulatory regime and market - oriented liberalized system.

An elaborate discussion on the paralyzing effect of a strong welfare state structure on the production base will definitely unfold the extent of participation of the poor in the growth process of Sri Lanka. Novel idea of extending discriminatory support to the small (land) holders² deserve maximum attention both at the global and

¹ Major findings of this study are derived, from the analysis of Census of Population from 1946 to 81, Consumer Finance Survey of various years and socio - economic surveys of 1978 -79, 80-81 and 81-82.

² The idea of considering the small land holders as a universally integrated group and bringing their products (agricultural) under liberal treatment is proposed as an effective means to reduce the intensity and incidence of poverty.

local level. All the intricacies¹ involved in the land-poverty nexus are disclosed in a lucid and descriptive fashion in their study. The survival strategy designed by the poor is intimately related to the strong and extensive state-support. But this study fails in measuring the extent of involvement of the poor in the development process of the economy.

By applying the conventional technique of measurement of poverty, Tjondronegoro et. al. (96)² make an attempt to identify the factors which add fuel to the problem of rural poverty in Indonesia. This vast literature on different dimensions of poverty is a poor analytical record which leave wider options for a more realistic micro level experimentation.

But the Korean experience of combating poverty is translated in to more realistic terms by Chung and Oh (96) who try to measure the incidence of poverty by accepting the discrepancy between farm and non-farm income component and inter-sectoral disparity in development as its most appropriate indicators. But the dedicate issue of sensitivity of poverty to a complex net-work of interactive forces in the labour market deserves considerable attention than is paid by the authors³. The vital feature of this

¹ Ownership, distribution and utilization pattern of land is brought into the analytical framework to examine their impact on rural poverty.

² For an extensive study on poverty, all relevant variables like Gini co-efficient of income, consumption and land in Indonesia, tenancy conditions, demographic specifications, govt-supported transmigration, employment generation, development of informal sector, investment in human capital, under-employment in agriculture and the resultant uneven sectoral income distribution are brought into analytical framework.

³ The authors have made an attempt in identifying structural disorder inherent in land distribution pattern in Korea. But their genuine effort to project poverty as an offspring of such structural adjustment narrowly missed the target.

study is its success in associating the plight of farm households to the strengths and weaknesses of rural sector the destiny of which is closely tied, on a wider magnitude, to export-oriented and unbalanced development strategy¹. The disequilibrating forces assumed wider dimensions leading to disproportionate sectoral growth, uneven income distribution and aggravation of relative poverty in rural Korea.

Inter-sectoral and inter-temporal trends in poverty in Philippines are examined by Balisacan (96) and measured by applying the FGT measures of poverty² on periodically updated sectoral and regional Poverty Lines. Balisacan's views favour the income in- equalizing but poverty reducing role of agricultural growth in Philippines. Equally important status is given to demographic and socio-economic factors in shaping the destiny of rural poor households. When HDI as a better measure of human poverty is substituted for other measures of income poverty, Philippines is pushed down in the ladder of social development in comparison with its South East Asian counterparts.

A comprehensive analysis of the interrelationship between distribution of operational holdings, their utilization pattern and tenancy conditions holds the result

¹ Overall evaluation of the development experience of Korea throws light on the strength of trickle-down mechanism and the impact of its operation on rural poverty. Gradual disappearance of the rural community, the vital base of the rural economy, is found to be the ultimate outcome of the Korean development experience during the plan period. Hence much emphasis is placed on the necessity to reinforce her rural base through continuous investment .

² For scaling the impact of skewed distribution of income on poverty, indices of inequality with varying degrees of sensitivity to changes in income ranges like Gini coefficient (G), Co-efficient of Variation (CV), and Standard Deviation of Logarithms (SDL) and Atkinson index (A) are used.

that inequality in the distribution of land a strong explanatory variable whereas tenancy bears only weak association to poverty. This study is an elaborate account of broader and possible options¹ which, if brought effectively to implementation channel, will definitely go a long way to reduce rural poverty in Philippines. Analytical study of this nature conveys a message to the policy makers that the layer of practicality enveloping macro economic policies can be strengthened to the desired level by micro tools.

Elegant computational devices assisted Krongkaew et. al² (96) in deriving a skeletal view of the nature and incidence of rural poverty in Thailand. Conventional mode of analysis conducted by incorporating a wide spectrum of demographic and socio-economic variables provides a robust poverty profile of rural Thailand. Landlessness as a major determinant of poverty is extensively referred without specifying any policy measure to rehabilitate them in the tenurial or labour market. The effect of discriminatory price intervention in favour of rice on the marginal and small rice producers remains undiscussed. In effect, this study gives the impression that macroeconomic indicators and policies are weak analytical variables to disclose the actual micro dimensions of poverty.

¹ Recommendations for enhancing the momentum of growth, improving income distribution in favour of the rural poor, providing a strong asset base to the landless, formulating a more feasible employment policy and strengthening the operations of NGOs enjoy the most preferred position in this study.

² Contrary to the conventional procedure of updating PL by price indices, the authors have, as an innovative step, attempted to frame adjusted PL by accommodating inter-temporal changes in population structure, pattern and composition of the household's food and non-food consumption, minimum nutritional requirements etc.. They have borrowed the technique proposed by Kanbur (87) to complete 'cross-over growth rate' and 'cross-overtime' for Thailand with respect to both 'trickle-down' effects of a distributionally neutral growth and government policy.

Evidence regarding how a distorted rural structure, especially agrarian system, can generate self-perpetuating dynamic forces to aggravate the intensity of rural poverty in Pakistan can be gathered from an authentic study conducted by Irfan et. al (84)¹. But the validity of empirical and investigative exercises can be rated by the extent to which the resultant inferences can be viewed in the light of practical considerations.

Khan's (84) seminal work² on the role of real wages of agricultural workers in determining their standard of living has identified both short-run and long-run factors which depress real wages in Bangladesh. But the 'trend factors' are powerful enough to outweigh the positive trickle-down effects of growth and improved terms of trade (TOT) of agriculture. It is argued that the 'trend factors' evolve out of an errant agrarian system. An indepth study of an explorative nature is absolutely essential before labelling trend factors as real wage depressants.

¹ This analytical study is a brief but precise record of the impact of structural transformation in the agrarian sector and the consequential development of other external forces on rural poverty. But for making an accurate assessment of this relationship adequate information about the extent of labour displacement due to structural change in landholdings-owned and leased - and its consequential change in the labour market is essential.

² Long-run variations (1949-1982) in real wages are attributed to three sets of strong variables like 1. Productivity in agriculture, 2. TOT of agriculture and 3. Trend factors-their main elements being (a) the impact of demographic change and slow growth in employment in non-agricultural sectors on the supply of labour (b) worsening land-man ratio and land-labour ratio leading to unequal distribution of an increasing share of net output and increased proletarianisation in agriculture and the resulting expanded supply of wage labour. (c) Inappropriate institutions and inadequate technological advancement depressing the labour absorption capacity of land.

The hypothesis that (i) reduction in the incidence of poverty can be attained either without any improvement in the pattern of income distribution or with its deterioration and (ii) that the mechanism of growth may go a long way in poverty amelioration and reduction in inequality are tested empirically by Rizwanul Islam (84) by using the data from various household surveys of income and expenditure conducted by National Statistical Office, (Thailand) since 1962 / 63. Remarkably higher rate of growth in agrarian sector facilitated by an expansion of cultivated area coupled with an increase in land- man ratio comes out as the prime factor causing a dent on rural poverty in Thailand. Evidence is collected from available data to show that during period of rapid growth, a decline in incidence of absolute poverty can be experienced simultaneously with a deterioration in income distribution¹.

The fact that any attempt to associate accelerated growth of agricultural output to a fragile agrarian base characterized by land scarcity, low land-man ratios, unequal distribution of landholdings with speedy marginalization of land (and high degree of landlessness) will prove to be futile is recorded with approximate accuracy by Lee

¹ This analytical study seeks the support of strong explanatory variables like pattern of distribution of landholdings, disparity augmenting distorted governmental policies and visible technological change in agrarian sector (usually in large farms) in terms of irrigation, mechanization and increased application of fertilizers, to prove that the period under consideration witnessed an unprecedented deterioration in the distribution of income in Thailand.

(84)¹. It is proved beyond doubt that a highly disordered system can in no way help the poor since it may generate certain income depressing forces².

Gooneratne's et al (84) work on poverty in Srilanka tries to document how the interaction of growth stimulants can weaken the agrarian system by generating certain income-depressants the negative impact of which will marginalize the agricultural labourers and tenants. Reformative ideas like mechanization, biochemical technology and land reform as policy prescription for attaining rapid growth in agrarian sector are extensively discussed. But it is convincingly proved with evidence that even such renovational attempts to improve the agrarian system along with decades-old welfare policies can pose threat to the weaker sections³.

Rather a more scientific study on rural poverty in Pakistan conducted by Naseem (77), though based on conventional norms for the construction of PLs, is

¹ This study on poverty in rural Java brings all relevant variables into the analytical canvas to prove that changes in land and labour market (growing concentration of landholdings – ownership and operational- spread of commercialization, exploitation of labour, introduction of new technology in agriculture and the resultant labour displacement) are consistent with growing marginalization of the poor. Growth of employment in the low productivity rural tertiary sector is the spontaneous and inevitable outcome of structural deformity.

² Saturated limit of labour absorption of Javanese rural economy, heavy burden of employment on rural non-agricultural activities, shrinkage of land base under paddy cultivation and its negative effect on labour absorption and real wages emerge as the income depressing factors.

³ Increased landlessness, loss in man days to agricultural labourers, reduction in labour-intensive character of growth, inflation, escalation in costs of cultivation, nutritional deficiency and chronic undernutrition as indicators are used to substantiate the contention that both rural poverty and inequality have worsened during 70s.

designed in an entirely different fashion to estimate¹ the number and proportion of farm households below subsistence level. Data on land distribution after the implementation of land reforms in 1959 and 1972² guided the author in twisting this study towards assessing its direct impact on landlessness and tenancy and indirect effect on poverty.

For further elaboration of the paradoxical co-existence of general prosperity and mass poverty in Pakistan during the period under study, the discriminatory effects of diffusion of technology on the main participants in agricultural operations, unequal benefits from an uneven social system and the possible impact of a misdirected growth strategy are skillfully diagnosed³.

A brief but early study by Khan (77) on rural poverty in Bangladesh adopted primitive techniques to estimate poverty and attributed growing incidence of poverty to fluctuations in real wages of agricultural laborers. But the intricacies involved in land transactions leading to increased proletarianisation and landlessness received only a superficial treatment⁴.

¹ The entire calculation made to separate households below subsistence level is based on the results produced by IBRD survey (1966) with regard to the minimum size of holding required to generate subsistence income for owner-cultivators (5 acres), tenants (10 acres) and owner-cum-tenants (6.4 acres)

² The impact of such redistribution of land on marginal farmers, the landless and tenants is not examined due to the lack of necessary data.

³ It is argued that the new technology package has reduced the wage content of growth in Pakistan.

⁴ The actual socio-economic background (other than demographic factors) causing such visible structural change in land holding pattern in Bangladesh as an analytical parameter would have provided a more meaningful picture of rural poverty.

Rural poverty in Sri Lanka has been demonstrated as a structural phenomenon through an inter - temporal analytical exercise done by Lee (77). It has gone to the extreme extent of disproving¹ the claims that there has been a remarkable reduction in income inequality and incidence of poverty in Sri Lanka during the decade 1963-73. This solid work has succeeded, in a large measure, in establishing the fact that fair degree of redistribution of income achieved through a TOT favorable to agriculture does not guarantee distributive justice in the long run. But the argument that land distribution and import substitution policies helped in enhancing rural income in Sri Lanka is supported with less valid micro level incidence.

Lee (77) in another study on rural poverty in Malaysia conducted on an inter-temporal basis (1957-70) has thrown light into various possible factors like (i) highly distorted application of modern technology package in both rubber and paddy cultivation holding adverse impact on the level of income of both small peasants and marginal cultivators (ii) a reduction in estate employment caused due to a remarkable contraction of estate acreage and (iii) adoption of an absolutely discriminatory govt. al policy to divert investment for rural development having less spread effects, as prime causes of low income and increased poverty. But in no circumstances, a general description about these broad configurations of agrarian structure-estate and peasant sectors-can be treated as an effective method capable of penetrating into the depth of poverty.

¹ Based on the Central Bank Survey data, this dissective study has revealed a picture of increased inequality and considerable reduction in the levels of real consumption of the poor.

Production structure of the rural sector in Indonesia gets upper hand in an elaborate study¹ directed towards gaining an insight into trends in poverty during the period from 1950 to 1973. But an assessment of periodical change in the number of near-landless or landless households is made without making any reference to the process of structural transformation leading to speedy marginalization of landholdings and increased rate of landlessness. The design of a subjective PL in terms of an annual output of 1200 kg. of rice for a family of five or 0.34 hectare of land per household (to raise 3.5 tons of rice per hectare a year) is neither scientifically drawn or properly defined. The logical argument to support the view that the incidence of poverty has increased to undimensional proportions seeks factual proof in terms of increased indebtedness of small farmers, distress sale of labour at depressed wages, restricted labour mobility, visible reduction in labour content in the agricultural output caused due to new aggressive techno - commercial revolution in rice production. The total discard of the process of disintegration, of the patron-client-relationship (resulting in "de-Geertzification") in rural Jawa is a vital lapse of this study².

An analysis of the available data conducted within a conventional diagnostic framework enabled Khan (77) to draw a more accurate picture of the factors which contributed maximally to the deterioration in living standards of the rural poor in Philippines during the period from 1957-74. Trends in real wages in agriculture in comparison with changes in output are extensively examined to obtain an idea regarding the distribution of income in rural Philippines. But not much flesh is stuffed into this skeletal work so as to gain recognition as an authentic record on rural poverty.

Khan (77) recognizes the unequal asset base as the prime cause of poverty in rural China. Ample evidence is presented to show that communes, as vibrant and strong

¹ Ingrid Palmer (77)

² Other wise the concluding note that the practice of shared poverty is collapsing under the impact of the private returns to aggressive techno-commercial innovations should be considered as a casual statement.

rural institutions are constituted to reduce the gravity of inequality. But the negative impact of cultural and structural rigidities hinder the “communal ” operations to contain inequality within certain limits.

Section 11: 1.2.

An attempt to evaluate the vast literature on poverty in India really necessitates its classification into two broader groups, viz (i) the studies involving the technical aspect of measurement of poverty (Ojha, 70; Dandekar and Rath, 71; Bardhan, 73; Tyagi, 82; Rath, (96) and (ii) the studies introducing more meaningful factors which determine the incidence and severity of poverty (Sundaram and Tendulkar, 88; Dev, 88 & 95; Kakwani and Subbarao, 90; Nayyar, 91; Tendulkar and Jain; 96 Datt and Ravallion,96) Before the publication of Ahluwalia’s study (78) most of the literature on poverty dealt with the estimation (and its methodology) of rural and urban poverty. Later on most of the researchers and economists enriched the terrain (of poverty) by studding it with more powerful variables capable of conveying meaningful message (regarding the intensity of this problem) to the academic world and policy makers. In this section an attempt is made to evaluate the eternal flow of literature on poverty¹.

Distributive aspects of income or calorie converted consumption expenditures as a better proxy for living standards are brought into the realm of analysis by Dharma Kumar (74)² to examine the changes in poverty levels in India. An analytical exercise of this dimension focusing more on disclosing the anomalies inherent in the available data

¹ Attention is devoted more on such studies conducted to examine the determinants of poverty rather than its estimation and measurement, a detailed discussion of which is made in Chapter III of this study.

² Kumar (74) tries to examine whether the trends in income distribution during mid-50s and late mid-60s fit into the theoretical framework designed by Kuznets (1955)

and disputes and controversies involved in the measurement of poverty can contribute nothing substantially to the process of policy formulation.

Methodological issues involved in computational procedures for designing an appropriate consumer price index for the poor become the central theme in Bardhan's study (74) on poverty in India. But any effort to draw more inferences by assimilating various factors discussed in this study is obstructed by its limited scope. This study generates the impression that the "Indian poor really enjoy the privilege of receiving an attractive list of "accurately measured" and nutrient coated" food items, though they are not much accustomed to being adequately fed ¹.

By affiliating to the traditional school of poverty measurement, Ahluwalia (78) ² has pioneered in conducting an analytical exercise on the operation of trickle-down mechanism in India. Laborious exercises done to derive a "flawless PL" by eliminating the possible technical lapses in computational procedures ended with a flimsy yardstick

¹ Bardhan tries to incorporate all details regarding nutritional requirements and their money equivalents for formulating a PL and indicates the necessity for adopting discriminatory price indices suitable for the rural poor in India.

² Using the NSS data for 14 years spanning the period 1956/57 to 1973/74, Ahluwalia made an attempt to verify whether the trickle-down mechanism operates vigorously to make a dent on rural poverty. But the unopposed acceptance of 'though an extremely low level of living represented by a money equivalent consumption expenditure level of Rs.15 per person for 30 days' pushed him to the camp of orthodox economists, Bardhan, (71), Dandekar and Rath, (71), Minhas, (70).

of Rs.15 worth consumption bundle to measure the value of the poor ¹.

By relying on a visibly refined computational apparatus², this study has succeeded in revealing the complex mechanism projecting the inverse relationship between rural poverty and agricultural performance both at the national and state levels. But such a systematized work, though of an aggregate nature, has not injected any degree of practicality into the policy framework.³ Tendency of a disordered rural structure to generate disequilibrating and growth depressing forces aggravating the problem of poverty is highlighted. This time-series test finds no significant underlying

¹ Major disquieting factors that seem to have disturbed the process of computing an appropriate PL at national and state levels are (i) the significantly fluctuating price across states (ii) and the absence of a specifically designed price index for the rural poor. Consumer Price Index of Agricultural Laborers (CPIAL; Labour Bureau) partly resolves the problem. To estimate Head Count Ratio (HCR) and Sen's Index of Poverty, state-specific PLs have been calculated for period under consideration.

² The test of trickle - down mechanism at the national level is conducted by introducing the level and average of Net Domestic Product in agriculture per head of the rural population (NDPARP) and time as powerful explanatory variables to the regression model. But the picture becomes all the more complex due to the lack of time series of NDP at the state level. Hence an index of agricultural production constructed by A.V.Jose (74) is used as an explanatory variable to measure agricultural performance by running regression for each state.

³ No concrete action is taken to revive the seemingly deteriorating agrarian base of our economy.

time-trend in rural poverty though its concomitant result holds statistically significant inverse relationship between rural poverty and agricultural performance .

By comparing the incidence of poverty inter-temporarily, Parthasarathy (87) examined the phenomena of transient and chronic poverty in India during the decade, 1970/71 - 1980/81. Life cycle impact is identified as the dominant factor enabling households to free the fetters of poverty trap. Along with the discussion on the qualitative dimensions of data base (National Council of Applied Economic Research (NCAER) 86 and NSS data of 32nd and 38th Rounds), this study creates a conducive background for a realistic analysis of poverty across states. But broader classification of states on the basis of poverty inducing factors (labour productivity, incidence of unemployment, wage and rural labour market structure, inter-temporal changes in the number of marginal and small farmers) can in no way be accepted as a proper method to measure their impact on poverty.

Visaria (80) undertakes the task of reinforcing the study on poverty by analyzing the nature of poverty-unemployment nexus in India. This exhaustive deliberation on unemployment in India considers casual labourers as the worst - affected and first-to-be-enlisted in any programme designed for the alleviation of poverty and reduction in unemployment. But a highly complex structure of labour market in India with all its heterogeneous characteristics should be fully apprehended before arriving at such generalizations.

Through a brief but emphatic note on rural poverty, Saith (81) ventures in adding fuel to the fire of controversies that have furnished the academic realm after the publication of Ahluwalia's study of 1978¹. Introduction of price as a strong explanatory variable into the rigorous computational process² seems to have subjugated the ideological discordance among researchers. The statistical robustness of this additional variable provides it strength to disprove Ahluwalia's optimistic view on 'some trickle - down' associated with agricultural growth³.

The extent of disturbance caused, by Ahluwalia's pioneering attempt at measuring the impact of agricultural growth on rural poverty, to the researchers is evidenced by the relentless flow of excellent intellectual exercise drilled on an experimental and trial and error basis with newly invented variables extracted from and facilitated by periodically published data. Mathur(85)⁴ have taken the initiative in

¹ Ahluwalia, (78) Op.cit. Ahluwalia's empirically valid and theoretically sound trickle-down mechanism, instead of fetching relief to the poor, has caused strong contention among researchers who have reacted strongly by raising certain methodological issues (Griffin and Ghose, 79) and by introducing other seemingly strong variables (Saith, 81)

² Saith, (81). To test the validity of Ahluwalia's hypothesis, Saith has coined a regression equation by incorporating an additional variable viz, the series for CPIAL (measured as percentage deviation of CPIAL around its trend value) along with index of agricultural production. (IAP) and time-trend (TT)

³ Ahluwalia, (78), Op. cit. p. 310.

⁴ Mathur's (85) brief paper on rural poverty is such an updating exercise done with an intention of examining the explanatory power of both, prices (CPIAL) and agricultural growth (NDPAAP) in accounting for the changes in rural poverty in India.

settling the dispute among economists by supporting both 'pro-price' and 'pro-growth' versions of rural poverty.

An inter-state temporal analysis¹ incorporates three fundamental variables viz. agricultural output, wages and population to conduct a slightly refined statistical exercise on poverty. The effect of population growth on poverty is decomposed into (i) an average output effect and (ii) distribution effect. This statistical investigation leaves behind a strong concluding note by identifying both agricultural production and population as its crucial determinants. But the malaise of poverty being the offspring of a distorted structure requires a consolidated approach rather than a superficial statistical treatment² for an accurate and effective diagnosis.

Against the background of development experience during planned era, Gupta (86) examines the feasibility of adopting a more effective strategy in future for the eradication of poverty in India³. This study recognizes insufficient surplus generation as

¹ Dominique Van de Walle (85) examines the hypothesis that population size does not influence poverty independently of per capita agricultural output for the 59/60 to 70/71 period using a pooled model. It is noted with emphasis that an adverse effect of population growth on poverty is found to exist independently of output per capita and real wages.

² Statistical jargons commonly used in all analytical studies on poverty will have to face the threat of becoming increasingly unpopular if they fail to reflect reality.

³ Two extreme options suggested by the author are (i) to achieve poverty reduction through the trickle-down effect of a significantly accelerated growth rate of the economy (ii) by taking positive income redistribution measures at the cost of GDP growth of the economy. The Indian plan strategy was periodically redesigned to project the shift in emphasis from rapid growth to distributive mechanism as well as to specific targeted programme as effective means to combat poverty.

the major barrier blocking the speedy progress in poverty alleviation. But attractive suggestions educed from refined statistical process¹ can hardly feed the malnourished millions.

Analysis of poverty nears reality when its focus is diverted to gather a more detailed account of specific segments of population. Through an inter-state comparison, Dev (88) has conveyed a more meaningful message to the academic circle and policy makers regarding the alternative ways of fighting poverty among agricultural households in India. A rise in real wages by enhancing labor productivity in agriculture is suggested as the best option for attaining visible reduction in poverty in many states.²

By substituting the traditional methods used in measuring the incidence of poverty directly from NSS Consumer Expenditure Surveys with the indirect measures (by incorporating wage labour, growth of employment and the direction of change in real wage rate) Vaidyanathan (88) opens a new chapter in the measurement of poverty.

¹ Based on the observed functional relationship between growth, equity and poverty, certain apt prescriptions - accelerated growth combined with proper distribution measures, creation of a healthy production base in the rural sector and a shift in investment towards rural sector - are suggested to alleviate poverty at a speedy rate. But usually, guarantee for implementation judges the validity of these suggestions.

² A strong negative relationship between the growth in labour productivity and the incidence of poverty among agricultural labour households is observed when a cross - section regression is estimated. This study comes to a firm conclusion that in many states an increase in employment will not be sufficient to lift the landless poor above the PL. Punjab and Kerala receive a preferential treatment in this analytical study for enjoying a unique position with regard to potential income of agricultural labour households being more than sufficient to reach the PL.

This brief note on rural poverty warns against the further worsening of (the size of) operational holdings and the rapid pace of labour displacing mechanization.

Analysis of poverty assumes new dimension when Dandekar (88)¹ tries to resolve the controversial issue related to the selection of an appropriate base for poverty alleviation strategy. This elaborate discussion is associated with the nature and role of poverty alleviation programme² in enhancing the income and asset base of the poor in India.

¹ This study is based on the premise that alleviation of poverty cannot be left to the general course of economic development and that a direct attack is absolutely essential. But immediate relief to the poor facilitated by anti-poverty programmes endangers the economy by weakening its production base. But the sustainability of permanent governmental intervention to make a dent on poverty should be thoroughly checked before it is accepted as the final option.

² But any proposal for an effective poverty alleviation programme should be tested in the light of cost-benefit analysis i.e, full involvement of the beneficiaries in augmenting their household income from such assets should be anticipated. Production base of an economy can be strengthened only if the so-called recipients of such benefits become active participants of the development process.

By making paradigmatic discussion¹ on labour market as a prelude to an elaborate study on poverty, Papanak (88) prepares a realistic account of factors that influence agricultural real wages and demand for labour in India. Creation of new avenues for accommodating India's large pool of unskilled and low cost labour is recommended emphatically to bring down the incidence of poverty.

Khusro (84)² sounds highly critical of the use of traditional yardstick (PL based on minimum calorie requirement) to demarcate the poor. His views take a positive turn towards adopting alternative methods of poverty estimation based on the total quality of life and consumption of public goods.

Ghose (89) using regression models has disclosed a comparatively higher statistical robustness of relative prices than agricultural output in explaining the

¹ In search of an alternative paradigm to explain the income status of the poor in the labour market, Papanak (88) negates suitability of neo-classical, Lewis and Fei-Ranis models to Indian conditions by citing reasons for such nonconformity. Heterogeneous nature of the labour market and wage structure in India and the corresponding mismatch between marginal productivity (MP) and wages sound odd to standard neoclassical mechanism of wage determination by demand and supply. Again fluctuations in real wages over a long period of time, as is revealed by Indian data on agricultural wages, disproves the applicability of Lewis and Fei-Ranis models in India.

² His argument seeks evidence from <1 income elasticity of demand for good, rigidity in food habits even under prosperous conditions. In this context he distinguishes food poverty from other forms of poverty such as poverty of literacy, education, health, housing etc.. This brief note warns against the practice of poverty being overstated due to the non-inclusion of heavily subsidized or freely distributed public goods which are not captured by personal expenditure data. But it seems necessary to place a word of caution against this criticism: such calculations always omit a major chunk of population not coming within the purview of gross subsidization or generous distribution.

incidence of poverty in India. Some valid and practical suggestions to (i) reduce poverty (ii) induce agricultural growth and (iii) to maintain stability of both agricultural growth and of relative prices, are put forward¹.

Gaiha's (89) powerful analytical skill crystallizes in the form of transparent and logical inferences which unveil an appreciably strong interrelationship among (an index of) agricultural production, (consumer) price fluctuations and rural poverty in India. His recommendation to assign consumer price stabilization in rural areas a decisive role (in anti-poverty strategy) is influenced by the adverse effects of price fluctuations on rural poverty. Alternative means of building up a comfortable (agricultural) product base as a cushion against price fluctuations are given due place of importance in this analytical study².

In a terse analytical work on inter-state and inter-temporal changes in poverty, Jain et. al. (90) seek to decompose the change in Head Count Ratio into growth (change in real average per capita total expenditure from the base to terminal year) and distributional (change in the relative size distribution of per capita total expenditure

¹ Redistribution of productive assets or income to alleviate rural poverty, land reforms and credit schemes to strengthen the resource base of the rural economy, stable agricultural growth, strong PDS as instrument to dampen fluctuations in relative prices and a proportionate rate of growth of both agricultural output and money income are to be considered as his strong recommendations to realize these targets.

² Inter-state transfer of (agricultural) products, governmental intervention through effective buffer stock operations and "permissible" (foreign exchange reserve as the constraint) degree of openness to the rest of the world (i.e, imports) are considered as price stabilizers. But price as a determinant of poverty should be incorporated only after examining the share and dependence of the poor in the market.

from base to terminal year as reflected in the Lorenz curve) components¹. Results of the regression exercises at the state-level indicate the powerful influence of growth in real Average Per Capita Total Expenditure (APC TE) on the HCRs between 1970-71 and 1983. On computation, regression results pointed out that a one percentage point in the growth rate of real APCTE brought about 0.5 or 0.6 percentage point reduction in rural HCR.

Bardhan's (89) seminal work on poverty tries to unlock the nature of relationship between the technological and structural changes in agriculture and the combined effect of agricultural growth and labour relations on rural poverty. Decrease in labour content in agricultural production, it is argued, has resulted in massive landless poverty.

Through an elegant decompositional exercise drilled towards examining the individual and combined impact of economic growth and income inequality on poverty at the state and national levels, Kakwani et. al. (90) argue that adverse trends in the inequality of consumption will nullify the beneficial effects of growth on the incidence of poverty². An active policy intervention in the form of a series of anti-poverty

¹ This study intends to assess the sensitivity of decompositional exercise to two alternative specifications of All India Poverty Line viz, (i) Planning Commission's recommendations of per capita total expenditure (PCTE) of Rs.49.09 (rural) and Rs.56.64 (urban) 73-74 prices and (ii) an alternative stipulation of monthly PCTE of Rs.15 (rural) and Rs.18 (urban) at 1960-61 prices. It proposes a method of decomposition and makes use of data of 25th, 28th and 32nd Rounds of NSS for empirically quantifying the growth and distributional impact on the state-specific HCR between 1970-71 and 1983.

² Existence of such an interaction is verified by introducing the concept of marginal proportional rate of substitution (MPRS) between mean income and income inequality i.e, $MPRS = \left| \frac{\partial Y}{\partial G} \right|$. Period specific study of a phenomenon (ie, 1973-74) acts as a solid evidence to this argument.

programmes is prescribed as an effective method to countervail such growth-neutralization process¹.

Chambers' (92) perception about a realistic study on deprivation turns him to be a staunch critic of the current practice of quantification of poverty which fails in addressing the urgent demands of the poor. An ideal procedure to standardize the varied and real needs of the poor is recommended².

Competence of micro level studies in comparison with holistic approach to picturize poverty is exposed realistically in all their strength and spirit by Harriss (92)³ through evidence from village-level-studies. (VLS) on multifarious aspects of rural poverty (in India). This study has left no variable (associated directly or indirectly to poverty) undiscussed⁴.

¹ An over-all valuation of the anti-poverty programmes introduced at the state level is made in support of this recommendation .

² Chambers' recommendations being unusually realistic and practically sound are worthy to be followed by policy makers.

³ Sectoralisation of poverty on the basis of three distinct aspects namely material opulence, lack of welfare and caste perceptions and priorities of the poor, form the structure of this study.

⁴ Asset base of the poor, their occupational structure, employment and income status, demographic characteristics, labour market intricacies, food and non-food expenditure, a consolidated picture of their health status and caste constitute the analytical base of this study.

Tendulkar (92) in an incisive deliberation has enlisted two broad topics in the agenda to examine whether a dynamic growth process can transmit vibrant stimulants capable of converting a transiently poor household to a persistently active participant of that (growth) process. Ideal package programme, as is recommended by him, for poverty eradication contains relentless effort to weaken socio-economic barriers to income mobility, an ambitious development strategy, adequate distribution of basic needs and an active role assigned to the state¹.

A wide spectrum of unemployment and allied parameters constitutes a suitable format against which Dev (92)² conducts an analytical study on human resources and rural poverty. Issues like reduction in population growth, targeted employment policy, enhancement of investment in health, education and nutrition of the poor as a part of poverty alleviation programme, are widely discussed.

Among various factors which are related to rural poverty, agricultural labour productivity (ALP) captures prime position in an analytical study conducted by Ghosh (92) to examine the efficacy of trickle-down mechanism in rural West Bengal. A strong affiliation to the earlier trickle-down theoretists³ is established by the author by

¹ A well defined and 'highly protected' strategy to eradicate poverty is designed by the author.

² 27th, 32nd, 38th, and 43rd N.S.S Rounds provide the database to have a categorical discussion on incidence of unemployment. This study throws light on the inadequacy of health services, relative neglect of primary education and higher incidence of unemployment and poverty among the casual labourers.

³ Ahluwalia, (78) Op. cit. p.310

proving the existence of an inverse relationship between rural poverty and agricultural performance in the state.¹

The contribution of regional and sectoral disparities in living standards to national poverty is selected as the central theme of discussion on poverty in India by Datt and Ravallion (92)². A closer look at the empirical results indicates that a small transfer from a donor region with a higher mean consumption than the recipient region will generally lead to a reduction in national poverty. The suggestion that a frontal attack on poverty through redistributive measures is possible only by reducing intra-regional disparities sounds more practical.

An applied general equilibrium model (AGE) of the Indian economy constitutes an analytical framework against which three broad set of policies for alleviating rural poverty- subsidization of food consumption, rural works programme for generating additional employment opportunities for the rural poor and subsidization of fertilizers- are compared by Parikh and Srinivasan (92) to get the

¹ Rural poverty [measured in Head Count Ratio (HCR) and Sen Index (SI)] is considered as the dependent variable whereas PL at constant prices, per capita consumption expenditure at current prices and Lorenz Ratio of per capita consumption expenditure are treated as independent variables. But inclusion of Agricultural Production (ALP) and CPIAL to this model made dramatic change (in the multiple regression results) in favour of the former and totally against the latter.

² Basing their analysis on data of 38th Round of N.S.S of consumer expenditure for 1983, the authors estimated FGT measures of poverty and evaluated them at two PLs of Monthly Per Capita Expenditure (MPCE) of Rs.76.65 and Rs.89.00 at 1983 all India rural prices. On the basis of their percentage (98.4%) share in total population, forty regions (both rural and urban) from 20 states are included in this study.

assessment in favour of a well-targeted rural works program registering greatest effect on the poor ¹.

Sen (94) focuses more on the complex trickle-down mechanism operating in the labour market to examine the link between poverty and employment. Main factor responsible for bringing about changes in the pattern of income, employment and extent of poverty during the 80s is identified as the changing public sector resource flows. The temporary withdrawal of the rural 'elite workers' from the traditional agrarian sector to state sponsored activities in the non-agricultural sector activated the trickle down mechanism through increased tightness in the agricultural labour market.

Sheilla Bhalla (94) prepares a constructive analytical background to expose the complex nexus between poverty, rural-urban migration and labour market adjustment through labour productivity. The proposition of distress rural diversification in India as a survival strategy and transmission of high incidence of poverty in agrarian sector to other sectors through weak demand for non-farm goods and services and the entry of excess agrarian labour to non-farm sector are amply supported by the results of regression analysis.

The inter-linkages between poverty and changes in labour markets within a larger socio-economic context is selected as the focus of an explorative study of Unni (94) taking Tamil Nadu and Madhya Pradesh as its base. Adjustment at the household level to design an income enhancement strategy involves increased participation in casual wage work, high female work participation rate, incorporation of more family labour in cultivation and reduction in dependence on hired labour. But the significance of optimum-resource utilization strategy as a poverty alleviation device at the

¹ Distinguishing features of AGE models and their application in policy analysis are discussed elaborately.

household level lies more in the pattern of intra-household distribution of income/consumption.

Alok Kumar's (94) analytical study on poverty in India conducted on an inter-temporal and inter-state basis captures all relevant factors¹ to run a linear multiple regression test from which agricultural output, real wages and inflation emerge as the explanatory variables. But the adverse price effect of a higher agricultural output on the income of small and marginal producers seems to have escaped the perception of the author.

In a brief descriptive note on various poverty alleviation programmes, Banerjee (94) projects the necessity of adopting an integrated but phased approach comprising of land reform and investment in agricultural infrastructure, decentralization of economic activities, investment in human capital (in health, education, formation of skill and capability) to make a considerable dent on poverty.

An entirely different option of raising productivity or shifting labourers from existing employment with low productivity to high productivity is favoured by Seth (99) in an explorative study on the socio-economic conditions of women workers in rural Maharashtra. Self-generating income propagation mechanism through enhancement in productivity is recommended as a comparatively effective method to combat poverty than the temporary relief operations of the government.

Gujarat based village level study on rural artisans conducted by Parthasarathy (94) divulges the pressing forces behind distress-related diversification of economic activities as a survival strategy. A strong linkage between accessibility to

¹ A linear multiple regression has been run to estimate the co-efficient of various variables like real wages, unemployment rate, yield of food grains per hectare, food grains production per rural person, CPIAL, ratio of size of operational holding to the number of agricultural workers, indebtedness etc..

assets, poverty and diversification of economic activities at the household level is established through a regression exercise.

An effort ¹ to quantify the intra and inter-sectoral effects of urban and rural growth on aggregate poverty in India (by using an econometric analysis of new time series data spanning 40 years from 1951-91) provided certain valid inferences which reinforce the importance of rural growth to poverty reduction and its spill-over effects on urban poverty. But the implications of the glaring fact that urban growth fostered by capital intensive industrialization has failed in contributing to reduction in national poverty or in fetching benefits to the rural poor deserve closer scrutiny.

Against a brief account of certain obviously pertinent lapses² in certain studies on poverty in India, Bell and Rich (94) develop a single equation and a two equation poverty model comprising of variables like real per capita output, rate of inflation, rainfall index and a time trend variable. Inferences drawn from this analytical exercise support the existence of a stronger association between the levels of poverty and sustained real output in the long run. (1951/52 - 1977/78) and a distributionally neutral growth process over the period under consideration (1951/52 - 1977/78). Unanticipated inflation is found to be a variable exacerbating poverty³.

¹ Ravallion and Datt, (94).

² Serious omissions in Ahluwalia's (78) work recorded by this study are (i) Poverty series estimated is incomplete; it omits the years 1951/52 through 1955/56, 69/70 and 72/73, (ii) the method of estimation of Lorenz curve from grouped data is unsatisfactory, (iii) use of per capita NDP or gross output at constant input and output prices on the index of real agricultural output, (iv) exclusion of household asset as a determinant of its current consumption, (v) exclusion of unanticipated movements in prices.

³ A sophisticated econometric model is developed to analyze the linkage between rural poverty, agricultural performance and price.

Leaving little space for criticism Ravallion and Datt (95) structured an analytical framework to discuss the (agricultural) growth elasticity of (absolute) poverty in India over the period spanning 32 years (1958-90). Scholarly debate¹ on the operation of trickle-down mechanism to fetch benefits of agricultural growth to the rural poor is effectively moderated by the inferences emanating from this analytical study².

Using the village level studies (VLS) data from two villages in Maharashtra, Gaiha (95) tries to examine a slightly different version of the much discussed phenomenon of trickle-down mechanism and the relevance of implementing anti-poverty programmes to supplement the feeble trickle-down effect of agricultural growth. Oligopsonistic power of the domineering class of large landholders in labour markets weakening the trickle-down mechanism through its dampening effect on employment and wages coupled with unanticipated increases in consumer prices are identified as factors contributing to the aggravation of rural poverty. 'Figurative'

¹ Ahluwalia's (78) conclusion that 'there is evidence of some trickle-down associated with agricultural growth' is diametrically opposite to Saith's (81) claim that 'there can be little doubt that current growth process have served as generators of poverty' (P.205). These contrasting views emerge from the analysis of same data (for the period 1957-1973).

