PATTERNS OF RURAL DEVELOPMENT AND PUBLIC EXPENDITURE 1981-2001:
A SPATIO-TEMPORAL ANALYSIS

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AJAY KUMAR

**Centre for the Study of Regional Development
School of Social Sciences
Jawaharlal Nehru University
New Delhi-110067
India
2004**

CERTIFICATE

I, **Ajay Kumar**, certify that the dissertation entitled "**PATTERNS OF RURAL DEVELOPMENT AND PUBLIC EXPENDITURE 1981-2001: A SPATIO-TEMPORAL ANALYSIS.**" for the degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation.

AJAY KUMAR

21/7/04

Forwarded by

(DR.SACHIDANAND SINHA)
SUPERVISOR
21/7/04

(PROF. ASLAM MAHMOOD)
CHAIRPERSON

Acknowledgement

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Abbreviations

Pc.P.F.	-	Per Capita Foodgrain Production
A.Y.	-	Average Yield
Irr. In.	-	Irrigation Intensity
NF. E(M)	-	Non Farm Employment (Male)
NF. E(F)	-	Non Farm Employment (Female)
P.H.	-	% of persons living Pucca Houses
S.D.W.	-	% of household having availability of safe Drinking Water.
T.F.	-	% of household having Toilet Facilities
H.E.	-	% of household with electricity connection.
RC1	-	% of villages connected by road (Population < 1000)
RC2	-	% of villages connected by road (Population >1000 <1500)
I.M.R.	-	Infant Mortality rate
F.L.Ex	-	Female Life expectancy
S.R.	-	Sex Ratio
T.F.R.	-	Total Fertility Ratio
N.E.R.1	-	Net Enrolment Ratio (Class I-V)
N.E.R.2	-	Net Enrolment Ratio (Class VI-VIII)
P.R. 1	-	Girls/Boys participation ratio (Class I-V)
P.R. 2	-	Girls/Boys participation ratio (Class VI-VIII)
F.D.R.	-	Female Dropout Ratio
A.L.R.	-	Adult Literacy Rate
S.D.P.	-	State Domestic Product
C.I.	-	Composite Index

CHAPTER ONE

INTRODUCTION

INTRODUCTION

Statement of the Problem

Rural development is the crux of India's development strategy. Since an overwhelming majority of India's population lives in villages, a holistic development of its rural life is a pre-requisite for the acceleration of the pace of overall economic development of the country. Rural development is a strategy to enable a specific group of people, poor rural women and men to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek livelihood in the rural areas to demand and control more of the benefit of rural development.[1] It enables the use of human and natural resources in the rural areas and to reduce area-wise disparities.[2]

Rural development in itself is a very broad term. It includes within itself all developmental themes. Within the economic development, agriculture and allied activities stands out as most important mainly because of agrarian nature of our rural economy. Infrastructural development owes its importance to the fact that it acts as platform on which the process of growth and development can take off. Ever since would Bank's designed strategy included improvement in social life as an inseparable part of development, social development largely in the context of health and education has gained top priority.

India is a very vast country geographically. There are differences in natural endowment and historical process of growth as a result different regions identified as different states are at varied levels of economic development. Evidence indicates that public and governmental interest in development has been growing rapidly and there is a strong and serious commitment towards it on the part of our policy makers.

Studies show that rural economy is not of much interest to the private sector and hence the role of government in initiating and furthering the process of rural development has become paramount. Government

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[1]   Chambers, Robert., Rural Development: Putting the Last First, Longmans, London, 1983.

[2]   Arora, Ramesh, K., and Hooja, Rakesh, Administration of Rural Development, Arihant Publication, Jaipur, 1994.

formulates rural development programmes and implements then using money from public exchequer. This public expenditure on various developmental heads has varied over time and from state to state. It therefore needs to be seen, how far the pattern of public expenditure matches with the rural development trends. This empirical examination can be of immense help in policy formation.

Theoretical Framework

Development administration is seen as directly government-led effort to intervene in the process of socio-economic transformation. Development, according to Montgomery[3] is usually conceived as an aspect of change that is desirable, broadly predicted or planned and administered or at least influenced by governmental action. George Gart[4] has characterised development administration in terms of its purpose, its loyalties and its attitude. According to him the purposes of development administration are to stimulate and facilitate defined programs of social and economic progress. Thus development administration theoretically and conceptually took berth in the context of developing third world after the liquidation of colonialism.

The context and the content of development have changed over a period of time. The people, especially poor and areas especially backward, emerged as the focus group and focus area, for developmental purposes. With prioritisation of socio-economic objectives the nature and composition of public expenditure became as tool to correct economic distortions and bringing balanced all round development. Thus within this framework of developmental needs and governmental effort effected through expenditure, an input-output kind of relationship can be envisaged with public expenditure on various development heads as input and development as output. The present study can be placed within the ambit of this theoretical framework of development administration.

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[3] John D. Montgomery and William J. Siffin (eds.), Approaches to Development: Politics, Administration and Change, McGraw Hill, New York, 1966, p.259.

[4] Gart, George, F., Development Administration: Concept, Goals, Methods, The University of Wiscosin Press, 1979, pp.20-21.

Study Area

The study is based on state-wise analysis of various indicators of rural development. For this purpose 14 major states have been taken up for the study. Jammu & Kashmir, Himachal Pradesh and North Eastern states including Assam has been excluded because of lack of availability of data and also because the size of public expenditure is very small. Uttaranchal, Chhatisgarh, and Jharkhand have been considered as part of Uttar Pradesh, Madhya Pradesh and Bihar.

Objectives

- To study the levels of rural development both spatially and temporally across major Indian states.
- To study the composition, extent and inequalities in public expenditure impacting rural development.
- To seek an empirical relationship between rural development and public expenditure.

Research Questions

- How have different states fared in selected indicators of rural development over a period of time from 1981 -2001?
- What has been the extent of variation among the states with respect to different selected indicators?
- What has been the order of states in the overall rural development for the various time periods between 1981 to 2001?
- Whether the inequalities among states have bridged or have widened?
- What has been trend of public expenditure on various components of rural development?
- To what extent there is inequality among states in terms of their resource potential for expenditure on rural development?
- Is rural development a direct function of public expenditure made on it?

Database

The study is based on secondary data for various indicators of rural development. These have been collected from the following sources:

- Census of India reports of 1981, 1991 and 2001
- Various issues of Statistical Abstract of India
- Rural Development Statistics, NIRD.
- Sarvekshana, (Various issues).
- Education in India, Dept of Education, Ministry of HRD.(Various issues)
- Annual reports of various ministries and departments of the Government of India

Data Problems

The present study presents a time series analysis at five-year time internals, from 1980-81 to 2000-01. There is a lack of availability of time-series data on the various indicators selected for the purpose of study. Therefore in this study, data available for different time periods have been used to calculate the compound annual growth rate and then estimates and projections wherever necessary.

The table below gives the details of estimated and projected figures for all the selected indictors.

Table 1.1 : AVAILABLE, ESTIMATED AND PROJECTED FIGURES FOR ALL THE SELECTED INDICATORS OF RURAL DEVELOPMENT.

INDICATORS	1980-81	1985-86	1990-91	1995-96	2000-01
I.M.R.	A	A	A	A	P
F.L.Ex.	E	E	A	A	A
S.R.	A	E	A	E	A
T.F.R.	A	A	A	A	P
N.E.R.1	A	E	A	P	P
P.R.1	A	A	A	A	A
N.E.R.2	A	E	A	P	P
P.R.2	A	A	A	A	A
F.D.R	A	E	A	E	A
A.L.R	A	E	A	E	A
Pc.F.P.	A	A	A	A	A
A.Y.	A	A	A	A	A
Irr.In.	A	A	A	A	A
NF.E.(M)	A	A	A	A	A
NF.E.(F)	A	A	A	A	A
P.H.	A	E	A	E	A
S.D.W	A	E	A	A	, P
T.F.	E	A	A	A	P
H.E.	A	E	A	A	A
Rc.1	E	E	A	A	P
Rc.1	E	E	A	A	P

Note   A – Available, P – Projected, E – Estimated
© - Computed figures using available

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There are three basic sources, which contain data on total expenditure and on its components incurred by each state, union territory and central government a whole. These are: -

- The original budgets of the governments published by the state and central governments.
- Combined Finance and Revenue Accounts published by C.A.G. of India.
- The Reserve Bank of India (RBI) Bulletins.

For this study, major part of the data has been collected from the various issues of RBI bulletins because The RBI bulletins give state-wise data after making necessary adjustments in the budget figures to obtain comparable estimates. Moreover the data published by RBI bulletins are better suited to our requirements as they give a break down of total expenditure into developmental and non-developmental expenditures and their further break up into the main services social and community services, economic services and so on.

Methodology

For the purpose of analysis of data on various indicators of rural development, five-time period has been selected 1980-81, 1985-86, 1990-91, 1995-96, and 2000-01. Analysis has been done in the following ways:

- Temporal analysis of the performance of various indicators has been made by trend line observation of each indicator for all the selected states.
- Coefficient of variation has been used to calculate inter-state variations in achievement levels of different indicators.

  Coefficient of variation = standard deviation/mean*100

- To assess the overall performance of states a composite index has been prepared for each of the subsets of rural development. Then using first principal component of each subset, a composite rural development index for all the five-time period has been calculated.

Data pertaining to indicators of rural development for the selected time period, for which it was not available has been computed using the following formulae.

- Compound Annual Growth Rate (CAGR)

  = (EXP ((LN (current year) – LN(Base year))/time-period)-1)*100

- Projection using (CAGR)

  = Base year * (1+(GR/100))^no of years of projection

- Estimation using (CAGR)

  = current year/(1+(GR/100))^no of years for estimation.

For the purpose of analysis of public expenditure, data obtained from R.B.I. bulletins have been standardized to remove the biases due to inflation and also to enable inter state comparisons.

The effect of rise in prices should be evened out of the total expenditure and its components to obtain an accurate picture of their growth. Different studies have used different deflators, such as GDP deflator, government price deflator and weighted public expenditure deflator in order to deflate government expenditure. In India the use of state income deflator may be preferred to national income deflator because they tend to take into account the regional variations in the prices at the state level.

In order to obtain a state wise comparison of expenditure data a suitable denominator has to be chosen which would even out large variations across states in the absolute figures. Three different denominators have been proposed (1) population (2) income and (3) geographical areas. Here population of the state has been chosen as denominator because states with large population spend more (absolute amount) than the states of smaller size. Hence standardizing absolute expenditure by using population, as denominator will even out biases more realistically.

Public expenditure data has been analyzed in terms of its growth over the past two decades and also inequality across states and different rural development indicators. Growth has been measured using trend lines. Inequality has been measured using coefficient of variation.

For the purpose of studying nature of relationship between rural development indicators and public expenditure, correlation and simple liner regression analysis has been done with public expenditure as independent variable and indicators of rural development as dependent variable.

Rationale for the selection of the indicators

Agriculture

Agriculture is the key sector as far as rural development is concerned. Scholars like Ahluwalia, Bhalla, Singh, Rao, Jones, Sen and others have through their studies highlighted the importance of agriculture growth in rural India. A thorough regional analysis of agriculture has pointed its links with rural poverty. Here in order to assess the level of rural development across major Indian states, following indicator related to agriculture has been selected.

- Per capita food grain production in Kgs.
- Yield per hectare of food grains.
- Gross irrigated area as percentage of net cropped area.
- Rural non farm employment male / female.

Shastri has used the first three indicators while studying regional disparities in Economic Development in Rajasthan along with other agriculture related indicator to prepare a composite index of agriculture. In addition to the two output related indicators of production another indicator reflecting non agricultural work force has been added apart from irrigation indicator. Thus the four indictors cumulatively give the nature & performance of agriculture in the state and can thereby closely related to the rural prosperity or drudgery. The rationale for selecting both per capita food grain production and yield per hectare is that some state might have low per capita food grain productions but it can not be summarily concluded that agricultural development is poor. It may be that yield per hectare is high compared to may state but low per capita production is due to high population density in agricultural sector.

Irrigation is the most important input for agricultural development. Many regional level studies on agriculture have showed direct links between

high productivity and availability of irrigation facilities and thereby rural prosperity.

Proportion of rural workers in agriculture to rural work force over a period of time reflects the casualisation process in agriculture (Rao, Hanumappa). Agricultural sector already over employed, further addition into it suggests that the process of rural development has failed to absorb the rising work force to other sectors.

Infrastructure

Most of the social, economic and civic infrastructure is located in large towns and cities and amenities are best enjoyed by the privileged ones. Almost three fourth of the population living in rural areas bereft of such facilities face hindrance in process of socio-economic amelioration. Various infrastructure indicators have been selected which are very basis to rural development and have come up in various studies done by Pal, Thomas, Upadhyay, Singh, Kurian, Choudhary and Rajakutty and others.

- Percentage of persons living in Pucca houses.
- Percentage of household with safe drinking water.
- Percentage of households with toilet facilities.
- Percentage of household having electricity.
- Percentage of villages connected by all weather road. (Both above 1000 and below 1000 population category).

Housing, drinking water and toilet facilities are basic civic infrastructure for healthy living and are therefore inseparable part of any development process whether in urban or rural area. Electricity is a vital input for industrial and agricultural development. Rural electrification can assist in increasing the coverage area of irrigation of facilitating lift irrigation through energized pump sets. Rural electrification can give boost to the process of rural industrialization. More over domestic consumption indirectly assist in reducing the manual workload of women engaged in domestic chores, helps the literacy campaign and bridges the information divide between the rural and urban areas. Thus rural electrification serves a very important indicator of rural development.

Rural road is a basic infrastructure requirement that plays an important role in socio-economic upliftment not only of rural community but also of the country as a whole. It contribute significantly in meeting the transport demand in rural areas by providing access to goods, services and social facilities. Thus has a multiplier effect assisting in further augmenting the inflow of capital, information and ideas and outflow of better and larger quantity of produce.

Health

The spectrum of health ranges from good health to morbidity to fatal ill-health or mortality. Scholars like Agnihotri, Saith, Harriss, Padmanabha, Morris and other have analysed various indictors which not only show the overall health condition but also the gender-bias involved as reflected in weaker position of female. Therefore selection of indicators have been done in order to capture not only the state of health but also the processes aspects.

- Infant mortality rate – In a developing country like India with high mortality and high fertility rates, the largest proportion of deaths occurs in the first year of life due to poor health care facilities, nutritional deficiency, under-age marriage, infanticides etc. Thus IMR becomes an important indictors reflecting the socio-economic development of the area.

- Life Expectancy at Birth – Life expectancy at birth directly reflects the level of health, nutrition and income and thus indirectly links employment and shelter. Life expectancy at birth calculated for males and females is extensively used as a measure of gender differential in well being. But this use is quite misleading as it masks age-specific differentials in mortality. However overall life expectancy is useful as a measure of development.

- Sex Ratio – Agnihotri suggests that sex ratio is an important indicator of health standards in the region. Any excess female mortality due to social factors also gets reflected in this indicator and therefore it can serves as a reliable indicator of gender differential in the functioning of health.

- Total Fertility Rate – This indicator highlights the population growth potential. Better is the socio-economic status of the population greater will be the chances of low fertility rate. This indicator also throws light on the functioning of the family welfare programmes.

Education:

Access to education from basic literacy up to tertiary education is of great relevance to developing countries, where access is often unequal even at primary level. Indicators of access are sub divided into stock variable and flow variable. Stock variables reflect past investment. Recent progress is better captured by looking at changes over time, as revealed by flow variable. This is particularly important in developing countries where younger age cohorts constitute a large proportion of the population.

- Net Enrolment Ratio – It includes enrolment for the age group corresponding to the official age group for that level. It is a better measure compared to Gross Enrolment Ratio as (GERs) which may be misleading especially in India where repetition rates are high and would therefore mask the extent of lack of access of education.

- Female Dropout Ratio – High enrolment ratio alone cannot present the true picture of the state of primary level education. Poor show with low retention nullifies high enrolment rates. Thus drop out ratio measures the effectiveness of the education system in keeping students hooked to the classes. Female drop out ratio has been chosen as a measure because it is the female child, which has to bear the first assault of poverty, social restrictions and requirements. In rural areas female are pulled out of schooling to help in domestic chores, child raising and other activities.

- Female/Male Participation Ratio – In India which is still far from achieving universal primary education female/male participation ratio (female and male gross enrolment ratio) can be used to assess gender gap in education. This indicator will address equity concern as any development process, which is lopsided does not ultimately, gives desired results.

- Adult Literacy Rate – It is a direct measure of achievement of one basics right of the human being, i.e. education. Mazumdar suggests that this indicator also well correlated with many other indices of quality of life such

as measures of employment, income or health and therefore adult literacy can be a good indicator of overall quality of life.

Historical Overview

During the British period the dominant philosophy of the state was laissez-faire and the best government was described as the one which ruled the least. The government however assumed the functions of rural development in the context of recurrent famines

As early as 1866, Famine Commission proposed for a separate department of agriculture and it was North-Western Province where a separate department of agriculture was set up to promote agricultural development. Thus a tacit beginning towards institutionalized rural development was made.

Rural development Programme received mass popular support with the entry of Mahatma Gandhi into the Indian political scene. Gandhiji's designed comprehensive Programme of rural development included use of khadi, promotion of village industries, erradication of untouchability, provision of basic and adult education, upliftment of women and propagation of national language.[5] Rabindra Nath Tagore set up Sriniketan Institute Of Rural Development in 1921, with the aim of making the rural population self reliant and self respectful.[6] In 1927, the district collector of Gurgaon started Programme of rural reconstruction based on old virtues of hard work, self-help, mutual help and mutual respect. Similarly in 1932, princely states of Baroda launched a broad-based program of rural amelioration to promote the will to live better and a capacity for self-help and self-reliance. This helped in building up a self-sufficient village.[7]

Rural development received a boost in 1921 when Dyarchy was introduced in the provinces under Government of India Act 1919. Under this act the Transferred subjects under various departments included were education, medical services, public health, agriculture and industries. Rural

5   Maheshwari. Shriram.,Rural Development: A Public Policy Approach, Sage Publication, N. Delhi, 1985,PP-32.

6   Randhawa. M. S.,Developing Village India Bombay,Orient Longman, Delhi,1951,P-40

7   Bryane. F. L.,Better Villages, Oxford University Press, 1946, P-268

development received considerable encouragement, as elected members were in-charge of different ministries.

Government of India Act 1935 conferred autonomy on the provinces in the sphere of activities that included among others all the ingredients of rural development and promising wide-ranging agrarian reforms. After the First World War elections in 1945 took place, under the act of 1935 and here congress expressed its broad based concerns for rural development in its election manifesto of 1945.[8] Issue of rural development came up time and again but in the pre-independence period it was a minor symphony in the governmental orchestra of time. The functions of government of India were limited and even the spread of each functions was narrowly restricted.

At the time India's independence picture was of poverty, malnutrition, poor standards of public health and mass illiteracy. This was the background against which First Five Year Plan was drafted and there was a resolve to reconstruct the country economically and socially and thus rural development concerns of the government acquired a high level of priority. Even later various five-year plans have been articulating the goals, strategy and logistics of rural development in India. Rural development has been continuous since its inception with only a change in its content or a shift in emphasis of its ingredients, showing a variation over time.

India started with a large-scale government financed rural development program in 1948 known as the Etawah Pilot Project in Uttar Pradesh. The community development program launched in 1952 laid emphasis on construction of village roads, school buildings, panchayat ghars and drinking water wells with the help of people's participation and organization of rural cooperatives.[9] In 1957 Balwant Rai Mehta study team was appointed to study and report on the community development project. The study team gave path-breaking suggestion of administrative decentralization by setting up of Panchyati Raj Institutions for the implementation of rural development Programmes.

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[8] Maheshwari. Sriram., ibid, p- 29-30

[9] Mathur Y. B., Rural Development In India, National Institute Of Rural Development, Hyderabad, 1985.

Later various rural development Programmes were started with varying degree of success. Some of the major programmes were Intensive agriculture District Programme (1960), Intensive Agriculture Area Programme (1964), Drought Prone Area Programme (1973-74), Command Area Development Program (1974), Small Farmers Development Agency, Marginal Farmers And Agricultural Labourers' Development Agency, Twenty Point Program, Integrated Rural Development Programme (1980), National Rural Employment Program and Development Of Women And Children In Rural Areas.[10]

Prominent rural development Programmes presently in operation are Swarnjayanti Gram Swarojgar Yojna, Sampoorna Grameen Rojgar Yojna, Pradhan Mantri Gramodya Yojna and Food For Work Programme. The contents of the program have been changing under the dynamics of politics as well as impulses and focus realized by implementation of the earlier Programme.

Approaches of rural development

Rural development means not only agricultural expansion but also growth of small industries, schools, training centers, improved communication, rural electrification, public health, population control centers and even the stimulation of rural cultural awakening.[11] Rural development is thus seen as integrated development of all sectors.

Recent interest in rural development has popularized integrated rural development as a strategy of promoting development of backward areas and weaker sections. The strategy of rural development has been derived from the contributions of Nurske and Hirshman on the of initiating growth of backward regions.[12]

Integrated rural development proposes integration at three levels namely functional, spatial and group level. On the question of manner of integration proposed particularly to promote rural development there are

[10] Desai. Vasant.,Rural Development Through Plans, Himalayan Publishing House, N. Delhi, 1988.

[11] Bowes. Chester.,"Dynamics Of Rural Development", Kurusherta , 1967.

[12] Moddie. A.D.,Approaches to Rural Development, Leslie Sawhney Program of Training for Democracy, 1976.

broadly two schools of thought. First school is lead by Gokhale Institute of Economics and Politics, Poona (D. R. Gadgil and associates) and the National Institute of Community Development, Hyderabad (Lalit K. Sen and associates). The other school is represented by The Institute of Social and Economic Change, Bangalore (V.K.R.V.Rao and associates) [13]

Gadgil and Sen have proposed vertical integration between hierarchy of human settlements with the hope that such a link up will transmit to the lowest point in the hierarchy, growth impulses from the top growth centers. Trickle down is basic developmental growth strategy entailed here. This school assumes that by achieving inter-sectoral connectivity at geographical, industrial, and inter-group level would increase the range of wants of consumers, promote higher degree of specialization and capacity utilization, greater dissemination of technical knowledge and there by promote rural development.

Gadgil and Sen[14] have been criticized on the question of dependency that rural areas develop on urban areas in the rural-urban vertical link up. Moreover the three classes in rural areas cultivators, artisans, and landless agricultural labourers and tenants do not get functionally linked. There is a fear of labour class getting bypassed if services of the urban skilled labour are sought and if agricultural operations are mechanized.

Rao[15] and associates have advocated horizontal link up among the villages themselves so that they can support each other functionally in a manner that the whole cluster of villages becomes a viable economic unit. This school strongly proposes for containing the multiplier effect within the rural economy. Rao's model binds cultivators, artisans and agricultural labourers together. As there would be inter-village exchange relationship between these different groups, the benefits of prosperity among the cultivator's class is expected to pass to the other classes.

The current strategy of integrated rural development is not based on any one particular approach. There is synthesis of both the approaches in devising the strategy of rural development

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[14] Aziz. Abdul., ibid, page 290-91

[15] Aziz. Abdul., ibid, page 292

Administrative organisation for rural development

India has a federal and democratic governmental system. For the administration of agricultural and rural development with its large and varied scope there are several organization at place at union, state and local level. The policies and the major programmes outlined under the five year plans are partly implemented by union government ministries and agencies directly and largely executed by the state government departments and organisations, often under the guidance of union government.[16] The union ministry of agriculture and Rural Development is the nodal agency involved with the management of rural and agricultural development. Besides, it coordinates the activities of other union ministries and agencies concerned one way or the other with development of rural works and services and facilities, such as major and medium irrigation works, forests, and environment, education, health care, social welfare, public works, energy, etc. The actual implementation of the rural development programmes and projects takes at the level of the districts. There is the District Rural Development Agency (DRDA) since 1980, which actually implements the various poverty alleviation and rural development programmes.[17]

The panchyats systems has also been associated with the working of this agency in many states especially after the passage of 73rd and 74th Amendment Acts, by serving as members of the various committees constituted at the block level for the implementation of IRDP. They help in plan formulation and also acts as agent for the implementation of these programmes. The village gram sabha serves as an important meeting point for the block level functionaries. Gram sabha is also entrusted with the process of social auditing.[18] Below the district level the body concerned with implementation of rural development activities is the block development office. Extension officers and gram sevaks (village level workers - VLW) work under the supervision and support of the block office to promote rural development activities in the villages. Various committees consisting of

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[16] Khanna. B.S.,Rural Development In South Asia 1. India, Deep and Deep Publication, N. Delhi, 1991.

[17] Khanna.B.S., ibid, page 8

[18] Goyal. Rajni, and Arora. R.K., Indian Public Administration:Institutions and Issuses ,Wiswa Prakashan, N. Delhi, 1996, page 480

representatives of panchyats, banks, extension officers' etc are also constituted to remove the bottlenecks in the Programme.[19]

Organisation of the study

The study has been organised into six chapters. Chapter one deals with the introduction part. The chapter begins with statement of the problem and theoretical framework. This is followed by study area, objectives of the study, research questions, database, methodology, and rationale for selection of various indicators of rural development. Next rural development has been introduced with a historical context. A brief summary of main approaches of rural development and the organisational structure of its implementation has also been made.

Chapter two deals with review of the literature. Third chapter constitutes of rural development trends and disparities. Fourth chapter contains the study of the public expenditure trends of the major selected states. Chapter five deals with the empirical relationship between rural development. Last chapter contains the summary of the findings and conclusion.

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[19]   Goyal. Rajni., ibid, page 480

CHAPTER TWO

AN OVERVIEW OF LITERATURE

AN OVERVIEW OF LITERATURE

Definition and Concept of Rural Development

The term rural development emerged during the period of Second World War as a technique for development of under-developed agrarian economies. Then it was chiefly associated with agricultural and community development. Since then the concept of rural development has broadened, which now aims to provide all development potentialities in rural areas, which would increase the standard of living of the people. Sachchidanada [1] opined that it is now a synthetic approach taking both distributive justice and stimulation of creative urges for production.

World Bank [2] has defined rural development as the strategy designed to improve the economic and social life of a specific group of people i.e. the rural poor. It involves extending the benefits of development to poorest among those who seek a livelihood in the rural areas. The group includes small-scale farmers, tenants and the landless

Ahmad [3] has extended the concept of rural development as integrated rural development and defined it as a series of mutually supporting agricultural and non-agricultural activities oriented towards a stated objective which involves the progression of rural sub-system and their interaction leading to desired improvement in the rural system as a whole.

Rao [4] considers rural areas as a closed system and defines it in terms of optimum utilisation. He states that rural development is a process of optimum utilisation of the natural and human resources of a given rural area for the enrichment of the quality of life of the people.

[1]   Sachchidanda., Strategic for Rural Development in India, in L.P. Vidyarthi ed. "A Search for Alternatives in Rural Development in south Asia", Concept Publishing Company, New Delhi, 1982

[2]   World Bank., Rural Development, Sector Policy Papers, Washington D.C., 1975, PP.03.

[3]   Ahmad, Y.L., Administration of Integrated Rural Development: A study on Methodology, International Labour Review, 1975, pp.119-142.

[4]   Rao. V.K.R.V., Integrated Rural Development Paper Presented to the Third Biennial Conference of Association of Development, Research and Training Institute of Asia and Pacific at Goa, 1977.

By mid-eighties, development started to be seen, as making people capable of their self-sustenance. This is reflected in Mishra's [5]definition where he says that rural development no longer means agricultural development alone. It is also not a social welfare case of pumping money needs. It encompasses a spectrum of activities and human mobilisation to make people stand on their own feet and break away all the structural disabilities, which chain then to the condition in which they live. It includes urbanization too.

On the same lines of Mishra, Shah[6] has listed three major aspects of rural development (a) Improving living standard (b) Mass participation (c) Making the process self-sustaining. Rural development more specifically focuses on poverty and inequality. Gulati[7] while stating his content of rural development has listed five basic areas pertaining to health, education, agricultural development, roads and housing as indispensible for uplifting the quality of life in rural areas.

After having contextualised the content and intent of rural development, we can divide rural development into its constituents. For the purpose of ease in quantitative analysis rural development has been divided into following − Agricultural and infrastructural development, Health and education. Survey of literature has therefore been carried out separately for each constituent.

Agriculture

Indian economy is largely agrarian as still two-third of population directly depend upon agriculture for their livelihood and almost all of them reside in rural areas. Rural development therefore will not be able to make any-head way if agricultural development is not pursued. Scholars have studied the vital role of agriculture in rural development.

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[5] Mishra, R.P., Development issues of our Times Concept publishing Company, New Delhi, 1983, pp.220.

[6] Shah, Dilip., Rural Development in India: Assessment and Alternative policy action, in ed. Shah D.R., Alternatives in Rural Development, Sterling Publications, 1990.

[7] Gulati, Ashok., "Millenium Budget Agriculture and Rural Development", Economic and Political Weekly, 35(14), 2000 (1-7 April), pp.1144.

Vyas [8] and others have acknowledged the improvement in agricultural production and its impact on inter regional equity and poverty alleviation. Vyas opined that performance in agricultural sector was not inhibited because of lack of public support of planned expenditure. He has listed out four weakness hampering the process of rural development they are preponderance of low value agriculture, low cost-benefit ratio, inefficient use of natural resources and deterioration of self-help institutions. Mishra [9] in his article states that the agricultural development strategy followed in the country since late 60s have paid off handsomely. During 80's the rate of agricultural growth was 4% a year in real terms. Better performance of agriculture has been a major factor in reducing the incidence of rural poverty. Off late the regional disparities on account of first phase of green revolution has also got bridged.

Green revolution feature in large number of literature on agriculture. G Bhalla and Singh [10] have done in-depth study of the spatio-terporal spread of Green revolution. Both Bhalla and Singh, together in an article doing a state level analysis have opined that in a vast country of subcontinent size with marked regional disparities, it is likely to be characterised by uneven economic and agricultural development. The regional differences in agricultural development gets further accentuated because of varying levels of investment is rural infrastructure. According to them augmenting agricultural production could bridge regional inequality and there by make a dent on rural poverty.

Roy and Pal [11] in their article share views with Bhalla and Singh in making larger resources available for agriculture, which would improve agricultural productivity, and can generate a multiplier effect on the whole rural economy leading to economic progress

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[8]   Vyas, V.S., "Agricultural policies for the Nineties: Issues and approaches", *Economic and Political Weekly*, 25 June, 1994.

[9]   Misra, S.N., "Agricultural Liberalisation and Development strategy in Ninth Plan", *Economic and Political Weekly*, March 29, 1997.

[10] Bhalla G.S. and Gurmail Singh., "Recent Development in Indian agriculture: a State Level Analysis", *Economic and Political Weekly*, March 29, 1997.

[11] Roy, B.C. and Pal Suresh., "Investment, agriculture productivity and rural poverty in India: A State level analysis"; *Indian Journal of Agricultural economic*, 57 (4), 2002 (October-December) pp.653-78.

Bhalla [12] is a separate article has exposed the declining trend of public investment in agriculture. This has been because of the fiscal consolidation initiatives following the liberalisation and privatisation. Gradual decline in investment has decelerated the agricultural growth rates. Work force diversification is not taking place from farm to non-form sector. Thus there is more or less stagnancy in the rural economy. Author has suggested measures like consolidation of land holdings and also involving small and marginal farmers and landless labourers in deriving benefits of diversification of agriculture. This can speed up the rural consolidation and development process.

On the issue of Structure of employment, workforce diversification, and casualisation in rural India many scholars suggest that rural transformation gets manifested through changes in the occupational structure and associated income patterns of rural groups. Rao and Rajyalakshmi [13] in their study have suggested that declining share of farming and wage labour and increasing share of non-form activities cannot always be taken as positive aspect of rural transformation because the income benefits of the non-form sector go mostly to better endowed groups.

Rao and Hanumappa [14] have also described the marginalisation process operative in agriculture and suggested that the process is likely to get intensified in coming years.

Jones and Sen [15] explores the role of agro-ecological factors associated with agricultural growth and poverty outcomes in India. Author shows that agricultural growth and poverty reduction appears to depend on the underlying agro-ecological condition which are favourable to the spread

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[12] Bhalla G.S., "Emerging Crises in Indian Agriculture, Causes and Suggested Remedies" ,Presented at the Seminar on Stagnation in Agriculture during Nineties and New Challenges to Indian agriculture. Organised by All India Kisan Sabha and ILO, Hyderabad, June 1999

[13] Rao, K. Hanumantha, and K. Rajalakshmi, "Structure of employment and Casualisation in Rural India during pre and Post Reform Regime", Journal of Development Studies 21(1), Jan-March 2002.

[14] Rao, V. M and Hanumappa, H. G.,"Marginalisation process in agriculture: Indicators, outlook and policy implications", Economic and Political Weekly, 34(52, Dec 25-31, 1999.

[15] Palmer - Jones, Richard and Sen, Kunal.," What has luck got to do with it? A regional analysis of poverty and agricultural growth in rural India", Journal of Development studies 40(1), October 2003.

to irrigation and hence agricultural development which in turn is associated with poverty reduction. Promotion of agriculture in less favoured areas is unlikely to have similar effects on agricultural growth even if the effect of agricultural growth on poverty remains similar. The finding of author can serve as a caution while drawing policy conclusions.

Sekhar[16] in his article has tried to draw relationship between the slowdown of agricultural growth rate and decline in poverty in 1990's. He has assigned various reasons to it and also suggested measures to increase investment in agricultural infrastructure and inputs as it the only solution for bring rural people out of the poverty trap.

Infrastructure

Infrastructure availability is the basic prerequisite for any development process to start. Various scholars have studied the links between development and infrastructure availability. Shah[17] was among the first few scholars who studied the patterns and levels of infrastructural facilities inherited by India on her independence and trends during later two decades. He related levels of per-capita income of Indian states with the levels of infrastructural development and suggested that a strong correlation exist between them.

Prakash[18] also examined the extent of inequalities in the availability of infrastructural facilities in India. In equalities were low or decreasing in the fields of installed power capacity, road length, post offices, banks etc. Inequalities were high or increasing in indicators like availability of agricultural implements, per capita power consumption, per capita credit etc. He also showed that different states ranked differently with different indicators.
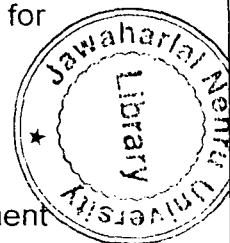
[16] Sekhar, C.S.C., "Agriculture and Rural Development: Need for reform, *Artha Vijnana,* Vol.XCIV, No.1, March 2002, pp.47-61.

[17] Shah, Norottam., Overall Summary: Infrastructure for the Indian economy In Vadildagli (ed.) Infrastructure for Indian economy,1975.

[18] Prakash Shri., "Regional Inequalities and economic development with Special reference to infrastructure facilities in India, *Indian Journal of Regional Science,* Vol.9, No.2, 1977.

State-wise inequality in availability of infrastructure has also been highlighted by the work of Tewari[19]. Looking at the inter-regional disparities in the level of development he commented that their existed a perpetual gap between developed group of states like Maharashtra, Gujarat, Punjab, and Haryana and the developing states like Rajasthan, Orissa, Uttar Pradesh etc. According to the scholar, inadequacy in existing infrastructure facilities seems to be the major obstacle in the path of progress of developing states. In an examination of inter-relationship between economic infrastructure and development based on state level data, he concluded that six states had both at high level, five had both at low level. He therefore obtained a positive direct relationship.

Alagh[20] and others studied various dimensions of infrastructure planning in India. They concluded that infrastructure planning in India must not stress only on greater availability of infrastructure facilities but also improvement in their efficiency.

On the issue of social infrastructure Dadibhavi[21] surveyed the existing levels of social infrastructure over a period from 1970-71 to 1984-85 using educational and health facilities as indicator. He prepared a composite under using PCA, and found that there has been remarkable progress in the availability of social infrastructure, but the spread has been unequal. A positive and significant association was observed between levels of social infrastructure and economic development levels of the states.

Ghosh and De[22] tested the relationship between physical infrastructure and regional economic development in the context of India states using regression method for a period between 1961-1995. He found that a major part of the rising trend in economic inequality can be attributed to regional imbalance in physical infrastructure.

[19] Tewari, R.T., "Economic infrastructure and Regional Development in India", Man and Development, Vol.6, no.4, 1984

[20] Y.K. Alagh, J. Shah and V.K. Shah., "Infrastructure planning", Anvesak, Vol. 27, no.1, 2 December 1987.

[21] Dandibhavi, R.V., "Disparities in Social infrastructure development in India. 1970-71 to 1984-85", Asian Economic Review, Vol.33, No.1, 1991.

[22] Ghosh, B, P and De., "Role of infrastructure in Regional Development: A Study over the Plan Period", Economic and Political Weekly, November 1998.

Health

Health constitutes an integral part of the well being of human. The most widely accepted definition of health given by (WHO)[23] says that it is "a state of complete physical, mental and social well being and not merely the absence of infirmity or disease." Going by the definition of health, a healthy individual can contribute more to the development process than an unhealthy person. Thus Health and development is presumed to share a synergistic relationship. Banerji[24] has highlighted the closed interlinkage between poverty, Health and development.

Various aspects of health like fertility, mortality, life expectancy, sex ratio, issue of gender, health administration etc. have been studied by many scholars. On the issue of availability of health services in rural India, Chatterjee[25] comments that despite progress in other areas over the past decade, India is woefully lacking in providing basic welfare service like health care, education, water supply to the rural poor. She further says that there is willful neglect of health administration in ensuring presence of doctors and paramedical staff at work place during working hours.

Sen[26] has also questioned the role of the state in the present poor state of things in rural health sector. He has also dealt with other questions like relationship between high economic growth and better health standards, method of objective assessment of health status and also cases of sex-biases in providing health care.

A brief review of Indian studies addressing social inequality in health status focuses primarily on gender inequality in health, by attributing excess female-male ratio (FMR). Krishnaji[27] analysed variations in FMR across families under different size groups of landholdings and between agricultural

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[23] WHO (1977), quoted in Kopparty S.N.M, Social Inequality and Health Care, Northern Book Centre, New Delhi, 1994.

[24] Banerji D.,Poverty Class and Health Culture in India, Prachi Prakashan, New Delhi, 1982.

[25] Chatterjee, Meera, Implementing Health Policies, Manohar Publishers, New Delhi, 1988, pp.324.

[26] Sen, Amartya.,Health, Poverty and Development in India (ed.) Das Gupta, Monica, Chen, C. Lincoln, Krishnan, T.N. Oxford University Press, New Delhi, 1996.

[27] Krishnaji, N. "Family Size, Levels of Living and differential mortality in rural India: Some Paradoxes", Economic and Political Weekly, vol.xix, No.6, 11 February 1984.

labour and other rural household. He observed that discriminatory practice especially related to nutrition and health care are more effective among land owing than the poor families. he also adds that the phenomenon of pronounced female deficit is found more among large land holding even in the south where the FMR is in general more balanced. Raju and Premi[28], Agnihotri[29] and others have also attempted at providing explanation for decline in (FMR) and have developed the concept of "missing women". Rajeshwari[30] has opined in relation to women's health care vis-a-vis availability of public health facilities, educational and occupational status of household, that the availability of public health care facilities at the place of residence certainly show positive impact on women health. The economic status of the household (Batliwala)[31] and educational status of the head of the household (Nag)[32] emerges as other important factor, which has positive impact on women's health.

It has been suggested that development in any society is accompanied by decline in infant and child mortality, which impact the fertility rates also. Variations creep up among different social groups and by gender. Therefore there is a need to unpack the development indices in order to take on the broad the process of discrimination, as the aim of development policy and intervention should be to ensure development without discrimination. Agnihotri[33]

Guilmoto and Rajan[34] in their paper have come out with the findings that over the last few decades, both fertility and mortality rates have been falling, but the decline of mortality was strong enough to the offset the fall in

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[28] Raju, Saraswati and Mahendra K. Premi, "Decline in Sex Ratio: Alternative Explanation Re-examined", Economic and Political Weekly, Vol. XXVII, No.17, 25 April, 1992.

[29] Agnihotri, S.B., "Missing Females: A Disaggergate Analysis" Economic and Political Weekly, Vol.xxx, No.3, 19 August 1995.

[30] Rajeshwari., "Gender bias in Utilisation of Health care facilities in rural Haryana", Economic and Political Weekly, Feb. 24, 1996.

[31] Batliwala S., "Rural Energy and Scarcity and Nutrition", Economic and Political Weekly, vol.xvii, Feb. 17, 1982.

[32] Nag M., "Impact of socio-economic development on mortality: A comparative study of Kerala and West Bengal", Economic and Political Weekly, vol. XVIII, 1983, pp.887-900.

[33] Agnihotri, S. B.,"Declining infant and child mortality and fertility in India : How do girls fare ?", Economic and Political Weekly, vol. 36(3), Jan 20-26, 2001.

[34] Guilmoto, Z Christophe and Rajan S. Irudaya.,"District level estimates of fertility from India's 2001 census", Economic and Political Weekly, vol.   Feb.16, 2002.

fertility. 2001 census gives a clear indication that India has entered the last phase of fertility transition. According to authors, decline in mortality both natural and infant has been due to better availability and delivery of health services.

Education

Education and development have a direct relationship. A better-educated household derive both or either, tangible and non-tangible benefits of education. A thorough survey of literature highlights this point. Major themes which most of the literature on education refers relates to equality, quality and quantity of education. This has been aptly summerised by Naik[35] where he criticizes the Indian education system for its failure to deliver an education curriculum suited to the livelihood requirements. He advocated for ruralisation of primary school curriculum so that rural development can take up in a more realistic and sustainable way.

Rao[36] has made a pioneering contribution in analysing how system of formal education in India actually works at the village level and how it interacts with other elements of rural development. Rao concludes that formal education is counter-productive as far as rural development in concerned since it has alienated the youth from the environment. Vocational education can better help the cause of rural development.

Deon, and Lant[37] have used NHFS data and looked at a number of possible determinants of educational enrolment and the level of educational attainment. They, through their studies have concluded that there is significant gap in enrolment between the rich and the poor households. Looking at the state wise results Himachal Pradesh (2.6%) and Kerala (4.2%) showed smaller gap. On the issue of gender, authors conclude that gender differences exacerbate the effect of wealth gap. Finally the authors mention that there is a very significant state effect on enrolment and educational attainment. A poor household in Kerala would be more likely

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[35] Naik J.P., Equality, quality and quantity: An elusive triangle in Indian education, Allied Publishers, New Delhi, 1875

[36] Rao, S. Sudha.,Education and Rural Development, Sage Publication, New Delhi, 1985.

than an observationally equivalent poor household in Bihar to have a child enrolled in school. These differences according to author are related to variations in education policy of the states.

There are various studies carried out like the one done by Noronha[38] and Samson and Krishnaji [39] which show that states with higher expenditure has improved upon various indicators of education like better enrolment ratio, low dropout ratio and high literacy.

Noranha and Samson looked more specifically at the remarkable experience of Himachal Pradesh State, which managed to reduce illiteracy very sharply over past four decades. The author have examined several roots of success which includes relatively egalitarian society, limited role of caste barriers, early implementation of land reforms and finally the role of state where successive governments have made higher allocation to education (7.8% of public expenditure as compared with all India average of 4%).

Various scholars like *Foster* and Resenweig[40]and Kochar[41] have referred quality of schooling as an important determinant in affecting attainment level. Kochar in his paper conclude that school quality affects schooling attainment, it also impacts household decision on enrolment. Further he also finds preliminary evidence of a link between government expenditure on schooling and school inequality. On the issue of private school Kochar says that private school enrolment have increased the most in states that spends relatively more in elementary education. Correspondingly

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[37] Filmer, Deon and Pritchett, Lant., "Educational Enrollment and Attainment in India: Household wealth, lender, village and state effects", *Journal of Educational Planning and Administration*, 13, 1999.

[38] De, A.C., Noronha and Samson M., Primary education in Himachal Pradesh Examining a Issues story, National Institute of Educational Planning and Administration, New Delhi, 2000

[39] Krishnaji, N., Poverty Lender and Schooling: A Study of two district in Andhra Pradesh in A. Vaidyanathan and P.R. Gopinathan Nair (ed.) Elementary education in rural India: A Grass Root View, Sage Publication, New Delhi, 2001.

[40] Foster, Andew D. and Mark R. Rosenzweig., Does Economic Growth increase the demand for schools? Evidence from Rural India, 1960-9. In Anne O. Krueger (ed.) Economic policy reforms and Indian economy, Oxford University Press, New Delhi (2002).

[41] Kochar, Anjani., Emerging Challenges for Indian Education Policy, In Anna O. Krueger (ed.), Economic Policy reform and the Indian economy, Oxford University press, New Delhi, 2002.

private-sector growth has been lower in states where quality of public school is low.

Foster and Rosenzweig on the issue of quality of schooling opined that low levels of school infrastructure and low schooling investments are solely the products of failed educational policies. They also reflect low demand for schooling due to inadequate economic policy. Authors have concluded that demands for schooling are positively associated with higher economic growth.

Constitution guarantees pre elementary education to all children between 7 to 14 years age group. But Tilak[42] in his working paper argues that there is complete absence of free education in India. Regardless of the socio-economic background, household spending on education is substantial even at primary level. Indirect costs of education are very high. Government spending and household expenditure on education is not substitutes but complementary. Hence, economic progress and educational development should move side by side at comparable speeds.

There are studies done by various scholars, which highlight the importance of female education. One done by Agnihotri[43] examined the relationship between rural female literacy and the size of the child population (0-6 years) which turned out to be negatively correlated. He also concluded that there is a threshold effect in the way literacy rates affect child population size. The implication of this finding is significant as it establishes that blackboard can be equally or more effective tool in checking rapid population growth.

The importance of female education has also been highlighted by Sengupta[44] who in her article makes it clear that household endowments characterised by parental schooling, income and occupation have strongest impacts on girls schooling opportunities and attainments. Mother's education has emerged as a particularly significant factor. In a rural household most

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[42] J.B.G. Tilak, Determinants of Household Expenditure on Education in Rural India, NCAER, New Delhi,

[43] Agnihotri, S.B., "High Female Literacy, Law Child Population: Is there a threshold effect?", *Economic and Political Weekly*, September 28, 2002.

[44] Piyali Sengupta, and Guha, Jaba, "Enrolment, Dropout and Grade Completion of Girls Children in West Bengal", *Economic and Political Weekly*, April 27, 2002

disadvantage section is the agricultural labourers with lowest enrolment rates.

Ramachandran[45] has also concluded on same lines as Piyali Sengupta while reviewing district Primary Education Programme and making qualitative micro studies in six states. Ramchandran has further added that child-women ratio was found to be an influencing factor in the enrolment and continuation of girls in schools. Moreover, higher literary rates especially among girls have positive impacts on health also.

Public Expenditure

In a developing country the role of government in providing economic support to the underprivileged and in unserved areas in paramount. It uses budget as one of the important instruments of economic policy for achieving its stated goals. Budget contains many measures,to meet short term and long term goals using money from public exchequer. The change in the magnitude of expenditure is an important tool in the hands of the government to give effect to public policies.

Hicks[46] has done some of the pioneering works in Public Finance. According to him the importance of public expenditure ensues from the fact that it can directly promote economic growth by creating the economic and social overheads and by providing assistance for the establishment of a new industry and devising new technique.

Reddy[47] while making an analysis of growth of public expenditure in India has found that most of the literature on public finance shows that researchers are more occupied with problems pertaining to evaluation and determination of revenue and public expenditure polices rather than public expenditure per se.