² This analytical report (i) establishes a strong and positive association between agricultural growth and changes in mean consumption since 1970, (ii) rejects the immiserizing growth hypothesis, (iii) finds space in accommodating a range of absolute poverty measures responding elastically in the short run to both agricultural wages and average farm yields, (iv) incorporates inflation having strong adverse impact on real agricultural wages and absolute poverty, (v) calculates (here 3 years) the time required by the rural participants to share the gains from agricultural growth.

exposition of time¹ required to halve HCR through a modest rate of agricultural growth turns out to be an innovative feature of this study.

Strong data base ² comparable to international standards broadened the horizon for Ravallion and Datt (96) to analyze and evaluate India's past experience in fight against poverty and to evolve clear lessons for her prospective poor. This search for an ideal prescription against poverty for posterity identifies initial inequalities in access to physical and human infrastructure and differences in the package and impact of interventions pursued as causes of inter-state differences in the levels of living in India ³.

The phase of transition from the protected era to liberalized regime is opted by Dutta (96) as the apparently congenial background to examine the extent to which major determinants of poverty levels are influenced by the structural adjustment programmes. It is noted emphatically that any (long-run) strategy to remove poverty must be designed by incorporating growth and price stability as crucial ingredients. This diagnostic study on poverty uses per capita per day availability of cereals and per capita net availability of (per day) cereals and pulses as proxies for average rural consumption to conclude that the mean consumption of the rural poor increases along with an increase in mean rural consumption ⁴. The inference that immiserising growth hypothesis is rejected corroborates the similar result of Ravallion and Datt (95).

¹ It is calculated that a 1 percent agricultural growth per annum requires 50 years to bring down HCR to half.

² Existence of time series of consumption data from N.S.S spanning 40 years provides ample opportunity to conduct a multi-thronged study on poverty in India.

³ Other valid inferences of this study are deliberately excluded to avoid repetition Datt and Ravallion (93), Ravallion and Datt (94, 95) discuss these points elaborately.

⁴ All measures of poverty - FGT measures- are responding elastically to changes in mean rural consumption.

Absolute negligence of social sectors, visible absence of public welfare system, governmental failure in accurately targeting and generously protecting the poor during the reform period become the topic of discussion in Joshi and Little's (96) study. Extension of discriminatory assistance to the marginal and small farmers through retaining subsidies or higher output prices is strongly recommended.

As a pursuit to resolve the controversies¹ involved in assessing the poverty impacts of macro economic crisis and stabilization in India, Datt and Ravallion (96) framed an econometric model² to be tested against the time series of poverty measures and other data³. Contraction in average household consumption in India's rural areas in the year following the beginning of the stabilization program is attributed to macro-economic crisis. Decline in average living standards is explained more by inflation, drop in agricultural yields and contraction in the non-farm sector.

In a highly comprehensive study framed against the background of economic reforms initiated in India in 1991, Sen (96) provides an elaborate account of inter-temporal(pre and post reform) fluctuations (1951-94)in poverty estimates coupled with

¹ Researchers hold diametrically opposite views on the visibly disturbing rise in India's rural poverty in the year (1992) following stabilization (mid 1991)

² Agricultural State Domestic Product per hectare of Net Sown Area, real non-agricultural SDP per person, rate of inflation in the rural sector per capita, State Development Expenditure and real male agricultural wages are incorporated as the explanatory variables of this model.

³ Categorization of states based on the direction of changes in the analytical variables with their impact on poverty measures throws light on the aggregate performance of each state with regard to poverty reduction.

trends in certain visibly intimate allied parameters, trends in and structure of sectoral unemployment and the possible impact of structural adjustment and stabilization programme on the rural poor ¹.

In World Bank (country study) Report (97) India obtains the top position with the largest concentration of rural poor in the world. Following the traditional approach of growth with redistributive policies adopted to combat poverty effectively. the present report ² too identifies the need for growth enhancing public policies in bringing a considerable reduction in poverty. But the debate on the unresolved issue associated to a visible and drastic increase in the incidence of poverty in India between late 80s and 92 gets a closer link to stabilization and reform strategy ³.

Treating a dual economy model as the base Ravallion and Datt (98) conduct an explorative study to identify the major determinants of poverty in India. Dual labour

¹ As compared to Ravallion-Datt model (96) of poverty estimation with average productivity and real wages as prime determinants, the present model tries to explain incidence of poverty for two time periods (60-89 and 60-92) with relative prices of cereals and non-agricultural employment, commercialization and state development expenditure by leaving more emphasis on relative prices of food and the level of government expenditure. But the marketist reform strategy (with unjust means) can never be fair in its approach towards (the end of) poverty reduction. End never justifies means.

² The first World Bank assessment of India in 1989 based on data upto 1983-84 concluded that growth and redistributive policies played a crucial role in reducing poverty over 1970s and 80s.

³ Generation of diversified economic opportunities and release of increased resources to enhance investment in human capital are treated as the main attributes of economic growth. It is believed that they can make considerable dent on poverty.

market model is framed on the presumption that the initial inter- sectoral (farm and non- farm)income disparities check the poverty reducing impact of non-farm growth. Inter-state differences in growth elasticities of poverty are analysed with the help of four crucial variables namely average farm yield, state development spending , non-farm output(rural and urban) and inflation¹.

Chatterjee et. al. (98) strongly favour the necessity of accepting redistributive policies at par with growth factors in any attempt at poverty reduction. This study recommends mean of monthly per capita expenditure (MPCE) of the N.S.S.O consumption expenditure distribution as the poverty cut-off point rather than an arbitrary PL.

By changing ² the method used to assess poverty reduction in favour of initial conditions (proxying for initial poverty levels),Datt and Ravallion (98) succeeded in accounting for the cross-state differences in the trend rates of poverty reduction³.

¹ Higher farm yields, higher state development spending, higher non-farm output and lower inflation contribute positively to reduction in poverty. Inter-state differences in the impact of non-farm growth on poverty are attributed to differences in initial conditions measured in terms of literacy rate, human resource development, inter-sectoral income disparity, population distribution, urbanization etc..

² Same analytical methods are used in both studies- (other being Ravallion and Datt (98), But variables included in representing initial conditions differ in number.

³ Initial endowments of physical infrastructure and human resources, higher initial irrigation intensity, higher literacy and lower infant mortality contributed to higher long-term rates of poverty reduction in rural areas. The unique position enjoyed by Kerala in this respect needs special mention.

In a seminal paper prepared by considering reformist regime as an ideal background for discussion, Lal (98) makes an attempt in weighing the efficacy of both public and private transfers in dealing with indigence.

But Tendulkar (98), by shifting the blame for a pronounced surge in poverty in the post reform period (here the year 1992) to a visible dip in agricultural production, tries to protect the phase of transition to 'disprotection'.

Through an arduous process of dissecting the recently published data¹, Datt (99) substantiates the argument that stagnation in rural poverty is attributable to the lack of growth in that sector.

A simultaneous equation model involving rigorous computational procedure has been developed by Fan et. al.(99) by incorporating government expenditure (in decompositional form²) to estimate its direct and indirect impact on rural poverty in India. This analytical report is the result of sophisticated exercise done towards identifying the most effective device to combat poverty on a sustainable basis. This study brings (agricultural) production-productivity growth differential to the broader spectrum of explanatory variables³.

¹ Datt's (99) brief paper designed to examine the inter-sectoral (rural-urban) differentials in the estimates of poverty bases its analysis on the tabulated distributions of consumption expenditure published by N.S.S.O (97).

² Each item of government expenditure [education, medical and public health, agricultural Research and Development (R&D), rural roads, irrigation (to mention a few items enlisted)] is treated as analytical exogenous variable of this model.

³ Agricultural productivity (rather than production) growth and poverty reduction are shown to be strongly correlated.

Enriched by the WIDER¹ data from six villages in West Bengal for the period 87-89. Pal et. al. (2000) focus their attention more on exposing the determinants of occupational mobility among agricultural labourers than on indigence among them. But this study does remain silent in verifying whether poverty is the real cause of occupational mobility². ..

Repetitive reference in Ravallion's paper (2000) to the inferences from the previous analytical studies³ reinforces the importance of human resource development and initial conditions and lessens the difficulty involved in examining the 'residual' factors⁴ capable of contributing to speedy reduction in poverty in India during the reformist regime.

With a lucid expositional skill, Gupta (2000) constructs conceptual framework tightly packed with appropriate analytical variables representing socio-economic conditions and demographic structure, to examine the impact of economic growth on

¹ World Institute of Development Economic Research.

² Reverse test would have provided more meaningful results.

³ Ravallion and Datt (96) and Datt and Ravallion (97,98) Op. Cit.

⁴ The necessity of increasing investment in education and healthcare to equip the poor to exploit new opportunities (generated during reform period) is the focus of this study.

poverty and employment ¹ in India. Failure of a market growth process to deal effectively with poverty or employment in India is highlighted. But the study comes forward with a package of conceptually sound prescriptions to ameliorate poverty in a reform scenario ².

A multi-dimensional approach ³ is adopted by Dev(2000) to examine the impact of economic reforms on (rural/urban) poverty, income distribution and employment. Much attention is devoted to bring the major determinants ⁴ of poverty to limelight with

¹ Inverse relationship between employment and poverty is taken as an indicator of the efficacy of a strong employment generation policy to curb poverty to a considerable extent. The study coins a word of caveat against an exhaustive growth-induced poverty alleviation policy for India. The decomposition method-an innovative feature of this study- is employed to measure the change in household's consumption due to higher earnings rate, number of employed and the size of the household.

² The suggestion to equip the rural and urban poor with appropriate skill and training to enter main stream market activities generated in a globalised world may taste sour to the victims of retrenchment.

³ Trends in poverty are analyzed by looking at poverty ratios, employment, unemployment ratios and wages whereas increasing inter-state inequalities are disclosed through an analysis on convergence / divergence on per capita consumption and per capita SDP.

⁴ Relative food prices, rural non-farm employment, wages and development, (public) expenditure, infrastructure, technology, institutional changes, employment elasticity and labour productivity in agriculture are identified as the major determinants of poverty.

added emphasis on a healthy agricultural growth¹. The discussion on anti-poverty programmes is made more constructive by incorporating the role of panchayats, NGOs, self-help groups and community-based organizations as active agents of employment generation.

Suryanarayana (2000) turns his attention to certain contentious issues associated to the traditional practice of estimation of poverty in India based on N.S.S data. Serious lacunae² in poverty estimation catalyzed by total negligence of institutional and structural changes in rural sector have been highlighted along with an emphatic note on an increase in proportion of calorie deficient rural population from 65 per cent to 75 per cent³.

In a state-level analysis purported towards examining the inter-relationship between economic inequality, poverty and economic growth inter-temporarily, Jha (2000) considers rapid economic growth combined with public expenditure programme

¹ This is fully revealed by his recommendation to consider agricultural growth and development of rural infrastructure as targets to be realized during the second generation reform period.

² Distortion in poverty estimation is caused due to (i) exclusion of the institutional practice of payment of wages in kind (cooked meals at landlord's houses). (ii) understatement of income/ expenditure by middle and richer section. (iii) differences in valuation of home grown stock (at farm harvest prices) and formulation of PL at market prices. (iv) structural changes in labour market in favour of casual workers and a visible decline in the practice of permanent farm servants.

³ It is shown that cropping pattern after green revolution has changed in favour of superior and costlier cereals like wheat and rice.

adequately supported by a conducive tax- structure (generation of revenue and redistribution of income) and empowerment of the poor, as the most appropriate policy options to be viewed practically. Inter-state comparison made possible through real mean consumption, gini co-efficient and HCRs (data base formed by 13th to 53rd Rounds of N.S.S) surfaces regional diversities concealed in national aggregate indicators.

Pradhan et. al (2000) on the other hand, conduct a more comprehensive study on inter-sectoral disparities in the levels of living by widening the dimensions of poverty from mere economic indicators to social indicators. This analytical study tries to make appropriate adjustment for the lapses in other data¹.

By making use of the data of various Rounds of N.S.S consumer expenditure surveys², Dubey et. al (2000) structure an analytical framework to examine (i) the impact of relative performance of various states (at sectoral and regional levels) (ii) size of states, (iii) geographical location (iv) occupational characteristics and the size of female-headed and male-headed households on the income earning potentiality and thereby reduction in poverty in India. Disaggregate analysis at the regional level leaves behind certain valid inferences favouring the view that spill over effects from growth centres into neighboring states positively influence reduction in poverty at a rapid pace. A negative relationship between incidence of poverty and size of cities is established through higher factor productivities in larger cities. But the debate on the desirability of

¹ A dual scale-consumption expenditure I (CEI) including imputed rental value of owner- occupied houses as an item of expenditure on consumption and consumption expenditure II (CE II) excluding the same-is used to measure inequality in consumption expenditure. N.S.S.O in its surveys on consumption expenditure does not capture this item.

²Data of 43rd and 50th Rounds of N.S.Ss are used for this analysis.

economic reforms for poverty alleviation cannot be settled amicably without fathoming the depth of deprivation at a micro level¹.

Kalirajan et. al (2000) presuming pre and post reform period as an ideal background to examine the impact of inter-state disparities in per capita income and agricultural growth on poverty reduction sharpen the focus of their study by accurately locating the causes accentuating² such disparities and suggesting policy prescriptions to activate agricultural sector of backward states.

Bhalla and Kaur (2000) accept a much-discussed issue associated to the selection of an appropriate strategy³ to eradicate poverty in India.

Haldar (2000) is rather precise in (i) exposing inter-temporal changes in incidence of poverty in India. (ii) in accurately computing the quantum of resources (financial) required to lift the poor above the PL, (iii) in judiciously evaluating various anti-poverty

¹ A more serious micro level study encompassing different categories of people affected by the implementation of economic reforms is required for an unbiased settlement of this issue.

² Attempt is made to test for the convergence of per capita SDP and agricultural growth rates across major states in India before and after reform and to prove that backward states are growing faster to contain growth in poverty.

³ Apart from the efficacy of direct intervention and effectiveness of trickle-down mechanism to eliminate poverty at a speedy rate, the necessity of expanding human development, empowering the poor and of transferring resources to the deprived receive adequate attention in this study.

schemes and (iv) in prescribing effective measures to alleviate poverty on a permanent footing.¹

Delicate issues involved in the process of reviving the study on poverty by adopting a more pragmatic approach fully supported by a well-consolidated data still haunt researchers² with renewed vigour.

Vaidyanathan (2001) traces the evolution and acceptance of minimum living standards to conduct a healthy discourse on issues concerning the measurement of poverty and formulation and implementation of policies to solve the problem effectively. This study gives an elaborate account of the major determinants of poverty like agricultural production, prices, demographic pressure on land, productivity of land, and diversification of employment. Proper evaluation of governmental policies (implemented to alleviate poverty) coupled with appropriate suggestions to rectify past mistakes make this study more elegant.

Maria Antony et. al (2001) make a pioneering attempt in examining the suitability of HDI to measure health inequality and standard of living. Using different methods, this study tries to compute HDI at the state level. This study represents a change in approach to analyse the integrated development process of regions.

Based on the latest available data on employment-unemployment survey, Sundaram (2001) makes an attempt in presenting a highly disaggregated picture of

¹ But this optimistic outlook and constructive suggestions have not yet been proved to be adequate enough to protect the poor.

² Richard Palmer-Jones and Sen (2001) try to invigorate the study on poverty by examining the issues related to the construction of PLs like (i) qualitative aspects of available data (ii) use of proper price deflators and (iii) the current debate on a more suitable recall period of 7 days / 30 days.

population below poverty line (BPL) with more emphasis on inter-temporal and inter-state change in the prevalence of poverty ratios. Inter-state comparison of poverty ratios between 93-94 and 99-2000 (based on Employment-Unemployment Survey of N.S.S.O, 2000) confirms that they have registered a decline over the 90s, even though the order of decline is comparatively small than that revealed by the 55th Round Consumer Expenditure Survey.

Section 11. 1. 3.

Discourse on poverty turns a twist and gains vibrancy when its focus is shifted to analyze the paradoxical situation in Kerala featured by a unique blend of low per capita income and high HDI¹

Most of the literature pertaining to Kerala's development achievements accepts her high profile performance in respect of living standards with remarkable gains in the sphere of health and education facilitated by active government mediation as a strong theme for effective discussion, leaving little space for limited development in the real sectors. Hence this section is confined solely to review a few seminal studies conducted by eminent economists and researchers with an intention of probing deep into the sources of poverty in Kerala.

Early analytical studies on poverty in Kerala visibly indicate the primitive stage of development reached in the formulation of a rather reliable technique to measure poverty along with its major determinants. An independent and impartial analysis

¹ Kerala's performance in the spheres of social and economic development has been substantially better than other states of India. This exclusive position enjoyed by Kerala obscures the vision of impartial researchers who find impending danger lurking behind the mismatch between the development of real and social sectors of the economy.

attempted in an early study¹ tries to settle a dispute precipitated by certain anomalies crept into the data system used in the computation of the incidence of poverty in Kerala².

Mohandas' analytical work on poverty is purported to confirm the belief that micro level study is more powerful a medium to convey the message with authenticity and definiteness to the policy makers. Sophisticated computational procedure and refined analytical skill make this study an added contribution to the literature on poverty.

Through a brief but elegant analytical study, Kannan (95) strongly argues and firmly establishes the efficacy of direct action³ in containing poverty in Kerala within manageable limits. This dissective exercise outrightly rules out the possibility of trickle-down mechanism to operate positively to curtail the intensity of the problem of poverty in Kerala. Absolutely crippled real factors of Kerala's economy constituting only a fragile productive base lose eligibility and stand highly disqualified to generate sustainable income and sufficient quantum of employment opportunities

¹ Based on Dietary Survey and a Food Balance Sheet analysis, Center for Development Studies (C.D.S) conducted a study to enquire into the causes, determinants and normative considerations of poverty in Kerala. Whole analysis is conducted by taking into account Kerala's major development issues like land reforms, population growth, unemployment etc..

² Details regarding this are included in another section (chapter III) which deals with measurement of poverty.

³ But in the context of Kerala, a more intensive study should be conducted to examine the extent to which direct state intervention programmes have catalysed the process of stagnation of the state's productive sectors.

Report of the Task force (96) obviously adopts a more practical approach towards identification of the poor¹ and measurement of poverty and seems to be more realistic in considering poverty as a structural phenomenon. A thorough evaluation of the poverty alleviation programmes introduced in Kerala at different levels is made. This report makes certain valid recommendations to be implemented effectively to curb the incidence of poverty in the immediate future.

Conceptualising poverty in terms of food intake and its correlates of nutritional requirements, Mohandas (99) examines their current trends² and identifies the lowest calorie intake emanating from the lowest cereal intake as the sole reason for the highest HCR in Kerala during the period under consideration (1970-71 to 1991-92). The concluding part of this analytical study throws light on the crucial role played by PDS in supplementing cereal availability in the state during times of food scarcity³.

¹ Five easily observable and verifiable physical characteristics of the households [(i) households with dwellings <215 sq:feet floor area and having thatched roofs, mud or coconut leaves, partition walls, and mud or dung - coated floor (ii) households without drinking water facilities within easy reach. (iii) households without ordinary latrine facilities. (iv) households not having even a single person with regular employment earning an annual income of about Rs.21000/- and (v) Landless households] are suggested to avoid a possible mistake of enlisting a non-poor as poor or excluding a poor from the list.

² Declining trends in Engel's Ratio (ER) and proportion of Per Capita Consumer Expenditure (PCCE) on cereals and cereal substitutes are considered as a clear reflection of the rising trends in living standards in Kerala.

³ But the suggestion to revamp the PDS in a consumer state like Kerala should be recommended for strict scrutiny since it is feared that such an effort may further paralyse state's agrarian sector.

A cross-country comparison of an excellent analytical nature made by Kannan(99) treats the radiating effects of education, vibrant functioning of the state, uninterrupted supply of food from the center, relentless flow of remittances from abroad effectively monitored by concerted public action and the dominant role played by literate women as factors contributing to the alleviation of poverty in Kerala to a considerable extent. This analytical exercise nears perfection when it captures rather more realistic constraints¹ weakening the visibly paralysed real sectors of the state.

Analytical studies on poverty conducted so far in Kerala have only partially succeeded in projecting the crux of the problem of abject poverty concealed behind the thick veil of high social and human development index - generally qualified as a creditable achievement worthy of being imitated by other states in India. It is high time to get the benefits of social advancement and human development translated as agents to promote economic opportunities for the socially and economically deprived sections of the population.

Section11.11.1

Focus of the study gets sharpened at this juncture when attention is diverted to have a closer examination of the nature association between farm size, farm income and poverty. This section is designed in such a way as to become more familiar with a limited number of studies conducted earlier in this area.

Assuming micro level estimates of poverty at the district/block level to be superior and highly influential at the implementation stage, Tyagi adopts the technique of step by step regression to examine the explanatory power of various

¹ Constraints assume the form of inadequate investment in infrastructure, resistance of trade unions to introduce technological changes and the failure of the state to attract investment.

factors¹ identified as the major determinants of poverty and their variations across states in India. Inter-state variations in the incidence of poverty are examined by estimating four models constituted by different combinations of parameters like wages, agricultural labourers, marginal holding and gross cropped area². Though this study has apparently adopted a more practical and realistic approach in analyzing the incidence of poverty, it has absolutely failed to consider income differentials across farms as an indomitable determinant of the level of income³.

In a brief analytical study Minhas makes a more meaningful exercise by associating the incidence of rural poverty to the size-wise classification of land holdings (both ownership and operational). A broad classification⁴ of the rural poor as landed and landless households is brought into the analytical framework to assess the impact of radical land distribution policy on rural poverty. Policy prescriptions

¹ An appropriate model to estimate poverty at micro level is framed by incorporating explanatory variables like (i) Percentage of agricultural labourers in the main workers. (ii) Percentage of small holdings in total holdings (iii) Percentage marginal holdings (iv) Per hectare income at current prices from primary sector. (v) Real wages for male workers in rural areas (vi) Per capita Net Cropped Area (vii) Per capita value from primary sector.

² It is estimated that 64 percent variation in incidence of poverty across states is explained by variation in wages alone.

³ Structure of landholding may assume significance as a determinant of poverty only if income differentials across farms are brought into the picture.

⁴ Specific calculation of the number of rural poor to the tune of 153935 is made on the basis of four smallest land operating size classes (i.e, <.49 acres, .50-.99, 1.00-2.40, 2.50-4.99 acres) and no-land-operating size class.

capsulated by another study¹ are meant for nurturing the production base of the rural sector with amply available local resources. Land distribution in its reverse order – compulsory land consolidation – is proposed as a part of integrated rural development programme.

Analytical skill of superior quality and exceptionally excellent innovational caliber are precisely exhibited in an elaborate and comprehensive dissective exercise done by Visaria mainly with an intention of examining (against a broad spectrum of household demographic features) the interrelationship between the size-wise distribution of land holdings among households and their per capita expenditure, in rural areas of Gujarat and Maharashtra for the period 1972-73. But a strong and more meaningful message would have been conveyed by this study to the policy makers if such an association between Per Capita Land (PCL) and Per Capita Expenditure (PCE) was cemented solidly with farm income ².

Dandekar and Rath by analyzing the data collected in the 11th Round of the N.S.S (56-57) have 'identified' lack of land resources³ as the crucial cause of poverty

¹ Minhas (74) enlists a number of feasible suggestions to be conceived by any programme to eradicate abject poverty. They are; (i) reduction in inequalities in the distribution of land. (ii) utilization of underutilized or unemployed rural resources. (iii) raise the productive capabilities of the rural sector (iv) raise the required resources locally.

² Size-productivity nexus, if translated into real quantifiable units i.e, farm income, accurately measures the extent of utilization of land and its impact on the incidence of poverty. Operational holdings without operational effect do passively contribute to reduction in poverty. Multiple regression analysis as the analytical tool accommodates Per Capita Land (PCL) and household size as the powerful explanatory variables.

³ Dandelkar and Rath (71), pp. 12-14.

and delineated the rural poor as small landholders with cultivated holdings of <0.5 acres and particularly <2.5acres”¹.

Rather a paradoxical situation is pictured by Vaidyanathan(74) by emphasizing that the ‘rich households’ do not consist exclusively of big landholders nor all big land holders ‘rich’. The computational procedure (adopted by the author) helps him in carving out a figure representing the poor as the landless or operational holders of <0.5 acres² (size of landholdings and household size are used as the explanatory variables in the regression model)

Unique blend of analytical elegance and logical reasoning lifts the comprehensive study by Raj and Tharakan(83) (on the far reaching implications of agrarian reform initiated in Kerala after the states formation in1956) to level of unparalleled intellectual excellence. Details regarding inter- temporal changes in the structure of landholdings in Kerala (after the implementation of land reforms), status of tenants (before the abolition of tenancy), historical and political background leading to changes in rural economic relations and formation of agricultural labourers and factors contributing to an enhancement in agricultural output during the period- (56-79) are allotted a fair amount of space in this analytical exercise. But this well structured study has absolutely failed in capturing the incidence and intensity of poverty in Kerala. A restructured framework to suit the regional specificities is required to change its focus towards the poor.

¹ Ibid. P.16. To the category of the rural poor, the authors include agricultural labour households, estimation of which is based on the data from 11th and 12th Rounds of N.S.S.

² Data from 11th and 14th Rounds of N.S.S constitute the base of calculation even though the incidence of poverty differs between the two.

Sanyal introduces an innovative method to measure poverty by treating land owned ¹ as the classification variable in the identification of the poor. The exercise of inter-state comparison of the structural change in landholdings done on the basis of data of various Rounds of N.S.S ² reveals the trends in landlessness and corresponding changes in landholding pattern of the households with equal importance to the tenancy conditions prevailing in different states. Trends in poverty across states and at a national level are examined by using (i) Sen index which is highly distribution sensitive (ii) Sengupta and Joshi's estimate of PL in terms of MPCE at current prices following the norm of 2200 Kcal and (iii) land-owned as the determinant of household levels of living ³.

The strength of this analytical exercise lies in its elegant computational device used in designing state-level PL in terms of size of household ownership holding which ranges between 12.50 acres for Maharashtra and 2.5 acres for most of the states except A.P, Gujarat, Karnataka, M.P, Rajasthan and Tamil Nadu,⁴. Reduction in

¹ Three specific categories of land holdings-ownership holdings, operational holdings and ownership operational holdings- are brought into the analytical framework with leased land constituting the base of such classification.

² The major data source of this study is 8th Round (July 54 to April 55), 17th Round (September 1961 to July 62) and 26th Round (July 71 to September 72) of N.S.S.

³ Household level of living is presumed to be an increasing function of the amount of land it owns. An innovative feature of this study is that PL is designed in terms of the size of household ownership holding. Therefore Sen index is given by $P = h \cdot (1 + l^{-1}) G_p$ where h = proportion of households with ownership holding $< H$; l = land-gap ratio G_p = Gini co-efficient of the poor and H = PL in terms of size of household ownership holding.

⁴ The value of 'h' for these states is computed as 5 acres.

landlessness is held partially responsible for a reduction in poverty whereas inequality in land ownership is identified as its important cause. But the total exclusion of income differentials across operational holdings of different sizes stands out as the inherent weakness of this study.

An optimistic note recognizing (i) land holding class as a relevant indicator for targeting, (ii) transfers (believed to be more productive)¹ to the rural land-poor as an effective step to reduce aggregate poverty in Bangladesh is left behind by Ravallion and Sen.(94).

Basely and Burgess (2000) make an attempt in analyzing the impact of land reform on growth and poverty (at the state level) in India. This highly comprehensive study considers reduction in poverty strongly associated to two kinds of land reform legislation²- tenancy reform and abolition of intermediaries. Land reform is viewed as a positive factor benefitting the landless by raising agricultural wages. This study has examined the positive contribution of land reform on poverty reduction by introducing per capita income as an analytical variable. Highly coordinated data system³ provides the authors an option of using a wide spectrum of variables to analyse the relationship between poverty reduction and land reform.

¹ The argument that land-based redistribution can yield substantial pro-poor productivity effects is based on the empirically tested theoretical proposition of an inverse relationship between farm-size and productivity.

² Land reform legislation is classified into four main categories on the basis of the purposes for which it is enacted namely (i) tenancy reform (ii) abolition of intermediaries (iii) ceilings on landholdings and (iv) consolidation of holdings.

³ Data of 22 Rounds of N.S.S spanning 35 years (1957-58/ 90-91) put together by Ozler, Datt and Ravallion are used in this study.

Brief review of earlier studies (made in this chapter) reveals the fact that the critical issue of poverty, to be considered as a systematic disorder causing gnawing effect on the economy, has undergone several phases of ideological transformation and received absolutely sophisticated treatment (ie, refined analytical procedure adopted to analyse the conceptual intricacies and practical implications) from eminent economists and researchers. An overall evaluation of earlier literature favours the view that the conceptual evolution of poverty, to a certain extent, has reached a point of saturation leaving limited space for further analytical scrutiny. Hence the posterity should prove its merit by developing a technique to rate the success of such past endeavor (ie, by bringing the results of such effort to implementation channel.)



Chapter III

Measurement of poverty

A theoretical exercise

Brief discussion, conducted in the previous chapter (Chapter II), on poverty based on the valuable contributions of eminent economists and researchers reveals the fact that poverty is a multi-dimensional phenomenon. Hence it is to be analyzed from different angles¹ for having a comprehensive definition and satisfactory interpretation. Its ideological metamorphosis from ethical considerations to refined socio-economic contours reveals the subtle and elegant nature of modification carved out at each stage of transition. But the fact that the evolutionary stage of the concept of poverty has not been reached becomes all the more obvious from the plethora of dissective exercises done by recent theorists² and researchers in this field. Any attempt to theorise the concept of poverty with practical implications bears fruits only when its allied parameters are examined properly. This is done under four sections: Section I deals with various concepts of poverty. Section II: examines the intricacies involved in the construction of poverty line (PL) whereas Section III presents different methods evolved for measuring the incidence, depth and severity of poverty. Section IV, tries to capture the trends in and structure of rural poverty³ in Kerala.

¹ Religious thinkers, anthropologists, sociologists and economists have elucidated this phenomenon rather lucidly. Evolution of the concept of poverty traces the process of transformation from its abstract conceptualization to inflexible concretization.

² Ahluwalia M.S, Bardhan P.K, Dandekar V.M, and Rath, N. Dantawala M.L, Griffin .K, Lipton M, Sen A.K, Hanumantha Rao, C.H. Kakwani, N.C etc to quote a few names from that long list.

³ Emphasis is placed on the alternative methods of computation of poverty using popular measures of poverty and all available poverty lines formulated and updated periodically.

Section III.1

Conceptualization of poverty involves critical issues which become ostensible in the discourse on alternative approaches to poverty. Biological approach ¹ to the concept of poverty leaves behind marked signs of dissonance among economists who raise certain conceptual and methodological problems ² in accepting “survival fitness” as a concept of poverty.

The idea that skewed distribution of income ³ may exhibit symptoms of poverty at large has gained only limited acceptance. Some studies define poverty as income

¹ Seebohm Rowntree (1901) tries to translate the total earnings of a family into minimum necessities to maintain physical efficiency.

² Inter-group and inter-regional variations in nutritional requirements are not captured by this approach. The choice of a minimum-cost diet for meeting specified nutritional requirements is again brought under severe criticism. But the argument that “people’s food habits are not determined by a cost minimization exercise” should be viewed skeptically since the inadequacy of limited income to preserve their food habits may induce them to prefer a low-cost diet. Again, intra-household nutritional deficiency is not given adequate importance as the ‘unit’ of study is the ‘family’. Reformulation of the biological approach is recommended due to these apparent lapses. Sen (81). Martin Rein (71) is a staunch critic of this ‘Subsistence-level definition’ of poverty.

³ Millor and Robey (71) treat poverty as inequality, Sen (73) visualizes a positive association between poverty and inequality. But Sen’s argument to identify poverty with inequality cannot be accepted unopposed since the link between the two is related to fragile base of arbitrarily imposed minimal standard of living. [Sen, (73) p.68] On the other hand, Atkinson (70), Kolm (76), Blackborby and Donaldson (78, 80) place these two concepts poles apart.

inequality between the bottom 20 percent or 30 percent of the population and the rest of the society ¹. This view emerges from the theoretical dialect that any genuine attempt in transferring income from top to middle income range leaves the perception of poverty unaffected. ²

Absolute poverty, on the one hand, is defined in terms of nutritional deficiency and malnutrition. In an absolute sense a person is considered poor if he does not get the minimum required calories from his food basket. It has also been defined as lack of basic necessities of life ³ or as a problem of want and deprivation. Much debated issue of recognizing a nutritionally protected minimum consumption bundle as the universally acceptable conception of poverty dilutes the gravity of its vagueness by allowing malnutrition to capture a part of the idea of poverty. Stress on the irreducible core of absolute deprivation in the concept of poverty' ⁴ indicates the absolute disinclination to accept relative deprivation as the sole basis of a set of basic needs'- its non-fulfillment constituting the test of poverty.

Any attempt at conceptualising poverty may fail in containing ideological aberrations if detached from actual reports of starvation, malnutrition and visible

¹ Ibid.

² Sen (81) p.15. His partial disagreement with the view that poverty and inequality are conceptually equivalent is strongly expressed. Most of the studies using relative poverty concept follow V.R. Fuchs (71).

³ Michael E. Rose (1972) p.6.

⁴ Sen (81) Op. cit. p. 24

hardship. The process of quantification of poverty filters away its most indispensable and well representative attributes ¹.

The most popular and widely used approach in defining poverty is to draw poverty line at an income level which is just sufficient to a person or a family to meet the² socially accepted basic minimum needs. But the process of formulating an index of human development as the new criterion for measuring human poverty is widely discussed and well-documented. Recent shift in emphasis from income poverty to human poverty unveils degree of perfection attained in ideological evolution construing human resource as an instrument of production rather than consumption. Diffused

¹ The primitive techniques used in defining poverty in terms of nutritional adequacy, realization of minimum needs, lowlessness of income and relative and absolute deprivation blocked the inflow of novel ideas into the current literature on poverty. The debate still continues unabated. But the massive attack on the earlier approaches on poverty paved the way for a surge of more realistic norms to be considered as the base of poverty measurement.

² The modern trend has twisted in favour of a strong preference for social indicators such as life expectancy, literacy, child mortality, etc.. over malnutrition or shortfall of income. It is quite obvious that income poverty defined in terms of a basic minimum caloric intake captures only a limited perspective of what poverty really connotes. Various composite indicators of 'results' rather than 'inputs' have been proposed and extensively used instead of nutritional statistics and income data. (Morris, M.D (1979) p. 32. Human Development Report (HDR) of the last decade is well-accepted as an authentic record which throws more light on the composite approach towards human poverty. The rigorous computational procedures adopted in various HDRs for formulating Human Development Index (HDI), Human Poverty Index (HPI), Gender Development Index (GDI) etc.. accept a disaggregated approach to analyze human poverty. But many vital dimensions of human development are not captured by these comprehensive devices due to their unquantifiable character.

strategies of poverty alleviation¹ are the direct outcome of these contrasting conceptual issues involved in poverty analysis. But the problems of comparability, aggregation and quantification of supplementary information required for a fuller and deeper understanding of poverty paved the way for the construction of a conventional PL as a pragmatic and standardized tool for identifying the poor.

Section III. 2.

Any analytical study on poverty considers poverty line² as its starting point. The process of construction³ of poverty line involves a partially successful attempt⁴ at translating the qualitative status of being poor into quantitative dimension of income / consumption.

¹ Conceptual difference between growth-mediated security and support-led security becomes more prominent.

² Poverty line is defined as the monetary cost to a given person at a given place and time of a reference level of welfare. (Martin Ravallion, (97b), p.3)

³ It is based on the assumption that there exists pre-determined and well-defined standards of consumption.

⁴ Inherent problems associated with equating qualitative aspects of poverty with quantitative dimension of income / consumption are too grave to be contained in a one-dimensional PL. Hence a number of approaches to the construction of PL can be found in literature on the subject.

The customary practice of making a distinction between 'absolute poverty line'¹ and 'relative poverty line'² helps in the assortment of certain conceptually sound norms bearing less practical validity³.

¹ Absolute poverty line is defined as the cost of a bundle of goods deemed to assure that basic consumption needs are met in the specific domain of the poverty comparison (Martin Ravallion, (92), p.26). But variant nature of the constituent of 'basic needs' requires thorough scrutiny.

² Relative poverty line is defined as a relative position in the scale of consumption/income/ wealth. This is recommended by those who think that poverty is basically a general form of relative deprivation which arises from an unequal distribution of resources rather than an actual shortage of them. (Townsend, (1971), p.2). Generally, relative poverty line is described as a proportion of the mean level of the distribution under consideration. It rises with average expenditure. This practice of distinguishing between relative and absolute poverty lines is still followed to pacify those who are ideologically different. Extremely different views favouring both versions of PL can be extracted from the literature on poverty. The argument that a 'poverty line should always be absolute in the space of welfare' (Martin Ravallion, (1997), p.4) is perceived against the notion that 'a fixed absolute poverty standard' applicable to all societies and all times is a chimera (Atkinson, (1987) p. 931)

³ Any deliberate attempt at fixing an absolute PL in terms of certain 'basic needs' to escape poverty invites the inevitable danger of keeping a certain percentage of population always at the brim of subsistence since its choice in a specific society may be crucial in mobilizing resources for fighting poverty.

Infinite array of theoretical exercises¹ arrange a constructive background for an extensive discourse on poverty line.

Highly mechanical way of theorization² directed towards renovating and broadening the base of poverty line leaves behind a consolidated approach for setting

¹ Conventional theorization in welfare economics lacks constructive tools to formulate a poverty line. Postulating utility function, poverty line is interpreted as a point on the consumer's expenditure function which enables the household to attain a given level of utility at maximum cost at the prevailing prices and for given household characteristics. It tries to identify a poverty level of utility in terms of money. Theory seldom captures reality. Any attempt at elucubrating a poverty line based on fallacious presupposition may provide only invalid results. The utility approach which presumes poverty line as the cost of a given level of utility is even more a delicate mechanism since the poor are influenced more by cost than utility. Whether a reverse test suits the situation can be verified only in the light of possible inferences from an analytical study on the consumption pattern of the poor. Existing evidence i.e, same pattern of consumption, limited income, preference to have low cost food basket favours such a reciprocity.

² Rigid theoretical model formulated for deriving a poverty level of utility is given below in nutshell.

$C = c(q,x) \dots (1)$ where $C =$ household capabilities; $Q =$ Quantities of goods consumed by household.

$U = w(c) \dots (2)$ where $u =$ utility

$U_z = w(cz) \dots (3)$ where $U_z =$ Poverty level of utility; $cz =$ Value of capabilities to escape poverty.

The rigid structure of this model seems to have been developed on the assumption of an aggregate and generalized concept of household capabilities. Again, the conversion of rather abstract concept of poverty level of utility into corresponding value in concrete monetary units involves complex and unrealistic computational procedures having less power in feeling the actual pulse of the poor. It is absolutely unintelligible to expect 'the poor' to trot through an uncharted path to reach the undefined poverty level of utility.

capability-based poverty lines¹.

Further discussion on poverty lines incorporates two main methods- Food-Energy-Intake (FEI) method and Cost of Basic Needs (CBN) method- of setting them². Their use in empirical studies³ gained unopposed acceptance. FEI method tries to find a monetary value of the PL at which basic needs are met. Under this method PLs are set by computing the level of consumption or income at which households are expected to satisfy the normative nutritional requirement. The CBN method, on the other

¹ Sen (83). Following the traditional notion of equating PL to attainment of basic capabilities, Sen has given a conceptual design to poverty in terms of a fixed set of capabilities i.e, activities a person is able to perform. But his attempt to define standard of living solely in terms of capabilities is self-defeating.