According to Musgrave and Peacock[48], the traditional neglect was primarily because of earlier thinkers including Hobbes, Hume, Smith,

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[45] Ramachandran, Vimala and Saihee, Aarti., "The New Segregation: Reflections on Lender and equity in Primary Education", Economic and Political Weekly, April 27, 2002.

[46] Hicks, U. K., Public Finance, James Nisbert and Co Ltd., London, 1955, PP- 294.

[47] Reddy, K. N., Growth of Public Expenditure in India (1872-1968). A secular and time series pattern, Sterling Publishers, N. Delhi, 1972.

[48] Musgrave, R. A. and Peacock, A. T.,Classics in the Theory of Public Expenditure, Macmillan &Co, 1962.

Ricardo and Mill believed that government had primary role in economic affairs, but it should be resented as far as possible. Moreover economist in general perceived the level and structure of public expenditure was for a long time to be a subject more in political science rather than in economics.

Mukherjee[49] has opined that studies in India with respect to public expenditure relate mainly to growth, pattern and distribution of public expenditure on the one hand and its impact on income distribution and employment on the other. There are a few studies like the one done by Madalgi[50] that depicts the comparative picture of all the major states with respect to the magnitude, growth and pattern of their expenditure and also inequalities in the level of expenditure.

Sarma and Tulasidhar[51] in their study in economic impact of public expenditure have highlighted that the domestic output multiplier worked out for government purchase turned out to be very high. The public expenditure made on infrastructure yields with high multiplier effect. Public investment acts as an incentive for private investment. The distributive impact of public investment is highest in primary sector.

Horowitz[52] through his work on government expenditure in countries of accelerated growth has lead to the conclusion that there is a positive correlation between accelerated economic growth and the share of total government expenditure. A developing country has a high share of government expenditure in the G.D.P., which is explained by public investment in both social and economic activities. Scholar mentions that rate of investment especially in infrastructure are critical for high growth rates.

Lall[53] in his article on role of public infrastructure investment in Regional Development has made an empirical analysis test of the efficacy of

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[49] Mukherjee., D. K.,Levels of Economic Activity in India, Concept Publishers. Bombay, 1965.

[50] Madalgi, s. s.,"State Government Expenditure 1951 to 1965-66", RBI bulletins, June 1966

[51] Sarma, Atul. and Tulasidhar, V. B.,Economic impact of government expenditure:An analysis of input out put framework,Concept Publishing company,N. Delhi, 1984.

[52] Horowitz, D.,Government expenditure in countries of accelerated growth, in Ed Peacock, A. T. and Hauser, Gerald., "Government Finance and Economic Development", OECD, Paris, 1963.

[53] Lall, V. Somik.,"The role of public infrastructure investment in regional development: Experiences of stares", Economic and Political Weekly, Mar 20, 1999.

public infrastructure investment in the development process of 15 Indian states. The empirical analysis has highlighted that investments in social infrastructure have closest linkage with economic growth across all states irrespective of their current state of development. Expenditure on health care and education facilities contributes to the formation of better-qualified and healthier labour force, directly translating into higher productivity. He therefore suggests that composition of public investment is significant for facilitating growth.

Pradhan[54] and others have also worked on related issue of public spending and its social outcome, but the presently mentioned work is in context of the structural adjustment of1990's. Pradhan and others have pointed out that at an all India level expenditure growth rates have fell sharply for education. Their paper finds a weak but positive relationship between state per capita expenditure on health care and changes in life expectancy. The paper concludes, as have other studies that expenditure is only weakly associated with outcomes.

EPW Research Foundation's[55] work on Finances of state government states that there is growing importance of state finance in the macro economy. This is evident from the fact that total expenditure of state government has overtaken those of the centre in the year 1999-2000. State government share of expenditure, on social services now constitutes over 86% of the total government expenditure. The foundation has noted that there has been erosion in development momentum especially in the rural areas in the 1990's. The sliding down of the development expenditure has essentially been due to economic services, its ratio has slipped from 5% in early 1990's to 4% in 2000. The emphasis on social services has remained more or less same.

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[54] Pradhan, Basanta. K., Tripathy, K. K. and Rajan, Raji.,Public spending outcome of service in India: A Review during the regime of policy reforms, NCAER,New Delhi (2000).

[55] EPW Research Foundation, "Finances off state governments: A time Series Presentation", Economic and Political Weekly, May 19, 2001.

Like Basata Pradhan, various other scholars have also worked on social provision and expenditure. Shariff[56] in his paper has concluded on the same lines as others in the past, but differs in few other aspects. He mentions that there has been large inter sectoral reallocations of funds, funds previously used for employment generation are now diverted to rural roads construction programme. He states contrastingly that share of total expenditure on education, health and family welfare, water and sanitation have all went up. How much of it translates into actual development measured by output indicators is yet to be seen.

Many scholars have worked on the issue of nature of fiscal federalism in India. Bagchi[57], Rao, Chelliah[58]and Vithal[59] are among the prominent few. Amaresh Bagchi in his exhaustive article on this issue has detailed us about the Indian constitutional structure and the fiscal institutions functioning. He has analysed the forces, which are centralizing the public finance. The dependency of states on the centre for resources through centrally sponsored schemes, planned and non-planned grants etc. is on the increasing side. In the concluding remark A. Bagchi has indicated the merits of present system of economic federalism on the pretext that the economy registered impressive growth in the last decade.

[56] Shariff, Abusaleh., Ghosh, Prabir. and Mandal, S. K.,"State Adjusted Public Expenditure on social Sector and Poverty Alleviation Programme", *Economic and Politically Weekly,* vol. xxxvii, No.8, Feb 23, 2002

[57] Bagchi, Amresh.,"Fifty Years of FISCAL Federalism in India", *Artha Vijnana,* vol XLIV, No.1. Mar 2002.

[58] Rao, M. Govinda. And Chelliah Raja, J.,Fiscal Federalism in India,ICSSR, N. Delhi, 1996.

[59] Vithal, B. P. R.," Federal Fiscal Relations: The Plan/Non-Plan Conundrum", *Economic and Politically Weekly,* Feb 13, 1999.

CHAPTER THREE

RURAL DEVELOPMENT: TRENDS AND DISPARITIES

RURAL DEVELOPMENT: TRENDS AND DISPARITIES

Introduction

Rural India, which consists of nearly 6.34 lakh villages, accommodates about 72 percent of India's population. Without offering any statistics it is obvious to the naked eye that the level of socio-economic development in the Indian villages is quite low at the state level. Rural development in the context of both economic and social indicators has over the years seen a change. But this change has not been uniform for all the regions. This has resulted in a development pattern, which is unbalanced. The present chapter therefore aims at making firstly an objective assessment of the level of rural development across major Indian states and then see the disparity levels across states.

This chapter has been organized as follows:-

- Analysis of the levels of rural development indicators
- Analysis of the causal relationship between the selected indicators.
- Analysis of each constituent indicator of rural development with reference to their spatial and temporal variation.
- Findings of the composite index done for each subheads of rural development.
- Findings of the overall composite index of rural development.
- Regional depiction of the levels of rural development through maps for the selected time period.

Levels of Rural Development Indicators

For the assessment of the development process and its transformation temporally, analysis of the level of individual indicator is very important. The growth trends cannot be perfectly analysed in the absence of the information about the stage of development. In this section various indicators of rural development has be analysed for assessing their levels,

starting with economic indicators of Agriculture and Infrastructure and then social indicators of health and education.

Agriculture development is largely a function of natural endowment and secondarily human endeavour. Thus comparison of levels of agricultural development especially per capita food grain production, average yield of food grains and irrigation intensity shows wide differences among states. In case of food grain production Punjab and Haryana is far ahead of other states and can be placed at high level. States like Bihar, Karnataka, Kerala, and Gujarat can be placed at lower levels in terms of per capita food grain production.

Per capita food grain production and average yield are closely related indicators and hence follow the some trends, except for the high population density states like Bihar and West Bengal which have better average yield, but lower per capita food grain production. Irrigation intensity is an important determinant of both yield and production and hence it follows the trend of per capita food grain production, with Punjab and Haryana placed at higher levels.

Indian economy is largely agrarian and it is best reflected by the employment structure. The Rural non-form employment status among male shows that on an average only 30 per cent of male population is engaged in non-farm activities. This figure is much lower in case of female. Thus almost all states are at a lower levels with respect to this indicators.

Looking at the various indicators of infrastructural development (Table 3.6 to 3.10) it can be said that on an average except for road connectivity to larger village, all other indicators are at moderate or lower levels. In case of percentage of persons living in pucca houses Punjab, Kerala and Haryana show satisfactory level, with more than 50 per cent coverage. For safe drinking water and household with electricity there has been significant improvement over the past two decades, and presently the level of development in these indicator can be said as moderate. As for availability of toilet facilities in rural areas the figures suggests that most of the states except Kerala and Punjab are at a very low level, with signs of improvement only in the recent past.

Health indicators, in modern day assessment of development have become very important. They are linked very closely to the standard of living. Infant mortality rate provides explanation for the nature and extent of health care facilities available in the region along with social and economic milieu of the region. The available trends suggest that most of the Indian states have high level of infant mortality rate in rural area. There is however, a significant declining trend.

Female life expectancy in India has improved over the years. Though it is not as close as to many European countries or even Sri Lanka but it can be placed at a moderate level. Sex ratio in India is adverse to female population. Kerala is the only state with favourable sex ratio. For most of north India states the sex ratio is very low. Punjab, Haryana and Uttar Pradesh have the lowest figures. (Table 3.11 to 3.15). Total fertility rate is high in India and the average figure is much higher than the replacement level. 2001 figures suggests that there has been appreciable decline in TFR in states like Kerala, Tamilnadu, Punjab and Karnataka which now have fertility rate below replacement levels.

Various indicators selected to depict educational development in rural areas suggest that most of the states fare poorly in all the selected indicators during 1980-81. There has been significant improvement since then. Net enrolment ratio is at higher level for states like Kerala, Himachal Pradesh, Tamil Nadu and Maharashtra. Bihar, Rajasthan and Uttar Pradesh average close to 30 in the net enrolment ratio for age group 6-11, which is very low. Participation ratio which reflects the parity between girls and boys education suggest that in all states except Kerala, Himachal Pradesh have lower girls participation in schooling than boys.

Female dropout ratio is very high for almost all states except Kerala. There has been a declining trend but the decline has been very slow. Rural adult literacy in India is no where close to urban literacy. Average rural literacy is close to 55 per cent in 2001 suggesting that still about half of rural population is illiterate and away from availing the power of empowerment sourced by surges in information in the modern global village.

Causal relationship between the indicators of rural development

Various selected indicator of rural development are also the constituent outcomes of the process of rural development. All these indicator are not independent of each other many of them have bearing on each other. Therefore, for proper understanding of this complex process, examining of the causal relationship between the selected indictors becomes very essential. This has been done with the statistical measure of correlation. A correlation matrix of the selected indicators provides us with figures used for analysis.

Infant mortality rate shows positive (.571*) relationship with total fertility rate and negative (-.935**) relationship with female life expectancy. IMR and total fertility rate shows negative significant relationship with all the indictors of education except female dropout ratio. Female life expectancy shows positive significant relationship with all the indicators of education except female dropout ratio, where it shows negative (-.768**) relationship. This means that health and education in rural areas are closely related. Poor educational standard could be the reasons for poor health.

Correlation coefficient between life expectancy and indicators of rural infrastructure also shows a positive relationship. Better sanitation facilities could mean low incidence of disease and hence higher life expectancy. Significant relationship with road connectivity can be explained by the fact that chances of morbidity turning into mortality can be reduced if better medical care is available at nearby urban center. Moreover the success of immunisation programmes is more in readily accessible areas.

Six ratio shows a negative (-.686**) relationship with per capita food grain production. Punjab and Haryana have highest per capita foodgrain production and lowest sex ratio. Migration of agricultural labourers mainly males to these states could be the reason to adverse six ratio.

Enrolment ratio class (Vi-VIII) and rural infrastructure namely availability of toilet facilities and road connectivity are positively correlated (.787**, 758**), while it is negatively correlated with female dropout ratio. This means that higher retention of female has direct links with better availability of infrastructure. The value of correlation coefficient is high for middle level than primary level schooling.

Looking into indicators of agricultural development. Average crop yield shows positive significant relationship with availability of electricity (.781**) and also road connectivity (.733**). Availability of electricity facilitates irrigation and off farm mechanisation, while road connectivity is essential for timely transportation of inputs, which is very vital for achieving high yields.

Rural non-form employment (female) shows positive (.547**) relationship with availability of toilet facilities. This suggests that with higher the percentage of female in gainful employment, they are in a better position to mould household decision and also the economic status of household is comparatively better. Thus such basic amenity like toilet within the house become essential.

Various indicators selected to depict state of rural infrastructure are positively correlated with each other. The availability of one necessitates the availability of other and hence all are simultaneously set up. States with higher percentage of villages connected by road also has higher number of households with electricity connection and also larger number of pucca houses. The reverse also comes out to be true.

Thus from the empirical analysis we can conclude that there is not just one to one relationship among various indicators but there is a complex mesh of forces acting as a system in bring about rural development.

Analysis of variations in the indictors of rural development

Livelihood of majority of the rural households in India is inter-linked with the rate and quality of agricultural growth. Agricultural growth measured in terms of food grain production shows that there has been

1.45 fold increase in last two decades. However in terms of percapita food grain production only few states are better than what they were in 1980. These states include Punjab, Haryana, Uttar Pradesh, West Bengal and Tamilnadu. Thus the rise in population size has outpaced agricultural growth in majority of the states. The statewise disparity has been widening ever since 1985. (Figure3.1).

Increase in average yield of food grains, pulses and oil seeds has been more in the eastern and central Indian states. During 1980's West Bengal, Uttar Pradesh and Madhya Pradesh saw rapid increase in productivity. Increase in the yield of rice was the major reason for better performance of the eastern states. In the central states shift from coarse cereals to oilseeds helped in increasing yield.[1] During 1990's Punjab, Haryana, Uttar Pradesh and Tamilnadu showed highest percentage increase of average yield. This trend has suddenly increased the coefficient of variation trend line since 1991 (Figure 3.1).

Figure 3.1 : STATEWISE VARIATION IN PER CAPITA FOODGRAIN PRODUCTION, YIELD AND IRRIGATION INTENSITY (1981-2001)
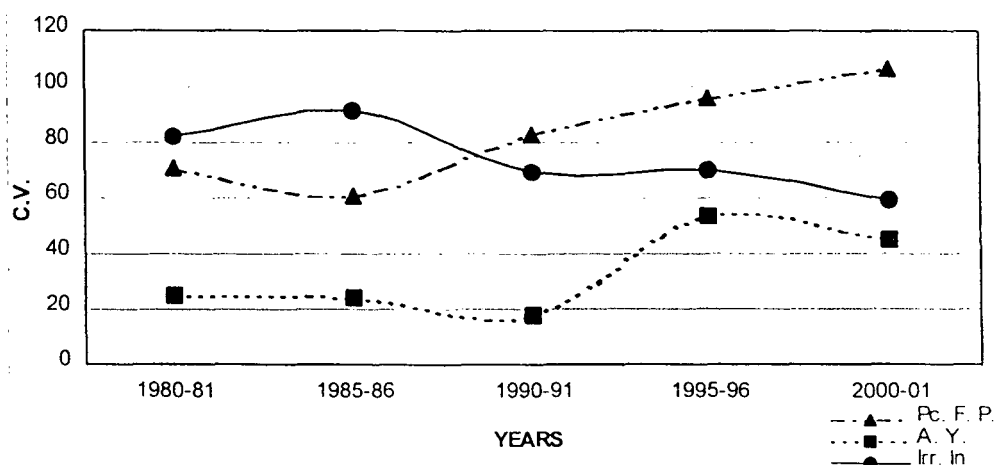
Irrigation facilities are one of the most important input for augmenting agricultural productivity and production and hence have close links with rural development. On examining data on irrigation intensity it is

[1] Bhalla, G.S. and Singh Gurmail., "Recent Development in Indian agriculture: A State level Analysis", *Economic and political weekly*, March 23, 1997.

found that during 1980's Rajasthan more than doubled its gross irrigated area.. This was largely due to Indira Gandhi Canal. Other states that made substantial improvement were Uttar Pradesh and Gujarat. During 1990's again Gujarat and also Himachal Pradesh and Haryana improved their position. Disparities among states in general have widened during the last decade, because of the lack of irrigation expansion potential in the dryland areas.

Figure 3.2 : STATEWISE VARIATION IN RURAL NON FARM EMPLOYMENT MALE / FEMALE (1981-2001)
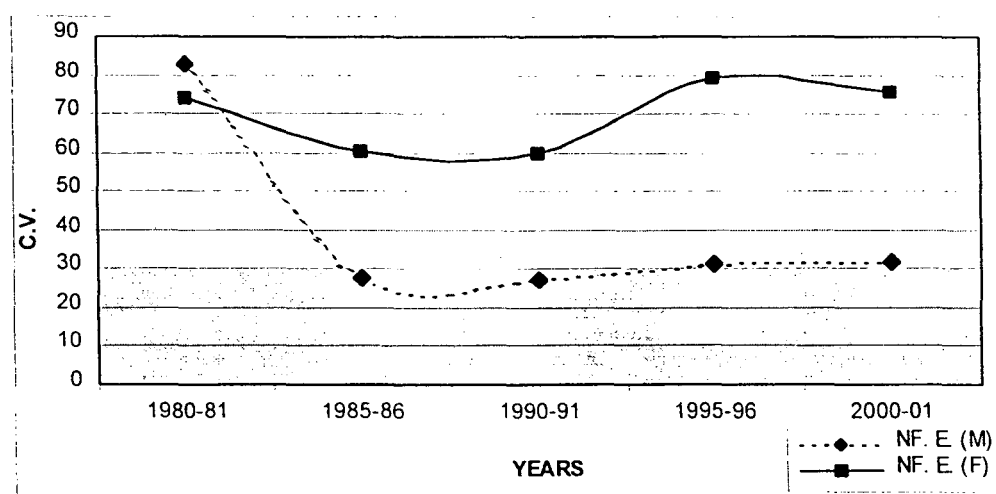
In almost all states rural non-form employment (male) has grown steadily with highest growth seen in Kerala, Gujarat, Rajasthan, West Bengal. The variation across state was very high till mid 1980's, which in later years came done appreciably. However in case of female, the growth has been uneven. The better off states during 1980's like Kerala, West Bengal, Tamilnadu and Orissa have further improved, while other states have failed to improve rural non-farm employment among female. This is reflected in the coefficient of variation (Figure3.2).

Looking into rural infrastructure, inter state differences are most stark. Availability of safe drinking water was as low as 10-15 present household in Rajasthan Orissa, Madhya Pradesh and Kerala, while it was close to 70-75 percent in Punjab, and West Bengal. Over the past two decades this difference is gradually bridging. Rapid progress was seen

during 1980's in almost all states, while in the last decade states failed to make any appreciable improvement.

Figure 3.3 : STATEWISE VARIATION IN AVAILABILITY OF SAFE DRINKING WATER TOILET FACILITIES AND ELECTRICITY (1981-2001)
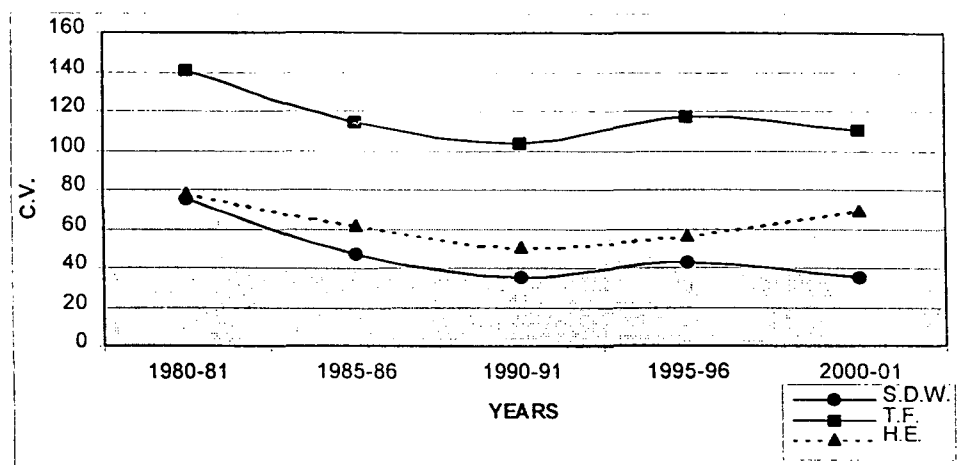
Inter-state variation has been highest in case of availability of toilet facilities. Figure 3.3 shows that over the year variations have come down but still it is above 10 percent. During 1980's all states except Kerala, Gujarat and West Bengal had less then 10 percent of household with toilet facilities. During 1990's states like Punjab, Haryana, Maharashtra, and Gujarat have improved appreciably in making available toilet facilities.

On examining the indicator of availability of electricity, it has been found that economically better off states like Punjab, Haryana, Maharashtra and Tamilnadu were far better than rest of the states during 1980's. West Bengal and Orissa have shown a negative growth rate during the last decade. Bihar presents a case of complete stagnancy, with only approximately five percent rural household have electricity facilities. Coefficient of variation declined during 1980's but is now again showing an upward trend (Figure 3.3).

Figure 3.4 : STATEWISE VARIATION IN RURAL HOUSING AND ROAD CONNECTIVITY (1981-2001)
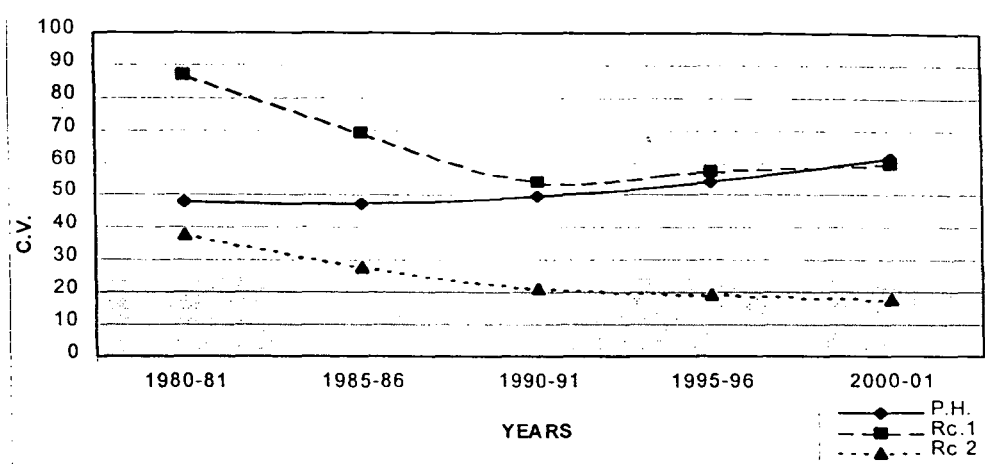
The concern for rural housing has been a priority by our planner. But this is not reflected by the fact that on an average only 35 percent of population live in pucca houses (2001). This figure was approximately 25 percent in 1981. Even at this low level, state to state variations are high and over the years the trend is further upward (Figure 3.4). The decadal difference in growth rate is stark. Most of the growth was achieved during 1980's. During 1990's all states except Haryana, Tamilnadu and Andhra Pradesh showed negative growth rate.

In terms of rural connectivity by roads for village size of population both above thousand and below thousand, Kerala, Punjab, Haryana and Gujarat are the better off states. Kerala had achieved 100 percent connectivity by the end of 1970's. Large regional disparities declined sharply during 1980's. During 1990's coefficient of variation has stabilised. This means that some of the states have failed to show any improvement in rural connectivity. These states include Bihar, Madhya Pradesh and Uttar Pradesh. Analysis of data also shows that there is biasness towards larger sized villages than the smaller ones. Road connectivity in villages of population size between 1000 and 1500 is now close to 100 percent in many of the states. Punjab, Kerala, Haryana and Gujarat have approximately same connectivity percentage for both sizes of villages.