² A number of approaches to the construction of poverty lines that claim to have some scientific basis are discussed in literature on the subject. They are (i) Minimum Necessary Approach (ii) Minimum Sufficiency Approach (iii) Distribution Threshold Approach (iv) Committed Consumption Approach and (v) Stated Minimum Approach.

³ Dandekar and Rath (71), Greer and Thorbecke (86), Paul (89) used FEI method whereas Rowntree (1899) used CBN method in his seminal study of poverty in York. These objective methods used for computing PLs are more popular in developing countries.

hand, stipulates a consumption bundle deemed to be adequate for basic consumption needs¹.

Certain anomalies² crept into the process of constructing objective PL paved the way for its reformulation in the form of subjective poverty lines,³ which is recognized as a more realistic, promising and appropriate tool to represent self-reported perceptions of welfare adequacy.

¹ The scope for dispute is weakened by making an allowance for non-food consumption, inter-regional, inter-sectoral and inter-temporal differences in the relationship between food-energy intake and consumption or income. An alternative solution to the problem of setting a PL is prescribed which attempts to identify as 'poor', the poorest percentage of the population at some base date or place and use the corresponding consumption or income level for this percentile as the PL for comparison with other dates or places. (Martin Ravallion (92), p.29) Orshansky (65) line, on the other hand, is the outcome of an entirely different computational procedure adopted to include an allowance for non-food consumption. This method tries to find the minimum cost of a food bundle which achieve the stipulated energy intake level and then divide this by the share of food in total expenditure of some group of households deemed likely to be poor. Orshansky (65) used it to measure poverty in U.S.A

² Objective Poverty Lines failed to reflect the inherent subjectivity in the notion of basic needs.

³ Subjective Poverty lines are constructed on the assumption that poverty lines are inherently subjective judgments people make about what constitutes a socially acceptable minimum standard of living in a particular society. (Martini Ravallion, 92 Op.Cit, p.33.) They have been constructed on the basis of answers to the minimum income question (MIQ). Subjective Poverty Line is proposed to be a more fundamental concept for poverty analysis.

Revival of the study on poverty in India¹ led to a rejuvenation of attempts on an equal footing to construct a poverty line for India². But the process of formulating PL fixes its base on a stringent minimal private consumption expenditure by assigning the state, the role of a generous facilitator of basic necessities³. Conceptually, the question

¹ No effort is made here to explore various factors which necessitated a renewal of study on poverty in India.

² Mention may be made of the PL construct found in J. Patel (65), P.D Ojha(69), Dandekar and Rath (71) Bardhan (70,71,73,74),Minhas (70). Some researchers have worked out PLs with Perspective Planning Division (PPD,62) PL as the bench mark by making periodic modification and adjustment for price changes. Among the two approaches used for constructing PLs – Basic Minimum Needs and Core Basic Minimum Needs - the former is more widely used in most of the Indian studies on poverty. Highly disaggregated approach towards the construction of PL is a recent development which led to the formulation of state-specific, sector-specific and class-specific PLs. Micro level studies on poverty coupled with specifically designed PLs are supposed to provide more meaningful and reliable results.

³ An inter-temporal comparison of the estimate of rural and urban PLs adjusted periodically for price fluctuation discloses a stingy and rigid structure of PL. It indicates a rather risky alignment i.e, failure of the state machinery to provide public consumption goods adequately to the poor will dip them into the depth of poverty. A judicious blend of both adequate private consumption expenditure and generous provision of public consumption goods demands a 'swollen' consumption basket modified for changes in consumption pattern and updated for price variations .The danger is even more serious in the case of calorie based PL. Policy prescription may be mistaken for doctor's prescription. If poverty eradication policies are designed on the basis of such PLs, the risk of turning a major chunk of population as mere recipients of whatever is bestowed upon them by a liberal state cannot be ruled out.

of finding a suitable base for super imposing PL revolves around four major criteria namely;

- i. The proportion of expenditure taken up by specified essential items such as food.
- ii. The caloric value of food.
- iii. The cost of a balanced diet, and
- iv. The cost of the essentials for a tolerable human existence.

A quick glance at estimates of PL from different sources for both rural and urban sectors reveals the structure and criterion accepted as its base¹. Planning Commission (62) has set the national minimum needs at Rs.20 per capita per month without disclosing its consumption basket. But PL designed by Planning Commission presumes that public consumption goods are provided for by the state². Considering this PL as a bench mark, several economists³ have attempted to formulate it for different areas, states and years. Attempts have also been made Da Costa (69), Ojha (70) Dandekar and Rath (71) Rudra (74) and Kalirajan (76) to construct PLs with slight normative differences. While Dandekar and Rath (71) proposed a caloric-based PL with a minimal nutritional norm of 2250 calories per person, Rudra (74) preferred to base it on minimum food

¹ Refer Appendix III.1. to this chapter for details. Only a very short list of authors coupled with the corresponding norms (accepted by them) for formulating PLs is presented in this context. List nears completion only when the names of P.D. Ojha(69), V.S Vyas (71), A.Vaidhyanathan(74), Nikhilesh Bhattacharya, A. Coondoo, P. Maiti and R. Mukherjee (1980), Bhasker Dutta (80), D.S Tyaji (82), J.W Melloor and G. Desai (86), S Mahendra Dev (88), S. Mahendra Dev, K.Parikh and M.H. Suryanarayana(90), Jain Tendulker (90), Kakwani and Subharao (90) are included in it.

² PPD (62)P. 13

³ Bardhan (70) and Minhas (70) started with the national minimum recommended by the Planning Commission even though Bardhan did a notional separation of the minimum between rural and urban India.

needs recommended by Sukhatme (65), FAO (73) and Patwardhan (57) respectively¹. Bardhan (70,71,73,74) accepted minimum diatory norms suggested by Patwardhan as the base for the construction of rural PL.

To provide a brief account of certain refined tools used by many economists² to adjust PL for various states and subsequent years seems relevant. Laxity on the part of National Sample Survey Organizations (N.S.S.O)³ to publish quantity data on various items of food consumed for every round of its consumption expenditure survey made the estimation of the incidence of poverty in successive years a difficult task. This problem was effectively solved with the help of appropriate price indices⁴.

¹ Refer Appendix III.2 to this Chapter for Minimum Food Needs (MFNs) for India.

² Kalirajan (76), Ahluwalia (78), Minhas et. al. (87), Minhas and Jain (90) used different price indices for adjusting PL to price changes both at the national and state level.

³ Most of the researchers who derived PLs on the basis of nutritional requirement used wholly or partly the household consumer expenditure data collected by the National Sample Survey Organization (N.S.S.O). In spite of its various uses, N.S.S data have been criticized by many experts on various counts. Kadekodi et. al. (92).

⁴ One price index used for such purpose is Consumer Price Index of Agricultural Laboures (CPIAL). Planning Commission used other price indices like Wholesale Price Index (WPI) and price index implicit in the current and constant price estimates of total national private consumption expenditure published by Central Statistical Organization (CSO) Minhas et. al. (87) prepared the CPI by using the basket of commodities reported to have been consumed by the households in the middle ranges of percapita monthly expenditure in each state near which the PL lay and which corresponded to the 40 or 60 fractile groups of the rural population for a base year 60-61 and the prices for the respective baskets from year to year from the CPIAL..

Minhas et. al. approach to the preparation of Consumer Price Index (CPI) specifically designed for adjusting the PL for price changes for every state indicates a marked deviation from the prevailing methods of construction of price indices. This highly disaggregated and rather discriminatory price index prepared by Minhas et. al. promises to be a relatively better index than Consumer Price Index for Agricultural Labourers (CPIAL). Clear-cut guidelines are given by the Expert Group of Planning Commission (93)¹ for the preparation of a price index for rural India.

In an effort to give a practical exposition to PL on the basis of certain normative configurations, Dandekar and Rath² estimated PL at per capita annual expenditure of Rs.170.8 per rural areas and Rs.271.7 for the urban areas. Calculations made on the basis of Dandekar and Rath estimates of PL placed Kerala at the top with highest incidence of poverty of 88.9 percent in 1960-61. The necessity of framing an independent estimate of PL for Kerala may be considered as a sign of strong discordance against two serious

¹ It is the latest official body appointed to review the whole problem of measurement of poverty in India. As per its recommendation a price index should be prepared by "taking the commodity group indices available from CPIAL for rural areas and the consumption pattern of the people around PL at the National level for 1973-74 as weights". For individual states, the Experts Group suggests this all India weighting diagram to be used along with state- specific price indices from the respective state CPIALs.

² To make themselves free from the allegation of basing PL solely on the N.S.S data, Dandekar and Rath revised these figures to Rs.180 and Rs.270 following the recommendations of the Planning Commission (62). They accepted the norm of 2250 Kcal per capita per day and defined PL as that expenditure level at which the intake met this norm. They estimated that for Kerala a monthly per capita expenditure (MPCE) level ranging between Rs.34 and Rs.43 corresponds to 2200 calories per capita per day.

Lapses ¹ in the analytical procedure adopted by Dandekar and Rath. Bardhan (73) estimated Rs.16.10 at 1960-61 prices as the PL for rural Kerala. Ahulwalia (78)² too was complacent with a PL fixed at Rs:15 per person for 30 days at 1960-61 prices as the consumer expenditure level.

¹ Resonance of strong disagreement with the inferences derived by Dandekar and Rath (71) was heard in the southern tip of India. The study of Centre for Development Studies (C.D.S) (77) based on the data collected through Dietary Survey and Food Balance Sheet Analysis for Kerala pinpointed visible lacunae in Dandekar and Rath's study- (i) calculations made by Dandekar and Rath are based on the consumer expenditure data which excluded certain locally available nutritive items like banana, tapioca, coconut and fish and hence sizeable proportion of calories remains unaccounted. (ii) uniform application of calorie norms for all states without looking into the details like age group composition, climate and proportion of workforce in total population may give unreliable results. Average per capita daily calorie requirement is comparatively lower in Kerala since the proportion of work force in the total population in Kerala is lower than the national average. The average per capita calorie requirement for India is estimated as 2400 whereas for Kerala it is estimated to be 2200 in 1960-61. C.D.S study came out with an average per capita per day availability of 2339 calories during 61/62 to 70/71 which was 720 calories more than what was prescribed by the N.S.S data. But no serious effort had been taken by it to estimate a suitable P.L for Kerala.

² Refer Table III.1 for details. All that was considered as the deficiency of this PL was its 'nutritional' deficiency detected after making an alliance with Sukhatme(77).

Table III.1
Rural Poverty Lines : Consumption per person for 30 days.

States	56-57	57-58	59-60	60-61	61-62	63-64	65-65	65-66	66-67	67-68	68-69	70-71	73-74
A.P	14.1	14.1	15.4	15.5	15.7	16.2	19.4	21.2	24.3	25.0	25.9	26.5	37.5
Assam	15.0	17.0	15.8	16.3	16.1	18.4	21.4	23.6	31.0	35.7	33.9	33.1	42.9
Bihar	15.6	17.1	16.1	15.8	16.3	18.6	23.7	28.3	36.2	39.5	29.5	32.5	53.2
Gujarat	16.5	16.5	15.8	16.8	17.1	17.8	22.3	22.9	25.7	26.9	26.9	29.1	41.3
Karnataka	13.9	13.9	15.4	15.6	15.6	17.1	22.8	26.7	27.9	29.2	28.4	29.3	42.9
Kerala	15.9	15.2	16.3	16.1	17.1	17.6	21.3	24.2	25.9	27.7	31.4	34.5	44.4
M.P	14.2	14.8	14.2	14.1	14.5	16.8	19.6	22.0	28.5	30.9	27.5	27.9	43.6
Maharashtra	15.7	15.8	16.5	16.0	15.7	17.7	24.2	25.4	28.0	29.3	28.3	30.7	44.2
Orissa	13.8	14.0	14.4	14.5	14.8	19.0	20.7	23.5	27.7	30.3	31.6	30.7	40.9
Punjab& Har yana	15.7	16.0	16.4	15.9	16.5	18.2	22.1	21.9	27.7	30.7	30.7	30.8	43.4
Rajasthan	14.1	13.5	--	14.7	13.8	15.2	19.4	20.6	24.6	25.4	26.8	25.4	41.7
T.N	16.1	16.1	17.2	16.4	18.5	19.8	22.6	23.5	28.7	28.2	29.0	28.5	39.7
U.P	14.6	15.6	14.9	14.5	15.2	19.3	23.8	23.9	30.6	34.2	26.0	26.5	43.4
W.B	18.1	19.5	19.9	18.1	19.0	24.0	24.6	25.3	30.3	43.6	36.0	37.3	50.0
All India	14.6	15.1	15.3	15.0	15.5	17.7	21.3	23.3	28.5	30.9	27.8	28.8	42.9

Source : Ahluwalia, (78).

Rigorous exercises done to construct state-specific poverty lines should be viewed as rather enthusiastic and ambitious effort, of economists and researchers to move nearer to reality, by accommodating state specificities associated to population structure, activity composition, climate and topographical price structure and their trends over time, consumption basket of the poor and its compositional changes overtime, locally available food items, highly disaggregated calorie norm etc.¹ Table (III.2) contains the PL for each state estimated for 1961 -62 by Dandekar and Rath by inflating it to 1971-72, with state - specific CPIAL and simultaneously estimating the PL for 1971-72 on the basis of the NSS Consumer Survey Data for that year. A closer look at the figures entered in this Table² brings home the fact that Kerala had the highest poverty norm irrespective of the differences in the computational procedures. A very same position is given to Kerala with respect to poverty norms for years 1977-78 and 1983³ computed directly from consumer expenditure survey data of the NSS on the basis of calorie norm of 2250 Kcal and simultaneously by applying the price index prepared by Minhas et. al. (90) to the 1977-78 PL to estimate the PL and the percentage of population below it in 1983. Sector specific poverty lines computed by Minhas et. al. (91) at the state level for 1970-71, 1983 and

¹ Calorie requirements differ in accordance with the structure of population, their activity composition, its age-sex composition, sectoral allocation of population etc. For example, the calorie requirement for a sedentary worker is approximated to 2400 while that for a heavy worker is estimated to be 3900. (CDS, (77) P. 32.)

² A detailed analysis of inter-state and inter temporal comparisons of PLs is not attempted here since attention is focussed more on finding an approximately appropriate PL designed by economists for Kerala.

³ Refer Table III.3.

87-88 are presented in Table III. 4¹. For computational purpose they have taken the All-India rural and urban poverty lines as exogenously specified by the Planning Commission i.e, monthly per capita total expenditure (MPCTE) of Rs.49.09 (rural) and Rs.56.64 (urban) at All-India level both at 1973-74 prices. But state specific poverty line for rural and urban areas is calculated at 1973-74 prices on the basis of price index constructed for the middle range population.

¹ Process of constructing an all encompassing PL assumes the risk of compressing various essential factors into a unique base. In this case, the possibility of deriving a highly twisted and refracted picture cannot be ruled out. Basing poverty line on the criterion of uniform calorie norm for all sections of population itself is an erroneous procedure. The decision (Planning Commission) to substitute an alternative approach (Rath, 96, p.91) of 'ideal method' for 'practical considerations' measures the conceptual difference between the ideal and practical methods used to compute poverty line. Idealism has to be sacrificed for practical considerations. Planning Commission has absolutely failed to compute a more realistic state-specific poverty line by making maximum use of the available data published by N.S.S.O.

Table III.2

State-specific PL for 1961-62 and 1971-72 directly calculated (calorie norm : 2250)

and for 1971-72 calculated by inflating 61-62 line by using the CPIAL

Poverty line (Rs)

States	1961-62	1971-72	Adjusted by CPIAL 71-72
Rajasthan	120	341	211
U.P.	146	316	280
H.P.	147	292	306
J & K	165	292	277
Punjab (Including Haryana & Himachal Pradesh)	165	414	338
Gujarath	164	523	300
Karataka	172	414	330
Bihar	169	414	350
Orissa	167	414	372
W.B.	199	523	418
Assam	233	523	494
T.N.	235	468	439
Maharastra	238	523	493
A.P	236	445	432
Kerala	464	690	979
All India	170	414	340

Source : Rath (96)

Table III.3

**The 1961-62 PL for states inflated by the state-specific price index on Minhas et.al for
1977-78 and 1983 and compared with PI directly calculated**

Calorie norm 2250

POVERTY LINE (Rs.)					
State	1977-1978		1983		Calorie level at PL
	Direct	Price adjusted	Direct	Price adjusted	
A.P	701	727	1300	1088	<2127
Assam	714	752	1512	1262	<2128
Bihar	614	598	1107	1011	<2081
Gujarat	801	473	1487	785	<1521
Haryana	680	1145	1371	1735	>2500
Himachal Pradesh	648	1158	1200	1922	>2900
J & K	565	561	1085	875	<2053
Karnataka	614	535	1248	883	<1919
Kerala	936	1559	2080	2660	>2500
M.P	582	520	1055	795	<1956
Maharashtra	689	803	1398	1274	<2230
Orissa	654	576	1229	1021	<2000
Punjab	774	630	1498	964	<1743
Rajasthan	543	412	1168	609	<1800
T.N	777	728	1762	1256	<1900
U.P	555	500	1005	782	<1900
W.B	658	668	1435	1091	<2000
India	648	568	1267	918	<1952


Source : Rath (96).

Table III. 4.**State-wise Poverty lines- for rural and urban- for 1970-71, 83, and 87-88****Rs. Per month / per person.**

State	Rural			Urban		
	70-71	83	87-88	70-71	83	87-88
A.P	30.15	80.31	105.43	38.69	104.69	151.28
Assam	38.53	103.50	140.23	38.57	96.23	130.61
Bihar	37.06	105.33	136.56	42.09	116.81	160.73
Gujarat	33.64	92.64	130.34	41.58	120.48	175.25
Haryana	35.77	95.27	132.85	37.56	103.46	143.36
H. P	35.77	96.49	135.53	34.90	92.89	130.19
J & K	30.83	95.37	131.73	30.65	90.78	133.71
Karnataka	31.63	87.37	116.04	39.47	110.36	162.62
Kerala	38.62	110.23	154.83	42.12	125.71	172.33
M.P	31.86	87.86	118.06	43.22	121.26	176.11
Maharashtra	34.96	97.45	131.31	41.54	126.05	177.25
Manipur	38.53	104.43	141.16	38.57	96.23	130.61
Orissa	34.13	103.53	131.04	44.86	129.94	170.41
Punjab	35.77	96.77	137.14	37.79	98.12	137.33
Rajasthan	31.55	90.50	135.68	40.09	112.92	164.31
T.N	31.74	99.77	125.49	37.09	117.26	166.71
Tripura	38.53	102.18	137.27	38.57	96.23	130.61
U.P	30.17	87.48	121.30	38.22	106.80	151.58
W.B	41.19	109.69	140.70	38.96	100.12	141.86
Delhi	35.77	96.45	136.85	46.38	122.15	182.55
All-India	33.01	93.16	122.63	39.04	111.25	158.31
Relative range in PL(%)	33.44	32.12	40.28	40.29	35.20	33.07

Source : Minhas et. al. (91).

T
338.43 : 364, 662 (500.6)
MAY



The traditional technique of valuation of PL basket in a particular year with the help of price index over years rather than in terms of calories in every subsequent round of N.S.S. consumer expenditure survey is used to work out poverty line in subsequent years by the Planning Commission and its Expert Group (93). The aggregation of available information about the essential prerequisites of an appropriate PL prepares an elegant background for the formulation of one which will fit into the prevailing conditions of the concerned region. The best known option¹ favours the application of calorie norms for an average Indian, rural and urban separately, to the consumer expenditure data by the N.S.S.O in every round of its survey. With an intention of estimating the incidence of poverty at the state level on an inter- temporal basis, PL based on two alternative norms of 2250 Kcal used by Dandekar and Rath for 1961-62 and 2400 Kcal for rural India suggested by the Task Force (1979) of the Planning Commission is computed for 1961-62, 71-72, 77-78, 1983 and 1987-88².

In short, the complex procedure involved in the computation of an appropriate poverty line with all essential requirements has positively influenced researchers and

¹ Rath (96) P.100. But the term 'average Indian' lacks definitional precision. The procedure discussed here to sharpen the technique is associated to incorporation of separate sectoral calorie norms based on age, sex and activity data about the state population.

² Refer Table 111.5

economists¹ to think in terms of a simple (single) PL to measure poverty even across regions within a country.

¹ Dubey and Gangopadyaya (98). They consider a two fold categorization of PL. The first category (the disaggregated set) assumes three PLs.[1. OPL -PL based on the official norm and updated using disaggregated price adjustment suggested by Minhas et. al. (88) 2. EOPL -PL based on the official norm and up dated using price adjustment suggested by Expert Group (93) and 3. APL- PL based on the alternative norm and updated using disaggregated price adjustment suggested by Minhas et. al. (88)] for different parts of the country whereas the second category again consisting of three PLs [1. A1OPL -All India Official PL used for all the states/ regions 2. AIEOPL - All India EOPL used for all the states /regions and 3. AIAPL- All India APL for all the states/ regions] assign the same PL to all parts of the country. PLs computed and classified into these six categories for 87-88 and 93-94 are given in Appendix III.3A

Table III.5

State-specific Rural Poverty Line at current prices

Calories Norm : 2250

State	1961-62	71-72	77-78	83	87-88
A.P.	236	430 (464)	701 (790)	1300(1549)	2616
Assam	233	498 (558)	714 (790)	1512 (2073)	2366
Bihar	169	383 (418)	614 (674)	1107 (1234)	1638
Gujarat	164	503 (520)	800 (893)	1487 (1449)	2270
Haryana	-	394 (416)	680 (798)	1371 (1542)	1807
H.P.	-	374 (602)	648 (762)	1200 (1348)	1633
J&k	165	301 (344)	565 (628)	1085 (1232)	1599
Karnataka	172	411 (445)	614 (651)	1248 (1408)	1923
Karala	464	703 (803)	936 (982)	2080 (2339)	3635
M.P.	147	264 (256)	582 (665)	1055 (1210)	1640
Maharastra	238	518 (614)	689 (821)	1398 (1692)	2262
Orissa	167	411 (468)	654 (681)	1229 (1352)	1713
Punjab	-	461 (507)	774 (866)	1448 (1561)	2220
Punjab (including Haryana H.P.)	-	393	-		-
Rajastan	-	329 (359)	543 (608)	1168 (1379)	1610
T.N.	-	468 (523)	777 (871)	1762 (2098)	3030
U.P.	-	320 (355)	555 (625)	1005 (1133)	1476
W.B.	-	515 (580)	658 (726)	1435 (1613)	1918
India	-	398 (440)	648 (735)	1267 (1460)	1973

Sources : Rath (96)

Notes : Figures in parenthesis represent PL for the respective years based on calorie norm of 2400.

But an impartial and independent attempt to evaluate the state - specific PL designed for Kerala by many economists reveal the necessity of peeling away its thin layer of imprecision in acknowledging the regional specificities to dilute the ambiguity involved in generalization¹. For chipping away the zone of inaccuracy involved in the estimation of incidence of poverty, alternative methods in different conceptual framework are used simultaneously in a micro level study on poverty ².

Section 111.3

Previous section was confined solely to the discussion on various issues associated to the pragmatic question of construction of poverty line in general and of designing poverty lines both at the national and state level with specific thrust on

¹ Apart from the regional disparities in the PL basket and discriminatory price indices, the factors which require attention are (i) impact of climatic factor on the consumption habits of Keralites(ii)morbidity index (iii)age-sex-wise activity level and intra household calorie requirement and distribution. Any scale used without acknowledging these valid information at the local level will not measure the incidence of poverty accurately. Aggregation of local level incidence of poverty will sum to state level poverty. But this suggestion to reformulate PL should not be mistaken for an attempt to reconstruct one for this study. Further study on an elaborate and extensive scale, by mobilizing adequate and reliable information about all relevant variables, is highly essential to develop an independent and all inclusive PL for Kerala at the regional level.

² Mohandas(86).In a micro study conducted at regional level, he has used four alternative concepts namely (i) Subsistence Income Criterion (SIC), (ii) Basic Needs Criterion (BNC) (iii) Average Income Concept(AIC) and (iv) the Criterion of actual intake of 2400 calories per capita in rural areas and 2100 calories in urban areas as is recommended by the Planning Commission.

Kerala. But for an effective analysis of 'poverty', a wider canvas with sharper tools for its measurement is required. Recently many methods (having both merits and weaknesses) have been developed¹ to fathom the intensity and extent of poverty. The picture becomes clearer when set against the background of a bird's eye view of both the traditional and modern poverty measures. This section makes an attempt to attain a glimpse of poverty measures of contrasting intellectual elegance and appreciable practical importance.

A most commonly used index, which is expected to prepare a solid ground for discussion of other indices, now in vogue is the traditional index popularly known as Head Count Ratio (HCR). This simplest measure of poverty is given by the proportion of population for whom consumption (or another suitable measure of living standard)/ income is less than the poverty line 'Z'. The Head Count Index is

$$H=q/n \quad \dots(1) \quad \text{where :}$$

q= number of people deemed to be poor.

n= total population.

The Head Count Index of poverty (H) has gained much popularity and wider acceptance due to its lucid nature, computational easiness and theoretically desirable properties. But HCR takes no account of the intensity of deprivation and magnitude of poverty. The dangerous implications of policy formulations based on HCR cannot be discarded unnoticed. The risk of concentrating on the least poor by totally neglecting the most in need in society is identified as the dangerous and serious implications of this index.

¹ Literature on poverty measure is somewhat large. Poverty indices widely discussed are based on axiomatic framework. Special mention may be made of Harrold Watts (1967,68), A.K.Sen (73,74,76) D.Thon (78,79), N.C. Kakwani (1980), N.Takayama (1979), Blackborby and Donaldson(1980), Clark et. al.(1981) and S.R Chakravarthy(1983)

Traditional measures of poverty encompass slightly refined class of measures which assume a twisted approach towards poverty gap as a new concept to measure the extent of poverty. Aggregate of individual poverty gaps defined as :

$$g = \sum_{i=1}^n (y^* - y_i), y_i < y^* \quad \dots\dots (2)$$

is identified as one such index. But the insensitivity of this index to interpersonal transfer of income among the poor and to the number of people sharing the gap proves to be its strong disqualification. The normalized poverty gap defined by Kundu and Smith (1983)¹ as

$$1_{ks} = \sum_{i=1}^n \left(\frac{y^* - y_i}{y_i^*} \right) \quad \dots\dots (3) \text{ where } y_i < y^*$$

belong to the group of relative poverty gap measures whereas the average poverty gap;

$$\bar{g} = \frac{1}{n} \sum_{i=1}^n (y^* - y_i) = (y^* - \bar{y}_p), y_i < y^* \quad \dots\dots\dots(4)$$

tries to discount the size of the poor. But attempts at translating the traditional poverty indices into new forms and moulds have not succeeded in wiping out their inherent weakness of insensitivity to transfers.

Poverty intensity ratio defined as ;

$$1_p = \frac{g}{\bar{y}^*} = \frac{1}{n y^*} \sum_{i=1}^n (y^* - y_i) \quad \dots\dots\dots(5)$$

combines the features of normalized gap and average gap. 1_p is the normalization of the aggregate gap by the total income that the poor would have had if each of them were just non-poor. Besides its insensitivity to incidence, discriminatory benefits shared by those remaining close to the poverty line are the attributory drawbacks of this index when analyzed policy-wise.

Normalized deficit ratio is another version of the aggregate poverty gap normalized by the Ny^* , the total income of the society at zero level poverty. The equation for normalized deficit ratio can be coined as;

$$1_w = \frac{1}{Ny^*} \sum_{i=1}^n (y^* - y_i) = \frac{n}{N} \left(1 - \frac{\bar{y}_p}{y^*} \right) < y^* \dots (6)$$

¹ Kundu and Smith (1983, p. 425).

which can be shown to be a product of poverty incidence ratio, H_p , and poverty intensity ratio I_p in the following way;

$$I_w = H_p I_p \dots\dots\dots(7)$$

Foster, J; Greer, J; Thorebecke, E; (FGT)¹ generalized (6) by raising the individual relative deprivation to a non-negative power λ ,

$$I_\lambda = \frac{1}{N} \sum_{i=1}^n \left(\frac{y^* - y_i}{y^*} \right)^\lambda \quad y_i < y^*, \lambda \geq 0 \dots\dots\dots (8)$$

which is equivalent to H_p when $\lambda = 0$ and to I_w when $\lambda = 1$. But when $\lambda = 2$, the result would be ;

$$I_2 = \frac{1}{N} \sum_{i=1}^n \left(\frac{y^* - y_i}{y^*} \right)^2 \dots\dots\dots (9)$$

All these indices of poverty try to equate an individual's deprivation with the short fall or gap of his income from the poverty line. But logarithmic poverty gap ratio is written as;

$$\tilde{I}_p = \frac{1}{N} \sum_{i=1}^n (\log y^* - \log y_i), \dots\dots y_i < y^* \dots\dots(10)$$

= $\log y^* / \hat{y}_p$ where \hat{y}_p is the geometric mean of the incomes of the poor². But its defects of being insensitive to incidence is easily rectified by defining the logarithmic index in Wattsian³ manner which can be written in an equational form i.e,

$$I_w^* = \frac{1}{N} \sum_{i=1}^n (\log \gamma^* - \log \gamma_i), \dots\dots \gamma_i < \gamma^* \dots\dots\dots(11)$$

¹ FGT (84)

² This measure gives greater weights to larger gaps. A transfer from a poorer poor to a richer poor would increase the magnitude of \tilde{I}_p . It is insensitive to incidence.

³ Watts (68)

which means I_w is obtained by dividing the aggregate logarithmic gap by the total population size, N . This measure is sensitive to incidence, intensity and inequality.

Relative geometric ratio;

$$\hat{I}_p = 1 - \frac{1}{y^*} \left(\prod_{i=1}^n y_i \right)^{1/n}, \quad y_i < y^* \quad \dots\dots(12)$$

is sensitive to transfer of incomes, among the poor but insensitive to incidence. Khare (86)¹ geometric mean, on the other hand, tries to correct the defect of \hat{I}_p by reformulating the equation in the following way, i.e,

$$I_k = H_p \hat{I}_p = H_p \left(I - \hat{y} / y^* \right) \quad \dots\dots (13)$$

This index proposed by Khare is a powerful index in the sense that it is sensitive to all dimensions of incidence, intensity and inequality.

Traditional poverty measures², if reformulated in a different mould to make them sensitive to all dimensions of poverty like intensity, incidence and inequality in the distribution of income bear the unique traits of modern poverty indices³.

Sen index (76)¹ in its original form based on the axioms of ranked relative deprivation and normalized poverty value,

¹ Khare, (86), p.66.

² For example poverty intensity ratio, generalized deficit ratio etc.. are found to be similar to Sen's index.

³ Fairly long array of more refined approaches to measurement of poverty is found in the literature with more thrust on Sen's index, Thon index, Takayama index, Kakwani index, and Atkinson index of poverty. An attempt to get a bird's eye view of all these indices is made in this study. If attention is diverted to elaborate computational procedures, and derivational exercises adopted by these authors, the potential danger of diluting the gravity of the real problem of poverty may be neglected unnoticed.

$$P_s = \frac{2}{N(n+1)y^*} \sum_{i=1}^n (y^* - y_i)^{n+1-i}$$

when reduced in terms of incidence index H_p , intensity index 1_p and inequality index G_p , assumes the following version.

$$P_s = H_p \left[1_p + (1-1_p) G_p \right] \dots\dots\dots(14)$$

Thon index (83) widely accepted as a good measure is the modified index designed to satisfy the original transfer axiom put forward by Sen. Defining poverty index, P , as the normalized weighted aggregate of individual gaps, Thon's index could be written as;

$$P_{TH} = \frac{2}{N(N+1)y^*} \sum_{i=1}^n G_i (N+1-i) \dots\dots\dots(15)$$

which can be reduced in terms of incidence and intensity ratio to;

$$P_{TH} = 2H_p 1_p + H_p^2 \left[G_p - 1_p - 1_p G_p \right] \dots\dots\dots(16)$$

Takayama ² (1979) index of poverty equivalent to Gini index of inequality can be written in the following form;

$$P_T = 1 + 1/N - (1 - N^2 - y^c) \sum_{i=1}^n y_i^c (N+1-i) \dots\dots\dots (17)$$

Equation (17), when converted to the reduced terms of H_p , 1_p and G_p takes the following form;

¹ Sen, (76)

² Takayama (1979) has expressed in strong terms of disagreement that Sen's index is less geared to relativities and that poverty should be considered as a problem of the society as a whole rather than that of a part. Hence total income distribution than partial should be given adequate importance.

$$\frac{H_p}{1 - H_p I_p} = H_p (1 - I_p) G_p + I_p (1 - H_p) \dots\dots\dots (18)$$

Kakwani (80)¹ has proposed an index of poverty as an improvement upon Sen index by basing it on a monotonic transform of G_p in the place of $(1 - G_p)$ in Sen index. He replaces G_p by a general index of inequality. Kakwani's index of poverty can be written as;

$$P_k = \frac{n}{N y^* - \sum_{i=1}^n \epsilon_i^v} \sum_{i=1}^n (y^* - y_i)^v, V > 1 \dots\dots\dots (19)$$

assuming 'V' to be the weighted average of poverty gaps.

Atkinson's index of poverty can be developed in the following way i.e,

$${}^2P_A = H_p \left[1 - \left(\bar{Y}_p / \gamma^* \right) (1 - A_p) \right] \dots\dots\dots (20) \text{ where ;}$$

$$A_p = 1 - (y^p / \bar{y}_p)$$

y^p = mean equivalent income of the poor

\bar{y}_p = mean income of the poor.

Above discussion was an attempt to throw light on some of the elegant and intellectually superior poverty measures accepted for all practical computational purposes. It reveals the fact that much intellectual energy has gone into the theory of poverty measurement over the last two decades and the virtual plethora of these more sophisticated poverty measures expands the domain of freedom of choice ².

¹ Kakwani, (80)

² It should be mentioned that Atkinson has not produced P_A .

Section IV:

Theory in practice: Trends and structure of rural poverty in Kerala

Theoretical formulations gain significance and validity only through their application. Process of theorization is not an end in itself. Attempts made periodically, at different levels to examine the trends, prevalence and depth of poverty by adopting the most sophisticated measures of poverty¹ coupled with variously designed poverty lines, project the practical dimensions of theorization. Moreover, the effectiveness of such endeavor can be gauged by its success in identifying certain decisive factors, which have acted positively to reduce the incidence and intensity of poverty. Impartial judgment of the tremendous effort made by researchers and economists to evaluate the performance of Kerala in fighting rural poverty holds key to this fact. Barring wide fluctuations in the incidence of rural poverty, Kerala is pictured as a state having scored remarkable progress in poverty reduction. State intervention induced by public action², strong initial conditions defined in terms of high irrigation rate, female literacy rate, low infant mortality rate, generous supply conditions³ of food grains and massive flow of foreign remittances⁴ weigh more in importance as factors which have contributed substantially to the reduction in rural poverty in Kerala. But a

¹ Foster, Greer, Thorbecke (84) class of measures of poverty. Op cit.

² Kannan, (95) Op Cit.

³ Datt and Ravallion, (98) Op Cit.

⁴ Kannan, (99) Op Cit.

picture displaying diverging dimensions of rural poverty in Kerala emerges from an array of inter-temporal analytical exercises conducted as apart of the all India studies¹.

Updated time series on poverty both at the national and state levels spanning the period 1951-94² (Table 111.6) present a unique opportunity to address a number of issues which are intrinsically temporal in character.

¹ This section is framed on the basis of data from a limited number of such studies and is designed solely for the purpose of identifying the popular measures of poverty, in vogue, and poverty lines used in measuring poverty in Kerala.

² This is one of the longest series of national household surveys suitable for tracking living conditions of the poor.

Table III.6

Poverty measures of (Rural) Kerala for 1957-58 to 93-94.

VSS Round	Survey Period	MC	H	PG	SPG	Gini
13	Sep 57-may 58	47.27	66.88	26.948	13.455	34.96
14	Jul 58-Jun 59	45.88	68.86	29.125	14.571	35.15
15	Jul 59-Jun 60	45.40	71.21	29.944	13.410	33.95
16	Jul 60- Aug 61	46.64	68.65	25.655	11.765	32.20
17	Sep 61-Jul 62	52.25	59.20	21.103	9.861	33.02
18	Feb 63-Jan64	49.50	63.24	21.070	9.140	30.18
19	Jul 64-Jun65	45.25	59.40	27.314	13.644	33.57
20	Jul 65-Jun 66	38.10	79.76	32.929	16.400	29.83
21	Jul 66- Jun 67	40.04	77.37	30.752	14.944	30.13
22	Jul 67- Jun 68	43.35	74.13	27.803	13.329	31.85
23	Jul 68 -Jun 69	48.49	73.76	30.237	15.205	41.38
24	Jul-69-Jun 70	40.17	78.15	30.913	15.168	30.92
25	Jul70- Jun 71	43.79	72.65	28.391	13.926	33.04
27	Oct 72- Sep 73	47.65	66.79	23.487	10.665	31.40
28	Oct 73- Jun 74	50.46	62.06	21.570	9.810	33.02
32	July77 -Jun 78	59.75	52.66	17.898	8.167	35.86
38	Jan83- Dec 83	67.70	43.70	11.687	4.296	33.88
42	Jul 86- Jun 87	72.58	39.66	9.996	3.508	34.82
43	Jul 87- Jun 88	72.90	34.67	8.284	2.714	31.70
45	Jul 89- Jun 90	66.29	38.87	9.582	3.328	27.88
46	Jul 90- Jun 91	68.81	33.80	8.246	2.789	27.24
48	Jan 92-Dec 92	77.70	34.15	8.635	3.099	34.70
50	Jul 93 - Jun 94	73.44	31.07	7.004	2.412	30.07

MC = Mean Consumption; H = Head Count Index; PG = Poverty Gap Index;
SPG = Squared Poverty Gap Index.

Source : Datt, (98)

Alternative dimensions of poverty¹ in rural Kerala corresponding to its incidence (H), depth (PG) and severity (SPG) for a period from 1958 to 1994 can be captured from Table 111.6. The incidence of poverty in Kerala registered a highly fluctuating trend during the late 50s and 60s whereas dramatic decline in poverty is experienced by the state spanning the period 1970-88. Rural poverty seemed to have declined remarkably during the early 90s. Trends in both the depth and severity of rural poverty followed more or less the same track to present Kerala as the best performer in making tremendous progress in poverty reduction. Kerala had the highest trend rate of decline in HCI of (-2.4) percent per annum. Kerala's success in fighting poverty can be equated to other dimensions of poverty viz. PG of -4.07 percent and SPG of -5.24 percent. More specifically, the highest trend rates of decline in poverty reduction in Kerala is followed by the highest trend rates of growth in mean consumption .