Decline in the infant and child mortality rate is an important indicator of development in any society. However such as decline is not uniform across various regions. The coefficient of variation calculated across major states has been around 30 percent over the past two decades with only a slight variation. (Figure 3.5).

There has been a general decline in infant mortality rate among all the states. During 1980's Uttar Pradesh, Gujarat and Bihar reduced their IMR substantially. During 1990's Orissa and Madhya Pradesh have achieved significant progress in reducing IMR. In the rural areas the mortality rates for male and female are strongly related[2] and therefore IMR serves as a good enough indicate of health in rural areas.

Total fertility rate has witnessed a slow but steady decline over the past two decades. The line graph of C.V. (Figure 3.5) shows constant variation during 1980's. But during 1990's there are sign of increasing inter-state variation. This is because states with very high TFR like Bihar, Uttar Pradesh, Assam have shown very little decline during the last decade, while many states including Kerala, West Bengal, Tamil Nadu, Punjab have reached replacement levels. States with high IMR are also the states with high T.F.R. Correlation analysis done in the later part of the chapter also suggests a positive and significant relationship between the two.

Figure 3.5 : STATEWISE VARIATION IN INFANT MORTALITY RATE AND TOTAL FERTILITY RATE (1981-2001)
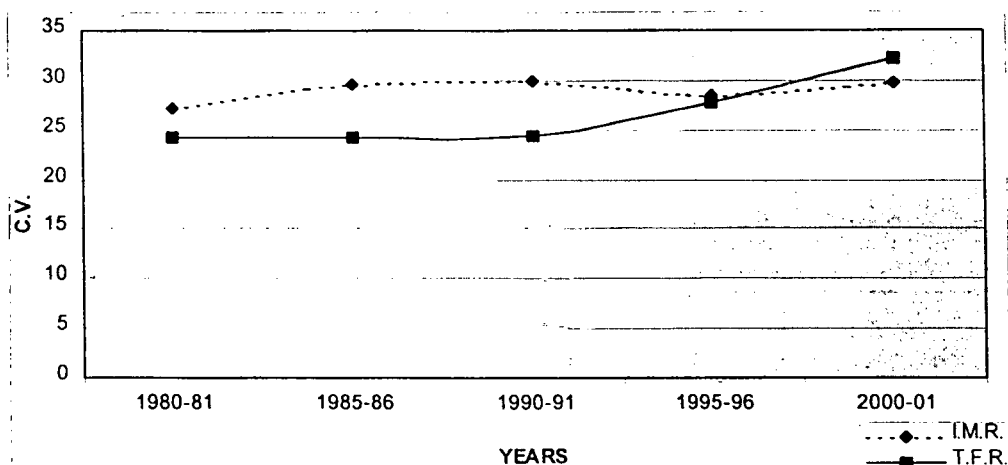
2 Agnihotri, S.B., Declining Infant and Child Morality in India: How do Girl Children fare?", *Economic and Political Weekly*, Jan. 20, 2001.

Figure 3.6 : STATEWISE VARIATION IN FEMALE LIFE EXPECTANCY AND SEX RATIO (1981-2001)
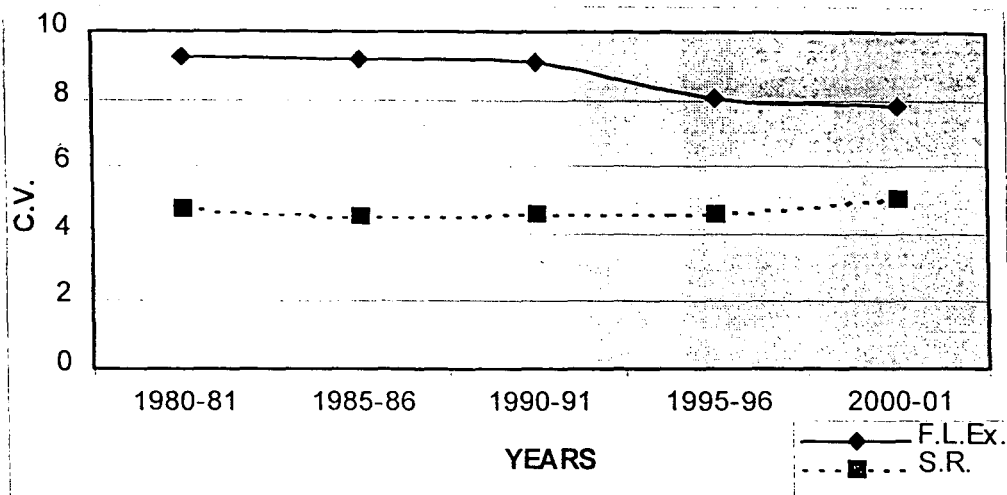
Over the past two decade improvement in the life expectancy of both male and female population is indicative of the fact that the availability and utilisation of health care facilities particularly immunisation programme has delivered good. Variations among states are on decline as the better off states like Kerala, Tamilandu, Punjab has already reached plateau and the backward states are progressing gradually. Kerala improved by only two years in the last two decades, while Bihar, Assam, Uttar Pradesh have improved the life expectancy of its population by 8-10 years.

In India sex ratio is adverse to female population in all the states except Kerala. Bimaru states (Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh) head the list for son preference. Figure 3.6 shows that in the last 6-7 years the coefficient of variation in sex ratio is on increase after showing consistency in the past. This has been mainly because of sharp fall in the fertility and strong preference for small family norms, which enhances gender bias. However, in states like Maharashtra, Punjab, Haryana sex selective abortion of female has declined further the sex ratio in these states[3]. Sex-selective migration from rural to urban[3] areas affects sex ratio in a positive way.

Education has long been identified as one of the most important determinants of economic growth. It is both an indicator and an instrument of economic growth. Within education the greatest return are achieved through the provision of elementary education.[4] Analysis of data on net enrolment ratio at both elementary and middle school level shows that all the states have made substantial progress except for Bihar, Uttar Pradesh, Rajasthan and West Bengal. There has been very slow but consistent decline in variation across states. (Figure 3.7).

Analysis of data on adult literacy shows that over the past two decades Rajasthan, Madhya Pradesh and Himachal Pradesh have made remarkable improvement. Their average literacy level has gone up by 22-25 percent. Bihar has yet to show signs of progress inspite of having a low base. With most of the backward states showing improvement, the variation graph shows a consistent decline.

Figure 3.7 : STATEWISE VARIATION IN NET ENROLMENT RATIO AND ADULT LITERACY RATE (1981-2001)
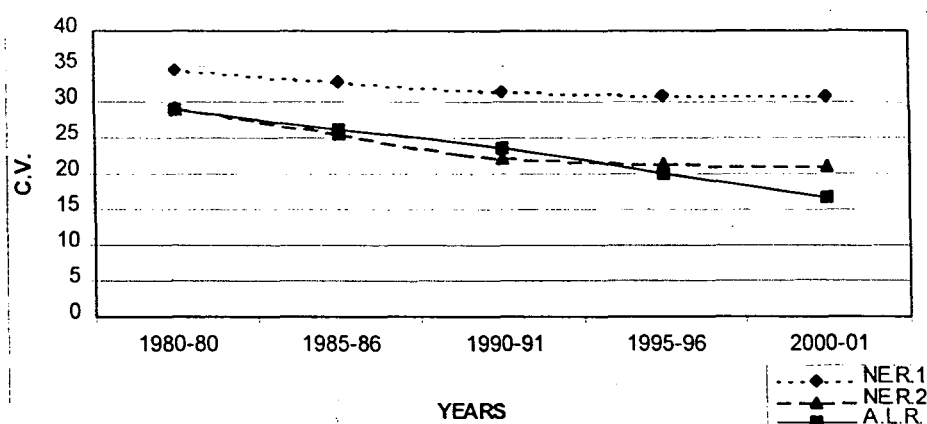
Participation ratio is the ratio of gross enrolment ratio of girls/gross enrolment ratio of boys. The indicator reflects the gender disparity in education. The computed value for selected time periods show that at the primary school level participation of girls is high but at

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4   Patel, Vibhuti., "Adverse Juvenile sex ratio in Kerala", Economic and Political Weekly, June, 2002.

4   Sengupta, Piyali, and Guha, Jaba., "Enrolment, Dropout and grade completion of Girl children in West Bengal", Economic & Political Weekly, April 27, 2002.

the middle school level this falls down appreciably. All the southern state fare better than the northern and central Indian states. At the primary school level during 1980's Haryana, Madhya Pradesh and West Bengal made rapid improvement, while during 1990's Uttar Pradesh and Andhra Pradesh showed best results. At the middle school level, the trend in more or less same as at primary level during 1980's, however in 1990's, Madhya Pradesh, Orissa and Rajasthan join as rapidly improving states in bridging gender divide in education. (Figure 3.8) also shows that inter-state variation is declining over the last two decades.

Figure 3.8 : STATEWISE VARIATION IN PARTICIPATION RATIO AND FEMALE DROPOUT RATIO (1981-2001)
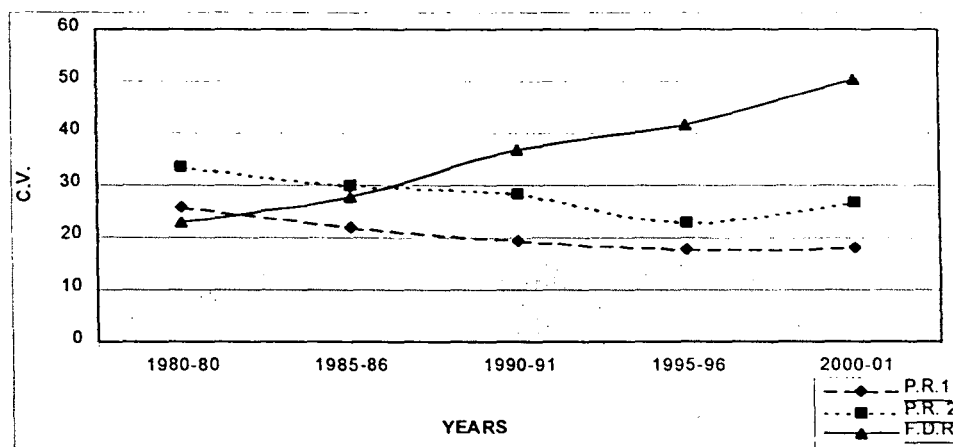
Many scholars have considered female dropout rate as a very sensitive indicator. It is indicative of the quality of education facilities, accessibility of schools, social structure and economic states of the population. In the past two decades it has been observed that economically well off states have been more successful in reducing this ratio. Punjab, Haryana, Maharashtra are now very close to the best performing states like Kerala and Tamil Nadu. Figure 3.8 however show that there has been a constant increases in the disparity among states. States like Bihar, Andhra Pradesh, Orissa, Uttar Pradesh and West Bengal still have high female dropout rates.

Results of Composite Index

In order to ascertain the position of different states regarding rural development, various selected indicators have been categorised and them combined into four subheads, namely agriculture, infrastructure, Health and education. Principle component analysis method has been used to arrive at composite index. For data sources of the table reference can be made to chapter one.

Agricultural Index

The first principal (F1) obtained by the process of data reduction through P.C.A. explains 53.4, 56.31, 50.1, 58.4 and 69.9 percent variance for the five selected time period respectively. Punjab and Haryana are agriculturally most developed states. Uttar Pradesh during 1980's made substantial improvement in agricultural production. Bihar and West Bengal on the other hand witnessed a major decline in the composite index score in the last two decades. Tamilnadu and West Bengal are the other better performing states.

Table 3.1 : LEVEL OF AGRICULTURAL DEVELOPMENT

1980-81						
States	Pc. F. P.	A. Y.	Irr. In	NF. E. (M)	NF. E. (F)	C.I.
Punjab	712.77	15.93	81.30	38.82	7.64	2.791
Haryana	487.31	12.67	51.08	28.13	7.24	1.400
Tamilnadu	115.29	10.16	47.91	29.54	22.13	0.436
Bihar	148.21	9.86	32.68	20.42	7.49	0.127
Andhra Pradesh	187.10	8.30	34.92	23.44	19.54	0.015
Uttar Pradesh	221.18	8.74	23.09	15.18	6.74	-0.166
Maharashtra	154.99	8.31	16.60	23.00	10.60	-0.216
West Bengal	151.74	10.32	19.56	11.97	21.57	-0.390
Himachal Pradesh	207.94	8.02	16.58	11.27	2.93	-0.422
Orssa	221.69	8.18	18.27	12.33	23.53	-0.533
Kerala	51.47	10.50	18.30	11.11	30.66	-0.651
Rajasthan	189.81	6.88	18.71	13.42	27.28	-0.715
Madhya Pradesh	234.01	7.01	10.41	7.41	9.11	-0.745
Gujarat	131.29	9.99	13.58	8.44	51.04	-0.929

Table 3.2 : LEVEL OF AGRICULTURAL DEVELOPMENT

1985-85						
States	Pc. F. P.	A. Y.	Irr. In	NF. E. (M)	NF. E. (F)	C.I.
Punjab	543.28	17.70	88.91	28.98	8.05	2.856
Haryana	457.67	12.07	67.08	26.81	7.40	1.646
Uttar Pradesh	244.36	11.49	49.07	19.62	7.85	0.678
Bihar	118.19	10.78	34.75	19.61	8.80	0.001
Tamilnadu	136.05	11.28	45.34	34.11	22.61	-0.010
West Bengal	152.68	13.92	26.19	26.41	26.06	-0.027
Andhra Pradesh	171.14	8.26	35.38	25.85	18.50	-0.329
Karnataka	155.49	9.76	16.09	19.99	11.23	-0.335
Madhya Pradesh	223.10	8.14	12.35	14.44	8.98	-0.353
Rajasthan	198.89	8.36	22.22	35.09	20.07	-0.452
Orissa	220.62	9.33	0.00	25.47	22.52	-0.680
Maharashtra	138.81	7.47	0.00	23.48	9.24	-0.840
Kerala	44.88	12.00	13.59	43.31	32.83	-0.864
Gujarat	138.69	11.26	0.00	31.50	32.02	-0.878

Table 3.3 : LEVEL OF AGRICULTURAL DEVELOPMENT

1990-91						
States	Pc. F. P.	A. Y.	Irr. In	NF. E. (M)	NF. E. (F)	C.I.
Haryana	571.14	13.87	35.69	30.74	7.57	1.313
Punjab	836.44	15.20	71.09	31.21	8.47	2.664
Uttar Pradesh	254.91	12.10	51.23	22.15	9.14	0.639
Rajasthan	239.89	10.19	60.29	34.28	14.77	0.380
Tamilnadu	129.91	12.25	43.70	35.27	23.10	0.002
West Bengal	168.13	14.40	23.27	28.59	31.50	-0.175
Andhra Pradesh	194.30	10.34	37.29	25.77	17.51	-0.198
Gujarat	124.08	11.37	26.18	30.50	20.08	-0.413
Karnataka	148.43	10.10	20.38	20.51	11.51	-0.504
Bihar	134.70	11.20	10.21	20.10	10.35	-0.520
Madhya Pradesh	238.44	9.16	15.11	14.88	8.85	-0.520
Maharashtra	139.46	8.84	19.19	24.35	8.04	-0.659
Orissa	217.51	10.29	10.53	24.69	21.50	-0.737
Kerala	35.49	11.60	3.60	47.54	35.15	-1.271

Table 3.4 : LEVEL OF AGRICULTURAL DEVELOPMENT

1995-96						
States	Pc. F. P.	A. Y.	Irr. In	NF. E. (M)	NF. E. (F)	C.I.
Punjab	1002.99	38.40	94.95	32.38	7.07	3.075
Haryana	566.21	23.50	77.64	39.98	6.93	1.553
Uttar Pradesh	252.69	18.90	64.06	24.28	10.10	0.620
Tamilnadu	33.31	21.40	49.51	36.44	21.49	0.092
Andhra Pradesh	162.21	17.20	39.56	24.48	16.02	0.000
Bihar	142.40	14.50	43.21	18.09	8.16	-0.023
West Bengal	189.55	21.30	28.70	35.76	42.79	-0.208
Madhya Pradesh	257.27	10.80	22.27	12.78	6.18	-0.293
Orissa	231.04	10.90	25.75	21.07	14.96	-0.357
Rajasthan	196.68	8.10	28.91	30.16	6.87	-0.374
Karnataka	180.27	12.90	23.90	21.21	15.38	-0.379
Gujarat	100.29	10.80	28.93	28.71	8.47	-0.425
Maharashtra	145.64	8.80	15.28	24.98	8.56	-0.644
Kerala	31.13	2.20	13.58	47.89	37.41	-1.389

Table 3.5 : LEVEL OF AGRICULTURAL DEVELOPMENT

States	Pc. F. P.	A. Y.	Irr. In	NF. E. (M)	NF. E. (F)	C.I.
2000-01						
Punjab	1042.61	40.20	90.88	36.20	9.40	2.643
Haryana	628.59	30.50	76.41	40.40	7.90	1.613
Uttar Pradesh	254.86	21.90	65.64	28.20	12.40	0.485
Tamilnadu	143.44	21.60	53.09	37.70	24.10	0.245
Andhra Pradesh	191.93	19.40	37.86	25.60	15.70	-0.129
West Bengal	172.46	21.80	26.82	33.50	46.00	-0.220
Kerala	24.28	20.90	14.30	57.30	40.30	-0.273
Bihar	109.80	16.20	46.37	21.10	14.30	-0.290
Rajasthan	177.71	9.80	31.19	32.70	8.00	-0.490
Gujarat	70.76	11.90	34.04	28.60	7.90	-0.556
Karnataka	207.63	13.10	23.71	21.60	12.10	-0.596
Orissa	135.81	10.20	27.51	23.20	19.60	-0.749
Madhya Pradesh	147.88	11.90	25.09	15.80	8.60	-0.762
Maharashtra	104.14	9.30	14.21	26.20	6.10	-0.922

Infrastructural Index

The first principal (F1) obtained by the process of data reduction through PCA explains 51.8, 62.05, 57.40, 58.55, 57.48 percent variance for the five selected time period respectively. Rural infrastructure index suggests that Punjab, Kerala, Haryana, Gujarat, Tamilnadu and Maharashtra have maintained the top six places for the last two decades. Growth rate in Uttar Pradesh has not been commensurate with other states and therefore its composite index value fell very rapidly during 1980's. Maharashtra has shown a consistent increase in the availability of infrastructural facilities.

Table 3.6 : LEVEL OF INFRASTRUCTURAL DEVELOPMENT

States	P. H.	S. D. W.	T. F.	H. E.	Rc. 1	Rc. 2	C.I.
1980-81							
Punjab	49.50	81.80	4.93	50.60	103.59	100.00	2.063
Kerala	35.00	6.26	38.47	23.10	129.76	100.00	1.218
Haryana	31.70	42.90	1.95	41.04	98.57	99.78	1.117
Guajrat	36.40	36.10	15.07	30.50	58.62	89.65	0.793
Tamilnadu	25.50	30.90	4.48	26.03	105.26	105.09	0.713
Maharashtra	25.70	18.30	4.78	24.13	7.76	88.90	-0.163
Uttar Pradesh	21.50	25.30	6.49	3.97	19.51	116.56	-0.281
Rajasthan	40.30	13.00	8.37	8.70	12.42	61.78	-0.312
West Bengal	11.96	65.70	7.33	7.02	36.17	57.67	-0.476
Karnataka	19.10	17.60	4.99	21.30	7.57	40.47	-0.749
Orissa	8.30	9.40	4.59	13.03	14.35	83.54	-0.836
Bihar	17.70	33.77	4.31	3.48	15.23	37.84	-0.983
Andhra Pradesh	18.60	15.82	8.58	12.50	8.64	26.85	-0.999
Madhya Pradesh	16.90	8.09	2.46	6.89	21.56	38.46	-1.105

Table 3.7 : LEVEL OF INFRASTRUCTURAL DEVELOPMENT

1985-86							
States	P. H.	S. D. W.	T. F.	H. E.	Rc. 1	Rc. 2	C.I.
Punjab	74.30	82.12	9.21	68.60	73.90	100.00	2.410
Kerala	51.84	31.88	48.46	38.00	58.73	100.00	1.089
Guajrat	47.00	51.72	16.59	44.70	38.36	92.08	0.752
Haryana	31.05	54.12	3.89	53.01	41.22	99.85	0.639
Tamilnadu	33.92	49.44	6.13	40.50	45.68	100.10	0.537
Rajasthan	47.51	48.81	9.69	19.50	33.73	65.86	0.033
Maharashtra	35.97	44.66	6.87	37.20	19.49	89.39	0.015
Uttar Pradesh	33.06	44.65	7.34	7.68	24.36	84.97	-0.382
Karnataka	31.13	49.36	6.51	33.60	14.26	52.80	-0.439
West Bengal	16.06	47.95	10.87	17.50	15.02	60.53	-0.784
Madhya Pradesh	26.56	33.22	3.20	25.90	20.72	49.77	-0.814
Andhra Pradesh	28.61	39.30	9.46	15.20	15.33	39.53	-0.940
Bihar	28.52	40.25	5.82	4.36	17.97	43.75	-1.027
Orissa	14.82	24.16	4.35	17.80	9.34	81.72	-1.090

Table 3.8 : LEVEL OF INFRASTRUCTURAL DEVELOPMENT

1990-91							
States	P. H.	S. D. W.	T. F.	H. E.	Rc. 1	Rc. 2	C.I.
Punjab	72.14	92.09	15.79	82.30	98.72	100.00	1.917
Kerala	51.56	12.20	44.07	48.40	100.00	100.00	1.534
Haryana	41.10	67.14	6.53	70.30	97.98	99.91	1.062
Guajrat	43.40	60.04	11.16	65.90	75.02	94.58	0.833
Tamilnadu	34.60	64.28	7.17	54.07	60.38	95.34	0.377
Maharashtra	35.30	54.02	6.64	69.40	25.47	89.89	0.148
Karnataka	30.40	68.31	6.85	52.40	34.43	68.88	-0.323
Rajasthan	47.00	50.62	6.65	35.03	24.11	70.21	-0.370
Andhra Pradesh	29.70	48.90	6.62	46.30	32.43	58.19	-0.622
West Bengal	15.70	80.20	12.31	32.90	39.50	63.53	-0.700
Uttar Pradesh	32.70	56.60	6.44	21.90	35.16	61.94	-0.766
Madhya Pradesh	20.93	45.50	3.67	43.30	22.00	64.42	-0.856
Orissa	13.00	35.32	3.58	23.50	27.78	79.94	-0.957
Bihar	24.00	56.50	4.96	12.50	27.16	50.58	-1.277

Table 3.9 : LEVEL OF INFRASTRUCTURAL DEVELOPMENT

1995-96							
States	P. H.	S. D. W.	T. F.	H. E.	Rc. 1	Rc. 2	C.I.
Punjab	70.04	92.05	32.10	87.30	99.23	100.00	1.805
Kerala	51.28	12.10	76.90	56.50	100.00	100.00	1.535
Haryana	54.40	67.07	15.50	74.60	98.60	99.91	1.223
Guajrat	40.07	60.02	20.10	67.40	81.70	100.00	0.820
Tamilnadu	35.29	64.14	11.50	54.00	60.67	100.00	0.353
Maharashtra	34.64	54.01	14.20	58.90	25.73	95.36	0.035
Rajasthan	46.50	50.31	13.00	41.00	24.87	78.53	-0.214
Karnataka	29.69	67.66	11.10	54.50	43.64	74.46	-0.222
Andhra Pradesh	30.83	48.95	11.50	49.20	32.79	59.30	-0.585
Uttar Pradesh	32.35	56.30	9.40	17.70	35.57	65.62	-0.770
West Bengal	15.35	80.10	23.90	11.20	41.06	66.76	-0.845
Madhya Pradesh	16.50	45.25	5.40	44.90	22.10	65.59	-0.923
Orissa	11.40	35.16	3.90	14.60	29.73	88.93	-0.948
Bihar	20.20	56.25	10.60	6.40	27.72	55.37	-1.263

Table 3.10 : LEVEL OF INFRASTRUCTURAL DEVELOPMENT

States	P. H.	S. D. W.	T. F.	H. E.	Rc. 1	Rc. 2	C.I.
2000-01							
Punjab	68.00	92.00	59.93	89.30	99.74	100.00	1.769
Kerala	51.00	12.00	96.87	68.70	100.00	100.00	1.513
Haryana	72.00	67.00	30.94	85.20	99.22	99.91	1.482
Guajrat	37.00	60.00	22.12	63.60	88.97	100.00	0.637
Tamilnadu	36.00	64.00	15.75	53.00	60.96	100.00	0.240
Maharashtra	34.00	54.00	20.42	60.30	25.99	100.00	-0.009
Karnataka	29.00	67.00	14.49	55.40	55.31	80.49	-0.136
Rajasthan	46.00	50.00	15.06	36.10	25.65	87.84	-0.269
Andhra Pradesh	32.00	49.00	12.68	59.30	33.15	60.43	-0.563
West Bengal	15.00	80.00	35.44	10.50	42.68	70.15	-0.754
Uttar Pradesh	32.00	56.00	10.64	19.20	35.98	69.52	-0.776
Madhya Pradesh	13.00	45.00	7.01	54.90	22.20	66.78	-0.932
Orissa	10.00	35.00	3.69	8.10	31.82	98.93	-0.939
Bihar	17.00	56.00	14.31	4.00	28.29	60.61	-1.262

Health Index

First Principal (F1) obtained by the process of data reduction through principal component analysis explains 63.25, 67.63, 70.60, 68.68 and 57.7 percent variance for the five selected time period respectively. Overall ranking of the states show that Kerala along with the other southern states occupied higher ranks for all the time periods. West Bengal till 1980 has a comparatively better position (rank 3) but in the last decade dropped down in position. Punjab showed most impressive performance and moved up from rank 6 to rank 3. Control over infant mortality rate and sharp reduction in fertility rate can be attributed to its success.