Rather a contrasting picture of alternative estimates of rural poverty in Kerala for 1983 and 93- 94 emerges from a slightly, twisted analytical procedure adopted in favour of an adjustment in the official rural poverty line at all India level based on per capita total expenditure (PCTE) per month of Rs49.09at 1973-74 prices for changes in the state specific middle range consumer price indices to derive the corresponding state specific poverty lines (Table 111.7)

Table 111.7
Poverty measures for (rural) Kerala for 1983 and 93.94

State	HCR		PGI		SPG	
	83	93-94	83	93-94	83	93-94
Kerala	47.18	34.79	0.1301	0.0833	0.0491	0.0291
India	49.02	39.65	0.1386	0.0929	0.0545	0.0314

¹ Poverty line defined by Planning Commission (Gol,79) at per capita monthly expenditure level of Rs.49 for rural area at 73-74 prices is used to estimate the three alternative measures of poverty .Planning Commission followed the food energy method in deriving both rural and urban Poverty Lines which corresponded to a norm of percapita intake of 2400 calories per day in rural areas and 2100 calories per day in urban areas.

Poverty indicates (Table 111.7) based on the adjusted state specific poverty lines using the state specific size distribution of population ranked according to the size of PCTE, differently from this corresponding values for 83 and 93-94 (Table 111.6) captured on the basis of all India rural poverty lines.

Again, a comprehensive and in-depth analytical study¹ on poverty at a highly disaggregated level areas all the 77 N.S.S regions in both 87.88 and 93.94 (Table 111.8) enjoys the unique feature of writing outstanding practical significance, of incorporating all available poverty lines and all price corrections to compute the different statistical measures of poverty.

Table III.8

Poverty Measures of (Rural Kerala for 87 - 88 and 93 -94 (State-wise and Region Wise)

87 - 88

STATE	OPL	EOPL	APL	AIOPL	AIEOPL	AIAPL	APCTEP	PG	FGT
Kerala at 87-88 prices	46.51 (33.37)	31.64 (22.26)	33.32 (28.06)	27.99 (17.00)	21.43 (12.82)	17.78 (9.98)	114.87 (116.34)	.1150 (.0793)	.0409 (.0276)
Region wise kerala 1 at 87-88 prices	55.38 (38.43)	39.59 (25.20)	41.30 (25.82)	35.23 (20.24)	27.79 (15.88)	23.21 (13.02)	112.78 (115.40)	.1446 (.0937)	.0521 (.0345)
Kerala II at 87-88 prices	40.51 (30.00)	26.27 (20.31)	27.92 (21.21)	23.09 (14.85)	17.13 (10.78)	14.10 (7.95)	116.81 (117.15)	.0951 (.0697)	.0333 (.0229)
India	49.38 (42.70)	39.54 (33.35)	36.64 (30.29)	47.33 (40.99)	39.47 (33.26)	34.66 (27.82)			

APCTEP = Average Per Capita Total Expenditure of the Poor; OPL = Official Poverty Line; EOPL = Expert group poverty Line; APL = Alternative Poverty Line ; AIOPL = All India Official Poverty Line; AIEOPL = All India Expert Group Poverty Line; AIAPL = All India Alternative Poverty Line.

¹ Dubey and Gangopadhyay (98). Op.Cit.

holding 121 (North) and 122 (South) as their corresponding region codes as per the 50th Round (93-94). Figures in brackets represent the corresponding values for 93-94.

A cursory glance at the varying dimensions of rural poverty in Kerala for 87-88 and 93 -94 estimated in terms of the most refined FGT measures (basing them on all available poverty lines) provides factual evidence to confirm the previously established authentic and positive view on the performance of the state in reducing poverty considerably. The absolute change in HCRs is estimated as -13.14 percent whereas region-wise rural poverty in Kerala is reported to have scored an absolute change to the tune of -16.95 percent (Kerala 1) and -10.51 percent (Kerala 11).

To capture a bird's eyes view of the inter-temporal changes in the prevalence of rural poverty in Kerala, a closer scrutiny of its structures at the state level¹ is absolutely essential. The 32nd Round of NSS 77-78 on employment and unemployment distinguishes by means of livelihood the following household types : agricultural laborers, self employed in agriculture, self-employed in non-agriculture, other laborers and other rural households. Basing the study on the data from the NSS consumer expenditure surveys, Dev (88)² uses the state-specific poverty-line derived by Bardhan (73)³ for the year 60-61 and adjusted them by the corresponding state-specific Consumer Price Index for Agricultural Laborers (CPIAL) to estimate the incidence of poverty at the state level. The analysis on the structure of poverty by the household type

¹ An attempt is made at this context to compare the incidence of poverty by broad categories of households, differentiated by reference to principal means of livelihood, for 77-88 and 1999. Recent survey conducted at the state level (99) incorporates six categories of households by means of livelihood, viz, agricultural laborers, self employed in agriculture, self employed in non-agriculture, rural artisans and "others".

² Dev, Mahendra (88.)

³ Bardhan, (73) Op cit.

(Table.III.9) indicates that the incidence of poverty was the highest among the agricultural labour households in Kerala as well as at the national level. Quite obviously,

Table III.9

Incidence of poverty by households type : 77-78

<u>State</u>	<u>AL</u>	<u>SEA</u>	<u>SENA</u>	<u>OLH</u>	<u>ORH</u>	<u>TOTAL</u>
Kerala	54.79	23.10	35.59	18.51	2.63	36.52
India	55.90	28.00	35.71	36.24	22.00	37.33

AL : Agricultural laborers. SEA : Self-employed in agriculture, SENA : Self-employed in non-agriculture, OLH : Other labour households; ORH : Other rural households.

the agricultural labour households and other labour households formed the largest segment to dominate the poverty households in rural areas at the national level while Kerala displayed an entirely different combination of households formed by agricultural laborers and self employed in non-agriculture as the largest segment to capture a dominant position among poverty households .

But regional dimensions of poverty in Kerala (Table III. 10) estimated on the basis of 87 Survey data reveals that agricultural labourers and rural labourers gain significance among poverty households in terms of their respective incidence of poverty of 43 percent and 31 percent.

The incidence of poverty of agricultural labourers and other rural labourers is reported to be the highest in almost all districts of the state whereas the prevalence of rural poverty is the highest in the districts of Palakkad, Malappuram and Kasargode.

Table III. 10.
Structure of poverty in Districts of Kerala; in 87.

	AL	ORL	PWOTA	SEF	SEOA	TOTAL	BPL
Trivandrum	31.6	42.9	.5	4.3	20.6	8.6	23.4
Kollam	28.9	39.6	2.0	14.8	14.8	6.8	30.0
Pathanamthitta	47.0	18.0	1.8	20.3	12.9	4.9	32.0
Alappuzha	34.3	32.0	0.6	5.0	28.2	8.2	34.0
Kottayam	48.1	22.1	1.7	13.9	14.3	5.2	21.0
Idukki	53.5	16.6	0.5	24.1	5.4	4.2	25.7
Emakulam	54.1	29.0	1.1	4.7	11.1	6.3	22.7
Trissur	35.3	36.8	3.5	7.3	17.2	5.9	20.0
Palakkad	53.0	26.7	0.2	5.8	14.4	14.2	42.5
Malappuram	44.6	33.0	2.2	5.2	15.1	12.7	42.0
Kozhikode	39.8	36.1	1.2	7.7	15.3	7.4	33.4
Wayanad	68.3	8.3	0.8	13.3	9.2	2.7	27.4
Kannur	46.4	34.9	1.9	3.8	13.0	7.2	24.5
Kasargode	41.9	30.9	2.0	11.8	13.4	5.6	37.9
State	43.0	31.0	1.0	9.0	15.0	100	30.7

AL = Agricultural labourers

ORL = Other rural labourers

PWOTA = Permanent workers other than agriculture.

SEF = Self-employed farmers

SEOA=Self employed other than agriculture

BPL = Below Poverty Line.

Source : Kannan, (95). Op. Cit.

Recent survey (99) conducted at the state level too discloses the fact that agricultural labourers constitute the single largest segment in rural poverty (Table III.11).

Table III. 11.
Structure of rural poverty in Districts.

Districts	AL	NAL	SEA	SENA	RA	Others	Total (share in rural poverty)
Trivandrum	27.23	27.27	3.77	8.80	2.57	30.35	10.93
Kollam	32.25	22.54	5.13	10.82	2.92	26.34	10.19
Pathanamthitta	47.36	18.83	8.66	7.15	2.33	15.67	4.34
Alappuzha	25.19	22.74	3.66	14.20	2.54	31.67	9.06
Kottayam	39.95	23.23	4.48	7.19	2.12	23.03	3.43
Idukki	52.31	15.42	14.43	4.87	1.15	11.81	2.00
Emakulam	25.21	27.26	4.27	9.97	2.88	30.30	5.77
Trissur	27.81	28.93	3.87	10.79	2.90	25.70	9.22
Palakkad	44.39	18.13	5.16	6.11	3.47	22.73	11.87
Malappuram	28.99	30.18	3.13	6.91	2.57	28.22	10.47
Kozhikkode	35.58	23.84	3.64	6.88	2.81	27.25	7.65
Wayanad	56.00	17.43	7.76	3.82	1.22	13.77	3.76
Kannur	39.92	21.79	5.24	7.10	2.76	23.19	7.08
Kasargode	33.70	28.08	6.86	6.80	2.82	21.74	4.23
State	34.42	24.03	4.86	8.49	2.70	25.51	100

Al= Agricultural labourers; NAL= Non-agricultural labourers; SEA= Self-employed in agriculture; SENNA= Self-employed in non-agriculture; RA= Rural artisans.

(34.42%) by households followed by other rural households (25.51%) and non agricultural labourers (24.03%). At the regional level, Palakkad (11.87%), Trivandrum (10.93%), Malappuram (10.47%) and Kollam (10.19%) top the list (arranged in descending order) with the highest share in incidence of rural poverty. But the incidence of rural poverty at the district level indicates, that Palakkad captures top position with 52.13 percent (relative to the total number of households in the district) whereas Wayanad (though tops the list with highest Per Capita Income (PCI) among the districts) comes next in the list with 49.87% as its incidence of poverty. Alappuzha and Kasargode too are reported to have high incidence of poverty of 45.95 percent and 44.46

percent respectively whereas the least incidence is estimated for Idukki district with only 15.29 percent followed by Kottayam with 18.10 percent. But state level incidence of poverty has reached a level of 36.58 percent¹.

Inferences from such inter-temporal comparison of the incidence and intensity of rural poverty in Kerala provide strong indications regarding the general performance of the economy towards poverty alleviation on the one hand and the necessity of designing well-defined package of prescriptions and an alternative mode of region-wise household specific targeting to eliminate poverty absolutely.

¹ But the estimates of poverty prevalence ratio for Kerala for 93-94 and 99-2000 are provided as 33.95 percent and 26.50 percent respectively, whereas the same on all India basis are shown as 39.36 (93-94) percent and 36.35 percent (99-2000). State specific PLs for 93-94 have been adjusted for inflation by reference to the CPIAL (for rural population). Poverty Prevalence Rates for 93-94 have been computed from Table 4.4.1 in Sarvekshana(96) and those for 99-2000 from Table 4.3.2 in Draft Report No.458(55/10/02) Employment-unemployment situation in India 99-2000. (K.Sundharam 2001)

APPENDIX III.1A

Estimates of Poverty Lines : India

Source	Criterian/Method.	60 -61		Total	63 - 64	
		Rural	Urban		Rural	Urban
PPD	BMN ^a (Food)	15.7	35.2	20.0	18.7	41.0
Da Coasta	Arbitrary	15.0	24.0	17.0	17.9	28.0
Minhas	BMN	16.7	31.7	20.0	19.9	36.9
D-R ^b	Calorie value of Food	15.0	22.5	16.7	17.9	26.2
Bardhan.1	Minimum Dietary	15.0	22.5	16.7	17.9	26.2
	(Patwardhan)	15.0	37.6	20.0	17.9	43.8
Bardhan.2		12A	46.8	20.0	14.6	54.6
Bardhan.3		14.0	41.1	20.0	16.7	47.9
Bardhan.4		15.0	18.0	15.7	17.9	21.0
Rudra (S) ^c	MFN ^d	22.7	27.3	23.7	27.0	31.8
Rudra (FAO)	"	28.6	33.7	29.7	34.0	39.3
Rudra (P) ^e	"	15.6	19.0	16.4	18.6	22.0
Kalirajan	Minimum Nutrition	15.2	31.7	18.8	18.0	36.9
Patel	BMN (Food & Non food)	17.6	--	--	20.6	---

- Note :- a. BMN : Basic Minimum Need.
b. D - R Dandekar and Rath.
c. S - Sukhatme
d. MFN Minimum Food Need
e. P Patwardhan

Source : J.L. Jain (87).

APPENDIX III.2A

Minimum Food Needs for India

Items	Patwardhan ^a (57-59)	Sukhatme(1965) ^b	F.A.O ^c (1973)
Cereals	.425	.403	.395
Pulses	.113	.104	.075
Starchy Roots		.046	.160
Sugar	.043	.050	.035
Milk	.113	.201	.098
Meat		.007	.036
Fish and Eggs		.019	.027
Fruits and Vegetables	.170	.137	.025
Oils and Fats	.035	.018	.016
Value of diet (Rs) At 60-61 prices	.4833	.5238	.6087
Approx: Food Contant calories	2100	2370	-
Proteins (gms)	55	56	-

Notes:

- a) Per Person
- b) Based on minimum concept per person
- c) Per adult unit . (one person =.81 adult units)

Source :

- a) A. Rudra (74)in Srinivasan and Bardhan (74),Op. Cit.

Appendix III.3 A

State specific Poverty Lines (Rural and Urban) for 1987-88 and 93-94.

State/ut	OPL		EOPL		APL		AIOPL		AIEOPL		AIAPL	
	R	U	R	U	R	U	R	U	R	U	R	U
Andhra Pradesh	107.99 (193.98)	152.66 (269.40)	91.95 (165.15)	159.50 (281.47)	93.88 (168.64)	134.41 (237.19)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26	142.03
Arunachal Pradesh	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (254.24)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.68)	195.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Assam	137.35 (256.73)	129.11 (221.94)	127.44 (238.21)	140.45 (241.43)	119.41 (223.19)	113.67 (195.41)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (136.31)	142.03 (245.36)
Bihar	136.98 (229.18)	158.53 (264.54)	120.36 (201.37)	161.19 (268.98)	119.09 (199.24)	139.58 (232.91)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Goa	131.73 (228.40)	179.18 (320.80)	115.61 (200.46)	184.45 (330.24)	114.52 (198.57)	157.76 (282.45)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Gujarat	132.53 (224.40)	176.21 (302.57)	115.00 (194.72)	175.57 (301.47)	115.22 (195.09)	155.14 (266.40)	125.68 (214.51)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Haryana	132.20 (233.53)	146.16 (240.18)	122.90 (217.10)	142.15 (233.59)	114.93 (203.02)	128.69 (211.47)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Himachal Pradesh	137.14 (244.57)	135.15 (231.12)	122.90 (219.17)	142.63 (243.91)	119.22 (212.62)	118.99 (203.49)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Jammu Kashmir	132.97 (224.97)	137.66 (209.17)	124.33 (210.35)	145.22 (220.66)	115.60 (195.58)	121.20 (184.16)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (236.06)	109.26 (186.31)	142.03 (245.36)
Karnataka	116.01 (201.50)	165.92 (274.75)	104.46 (181.44)	171.23 (283.54)	100.85 (175.18)	146.08 (241.90)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (236.06)	109.26 (186.31)	142.03 (245.36)
Kerala	152.63 (270.05)	178.58 (309.26)	130.61 (231.09)	175.11 (303.25)	132.69 (234.77)	157.23 (272.29)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)

Contd.

Madhya pradesh	118.50 (183.99)	178.09 (310.50)	107.00 (166.13)	178.44 (311.11)	103.02 (159.95)	156.80 (273.38)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Maharashtra	131.73 (228.41)	179.18 (320.80)	115.61 (200.46)	184.45 (330.24)	114.54 (198.57)	157.76 (282.45)	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Manipur	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (254.24)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Meghalaya	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (254.24)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Mizoram	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (254.24)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Nagaland	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (289.89)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Orissa	129.24 (205.55)	171.36 (291.13)	121.42 (193.11)	170.63 (239.62)	112.36 (178.70)	150.87 (256.33)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Punjab	138.67 (246.21)	139.07 (232.86)	122.90 (218.21)	143.11 (287.67)	120.55 (214.05)	122.44 (205.03)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Rajasthan	134.75 (215.49)	167.07 (288.27)	117.52 (187.94)	166.72 (254.24)	117.15 (187.34)	147.10 (253.81)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	186.31 (245.36)	142.03 (245.36)
Sikkim	134.75 (253.08)	139.57 (252.65)	127.44 (239.35)	140.45 (302.14)	117.15 (220.02)	122.88 (222.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Tamil Nadu	129.95 (218.87)	171.69 (296.73)	118.23 (199.13)	174.82 (241.43)	112.97 (190.28)	151.16 (261.26)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (236.06)	109.26 (186.31)	142.03 (245.36)
Tripura	135.55 (254.58)	129.11 (221.94)	127.44 (239.35)	140.45 (264.50)	117.84 (221.32)	113.67 (195.41)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Uttar Pradesh	122.65 (210.36)	153.95 (263.08)	114.57 (196.50)	154.78 (254.48)	106.63 (182.88)	135.55 (231.63)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
West Bengal	142.12 (245.59)	141.02 (240.93)	129.21 (223.55)	148.95 (279.65)	123.55 (213.77)	124.16 (212.13)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Andaman & Nikobar	125.68 (214.31)	161.31 (278.68)	118.23 (192.12)	174.82 (246.28)	109.26 (186.31)	142.03 (245.36)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)

Contd.

Chandigash	139.07 (232.86)	152.14 (266.78)	143.11 (239.63)	143.11 (279.65)	122.44 (205.02)	133.95 (234.89)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Dadra& Nagarttanc	125.68 (214.31)	161.31 (278.68)	115.61 (192.12)	184.45 (330.24)	109.26 (186.31)	142.03 (245.36)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Daman& Diu	131.73 (228.41)	179.18 (320.80)	114.52 (200.46)	184.45 (317.64)	115.61 (198.57)	157.76 (282.45)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
Delhi	136.67 (239.28)	201.10 (357.90)	122.90 (215.17)	178.48 (317.64)	118.82 (208.02)	177.06 (315.11)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)
All India	125.68 (214.31)	161.31 (278.68)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)	125.68 (214.31)	161.31 (278.88)	115.43 (196.83)	165.58 (286.06)	109.26 (186.31)	142.03 (245.36)

Source: Dubey and Gangopadhyay (98) R- Rural , U- urban. Figures in brackets represent PLs for 93 – 94.

CHAPTER. IV

Structure of Landholdings Pattern of land utilization & Farm income in Kerala -A macro analysis.

Effectiveness in implementation and accuracy in targeting constitute the essential pre-conditions for securing success from any anti-poverty operation at the state level. The question of identification and aggregation of the poor gains more significance at this context. Hence an attempt has been made in the previous chapter to examine the intricacies involved in a pragmatic approach towards the measurement of poverty ¹.

This chapter, tries to provide an ideal background and thus to gain logical sequence to the discourse on farm poverty- the thrust area of the present study.

Section I of this chapter examines the structure of operational holdings in Kerala whereas Section II tries to capture a dissective view of land utilization and cropping pattern both at the state level and at the district level². Section III makes an attempt to design a break-even size of holding for Kerala by consolidating the available data.

Section IV.I

The fact that in designing poverty alleviation policies in rural areas, the landless marginal and small farmers have been the target groups indicates the

¹ A detailed discussion on the issues associated to the formulation of an appropriate poverty line is conducted in Chapter III.

² Dissective exercise of this nature is drilled towards designing an approximately reliable procedure for the estimation of farm income - a crucial variable to be used in further analysis.

overwhelming importance in associating landholding with poverty¹. To add strength to the policy formulations, Seventh Plan² documents land as a vital element and 'land reforms as an intrinsic part of any anti-poverty strategy' . An optimistic note on distributional effects of land reforms³(provision of entitlement to the landless and the rural poor and improvement in productivity making a considerable dent on rural poverty) too strengthens this view.⁴

But land reforms⁵ as a part of broader agrarian strategy, implemented in

¹ Contextual reference can be made of the elegant and elaborate analytical work of analogous nature [(but of differing dimensions) by Pravin Visaria (81),Sanyal, (88).Op.cit]

²Seventh Five Year Plan, 1985-90, pp.60-61.

³ Oommen, M.A(1975).But no sincere effort has yet been done to evaluate the re-distributional effects of land reforms on rural poverty except an endeavor by Raj and Tharakan, (83) to make the attempt " self defeating" and " bewilderedly complex".

⁴ But the possibility of forming an opinion to counter this optimism cannot be ruled out. Mere transfer of land to the tiller of soil (having labour as his only asset) not adequately supported by resilient resources to generate surplus is not supposed to make a visible dent on poverty, Generation of surplus under capitalist farming as its advantage deserves special mention.

⁵ The Kerala Land Reforms (Amendment), Act, 1969(KLRA) was implemented from January 1, 1970 with an ambitious objective of attaining an equitable distribution of operational holdings.

Kerala to provide a permanent asset base for the rural landless poor¹ through equitable distribution of land and thus to restructure rural society based on social justice, can be held partially² responsible for bringing about a thorough change in the structure of operational holdings³ in the state. Again the fact that the trends in Gini Coefficients (Table IV.I) of land distribution immediately after the implementation of KLRA in 1970 registered a fall can be recorded as an unquestionable proof to consider land reform as a force (though weak) effecting its impact on the pattern of distribution of land holdings⁴.

¹ It is estimated that about 25000 hectares have been distributed among 1,26000 households. The position of landless agricultural labour households has improved tremendously. The proportion of agricultural labour households without land has decreased to 7.8 percent (83-84) from 29.8 percent (64-65). Other rural households without land too experienced a change in their status during the post-reform period. Their number (in percentage) has decreased from 40(64-65) to 5.4 (83-84). Land reforms have favoured 'All Rural Labour Households' without land as a class whose number (in percentages) has decreased from 33.2(pre-reform) to 6.7(post-reform). [GOK, 1985, p.13]

² The scope of this study does not permit us to conduct unwieldy analytical exercises to enumerate all factors influencing the structure of land holding in Kerala.

³ In Kerala, the distinction between ownership and operational holdings loses much of its significance because from January 1, 1970, most lands operated are turned into ownership holdings legally.

⁴ The objective of land reform i.e., to have an equitable distribution of operational holdings, itself justifies this argument.

Table IV. 1

Trends in Gini Co-efficients of land distribution in Kerala.

Year	Gini Co-efficients.
1970-71	0.6316
1976-77	0.6084
1980-81	0.6077
1985-86	0.6206

- Computed from Appendix IV. 1A.

Evidence adds¹ strength to the simple arithmetic of estimation of the pressure of population on land leading to a visible change in the distribution of land holdings².

¹ A decadal growth rate (1991-2001) of population of 9.42 percent (though less than the previous decadal growth rate of 14.32%), an accentuation in its density from 749 per sq. km (1991) to 819 per sq. km. (2001) and a phenomenal decrease in per capita availability of (geographical) land from, 228 hectares (1961) to 122 hectares (2001) [Gok, 2001 a] can be considered as certain vital parameters to substantiate this argument. Nair et. al (90) too make an assessment of the impact of population pressure on the structure of land holdings at the national level.

² Relevance of other crucial factors like laws of inheritance and succession, large scale transaction of land (due to fast appreciation in real estate value, distress sale of land, massive conversion of arable land to construction sites) in causing a visible change in the distribution of operational holdings in Kerala cannot be neglected in this context. But no serious study has yet been conducted to examine their impact on the distribution of land holdings in Kerala. Hence it is presumed that the present structure of land holdings in Kerala is the result of the combined effect of all these factors.

At an analytical level¹, a dissective exercise by adopting a disaggregative approach will disclose the configurational composition of the present structure of operational holdings in Kerala. An inter-temporal comparison² of the size distribution of land holdings³ at the state level⁴ provides relevant indications (Table IV. II) to support the view that a phenomenal proliferation of marginal holdings has caused a pronounced marginalization of the structure of land holdings in Kerala. By 1995-96 the number of holdings below one hectare (< 1 ha) has increased to 59.18 lakhs from 50.16 lakhs in 90-91 (which accounts for about 17.98 percent variation over 90-91). But the corresponding trends in all other size classes (except large holdings)⁵ exhibit a decline both in terms of their area and number. From an overall evaluation of the trends in the distribution of agricultural holdings at the state level, it can be inferred that about 98.13 percent of the total land holdings in '95-96 is constituted by marginal and small holdings⁶.

¹ Further analysis on structure of land holdings in Kerala is facilitated by the data (collected quinquennially) from Agricultural Census Reports of various years.

² Trends in the size-wise distribution of land holdings over a period of five years between 90-91 and 95-96 are compared at the state level.

³ For a detailed discussion and effective comparison, size classes of land holdings are grouped into five viz, 1. Marginal (<1 hectares) 2. Small (1-2 hectares), 3. Semi-medium (2-4 hectares), 4. Medium (4-10 hectares) and 5. Large (10 hectares and above)

⁴ Non-availability of data (for 95-96) on size-wise distribution of landholdings at the district level prevents us from proceeding further for a similar comparison at the district level.

⁵ The number of large holdings remained the same whereas area operated by them showed a declining trend over the period in question.

⁶ Obviously, it can be read (from Col. 7 and Col. 8 of Table IV. II) that only the number of and area under marginal holding showed a positive percentage variation of 17.98 and 5.32 respectively.

Table IV. II**Size-wise distribution of land holdings in Kerala for 90-91 and 95-96.**

Sl.No.	Size Class	90-91 ^a		95-96 ^b		% variation	
		Number (lakhs)	Area (hec)	No. (lakhs)	Area (hec)	Number	Area
1	Marginal (< 1 hectares)	50.16 (92.58)	8.65 (48.16)	59.18 (93.97)	9.11 (53.24)	+17.98	+5.32
2	Small (1-2 hectares)	2.80 (5.17)	3.84 (21.38)	2.62 (4.16)	3.50 (20.46)	-6.43	-8.85
3	Semi-Medium (2-4 hectares)	0.98 (1.81)	2.55 (14.20)	0.95 (1.50)	2.43 (14.20)	-3.06	-4.71
4	Medium (2-10 hectares)	0.21 (0.39)	1.14 (6.35)	0.20 (0.32)	1.04 (6.08)	-4.76	-8.77
5	Large (> 10 hectares)	0.03 (0.05)	1.78 (9.91)	0.03 (0.05)	1.03 (6.02)	0	-42.14
	Total	54.18 (100)	17.96 (100)	62.98 (100)	17.11 (100)	+16.24	-4.73

Source : (a) Agricultural Census Report, of (90-91), Department of Economics and Statistics.

(b) Ecostat News, 2000, Department of Economics and Statistics, GOK.

A dissective exercise at the district level too discloses the same trend in the distribution of operational holdings which can be captured from Table IV. III. An inter-temporal comparison of land holdings at the district level confirms the view that the size distribution of operational holdings has gravitated towards marginal farms¹. Percentage variation (over 90-91) in the number of operational holdings across districts ranges between 23.14 in Malappuram and 9.84 in Alappuzha whereas area operated by these holdings experienced a phenomenal reduction in majority of the districts with Idukki registering - 33.70 percent followed by Kozhikode (-18.51%) and Trivandrum (-

¹ Logical reasoning is the base of this argument. Inference justifying such a visible swelling in the number and area of marginal holdings at the district level can be derived from Table IV.II.

12.83%) The highest positive change in area operated is registered by Kollam (14.21%). A visible decrease in the average size of land holdings both at the state level (from 0.31 hector in 90-91 to 0.27 hector in 95-96) and at the district level- a trend having far-reaching economic implications¹- should be viewed seriously.

Significance of a detailed analytical exercise on the configurational specificities of the structure of land holdings become more crystallized when the present discussion is extended to encompass the extent and pattern of land utilization in Kerala.

Section IV. 2.

Land, being considered as the best means of providing regular exchange entitlement to the rural masses, can be given the status of a resource, powerful enough to make a dent on rural poverty² only if a sustainable level of income (farm income) is

¹ Economic implications of such an unhealthy trend emerging from the structural transformation in the pattern of operational holdings in Kerala need closer scrutiny since a change of similar nature constitutes a gradual shift in the production base of the agrarian sector of Kerala to marginal and small farmers. But in this context, special reference should be made of the strong theoretical and empirical studies conducted to support the view that small farms are potentially viable in terms of absorption of (family) labour (Sen, 1962, 64) and generation of output. Such theoretically sound and empirically valid studies seem to have absolutely discarded the question of economic sustainability of small and marginal holdings.

² A large chunk of population labeled as landless of 56.5 lakh households (90-91) 3.3 lakh households (5.8%) are estimated to be landless - has to depend on land lease market or labour market for a regular source of income.

Table IV. 111.
District - wise distribution of operational holdings
in Kerala for 90-91 & 95-96

Sl No.	Districts	90 - 91			95 - 96			% Variation is over 90-91	
		Number	Area (hectares)	Average size of holding	Number	Area (hectares)	Average size of holding	Number	Area
1	Trivandrum	628868 (11.60) ^a	106773 (5.93) ^b	0.16	768159 (12.20)	93073 (5.44)	0.12	22.15 ^c	-12.83 ^d
2	Kollam	482211 (8.90)	79645 (5.43)	0.20	550747 (8.74)	91013 (5.32)	0.16	14.20	14.27
3	Pathanamthitta	249967 (4.61)	89791 (4.98)	0.33	291802 (4.63)	90391 (5.28)	0.31	16.74	.67
4	Alappuzha	403973 (7.45)	83974 (4.66)	0.20	443734 (7.05)	83312 (4.87)	0.19	9.84	-7.9
5	Kottayam	348017 (6.42)	146533 (8.13)	0.41	389840 (6.19)	139155(8.13)	0.36	12.02	-5.04
6	Idukki	244830 (4.52)	204127 (11.33)	0.57	283906 (4.51)	135332(7.91)	0.48	15.96	-33.70
7	Emakulam	516296 (9.53)	126070 (7.00)	0.23	607981 (9.65)	133059(7.78)	0.22	17.76	5.54
8	Trissur	513861 (9.48)	124216 (6.98)	0.24	606893 (9.64)	140170(8.19)	0.23	18.11	12.84
9	Palakkad	434439 (8.02)	186730 (10.60)	0.42	488082 (7.75)	193559(11.32)	0.40	12.35	3.66
10	Malappuram	461029 (8.51)	140266 (7.78)	0.30	567706 (9.01)	148666(8.69)	0.26	23.14	5.99
11	Kozhikode	462603 (8.54)	135415 (6.96)	0.26	521551 (8.28)	110350(6.45)	0.21	12.14	-18.51
12	Wayanad	131736 (2.43)	100952 (5.60)	0.68	155285 (2.47)	95272 (5.57)	0.61	17.88	-5.63
13	Kannur	369760 (6.82)	166621 (9.25)	0.45	421149 (6.69)	158499 (9.27)	0.38	13.90	-4.88
14	Kasargod	176599 (3.17)	102708 (5.70)	0.52	201220 (3.14)	98858 (5.78)	0.49	17.26	-3.75
15	State	5419189 (100)	1801823 (100)	0.31	627855 (100)	1710709(100)	0.27	16.22	5.06

Source : Agricultural Census Reports of 90-91 and 95 - 96

a, b :- Figures in brackets are percentages

c, d :- Percentage variation over 90 - 91.

guaranteed to the farmers¹. In this context, the role of land as a resilient resource to catalyze the pace of (agricultural) income propagation than as an asset² to rural population gains more significance.

Current practice of allocation of land (Table IV. 4)³ both at the state as well as at the district levels still follows the traditional discipline of earmarking lion's share of the total geographical area (TGA hereafter) for agricultural use while the residual constituting the area under non-agricultural use. A broader allocation procedure captures 90.88 per cent of TGA to agricultural use while the remaining 9.12 percent is treated as area under non-agricultural use. An inter-district comparison still reveals the same pattern of allocation with agriculture gaining all the more significance. Even though remarkable Variations in its share across districts prevail with Idukki allocating 97.09 percent of its TGA for agricultural use which is closely followed by Wayanad (94.52%) and Pathanamthitta (94.42%). District specific intensity of cropping too registered wide variations with Wayanad topping the list (181%) while Kasaragode

¹ Risks involved in agricultural operations uncertain climatic conditions, unanticipated price fluctuations, absence of an assured market for agricultural produce- need special mention. Risk- induced disruption in the steady flow of (agricultural) income- a gravies issue among small and marginal farmers- accounts for transient poverty Survival strategy through diversification of agricultural activities (judicious integration of livestock and highly profitable cropping system) is designed by them to tide over such critical situations.

² Alternative means of raising income from land as an asset are paid little attention, since remarkable appreciation of the value of real estate in Kerala due to its inclusion in the investment portfolio of Gulf migrants turned many 'income-poor' to 'asset-rich'. This conjectural proposition needs further empirical verification.

³ Some relevant indicators showing the importance of land in Kerala's agrarian scenario are included in Table IV. 4.

enjoys the lowest position (106%). State-level position, in this respect, is marked with 134 percent. Picture becomes all the more transparent when an inter-district comparison in terms of agricultural income is introduced as an analytical procedure. Wayanad (9.56%) and Kasargode (2.62%) appear again in the list as districts enjoying the highest and lowest agricultural income respectively.

A slight twist in analysis constituting an extension of the present discussion to accommodate crop-wise distribution of operational holdings at the state level (Table IV. 5)¹, still reveals that marginal and small holdings hold a predominant position equivalent terms of which can be observed both in their number and area under each crop. The impressionistic view that Kerala's agrarian structure can capture a renewed dynamic spirit by erecting a strong production base on the 'productive small farm sector'² seems to gain more contextual relevance.

¹ A disaggregate analysis on crop-wise distribution of operational holdings for 90-91 (latest data for 95-96 are not available) would provide an opportunity to have a quick view of the increasing concentration of marginal and small holdings under each crop. (except certain plantation crops.)

² This proposition seeks support from the empirically proved 'size-productivity' alliance [Sen, 64]. The limited scope of the present study prevents unwidely explanation in this regard. But the relevance of separate study on the impact of such a limitless proliferation of marginal and small farms (constituting about 98.13% of total operational holdings), on the prospects of Kerala's agrarian sector cannot be absolutely discarded. The suggestion to provide a congenial global environment to the rural poor by providing markets for what is produced on small holdings in Sri Lanka and a brief descriptive account of the major contribution of small holdings of the rural poor (Sri Lanka) to the total output of tea, rubber, coconuts, coffee, spices (pepper, cinnamon, cloves, nutmeg, cardamoms, and ginger), betel leaves, sesame seed, mustard and vegetables (considerable portion of which is exported) strengthen this view [Godfrey Gunatilleke, in Quibria (94), Op. Cit. p. 503]. But lack of data on size-wise contribution to farm products in Kerala blocks the way to proceed in that direction.

Table IV - 4

District - wise distribution of area under land utilization and Agricultural income in Kerala for 99 - 2000

1	2	3	4	5	6	7	8	9 (Area : ha)
Districts	Total Geographical Area ^a	Net sown Area ^b	Area sown [©] More than once	Cropping Intensity [*]	Agricultural Use.	Non-agricultural Use. (d)	Total Cropped Area	Agricultural Income (Rs. Lakhs)
Trivandrum	218600	143786	53705	137	196036(89.68)	22564 (10.32)	197491 (90.34)	143246 (9.46)
Kollam	251838	143302	69309	148	230133(91.38)	21705 (8.62)	212611 (84.42)	81112 (5.36)
Pathanamthitta	268750	93717	18564	120	25376(94.42)	14986 (5.58)	112281 (41.78)	61968 (4.09)
Alappuzha	136058	100653	33295	133	113164(83.17)	22894 (16.83)	133948 (98.48)	138048 (9.11)
Kottayam	219550	174895	40761	123	194710(88.69)	24840 (11.31)	215656 (98.23)	123452 (8.15)
Idukki	514962	223000	41726	119	499980(97.09)	14982 (2.91)	264726 (51.07)	140483 (9.28)
Ernakulam	235319	171320	56052	133	195464(83.06)	39855 (16.94)	227372 (96.62)	112746 (7.44)
Trissur	299390	147530	50986	135	267069(89.20)	32321 (10.8)	198516 (66.31)	111119 (7.34)
Palakkad	438980	217176	87331	140	395089(90.00)	43891 (10)	304507 (69.37)	13400 (8.68)
Malappuram	363230	203759	60685	130	330697(91.04)	32533 (8.96)	264444 (72.80)	126856 (8.38)
Kozhikode	233330	162588	69719	143	209894(89.96)	23436 (10.04)	232307 (99.56)	71864 (4.74)
Wayanad	212560	115293	93768	181	200913(94.52)	11647 (5.48)	209061 (98.35)	144861 (9.56)
Kannur	296797	202579	67670	133	267819(90.24)	28978 (9.76)	270249 (91.01)	87921 (5.81)
Kasargode	196133	139765	8770	106	176375(89.93)	19758 (10.07)	148535 (75.73)	39639(2.62)
STATE	3885497	2239363	762341	134	3531107(90.88)	354390 (9.12)	3001704 (77.25)	1514715 (100)

Source : a,b,c,d; Agricultural Statistics, 99-2000.

Col 6 = Col 2 - Col 7

e : Economic Review, 2000

Figures in parenthesis in Col 6, Col 7, and Col 8 are percentages to total geographical area. Figures in brackets in Col 9 are percentages to the total income.

* : Cropping intensity TCA/ Net Sown Area in per cent.

Table IV-5 a

Percentage (Crop - wise) distribution of area and number of operational holdings in Kerala (90-91)

Size class	Paddy	Coffee	Coco-nut	Rubber	Tapioca	Plantain /Banana	Areca nut	Pepper	Cashew	Ginger	Sesame	Tea	Pulses	Sugar cane	Chillies	Turneric	Cardamom	fruits	Sweet potato	Vegetable	Other Food Grains	Other food crops	Oil seed
Marginal	No.	69.42	84.63	91.52	70.33	89.68	88.37	87.98	88.50	74.45	66.45	-	83.08	70.44	73.79	75.29	59.45	89.14	71.62	87.17	74.15	82.16	75.
	Area	39.41	23.09	69.68	30.39	72.57	47.27	51.84	48.80	41.21	47.29	-	49.73	28.77	11.29	40.54	14.61	74.10	48.98	73.94	37.36	47.39	46.
Small	No	20.17	6.47	5.93	20.20	7.23	8.14	8.43	8.02	16.72	21.96	-	9.62	13.57	14.52	16.35	26.85	7.32	16.14	8.44	14.07	12.00	11
	Area	29.31	20.55	15.58	28.29	13.45	14.97	22.38	25.81	15.36	25.90	35.38	-	24.39	13.38	.30	12.36	14.95	26.45	12.02	.50	24.54	31
Semi-Medium	No	8.35	7.28	2.05	7.32	2.52	2.85	2.94	2.80	7.40	10.50	-	5.45	8.84	10.01	6.84	8.26	2.81	.10	3.47	9.61	4.76	6.
	Area	19.68	19.68	9.14	19.68	8.51	16.34	14.73	9.94	24.46	24.46	11.57	-	17.06	39.04	22.13	11.25	7.77	19.07	6.11	10.70	12.54	9.
Medium	No	1.93	1.84	0.44	1.84	.51	.58	.58	.59	1.31	.80	-	1.70	6.20	1.35	1.37	2.72	0.64	1.69	0.83	2.17	.97	6.
	Area	9.44	9.75	3.21	9.75	3.22	10.54	5.91	7.48	6.55	3.75	-	7.02	12.42	.72	5.60	9.75	2.14	3.53	2.81	1.44	4.24	8.
Large	No	.13	0.31	.06	0.31	0.06	.07	0.07	.08	.13	.30	100	.16	.94	.30	.15	2.73	0.08	.56	.09	-	.12	2
	Area	2.09	11.90	2.10	11.90	0.74	3.48	1.71	18.42	1.88	2.01	100	1.80	4.35	.29	1.74	52.03	1.05	1.96	1.58	-	11.29	4
Total	No	(100)		(100)		(100)	(100)	(100)	(100)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Area	(100)		(100)		(100)	(100)	(100)	(100)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^a Computed from Appendix IV - IIA percentages refer to number and area under each crop to total number and area of operational holdings under each crop.