Uttar Prdadesh, Madhya Pradesh, Bihar, Orissa and Rajasthan are the five bottom states. Over the two decades no appreciable change has taken place in these states. Stagnancy in health can be attributed to many factors like stagnant or decline in public expenditure of health, low educational level, low level of infrastructure development. These would be explored in the following chapters.

Table 3.11 : LEVEL OF DEVELOPMENT IN HEALTH

1980-81					
States	I .M .R.	F. L .Ex	S.R.	T.F.R.	C.I.
Kerala	-42	73.2	1032	-2.5	2.361
Karnataka	-83	63.4	963	-2.9	0.822
Maharashtra	-90	64.4	937	-3	0.674
West Bengal	-94	61.8	911	-2.4	0.545
Tamilnadu	-107	62.0	977	-2.9	0.492
Punjab	-92	66.8	879	-3.4	0.462
Andhra Pradesh	-103	61.3	975	-4.1	0.102
Haryana	-108	62.8	870	-3.7	-0.128
Rajasthan	-113	58.9	919	-4.4	-0.487
Gujarat	-124	60.3	942	-4.8	-0.567
Orissa	-142	54.8	981	-3.8	-0.684
Bihar	-114	55.9	966	-5.7	-0.937
Madhya Pradesh	-152	52.8	941	-3.9	-1.122
Uttar Pradesh	-164	53.9	885	-4.3	-1.534

Table 3.12 : LEVEL OF DEVELOPMENT IN HEALTH

1985-86					
States	I .M .R.	F. L .Ex	S.R.	T.F.R.	C.I.
Kerala	-30	73.3	1053	-2.3	2.460
Maharashtra	-76	64.5	955	-3.1	0.598
Tamilnadu	-93	62.3	979	-2.6	0.572
Karnataka	-83	63.5	968	-3	0.564
West Bengal	-81	62.1	926	-2.4	0.464
Punjab	-76	67.0	884	-3.2	0.326
Andhra Pradesh	-86	61.4	976	-3.9	0.147
Haryana	-98	63.0	867	-3.6	-0.115
Rajasthan	-76	59.0	919	-4	-0.242
Orissa	-127	55.0	985	-3.3	-0.454
Gujarat	-121	60.4	946	-4.1	-0.534
Madhya Pradesh	-128	53.0	942	-3.8	-0.994
Bihar	-103	56.1	944	-5.6	-1.114
Uttar Pradesh	-153	54.2	885	-4.3	-1.677

Table 3.13 : LEVEL OF DEVELOPMENT IN HEALTH

1990-91					
States	I .M .R.	F. L .Ex	S.R.	T.F.R.	C.I.
Kerala	-19	73.4	1073	-1.8	2.578
Tamilnadu	-72	62.5	981	-2.1	0.653
Maharashtra	-66	64.7	972	-2.7	0.593
West Bengal	-76	62.3	940	-2.1	0.354
Karnataka	-85	63.6	973	-2.6	0.344
Punjab	-65	67.2	888	-2.9	0.194
Haryana	-78	63.2	864	-3.1	0.174
Andhra Pradesh	-79	61.5	977	-3.1	0.136
Gujarat	-81	60.5	949	-3.5	-0.253
Orissa	-122	55.1	988	-2.5	-0.482
Rajasthan	-89	59.1	919	-3.5	-0.607
Bihar	-80	56.4	921	-4.8	-1.113
Madhya Pradesh	-123	53.2	943	-3.3	-1.153
Uttar Pradesh	-111	54.5	884	-3.7	-1.419

Table 3.14 : LEVEL OF DEVELOPMENT IN HEALTH

States	I .M .R.	F. L .Ex	S.R.	T.F.R.	C.I.
1995-96					
Kerala	-15	75	1066	-1.8	2.685
Tamilnadu	-62	63.1	984	-1.9	0.677
Karnataka	-68	65.3	969	-2.3	0.519
Maharashtra	-64	65.9	947	-2.5	0.415
Andhra Pradesh	-72	64.5	978	-3	0.244
Punjab	-57	66.5	881	-2.4	0.173
West Bengal	-81	61.9	937	-1.9	0.032
Haryana	-70	64.2	863	-2.9	-0.123
Gujarat	-69	62.7	935	-3.3	-0.197
Orissa	-101	58.4	980	-2.4	-0.375
Rajasthan	-90	60.5	921	-3.1	-0.667
Madhya Pradesh	-104	58	932	-2.7	-0.839
Bihar	-72	60.1	921	-4.7	-0.937
Uttar Pradesh	-89	52.8	891	-3.9	-1.607

Table 3.15 : LEVEL OF DEVELOPMENT IN HEALTH

States	I .M .R.	F. L .Ex	S.R.	T.F.R.	C.I.
2000-01					
Kerala	-12	75	1058	-1.8	2.658
Tamilnadu	-53	67.5	986	-1.7	0.954
Punjab	-50	71.4	874	-2.0	0.580
Karnataka	-55	65.3	964	-2.0	0.550
Maharashtra	-62	68.1	922	-2.3	0.290
Andhra Pradesh	-66	63.7	978	-2.9	0.025
West Bengal	-86	67.2	934	-1.9	-0.029
Haryana	-63	67.3	861	-2.7	-0.255
Gujarat	-59	62.7	921	-3.1	-0.311
Orissa	-84	58	972	-2.3	-0.580
Rajasthan	-91	61.3	922	-2.7	-0.876
Bihar	-64	62.07	921	-4.6	-0.918
Madhya Pradesh	-88	57.2	920	-2.2	-0.983
Uttar Pradesh	-71	61.1	898	-4.1	-1.105

Education Index

The first principal component (F1) obtained by the process of data reduction through P.C.A. explains, 81.70, 87.36, 86.32, 83.37 and 75.63 percent variance for the five selected time period respectively. Kerala has been the leading state throughout the time period. The value of the composite index suggests that gap between Kerala and the second ranking state is very high. Comparative analysis of states suggests that Punjab, Gujarat and West Bengal have yielded their place to other states. There has been a very sharp decline in the composite index score of west Bengal during the last decade, when rest of the states have shown an upward trend.

Madhya Pradesh has shown signs of improvement especially during 1990's better show can be attributed to various primary education programmes initiated during the last decade. The performance of Bihar, Uttar Pradesh and Rajasthan is dismal.

Table 3.16 : LEVEL OF DEVELOPMENT IN EDUCATION

1980-81							
States	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R.	A.L.R.	C.I.
Kerala	89.10	99.50	83.30	94.83	-23.60	81.60	2.691
Punjab	60.70	88.24	56.70	72.45	-63.40	48.10	0.791
Tamilnadu	61.40	87.90	44.30	64.69	-70.30	54.40	0.586
Maharashtra	56.60	79.92	51.80	58.18	-77.80	55.80	0.436
Gujarat	50.70	71.33	52.90	62.18	-71.80	52.20	0.340
West Bengal	40.10	73.88	46.50	55.96	-72.00	48.60	0.036
Haryana	44.80	55.20	49.10	39.88	-57.50	43.90	-0.151
Karnataka	44.80	82.31	38.10	62.45	-98.10	46.20	-0.154
Orissa	46.30	69.79	38.70	49.64	-85.00	41.00	-0.333
Andhra Pradesh	40.00	73.74	31.70	52.30	-80.80	35.70	-0.476
Madhya Pradesh	31.00	53.72	33.00	36.24	-77.60	34.20	-0.913
Uttar Pradesh	30.30	49.56	40.30	35.41	-87.70	33.30	-0.982
Bihar	29.90	44.27	38.00	27.37	-87.0C	32.00	-1.161
Rajasthan	27.80	34.83	33.70	25.26	-75.70	30.10	-1.277

Table 3.17 : LEVEL OF DEVELOPMENT IN EDUCATION

1985-86							
States	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R	A.L.R.	C.I.
Kerala	89.95	97.39	88.05	96.07	-12.80	85.70	2.416
Punjab	62.20	93.94	63.40	80.73	-55.90	53.30	0.773
Tamilnadu	68.20	88.28	56.20	69.88	-56.90	58.55	0.652
Maharashtra	60.50	84.45	61.10	65.31	-67.90	60.35	0.474
Gujarat	54.75	77.85	58.20	66.96	-68.00	56.75	0.267
Haryana	51.70	73.64	59.45	49.72	-50.00	49.90	0.110
West Bengal	40.70	75.28	51.10	73.88	-73.40	53.10	-0.042
Karnataka	50.95	80.66	47.50	60.73	-77.90	51.10	-0.109
Orissa	49.30	62.95	46.15	62.79	-80.40	45.00	-0.420
Andhra Pradesh	43.60	74.80	40.00	55.41	-79.90	39.90	-0.573
Madhya Pradesh	36.25	62.22	41.65	36.91	-71.20	39.20	-0.869
Uttar Pradesh	31.95	57.45	44.00	39.46	-75.10	37.45	-0.970
Bihar	30.40	48.30	42.35	35.14	-85.50	35.25	-1.270
Rajasthan	30.45	40.91	39.85	26.78	-80.60	34.35	-1.426

Table 3.18 : LEVEL OF DEVELOPMENT IN EDUCATION

1990-91							
States	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R.	A.L.R.	C.I.
Kerala	90.80	96.65	92.80	107.34	-1.96	89.80	2.221
Tamilnadu	75.00	89.66	68.10	78.88	-43.50	62.70	0.716
Punjab	63.70	95.51	70.10	88.99	-48.40	58.50	0.676
Maharashtra	64.40	91.11	70.40	76.30	-57.90	64.90	0.547
Haryana	58.60	91.18	69.80	71.18	-42.50	55.90	0.424
Gujarat	58.80	80.42	63.50	68.20	-64.50	61.30	0.114
West Bengal	41.30	94.02	55.70	87.35	-74.70	57.60	0.101
Karnataka	57.10	90.81	56.90	74.68	-66.60	56.00	0.087
Orissa	52.30	65.42	53.60	60.00	-75.70	49.00	-0.571
Andhra Pradesh	47.20	77.61	48.30	61.06	-79.05	44.10	-0.649
Madhya Pradesh	41.50	75.24	50.30	49.40	-64.70	44.20	-0.703
Uttar Pradesh	33.60	58.09	47.70	40.45	-62.50	41.60	-1.099
Bihar	30.90	56.70	46.70	41.04	-83.13	38.50	-1.350
Rajasthan	33.10	50.00	46.00	34.02	-85.50	38.60	-1.484

Table 3.15 : LEVEL OF DEVELOPMENT IN EDUCATION

States	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R.	A.L.R.	C.I.
				1995-96			
Kerala	91.66	97.20	97.95	97.42	3.90	89.90	2.064
Tamilnadu	82.89	94.50	84.43	81.76	-38.00	64.65	0.878
Maharashtra	68.69	93.04	82.07	80.79	-49.70	67.85	0.634
Punjab	65.26	94.83	77.94	88.30	-42.90	61.80	0.599
Haryana	67.02	86.60	83.22	72.37	-32.50	59.85	0.477
Karnataka	64.46	92.68	69.54	79.01	-60.10	57.55	0.164
West Bengal	41.91	98.64	60.96	90.73	-72.50	60.82	-0.037
Gujarat	63.32	80.67	69.57	67.03	-61.10	59.90	-0.075
Andhra Pradesh	51.27	86.00	59.62	71.85	-73.60	49.70	-0.478
Orissa	55.59	66.44	63.08	69.60	-70.20	54.70	-0.525
Madhya Pradesh	48.02	78.23	62.10	60.61	-61.10	51.15	-0.564
Uttar Pradesh	35.38	70.68	51.89	49.03	-65.60	47.60	-1.118
Rajasthan	36.12	50.96	53.74	37.63	-73.30	47.25	-1.490
Bihar	31.41	56.73	51.77	44.30	-81.70	41.45	-1.590

Table 3.20 : LEVEL OF DEVELOPMENT IN EDUCATION

States	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R.	A.L.R.	C.I.
				2000-01			
Kerala	92.53	97.76	98.65	102.44	9.70	90.00	1.815
Tamilnadu	91.61	99.60	88.56	88.52	-32.00	66.60	0.950
Maharashtra	73.27	95.02	86.75	87.09	-41.40	70.80	0.593
Haryana	76.65	82.25	83.30	85.24	-22.40	63.80	0.557
Punjab	66.85	94.16	86.67	81.38	-37.40	65.10	0.289
Karnataka	72.78	94.59	78.96	90.71	-53.55	59.10	0.158
Gujarat	68.19	80.92	76.22	77.99	-58.02	58.50	-0.273
Andhra Pradesh	55.70	95.29	73.59	100.45	-68.20	55.30	-0.277
Madhya Pradesh	55.56	81.35	76.67	91.19	-57.30	58.10	-0.302
West Bengal	42.54	103.48	66.72	73.63	-70.10	64.04	-0.467
Orissa	59.08	67.47	74.24	85.74	-64.70	60.40	-0.488
Uttar Pradesh	37.26	86.00	56.46	81.11	-68.50	53.60	-0.948
Rajasthan	39.41	51.94	62.79	53.72	-60.90	55.90	-1.278
Bihar	31.93	56.75	57.39	42.64	-83.20	44.40	-1.859

Index of Rural Development

The first principal component Health, education, agriculture and infrastructure has been combined using P.C.A to obtain overall rural development index. The first principal component of step two P.C.A. explains 61.5, 58.50, 65.17, 62.20 and 66.02 percent of variance for the five selected time period respectively.

Statewise ranking show that Kerala and Punjab are the two leading states in rural development. Kerala leads with high scores in education and health i.e., more of social development while Punjab leads with high scores in agriculture and infrastructure i.e., more of economic

development. Madhya Pradeh is the only state, which has improved in the ranking among the backward states. All the fourteen states have been categorised into high, medium and low and very low levels of rural development. Regional depiction of the levels of rural development has been done using this categorisation. Maps on the following pages show the levels of rural development for the selected five-time periods.

STATES UNDER VARIOUS CATEGORIES OF RURAL DEVELOPMENT (1981-2001)

CATEGORY	1980-81	1985-86	1990-91	1995-96	2000-01
HIGH	KERALA, PUNJAB MAHARASHTRA	KERALA, PUNJAB TAMILNADU,	KERALA, PUNJAB HARYANA	KERALA PUNJAB,	KERALA, MAHARASHTRA PUNJAB HARYANA TAMILNADU
MEDIUM	TAMILNADU, HARYANA GUJARAT, WEST BENGAL, KARNATAKA	HARYANA MAHARASHTRA, GUJARAT, WEST BENGAL, KARNATAKA ANDHRA PRADESH	TAMILNADU MAHARASHTRA GUJARAT, WEST BENGAL, KARNATAKA ANDHRA PRADESH.	HARYANA TAMILNADU MAHARASHTRA GUJARAT KARNATAKA WEST BENGAL	KARNATAKA GUJARAT ANDHRA PRADESH
LOW	ORISSA, RAJASTHAN ANDHRA PRADESH	RAJASTHAN, ORISSA MADHYA PRADESH	ORISSA, RAJASTHAN MADHYA PRADESH	ANDHRA PRADESH ORISSA, MADHYA PRADESH	ORISSA, WEST BENGAL
VERY LOW	UTTAR PRADESH BIHAR MADHYA PRADESH	UTTAR PRADESH BIHAR	UTTAR PRADESH BIHAR,	RAJASTHAN UTTAR PRADESH BIHAR,	MADHYA PRADESH RAJASTHAN UTTAR PRADESH BIHAR.

India
Levels of Rural Development

1980 - 81

Composite Index
- High
- Medium
- Low
- Very Low

1985 - 86

Composite Index
- High
- Medium
- Low
- Very Low

India
Levels of Rural Development

1990 - 91

Composite Index
- High
- Medium
- Low
- Very Low

1995 - 96

Composite Index
- High
- Medium
- Low
- Very Low

India
Levels of Rural Development

2000 - 01

Composite Index

- High
- Medium
- Low
- Very Low
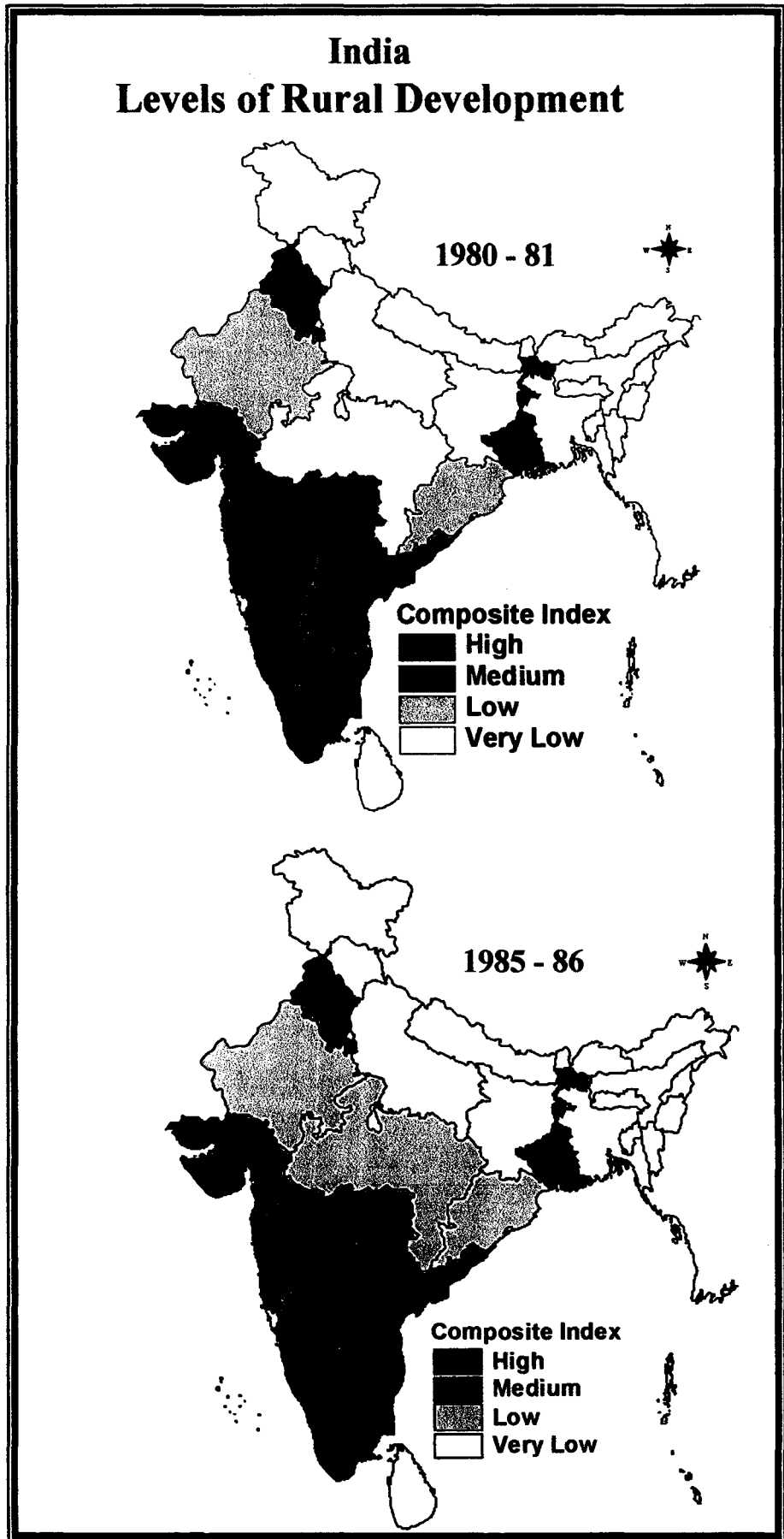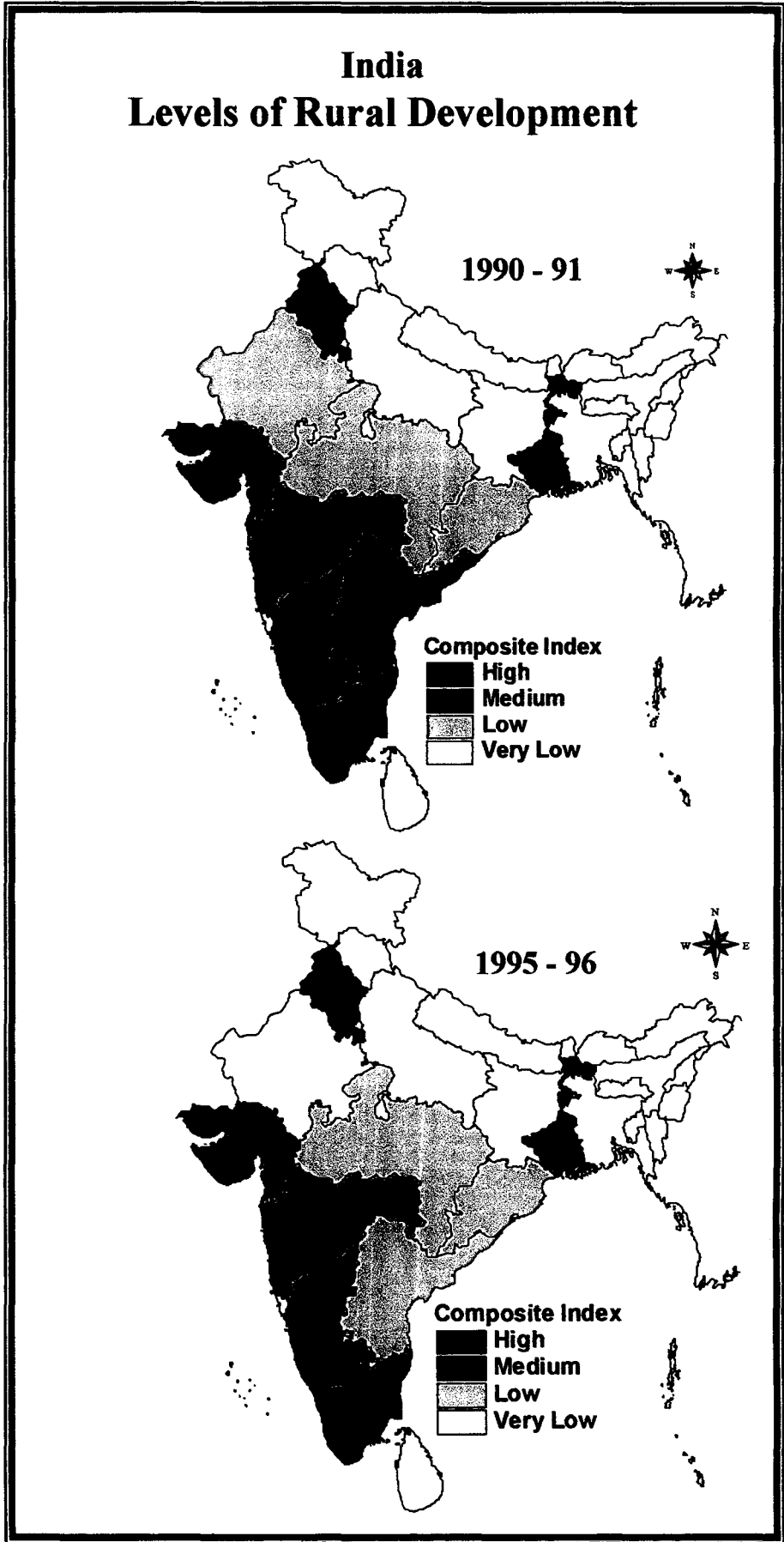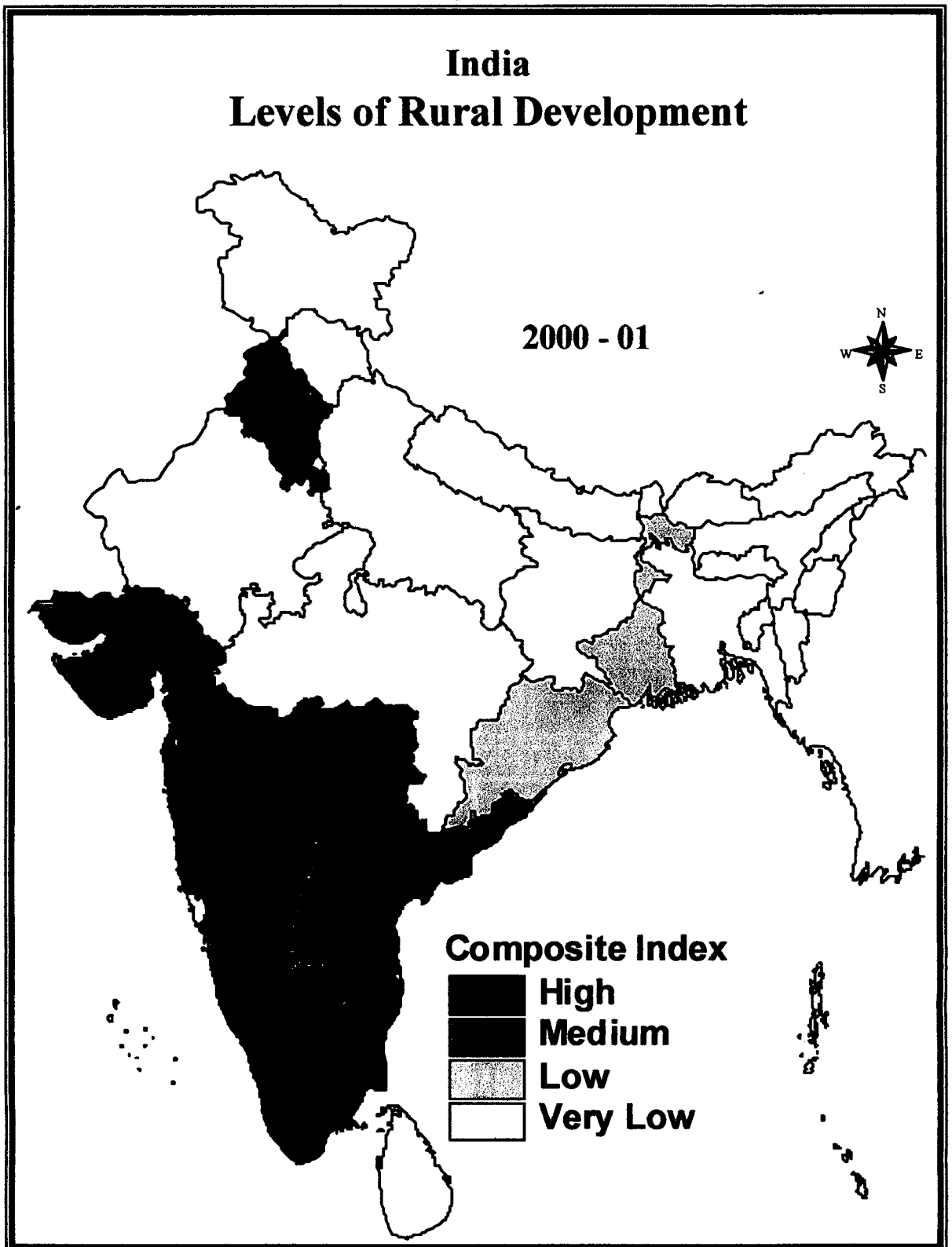
Conclusions

Having analysed the whole process of rural development across major Indian State for the last two decade we can conclude the following:

- Most of the indicators of rural development are at lower level and at the same time they are highly variable across states.

- Variation across states is on a declining trend except female dropout ratio, total fertility rate, sex ratio and per capita food grain production.

- Over the period of two decades most of the states like Bihar and Uttar Pradesh have got stuck in the vicious cycle of underdevelopment.

- Kerala, and Punjab enjoy the advantage of early start, which both have capitalised and therefore continue to lead in the overall rural development.

- Both the states represent different models of growth. Kerala's model is based more on social development. While punjab's focus area is economic growth. But still they both are successful.

Thus policy suggestion for bringing about rural development in hitherto under developed states could be either of the two models or a mix of both. The failure of the state in bringing about rural development in backward state could be because of implementation failure. This would be analysed in the subsequent chapter where trends of public expenditure and its relationship with rural development would be analysed.

CHAPTER FOUR

TRENDS OF PUBLIC EXPENDITURE

TRENDS OF PUBLIC EXPENDITURE

Introduction

In the previous chapter we have analysed various dimensions of rural development, its status in different states and also its spatio-temporal variations. The present study is based on the hypothesis that development is a function of state intervention mainly done through incurring expenditure on both capital and revenue heads. Therefore this chapter is an effort bring out the patterns of public expenditure of the selected major states. The chapter has been divided into two sections. Section I gives an account of spending patterns of states and also growth of expenditure and section II gives an account of the inequalities in the level of per capita expenditure on different selected heads of rural development.

In the federal polity, the constitution has assigned to the state government, the primary responsibility of providing important social and economic services and thus the study of state government expenditure is important especially to see their relationship with varying levels of development across states. Public expenditure is made on two heads. Capital and revenue expenditure. The capital expenditure incurred adds to the capacity of infrastructure services where as revenue expenditure represents the current expenditure. While capital expenditure may be seen as purely developmental, revenue expenditure cannot be termed as non-developmental as they include all these services necessary for maintenance purposes. Thus in the present chapter expenditure analysis has been done by adding together both the heads of expenditure as total expenditure.

Expenditure trends of different states have been analysed using data on percentage share of expenditure on various heads to total expenditure, per capita expenditure and percentage of public expenditure on different heads to state domestic product. In order to calculate per capita expenditure the expenditure figures have been deflated with year 1993-94 as the base year for price. For the purpose of tabulation states have been categorised into High-income states, Middle income states and Low income states on the basis of per capita SDP.

Table 4.1 : Per capita state domestic product (1993-94)

Punjab	12934
Maharashtra	12010
Haryana	10526
Gujrat	9054
Tamilnadu	8051
Karnataka	7242
Andhara Pradesh	7006
Kerala	6524
West Bengal	6247
Madhya Pradesh	5516
Rajasthan	5315
Uttar Pradesh	4794
Orissa	4662
Bihar	3417

SOURCE : Statistical abstract ,CSO,1998.

High income states :- Punjab, Haryana, Maharashtra and Gujarat.
Middle income states :- Karnataka, West Bengal, Tamil Nadu, Kerala and Andhara Pradesh.
Low income states :- Rajasthan, Madhya Pradesh, Uttar Prades, Orissa and Bihar.

Development expenditure

India being a developing country, large section of public expenditure is expected to be a part of development expenditure. Table 4.2 show that its share in the total expenditure is close to 65% (1997-99) which is on a declining trend from 75% in (1977-79). Decade wise break up show that during 1980's development expenditure was more or less stable. But during 1990's development expenditure as percentage of total expenditure came down sharply, with all states showing a negative growth rate. (Table A.10). This decline has been most significant among the high income states especially Punjab and Haryana. Among the low-income states, Rajasthan and Madhya Pradesh have shown some resistance in declining development expenditure.

In per capita terms development expenditure over the period has shown appreciable improvement. In the last two decades it has grown more than 100% in real terms. Table (4.3) shows that the states with high income are also the states, which spend high amount for development services. This stimulates further development and makes easier for these states to mobilise resources for further expenditure. The difference between the rich and poor states in stark. States like Bihar and Uttar Pradesh does not spend

even half of what high income or some middle income states spend on development services.

Table 4.2 : DEVELOPMENT EXPENDITURE AS % OF TOTAL EXPENDITURE

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	73.41	45.81	71.90	60.15	51.76
Haryana	78.48	78.49	74.77	67.26	40.61
Maharashtra	67.56	69.89	74.07	64.25	61.61
Gujarat	75.41	80.60	80.33	69.96	69.20
Karnataka	75.72	74.54	72.62	73.80	69.45
West Bengal	72.48	74.10	73.09	70.57	70.10
Tamilnadu	73.13	78.12	72.90	72.23	67.70
Kerala	76.45	75.20	68.03	66.71	64.17
Andhra Pradesh	79.22	78.63	79.30	72.95	67.23
Rajasthan	75.34	76.49	76.87	70.41	68.61
Madhya Pradesh	76.60	77.94	76.78	73.59	69.17
Uttar Pradesh	72.11	73.53	70.97	59.58	63.37
Orissa	76.03	78.81	75.89	71.01	63.32
Bihar	72.61	79.18	72.81	65.32	61.76
All States	74.61	74.38	74.31	68.41	63.43

Table (A.11) shows that growth for all states taken together during 1980s has been 84.93%. During 1990's developmental expenditure grew at 3% per annum. Thus there has been a considerable decline in the growth rate. Among the High income states Gujarat had the highest growth rate during 1980's. Kerala is the only states where per capita development expenditure grew at a faster rate during 1990's than during 1980's. This reflects the priority accorded by the state to developmental needs of the state. Kerala is also the state with highest per capita developmental expenditure.

Among the low income states Madhya Pradesh has shown a continuity in its developmental expenditure trend, which has not declined even during 1990's when other states registered decline. Bihar is the only state that registered a negative growth rate during 1990's. This shows that expenditure growth is not commensurate with rising population. Table (A.12) shows that during 1990s all the high income states showed very slow growth rates compared to other states. This may be due to shift in priorities of the state government while formulating expenditure plans under different heads.

Table 4.3 : PER CAPITA DEVELOPMENT EXPENDITURE   (Rs)

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	498.10	213.52	969.36	1086.90	1091.01
Haryana	585.26	766.83	1043.22	1016.68	1177.91
Maharashtra	476.51	667.65	913.87	921.44	1088.35
Gujarat	456.03	693.09	1080.51	947.96	1217.75
Karnataka	411.74	544.25	716.54	956.81	1160.42
West Bengal	341.54	465.13	561.42	651.26	744.08
Tamilnadu	360.92	549.59	725.15	911.28	1068.31
Kerala	493.19	569.41	733.09	865.07	1321.49
Andhra Pradesh	456.03	574.46	781.36	787.94	897.29
Rajasthan	400.45	514.08	806.94	774.94	931.93
Madhya Pradesh	352.72	448.21	643.39	704.24	1089.66
Uttar Pradesh	263.77	347.93	462.92	474.03	680.60
Orissa	402.46	599.75	709.26	848.15	857.09
Bihar	222.77	370.12	433.50	510.57	430.99
All States	408.68	523.14	755.75	818.38	982.63

Expenditure trend shown as percentage of state domestic product reflects the spending capacity of the state and how much it actually spends. Table 4.4 show that over the last two decades all states average has registered marginal increase. Decadal breakup reflects that all the growth was registered during 1980's. During 1990's growth was negative, reflecting a decline in developmental public expenditure or public expenditure of development has not grown at the same rate as has SDP grown. State wise break up show that high income states have low percentage of development expenditure of SDP while low income states have high percentage of development, expenditure to SDP. Growth trends suggest that in high income states there has been an overall decline (Haryana and Maharashtra). Two of the poorest states Orissa and Bihar have registered highest growth in development expenditure as a ratio to SDP.

Table 4.4 : DEVELOPMENT EXPENDITURE AS RATIO OF STATE DOMESTIC PRODUCT

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	7.50	8.69	9.38	8.40	8.05
Haryana	10.19	11.06	11.47	9.66	9.61
Maharashtra	8.52	10.07	10.70	7.67	8.52
Gujarat	8.86	11.39	13.83	10.47	10.78
Karnataka	10.71	12.00	12.32	13.21	14.27
West Bengal	7.66	9.47	9.55	10.43	7.29
Tamilnadu	9.97	12.27	12.04	11.32	8.48
Kerala	13.34	13.61	14.24	13.26	15.92
Andhra Pradesh	13.12	13.45	13.69	11.25	12.18

Rajasthan	13.96	14.27	16.41	14.58	14.32
Madhya Pradesh	10.91	11.84	13.35	12.77	14.68
Uttar Pradesh	8.54	9.91	10.67	9.89	9.83
Orissa	10.31	14.80	15.51	18.19	18.21
Bihar	8.97	12.93	12.08	14.94	13.32
All States	9.73	11.84	12.07	10.97	11.82

Agriculture

India has high population pressure on land and other resources to meet its food and development needs. The massive increase in population and substantial income growth, the demand for food grains would grow at 2.5 mt annually besides other allied agricultural product. This requires huge investments in the agricultural sector. But on the analysis of expenditure data, we see that there has been a two and half fold decline in the expenditure on agriculture as percentage of total expenditure. substantial part of this decline was during 1980's. This is the main reason behind declining productivity and low capital formation in the agricultural sector. During late 1970's and early 1980's West Bengal made allocations of upto 1/5 of their total expenditure on agriculture. However, this high expenditure, in later years was not sustained by any of the states and through out the last two decades every state except for Kerala registered negative growth in public expenditure on agriculture.

Table 4.5 : DEVELOPMENT EXPENDITURE ON AGRICULTURE AS % OF TOTAL EXPENDITURE

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	22.65	20.57	14.78	5.07	4.96
Haryana	10.38	12.50	6.46	7.49	3.07
Maharashtra	17.95	15.04	10.33	9.50	7.54
Gujarat	5.97	6.35	6.81	6.12	5.33
Karnataka	14.32	16.73	8.25	9.02	7.16
West Bengal	17.55	13.13	12.95	6.99	7.11
Tamilnadu	25.83	19.02	10.62	10.95	8.34
Kerala	9.96	13.85	6.63	8.70	10.68
Andhra Pradesh	11.73	13.44	5.89	3.42	4.07
Rajasthan	11.84	8.90	6.15	7.52	6.00
Madhya Pradesh	21.74	13.30	12.67	9.95	7.83
Uttar Pradesh	14.31	16.02	5.44	4.25	4.05
Orissa	15.23	11.85	8.72	8.77	7.39
Bihar	14.43	16.60	6.78	6.18	3.74
All States	15.28	14.09	8.75	7.42	6.23

Agriculture is said to be the mainstay of Indian economy but still it is the only sector where public expenditure even on per capita terms has shown only a marginal increase. On an average per capita public expenditure on agriculture is only Rs.95, which has grown from Rs.83 in 1977-79 in real terms. During 1980's agriculturally prosperous states showed increased per capita expenditure on agriculture. But during 1980's this trend was negative.

The Middle income and the low-income state with the exception of Bihar have witnessed increase in per capita public expenditure during 1990's, through in some states it is very marginal. Among the low income states Madhya Pradesh and Orissa are making comparable expenditure to that of some of agriculturally more prosperous states. The results of such investments, could well be seen in coming years if it is properly utilised.

Table 4.6 : PER CAPITA DEVELOPMENT EXPENDITURE ON AGRICULTURE (Rs)

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	153.66	95.87	199.27	91.63	104.58
Haryana	77.44	122.17	90.20	113.25	88.98
Maharashtra	126.60	143.67	127.43	136.22	133.24
Gujarat	40.78	54.64	91.66	82.96	93.76
Karnataka	77.87	122.18	118.37	116.98	119.62
West Bengal	82.69	82.42	76.30	64.51	77.18
Tamilnadu	127.47	133.78	134.13	138.19	132.88
Kerala	64.25	104.89	107.40	112.80	149.91
Andhra Pradesh	67.51	98.19	58.00	36.94	54.30
Rajasthan	62.93	63.52	64.54	82.78	81.55
Madhya Pradesh	100.09	132.44	106.13	95.25	123.29
Uttar Pradesh	52.35	75.82	35.47	33.81	44.92
Orissa	80.60	90.20	81.48	104.76	100.05
Bihar	44.26	77.62	40.37	48.28	26.11
All States	82.75	99.81	95.05	89.88	95.03

Public expenditure on agriculture as a percentage of state domestic product has witnessed a two fold decline and this decline was more rapid during 1980s. State wise break up (Table 4.7) shows that the high income states spend up percentage of their SDP on agriculture compared to the middle income state exception being Andhra Pradesh, and also low income states exception being Uttar Pradesh. States with growth potential, even though not so well off in income terms like Kerala, Madhya Pradesh and Orissa are making increased investments in agriculture.

Table 4.7 : EXPENDITURE ON AGRICULTURE AS RATIO OF STATE DOMESTIC PRODUCT

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	2.31	1.10	1.93	0.71	0.77
Haryana	1.35	1.20	0.99	1.08	0.73
Maharashtra	2.26	1.29	1.49	1.13	1.04
Gujarat	1.45	1.12	1.17	0.92	0.83
Karnataka	2.03	1.25	1.40	1.62	1.47
West Bengal	1.85	1.26	1.16	1.03	0.74
Tamilnadu	3.52	1.80	1.35	1.72	1.05
Kerala	1.74	1.96	1.39	1.73	1.81
Andhra Pradesh	1.94	1.68	1.02	0.53	0.74
Rajasthan	2.19	2.70	1.31	1.56	1.25
Madhya Pradesh	3.10	1.52	2.20	1.73	2.18
Uttar Pradesh	1.70	1.17	0.82	0.71	0.63
Orissa	2.06	1.53	1.78	2.25	2.13
Bihar	1.78	1.20	1.13	1.41	0.81
All States	2.09	1.42	1.37	1.18	1.04

Infrastructure

Physical infrastructures are the very basis for any development process to start and hence infrastructure as a sector, which includes, housing, road, power, water and sanitation becomes very important for our analysis purpose. Looking at the expenditure on infrastructure cumulatively we find that there has been only a modest increase when it is expressed as percentage of total expenditure. A sudden increase in the figure from 1982-84 to 1987-89 is because of addition of water and sanitation item under the infrastructure head. State wise break up show that in high income states there has been a consistent decline in the expenditure on infrastructure over the years especially during 1990's, mainly because most of basic infrastructure was already in place. Among, the low-income state, with the exception of Orissa, there has been improvement in the allocation on infrastructure. This reflects the priority accorded to setting up of infrastructure, for development to gain momentum.

Table 4.8 : DEVELOPMENT EXPENDITURE ON INFRASTRUCTURE AS % OF TOTAL EXPENDITURE

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	7.45	7.15	6.22	5.22	3.90
Haryana	3.35	3.94	5.86	6.05	5.40
Maharashtra	4.20	3.30	7.50	6.74	7.41
Gujarat	3.69	6.97	10.59	7.69	9.49
Karnataka	4.72	3.85	5.38	5.62	7.25
West Bengal	3.96	2.36	4.49	3.47	6.38
Tamilnadu	5.80	6.27	9.30	6.48	10.35

Kerala	4.58	4.52	7.23	5.78	4.00
Andhra Pradesh	4.65	3.85	5.25	5.01	3.46
Rajasthan	5.28	7.75	10.63	9.87	11.17
Madhya Pradesh	5.87	6.15	9.59	6.37	5.91
Uttar Pradesh	5.50	4.83	7.44	6.98	6.89
Orissa	4.91	4.11	7.21	6.83	6.69
Bihar	4.70	3.06	6.24	4.82	9.87
All States	5.25	5.18	7.35	6.98	8.10

Table 4.9 : PER CAPITA DEVELOPMENT EXPENDITURE ON INFRASTRUCTURE (Rs)

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	50.56	75.36	83.83	94.24	82.25
Haryana	25.02	38.52	81.79	91.44	156.55
Maharashtra	29.59	31.50	92.54	96.67	130.90
Gujarat	22.33	59.90	88.63	104.23	167.02
Karnataka	25.64	28.13	53.07	72.89	121.12
West Bengal	18.64	14.84	34.51	32.05	48.64
Tamilnadu	28.64	44.10	71.07	81.79	126.20
Kerala	29.55	34.21	77.94	74.91	81.66
Andhra Pradesh	26.77	28.10	51.74	54.13	46.20
Rajasthan	28.08	52.09	112.30	108.69	151.66
Madhya Pradesh	27.01	35.34	80.34	60.97	93.06
Uttar Pradesh	20.11	22.87	48.51	55.54	58.87
Orissa	25.99	31.30	67.42	81.60	90.49
Bihar	14.41	14.31	37.12	37.69	68.85
All States	26.60	36.47	70.06	74.77	101.68

Table 4.10 : EXPENDITURE ON INFRASTRUCTURE AS RATIO OF STATE DOMESTIC PRODUCT

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	1.69	1.96	1.73	1.55	1.40
Haryana	1.37	1.76	1.60	1.56	1.88
Maharashtra	1.50	1.77	1.95	1.46	1.61
Gujarat	1.55	2.11	2.69	1.88	2.27
Karnataka	2.37	1.87	2.17	2.10	2.79
West Bengal	1.50	1.56	1.57	1.61	2.93
Tamilnadu	2.22	2.79	2.24	2.01	1.86
Kerala	2.71	2.78	3.20	2.57	3.71
Andhra Pradesh	2.19	2.33	1.88	1.57	1.56
Rajasthan	3.14	3.45	4.37	3.30	3.74
Madhya Pradesh	2.14	2.45	2.75	2.06	2.96
Uttar Pradesh	1.42	1.82	2.20	1.94	2.15
Orissa	1.75	2.30	2.73	3.10	3.17
Bihar	1.62	1.70	1.99	2.50	3.37
All States	1.94	2.19	2.36	2.09	2.67

Expenditure on infrastructure in per capita terms has grown consistently in all the state. Haryana, Maharastra and Gujarat among the high-income state, Karnataka and Tamil Nadu from middle income states

and Rajasthan from low-income state have their average per capita expenditure on infrastructure more than Rs.120. This figure is more than double than what Orissa, Bihar and West Bengal spends. Expenditure. Figures on expenditure expressed as percentage of SDP also shows that there is a declining trend among the high-income state and increasing among low-income states.