Table IV. 6

Mean yield, Co-efficient of variation and Annual Average Growth Rate (AAGR) of important crops in Kerala (85-99).

S.No.	Crops	Mean yield (kg/ha)	Coefficient variation	AAGR
1	Rice	1930	7.30	2.20
2	Coconut (nuts/ha)	5348	2.65	1.91
3	Tapioca	19726	9.70	2.5
4	Banana	7880	12.43	3.28
5	Arecanut(nuts/kg)	209567	11.15	1.85
6	Pepper	296	12.46	2.67
7	Cashewnut	776	15.25	1.74
8	Ginger	3287	6.92	1.59
9	Groundnut	731	2.58	6.24
10	Sesame	263	20.15	2.46
11	Tea	1775	10.62	2.54
12	Coffee	460	35.28	12.52
13	Rubber	851	25.65	6.04
14	Cardamom	81	40.23	10.96
15	Pulses	127	2.33	.28

Source : computed from Appendix IV. 3. A.

A comprehensive analytical study on the determinants¹ of farm income (besides area captured by each crop) can be strengthened by shifting its focus to a more vital factor, viz, yield variability (overtime) of multifarious crops furnishing the TCA of the state.

A cursory glance at the yield specificities² (Table IV. 6) as indicators of the degree of stability scored by certain important crops of Kerala reveals a picture of diverging dimensions of their variability and growth rate. To be more precise, a comparative exercise of yield variability across crops over the period in question registers wild oscillations between 40.23 percent (cardamom) and 2.33 per cent (pulses). A more specific categorization of crops in terms of yield variability is sorted out as an appropriate step towards identification of an assured and stable crop/crop mix.

¹ Any attempt to identify the factors and to estimate their robustness as determinants of farm income requires a concrete but rigorous analytical procedure encompassing a wide spectrum of variables. But such a multivariate model loses its significance in the absence of a well-coordinated data set. Scattered data on area (proxy for size of holding), yield variability overtime and across districts, farm prices of important agricultural commodities, cost of cultivation etc.. (to be treated as eligible variables to conduct such an analytical exercise), and lack of data on farm income on a size - wise basis turn the possibility of applying such a model rather remote. Hence this study opts a primitive technique of analyzing each variable in isolation.

² Co-efficient of variation statistics is used for a proper analysis of yield variability of important crops of Kerala during a period of 15 years from 1985 to 1999.

Crops¹ like coconut(2.65%), Ground nut (2.55%) and pulses (2.33%) can be raised to the rank of stable crops, if yield variability is accepted as the reliable tool of its accurate measurement.

Second layer classification² (excluding plantation crops) displays a wide range of crops with rice registering yield variability of 7.30 per cent white pepper (12.46%) Banana (12.43%), Arecanut (11.15%) and Tapioca (9.70%) appear in descending order in the list. Among plantation crops tea works to be the most stable crop with 10.62 percent as yield variability where as Rubber and Coffee stand apart as crops recording comparatively high yield variability of 25.65 per cent and 35.25 per cent respectively. No visible relationship between yield variability and mean yield per hectare of crops enlisted can be established even on a closer scrutiny except for plantation crops. Quite interestingly, it can be noticed that yield variability is the highest for crops (coffee with 35.28%) having the lowest mean yield per hectare (460 kg /ha). The same association is

¹ But other parameters like area under each crop in each district (as a proxy for regional specialization) project coconut (gaining 30.82% of TCA) to be a crop of high significance in comparison with pulses (.37%) and groundnut (.23%). Again, area under coconut is evenly spread over the districts with Kozhikode (4.37%) and Malappuram (3.57%) top this list. But in comparison with groundnut, pulses enjoy a dominant position (in area) gaining 2021 hectares in Ernakulam, 1862 hectares in Palakkad and 1338 hectares in Kannur. Both coconut and pulses compete for area in almost all districts while only Palakkad with 6920 hectares of its TCA of 92849 ha. seems to have favourable conditions for the cultivation of groundnuts (Appendix IV.III A) Hence the scope of regional specialization automatically steps into the picture while assessing the status of a stable crop-mix.

² Crops capturing significant portion of TCA of (almost all districts of) the state (in 99-2000) like Rice (11.65% of TCA of the state), Tapioca (3.73%) Banana (1.30%) Arecanut (2.73%) Pepper (6.61%) Ginger (.38%) etc. [Appendix IV.IIIA]

On a closer scrutiny of the farm prices of certain principal crops of Kerala over a period of time would reveal their highly fluctuating (though increasing in the case of some crops) trends. Price, as a standard measure of stability of farm income (per hectare), exhibits disquieting trends of highly disturbing nature which become apparent in the case of certain leading crops especially coconut. AAGR of its farm price over a period of eight years from 92-93 to 99-00 has registered only 3.5 percent whereas farm prices of Paddy and Banana attained an annual growth rate of 7.44 percent and 7.34 percent respectively. Tapioca growers enjoy a comparatively good position (but its individual price is lower) by scoring 10.36 percent as its growth rate over the period in question. Pepper should be viewed in isolation with its steadily accentuating (its annual growth rate is 37.97%) prices in unequal proportions.

Table IV. 7.

**Annual average growth rate of farm prices of principal crops of Kerala :
1992-93 to 1999-2000.**

Sl. No.	Crops	AAGR
1	Paddy	7.44
2	Tapioca	10.36
3	Coconut	3.5
4	Pepper	37.97
5	Ginger	18.26
6	Cashewnut	9.17
7	Arecanut	13.39
8	Banana	7.34

Source : Computed from Appendix IV. 5 A.

Application of simple logic to this analytical exercise leads to an inevitable inference supporting the view that consistent yield (per hectare) accompanied by an assured (but stable) farm price for crops cultivated by the rural poor can be suggested as an ideal combination and a necessary prerequisite for ensuring a sustainable income which may go a long way in bringing about a sizeable reduction in farm poverty.

But an analytical study devoid of parity indices (relative measure of prices received and prices paid by farmers) can capture only a partial view of the real situation. Introduction of parity index to the analytical domain (Table IV.9) changes the whole picture by reflecting the visible effect of the prevailing price situation on the farmers. Parity indices decreased continuously from 92 points in 1991 to 77 points in 1995 as against an increase of 5 points in 1997 over the previous year and 6 points difference between 1998 (76%) and 1999 (82%). The year 2000 constitutes an absolutely unfavorable period¹ to the farmers with a decrease of 9.91 percent in prices received by farmers (over '99) as against an increase of 7.70 percent in prices paid by farmers. Quite visibly, the parity index decreased remarkably by 13 points (i.e., from 82% in 1999 to 69% in 2000.)

Reference to the periodical change in gross income generated per hectare of cultivated area in Kerala would suit this analytical background which partially captures (in quantitative terms) the vicissitudes and aspirations of farmers who are the actual designers of the destiny of the agrarian sector. Kerala's unique strength in attaining an enviable and unparalleled position (when compared with other states) in terms of aggregate income per hectare (Table IV. 8) can act as a stupendous force behind her aggressive fight against farm poverty.

¹ Gravity of the problem becomes all the more visible when this critical situation crystallizes in the form of a bleak future before 12.24 percent of the total main workers of Kerala. Of the total main workers of 8301087 at the state level 12.24 percent i.e, 1015983 is constituted by cultivators [Census of India, 1991]

Table IV. 8.

Per Hectare income of major states from agriculture.

States	90-91	91-92	92-93	93-94	94-95	95-96	96-97
Andra Pradesh	8344	10415	10561	15429	14745	16688	18029
Assam	9124	10792	11917	13611	15750	16062	16546
Bihar	9097	9839	11760	13249	15020	12195	13161
Gujarat	6134	6410	8754	8811	12880	11559	13911
Haryana	9102	11774	12167	14331	16296	16204	20026
Himachel Pradesh	7310	9275	9917	10595	13062	15107	NA
Jammu&Kashmir	9736	10863	11883	12185	15277	19674	NA
Karnataka	5809	7711	8342	9735	11666	13362	13946
Kerala	11650	17458	17865	19859	23836	27369	31468
Madhya Pradesh	4239	4604	4821	6330	6490	6967	8443
Maharashtra	5358	5801	7968	8651	9833	11386	13356
Orissa	3297	4567	4538	5472	6274	7519	7766
Punjab	9854	12534	14455	16803	18647	20090	22422
Rajasthan	4251	4807	5165	5134	6446	7220	9249
Tamil Nadu	7852	9422	11433	14517	15721	17287	NA
Uttar Pradesh	8054	9592	9621	11297	12810	14043	NA
West Bengal	10317	14033	14109	15801	20158	22368	NA
India	6851	8221	9001	10424	13581	12842	14178

Source : Economic Review, 2000.

Kerala's¹ success in maintaining a remarkably higher level of gross income per hectare from agriculture over a period of seven years from 90-91 to 96-97 can be equated to 18.87 percent² annual growth rate which is 5.44 points higher than its national counterpart of 13.43 percent.³

In conclusion, it can be emphatically argued that a rejuvenation of Kerala's potential strength in her agrarian front to weaken certain destabilizing and disequilibrating structural forces can release enormous energy to fight farm poverty with renewed vigour.

Section IV. III

Present agrarian scenario of Kerala⁴ characterized by distorted structure of operational holdings, diversified cropping pattern exhibiting high degree of regional specialization unhealthy price trends (to farmers) forms a suitable background to conduct an analytical study on farm poverty in the state. The unique position enjoyed by Kerala in terms of high average gross income per hectare⁵ places her in a state of

¹ An elaborate descriptive account of the inter-state differences in gross income per hectare is absolutely unnecessary and hence totally avoided. Rather an account of inter-regional farm income differences at the state (Kerala) level (not available) would have constituted a more constructive background of the present study.

² Computed from Table IV. 8.

³ Computed from Table IV. 8

⁴ A brief analytical exercise encompassing certain eligible variables (permitted by the available data) is conducted in section IV.1 to capsule the present status of Kerala's agrarian sector.

⁵ Presented in Table IV.8

apparent complacency. But it is high time to examine whether the enormous proliferation of marginal holdings¹ in the state acts as a (structural) countervailing force deforming the strong agrarian system by aggravating the incidence of farm poverty². Hence this section is structured in such a way as to capture an approximate size of (break-even size) holding necessary to generate poverty line income for Kerala. This analytical exercise is attuned to the available data on the distribution of operational holdings in Kerala and hence is confined to two points of time viz 1990 - 91 and 1995 - 96. For comparative purpose, poverty line at the state level corresponding to the years (referred above) calculated as Rs.14000 p.a (90-91) and Rs.21,000 p.a(95 -96)³ is selected for further analysis.

Gross income per hectare⁴ at current prices for the corresponding years is selected

¹ Table IV.II contains details regarding the structural change in operational holdings in Kerala.

² Such high incidence of farm poverty may lead to acute pressure of small and marginal (self - employed)farmers in the labour market.

³ Taken from the Report of the Task Force on Poverty Alternative Programmers (96).

⁴ Gross income per hectare, being an in appropriate measure of farmers income of agricultural (self-employed) households, constitutes only a fragile analysis. For a robust exercise and to attain reliable and meaningful results net income per hectare should be introduced as an analytical variable. Moreover, gross income per hectare at the state level is not supposed to capture the inter - regional farm productivity variations accurately and hence cannot be considered as a suitable representative of heterogeneity of land in terms of productivity. Again, the impact of farm price variations across crops on farm income at the regional level and on a size -wise (landholdings) distributional basis will not be fully reflected by the gross farm income per hectare. An accurate

as the base of analysis to associate holding size to poverty line income and thus to estimate an approximate (break-even) holding size just sufficient to generate poverty line income in Kerala.

Proper co-ordination of all relevant factors¹ automatically creates a constructive background for conducting an analytical exercise to compute a poverty line size of holding for Kerala. Consolidation of the necessary parameters on a comparable basis at the state level turns the whole endeavor to a simple computational procedure, which, when applied appropriately is expected to yield (Table IV.9) size-wise distribution of average farm income².

Quite obviously, average size of holding under all size classes has experienced suitable reduction over the period between 90-91 and 95-96, the dampening effect of which was fully neutralized by a two fold enhancement in farm income³.

computational procedure requires absolute rectification of such serious lapses. A macro dimensional approach to break-even analysis at the state level is adopted on the presumption that such constraints can temporarily be over looked.

¹ This refers to farm income per hectare and poverty line of rural Kerala for the period under study.

² A word of caution against such a procedure is absolutely essential. Size wise distribution of average farm income so computed is solely the net income cause of a change in average size of holding and can even be considered to represent a proper size modulating means-productivity nexus.

³ Analytical exercise of this dimension i.e, holding its base to a single uniform figure computed to be the aggregate farm income per hectare is expected to provide partially reliable results since the changes in farm income is solely attributed to a change in area

Table IV.9

Size-wise distribution of average size of holding and average income per holding at the state level for 90-91 And 95-96.

Size class hectare	90 - 91		95 - 96	
	(1)	(2)	(3)	(4)
	Average size of holding (hec)	Average income per holding	Average size of holding (hect)	Average income per holding (Rs)
<1 hect	.17	1981	.15	4105
1-2 hect	1.37	15961	1.34	36675
2- 4 hect	2.60	30290	2.56	70065
4-10 hect	5.42	63143	5.20	142319
>10 hect	59.53	6911945	34.33	939578
Total	.31	3612	.27	7390

Source: (col, 1 and col.3) from Agricultural Census Reports for 90-91 and 95-96.

Col 2 and col 4) computed from gross per hectare income of Rs.11650 (90-91) and Rs.27369(95-96), Economic Review, 2000.

The same analytical exercise can be slightly twisted to capture the changes in average size of holding across districts in 90-91¹ (Table IV.10).

under operation. Analytical framework of a more realistic nature should be designed to chip away the horizon of ambiguity and vagueness.

¹ Inter-temporal analysis on the change in size-wise distribution of average size of operational holding at the district level cannot be conducted due to the lack of data for 95-96 at the district level.

Table IV-10
Size - wise distribution of average size of
holding across districts for 90-91

Districts	90 - 91						95 -96*
	<1 hect	1-2 hect	2-4 hect	4-10 hect	>10 hect	Total	Total
Trivandrum	.15	1.30	2.46	5.27	53.55	.16	.12
Kollam	.18	1.32	2.56	5.31	81.85	.20	.16
Pathanamthitta	.24	1.33	2.56	5.42	46.46	.33	.31
Alappuzha	.16	1.33	2.57	5.41	18.22	.20	.19
Kottayam	.22	1.41	2.62	5.62	20.48	.41	.36
Idukki	.33	1.29	2.47	5.49	116.90	.57	.48
Ernakulam	.16	1.37	2.58	5.29	47.19	.23	.22
Trissure	.18	1.35	2.56	5.02	25.05	.24	.23
Palakkad	.20	1.41	2.66	5.28	42.37	.42	.40
Malappuram	.19	1.36	2.63	5.27	22.38	.30	.26
Kozhikode	.18	1.35	2.60	5.26	49.34	.26	.21
Wynad	.33	1.49	2.83	5.34	55.92	.68	.61
Kannur	.24	1.46	2.60	5.14	22.53	.45	.38
Kasargode	.27	1.34	2.59	5.26	108.32	.52	.49
State	.17	1.37	2.60	5.42	59.33	.31	.27

Source : Computed from Appendix IV - 6A

* only the average size of holding is available.

A quick glance at the size-wise distribution of operational holdings at the district level brings home the fact that the average size of holding in the marginal holding size class (i.e., <1 hectare) had been reduced to a minimum of .15 hectare (.37 acre) in Trivandrum in 90-91 whereas both Idukki and Wayanad retained the highest holding size of .33 hectares (i.e., .82 acres). The average size of holding at the district level ranged between .16 hectares in Trivandrum and .68 hectares in Wayanad. Idukki (.57 hectares), Kasargode (.52 hectares), Kannur (.45 hectares), Palakkad (.42 hectares) and Kottayam (.41 hectares) too are presumed to be in comfortable position with at least 1 acre (or slightly above) as their average size of holding. Even though almost all districts have experienced considerable reduction in the average size of operational holding over a period of five years, these districts (except Kottayam) have managed to retain at least one acre as the minimum size of holding even in 95-96. The gravity of the problem becomes more prominent when the average size of operational holding is compared to the poverty-line holding size at the state level for 90-91 and 95-96. By adopting the traditional method of computation which incorporates farm income and poverty-line as its analytical variables, a more transparent picture projecting (Table IV. 11) an approximate size of (land) holding just sufficient to generate poverty-line income at the state level for 90-91 and 95-96 can be drawn.

Table IV. 11¹

Break-even holding size for Kerala at Poverty-line for 90-91 and 95-96.

Per hectare farm income (Rs.)		Poverty-line		Average size of holding (hect)		Average income / size of holding (Rs.)		Break-even size of holding (hect)	
90-91	95-96	90-91	95-96	90-91	95-96	90-91	95-96	90-91	95-96
11650	27369	14,000	21,000	.31	.27	3612*	7390*	1.20	.77*

* Slight change in values as due to rounding. One hectare =2.471 acres.

¹ Refer Figure IV. 1 in Appendix IV. 7A for a diagrammatic representation of break-even holding size for 90-91 and 95-96.

Quite visibly, the average size of holding at the state level over the period under consideration experienced a reduction of .04 hectares which was more than compensated by an increase in average income per holding to the tune of Rs.3778/- Farm income per hectare registered a (more than) two-fold increment which accounts (acted as a counter balancing force) for the sizable reduction in area to the tune of .43 hectares (from 1.20 hectares to .77 hectares) in the size of holding required to generate poverty-line income at the state level. Considerable reduction in the break-even holding size actually represents the remarkable progress attained by the agrarian sector of Kerala. But the vulnerability of the farm sector, on the other hand, becomes all the more exposed when the unavailability of the average size of holding in Kerala is translated in terms of the discrepancy between average farm income per holding and the poverty-line income. (It can be calculated as - Rs.10,338 (90-91) and -Rs.13610 (95-96) at current prices). But the inter-temporal analysis on the break-even holding size throws light to a more healthy performance presented by the agrarian sector of Kerala. A precise calculation, for easy comparison, discloses that the farm income per hectare of Kerala increased about 2.35 times over a period of 5 years between 90-91 and 95-96 whereas specific rural poverty-line registered an increment of about 1.5 times during the period in question. But a closer analytical crop-specific study indicates that (Section IV.II) the annual growth rate in productivity and farm prices of plantation crops (1989-1999) was so high as to constitute the single important reason for the spectacular performance of the agrarian sector at the state level. Visible disparity in inter-crop yield variability (in monetary terms) will definitely lead to inter-regional farm income differences. Anyway, the spectacular performance of Kerala's agrarian sector can be considered as the sole reason for the sizeable reduction in break-even holding size from 1.20 hectare in 90-91 to .77 hectare in 95-96. Hence the possibility of a reduction in the number of unviable cultivating holdings cannot be totally ruled out.

To be more precise, the computational procedure adopted at this juncture to reach the proximity of an approximate poverty line size of holding for Kerala discloses the fact that the break even holding size in 90-91 lies in the range of 1-2 hectars (ie, small size class) while in 95-96 its size has assumed an area of .77 hectars only which can

obviously be placed in the size class of marginal holdings (i.e., <1 hectare). Proper assessment of the actual status of marginal and small farmers can be facilitated by comparing poverty line income to maximum and average (Table IV.12) income (per holding) for the period under consideration.

Table IV.12.
Maximum and average income (per holding)
from marginal and small holdings at the state level for 90-91 and 95-96.

Size class	90-91			95-96		
	Maximum income (Rs)	Average income (Rs)	Poverty line (Rs)	Maximum income (Rs)	Average income per holding (Rs)	Poverty line (Rs)
Marginal (<1 hectare)	11650*	1981	14000	27369*	4105	21,000
Small (1-2 hectares)	23300*	15961	14000	54738*	36675	21,000

Source: Table IV.9

* Maximum income for the respective years is calculated taking the upper limit of the corresponding size class as the base, whereas average income per holding is the product of average size of holding and per hectare income for the corresponding years.

At the aggregate level, comparatively Vulnerable position of the marginal farmers can be equated to their inability to generate at least poverty line income. Maximum income that can possibly be generated by them is limited to Rs.11650 (90-91) and Rs.27369 (95-96) while the average income per holding assumes low values of Rs.1981 and Rs.4105 for the respective years¹ Small farmers, on the other hand,

¹ Inter-temporal comparison of income (per holding) provides more meaningful results than inter size (of land holding) comparison of income (for the same year) since the latter represents a change in income due to change in area only. For more reliable and realistic interferences, an appropriate micro level study capturing size wise (land holdings) differences in farm income has to be conducted.

obviously enjoy a comfortable position equivalence of which can be found in terms of average farm income of Rs15961 per holding (lies slightly above the poverty line) income for 90-91 and Rs.36675 per holding (farm income which can be placed high above the poverty line of 95-96¹).

Analytical exercise of this nature (barring its inherent weakness already discussed) holds certain key issues to be viewed as relevant inference and hence to be addressed seriously. Firstly the uncontrolled proliferation of unviable marginal holdings, acting as a destabilizing force would definitely paralyze our agrarian system. The immediate necessity is to design an alternative (agricultural) production mechanism by incorporating the marginal and small holdings as its base. Secondly, the unnecessary waste of land as a productive asset caused by its uneconomic and unviable size can to a certain extent be avoided by strictly switching on to a more healthy system of agricultural operations.

A more comprehensive and constructive analytical study is absolutely essential to examine the potential strength of marginal and small holdings and to quantify the waste of land caused by its speedy disappearance from the agrarian scenario. Thirdly, the incapability of marginal and small farmers to generate sufficient and sustainable income to escape poverty, will create undesirable pressure in the labour market i.e, farm poverty particularly associated to disordered structure of operational holdings and their inefficient operation will assume new proportions to cause more acute pressure of wide spread poverty.

¹ The difference between the average farm income per holding (in the small size class) and poverty line income can be shown as Rs.1961 for 90-91 and Rs.15675 for 95-96(Table IV.12)

Appendix IV. 1 A.

Trends in the % of distribution of No. of holdings and area operated by major size group of holdings in Kerala for 1970-71, 76-77, 80-81 and 85-86.

Size class	1970-71		76-77		80-81		85-86	
	No.	Area	No.	Area	No.	Area	No.	Area
Marginal (<1 hect)	81.8	31.1	87.7	40.0	89.2	41.6	91.5	46.1
Small (1-2 hect)	10.1	19.6	8.0	23.2	6.9	22.0	5.7	21.5
Semi-Medium(2-4 hect)	5.6	21.2	3.2	17.9	2.9	18.4	2.10	15.3
Medium(2-10 hect)	2.1	15.7	1.0	10.9	0.9	10.8	0.5	7.4
Large (>10 hect)	.40	12.9	0.1	8.0	0.1	7.2	0.08	9.67

Source : Agricultural Census Reports of 1970-71, 76-77, 80-81 and 85-86,
Department of Economics and Statistics.

Appendix. IV.IIA

Crop-wise and size-wise distribution of Number and Area of operational holdings in Kerala (90-91)

Size class		Paddy	Coffee	Coconut	Rubber	Tapioca	Plantain/ Banana	Areca nut	Pepper	Cashew	Ginger	Se same	Tea	Pulses	Sugar cane	Chilly	Turric
Marginal (< 1 hec)	No.	456371	368330	4133740	547469	1428663	3080402	2198900	2233960	1995600	302165	13448	-	255417	5838	49009	2276
	Area	147811	14500	440197	115562	90766	95565	21849	97864	39436	5598	3490	-	8879	991	314	268
Small (1-2 hec)	No.	132600	28162	267700	157198	135000	248214	202600	214100	180900	67854	4444	-	29574	1125	9643	494
	Area	110217	12906	100310	107562	15942	19707	10342	48728	12412	3518	2611	-	4354	531	372	191
Semi-Medium (2-4 hec)	No.	54900	31700	92500	56994	47200	86500	70897	74600	63189	30019	2124	-	16757	733	6679	206
	Area	73791	13051	57738	74842	9116	11200	7553	27814	8028	3323	854	-	3046	1345	2067	141
Medium (4-10 hec)	No.	12700	6300	20000	14302	9432	17650	14317	14783	13345	5335	161	-	5218	514	893	41
	Area	35393	6234	20246	37083	2113	4242	4871	11148	6042	889	277	-	1253	428	20	37
Large (10 above)	No.	880	740	2730	2431	952	2120	1620	1857	1883	520	60	220	484	78	196	41
	Area	7833	16114	13287	45234	619	972	1607	3228	14887	255	148	36067	322	150	8	1
Total	No.	657451	435202	4516670	778394	1621267	3434886	2488334	2539300	2254917	405893	20237	220	307448	3288	66420	302
	Area	375045	62805	631778	380283	118556	131686	46222	188782	80805	13583	7380	36067	17854	3445	2781	61

Appendix IV.II A(contd.)

Size class		Cardamom	Fruits	Sweet potato	Vegetable	Other food grains	Other food crops	Other oil seeds
Marginal < 1 hec	Number	37200	8190715	35651	987288	4337	651356	54263
	area	7090	69691	624	2528	368	5388	4945
Small 1-2 hec	Number	16800	672826	8036	95584	823	95162	8092
	Area	5996	14058	337	411	486	2790	3309
Semi medium 2-4 hec	Number	5170	258041	4976	39329	562	37716	4503
	Area	5458	7310	243	209	104	1426	1020
Medium 4-10 hec	Number	1700	59212	839	9366	127	7668	4786
	Area	4730	2008	45	96	14	482	922
Large 10 & above	Number	1705	7741	276	982	-	912	179
	Area	25242	989	25	54	-	1284	461
Total	Number	62575	9188535	49778	1132549	5849	792814	71823
	Area	48516	94056	1274	3419	972	11370	10657

Source: Agricultural Censuses Report, 90 - 91.

Appendix IV - 3 A
Productivity of Major Crops in Kerala (85-90)

Year	Rice	Coconut No/ha	Tapioca	Banana	Areca nut 1 units/ha	Pepper	Cashew Nut	Ginger	Ground Nut	Sesame	Tea	Coffee	Rubber	Cardamom	Pulses
85-86	1729	4792	16149	6813	181697	272	582	2837	545	259	1514	359	559	56	721
86-87	1710	4494	17069	6501	182959	236	664	2872	467	240	1453	359	581	40	719
87-88	1709	4315	18717	7545	176000	320	670	3151	943	321	1500	349	603	32	725
88-89	1735	4432	18676	7378	183287	275	867	31577	729	173	2055	722	628	44	724
89-90	1956	5017	19069	7408	189363	323	859	3275	743	189	1880	283	694	44	718
90-91	1942	5289	19314	7482	201697	277	888	3250	743	219	1751	278	747	79	707
91-92	1959	5377	18713	7629	206747	282	933	3257	743	221	1909	239	806	79	706
92-93	2018	5843	19470	7652	213405	271	877	3257	743	212	1578	306	830	59	738
93-94	1976	5885	19866	7854	222073	269	820	3287	806	263	1954	528	934	102	734
94-95	1937	5856	20512	7913	243680	317	924	3588	704	283	1747	562	999	107	723
95-96	2023	5638	22008	8131	245825	358	801	3594	744	341	1762	546	1057	122	714
96-97	2021	5849	22354	9510	223991	309	710	3513	743	347	2003	570	1126	110	747
97-98	1975	5890	22586	9838	235570	255	601	3531	743	330	1882	610	1165	129	774
98-99	2061	6188	21638	8365	227650	376	664	3428	839	284	1858	731	1190	127	723
99-00	2203	6140	22621	10197	NA	306	NA	NA	NA	275	NA	NA	NA	NA	NA

Source : Data Book on Agriculture, 2000, Agriculture Division, State Planning Board.

APPENDIX IV. 4 A.
District - wise Production and Area of important crops in Kerala for 99-2000.
Districts

Crops	Area:Hect.														Produ:Tonnes
	TVM	KLM	PTA	ALP	KTM	IKI	EKM	TSR	PLKD	MLPM	KKD	WYD	KNR	KSD	
Rice	Area	17426	6716	35326	15822	3640	42894	42887	109704	23495	6495	17304	11710	8386	349774
	Produ	17550	35083	18639	92087	41431	9056	92209	250911	42117	8720	44761	19800	15996	770686
Jowar	Area								2528			1			2529
	Produ								1287						1287
Ragi	Area					33			837						870
	Produ					27			677						704
Other seed	Area					90			1731			5			1831
	Produ					70			1350			3			1423
Sugar cane	Area	0/168	0/19	272	136	421	2868	270	5950	1030	297	145	136	79	12052
	Produ	0/		1124	289	381	22164	189	33473	40	130	10	65	7	57882
Black pepper	Area	5575	10170	4224	1943	8499	57211	7002	4844	7885	11869	44771	23301	7051	198406
	Produ	1377	3269	912	242	777	13629	906	818	914	1806	17332	3430	1568	47543
Dry Chillies	Area	5		3		3			139				13	149	312
	Produ	5		3		3			149				11	139	310
Pulses	Area	1050	635	41	119	928	675	2021	1862	399	558	438	1338	389	10985
	Produ	240	1157	33	104	801	557	1447	1403	297	423	334	1093	302	8571
Cured ginger	Area	77	480	442	125	163	1711	469	1191	200	287	5520	358	129	11264
	Produ	254	1213	1295	333	458	7369	1592	3433	509	749	21965	1395	495	41344
cured Turmeric	Area	52	184	103	11	196	416	505	771	309	747	159	323	70	3971
	Produ	118	274	169	13	413	1000	864	1498	453	1639	446	1178	120	8362
Ground nut	Area								6920						6921
									1						

	Produ									5144											5144
Areca nut	Area	904	2235	1213	2308	1215	3348	3964	6355	3786	15894	10139	5212	12630	12738	81941					
	Produ	467	1442	1105	1043	671	3312	2661	6109	2320	11934	13314	1736	12191	25032	83337					
Tamarind	Area	1432	879	246	522	403	341	899	2038	6236	3047	1078	183	1348	270	18922					
	Produ	4368	1798	469	998	770	590	959	1903	7695	3951	2404	359	2572	728	29564					
Mango	Area	6957	6014	1527	5833	2720	2630	4977	6795	7535	11426	11307	5859	14360	2530	90470					
	Produ	22201	22189	10381	17083	10927	11076	12856	16843	27930	29500	12839	10003	42425	11508	257761					
Jack milka fruits	Area	6464	6611	2834	3191	4308	5467	4413	5175	4988	8868	11102	12477	14740	2606	93244					
	Produ	26	26	11	9	15	25	14	22	19	27	35	35	59	12	335					
Banana	Area	1599	1489	1669	536	2655	1138	4200	2791	5279	7049	1667	6342	1840	792	39046					
	Produ	16134	15742	16865	5418	30012	12190	41312	33729	52737	65122	16329	65753	18024	8778	398145					
Other plantain	Area	5877	4128	2053	3544	4259	3736	4232	5332	4268	3828	3259	1946	4347	2443	53252					
	Produ	41303	29507	19907	29592	44221	34681	29350	29990	34591	24391	21061	26798	26306	18868	410566					
Pine apple	Area	262	185	207	101	502	1283	5174	303	124	353	390	63	439	98	9484					
	Produ	1472	1582	1474	578	2885	11941	37497	1635	1018	2491	2281	236	2134	1034	68258					
Tapioca	Area	25981	25678	6877	4524	7745	7775	5131	1527	6373	8491	4924	1620	3996	1280	111922					
	Produ	530595	470705	157998	90552	202980	251629	154251	34226	133282	227107	108758	57449	86741	25479	2531752					
Sweet potato	Area	47	1		2		17	8		519	252	36	3	26	78	989					
	Produ	533	11		23		193	90		4787	2900	408	35	295	1423	10698					
Papaya	Area	863	917	481	978	901	530	1150	1112	1020	1756	1451	362	1223	446	13190					
	Produ	5683	853	2657	4865	6490	1342	5568	4863	6762	7585	943	2417	6551	2745	59324					
Drum stick	Area	2490	1696	577	924	908	534	877	1106	1528	2462	3109	835	1654	546	19246					
	Produ	4016	3101	593	1031	498	701	687	1501	2032	2575	1238	674	1261	817	20725					
Sesame	Area		581	8	902	46	9	236	111	115	558		20		26	2612					
	Produ		166	3	126	33	2	131	31	53	154		5		14	718					
Coconut	A	91362	79906	22769	61270	43272	23696	68110	88307	45857	107142	131061	10843	95257	56183	925035					

Million nuts	P	608	399	131	333	201	92	406	610	218	717	1059	27	515	364	5680
Cotton no. sales170/	A								4772							4772
	P								7702							7702
Nut meg	A	50	50	194	126	485	498	2632	1847	67	242	164	13	126	26	6520
	P	13	13	50	32	126	128	704	393	18	62	42	4	33	7	1625
Tobacco	A														44	44
	P														245	245
Len ion grass	A						1226	4	5	3		2	300	61		1601
	P						81	1	2	2			5	2		93
Tea	A	965	1258	90		1951	23503	2	530	840	174		5480			34793
	P	361	368			16.8	46456		1888	2302			10412			61955
Coffee	A						12075			4650			67414			84139
	P						10500			1790			48180			60470
Rubber	A	27954	36452	47700	3747	110923	38187	56383	13372	28781	28920	18016	6411	33806	22248	472900
	P	32913	45727	61664	3954	139550	44853	72663	19431	31235	32606	22593	3907	37992	23732	572820
Cocoa	A	113	38	661	175	2243	2860	1416	169	29	40	404	137	216	128	8629
	P	49	30	369	140	1137	1032	564	45	13	5	186	49	61	64	3744
Proceeds cardamom	A			664		200	32667			2919	70	220	4108	128	515	41491
	P			61		21	6077			180			245		1	6585
Raw cashew nuts	A	2804	4604	1044	4909	701	1341	1576	4101	5854	10982	3863	1561	26101	19962	89403
	P	1406	2662	419	1326	170	395	549	1216	2258	5669	2049	944	35954	10530	65547
Betel leaves	A															
	P	5904	2042	13957	7516	2683	179	7514	6262	716	126685	4473	179	1610	3936	183656
Clove (dry)	A	93	48	87	28	123	220	101	77	10	42	51	8	25	13	9.26
	P	6	3	6	2	9	14	7	6	1	3	3	1	1	1	63
Garlic	A						849									849
	P						14433									14433

Source : Agricultural Statistics ,99-2000. Department of Economics & Statistics, May 2001.

Appendix IV. 5A.

Average Farm Prices of Principal Crops of Kerala from 92/93 to 99-2000.

Year	Paddy		Tapioca		Coconut		Pepper		Ginger		Cashew nut		Areca nut		Banana	
	Unit	Price	Unit	Price	Unit	Price	Unit	Price	Unit	Price	Unit	Price	Unit	Price	Unit	Price
92-93	Quintal	420.5	Quintal	187.24	100 Nos.	420.14	Quintal	2616.59	Quintal	2490.5	Quintal	2000.41	100 Nos.	33.01	100	93.89
93-94	"	414.53	"	197.6	"	325.55	"	3898.02	"	2858.06	"	2134.34	"	33.65	"	108.56
94-95	"	494.86	"	217.13	"	307.83	"	6687.43	"	5250.29	"	2353.36	"	36.73	"	125.7
95-96	"	547.00	"	253.00	"	331.00	"	7320.00	"	5871.00	"	2700	"	43.00	"	130.00
96-97	"	607.00	"	300.00	"	480.00	"	8780.00	"	4214.00	"	2730	"	43.00	"	161.00
97-98	"	583.00	"	297.00	"	443.00	"	17440.00	"	4462.00	"	2848	"	44.00	"	148.00
98-99	"	627.00	"	313.00	"	485.00	"	18090.00	"	5625.00	"	3538	"	65.00	"	167.00
99-2000	"	684.00	"	368.00	"	476.00	"	20506.00	"	6394.00	"	3639	"	75.00	"	147.00

Source : Economic Review, 2000.

Appendix IV - 6A
District - wise distribution of Number & Area operational holdings (size - wise) for 90-91

Sl No.	Size Class	TVM	KLM	PTN	ALP	KTM	IKI	ERN	TSR	PKD	MLM	KKD	WYD	KNR	KSR	STATE
1	Marginal ^a (02 - 99)	N	495024	209802	344132	270052	158116	397060	428740	333897	405520	396737	91053	308620	140480	4381145
		A	72963	49909	54641	60011	51974	63773	77107	67455	75534	71568	29733	72654	38629	856443
2	Small (1-1.99)	N	11103	14380	10389	25693	34315	20501	19168	30515	21040	18096	16171	28341	18008	279740
		A	14400	19102	13824	36303	44171	28185	25888	42994	28683	24376	24164	41353	24113	383445
3	Semi Medium (2-3.99)	N	2627	3278	3079	10553	8638	6898	5162	15698	8467	5360	7435	11565	6813	97750
		A	6466	8388	7900	27689	21355	17765	13201	41690	22291	13948	21060	30038	17645	255000
4	Medium (4-9.99)	N	541	572	734	2354	1760	1342	688	4329	1987	1040	1947	2559	1337	21486
		A	2850	3100	3968	13222	9663	7093	3454	22876	10473	5475	10403	13142	7029	114321
5	Large (10 & above)	N	164	188	120	427	647	170	132	259	271	148	275	205	139	3185
		A	8182	8734	2186	8747	75637	8022	3306	10973	6064	7302	15379	4619	15056	178081
6	Total	N	509459	228220	358454	309079	203476	425971	453890	384696	437285	421381	116881	351290	166777	4783304
		A	105461	89233	82519	145972	202800	124837	122956	185988	143045	122669	100739	161806	102472	1787290
7	Average Size of holdings	.16 (.21)	.20 (.16)	.33 (.31)	.20 (.19)	.41 (.36)	.57 (.48)	.23 (.22)	.24 (.23)	.42 (.40)	.30 (.26)	.26 (.21)	.68 (.61)	.45 (.38)	.52 (.49)	.31 (.27)

Source : Agricultural Census Report, 90-91, Department of Economics and statistics.

Appendix IV. 7 A.

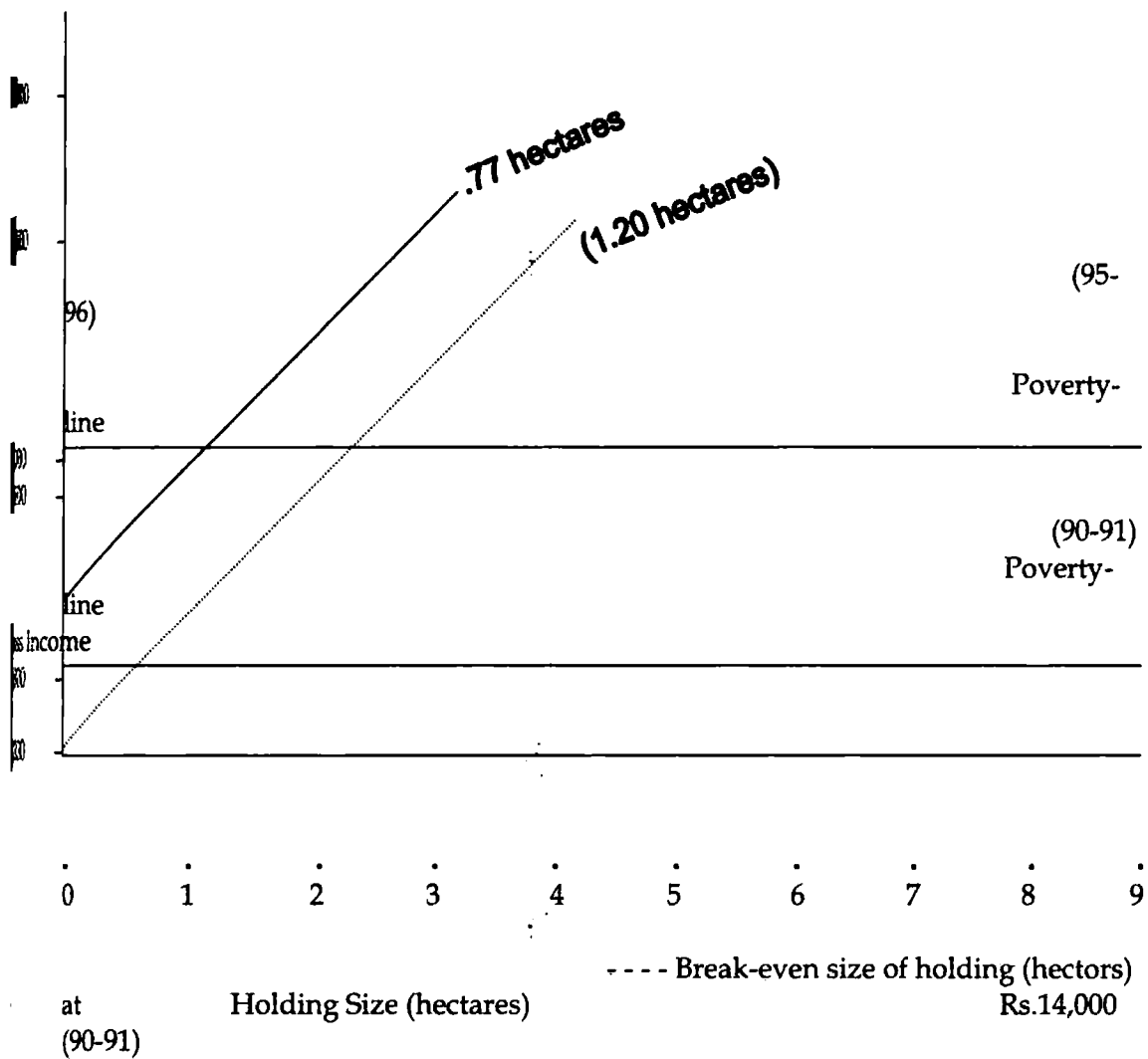


Fig. 12. 1

(hectares) at

----- Break-even size of holding (hectares)
Rs.14,000

----- Break-even size of holding

Rs.21,000 (95-96)

Chapter V

Farm Poverty in Kerala. A Case Study of Alappuzha, Trissur, Palakkad and Wayanad.

Analytical study of macro dimension on farm poverty (prelusive exercise to identify break-even holding size for Kerala was conducted earlier in section III of the preceding chapter.) cannot be freed from the allegation of being superficial in its approach towards holding closer scrutiny and providing realistic interpretation ¹ Relevance of a concrete micro level study becomes more prominent in this context. Here the present chapter is designed on the presumption that the data mobilized at the grass root level ² would be qualitatively superior highly reliable and thus would serve the purpose of extracting valuable inference. Chapter V is so framed as to capture a detailed profile (Section I) of the area selected for conducting the present study on farm poverty whereas Section II deals with the basic features of the sample households brought under this study. Section III is entirely devoted to provide a brief explanation of the different variables constituting the analytical framework and the last section, Section IV, conducts a detailed examination of the incidence and depth of farm poverty ³.

SECTION - I

Four Panchayats were selected ⁴ as the sample area for conducting the present study on farm poverty. Lekkidi - Perur in Ottappalam Block of Palakkad District

¹ Reasons supporting and strengthening this view have been presented in section III of chapter IV.

² Primary data collected through pretested questionnaire form the base of this study.

³ Head Count Index and Poverty Gap Index, as measures of poverty are used respectively to examine the incidence and depth of farm poverty.

⁴ Sampling techniques adopted to select 400 households from 4 Panchayats are discussed in the introductory Chapter,

Mullan kolly of Sultan Bathery Block of Wayanad district, Ambalappuzha in Ambalappuzha Block of Alappuzha District Puthur in Ollukkara Block of Trissur district constitute the base of this study. A brief discussion on the profile of each sample area under consideration is absolutely essential and hence an attempt is made in this section to capture the general features of all the four sample areas brought under the study.

1.1. Ambalappuzha (South) Panchayat, (divided into South and North panchayats) one among three panchayats of Ambalappuzha Block of Alappuzha district is bordered by Purakkad panchayat in the South, Nedumudi in the North, Thakazhi in the East and Arabian sea in the West. It is located 14 kms away from Alappuzha, the district head quarters. On the other hand, Ambalappuzha (South) Panchayat in the South, T.S. Canal and Nedumudi Panchayat in the East, Vettikkarithodu, Kuravanthodu, and Pumeen Pozhi in the North and Arabian Sea in the West constitute the geographical borders of Ambalappuzha (North) panchayat. It is located approximately about 13 kms away from the district headquarters.

1.2. Population and Area.

Gross geographical area of Ambalappuzha panchayat is reported as 25.93 sq. kms. Total population of 45113 is comprised of 22171 (49.14%) males and 22942 (50.86%) females. The density of population of North Ambalappuzha is computed as 2070 per sq. km. whereas South Ambalappuzha has a relatively lower density of population of 1700 per. sq. km. The proportion of SC population is estimated as 2195 (4.87%). whereas only 0.05 per cent (i.e, 23) of the total population is constituted by the ST.

1.3. Land Use and Cropping Pattern

Of the total area of 24.17 sq. kms, 1459.35 hectares of land are intensively used for the cultivation of various food and non-food crops. About 30 hectares of land are reported to be fallow land, Crops like Paddy, Plantain, Tapioca, Vegetables, Arecanut, Pepper etc. occupy the cultivable land. About 1151.59 hectares of land come under 'Virppu' cultivation whereas only 887.47 hectares are brought under 'puncha' cultivation. 1158.39 hectares of land are declared as the actual area earmarked for cultivation of paddy. Allocation of area under cultivation provides all indications

regarding the importance attached to paddy cultivation in this panchayat. Other crops occupy (Table. V.1) only an insignificant portion of the total area under cultivation.

Table. V. 1.

Distribution of area under different crops in Ambalappuzha Panchayat.

ITEMS	AREA (Hectares)
Paddy	1158.39 (79.36)
Plantain	165.00 (11.31)
Tapioca	45.00 (3.08)
Vegetables	70.00 (4.80)
Arecanut	5.00 (0.34)
Pepper	10.00 (0.69)
Ginger	3.00 (0.21)
Others	3.00 (0.21)
Total	1459.39 (100)

Figures in brackets are percentages to the total.

About 79.36 percent of the total cultivable area is brought under the cultivation of paddy, the dominant crop which constitutes the main source of income to the farmers of this region. Among other crops, plantain tops the list in terms of area under cultivation by occupying about 165 hectares (11.31%) of land. Vegetables, considered as quick-yielding variety of crops, are cultivated extensively by allocating about 70 hectares of land whereas Tapioca too gains significance by securing 45 hectares for its cultivation.

1.4. Irrigation and Infrastructure

Lack of proper and adequate irrigation facilities constitute the single reason for the absolute absence of paddy cultivation during summer. (Paddy cultivation is popular only during the other two seasons). But this sample region is otherwise gifted, though meagre, with other infrastructural facilities. About 450 pumsets are installed for the sake of irrigating 65 hectares of land and 190 sprayers are distributed among farmers by the Department of Agriculture. Financial institutions like, State Bank of Travancore, Federal Bank, South Indian Bank and District Co-operative Bank function efficiently. Co-operative societies add vitality and make agricultural operations more dynamic. 'Haritha' constituted by 41 farmers too play a vital role in strengthening the agrarian

sector of the region in question. But on the whole, it can be inferred that the government has absolutely failed in investing adequately in the agrarian sector to build up a strong infrastructural base for its rapid development.

1.5. **Puthur Panchayat**, one among seven panchayats of Ollukkara Block, belongs to the district of Trissur. The gross area of the sample region is reported to be of 3923.913 hectares or 79.08 sq.kms. Of the total area of 469.89 hectares earmarked for paddy cultivation, about 354.24 hectares are converted for the cultivation of multifarious crops, whereas 33.14 hectares are developed for the cultivation of plantain and 41.01 hectares are converted to cultivate coconut. Mixed-crop pattern of cultivation is followed by the farmers of this sample region. 217.98 hectares of paddy fields are converted for the cultivation of rubber while cashew occupies 368 hectares. Distribution of area (Table V.2) is done in such a way as to provide 23.83 percent of the area to Banana and 19.71 percent to coconut. Other crops commonly and extensively cultivated include Rubber (9.45 percent), Arecanut (9.32%), Paddy (9.09 %) and Pepper (7.58%) of the total area.

Table V. 2

Distribution of area under different crops in Puthur Panchayat.

ITEMS	AREA (Hectares)
Paddy	210 (9.09)
Banana	550 (23.83)
Vegetables	150 (6.50)
Rubber	218 (9.45)
Pepper	175 (7.58)
Coconut	455 (19.71)
Cashew	130 (5.63)
Arecanut	215 (9.32)
Tapioca	5 (0.22)
Others	200 (8.67)
Total	2308

1.6. Irrigation and Infrastructure

Irrigation facilities provided to this region is adequate enough to conduct extensive agricultural operations by bringing approximately 1500 hectares of land under cultivation. Moreover, the strength of public investment in agriculture is proved by the installation of 2500 pumpsets, 1015 sprayers, 10 tractors and 8 tillers. Quite obviously, Puthur Panchayat has succeeded in maintaining higher standards in productivity of certain (Table V.3) selected crops.

Table V.3

Yield per hectare of selected crops of Puthur Panchayat.

ITEMS	YIELD
Paddy (Virippu)	2600 Kg/ hectare
Paddy (Mundakan)	2900 Kg/ hectare
Coconut	70 nuts per palm
Pepper	14 Kg/ Standard
Cashew	10 Kg/ Plant
Banana	10 Kg.
Vegetables	20 tonnes
Rubber	4000 Kg/ hectare

General profile of the Puthur region indicates that public investment in agriculture, though low, has built up a sound base for conducting agricultural operations somewhat profitably.

17. **Lekkidi - Perur Panchayat**, one among five rural panchayats of Ottappalam Block belongs to Palakkad district. Ambalappara and Mannur panchayats in the North, Bharathappuzha in the South, Mankara and Mannur Panchayats in the East and Ottappalam Municipality and Ambalappara Panchayats in the West constitute the borders of Lekkidi - Perur Panchayat. Total number of wards in this particular Panchayat is reported to be 11.

1.8. Area and Population

The Panchayat has a total geographical area of 30.379 sq. kms with a population of 26571 according to 1991 census. Of the total population 47.34 per cent is constituted

by males while the rest of 52.66 per cent is reported to be female population. The proportion of scheduled caste population is calculated as 14.18 per cent while only 0.10 per cent of the total population is captured by Scheduled Tribe. Density of population is relatively higher with 875 persons per sq. km.

1.9. Land use and cropping pattern

Of the total cropped area of 3834 hectares, 73.92 per cent is earmarked as agricultural land whereas only 1.77 per cent is reported as non-agricultural land. Paddy, being the dominant crop in terms of area, is cultivated in 1328 hectares of land of which 50.30 per cent comes under cultivation during autumn season, 48.95 per cent in winter and 0.75 per cent of the total area under paddy is cultivated during summer season. About 650 hectares of cultivable land is entirely furnished by multifarious cash and food crops. The share of land captured by each crop can be estimated (Table V.4) as follows :

Table V - 4

Distribution of area under different crops in Lekkidi - Perur

Crops	Area (Hec.)
Gram	15 (2.31)
Seasame	5 (.76)
Vegetables	61 (9.38)
Ginger	16 (2.46)
Turmeric	9 (1.38)
Tuber Crops	62 (9.54)
Banana	38 (5.85)
Coconut	290 (44.62)
Area nut	4 (.62)
Rubber	51 (7.85)
Cashew	22 (3.39)
Pepper	5 (.76)
Mango	52 (8.00)
JackFruit	20 (3.08)
Total	650 (100)

Quite obviously, it can be seen that both paddy and coconut compete for the available cultivable land and hence dominate the agrarian sector of the region in question. Total number of agricultural families in this Panchayat is reported be 2657.

1.10. Rainfall, irrigation and infrastructure

It seems that agriculturists depend heavily on rainfall for conducting agricultural operations. This region obtains moderate rainfall during June- July and October-November. Average rainfall is computed as 1709 mm. Pallam Thuruth Lift Irrigation Project is a regular supplier of water for irrigation to 200 acres of land whereas Pallamangalam Lift Irrigation Project irrigates 25 acres of cultivable area. Right Bank Canal Malampuzha has gained more popularity as the major Irrigation Project of this Panchayat. 15 public ponds, 24 private ponds and 1500 wells are recognized as the major source of water for both drinking and in certain places irrigation purposes.

About 108 pump sets, 7 tractors, 5 winnowing machines, 89 sprayers and 3 fertilizer depots add strength to agricultural operations and inject confidence to the farmers of this region. Sixteen Group Farming Samithies with a membership of 3657 conduct their operations in 700 hectares of land. Kera Samithies with 625 members too function very efficiently in this Panchayat. Haritha Sangha operating in 200 hectares with 100 members too are very popular in this region.

Active intervention of the Government through Peoples' Planning has brought visible positive changes in the agrarian front of the Panchayat. Many novel schemes are introduced to raise the operational standards of the farms of this region.

1.11. Mullan Kolly, one among the eight rural Panchayats belongs to Sultan Bathery Block of Waynad district. River Kabini in the North, village Panchayat of Pulpally in the South, river Kannaran in the east and Reserve Forests in the west constitute geographical boundaries of this Panchayat of Mullan Kolly. It is situated about 52 kms away from the district headquarters.

1.12. Area and Population : The total geographical area of this Panchayat is reported as 71.58 sq. kms. According to 91 Census the total population of Mullan Kolly Panchayat is 28871 of which 53.80 per cent is constituted by males and the rest of 46.20 per cent is comprised of females. Of the total population 7.31 per cent belonged to Scheduled Tribe whereas only 5.18 per cent is constituted by Scheduled Caste. But the present population (2001) has increased to 40957 presenting a decadal growth of 29.51 per cent.

1.13. Land use and Cropping Pattern : Of the total geographical area, land brought under agricultural use is 5557 hectares. Mullan Kolly Panchayat is characterized by the absence of land for non - agricultural purposes, grazing and fallow land. But about 2sq. kms area of land comes under forests. Farmers are more dedicated and sincere and make maximum utilization of available land for the cultivation of high - valued crops. About 612 hectares (11.01%) of the total cropped area come under paddy cultivation whereas the significance of other crops cultivated in this region (Table V.5) can be translated in terms of the area under their cultivation and yield per hectare.

Table V.5

Distribution of area and productivity variations of different crops cultivated in Mullan Kolly.

Crops	Area (Hectares)	Yield No./kg/hec.
Paddy - 1	412 (7.41)	4800
Paddy - 2	200 (3.60)	5200
Coconut	600 (10.80)	60 nuts/palm
Rubber	200 (3.60)	3600
Tapioca	25 (0.44)	14000
Pepper	3500 (62.98)	1200
Banana	25 (0.44)	15000
Arecanut	35 (0.63)	500 nuts/ palm
Pulses	25 (0.44)	800
Coffee	150 (2.70)	600
Ginger	300 (5.40)	9000
Turmeric	25 (0.44)	4500
Mango	10 (0.18)	20,000
Jack fruit	50 (0.90)	300
Total	5557 (100)	

Figures in brackets represent the percentage to the total.

Lion's share of the cropped area is earmarked for the cultivation of pepper (62.98%), ginger (14%), coconut (10.80%) and paddy (11.01%). Among these crops, pepper and ginger, popular as high-valued crops, with price of Rs.20506 per quintal and Rs.6394 per quintal respectively, in 99-2000, enjoyed an annual increase in their average farm prices over 98-99 to the tune of 13 per cent and 14 per cent. But coconut experienced a slash in its farm price to the extent of -2 percent over the previous year. Productivity variations across crops measured in physical units provide all indications regarding the satisfactory performance of a healthy agrarian sector of this region.

1. 14. Irrigation and Infrastructure.

Absence of large irrigation projects in this region is more than compensated by Kolappally, Marakkadav and Perikkallur Lift Irrigation Schemes. Other sources providing regular irrigation facilities for cultivation on a permanent footing are 595 wells and the two rivers which form the borders of this Panchayat. Financial assistance extended by Canara Bank and State Bank of India with a social commitment to the farmers of this region requires special mention. Both Rubber and Agricultural Marketing Society (Mullan Kolly) and Service Co-operative Society (Mullan Kolly) play pivotal role in reducing the intensity of the problems of the farmers in general. Aggregate number of machines in use to make agricultural operations rather easy is (16)tractors, (10) power tiller, (702) sprayers. Several creative steps like the formation of Pepper Samities (12 in number) incorporate 5079 farmers as members and extend over an area of 4060 hectares. Paddy Samities (8 in number) extend over an area of 394 hectares and incorporate 876 farmers and Coconut Samities (12 in number), are taken to dynamise agricultural operations. Active participation of the prudent farmers, constructive agrarian structure, high investment in fixed assets (agriculture), irrigation and other infrastructural facilities dynamise the agricultural operations of this region.

This section is, designed solely for the purpose of presenting certain general but relevant characteristics of sample farm households selected for the present study. This is done on the presumption that such an attempt would sharpen the focus of the study.

II. 1. Hundred farm households from Ambalappuzha sample, having a population of 460, 97 are reported to be male-headed enjoy and they do not any special skill to engage themselves in other remunerative occupations for supplementing their farm income. Wage employment, self-employment and animal husbandry constitute additional sources which provide only meager income to sustain their living. Homestead, being too small in size, plays only an insignificant role in generating additional income to the sample households. Agricultural operations are extensively conducted by the traditional farmers, 27 per cent of whom belong to Other Backward Caste(OBC) while the rest (73%) is reported to be from Nair Community. Even though leasing is not so popular in this sample region, certain households have resorted to leasing (in) of land for extensive cultivation. About 8.19 per cent of the total operational

area is reported to have been leased (in) by 7 farm households. 80 cents of land is leased out by one sample household while 89 cents remain fallow. 98 per cent of the operational farms is placed under the wet land category while only 2 per cent belongs to the dry land group. Almost all operational farms are used for intensive cultivation of paddy while 3 farm households follow mixed crop pattern (by concentrating on the cultivation of banana, coconut and HYV of vegetables.)

11.2. Puthur sample exhibits an entirely different picture here 100 farm households have a total population of 414 only. Ninety per cent of these households are reported to be male-headed. Fifty per cent of the operational holdings here are totally owned and operated by the X'ians, while the rest is divided among OBC (19%) Scheduled Caste (4%) and Nair Community (27%).

Majority of the operational farms are reported to be constituted by dry land area while only an insignificant portion is placed under the wetland category. About 22 households possessing different size classes of operational holdings, are reported to have leased in 21.05 acres (12.83%) of land for conducting extensive cultivation. Leasing (oral) as a survival strategy, is popularly accepted by the farm households of this sample region. Homesteads, ranging between 5 cents to 20 cents, are devoted entirely for the cultivation, on a small scale, of plantain and coconut the produce of which is used for self-consumption. Multifarious crops like coconut, arecanut, pepper, banana, rubber, plantain, paddy, vegetables, tapioca are cultivated most scientifically, with the aim of maximizing farm income. Content of hired labour in the cost of cultivation is comparatively less since most of the farm operations are conducted by family labour (except in paddy cultivation)

11.3. Of the 100 sample farm households from Lekkidi-Perur, (having a population of 505), 25 per cent is reported to be female headed. Here 44% of the farmers belong to OBC while the rest is constituted by Nair Community (54%) and Scheduled Caste (2%). Almost all operational farms are wetlands while only 3.15 acres of land are placed under the category of dry land. The fact that only about 1.83 acres of land is reported to have been leased in and 3.70 acres of land leased out for cultivation, indicates that leasing is not accepted as a popular measure of extensive cultivation by the farmers of this sample region. The existence of fallow land to the extent of 7.50 acres

provides ample evidence to the highly speculative character of the farmers who earmark the entire available cultivable land for cultivation of paddy. Only in rare cases cultivation of other crops like Tapioca, Coconut, Ginger, Plantain and Cacholam is reported. Small homesteads, ranging between 15 to 20 cents, contribute nothing significantly to supplement the farm income.

11. 4. Of hundred the sample farm households from Mullan Kolly of Wayanad district (having a population of 486), 10 per cent is female-headed families. About 52 per cent of the farm households belong to X'tian Community while the rest is constituted by both OBC (18%) and Muslims (30%). Ninety per cent of the operational holdings is reported to be wet land. Mixed crop pattern of cultivation followed by the farm households of this sample region make agricultural operations highly remunerative and more dynamic in character. Ginger, Pepper, Coffee, Arecanut, Banana, Plantain, Coconut, Vegetables, Tapioca, Rubber etc. gain place of almost equal importance in the long list of crops extensively cultivated by the sample farm households. About 13 acres (5.53%) of operational holdings are leased out for agricultural operations. The general characteristics pertaining to the sample farm households, provide, more or less a lucid picture regarding the genuine interest shown by farmers in making agricultural operations more dynamic and profitable by optimum utilization of the available cultivable land.

Section 111.

The detailed discourse on the profile of the study area under consideration (conducted in Section 1) prepares an appropriate background to analytically examine the prevalence and depth of farm poverty. But a comprehensive and dissective study of farm poverty requires the introduction of certain relevant variables and parameters which constitute its broad analytical framework. Hence the inclusion of a brief note on the variables used to analytically approach the phenomenon of farm poverty, seems absolutely essential.

Since the focus of the present study is to design a poverty line holding size (break-even holding size here after) and thus to measure the incidence and depth of farm poverty, a sample of 400 farm households spreading across any of the four

categories of operational holdings (independently chalked out classification for further analysis¹) viz, <1 acre (marginal), 1-2 acres (small), 2-3 acres (medium) and >3 acres (large) collected from four panchayats each from the districts² of Alappuzha, Trissur, Palakkad and Wyanad constitute its base. Simple computational device of average is applied to estimate net farm income per acre (gross farm income - gross operating costs) across different size classes of holdings. Appropriateness of the size- productivity and size-cost nexus as a theoretical framework to proceed further with the study on farm poverty has been extensively examined by introducing correlation analysis. The technique of multiple regression is adopted to examine the robustness of each item of cost as explanatory variable on net farm income per acre. Final stage of this analytical study is featured by the estimation of a break-even holding size and thus to make the procedure of computing both the incidence and depth of farm poverty rather simple³. The latest poverty- line computed and published at the state level (1999-2000)⁴ is applied in estimating the break-even holding size.

¹ Official classification of operational holdings into five categories viz, < 1 hectare (marginal), 1-2 hectares (small), 2-4 hectares (semi-medium), 4-10 hectares (medium) and >10 hectares (large) does not hold good at the grass root level since majority of operational holdings are too tiny to be tugged easily into such broad categorization. Hence this study makes use of an independently designed classification giving better representation of all categories of operational holdings, and marginal differences in farm output subsequently caused.

² The sampling design adopted in selecting a sample of 400 farm households (100 samples from each district) from four districts is discussed in chapter 1 (1.3) of this study.

³ Results of these analytical exercises are presented in Section .IV of this chapter.

⁴ Details are given in Appendix V. 6A.

Section. IV.

Given the profile of the study area under consideration (Section 1) and a brief presentation of the variables and methodology of the analytical framework of the study (Section 111), an attempt is made to provide an appropriate interpretation of the phenomenon of farm poverty based on the pattern of allocation and the process of utilization of operational holdings. Differences in the pattern of cultivation (visibly seen and easily understood from the distribution and utilization of operational holdings, cropping pattern, and mode and cost of cultivation) practiced across regions, variations in climatic conditions and texture of the soil, will definitely influence farm income and hence the procedure adopted (Section 111. Chapter IV) in computing a break-even holding size for Kerala (basing the analysis on a single uniform figure representing gross income per hectare from agriculture) would be a misfit at the regional level¹. Application of such a method of computation would definitely provide unreliable and fallacious results. Hence an attempt is made in this section IV to conduct an analytical study on farm poverty by capturing the inter-regional variations in the productivity of land (i.e, farm income).

A detailed examination of the distribution pattern of operational holdings followed across regions (sample regions selected for this study) receives significance as a prelude to the analytical exercises carried out later to measure variations in farm income².

At the analytical level, an independent attempt is made to classify the operational holdings into four categories viz, <1 acre, 1-2 acres, 2-3 acres, and >3 acres. Geographical location is accepted as the criterion for arranging the sample regions in order from South to North. Regional disparities in the pattern of distribution of

¹ Farm income per unit of land would exhibit wide variations across regions and hence no attempt to design a break-even holding size even at the district level has been made in the previous chapter (IV). In turn, inferences derived from analysis conducted at the state level would not suit region-specific attributes.

² Farm income and yield are used interchangeably.

operational holdings (Table V.6) can be captured fully by making their inter-regional comparison.

Table V. 6

Size-wise distribution of the number and area of operational holdings in Ambalappuzha.

Size class	No.	Area (Acres)
<1	47	23.54 (14.55)
1-2	30	37.74 (23.34)
2-3	10	24.05 (14.87)
>3	13	76.40 (47.24)
Total	100	161.73 (100)

Figures in brackets represent the percentage to the total.

Quite obviously, of the total cropped area of 161.73 acres, 23.54 acres (14.55%) are operated by 47 percent marginal holders of this region whereas 13 percent large holdings capture 47.24 percent of the total operating area. Amablappuzha which belongs to the district of Alappuzha (rice bowl of Kerala) exhibits no visible association between the number of holdings and the corresponding area under cultivation. About 23.34 per cent of the area under cultivation falls within the size class of small holders. Medium group cultivators (constituting about 10% of the total) are in a weak position with only 14.87 percent of the total cultivated area available for conducting agricultural operations.

But Puthur Panchayat is unique in its position by bringing (Table 7) about 75.37 acres of land (45.94%) under the size group of small farmers (54%) while only 13.11 percent is secured by large farms (6%) as their share of total operational area. The position of marginal farms is brought down in the hierarchal order with only 8.39 percent as their share in the aggregate operational area.

Table V. 7.

Size-wise distribution of number and area of operational holdings (Puthur).

Size class	Number	Area (Acres)
<1	18	13.76 (8.39)
1-2	54	75.37 (45.94)
2-3	22	53.42 (32.56)
>3	6	21.5 (13.11)
Total	100	164.05 (100)

Figures in brackets represent the percentages to the total area.

Medium holders gain more of a superior position by capturing about 32.56 percent of the available operational area. But in terms of total cropped area (of the sample region), this region enjoys a remarkably superior position with 164.05 acres when compared with Lekkidi - Perur Panchayat (Table V.8) of Palakkad district with 142.49 acres as its total area operated by 100 operational holdings belonging to different categories.

Table V. 8.

Size-wise distribution of the number and area of operational holdings in Lekkidi-Perur Panchayat. (Palakkad District)

Size Class	Number	Area (Acres)
<1	41	23.09 (16.21)
1-2	31	39.49 (27.71)
2-3	19	41.83 (29.36)
>3	9	38.08 (26.72)
Total	100	142.49 (100)

Figures in the brackets are percentages to the total.

Heavy concentration of area (29.36%) is registered under medium group of operational holdings while 41 percent marginal holdings constitute only 16.21 percent of the operational area. Quite visibly it can be seen that about 26.72 per cent of the total cropped area is cultivated by 9 percent large holders. But Mullan Kolly Panchayat of Sultan Bathery block (Wayanad Dist) presents a skewed pattern of land distribution (Table V.9).

Table V. 9.

Size-wise distribution of number and area of operational holdings in Mullan Kolly Panchayat. (Wayanad Dist.)

Size Class	Number	Area(Acres)
<1	26	9.13 (3.88)
1-2	24	34.36 (14.61)
2-3	21	46.93 (19.96)
>3	29	144.74 (61.55)
Total	100	235.16 (100)

Figures in brackets are percentages to the total.

An entirely different picture apparently exhibiting heavy concentration of area under large holdings can be seen from the pattern of distribution of area under operational holdings of various size classes. While 3.88 percent of the total cropped area is operated by 26 per cent marginal holders, about as high as 61.55 per cent of cropped area is operated by 29 percent of large holders. Area under different size groups increases in an ascending order (if arranged from marginal to large holders in order) in absolute terms. The difference in total operational area between Lekkidi-Perur (with the least) and Mullan Kolly (enjoying the maximum) is 92.67 acres in absolute terms.

An inter-regional comparison of the pattern of distribution of number and area of operational holdings throws light to the fact that variations of remarkable dimensions persists in their distribution across regions, which assumes outward manifestation either in terms of proliferation of marginal holdings or heavy concentration of area under different size groups of holdings. Panchayats of Lekkidi-Perur and Ambalappuzha register high concentration of marginal holdings with 41 per cent and 47 per cent respectively whereas Puthur is qualified as a region with the highest number of small holdings (54 per cent). Mullan Kolly (Panchayat) remains distinguished by attaining maximum number of large holdings and area (under them) to its credit. Variations in the size-wise distribution of operational holdings across

regions should be accommodated as a vital factor holding definite impact on farm income¹.

Analytical framework is slightly broadened by incorporating gross farm income as an additional core variable which is used extensively to examine its size-wise distribution across regions under consideration. It is presumed that the introduction of gross farm income ² as an additional variable would strengthen the base of this study by chipping away the zone of ambiguity and hence would prepare a suitable background against which a detailed examination of the nature of size productivity nexus in the

Table V. 10.

Size-wise distribution of gross farm income in Ambalappuzha.

Size Class	Number	Area(Acres)	Gross Farm Income Rs.
<1	47	23.54(14.55)	280560 (13.26)
1-2	30	37.74(23.34)	491500 (23.25)
2-3	10	24.05(14.87)	323700 (15.31)
>3	13	76.40(47.24)	1018600 (48.18)
Total	100	161.73(100)	2114360 (100)

Figures in brackets are percentages to the respective total.

sample regions can be made. At the analytical level, a similar dissective study requires a brief discussion on size-wise distribution of gross farm income (Table V.10) across regions brought under this study.

A cursory glance at the distribution of farm income across various size classes of operational holdings of this sample region reveals the fact that 13 per cent of farms belonging to the group of large holdings dominate the agrarian sector by contributing 48.18 percent of gross farm income. In other words, an aggregate farm income of

¹ Strength of such an argument lies in the inferences from an analytical exercise conducted later in this study to examine the validity of size-productivity nexus in the context of Kerala's agriculture.

² Gross farm income represents both income from main product and by-product of each crop cultivated in the region in question.

Rs.10,18,600/- in absolute terms is attributed to 76.40 acres of operational area brought under cultivation by 13 per cent farmers holding large farms. The share of marginal (13.26%) and medium (15.31%) holders in this respect is very meager while 30 per cent small farms contribute about 23.35 percent to gross farm income by operating 23.34 per cent of operational area. In short, about 161.73 acres of cultivable area has to be extensively utilized to generate a gross farm income of Rs.21,14,360/-.

But Puthur sample, with heavy concentration of both number and area under operational holdings in the small and medium size class (Table V. 11) exhibits more or less similar pattern of distribution of gross farm income with 39.48 per cent being contributed by small farms followed by medium holders registering 32.19 per cent as their share in aggregate farm income. Eighteen per cent marginal holders contribute only 11.02 per cent towards gross farm income by operating about 8.39 per cent of the cropped area. But the share of farmers (6%) holding large operational holdings can be equated to Rs.8,23,400/- (i.e, 17.31%) gross farm income which is realized by operating 13.11 per cent of the gross cropped area.

Table V. 11.

Size-wise distribution of gross farm income in Puthur.

Size Class	No.	Area (Acres)	Gross farm income (Rs.)
<1	18	13.76 (8.39)	524350 (11.02)
1-2	54	75.37 (45.94)	1878310 (39.48)
2-3	22	53.42 (32.56)	1531155 (32.19)
>3	6	21.5 (13.11)	823400 (17.31)
Total	100	164.05 (100)	4757215 (100)

Figures in parenthesis are percentages to their respective total.

A specific feature of remarkable significance becomes more prominent and emerges as a valid inference from a comparative study, at the aggregate level, of the two sample regions (analysed so far) in terms of their gross farm income and aggregate area under cultivation i.e, study area of Ambalappuzha succeeds in generating only Rs.2114360 as its gross farm income by bringing 161.73 acres of land under cultivation

while the sample area of Puthur ¹ gains reputation by attaining more than two-fold increase in aggregate farm income by operating 164.05 acres of cropped area. Uneven distribution of the number and area of operational holdings with their heavy concentration in the middle range can be cited as the possible cause of visible gain in gross farm income to the tune of Rs.26,42,855/- by Puthur sample over the other regions.

At the descriptive level, the comparative study on the size-wise distribution of aggregate farm income is further extended to capture a similar detailed picture from Lekkidi-Perur and Mullan Kolly samples.

Lekkidi-Perur region (belongs to the district of Palakkad, the granary of Kerala) too exhibits (Table V.12) no visibly regular pattern of distribution of farm income across different size classes of operational holdings.

¹ Small holders in Puthur sample depend heavily on leased land to conduct agricultural operations. About 17 respondents belonging to small size class of holdings reported to have leased 17.60 acres of land for cultivation whereas only 5 marginal holders cultivate about 3.45 acres of leased land. It seems that extensive use of leased land for cultivation is widespread in this region and hence has to be identified as a survival strategy designed by small holders. But when the inter-farm share of gross farm income is dissectively examined - the contribution of small farmers being the highest with 39.48 per cent- it becomes visible that cultivation of leased land is more of a productivity enhancing mode of operation than a mere survival strategy. The spirit of enthusiasm displayed by the small farmers of this region in generating relatively maximum output from leased land even constitutes a solid reason to argue for the popularization of the practice of leasing as an ideal method of land distribution and a prudent way of its optimum utilization.

Table V. 12.

Size-wise distribution of gross farm income in Lekkidi - Perur.

Size class	No.	Area (Acres)	Gross farm income (Rs.)
<1	41	23.09 (16.21)	327570 (14.65)
1-2	31	39.49 (27.71)	592790 (26.51)
2-3	19	41.83 (29.36)	475140 (21.50)
>3	9	38.08 (26.72)	840425 (37.59)
Total	100	142.49 (100)	2235925 (100)

Figures in brackets are percentages to the respective total.

A detailed examination of the inter-farm distribution of aggregate farm income indicates that about 9 per cent large holdings generate 37.59 per cent of farm income by operating 26.72 per cent of cropped area whereas 26.51 per cent is obviously contributed by 31 per cent small holdings by bringing 27.41 per cent of available operational area under cultivation. An unpleasant note on the inefficiency (equated to their share of 14.65 percent in gross farm income) of marginal farms (41%) would be an appropriate comment at this context. The position of medium holdings is comparatively better with 21.50 percent as their contribution to aggregate farm income and 29.36 per cent as the operational area under cultivation.

But the aggregate level, the performance of the operational holdings at large, is remarkably superior (when compared with Puthur) since only 142.49 acres of cropped area are brought under cultivation (in this region) to realise an output worth Rs.2235925/-

On the contrary, an entirely different picture can be drawn on the operational efficiency (measured in terms of farm income) of agricultural holdings spread over an area of 235.16 acres in Mullan Kolly sample. A detailed analysis (Table V.13) of the share of contribution made by various size classes of operational holdings to aggregate farm income would throw more light on the pattern of its distribution prevailing in this region.

Table V.13
Size wise distribution of gross farm income in Mullan kolly

Size - class	No	Area (acres)	Gross farm income (Rs)
<1	26	9.13 (3.88)	268304 (2.81)
1-2	24	34.36 (14.61)	1093544 (11.44)
2-3	21	46.93 (19.96)	1740380 (18.19)
>3	29	144.74 (61.35)	6460450 (67.56)
Total	100	235.16 (100)	9562678 (100)

Figures in brackets are percentages to the total.

The structure of operational holdings in this region is characterized by the seemingly visible preponderance of large holdings both in terms of their number and area. The size wise distribution of farm income too assumes a similar position with large operational holdings (29%) being qualified as a size class to capture a share of 67.56 percent gross farm income by cultivating 144.74 acres (61.55%) of operational area. The unviability of marginal farms (26%) is manifested through both area under cultivation (3.88%) and their efficiency to generate farm output of too meagre an amount of Rs.268304/- the percentage equivalence of which can be shown as 2.81 of the gross farm income of Rs.9562678/. Small (24%) and medium (21%) holders are located between these extreme values (2.81%) and (67.56%) of gross farm income with their individual contribution of 11.44 percent and 18.19 percent to aggregate farm income. An increase in cropped area to the tune of 92.67 acres (enjoyed by Mullan Kolly over Lekkidi - Perur) seems to have fetched it a four-fold increase in gross income which can be translated to Rs.7326753 (difference between aggregate farm income of these two sample regions).

An overall evaluation of the performance of the agrarian sector of the regions (in terms of their operational efficiency of 100 agricultural holdings) provide all indications regarding the deplorable conditions into which the marginal farms have slipped. Unviable operational holdings (their inefficiency being equated to corresponding returns from them) will definitely constitute a permanent threat to our economy.

Increased proliferation of unviable¹ marginal holdings (with wide variation in their number across regions) caused by unchecked sub - division, speedy fragmentation and the generous and ambitious land distribution programme implemented by the Government will persistently disequilibrate our agrarian structure.

Moreover, wide variations in gross farm income prevailing across regions to a certain extent can be attributed to inter-crop price differential². Any realistic attempt to conduct a detailed study on farm poverty should be directed towards accommodating regional disparities of such magnitudes.

Analytical exercise is slightly twisted, at this juncture, to examine the association between the size of operational holdings and gross farm income across regions under the study and the results³ favour the prevalence of a strong and positive correlation between the two variables in all the four regions.

¹ A crude method of comparison reveals that to the aggregate farm income from 400 operational holdings together of Rs.1,86,70,178 only 7.50 percent is contributed by the marginal holdings while 48.97 percent is separated as the individual contributions of large operational holdings.

² Cropping pattern followed by different sample region supports this view .For example; Tapioca per quintals attains a price of Rs.368 (99-2000) while the price of Pepper per quintal is Rs.20,506.

³ Results are provided in Appendix V.1.A.

To strengthen the analytical base of this study¹, introduction of net farm income (gross farm income –cost of cultivation) as an additional explanatory variable is absolutely essential. Hence the size-wise distribution of cost of cultivation across sample regions gains contextual relevance and gathers great analytical significance. A brief discussion on inter-farm cost differentials across regions (Table V.14 - V.17) forms a reliable background to examine the distributional pattern of net farm income across different size classes of operational holdings.

Table V.14

Size - wise distribution of aggregate operating costs in Ambalappuzha.