Health

Health and education forms the two most important item of social service expenditure. Expenditure of health, which includes medical, public health and family welfare, constitutes 5.8 percent of total public expenditure. There has been a decline of 36 percent over the last two decades in the health expenditure as percentage of total expenditure. High-income states have lowest spending on health sector. Middle income states show higher allocation on health then both high income and low-income State. This suggests that there is compelling need for improving health scenario in these states and which is backed by resources for spending, which may not be so easily available in poor states. Private sector has started to play significant role in the health sector especially in the better off and therefore easing off the burden from the shoulders of the government.

Table 4.11 : DEVELOPMENT EXPENDITURE ON HEALTH AS % OF TOTAL EXPENDITURE

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	9.09	12.73	7.04	5.85	5.09
Haryana	7.20	8.53	4.60	4.81	2.53
Maharashtra	7.69	8.98	6.00	5.45	4.23
Gujarat	9.54	7.96	5.04	4.89	5.08
Karnataka	12.04	7.76	7.40	6.12	6.35
West Bengal	10.29	9.84	7.54	7.41	10.05
Tamilnadu	10.48	11.48	8.34	6.31	4.48
Kerala	10.96	10.85	8.07	7.16	8.71
Andhra Pradesh	8.56	9.80	5.62	5.17	5.13
Rajasthan	11.65	14.49	5.83	6.08	6.77
Madhya Pradesh	9.19	10.01	6.21	5.53	4.71
Uttar Pradesh	6.47	8.64	7.18	4.72	6.97
Orissa	8.03	8.13	6.16	5.25	4.35
Bihar	8.40	7.35	5.76	6.09	5.76
All States	9.03	9.75	6.49	5.77	5.73

In per capita terms, there has been a consistent increase in the expenditure of health. This increase has been more rapid during 1990's that

it was during 1980's. Table 4.12 clearly shows the difference between the low-income states and high-income states. States like Punjab, Gujarat, Karnataka and Kerala spend more than twice than that of Bihar and Orissa. Over the last two-decade low income state especially Uttar Pradesh, Madhya Pradesh and Bihar have show high growth rates mainly because to start with they had small base.

Table 4.12 : PER CAPITA DEVELOPMENT EXPENDITURE ON HEALTH   (Rs)

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	61.67	87.31	94.87	105.62	107.24
Haryana	53.70	83.36	64.15	72.77	73.79
Maharashtra	54.24	85.80	73.99	78.15	74.70
Gujarat	57.69	68.43	67.75	66.24	89.39
Karnataka	65.47	56.68	73.06	79.39	107.30
West Bengal	48.48	61.77	57.91	68.37	75.32
Tamilnadu	51.70	80.74	63.75	79.63	71.76
Kerala	70.71	82.13	87.01	92.86	122.78
Andhra Pradesh	49.27	71.60	55.33	55.89	68.52
Rajasthan	61.94	97.38	61.21	66.91	96.96
Madhya Pradesh	42.32	57.55	52.01	52.90	75.42
Uttar Pradesh	23.67	40.90	46.86	37.53	78.42
Orissa	42.50	61.87	57.59	62.69	58.81
Bihar	25.76	34.38	34.32	47.63	40.22
All States	50.65	69.28	63.56	69.04	86.99

Table 4.13 : EXPENDITURE ON HEALTH AS RATIO OF STATE DOMESTIC PRODUCT

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	0.93	1.10	0.92	0.82	0.79
Haryana	0.93	1.20	0.71	0.69	0.60
Maharashtra	0.97	1.29	0.87	0.65	0.58
Gujarat	1.12	1.12	0.87	0.73	0.79
Karnataka	1.70	1.25	1.26	1.10	1.31
West Bengal	1.09	1.26	0.99	1.09	1.46
Tamilnadu	1.43	1.80	1.06	0.99	0.56
Kerala	1.91	1.96	1.69	1.42	1.47
Andhra Pradesh	1.42	1.68	0.97	0.80	0.93
Rajasthan	2.16	2.70	1.24	1.26	1.41
Madhya Pradesh	1.31	1.52	1.08	0.96	1.31
Uttar Pradesh	0.77	1.17	1.08	0.78	1.08
Orissa	1.09	1.53	1.26	1.34	1.25
Bihar	1.04	1.20	0.96	1.39	1.24
All States	1.19	1.42	1.03	0.92	0.98

Public expenditure on health as percentage of state domestic product show slight decline over the last two decades. As in education, here too high-income states show lowest expenditure when compared with other states. Some of the highest spending states all the poorest states. Like Orissa, Rajasthan, Bihar and Madhya Pradesh. This shows that poorer

states are becoming more conscious about medical and public health facilities required in the state and hence higher allocation in recent years.

Education

Within the fold of development expenditure, education is an important component. For the purpose of our analysis data is expenditure pertaining to primary and middle school education has been taken. Expenditure trend, expressed as percentage of total expenditure shows that there has been a consistent decline and it stood at half of what it was two decades back. It shows that irrespective of states position in the levels of literacy, expenditure on education has declined and its share has been eaten up by some other non-developmental activities.

State-wise break-up does not throw up any discernible trend except for the fact that states with better literary rates at present like Kerala, Tamil Nadu, Maharashtra, and Gujarat had higher allocation under education during late 70's and early 80's, suggesting that higher allocation have yielded results.

Table 4.14 : DEVELOPMENT EXPENDITURE ON EDUCATION AS % OF TOTAL EXPENDITURE

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	7.88	6.56	4.40	4.79	3.35
Haryana	4.04	2.45	2.05	2.84	1.19
Maharashtra	8.27	5.07	3.05	3.14	3.69
Gujarat	11.04	6.35	4.65	6.28	4.34
Karnataka	7.88	5.53	5.16	4.65	2.84
West Bengal	6.96	3.66	5.14	3.33	5.90
Tamilnadu	10.19	5.81	6.08	4.09	7.26
Kerala	15.54	6.77	3.97	4.46	4.54
Andhra Pradesh	5.86	4.11	3.63	4.82	3.29
Rajasthan	8.70	4.59	3.10	4.79	3.16
Madhya Pradesh	9.06	6.03	5.19	4.07	4.07
Uttar Pradesh	7.86	4.72	4.04	3.87	3.08
Orissa	8.72	4.91	4.10	3.78	4.64
Bihar	9.11	4.75	5.86	6.93	6.29
All States	8.57	5.09	4.29	5.00	4.00

On an average per capita public expenditure on primary and middle schooling is only Rs.54. This figure stood at Rs.47.10 in 1997-78. A very small increase suggests that public expenditure has increased and managed only to accommodate the rising population. There has be very little quantitative gain on per capita basis. High-income states except Haryana have high per capita expenditure on education. Uttar Pradesh is the only

state where there has been a decline in the per capita expenditure over the last two decades.

Table 4.15 : PER CAPITA DEVELOPMENT EXPENDITURE ON EDUCATION   (Rs)

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	53.44	53.86	59.30	86.48	70.67
Haryana	30.14	23.92	28.58	42.89	34.50
Maharashtra	58.33	48.47	37.63	45.10	65.11
Gujarat	66.79	54.60	62.56	85.04	76.37
Karnataka	42.83	40.38	50.92	60.24	47.52
West Bengal	32.80	22.96	39.50	30.78	45.41
Tamilnadu	50.28	40.87	46.43	51.62	82.19
Kerala	100.26	51.29	42.74	57.83	63.72
Andhra Pradesh	33.74	30.03	35.76	52.02	43.87
Rajasthan	46.26	30.87	32.51	52.74	42.94
Madhya Pradesh	41.73	34.71	43.47	38.98	64.05
Uttar Pradesh	28.76	22.35	26.33	30.78	24.10
Orissa	46.13	37.36	38.36	52.36	62.86
Bihar	27.95	22.19	34.88	54.16	43.87
All States	47.10	36.70	41.36	52.93	54.80

Table 4.16 : EXPENDITURE ON EDUCATION AS RATIO OF STATE DOMESTIC PRODUCT

States	1977-79	1982-84	1987-89	1992-94	1997-99
Punjab	0.80	0.68	0.57	0.67	0.52
Haryana	0.52	0.35	0.31	0.41	0.28
Maharashtra	1.04	0.73	0.44	0.38	0.51
Gujarat	1.30	0.90	0.80	0.94	0.68
Karnataka	1.11	0.89	0.88	0.83	0.58
West Bengal	0.74	0.47	0.67	0.49	0.61
Tamilnadu	1.39	0.91	0.77	0.64	0.91
Kerala	2.71	1.23	0.83	0.89	0.77
Andhra Pradesh	0.97	0.70	0.63	0.74	0.60
Rajasthan	1.61	0.86	0.66	0.99	0.66
Madhya Pradesh	1.29	0.92	0.90	0.71	1.14
Uttar Pradesh	0.93	0.64	0.61	0.64	0.48
Orissa	1.18	0.92	0.84	0.97	1.34
Bihar	1.13	0.78	0.97	1.59	1.36
All States	1.13	0.76	0.68	0.81	0.68

Public expenditure on education expressed as a percentage of state domestic product has also declined substantially over the last two decades. This decline has been very rapid during 1880s'. State wise analysis reflects that high-income states to start with had low base and at present have lowest expenditure in comparison to other states. The success story of Kerala is reflected by its high allocation to education more than twice, than the next higher state during late 1970's. Bihar and Orissa grappling with low

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literary levels have shown increasing trend of education expenditure in order to meet the growing demand of improving educational status.

Disparity Trends

Public expenditure made by the government is conditioned by many factors. Availability of resources and prioritization of sectoral allocation accounts for much of inter-state variations. In the present attempt to capture the temporal charge in disparity coefficient of variation has been used on data pertaining to per capita public expenditure on various selected heads of expenditure. Graphs have been plotted to depict the change over the period of last two decades.

Coefficient of variation (C.V.) figures for Development expenditure show that there was slight increase in variation during initial years of 1980's but since then, there has been a slow by steady decline. This is mainly because the low income states are now increasingly investing in development activities, while the high income states have shown slow rate of growth because some of the basic infrastructure is already set up and only running expenses have to be made.

Figure 4.1 : STATEWISE VARIATION IN PER CAPITA DEVELOPMENTAL AND NON DEVELOPMENTAL EXPENDITURE (1977-99)
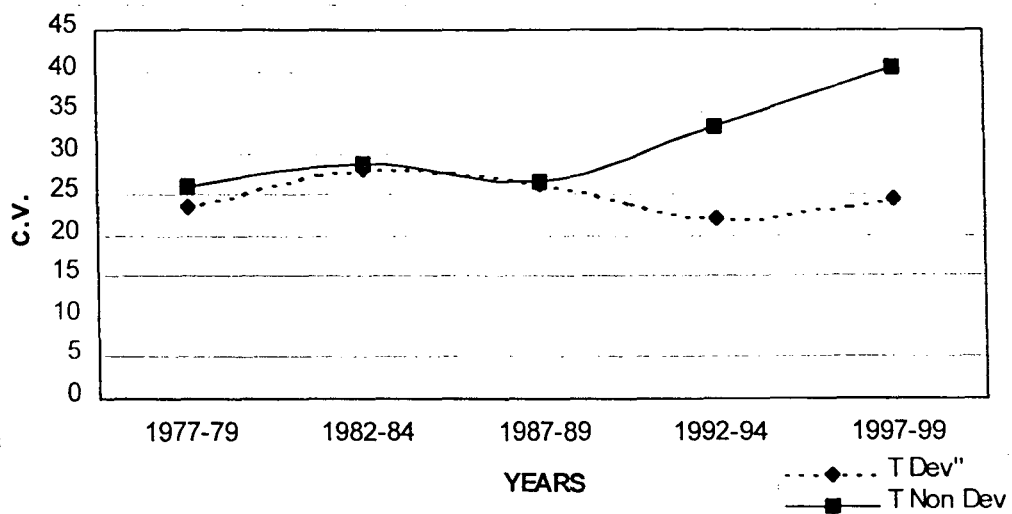
71
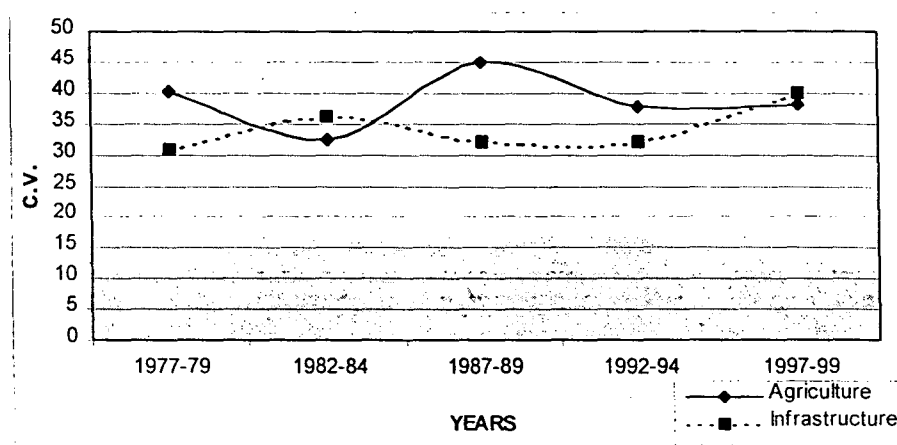
There is much interstate variation in per capita public expenditure on agriculture. States like Punjab, Haryana, Tamil Nadu, Maharastra spend more than twice of what states like Bihar, Uttar Pradesh and Rajasthan spends. This wide variation got bridged during 1982-84 because Bihar increased its allocation on agriculture while there was decline in investments made by Punjab. However, this trend could not continue for long and interstate variation again showed an increasing trend and in 1999 stood close to where it was in 1977.

Interstate disparity with respect to expenditure on infrastructure is also high. C.V. figures during 1877-79 were 30.83, which has since then increased to 39.89. Increasing disparity can be mainly attributed to low expenditure by low-income states. And also West Bengal and Andhara Pradesh from the middle income states which have one of the lowest per capita expenditure on infrastructure.

Interstate disparity of per capita public expenditure on education was very high during (1977-79). This figure was mainly because expenditure figures for Kerala was very high. In the later years especially during 1990's there was substantial decline in interstate variation. However, this is again showing an upward trend because some of the bigger states like Rajasthan, Uttar Pradesh and Bihar are still lagging far behind other.

Health is one sector where not much charge has taken place over the years. C.V. figures always remained within the band of 27 to 24.

Figure 4.3 : STATEWISE VARIATION IN PER CAPITA PUBLIC EXPENDITURE ON EDUCATION AND HEALTH (1977-99)
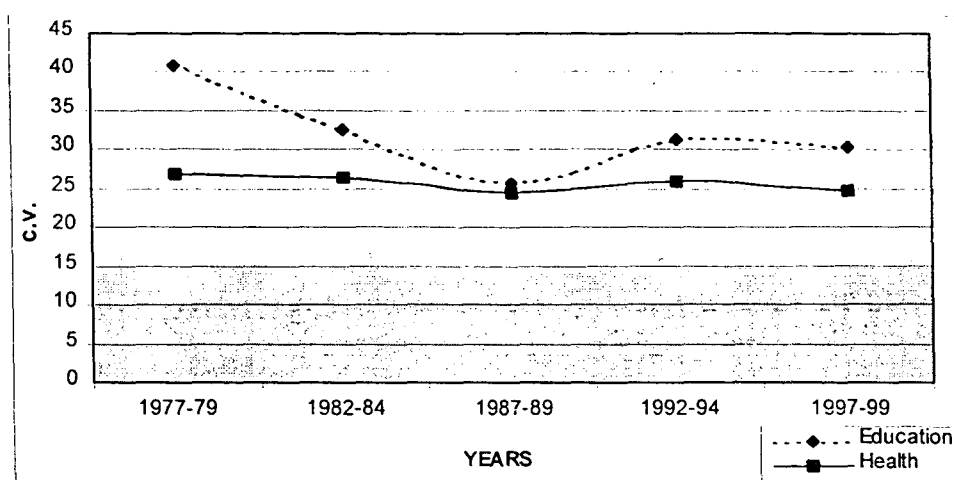
Conclusions

On the analysis of various dimensions of public expenditure we can conclude the following

- Developmental expenditure as percentage of total expenditure is declining and this decline has been sharp during 1990's. High income states accounts for most of the decline.

- In per capita terms development expenditure has almost doubled in last two decades. Bihar is the only state, which registered a negative growth during 1990's.

- Expenditure trend as percentage of state domestic product shows that high income states have low percentage of development expenditure to SDP while low income states have high percentage of development expenditure of SDP.

- Public expenditure on agriculture as percentage of total expenditure has registered 2½-fold decline in the last two decades. All states except Kerala has shown negative growth. There is high inter-state variation in per capita public expenditure on agriculture, which is on an increasing trend.

- Public expenditure on infrastructure as percentage of total expenditure shows a modest increase over the study period. State-wise break up show that in high-income state there has been a consistent decline in the expenditure on infrastructure. In per

capita terns there has been slow growth in the expenditure trend. Interstate disparity is high, which is further increasing.

- Public expenditure on health as percentage of total expenditure has declined over the last two decades. In per capita terms there is an increasing trend, which is more rapid during 1990's. When public expenditure is expressed as percentage of state domestic product, some of poorest states are the highest spending states

- The trend of Public expenditure on education as percentage of total expenditure shows that with a constant decline, expenditure has been reduced to half of what it was in late 1970's. Higher allocation on education made by states like Kerala, Tamil Nadu and Maharashtra during late 70's and early 80's have shown results as reflected in the indicators of educational development.

Thus we can say that there has been a definite increase in the quantum of expenditure in all the sectors. This increase is however quite variable across both states and sectors depending upon the priorities of the state and resource capacity to fulfill the demands of priorities.

CHAPTER FIVE

RELATIONSHIP BETWEEN PUBLIC EXPENDITURE
AND RURAL DEVELOPMENT

RELATIONSHIP BETWEEN PUBLIC EXPENDITURE AND RURAL DEVELOPMENT

Introduction

Rural development has been one of the major objective of planned development. But our analysis, as done in previous chapter, show that the situation has not improved over the past few decades. Large scale inter-regional disparities exists in different indicator of rural development. The redistributive efforts of the government, to bridge inter regional disparities is largely effected through fiscal federal structure. This fiscal situation of the states mainly related to expenditure has also been analysed in the previous chapter.

Economic growth translating in economic development is important. Therefore state recognizes that high growth of income is by itself not enough to improve the quality of life of the rural poor. Provision of social and economic services like literacy education, primary health care, safe drinking water, nutritional security and others fall within the domain of governments responsibility[1]. Public expenditure is incurred on the various social and economic services. But it needs to be assessed that to what extend public expenditure relates to changes in the various indicators of development.

The expenditure in order to translate into development needs time and therefore in the present chapter a lag of three years has been kept between the development indicators and expenditure incurred in that particular sector. The relationship between rural development and public expenditure in per capita terms has been analyzed using statistical measure of coefficient of correlation and simple linear regression analysis. The chapter has been divided into five section – Agriculture, Infrastructure, Health, Education and Rural development.

Agriculture

Investment or gross capital formation in agriculture by public and private sectors together shows that there is an increasing trend during

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[1] Dev, M. S. and Jos, Mooji:, "Social sector expenditure in the 1990's :Analysis of central and state budgets" , *Economic and Political Weekly*.37(9), March 2, 2002.

seventies and eighties despite yearly fluctuations as analysed by Ahluwalia[2] and Chand[3]. From 1990-91 onwards even through there is some upward trend in total investment in agricultural sector, the share of public investment has fallen.

The private investment in Agriculture has been steadily increasing from Rs. 1963 to Rs. 4991 in 195-96 (at 1980-81 prices). The share of private investment in total some upward trend in total investment in agriculture cultural sector, theshare of public investment has fallen. The private investment in investment in agriculture, which was 61 percent in 1980-81, increased to over 79 per cent during 1995-96.

Within this framework of public and private investment in agriculture, the relationship between agricultural development and public expenditure on agriculture can be analysed. The value of correlation coefficient between the composite index of agriculture turns out to be significant only for 1980-81 time period. Regression analysis shows that public expenditure explains 29.5 percent variation in the agriculture sector growth. However, in the later years when there is significant decline in share of public investment in agriculture, the linear relationship does not hold true.

The nature composition and direction of public expenditure on agriculture is also responsible for the relationship turning in significant. Since 1990's there has been a diversion of resources from investment to current expenditure. A large portion of public expenditure on agriculture went into current expenditure like food, and fertilizer subsidy, maintenance of existing projects and relatively lower allocation for irrigation and rural infrastructure, and creation of assets. This has lead to adverse consequences for output growth in agriculture.

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[2]   Ahluwalia, M.S., "Economic Performance of States in Post-Reform Period', Economic and Political Weekly, May 6. (2000),

[3]   Chand, R., "Emerging Crisis in Punjab Agriculture: Severity and Option for Future", Economic and Political Weekly, March 27. (1995).

Table 5.1 : Correlation between per capita public expenditure on agriculture and indicators of agriculture

	Expenditure 1980-81	Expenditure 1985-86	Expenditure 1990-91	Expenditure 1995-96	Expenditure 2000-01
Pc. F.P.	0.501	0.057	.551(*)	-0.016	-0.054
A.Y.	0.408	-0.244	0.265	-0.146	-0.075
Irr. In.	.548(*)	0.023	0.331	-0.195	-0.348
NF.E. (M)	.633(*)	-0.183	0.088	0.297	0.367
NF.E.(F)	-0.352	-0.374	-0.206	0.038	0.147
Com.Ind	.591(*)	0.025	0.472	-0.117	-0.114

**Correlation is significant at the 0.01 level , *Correlation is significant at the 0.05 level

Table 5.2 : Regression between per capita public expenditure on agriculture and indicators of agriculture

YEAR	ADJUSTED R SQUARE	t	REGRESSION EQUATION
1980-81	0.295	2.53	Y= -1.466 +0.177(x)
Y= Composite index (Agriculture) , X= Public expenditure on Agriculture			
1980-81	0.242	2.27	Y= 2.15 +0.322(x)
Y= Irrigation intensity , X= Public expenditure on Agriculture			

Infrastructure

The relationship between rural infrastructure and public investment on infrastructure as analysed using correlation coefficient and regression analysis shows that during 1980-81, 1995-96 there was a positive significant correlation coefficient and the regression analysis with per capita expenditure as independent variable and composite index (infrastructure) as dependent variable it was found that expenditure explained 33.9, 62.6, 41.7 and 33.1 percent variation in composite index of infrastructure.

Among the indicators of rural infrastructure, percentage of persons living in poor houses, percentage of household with electricity and road connectivity shows a linear relationship with public expenditure.

Electricity and road connectivity fall entirely within the domain of public expenditure and hence there is a linear relationship. In year 2000-01

Table 5.3 : Correlation between per capita public expenditure on Infrastructure and indicators of infrastructure

	Expenditure 1980-81	Expenditure 1985-86	Expenditure 1990-91	Expenditure 1995-96	Expenditure 2000-01
P.H.	.653(*)	.807(**)	.566(*)	.614(*)	0.402
S.D.W.	0.329	.649(*)	-0.165	-0.017	0.054
T.F.	0.043	0.074	0.112	0.073	-0.118
H.E.	.707(**)	.768(**)	.543(*)	.687(**)	0.429
Rc 1	0.447	.750(**)	0.256	0.372	0.298
Rc 2	0.307	.536(*)	.603(*)	.777(**)	.651(*)
Com. Ind	.624(*)	.809(**)	0.508	.619(*)	0.402

**Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level

Table 5.4 : Regression between per capita public expenditure on Infrastructure and indicators of infrastructure

YEAR	ADJUSTED R SQUARE	t	REGRESSION EQUATION
1980-81	0.339	2.77	Y= -2.02 +0.076(x)
1985-86	0.626	4.77	Y= -1.74 +0.047(X)
1990-91	0.417	3.20	Y= -2.20 +0.082(x)
1995-96	0.331	2.72	Y= -1.93 +0.025 (x)
Y= Composite index (Infrastructure) , X= Public expenditure on Infrastructure			
1980-81	0.378	2.68	Y= 0.945 +0.926(x)
1985-86	0.621	4.72	Y= 8.94 +0.735(x)
1990-91	0.510	3.80	Y= -2.14 +1.40 (x)
1995-96	0.325	2.69	Y= 3.03 +0.426 (x)
Y=% vill with pucca houses, X= Public expenditure on infrastructure			
1980-81	0.459	3.466	Y= -13.31 +1.23 (x)
1985-86	0.555	4.14	Y= 0.180 +0.825(x)
1990-91	0.471	3.26	Y= 1.41 +1.71 (x)
1995-96	0.428	3.27	Y= -7.67 +0.711 (x)
Y= % household with electricity, X= Public expenditure on infrastructure			
1990-91	0.281	2.46	Y= 44.97 +1.25(x)
1995-96	0.571	4.28	Y= 40.03 +0.56 (x)
2000-01	0.376	2.97	Y= 58.32 +0.266(x)
Y= % vill connected by road (pop >1000 <1500), X= Public expenditure on infrastructure			

relationship between percentage of household with electricity and public expenditure on infrastructure does not show any relationship because many of the states like Punjab, Kerala, Tamil Nadu, Haryana have achieved 100 percent electrification and therefore, their expenditure growth trend has decelerated inspite of showing higher value of output. The other indicators of infrastructure like toilet facilities do not show any relationship with public expenditure. This is mainly because expenditure on toilet facilities installation is largely private.