Size -class	No.	Area (acres)	Gross farm income (Rs.)	Aggregate operating cost (Rs.)
<1	47	23.54 (14.55)	280560 (13.26)	96570 (15.68)
1-2	30	37.74 (23.34)	491500 (23.25)	178790 (29.03)
2-3	10	24.05 (14.87)	323700 (15.31)	100780 (16.36)
>3	13	76.40 (47.24)	1018600 (48.18)	239710 (38.93)
Total	100	161.73 (100)	2114360 (100)	615850 (100)

A detailed examination of inter-farm distribution of operating expenses (TableV.14) reveals that a seemingly regular and specific pattern of distribution prevails in Ambalappuzha sample. At the aggregate level operating expenses of Rs.615850 have to be incurred in realizing a gross farm income of Rs.2114360 from 161.73 acres spread over hundred operational holdings. In Ambalappuzha, identified as a region which

¹ Analytical exercise (tool of simple correlation) drilled towards identifying the nature of association between size of operational holdings and aggregate costs of cultivation adds strength and injects concreteness to the present study by providing robust and positive correlation coefficient for all regions in question. Results are provided in AppendixV.11A.

earmarks a major chunk of its operational area for paddy cultivation, the content of labour cost ¹(in aggregate expenses) is found to be comparatively higher. A comparison of size-wise distribution of operating expenses² reveals that an amount of Rs96570 /- has to be incurred by marginal farms to generate output worth Rs280560 /- whereas Rs239710 as investment has to be made in large farms to realize gross farm income of Rs.1018600. An aggregate amount of Rs.615850 as operating costs is incurred to generate gross farm income of Rs.2114360 from 161.73 acres of land. Quite obviously more than two-fold increase in gross returns from investment is realized in Ambalappuzha.

In aggregate terms, an amount of Rs3808 per acre³ has to be incurred as operating costs to realize a gross return per acre of Rs13073 /- from paddy

¹ Rs.120 and Rs.60 per day are the current wage rate for male and female laborers of this region. Inter-household difference in wage rate within a range of Rs.110-125 for male and a uniform wage rate of Rs.60 for female workers prevail in this region . In Puthur sample, the respective wage rate for male and female are Rs.100 and Rs.80 whereas Lekkidi-Perur sample too experiences inter-household wage differences to the tune of Rs100 and Rs125 for male and Rs.50 and Rs65 for female. In Mullan Kolly the same pattern prevails with inter-household wage differences placed within a range of Rs100 to Rs125 for male and Rs.60 to Rs.75 for female. Paddy being the main crop of Ambalappuzha and Lekkidi-Perur sample; absorbs more labour while the other two sample regions mainly follow a mixed crop system containing Coconut, Arecanut, Pepper, Banana, Rubber, Tapioca, Paddy and vegetables (in Puthur).Mullan Kolly includes additional crops like Coffee, Ginger and Plantain to the list of crops (in addition to the crops cultivated in Puthur) cultivated there.

² Aggregate operating expenses reflect all items of costs disaggregated into hired male and female labour costs, fertilizers costs, costs on pesticides, costs on machine and animal labour. In rare cases, rent for leased land too has been reported and hence is excluded.

³ Operating expenses per acre, gross farm income per acre and per rupee cost of cultivation incurred in each sample area are separately given in Appendix V. 111 A.

Cultivation ¹, i.e. for each rupee per acre an amount of Rs.3.43 as gross return per acre can be realized in Ambalappuzha sample whereas in marginal holdings an amount of Rs.4102 per acre has to be expended to attain a gross return of Rs.11918 per acre. Per acre farm income from per rupee cost of cultivation, in this case, can be equated to Rs2.93. But cultivation in large holdings are more remunerative since an amount of Rs.13333 /- gross farm income per acre can be realized by investing Rs.3188/- as operating costs per acre. In other words, an approximate amount of Rs4.25 as gross return per acre can be attained from each rupee expended as cost of cultivation. Gross farm income per acre/Re. exhibits a tendency to increase gradually along with variation in the size of holdings except in marginal holdings.

Puthur sample, on the other hand, depicts (Table V.15) an entirely different picture of distribution of operating expenses across different size classes of operational holdings.

Table. V. 15
Size - wise distribution of aggregate operating costs in Puthur

Size class	No.	Area(areas)	Gross farm income (Rs)	Gross operating costs (Rs)
< 1	18	13.76 (8.39)	524350 (11.02)	58585 (10.18)
1-2	54	75.37 (45.94)	1878310 (39.48)	219560 (38.17)
2-3	22	53.42 (32.56)	1531155 (32.19)	219530 (38.16)
>3	6	21.5 (13.11)	823400 (17.31)	77570 (13.49)
Total	100	164.05 (100)	4757215(100)	575245(100)

¹ Since Ambalappuzha sample practices a mono-crop pattern of cultivation i.e, paddy, aggregate operating costs and corresponding returns can be attributed to paddy cultivation alone. Coconut as an additional crop is cultivated in the boundaries of paddy fields or after converting a part of it permanently for coconut cultivation. But respondents have not reported any yield from it.

Puthur sample (which follows a mixed cropping pattern with cash crops occupying lion's share of its gross cropped area.) depicts an entirely different picture with two extreme size classes of operational holdings (marginal and large farms) sharing comparatively less costs of cultivation (10.18% and 13.49% respectively) while the other two groups incur more or less the same costs to conduct agricultural operations.

To be more precise, an approximate amount of Rs.4258/- is incurred as operating cost per acre to gain gross income of Rs.38107 from marginal holdings whereas from Rs.3608 per acre, an amount of Rs.38298 as gross income is realized in large holdings (Appendix V.III.A)

A similar analytical procedure is adopted, at the aggregate level, to capture per acre gross farm income of Rs.8.27 from per rupee operating cost where the per acre farm income is Rs.28999 and the corresponding operational expenses can be equated to Rs.3507/- Increased utilization of more family labor by marginal farmers and less maintenance costs¹ incurred by large holders can be cited as the specific reasons for the prevalence of comparatively low operating costs in these two extreme categories of agricultural holdings. But Lekkidi-Perur sample (Table V.16) depicts no such extreme inter - farm variations in operating costs.

¹ Operating costs and maintenance cost at this context have to be distinguished. Computation of operating costs incurred in cultivating perennial crops is highly complicated. Actual expenses incurred during the gestation period should also be properly consolidated to get reliable and accurate operating expenses, for which the present value of past investment has to be calculated. But such a procedure of computation is not adopted in this study. Only the annual maintenance costs incurred by the farm households alone are consolidated to get the aggregate operating costs. Hence the interregional and inter crop variations in costs may be attributed to a certain extent, to such discrepancies. Secondly, the withdrawal of fertilizer subsidy by the Government and the subsequent increment in its price has induced farmers to switch on to more cost effective method of manuring which led indirectly to a considerable reduction in that item of cost. Imputed cost of home - produced manure is totally excluded from the aggregate costs. Thirdly, and more importantly, the imputed costs of family labour remains unaccounted in the computation of costs.

Table V.16.
Size - wise distribution of gross operating costs in Lekkidi - Perur.

Size class	No	Area (acres)	Gross farm income (Rs)	Gross operating cost (Rs/-)
<1	41	23.09 (16.21)	327570 (14.65)	153485 (21.97)
1-2	31	39.49 (27.71)	592790 (26.51)	209320 (29.96)
2-3	19	41.83 (29.36)	475140 (21.25)	171665 (24.57)
>3	9	38.08 (26.72)	840425 (37.59)	164180 (23.50)
Total	100	142.49 (100)	2235925 (100)	698650 (100)

A detailed analysis of the pattern of distribution of operational expenses in different size classes of agricultural holdings provides ample indications regarding the absence of any extreme inter-farm variations in costs. To conduct agricultural operations, to be more specific, paddy cultivation¹ in marginal holdings an amount of Rs.6647/- as operating costs has to be incurred per acre² while the same can be managed on a different scale with an amount of Rs.4312/- in large holdings. But small and medium holdings incur slightly higher operating costs of Rs.6647/- and Rs.5301/- per acre respectively in realising aggregate farm income to the tune of Rs.14187/- and Rs.15011 per acre from the corresponding operational holdings.

At the aggregate level, by investing an amount of Rs.4903 per acre, gross farm income to the extent of Rs.15692/- can be generated. A contrasting picture exhibiting operating costs of varying magnitudes is obtained when the details regarding the inter-farm distribution of expenses incurred in Mullan Kolly sample (Table V.17) are analyzed properly. Of the aggregate operating expense of Rs.1347520 incurred in cultivating 235.16 acres of cropped area an amount of Rs.59060 (4.38%) has to be invested in 9.13 acres (3.88%) of land to generate gross farm income of Rs.268304 (2.81%) from marginal holdings whereas in large holdings an investment of Rs.717685 (53.26%) is

¹ Both Ambalappuzha and Lekkidi-Perur sample follow a similar (mono) cropping pattern with more emphasis on paddy cultivation.

² From Appendix V.III.A

Table V.17.

Size-wise distribution of gross operating costs in Mullan Kolly.

Size-class	No.	Area (acres)	Gross farm income	Gross operating costs
<1	26	9.13 (3.88)	268304 (2.81)	59060 (4.38)
1-2	24	34.36 (14.61)	1093544 (11.44)	241440 (17.92)
2-3	21	46.93 (19.96)	1740380 (18.19)	329335 (24.44)
>3	29	144.74 (61.55)	6460450 (67.56)	717685 (53.26)
Total	100	235.16 (100)	9562678 (100)	1347520 (100)

made to attain a gross farm income of Rs.6460450/- (67.56%) from 144.75 (61.55%) acres of operational area. By comparing per acre (Appendix V.III.A) operating costs incurred in the two extreme size class of operational holdings, viz, marginal and large holdings, it can be inferred that per acre cost of cultivation is relatively high at Rs.6469/- in the former than in the latter with Rs.4958 per acre. Mullan Kolly sample which follows a mixed cropping pattern with more weight on perennial and cash crops indicates that an investment of Rs.5730/- per acre has to be made at the aggregate level to generate gross farm income of Rs.40665/- i.e, a gross return of Rs.7.10 per acre per rupee of operating cost.

Inter - regional comparison of per acre gross return per rupee ¹ at the aggregate

¹ In order to investigate the nature of association between gross farm income and aggregate operating costs, correlations were worked out (Appendix IV.4 A) the results of which favour the positive and strong association between the two factors.

level reveals that cash crops ¹ register relatively higher per rupee return per acre (evidence supporting this argument can be collected from the performance of the Puthur and Mullan Kolly region (the rating of which assumes values of Rs 8.27 per acre / rupee gross return and Rs.7.10 per acre /rupee respectively) than annual / seasonal crops like paddy (the per acre gross return per rupee of which can be translated in to Rs.3.43 and Rs.3.20 in Ambalapuzha and Lekkidi-Perur samples respectively). A mixed crop pattern can be identified as an ideal and most remunerative mode of cultivation and forms a suitable survival strategy for agriculturists with limited operational area and operating funds ² two vital factors the limit of which in terms of poverty line income of Kerala ³ has not been properly defined. A comprehensive study on farm poverty gathers analytical significance only when these two crucial components constituting the base of farm income propagation process⁴ are thoroughly examined. Discussions conducted so far turn favourable to marginal holdings and reveal the fact that their operational efficiency should not be viewed skeptically and hence underrated. When the per acre gross farm income per rupee (Appendix V.III.A) is accepted as the base of such a rating, their operational efficiency can be equated to Rs.2.91 (in Ambalappuzha) and Rs.2.13 (in Lekkidi-Perur) in terms of paddy (being the sole crop cultivated in these sample regions) and Rs.8.95 (Puthur) and Rs.9.13 (in Mullan Kolly) in terms of an indefinite array of

¹ Both Puthur and Mullan Kolly samples adopt a mixed cropping pattern while mono - crop pattern of cultivation is predominant in Ambalappuzha and Lekkidi-Perur regions.

² Suggestions of this nature gather validity and turn true only if certain constraints are removed (input-output price structure being the most prominent among them).

³ Deficiencies inherent (chapter III) in the computational process of an approximate poverty line are over looked at this juncture and further analysis of farm poverty is based on the latest rural specific poverty line formulated at the state level.

⁴ In the present era of liberalization , the same story, in a slightly twisted manner, has to be retold by providing adequate attention to the considerable slash in the prices of several items of agricultural produce. An inter-temporal analytical study would be a suitable framework to discuss the dynamics of poverty and thus to bridge the gap in the present study.

crops viz, pepper, arecanut, coffee, ginger, banana, coconut, tapioca, vegetables etc.. Inter-farm variations in gross farm income per acre realized from each rupee of operating cost too manifests its tendency to increase along with the size of holding (except in Puthur). Moreover, inter-regional variations in per acre gross farm income per rupee are explained more by the pattern of cropping followed and cost effective mode of cultivation adopted by the respective regions.

But to capture a closer look at the income propagating capacity of operational holdings across the sample regions, net farm income (gross farm income minus operating costs) as a more powerful explanatory variable has to be introduced into the analytical framework. Again, such a shift in the base (of the ongoing analysis) from gross farm income to net farm income would constitute a constructive step to design an approximately accurate minimum size of operational holding as to generate poverty line income under the prevailing conditions. Analytical exercise thus is further extended to examine in detail inter farm variation of both net farm income per acre and net farm income per rupee across the sample regions under consideration. An analytical procedure comprising of the technique of correlation is opted at this juncture to seek whether the phenomenon of farm poverty can be interpreted in the light of the theoretically sound size-productivity nexus.

But the correlation co-efficients¹ should be considered as reliable indicators of the total absence of any inverse relationship between the size of (operational)holdings and net farm income per acre of the sample regions.

A brief discussion on inter farm variations in net farm income per acre and net farm income per rupee across the sample regions, by constituting rather a more realistic background, would provide analytical precision to the present study. Size wise distribution of net farm income per acre in Ambalappuzha region (Table V.18) throws light to the fact that marginal farms, as against the conceptually strong traditional belief of being highly productive, register only the least net farm income per acre of Rs.8411²

¹ To examine the significance and empirical validity of the theoretical formulation stressing the prevalence of an inverse relationship between the size (of operational) holdings and productivity, correlations between net farm income per acre and size of holding of sample regions were worked out (Appendix V.5A). The correlation coefficients totally disprove the theoretical sanctity and vividly disclose the empirical invalidity of such an inverse relationship. Even though inverse relationship between the two factors holds good in Puthur sample, no significant and robust association between them is indicated whereas the correlation coefficients of Ambalapuzha, Lekkidi-Perur and Mullan Kolly samples favour an absolutely non-significant but positive size income nexus. An effort was made to examine the nature of association between size and productivity in general for all 400 samples together and the results indicate a positive and significant correlation between the two factors. Net farm income per acre, on the other hand, holds a significant and positive correlation with operating costs per acre in Puthur and Mullan Kolly samples while both are non significantly but positively correlated in Ambalappuzha and Lekkidi-Perur regions. But combined correlation coefficients indicate a robust and positive relationship between net farm income per acre and operating cost per acre. Hence the possibility of conducting the present discourse on farm poverty within the analytical framework based on theoretically valid inverse size-productivity nexus is absolutely ruled out.

² There may be slight discrepancies due to rounding.

whereas large holdings exhibit comparatively higher operational efficiency by generating Rs.10832/- as their net farm income per acre. The elevated position of other holdings in the classification (i.e., small and medium) can be translated in terms of their productivity to the tune of Rs.8508 and 9661 respectively. At the aggregate level Ambalappuzha sample attains net farm income of Rs.8880 per acre¹ in terms of paddy. But the least (farm) income per rupee cost of cultivation is

Table V.18
Size wise distribution of net farm income
per acre and net farm income per rupee (cost) in Ambalappuzha.

Size class	No	Gross farm income acre (Rs)	Cost/ acre (Rs.)	Net farm income/acre (Rs.)	Net farm income/ Re (Rs.)
<1	47	12377.05	3965.928	8411.124	2.12
1-2	30	13326.00	4817.87	8508.126	1.77
2-3	10	13920.79	4259.758	9661.028	2.27
>3	13	14137.47	3305.29	10832.18	3.28
Total	100	13044.96	4165.011	8879.953	2.13

recorded by small holdings to the tune of Rs.1.77 per acre whereas marginal farms enjoy somewhat a superior position by capturing a net return per acre of Rs.2.12 per rupee cost incurred in the cultivation of paddy. Slight increase in farm income (per acre/ per Re.) is achieved by medium holdings, which can be recorded as Rs.2.27 whereas the highest net return of Rs.3.28 is scored by large holdings. But at the aggregate level, net farm income per rupee can be equated to Rs.2.13 only². Hence the inference that mono.

¹ Gross farm income (in terms of paddy) per acre at the district level i.e., Alappuzha to which this sample region belongs is Rs.11252 in 99-2000 whereas at the state level, the same is recorded as Rs.9500/- per acre [computed from Agricultural Statistics, 99-2000].

² Inference from this analytical exercise strongly support the consensus that paddy cultivation has turned to be unremunerative. Crop diversification seems to be an appropriate proposal to be given practical dimension at a stage when mono crop pattern of cultivation faces the threat from both low productivity and considerable slash in its prices.

crop pattern of cultivation is highly risky in nature and can never be advised as an ideal pattern to be adopted by agriculturists requires a closer scientific scrutiny.

On the contrary evidence collected from Puthur sample (Table V.19) regarding the net farm income (per acre/Re) can be treated as a standing testimony to the fact that strength of the agrarian sector is determined by the cropping pattern followed and the production potentiality of the region in question.

Table V.19

Size - wise distribution of net farm income per acre and net farm income per rupee cost in Puthur

Size class	No	Gross farm income/ acre (Rs)	Cost/ acre (Rs)	Net farm income/ acre (Rs)	Net farm income/ Re
<1	18	38620.50	4361.44	34259.06	7.85
1-2	54	25484.45	2932.30	22552.15	7.69
2-3	22	28370.68	4080.28	24290.4	5.95
>3	6	34705.93	3691.75	31014.17	8.40
Total	100	29037.20	3487.67	25549.53	7.32

Quite visibly, marginal farms with high productive capacity are recording the maximum net farm income of Rs.34259 per acre which is nullified by the relatively higher operating costs per acre of Rs.4361 to leave an approximate amount of Rs.8 as their net farm income per rupee cost of cultivation. Large farms on the other gain the reputation of being highly productive by generating net farm income per acre of Rs.31014 and securing a corresponding net farm income of Rs.8.40 per every rupee incurred as cost. This picture gets slightly twisted when the net farm income of Rs.25550 per acre, at the aggregate level and its per rupee counterpart of Rs.7 per acre are taken into consideration. An inflated picture of both net farm income per acre and per rupee cost displayed by the Puthur sample confirms the argument¹ that the cropping pattern

¹ The fact that Kerala, at present, is passing through a critical phase characterized by considerable slash in farm prices of several items [coconut has experienced a reduction in price to the tune of -2 percent i.e., from Rs.485 per hundred in 98-99 to Rs.476 in 99-2000 and price of banana registered a decline of -12 percent] (Rs.167 in 98-99 and Rs.147 in 99-2000.) [Economic Review, 2000] of agricultural produce shakes the very foundation of this argument.

(supported by a strong price structure of agricultural produce) designs the destiny of agriculturalists at large and reinforce the base of the agrarian sector of an economy.

Fragile base of the agrarian sector of Lekkidi-Perur region becomes more visible when the size wise distribution (Table V.20) of net farm income (per acre and per rupee) of this area is analytically examined.

TABLE V.20

**Size - wise distribution of net farm income (per acre/ Re.)
In Lekkidi-Perur**

Size-class	No	Gross farm income Per (acre)	Costs/acre Rs.	Net farm income (acre/Rs)	Net farm income (Rs)
<1	41	14351.80	6730.39	7621.416	1.13
1-2	31	15303.67	5354.50	9949.173	1.86
2-3	19	11266.28	4096.69	7169.59	1.75
.>3	9	20780.04	4624.08	16155.96	3.49
Total	100	14639.18	5613.89	9025.28	1.61

A detailed examination of the distribution of net farm income per acre across different size classes of operational holdings in Lakkidi-Perur sample reveals the fact that a mono-crop pattern of cultivation¹, especially paddy is absolutely unremunerative and highly risky in nature. Though large farms in general retained their productivity at Rs.16156 per acre, productivity in general of this sample region is only Rs.9025 per acre which is slightly lower than the average productivity of the Palakkad district (Rs.10436) during 99-2000². The superior position of small farms in generating reasonably tolerable limit of net farm income can be equated to Rs.9949 per acre while the net return per rupee in all size classes of holdings (except large farms registering a net farm income per rupee of Rs.3.49) has assumed the lowest values. The lowest return on operating costs, at the aggregate level of Rs.1.61 provides some explanation for the

¹ Plantations are extended from the list.

² Agricultural Statistics, 99 - 2000.

speedy disappearance of paddy fields on a large scale from the site of cultivation and speaks volumes about the deplorable condition of paddy cultivators of this sample region. Inference from this analytical exercise favours the view that paddy cultivation is losing its grounds and the net return per rupee has touched rock-bottom in this region in recent years.

The fact that more dynamic agricultural operations conducted by judiciously selecting a pattern of cultivation (being represented by an ideal mix of remunerative crops) can fetch comparatively high returns is proved, beyond doubt, by Mullan Kolly sample (Table V-21)

Table V-21

Size - wise distribution of net farm income per acre and net farm income per rupee in Mullan Kolly

Size	No.	Gross farm Income/acre	Costs/ Acre (Rs.)	Net Farm Income/ Acre(Rs.)	Net farm Income/Re (Rs.)
<1	26	28341.5	4642.78	23698.72	5.10
1 - 2	24	19541.11	8319.72	11221.39	1.35
2 -3	21	36941.53	7140.763	29800.77	4.17
>3	29	43462.48	5237.82	38224.66	7.30
Total	100	35370.33	5883.15	29487.38	5.01

Operational efficiency of marginal farms in reaping moderately higher net farm income per acre (Rs.23699) can be attributed to the inter cropping system¹. The highest productivity of large farms is recorded as Rs.38225 per acre while the general productivity level of this sample region is satisfactory. The average net return per rupee is Rs.5.10 in small farms while the net farm income per rupee from the large farms is

¹ Puthur and Mullan Kolly follow a more or less unique (mixed) cropping pattern comprising more of high - priced crops. Allocation of available operational area to different crops is governed by their respective prices.

estimated as Rs.7.30. General productivity standard per rupee cost of cultivation of this sample region (Rs.5) is visibly lower than its Puthur counterpart¹ (Rs.7)

Inferences from the analytical exercise support the view that a judicious allocation of available operational area for high-valued crops² constitute the base of an appropriate agricultural strategy and a necessary precondition for securing stable agricultural growth. Moreover, a thorough restructuring of the agricultural operations in favour of a scientifically designed optimal plan is absolutely essential, both at the local and state levels, to appropriate maximum returns and thus to enhance farm productivity. Regional imbalances to a certain extent, can be eliminated by reducing inter-regional disparities in farm productivity.

On the presumption that the preceding dissective exercise conducted to examine the size-wise distribution of net farm income per acre across the sample regions would constitute an appropriate background for further analysis, a slight twist in the analytical procedure is effected at this juncture to carve out an approximately accurate size of operational holding adequate enough to generate the current poverty-line income³ for the regions under consideration and thus to facilitate an effective comparison of the

¹ A detailed crop-wise analytical exercise is not attempted in this study. But inter-regional differences in net farm income naturally reflect inter - crop differences in yield and price.

² No single factor in isolation can strengthen the agrarian base of our economy. High productivity backed by a favorable price formula alone can help the agriculturists.

³ State-specific (rural)poverty - line (99-2000) is applied for further analytical purposes. An aggregate poverty-line at the state - level will not properly capture the regional specificities and inter-regional discrepancies in all components which constitute the base of its formulation.

incidence and depth of farm poverty across regions ¹. Net farm income per acre (the base on which the edifice of the present study on farm poverty is erected) exhibiting visible disparities of large proportions across regions, constitutes a suitable indicator of the operational efficiency of agricultural holdings (attainable within constraints) ²

¹ A detailed discussion on the various poverty measures, in vogue, is conducted in Chapter III. But the analytical exposition of farm poverty is achieved by applying only two popular measures of poverty viz. Head Count Index (HCI) a measure of the prevalence of poverty and Poverty Gap Index (PGI) a measure of the depth of poverty. The HCI is $H = q/n$ = the proportion of total population deemed to be poor while PGI is defined as :

$PG = \frac{1}{n} \sum_{i=1}^n \frac{[z-y_i]}{z}$ = mean proportionate poverty gap (here, land gap) across the whole population [zero-gap for the non-poor]. In short, $PG = I.H$ where $H = q/n$ and $I = \frac{z-y_p}{z}$ =

mean depth of poverty as a proportion of the poverty line. But unlike in other studies both indices are computed by equating them to Z being defined as the size of operational holding (break-even holding size) in physical units (here, area) necessary to generate PL income and hence H is defined in terms of the number of farm households below the break-even holding size at the current PL and I , on the other hand is land-gap ratio.

² Type of crops cultivated, price of agricultural produce, the availability of operating funds etc. are to be included in the well-defined set of constraints. Inferences already derived from the previous analytical exercises deserve special mention and hold contextual significance.

After giving verbal explanations an elaborate analysis by running regression is conducted here to examine the impact of each item of cost¹ on the net farm income per acre of the sample area of the study.

¹ Aggregate operating costs are decomposed into (a) wages of hired male labor, (b) wages of hired female labour (c) costs of machine labour (d) cost on fertilizers and (e) costs on pesticides. Use of animal labour is not reported by any household. Since rent on leased land (payable in kind) is reported only rarely by the respondents, the aggregate costs do not represent it. Imputed costs of family labour and home-made manure are excluded. Step-wise regression analysis by incorporating net farm income per acre as the dependent variable and each item of cost as the explanatory variable was run for each sample region in isolation and for all samples collectively. Results (Appendix V.7 A) indicate that net farm income in Ambalappuzha sample is positively but not robustly influenced by costs on pesticides. But only 6 per cent of the variation in net farm income per acre is explained by this variable. Specific relationship between net farm income and costs on pesticides throws light on the necessary corrective measures to be introduced so as to make the process pests-resistant. On the other hand, net farm income holds a negative but not strong relationship with female labour costs in Puthur sample. Only 14 per cent of the variation is explained by female labour employment in this region. Quite obviously, the type of cropping pattern followed in this region does not encourage the employment of more female laborers. Paddy is identified as the single crop, the cultivation of which absorbs maximum female labourers. Lekkidi-Perur sample, on the contrary, displays a positive but not robust association between net farm income and the use of fertilizers. But a visible shift from the use of chemical fertilizers to home-made manure has occurred in this region. Heavy price of fertilizers is cited as the inducing factor behind the popularity gained by home-made manure. Mullan Kolly sample should be treated in isolation for not exhibiting any sort of relationship between the variable incorporated in the multiple regression model. But more variables gather explanatory power and establish their impact on net farm income per acre when an attempt was made to treat all the four sample regions as a single zone irrespective of their regional disparities in cropping pattern, input and land utilization pattern and visible difference in the structure of operational holdings. Combined results indicate that net farm income per acre is negatively but not significantly associated to employment of female labour and extensive mechanization and positively related to the utilization of chemical fertilizers. Inference emerging from this analytical exercise provides a more precise picture regarding the structure of costs and its relation to agricultural production in the sample regions under study.

Inter-regional differences in net farm income per acre are partially explained by the content of input-mix opted for conducting agricultural operations in the sample regions. Variations in net farm income (Appendix V.7A) across regions are more specifically explained by costs on pesticides in Ambalappuzha sample and costs on female employment in Puthur region. On the contrary, about 10 percent of the variation in net farm income is explained by use of (positive impact) chemical fertilizers in Lekkidi-Perur sample. But Mullan Kolly sample provides no such indication. Study on farm poverty gets more concretized and becomes precise if the inferences from the regression analysis form its base.

A comprehensive analytical exercise on farm poverty effected by comparing the net farm income per acre across regions under study (Table V.22) with the present poverty-line income for rural Kerala is required to design a break- even holding size¹ for each region.

Table V.22
Break-even holding size (operational) for the sample regions at Poverty line of
Rs.22,500*.

Ambalappuzha		Puthur		Lekkidi-Perur		Mullan Kolly	
Net farm income/acre (Rs)	Break-even size (Acre)	Net farm income/acre (Rs)	Break-even size (Acres)	Net farm income/acre (Rs)	Break-even size (Acre)	Net farm income/acre (Rs)	Break-even size (Acre)
8879.85	2.53	25549.53	.88	9025.28	2.49	29487.36	.76

➤ Slight variation in this figure is caused due to rounding.

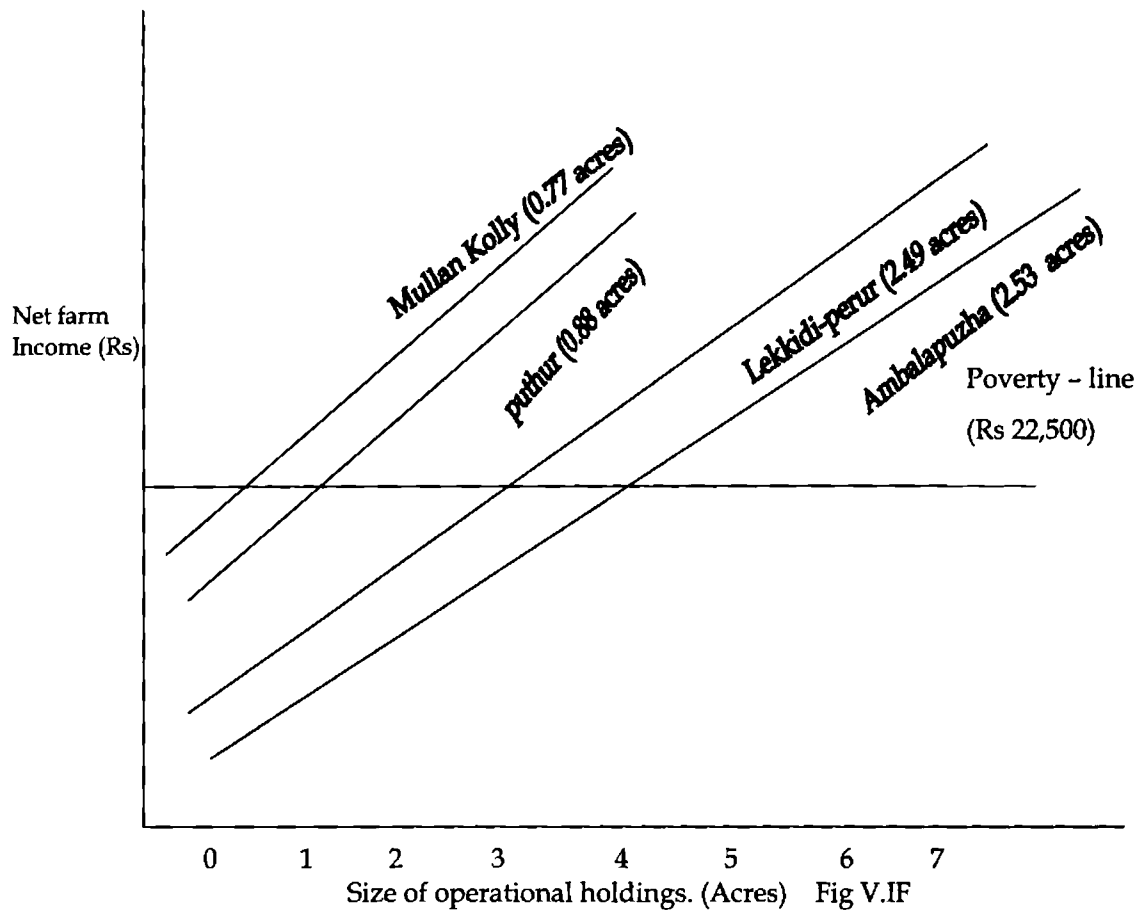
Quite obviously, variations in the break-even size of operational holdings across regions can be attributed more to the regional disparities in the cropping pattern, structure of operational holdings, productivity differences, inter-crop price differentials and above all, inter-regional and inter-crop differences in the cost of cultivation. To be more precise, mono-crop (paddy cultivating) regions of Ambalappuzha and Lekkidi-

¹ Further extensive study is required to examine whether the break-even holding size governs the entry of farm households to labour market or influences the development of off-farm operations as a survival strategy in Kerala.

Perur having relatively less net farm income per acre of Rs.8880 and Rs.9025 respectively have to bring in more area under cultivation to the tune of 2.53acres (in Ambalappuzha) and 2.49acres (in Lekkidi-Perur) to generate poverty-line income of Rs.22,500. But the picture automatically gets reversed in favour of Puthur and Mullan Kolly identified as mixed crop (high-valued) sample regions with higher net income per acre of Rs.25550 and Rs.29487, which require only 0.88acres and 0.76acres of operational land to generate the current poverty line income. Hence the inevitable conclusion favours the view that any sincere endeavor to design a poverty line size of operational holding should capture the regional specificities regarding variations in (land) productivity caused by multifarious factors, the most influential among them being the inter-crop price differentials ¹.

Easy comparison of the break-even holding size at state-specific rural poverty -line of RS. 22,500/- for sample regions can be facilitated when the corresponding figures are depicted in a diagram. (Fig V.1F)

¹ An attempt to make an inter-regional comparison of net farm income per acre in real terms has turned absolutely futile since conversion and aggregation of productivity (per acre) of heterogeneous crops into a single uniform unit is totally impossible. Hence the disparities in net farm income per acre across regions (measured in monetary units) partially represent inter-crop price and inter-regional cost differentials.



An effective evaluation of the operational efficiency of agricultural holdings and performance of agrarian sector of various regions in general can be made by comparing the break-even holding size of poverty line. Among the four sample regions brought under this study, Mullan Kolly presents a picture of excellent performance in the agrarian front which in turn can be equated to the highest net farm income per acre and hence the lowest break-even holding size of 0.76 acres. Puthur proves its efficiency in conducting agricultural operations effectively by minimizing the break-even size of holding to 0.88 acres. But mono crop (paddy) regions of Ambalapuzha and Lekkidi Perur should be treated separately is not satisfactory and hence they require performance which can be translated to break even holding size of 2.53 acres and 2.49 acres respectively to generate poverty line income i.e.net farm income per acre of both these sample regions (which is even less than one-third ($1/3$) of the net farm income enjoyed by mixed crop regions of Puthur and Mullan Kolly samples) is remarkably low.

Further extension of the analytical procedure is required at this context to capture, in detail, a more realistic picture of the size wise distribution of average (net) farm income¹ across sample regions. A closer scrutiny of the size- wise distribution of average farm income in Ambalappuzha (Table V.23) reveals that marginal and small farms with average farm income of Rs.4206 and Rs.10720, absolutely fail in generating at least poverty line income whereas medium and large farms prove their efficiency by attaining an average farm income of Rs.23283 and Rs.63692 constituting a marginal difference of Rs.783 (for medium farms) and a significant difference of Rs.41192 (for large farms) from the poverty - line income of Rs.22500. But average farm income at the aggregate level has touched a remarkably low value of Rs.14386 which lies far below the poverty line income.

A shift in the base of this comparative study to Puthur region carries a contrasting picture by exposing the vibrancy of its agrarian sector. A constructive and healthy system (of cultivation) followed in the sample region is visibly manifested by even marginal farms which gainfully realize an average farm income of Rs.26037 from an area of 0.76 acres of operational holding. Average farm income at the aggregate level of Rs.41901 is generated from an area of 1.64 acres of cultivable land.

But the fact that the performance of the agrarian sector of Lekkidi-Perur region is far from satisfactory, is proved by their distribution of average farm income across different size classes. All categories of farms are operating below capacity ² except large farms with an average (net) farm income of Rs.68340 gain recognition for having secured a comfortable position in terms of their relatively higher productivity.

¹ Average net farm income = average size of holding × net farm income per acre.

² Attempt to derive the optimum income from a given unit of land (by applying a Linear Programming model) is not made in this study.

Table V.23
Size-wise distribution of average farm income (net) and average Household size across sample regions.

Size classes	Ambalapuzha					Puthur					Lekkidi-Perur					Mullan Kolly				
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	Avg.* size of holding (acre)	Net farm income/acre (Rs)	Avg. farm income / (Rs)	Avg. HH** size	No.	Avg. size of holding	Net farm income/acre (Rs)	Avg. farm income (Rs)	Avg. HH size	No.	Avg. size of holding (acre)	Net farm income (acre) (Rs)	Avg. farm income (net) (Rs)	Avg. HH size	No.	Avg. size of holding (acre)	Net farm income / (acre) (Rs)	Avg. farm income (Rs)	Avg. HH size	
1	47	.50	8411	4206	4.81	18	.76	34259	26037	3.78	41	.56	7621	4268	4.68	26	.35	23699	8295	4.38
2	30	1.26	8508	10720	5.00	54	1.40	22552	31573	3.96	31	1.27	9949	12635	5.42	24	1.43	11221	16047	4.68
3	10	2.41	9661	23283	4.80	22	2.43	24290	59026	4.73	19	2.20	7170	15773	5.32	21	2.23	29801	66456	4.86
3	13	5.88	10832	63692	4.77	6	3.58	31014	111030	4.67	9	4.23	16156	68340	4.89	29	4.99	38225	190741	5.41
Total	100	1.62	8880	14386	4.60	100	1.64	25550	41901	4.14	100	1.42	9025	12816	5.05	100	2.35	29487	69295	4.86

Slight variation in values in columns 4,5,9,10,14,15,19 & 20 is due to rounding.

(Net) Average farm income = Average size of holding x Net farm income per acre.

* Avg - Average

** HH - Household

Quite surprisingly, the mixed crop region of Mullan Kolly presents a mixed picture regarding the performance of marginal and small farms. Average size of operational holdings in the <1 acre category is the lowest among the four regions brought under the study and hence the average farm income has been reduced to Rs.8295 while small holdings achieved Rs.16047 as their average farm income from 1.43 acres of operational area. But both the medium and the large farms enjoy a comfortable position by securing Rs.66456 and Rs.1, 90741 as their respective farm income.

Analytical study on the size-wise distribution of average farm income regions¹ offer certain valuable inferences which throw light on the operational efficiency of agricultural holdings the aggregation of which will constitute the general performance of the agrarian sector of the sample regions.

The qualification of being efficient in income generation never suits marginal holdings in general and hence they form only a fragile base of the agrarian sector of the regions (except Puthur) studied. Moreover, the fact that generation of maximum income from available cultivable area under mixed crop pattern of cultivation can be facilitated only through extensive utilization of land, is proved by Mullan Kolly sample. The positive impact of a higher (net) farm income of Rs. 23699 per acre from marginal holdings in Mullan Kolly region is absolutely negated by the considerable reduction in its average size to 0.35 acres. Fragmentation of operational area into uneconomic and tiny holdings will definitely disequilibrate the agrarian sector and shake the foundation of the agrarian structure of such regions.

But Puthur sample sets the example of an area where mixed crop pattern of cultivation (though opted as a survival and risk aversion strategy by the farmers of the region) has paved the way for maximum utilization of land and thus to fetch

¹ Household size too should be treated as a crucial factor and hence correlations were worked out to examine the nature of relationship between household size and size of operational holdings. A strong and positive association between the two was observed only in Puthur region (the correlation coefficient assuming a value of .3244)

comparatively high average farm income from almost all size classes of operational holdings.

Inter-regional distribution of average farm income reveals the miserably poor performance of the agrarian sector of the Lekkidi-Perur region. Large holdings of this region alone gather strength and display operational efficiency in crossing the income limit set by the poverty - line, by generating an average farm income of Rs.68340 whereas Ambalappuzha consolidates its position by placing both medium and large operational holdings with their respective average farm income of Rs. 23283 and Rs. 63692 above the poverty line income. Inferences show that, if left unchecked and unsupported, the rice bowls of Kerala¹ will soon get emptied and a bleak future is in store for paddy cultivation in the state.

A comprehensive study of farm poverty requires further discussion on the inter regional variations in the break-even farm size and a simple analytical exercise to measure the incidence and depth of farm poverty in the regions considered (Table V.24).

¹ Validity of this argument is conditioned by the possibility of generalization of inferences derived from micro level studies. Both sample regions of Ambalappuzha and Lekkidi - Perur belong to the districts of Alappuzha and Palakkad - two districts popular for their extensive paddy cultivation.

Table V.24

**Inter - Regional Variations In Incidence
And depth of Farm Poverty.**

Sample Regions	Total Farms	Net farm income/ acre (Rs.)	Break even farm (Z) (Acre)	Head Count Index (H)	Mean land <Z	Land Gap Ratio (I)	Poverty Gap Index
Ambalappuzha	100	8879.85	2.53	0.85	0.9388	0.6296	0.5351
Puthur	100	25549.53	.88	0.10	0.651	0.2608	0.026
Lekkidi-Perur	100	9025.28	2.49	0.85	1.041	0.5804	0.4934
Mullan Kolly	100	29487.38	0.76	0.25	0.3272	0.5712	0.1428

Z= Break Even Farm; H=Head Count Ratio; I=Land-gap ratio; PGI= Poverty Gap Index.

The customary practice of computation based on the popular measures of poverty -Head Count Index and Poverty Gap Index forms the analytical background against which a closer examination of the prevalence and depth of farm poverty in the sample regions is made. Net farm income, a decisive factor and a crucial variable, projects the strength and weakness of the agrarian sector in general and hence can be considered as a vital indicator of its actual performance. Aggregation of the operational efficiency of individual farm households constitute the general performance of the agrarian sector and a consolidated effort to enhance farm productivity would be a right step to dilute the intensity of the problem of farm poverty and thus to lift the farm households above the poverty line. Factual evidence to substantiate this argument can be collected from the agricultural performance of Puthur and Mullan Kolly regions which register only 10 and 25 as the respective percentage of farm households below the corresponding poverty - line holding size(Z)of 0.88 acres and 0.76 acres. But a contrasting picture is presented by both Ambalappuzha and Lekkidi- Perur (having relatively low net farm income per acre) which register 85 percent as their respective incidence of farm poverty. Land-gap ratio (I) (represents inequality in the distribution of land holdings below break-even farm (Z)) is the highest in Ambalappuzha region with 0.6296 followed by Lekkidi-Perur with 0.5804 while the same for Mullan Kolly can be placed in their proximity of 0.5712. The lowest land-gap ratio is reported by Puthur sample with 0.2608. Analytical exercise of such a dimension provides a more lucid picture regarding the prevalence of

large inequality in the distribution of operational holdings remaining below the break-even holding size in regions characterized by heavy concentration of marginal holdings. A comparative study on a regional basis, by incorporating both land-gap ratio (L) and Poverty - Gap Index (PGI) comes out with certain inferences confirming the view that depth of farm poverty is the highest in regions experiencing large land-gap ratio with the exception of Mullan Kolly region which registers only a low PGI due to low incidence (H) of farm poverty. Puthur region, again, stands separate with the lowest PGI of 0.026.

A decompositional exercise on the structure of operational holdings of each region under study indicates that the preponderance of unviable marginal holdings in Ambalappuzha with 47 percent and Lekkidi-Perur with 41 percent has intensified the problem of farm poverty by enhancing its incidence to (0.85 for both regions) and Poverty Gap Index to 0.5351 and 0.4934 respectively. But a picture of reverse order exhibited by Puthur and Mullan Kolly samples with less number of marginal farms (18% and 26% respectively) provides some explanation for their low incidence and depth of farm poverty.

Inter-regional comparison of the incidence of farm poverty throws light to the fact that the number of farm households below the poverty line is higher in areas (Ambalapuzha and Lekkidi- Perur samples) where performance of agriculture is far from satisfactory. Inter crop price differentials inter-regional cost differences, region-specific cropping pattern and above all regional differences in farm productivity account

largely for the visible variations ¹ in the performance of agriculture in general and farm income in particular. Land-Gap Ratio, being the vital determinant of depth of farm poverty seemed to have assumed higher values in regions characterized by the domination of marginal holdings ² in the structure of operational holdings.

¹ Net farm income (per acre and per rupee) is selected as the measure of the performance of agriculture in the regions studied. Entire analysis on productivity variations across regions is conducted on the assumption that other determinants of productivity are given and constant. But farmers are highly prudent and calculative in the sense that all agricultural operations are scientifically planned and effectively conducted to reap maximum farm income. About 95 percent of the respondents have reacted positively to the extensive use of HYV seeds, chemical fertilizers (if the constraint of its heavy price is removed) and pesticides and large scale mechanization of farm operations (as a labor and time saving mode of operation) as proper means of enhancing farm output. But no farmer seemed to have ventured into summer paddy cultivation due to the lack of proper irrigation facilities.

² Though the officially designed classification of operational holdings is not accepted by this micro level study, Agricultural Census Report (90-91) (the latest available data at the district level) – provides the aggregate number of marginal holdings (<1hectre) of Alappuzha as 344,132(7.19%),of Trissur as 428740 (8.96%) while Palakkad has a total of 333897 (6.98%) marginal holdings. But Wayanad reports the least number of marginal holdings of 91053 (1.90%) of the state total operational holdings of 4783304.

More specifically, the factual evidence to prove that region-specific cropping pattern has significance as a decisive determinant of the break-even holding size can be collected from the mixed crop regions of Puthur and Mullan Kolly which have successfully managed to reduce the size (of break-even holding) to 0.88 acres and 0.76 acres respectively. On the other hand, mono-crop regions of Amabalappuzha and Lekkidi-Perur (concentrate more on extensive cultivation of food crops like paddy) require higher break-even holding size to the tune of 2.53 acres and 2.49 acres respectively to attain the subsistence level of income. Hence the impressionistic view that regional specificities should fully be accommodated before designing an appropriate poverty-line size of holding at the state level ¹ gathers strength.

In short, the present study was an attempt to provide an alternative definition to the concept of poverty by reformulating the poverty-line in terms of the physical units of land. As against the conventional computational procedure, poverty line is estimated in terms of the minimum size of operational holding to be retained by the farmers to generate subsistence income. Land-poverty nexus is redefined by projecting the inter-farm productivity variations across sample regions.

Visible variations in farm income across regions, well documented by the present study, can be attributed to the specific cropping pattern followed by farm households. Cultivation of paddy, though highly labour intensive,² is absolutely

¹ Analytical studies of macro dimension absolutely discard such factors and subsequently leave behind severe lacunae to be filled later. Such a practice should have formed the base of land distribution mechanism in Kerala. A proper assessment of the leakage of farm income through the well-knit filter of asset (land) distribution mechanism will necessitate a thorough revision of its basic formulae (in favour of certain guidelines holding practical significance) for increased utilization of assets (land). Productivity effects of the land transfer from land-rich to the land-poor have to be properly evaluated. Skepticism still persists regarding the cyclical process of land transfer (from land-poor to land-rich) through its distress sales in rural areas.

² The paradox of high incidence of farm poverty among paddy cultivators and high incidence of employment in paddy cultivation provides same explanation for the gradual disappearance of paddy fields from the scene of cultivation.

unremunerative and hence constitutes the single major reason for the high incidence of poverty especially among paddy cultivators. The gravity of the problem becomes more prominent when due attention is paid to the average farm income of such farm households ¹. Cost escalation in paddy cultivation coupled with its unremunerative prices (susceptible to wide inter-temporal fluctuations) accounts most for the high incidence of poverty among paddy cultivators. On the contrary, mixed crop pattern of cultivation, as a risk aversion and survival strategy, has proved to be a highly suitable mode of operation to level down the prevalence of poverty to a considerable extent.

Again, a disaggregated analysis on the structure of operational holdings holds key to the fact that marginal farms are unviable and hence act as income depressing force to dip marginal farmers to the depth of poverty. Disparity in land distribution among the poor farm households estimated in terms of the land gap ratio(I) is identified as a major factor causing severe depth of farm poverty. Moreover, absolute absence of any inverse size-productivity nexus in the sample regions adds strength to such an argument and hence the proposition to consider marginal and small farms as the strong hold of our agrarian sector gets automatically deleted from the agenda. Alternative view that heavy leakage of farm income caused by speedy marginalisation of operational holdings in Kerala would definitely create acute pressure in the labour market requires more authentic empirical verification.

More significantly, considerable variations in break-even holding size represent the inter-regional discrepancies in the general performance of the agrarian sector and the wide variations in farm productivity across regions studied. Heterogeneous production structure accounts most for the differences in the break-even holding size across the sample regions. Inter-regional cost differentials, as a proxy for the input-mix opted for cultivation, directly influence farm income of the

¹ Average farm income in Ambalappuzha sample is estimated to be Rs.14386 for a family of 5 members (4.60 being the average household size) whereas Lekkidi-Perur region can generate only Rs.12816 as average net farm income to a family of five members (5.05 being the average size of the household of this region.) (Table V. 23)

households and hence gain recognition as a decisive determinant of poverty line size of holding and the prevalence ratios of farm poverty across regions. To be more precise, the inter-crop price and cost differentials design the destiny of the farmers. Region-wise analysis on inter-farm cost differentials provide ample evidence regarding the nature of association between net farm income and various items of costs incurred by farm households in conducting agricultural operations. Quite surprisingly, net farm income is negatively associated to female employment in Puthur sample whereas an inverse relationship between net farm income and mechanization is indicated by Mullan Kolly sample. Moreover, a robust and positive association between household size and land size is reported by the Puthur region where increased leasing has been recognized as a survival strategy by the farm households. Hence it becomes obvious that a built-in-mechanism operates strongly within the agrarian system itself to totally eliminate the disequilibrating forces and thus to maintain equity in both land distribution and income generation.

Moreover, the present study throws light to the fact that reduction in inequality through land distribution cannot be considered as an ideal method to secure equity in income distribution. In other words, to be more precise, disparities in land distribution can be narrowed by maximizing farm income from the available land. Complex process of (farm) income propagation deserves special mention at this context. Activated operation of trickle-down mechanism through productive farms (it is presumed that suction mechanism operates strongly to absorb more labourers to productive farms) makes the process of poverty alleviation self-contained and self-sustaining. Thus the effectiveness of poverty alleviation mechanism can be rated by the success attained in enhancing farm productivity and curbing its inter-farm differences. The absence of any inverse size-productivity nexus in the sample regions rules out the possibility of providing marginal and small farms a pivotal position in poverty-alleviation strategy. On the contrary, finding effective means to relieve poverty among small and marginal farmers is a mission to be redefined properly. A broader agricultural strategy encompassing a comprehensive package of well-defined measures for effective utilization of small and marginal farms (though a discretionary exercise of cultivators, land utilization can be effectively controlled by a thorough renovation of the farm price structure to favour them) is presumed to ensure them some degree of economic security. The impressionistic view that

poverty alleviation policies, if not made contributory in nature, through active participation of the targeted groups, (here marginal and small farmers) would prove to be highly unsustainable in the long run, requires a closer scrutiny. The imminent danger (of converting a section of population totally passive and thus paralyzing the productive sectors of Kerala's economy through an or under utilization of operational holdings) emanating from such policies has to be studied effectively.

Productivity-based targeting, though sounds highly impractical and a seemingly primitive tool to fight poverty, gathers significance as an effective technique to attain the twin goals of increasing farm productivity and reducing fiscal burden. Relentless effort through all possible means to enhance farm productivity (both in real and monetary terms) seems to be a permanent panacea to the problem of farm poverty. Absolutely impossible task of thorough restructuring of operational holdings too deserves priority in the agenda for further operationalisation. Group farming as a substitute for consolidation of fragmented farms should be treated as an ideal option for future experimentation on a wider scale.

Mass poverty, to a certain extent, thus can be attributed to the very process of structural change which destabilizes the peasant sector on a vast scale. Growing rationalization of productive system has considerably marginalized the marginal and small farmers. The reminiscence of the old social structure based on agrarian system encouraging 'shared poverty' (Geertz, 64) has totally disappeared into the past to aggravate the problem of poverty among peasants.

Appendix V. III - A
Size - wise distribution of per acre operating expenses, gross farm income and per rupee
gross farm income per acre
Ambalappuzha, Puthur, Lekkidi-Perur and Mullan Kolly

Size	Ambalappuzha (Alappuzha)			Puthur (Thrissur)			Lekkidi-Perur (Palakkad)			Mullan Kolly (Wayanad)		
	Operating costs/per acre	Gross farm income /Per acre	Gross farm income Per acre/per Re.	Operating costs/per acre	Gross farm income /Acre (Rs)	Gross farm income per acre / Re. (Rs.)	Operating costs per acre	Gross Farm income /acre (Rs)	Gross farm income per acre /Re (Rs.)	Operating costs per acre	Gross farm income per acre	Gross farm income per acre/Per Re.
		Total costs (Rs)	Total Income		Area	Total costs		Area	Total costs		Area	Total costs
<1	23.54	96570 (4102)	2.9*	13.76	58585 (4258)	8.95 *	23.09	153485 (6647)	2.13	9.13	59060 (6469)	4.58
1-2	37.74	178790 (4737)	2.75	75.37	219560 (2913)	8.56	39.49	209320 (5301)	2.83	34.36	241440 (7027)	4.53
2-3	24.05	100780 (4190)	3.21	53.42	219530 (4110)	6.97	41.83	171665 (4104)	2.77	46.93	329335 (7018)	5.28
>3	76.40	239710 (3138)	4.25	21.5	77570 (3608)	10.62	38.08	164180 (4312)	5.12	144.74	717685 (4958)	9.00
Total	161.73	615850 (3808)	3.43	164.05	575245 (3507)	8.27	142.49	698650 (4903)	3.20	235.16	1347520 (5730)	7.10

Figures in brackets represent per acre values. Only rounded figures are shown here.

Appendix V. 4A

**Correlation Co-efficients between gross farm
income and aggregate operating costs.**

Ambalappuzha .8760	Puthur .6793	Lekkidi- Perur .6860	Mullan Kolly .6294	Combined .6610
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Appendix V.5A

**Correlation Coefficient between net farm income per acre, size of holdings
(operational) and operating costs per acre.**

	Ambalappuzha		Puthur		Lekkidi-Perur		Mullan Kolly		Combined	
	LS	Cp	LS	CP	LS	CP	LS	CP	LS	CP
NET	.0585	.0038	-.0083	.4585	.1722	.1396	.1593	.2768	.1695	.2179
T										

NET - Net farm income per acre

LS - Size of operational holdings.

CP - Operating costs per acre.

Appendix V.6A

State Specific Rural and Urban Poverty Lines - 1999-2000

Sl. No.	States	Rural	Urban
1	Andra Pradesh	262.94	457.40
2	Assam	365.43	343.99
3	Bihar	333.07	379.78
4	Gujarath	318.94	474.41
5	Haryana	362.81	420.20
6	Himachal Pradesh	367.45	420.20
7	Karnataka	309.59	511.44
8	Kerala	374.79	477.06
9	Madhya Pradesh	311.34	481.65
10	Maharashtra	318.63	539.71
11	Orissa	323.92	473.12
12	Punjab	362.68	388.15
13	Rajasthan	344.03	465.92
14	Tamil Nadu	307.64	475.6
15	Uthar Pradesh	336.88	416.29
16	West Bangal	350.17	409.22
17	Delhi	362.68	505.45
	India	327.56	454.11

Source : "Grama Bhumi", Department of Rural Development,
No. 18, III, July Aug. 2001 Govt. of Kerala.

Appendix V.7A

Results of multiple regression analysis

1. **Ambalappuzha**

N - 100
NET - 6305.91 + 79.64 p
R² - .07746
Adjusted R² = .06805

2. **Puthur**

N - 100
NET - 31982.20 - 666.386 FE
R² - .13787
Adjusted R² = .12907

3. **Lekkidi-Perur**

N - 100
NET - 7939.39 + 403.68 MANU
R² - .11863
Adjusted R² = .10963

4. **Mullan Kolly**

N - 100
NET - 26767.75 - 833.111 MACHE.
R² - .11405
Adjusted R² = .11107

5. **Combined**

N - 400
NET - 24331.207 - 142.52 FE - 475.283 MACHE + 172.21 MANU
R² = .18265
Adjusted R² = .17644

N - Number of Samples
NET - Net farm in come per acre
P - Pesticides
FE - Female employment
MANU - Manure
MACHE - Machine labour

Chapter VI

Summary and conclusion

The present study was an attempt to analytically approach the problem of farm poverty in Kerala from an entirely different angle by incorporating an independently developed and reformulated definition of poverty line in terms of physical units of operational holdings (say, acre). The entire discussion on farm poverty emerged out of proper co-ordination of two important factors popularly considered as the distinct features of Kerala's agrarian sector, viz, unparalleled proliferation of marginal holdings and the unique and emirable position enjoyed by the state in terms of farm productivity. This brief analytical study on farm poverty, conducted in the light of inter regional variations in farm productivity tried to highlight various grave issues deserving thorough introspection.

The introductory chapter of this study was devoted solely for a brief discussion on the contextual significance of an analytical study on farm poverty in Kerala whereas in chapter II an attempt was made to review the earlier studies conducted by eminent economists to identify the decision determinants of poverty. The fact that a surge in highly sophisticated statistical tools, by broadening the canvas facilitated an extensive empirical analysis on poverty from all possible angles is revealed fully by the vast literature. Elegant studies of national and international importance gained popularity for being rich and diverse in their analytical pursuits. Evaluation of the earlier studies on a broader basis revealed that periodic shift in emphasis from growth-induced strategy to policy-mediated techniques, on an experimental basis paved the way for considerable reduction in poverty in many countries. A significant point to be stressed in this context is the analogous experience shared by both Kerala and SriLanka in their fight against poverty by resorting heavily .

On active policy interaction to attain high human development index (HDI)¹ even at low percapita income.

Chapter 111, on the other hand, was designed to have a brief discussion on the complex theoretical dimensions of measurement of poverty and the intricacies and deficiencies embedded in the process of construction of poverty line as a standardized and pragmatic device in vague to identify the poor. Measurement of poverty, at the practical level, is facilitated by three popular measures viz. head count index (HCI), poverty gap index (PGI) and squared poverty gap (SPG) all of which are members of the class of measures proposed by Foster, Greer, and Thorbeck (FGT). Periodical revision of poverty line based either on Food Energy- Intake (FEI) or cost of basic needs (CBN) criterion, to suit state specific price changes (as an effort to periodically eliminate the lapses latent in the process of its construction) by adjusting it with consumer price index for agricultural labourers (CPIAC) for rural population or consumer price index for middle range (CPIMR) (index computed by Minhas et. al. (89) based on consumption pattern of households in the middle range of percapita monthly expenditure in each state) is an innovational computational procedure designed and used by researchers and economists. The concluding sections of this chapter was devoted entirely to present a brief account of the progress made by Kerala in Poverty reduction (measured in Head Count Index, (HCI), Poverty Gap Index, (PGI) and Squared Poverty Gap Index, (SPG) over the period between 1957-58 and 93-94. Ample evidence to add strength to the

¹ It is estimated that the HDI (95) for Kerala is 0.628 whereas it is only 0.451 for the whole country. On the contrary, SriLanka has scored 0.716 as the value of HDI. (Economic Review, 2001). Kerala tops the list in terms of both Human Development Index (HDI) and Gender Equality Index (GEI). (National Human Development Report, 2001). But her poor performance on the real front is highlighted in the recent Economic Review, 2001. A similar view with added emphasis on Kerala's poor score in terms of state domestic product (SDP) is expressed by Prof.Jeffry.D.Sachs and Galan.L. Stone. (Business Line 2002).

Popular consensus that Kerala leads other states in poverty reduction.¹ (Kerala had the highest trend rate of decline in HCI of - 2.4 per cent per annum) can be collected through a proper analysis of the available largest time series of consumption distribution. Inter temporal comparison of the incidence of poverty household type throws light to the structural change in rural poverty experienced by Kerala over the period between 77-78 and 98-99. The specific alliance of agricultural labourers (54.79%) and self employed in non agriculture (35.59%) in 1977-78 was replaced by agricultural laborers (34.42%) coupled with other rural labor households (25.51%) as the single largest segment in rural poverty in 1999. But the relevance of the inference derived from a study (Dev, 88)² revealing the deplorable position of agricultural labour households in Kerala, equated to a wide gap between their actual and potential income requires closer introspection in the present context.

Chapter IV was framed mainly for the purpose of conducting a detailed decomposition exercise on the inter-temporal changes in the structure of operational holdings in Kerala over the period between 90-91 and 95-96. The results obtained from

¹ Originally Kerala followed the path of human development to reduce poverty. Since the late 1970s the poverty reduction strategies in Kerala have moved in tandem with the national policy of direct attack on poverty launched through two modes - one providing subsidised assets for self - employment at the individual level or at the level of the group and the other providing wage employment with or without food security through public -works programme. Over the last two decades the schemes have undergone various modifications but the essential approach had remained the same.

² It is inferred that visible discrepancy between income actually earned by the labour house holds in kerala and the potential income is caused by the (highest) unemployed days rather than the daily earnings (relatively higher than the rest of the states) i.e, poverty among landless agricultural laboures in Kerala mainly arises due to high incidence of unemployment rather than low wages. (Dev, 88, p. 20)

analytical exercises done on the basis of the data from agricultural Censuses Reports indicated that a phenomenal proliferation of marginal holdings has caused a pronounced marginalisation of the structure of operational holdings in Kerala. An overall evaluation of the distributional specificities of agricultural holdings at the state level brings out its real picture by indicating that about 98.13 percent of the total land holdings in 95-96 was entirely constituted by marginal and small farms. The average size of operational farms both at the state (from 0.31 hectares in 90-91 to 0.27 hectares) and district level has experienced a visible and sizeable reduction by making them totally uneconomic and unviable to generate suitable income (as at least subsistence income) to farm households. It is again estimated that crop wise distribution of operational holdings (90-91) too followed a pattern with marginal and small farms capturing major chunk of cropped area for the cultivation of both food and non-food crops. The possibility of the fact that the distributional justice attained through land distribution coupled with growing rationalization of productive system has compounded the problems of marginal and small farmers in Kerala by increasing both the incidence and depth of farm poverty. It is observed that far reaching limitations of alarming gravity of the problem of speedy marginalisation of operational holdings assume new dimensions by reducing net income of farm households and pushing them to the depth of severe poverty.

Specific analytical exercises focusing more on inter temporal changes¹ in productivity (in real terms) among major crops at the state level revealed that plantation crops (especially coffee) registered both the highest yield variability and growth rate than food crops (recorded only the least growth rate in productivity) over a period of 15 years between 1985 and 1999. More significantly the increase in farm prices of spices and condiments (especially pepper and ginger which registered an annual growth rate of 37.97 percent and 18.26 percent respectively) along with yield variability and growth

¹ Inter temporal variations in the break-even holding size is analyzed against the background of inter-temporal changes in farm productivity.

rate in productivity explain the visible inter regional disparities in farm income of the cultivating households. But barring certain visible disturbances causing wide fluctuations in farm productivity (in monetary units), Kerala recoded well by attaining the highest gross farm income per hectare of Rs.31468 as against its national counterpart of Rs.14178 in 96-97 (the latest figure available).¹

Basing the analysis on the relatively high farm productivity (representing better performance of the agrarian sector of Kerala) the poverty line holding size for Kerala for 90-91 and 95-96 is estimated as 1.20 hectares (2.97 acres) and 0.77 hectares (1.90 acres) respectively. It is inferred that higher farm income per hectare at the aggregate level is more than sufficient to nullify the adverse effects of uncontrolled proliferation of uneconomic marginal farms. But a deep and thorough investigative study is absolutely essential to examine and assess the effectiveness of the operation of trickle-down mechanism in Kerala. However, it is a matter of great consolation and remarkable achievement that over a period of five years between 90-91 and 95-96, a major chunk of marginal and small farmers² were lifted above the poverty line. But the fact that unviability of operational farms will assume new proportions to get itself reflected either in the labour market or in the off farm sector of Kerala economy deserves special attention and serious consideration. Analysis has to be further extended to estimate the break-even holding size, which exerts pressure on farmers to seek alternative source of income to maintain their family.

¹ Thorough an inter state comparison of the break-even size is not made in this study, it is presumed that Kerala tops the list by attaining the lowest possible poverty line holding size.

² No attempt is made to accurately assess the incidence of farm poverty for the respective years under consideration or its inter temporal changes since the classification of operational holdings, at the state level, into five broad categories, does not provide any room for adopting such a disaggregated approach towards farm poverty.

Chapter V, the core chapter of the present study is focused mainly on designing an approximately accurate region specific break – even holding size. ¹by bright highlighting the regional specificities in terms of the structures of operational holdings, land utilization and cropping pattern, cost of cultivation and farm productivity. The role played by visibly wide variations in farm income across regions, attributed more to region – specific cropping pattern and inter – crop differentials in (farm) price and cost of cultivation in determining the break – even holding size, is well documented by this study. Inference emerged out of a broader analysis supports the view that mixed crop pattern of cultivation (followed by Puthur and Mullan Kolly samples) as an ideal survival and risk aversion strategy, assists in minimizing the break-even holding size of these regions in question. The fact that geographical specificities provide locational and comparative advantages to cultivators, measurable in terms of inter-regional disparities in their net farm income, is proved beyond doubt by the region-specific break-even holding size. Mono crop region, especially paddy cultivating areas of Ambalappuzha and Lakkidi-Perur samples, have to retain at least 2.50 acres (2.53 acres in

¹ Special mention may be made of the rigorous exercises done by researchers and economists to study the direct land poverty nexus. Minhas (70) by using the NSS data collected in the Eleventh Round (August 56-march 57) showed that the proportion of people below poverty line was only 40 percent among those with operational holdings of less than 1 cent of an acre but between 83 and 72 percent among households with operational landholding of 0.01 to 4.99 acres. It is again estimated that within each land holding class the average size of households is inversely related to the level of per capita expenditure. Again Dendekar and Rath (71) estimated that small landholders with cultivated holdings of less than 5 acres and particularly less than 2.5 acres are poor. Vaidyanathan (74) emphasized that rich households (in terms of percapita expenditure) do not consist exclusively of big land holders nor are all big land holders rich. Visaria (81) (by collaborating the estimation of Vaidyanathan) revealed that poverty was most prevalent among households not operating any land or operating holdings of less than 0.5 acres and slightly lower among households operating holdings of between 0.5 acres and 1 acres.

Ambalappuzha sample and 2.49 acres in Lekkidi - Perur sample) of operational farm as the break - even holding size to generate subsistence income whereas mixed - crop regions (of Puthur and Mullan Kolly sample) are in a comparatively advantageous position since they can generate subsistence income by operating only 0.85 acres of cultivable land (0.88 acres in Puthur and 0.77 acres in Mullan Kolly samples). The gravity of the problem becomes all the more visible when an inter-regional comparison of the incidence of farm poverty is precisely made. It is estimated that about 85 per cent of the operational farms under paddy cultivation is placed below the break-even holding size whereas the incidence of farm poverty is 10 per cent and 25 per cent respectively for in Puthur and Mullan Kolly samples. A more transparent picture emerges when the configurational status of paddy farms at the state level is incorporated into the analytical framework. It is calculated that of the total paddy farms at the state level in 90-91 ¹ 69.42 per cent is operated by marginal farmers² by bringing 147811 hectares ³ (39.41%) of land under cultivation. To be more precise, about 90 per cent of the paddy cultivators of Kerala in 90-91 was constituted by both marginal (<1-hectare) and small (1-2 hectares) farmers. Subsistence farming under paddy cultivation will definitely be swept away in the heavy surge of more rationalized production system. The speedy disappearance of paddy farms ⁴ can be attributed to phenomenal proliferation of unviable operational holdings i.e, holdings below the break-even size. Again, it may be inferred that crop diversification rather than regional diversification of

¹ Data on crop-wise distribution of operational farms for 95-96 (the latest) are not yet published.

² At the state-level, those who operate land <1 hectare (2.471 acre) are included in the category of marginal farmers.

³ Of the total area under paddy cultivation.

⁴ Area under paddy cultivation is estimated to be 34977 hectare in 99-2000, whereas it was 881470 between in 1974-75 (being the maximum area registered over a period of 45 years 1956 - 2000.)

cropping pattern (as an ideal risk aversion and survival strategy) would fetch more benefits to farmers by considerably reducing the incidence of poverty. Hence a thorough revision in the land utilization procedure, as the part of an intergrated land policy, should be incorporated in the future agenda for effective implementation to combat rural poverty on a massive scale.

Moreover, the problem of farm poverty assumes new proportions in a situation of absolute absence of any inverse size-productivity nexus in the sample regions i.e, the possibility of revising and broadening the base of agrarian strategy of the sample regions by incorporating the small and marginal farms is totally ruled out. Heavy leakage of farm income caused by speedy marginalization of operational holdings, a matter of serious concern, will definitely aggravate the problem of farm poverty by exerting acute pressure on the labour market. Moreover, the decompositional exercise on the structure of operational holdings of each region under study throws light on the fact that preponderance of marginal holdings in Ambalappuzha with 47 percent and Lekkidi-Perur with 41 percent has aggravated both the incidence and depth of farm poverty. Indirect interpretation of such a view is associated with the fact that a highly inoperative "suction" mechanism (to be treated as the consequence of weak income propagation caused by unviable operational farms) will reduce the capacity of the states agrarian sector to absorb labour and thus will intensity the problem of poverty among agricultural labourers. More specifically, the fact that agricultural labourers still constitute the single largest segment of rural poverty (34.42%) in Kerala¹ adds strength to such an argument and throws light to the possible outcome of the weak process of income generation in the agricultural sector of our economy. (Moreover, the line of demarcation drawn between agricultural labourers and marginal farmers is too flimsy.)

Specifically, farm poverty is the residual of growing rationalization of the production system and to a certain extent can be considered as the natural and spontaneous outcome of structural deformity (assuming outward manifestation in the

¹ Details are included in Section 4, Chapter III of this study.

form of unchecked proliferation of unviable operational farms). If uncontrolled, this phenomenal increase in the number of uneconomic farms, constituting only a fragile base of (farm) income propagation mechanism, will definitely destabilize and cripple the agrarian sector of the state economy. The proposition to realize a shift in emphasis from policy-mediated to growth - induced poverty alleviation mechanism based on a broader agrarian strategy¹ (by accommodating an appropriate land utilization policy) gains more practical significance at this context. Or else, a reverse test of policy-mediated active and compulsory integrated land consolidation programme, though sounds impractical and utopian, remains to be the only solution and better option before the state.

¹ The joint report (the U.N, FAO, the international fund for agricultural Development (IFAD) and world food programme (WFP) outlines a twin track strategy for achieving substantial reduction in hunger and poverty. The strategy includes promoting agricultural and rural development mainly through productivity increases especially among small holder farmers to achieve broad based economic growth, increased food availability and sustained poverty reduction and improving food consumption to raise the productivity and productive potential of those who are weakened by hunger and allow them to take advantages of the opportunities offered by development. (Business line, Vol. No. 78, 2002)

Farm Poverty in Kerala

[Confidential : Data collected through this questionnaire will be used for research purpose only.]

1. General Information

1.	District								
2	Block/Panchayat								
3	Ward								
4	House No.								
5	Name of the head of the family [Male headed-1, Female headed-2]								
6	Religion [Hindu-1, X'ian-2, Muslim-3, Others-4]								
7	Community [SC-1, ST-2, OBC-3, Others-4]								
8	Total members in the family								
9	Educational status [Literate-1, Illiterate-2]								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Male</td> <td style="width: 33%;">Female</td> <td style="width: 33%;">Children</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>	Male	Female	Children					
Male	Female	Children							
10	Whether acquired special skill [Yes-1, No-1]								
11	Employment status (Code)								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Male</td> <td style="width: 33%;">Female</td> <td style="width: 33%;">Children</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>	Male	Female	Children					
Male	Female	Children							
12.	Do you send children for work? [Yes-1, No-2]								
13.	If Yes, specify the nature of work [Assisting parents-1, Independent work-2]								
14.	Health status [Healthy-1, Partially healthy-2, Chronic patient-3]								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Male</td> <td style="width: 33%;">Female</td> <td style="width: 33%;">Children</td> <td style="width: 33%;"></td> </tr> <tr> <td style="height: 150px;"></td> <td></td> <td></td> <td> <u>Employment (Code)</u> Agricultural Labour-1 Agricultural self Employed-2 Non-agricultural self- employed-3 Non-agricultural labour-4 Rural artisans-5 Others -6 Unemployed -7 </td> </tr> </table>	Male	Female	Children					<u>Employment (Code)</u> Agricultural Labour-1 Agricultural self Employed-2 Non-agricultural self- employed-3 Non-agricultural labour-4 Rural artisans-5 Others -6 Unemployed -7
Male	Female	Children							
			<u>Employment (Code)</u> Agricultural Labour-1 Agricultural self Employed-2 Non-agricultural self- employed-3 Non-agricultural labour-4 Rural artisans-5 Others -6 Unemployed -7						

15	Do you feel that you are healthy to work for all 30 days? [Yes-1, No-2]			
16	Is it applicable to other members of your family? [Yes-1, No-2]			
17	Nature of work of the members of the family? [Regular-1, Casual-2]			
		Male	Female	Children
18	Average No. of hours/days the members work in a day/month			
19	Do you reside in your own house? [Yes-1, No-2]			
20	If No, specify the type [rental-1, others-2]			
21	Nature of the house [Good-1, Partially good-2, Hut-3, Totally bad-4, Others-5]			
22	State whether you belong to [Landless Household-1, Landed Household-2]			
23	Source of drinking water [Well-1, Pond-2, River-3, Tap-4, Others-5]			
24	Is your house electrified? [Yes-1, No-2]			
25	Do you have ration card? [Yes-1, No-2]			
26	Do all the members get at least 2 square meals a day? [Yes-1, No-2]			
27	Give details regarding the assets of your family (Rs)			
	(Code)	Category	Value (Rs)	
	1	Land		
	2	Building		
	3	Machinery Equipment		
	4	Household durable		
	5	Financial assets		
	6	Dues Recieved		
28	Give details regarding the liabilities of the family (Rs)			
	(Code)	Category	Value (Rs)	
	1	Cash loan		
	2	Land mortgaged		
	3	Machinery pledged		
	4	Ration card pledged		
	5	Financial assets pledged		
	6	Gold mortgaged		
	7	Previous outstanding dues		

II. **Land holding**

29	Specify the category of land owned. [Household ownership holding-1, House hold operational holding-2]				
30.	Give details regarding the area of each category				
			Dry Land (acres)		Wet Land (acres)
31.	Are there any changes in area owned? [Yes-1, No-2]				
32.	If Yes, give details regarding (acres)				
	Ownership holding			Operational holding	
		Nature of acquisition/disposal		Dry	Wet
	1	Land purchased/Land added			
	2	Land received as a gift			
	3	Land received under ceiling laws			
	4	Land owned but not operated (fallow)			
	5	Land owned but not operated (leased out)			
	6	Land sold. Land mortgaged			
33	Do you lease in land for cultivation? [Yes-1, No-2]				
34.	If Yes, area in acres				
35.	Specifically state the land utilization category/area (acres)				
	Category (Code)	Dry	Wet	Category (Code)	
				Building and courtyard-1 Self cultivation of crops-2 Permanent pastures/grazing land-3 Leased out-4 Uncultivable land-5 Cultivable waste-6 Current fallow-7 Permanent fallow-8 Others-9	

43	Regarding leased land, give the following details *											
	Leased in				Leased out							
	Crop (Code)	Mode (Code)	Variety (Code)	Area (Acres)	Rent (Rs)	Gain in (Rs) income	Crop (Code)	Mode (Code)	Variety (Code)	Area (Acres)	Rent (Rs)	Gain in (Rs) income
44	Agricultural operations are conducted by [Family labour-1, Hired labour-2]											
45	If conducted by family labour alone, how many members are employed?											
46	If conducted by hired labour, how many persons may be employed?											
47	Do you conduct agricultural operations on a scientific basis? [Yes-1, No-2]											
48	Is agriculture the main source of income? [Yes-1, No-2]											
49	If Yes, specify its purpose (Self-consumption-1, Market-2)											
50	If food crop is cultivated, do you get enough to feed all members of your family? [Yes-1, No-2]											
51	If No, specify the alternative source of food											

* Same code as is given in Q.No.42 may be used here.

						Source (Code)	Qty (Kg)	Value (Rs)	Source (code)
						Open marker -1			
						Fair price shops-2			
						Neighbours -3			
						Relatives - 4			
Others - 5									
52.	If cash crop cultivated, do you get enough to meet your total monthly expenditure ? [Yes-1, No-2]								
53.	Do you find the cultivation of own land sufficient to feed all the members? [Yes -1, No. 2]								
54.	Do you find cultivation of leased land an ideal solution? [Yes - 1, No. - 2]								
55.	Do you have access to other area for [grazing - 1, fodder-2, No-2]								
56.	Give the further details regarding								
	Category (code)	Use (code)	Area (acres)	Gain (RS)	Category code				
					Leased in land-1	Neighbor's land-2	Govt:land other than forests-3	Cultivation-1	Use code
	Use (Code)	Qty/Kg	Value (Rs)	Use (code)					
				Further use-1	Market-2	Exchange-3	Cultivation-1	Use code	
57.	Do you find indirect income from grazing/ fodder collection [Adequate- 1, slightly adequate-2, Highly inadequate-3]								
58.	If you generate surplus output, mention use.								
59.	Is income from agriculture sufficient to meet your total monthly expenditure? (Yes - 1, No-2)								
60.	If no, how do you supplement it / how much ?								
	Category (code)	Amount (Rs)	Category (Code)	Trading % Business-5	Wages & Salaries-9				
			Animal Husbandry-1	Rentittances-6	Interest/divident-10				
			Fisheries-2	Rent-7	Self employment-11				
			Others-3	Household industries- 8	Others -12				
			Services-4						

IV. 65

Monthly Expenditure of the Family (Rs)

1.	Food	Qty.	Calories	Rs
a.	Cereals			
b.	Pulses			
c.	Oil/Vanaspati ghee			
d.	Milk/Milk products			
e.	Fish/egg/meat			
f.	Frits/Vegetables			
g.	Other food materials			
2. h.	Drinks/liquor/tobacco			
3.	Clothes			
4. i.	House maintenance & repair			
j.	Rent			
5.	Fuel/light			
6.	Education			
7.	Traveling expenses			
8.	Medical expenses			
9.	Recreation			
10.	Miscellaneous			

III. 61 use of inputs

Seasonal Crop	Crop (code)	Fertilizer (Rs)	Pesticide (Rs)	Farm Yard Manure		Family labour (Mandays)		Hired Labour (Mandays)				Tractors		Other Machinery Cost (Rs)	
				Home Produced (Kg)	Purchased	Male	Female	Child	Male	Female	Child	Hours	Cost (Rs)		
Season 1															
Season 2															
Season 3															
Perennial /annual crops															
Wage rate	Male	Rs/d	Fem	Rs/d	Children	Rs/day	Bullock days	Rs/day							

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