Health

Active participation of state is very essential for effective working of the health care system. In India however, public health expenditure has been grossly inadequate right from the 1940s, when the Bhore committee report stated that per capita private expenditure on health was Rs. 2.50 compared to the state per capita health expenditure of just Rs.0.36. This trend has continued since then[4]. Added to the fact that there has been a steady. Decline in public sector investment, but in per capita terms it has witnessed modest increase. Table 5.5 shows correlation coefficients between expenditure on health and indicators of health. All positives significant relationship have be further put to regression analysis to determine the extent of linear relationship.

There exists a linear relationship between health expenditure and overall improvement in health. In 1980-81 expenditure on health explained 54.6 variation in composite index of health and this value has remained more or less same throughout the two decade period except

Table 5.5 : Correlation between per capita public expenditure on health and indicators of health.

	Expenditure 1980-81	Expenditure 1985-86	Expenditure 1990-91	Expenditure 1995-96	Expenditure 2000-01
I.M.R.	.737(**)	.606(*)	.617(*)	.668(**)	0.531
F.L.Ex.	.788(**)	.599(*)	.826(**)	.800(**)	.568(*)

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[4] Chatterjee, Meera.,Implementing health policies, Manohar publishers, New Delhi, 1988.

S.R.	0.2	0.108	0.324	0.271	0.248
T.F.R.	.563(*)	0.509	.620(*)	.696(**)	0.524
COM. IND	.762(**)	.577(*)	.717(**)	.736(**)	.622(*)

**Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level

Table 5.6 : Regression between per capita public expenditure on health and indicators of health

YEAR	ADJUSTED R SQUARE	t	REGRESSION EQUATION
1980-81	0.546	4.082	Y= -2.85 +0.57 (x)
1985-86	0.277	2.44	Y= -2.15 +0.31 (X)
1990-91	0.513	3.83	Y= -2.74 +0.55 (x)
1995-96	0.503	3.76	Y= -2.84 0.04 (x)
2000-01	0.335	2.75	Y= -2.29 +0.028 (x)
Y= Composite index (Health) , X= Public expenditure on health			
1980-81	0.505	3.77	Y= -193.10 +1.65(x) .
1985-86	0.314	2.63	Y= -164.0 +1.0(x)
1990-91	0.312	2.62	Y= -140.2 +1.15 (x)
1995-96	0.40	3.10	Y= -128.79 +0.817 (x)
Y= Infant mortality rate, X= Public expenditure on health			
1980-81	0.590	4.43	Y= 44.86 +0.316 (x)
1985-86	0.305	2.59	Y= 48.86 +0.179(x)
1990-91	0.572	4.28	Y= 45.58 +0.309 (x)
1995-96	0.610	4.62	Y= 47.00 +0.228 (x)
2000-01	0.267	2.39	Y= 54.14 0.131(x)
Y= Female life expectancy, X= Public expenditure on health			
1980-81	0.259	2.35	Y= -5.63 +0.038x)
1985-86	0.314	.263	Y= -4.72 +0.034 (x)
1995-96	0.441	3.35	Y= -4.92 +0.031(x)
Y= Total fertility rate, X= Public expenditure on health			

2001-01 when there has been a decline. Public expenditure constitute only 10-15% of total expenditure on health but still shows a linear relationship. This is because the nature and direction of public expenditure, which is directed towards basic health care, plays a significant role in rural areas in prevention of child mortality through free immunization programmes, checks

maternal mortality through trained delivery facilities at PHCs, distribution of iron tablets, free medical check-ups, and nutritional support.

Decline in total fertility rate is affected through family welfare programmes, which has been made a separate head for public expenditure. Sex ratio is an important demographic indicator, but it does not show any empirical relationship with public expenditure on health. The value of correlation coefficient is not significant for any selected time period. As for infant mortality rate and female life expectancy they are closely related to the public expenditure on health. Close to 50 percent variation there in is explained by public expenditure.

Education

Education is an investment that yields returns for an individual and for society at large. It increases economic output and raises productivity levels. It is a means of raising earnings and reducing poverty. The social returns of education are also considerable. It alters perceptions, attitudes and behaviour[5]. Given the benefits that education and its importance in the development process, it becomes important to assess its relationship with the driving form i.e. public expenditure on education.

Table 5.7 lists the correlation results between the expenditure on education and indicators of educational development. The table shows that correlation between expenditure (1877-79) and various indicators of education development is significant. This trend continues for the next five years, but after that since mid eighties the relationship between

Table 5.7 : Correlation between per capita public expenditure on education and indicators of education development

	Expenditure 1980-81	Expenditure 1985-86	Expenditure 1990-91	Expenditure 1995-96	Expenditure 2000-01
N.E.R. 1	.850(**)	.739(**)	0.444	0.361	.607(*)
P.R. 1	.629(*)	.683(**)	0.473	0.092	0.248
N.E.R. 2	.822(**)	.631(*)	0.337	0.278	.541(*)

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[5] Dreze, Jean. And Sen, Amartya.,"India economic development and social opportunity, Oxford university press, N. Delhi, 1995.

P.R. 2	.781(**)	.660(*)	0.471	0.184	0.273
F.D.R.	.717(**)	0.473	0.188	0.181	0.355
A.D.R.	.854(**)	.662(**)	0.399	0.193	0.42
COM.IND	.847(**)	.687(**)	0.414	0.237	0.486

**Correlation is significant aT the 0.01 level ,*Correlation is significant at the 0.05 level

Table 5.8 : Regression between per capita public expenditure on education and indicators of education development

YEAR	ADJUSTED R SQUARE	t	REGRESSION EQUATION
1980-81	0.694	5.519	Y= -2.166 +0.045 (x)
1985-86	0.428	3.27	Y= -2.18 +0.057 (X)
Y= Composite index (education) , X= Public expenditure on education			
1980-81	0.70	5.59	Y= 12.16 +0.733 (x)
1985-86	0.509	3.80	Y= 12.07 +1.035 (x)
2000-01	0.316	2.64	Y= 23.58 +0.69 (x)
Y= Net enrolement ratio (class1-5) , X= Public expenditure on education			
1980-81	0.649	5.00	Y= 18.60 +0.573(x)
1985-86	0.348	2.81	Y= 27.36 +0.692 (x)
2000-01	0.234	2.22	Y= 51.07 +0.521 (x)
Y= Net enrolement ratio (class 6-8) , X= Public expenditure on education			
1980-81	0.345	2.80	Y= 39.95 +0.614 (x)
1985-86	0.422	3.24	Y= 37.80 +0.951 (x)
Y= Girls/Boys participation ratio (age 6-11) , X= Public expenditure on education			
1980-81	0.577	4.32	Y= 16.41 +0.769 (x)
1985-86	0.388	3.04	Y= 19.21 +1.07 (x)
Y= Girls/Boys participation ratio (age 12-14), X= Public expenditure on education			
1980-81	0.473	3.56	Y= -104.53 +0.66 (x)
Y= Female dropout ratio , X= Public expenditure on education			
1980-81	0.707	5.69	Y= 17.29 +0.599 (x)
1985-86	.391	3.05	Y= 22.42 +0.75(x)
Y= Adult literacy rate , X= Public expenditure on education			

educational expenditure and educational development is not significant. Regression analysis with public expenditure on education is independent variable and composite index (education) as dependent variable during 1980-81 shows that expenditure explained 63.4 % of variation in education development which declined to 42.8% during 1885-86. Since then there is no linear relationship. This can be explained by the fact that states like, Tamil Nadu, Maharashtra and more specifically higher levels in various indicators of educational development did not increase educational expenditure at the same rate as some laggard states. Hence there crept in a mismatch between high value of indicator and low expenditure making the relationship in significant.

Of all the indicators of education, Net enrolment ratio appears most sensitive to public expenditure as it reappear with significant relationship during 2000-01, which other indicators fail to show linear relationship.

Rural Development

Rural development, a cumulative factor of all the four related sectors education, health, agriculture and infrastructure shows a positive significant relationship with a positive significant relationship with per capita total development expenditure, for all time periods except 1985-86. (Table 5.9). The regression analysis done for significant correlation value shows that since 1990-91 the percentage variation on composite index of rural development as explained by per capita public expenditure has been gradually increasing from 25.1 percent in 1990-91 to 46.6 percent in 1995-96 to 54.7 percentage in 2000-01(Table 5.10).

This trend of close linear relation between rural development and per capita public expenditure brings out the point that role of public investment has been very significant in bringing about past development in the rural areas and is going to play a more significant role in future because private investments in rural areas is not forthcoming and public investment will largely effect development. Still there is a question of mismatch between expenditure and its real utilization for translation in development process.

Table 5.9 : Correlation between per capita developmental expenditure
and composite index rural development

	T.Dev.Exp 1980-81	T.Dev.Exp 1985-86	T.Dev.Exp 1990-91	T.Dev.Exp 1995-96	T.Dev.Exp 2000-01
comp. rural dev	.652(*)	0.085	.556(*)	.712(**)	.750(**)

Table 5.10: Regression between per capita developmental expenditure
and composite index of rural development

YEAR	ADJUSTED R SQUARE	t	REGRESSION EQUATION
1980-81	0.377	2.975	Y= -2.76 + 0.0067 (X)
1985-86	—	—	—
1990-91	0.251	2.317	Y= -2.12 + 0.0028 (X)
1995-96	0.466	3.51	Y= -3.21 + 0.0039 (X)
2000-01	0.527	3.93	Y= -3.05 + 0.0031 (X)
Y= Composite index rural development , X= Total developmental expenditure			

Conclusions

Empirical examination of the relationship between Public expenditure and Rural development done for each subheads of rural development separately and as rural development cumulatively presents us with the following facts

- There is a direct linear relationship between public expenditure and developments in infrastructure, health, education and rural development cumulatively.

- Linear relationship between agricultural development and public expenditure cn agriculture does not hold true. It was significant only during early part of 1980's.

- As for infrastructural developments the relationship is positive and significant for all time periods except 2000-01. Among the indicator of rural infrastructure, percentage of persons living in pucca houses, percentage of household with electricity and road connectivity show linear positive significant relationship with public expenditure.

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- Rural health and public expenditure on health show positive significant relationship for all time periods. Except for sex ratio all other indicators move along with expenditure trends.

- Educational development and public expenditure on education show significant positive relationship till 1985-86. Since then the linear relationship does not hold there. Among the indicators of education, net enrolment ratio is most sensitive to independent variable of public expenditure.

As for overall rural development and its relationship with per capita developmental expenditure is concerned, the correlation and regression analysis show that there is a positive significant relationship between the two and the percentage of variation explained by the independent variable is on an increasing trend.

CHAPTER SIX

A SUMMARY OF CONCLUSIONS

A SUMMARY OF CONCLUSIONS

The present empirical analysis has been done in the light of the questions raised in the first chapter. The conclusions drawn from the study after analysing the process of rural development across major Indian states for the last two decades presents us with the fact that for most of the indicators, majority of the states are at lower level. The inter-state disparity measured through coefficient of variation presents a declining trend.

Agricultural development which is the bedrock of rural development process has witnessed a very modest growth during 1990's. Punjab and Haryana are far ahead of other states in all the indicators of agricultural development. Except for per capita foodgrain production, the inter state disparites are either showing a declining trend or is stagnant.

Levels and disparities trend for infrastructural development suggests that on an average there has been substantial improvement among all indicators except the availability of toilet facilities. The coefficient of variation is also showing a declining trend. Apart for Punjab and Haryana, Kerala also has one of best rural infrastructure facilities among major Indian states.

Among the health indicators Kerala is the only state with indicators value, which is comparable to many developed countries. Infant mortality rate and Total fertility is very high in majority of states. Inter-state variation is showing a declining trend in female life expectancy, while in TFR there is an increasing trend.

Indicators of education suggest that the level of educational development in rural India is not satisfactory. Low level is coupled by high interstate variation. Over the past two decade there has been improvement in the enrolment and literacy levels, but female dropout is still high especially in the middle school level. Inter state disparity is declining for enrolment ratio, adult literacy rate and participation ratio. There is a steep increase in inter state disparity in case of female dropout ratio.

Analysis of the composite index prepared for agriculture, infrastructure, health, education and rural development cumulatively suggest that Over the period of two decades most of the states like Bihar and Uttar Pradesh have got stuck in the vicious cycle of underdevelopment. The advantage of early

start is enjoyed by Kerala, and Punjab, which continue to lead in the overall rural development. In the composite index of agriculture Punjab and Haryana are the leading states. In the composite index of infrastructure Punjab, Kerala and Haryana are the three leading states. In the composite index of health Kerala, Tamilnadu and Punjab perform better than the other states. Kerala is the leading state in case of educational development. The gap between Kerala and next state is very high. Kerala and Punjab thus emerge as the best performing states in the context of overall rural development

From analysis of the trend of public expenditure we can conclude that there has been a definite increase in the quantum of expenditure in all the sectors. This increase is however, quite variable across both states and sectors depending upon the priorities of the state and resource capacity to fulfill the demands of priorities.

Developmental expenditure as percentage of total expenditure is declining and this decline has been sharp during 1990's. High income states accounts for most of the decline. In per capita terms development expenditure has almost doubled in last two decades. However, the differences between rich and poor states is very wide, Kerala has the highest per capita development expenditure. Bihar is the only state which registered a negative growth during 1990's. Expenditure trend as percentage of state domestic product shows that high income states have low percentage of development expenditure to SDP while low income states have high percentage of development expenditure of SDP.

Public expenditure on agriculture as percentage of total expenditure has registered 2½ fold decline in the last two decades. All states except Kerala has shown negative growth. In per capita terms there has been only a marginal increase. Among the low and middle states Madhya Pradesh and Orissa, in recent year are making comparable expenditure to that of some agriculturally rich states. There is high inter-state variation in per capita public expenditure on agriculture, which is on an increasing trend.

Public expenditure on infrastructure as percentage of total expenditure show a modest increase over the study period. State-wise break up show that in high income states there has been a consistent decline in

the expenditure on infrastructure. In per capita terns there has been slow growth in the expenditure trend. Interstate disparity is high, which is further increasing.

Public expenditure on health as percentage of total expenditure has declined over the last two decades. High income states have lowest spending on health as percentage of total expenditure. In per capita terms there is an increasing trend, which is more rapid during 1990's. When public expenditure is expressed as percentage of state domestic product, some of poorest states are the highest spending states. Interstate disparity has remained close to 25 percent without any major shifts.

The trend of Public expenditure on education as percentage of total expenditure shows that with a constant decline, expenditure has been reduced to half of what it was in late 1970's. Higher allocation on education made by states like Kerala, Tamil Nadu and Maharashtra during late 70's and early 80's have shown results as reflected in the indicators of educational development. In per capita terns the increase has been only to accommodate increasing population size.

Empirical examination of the relationship between Public expenditure and Rural development done for each subheads of rural development separately and as rural development cumulatively provide with insight that there is a direct linear relationship between public expenditure and developments in infrastructure, health, education and rural development cumulatively.

Linear relationship between agricultural development and public expenditure on agriculture does not hold true. It was significant only during early part of 1980's. As for infrastructural developments the relationship is positive and significant for all time periods except 2000-01. Among the indicator of rural infrastructure, percentage of persons living in pucca houses, percentage of household with electricity and road connectivity show linear positive significant relationship with public expenditure.

Rural health and public expenditure on health show positive significant relationship for all time periods. Except for sex-ratio all other indicators move along with expenditure trends.

Educational development and public expenditure on education show significant positive relationship till 1985-86. Since then the linear relationship does not hold there. Among the indicators of education, net enrolment ratio is most sensitive to independent variable of public expenditure. As for overall rural development and its relationship with per capita developmental expenditure is concerned, the correlation and regression analysis show that there is a positive significant relationship between the two and the percentage of variation explained by the independent variable is on an increasing trend.

Policy implications

The patterns of rural development that has evolved from this study suggests that there is no uniformity in the development trends of different states. Even within states different indicators are at different levels. Punjab has emerged as a leading state in the overall rural development but its position in few of the indicators of health is not satisfactory. Kerala tops the list of state in rural development. This has been largely because of its performance in health and education, which far exceeds that of other states. But a lot is still desired in the economic front. Bihar and Uttar Pradesh present an entirely different story. Here under development is even, across most of the indicators. Thus suggesting a development strategy for all the states together is neither feasible nor desired. Development strategy for a state therefore has to be very specific for the balanced development.

The positive significant linear relationship between rural development and per capita public expenditure on development bring out the fact that the role of public investment has been very significant in bringing about past development in rural areas. Public expenditure on health and infrastructure seems to be most rewarding. Therefore any incremental public investment in these sectors will be rewarding. Expenditure on education has failed to show any development in education. This may be due to implementation lacunae. Public expenditure on agriculture is very small compared to total expenditure on agriculture. Stepping up allocation for agriculture can lead to positive growth in this sector and thereby a linear relationship can be developed.

In order to strengthen the relationship and cut down upon wasteful expenditure, a decentralised model of Rural Development is in vogue today. Panchayati Raj institution is being empowered to carry out the developmental activities. Direct allocation of funds to these institutions is also being contemplated. The effectiveness of the working of this institution for rural upliftment has been limited till date because neither of the three, Funds, Functions and Functionaries have been made available to the Panchayat bodies. However, with more decentralisation and powers devolved to Panchayati Raj institutions to raise resources and make expenditure on developmental activities, rural development can see a new dawn.

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APPENDICES

Table A.1 : CORRELATION MATRIX OF THE INDICATORS OF RURAL DEVELOPMENT

INDICATORS	I.M.R.	F.L.Ex.	S.R.	T.F.R.	N.E.R.1	P.R.1	N.E.R.2	P.R.2	F.D.R	A.L.R.	Pc.F.P.
I.M.R.	1	-.935(**)	-0.385	.571(*)	-.723(**)	-.662(**)	-.673(**)	-.716(**)	.654(*)	-.744(**)	0.066
F.L.Ex.	-.935(**)	1	0.232	-.623(*)	.847(**)	.751(**)	.807(**)	.828(**)	-.768(**)	.833(**)	0.102
S.R.	-0.385	0.232	1	-0.137	0.454	0.429	0.235	0.433	-0.232	0.454	-.686(**)
T.F.R.	.571(*)	-.623(*)	-0.137	1	-.607(*)	-.729(**)	-0.459	-.678(**)	0.45	-.658(*)	0.005
N.E.R.1	-.723(**)	.847(**)	0.454	-.607(*)	1	.868(**)	.886(**)	.931(**)	-.790(**)	.953(**)	-0.029
P.R.1	-.662(**)	.751(**)	0.429	-.729(**)	.868(**)	1	.642(*)	.960(**)	-0.489	.824(**)	-0.008
N.E.R.2	-.673(**)	.807(**)	0.235	-0.459	.886(**)	.642(*)	1	.795(**)	-.879(**)	.912(**)	0.011
P.R.2	-.716(**)	.828(**)	0.433	-.678(**)	.931(**)	.960(**)	.795(**)	1	-.657(*)	.907(**)	-0.027
F.D.R	.654(*)	-.768(**)	-0.232	0.45	-.790(**)	-0.489	-.879(**)	-.657(*)	1	-.793(**)	-0.049
A.L.R	-.744(**)	.833(**)	0.454	-.658(*)	.953(**)	.824(**)	.912(**)	.907(**)	-.793(**)	1	-0.203
Pc.F.P.	0.066	0.102	-.686(**)	0.005	-0.029	-0.008	0.011	-0.027	-0.049	-0.203	1
A.Y.	-0.334	0.505	-0.384	-0.164	0.442	0.379	0.521	0.414	-0.464	0.326	.720(**)
Irr.In.	-0.266	0.363	-0.285	-0.219	0.292	0.29	0.209	0.182	-0.05	0.193	0.401
NF.E.(M)	-0.241	0.306	-0.199	-0.21	0.246	0.248	0.151	0.13	0.016	0.18	0.231
NF.E.(F)	-0.103	0.161	0.359	0.074	0.302	0.167	0.313	0.307	-0.328	0.361	-0.44
P.H.	-0.347	.536(*)	-0.292	0.015	0.39	0.137	0.488	0.297	-0.518	0.29	0.469
S.D.W	-0.118	0.215	-.618(*)	-0.106	0.039	0.154	0.164	0.136	-0.072	0.009	.636(*)
T.F.	-.588(*)	.624(*)	.568(*)	-0.257	.691(**)	0.451	.787(**)	.652(*)	-.776(**)	.749(**)	-0.397
H.E.	-0.399	.616(*)	-0.27	-0.29	.580(*)	0.514	0.509	.533(*)	-0.462	0.451	.660(*)
Rc.1	-0.469	.655(*)	0.038	-0.382	.750(**)	0.527	.758(**)	.630(*)	-.839(**)	.680(**)	0.292
Rc.1	-0.002	0.289	-0.254	-0.246	0.506	0.275	.573(*)	0.351	-0.428	0.457	0.229

Table A.1 : CORRELATION MATRIX OF THE INDICATORS OF RURAL DEVELOPMENT

INDICATORS	A.Y.	Irr.In.	NF.E.(M)	NF.E.(F)	P.H.	S.D.W	T.F.	H.E.	Rc.1	Rc.2
I.M.R.	-0.334	-0.236	-0.241	-0.103	-0.347	-0.118	-.588(*)	-0.399	-0.469	-0.002
F.L.Ex.	0.505	0.363	0.306	0.161	.536(*)	0.215	.624(*)	.616(*)	.655(*)	0.289
S.R.	-0.384	-0.285	-0.199	0.359	-0.292	-.618(*)	.568(*)	-0.27	0.038	-0.254
T.F.R.	-0.164	-0.219	-0.21	0.074	0.015	-0.106	-0.257	-0.29	-0.382	-0.246
N.E.R.1	0.442	0.292	0.246	0.302	0.39	0.039	.691(**)	.580(*)	.750(**)	0.506
P.R.1	0.379	0.29	0.248	0.167	0.137	0.154	0.451	0.514	0.527	0.275
N.E.R.2	0.521	0.209	0.151	0.313	0.488	0.164	.787(**)	0.509	.758(**)	.573(*)
P.R.2	0.414	0.182	0.13	0.307	0.297	0.136	.652(*)	.533(*)	.630(*)	0.351
F.D.R	-0.464	-0.05	0.016	-0.328	-0.518	-0.072	-.776(**)	-0.462	-.839(**)	-0.428
A.L.R	0.326	0.193	0.18	0.361	0.29	0.009	.749(**)	0.451	.680(**)	0.457
Pc.F.P.	.720(**)	0.401	0.231	-0.44	0.469	.636(*)	-0.397	.660(*)	0.292	0.229
A.Y.	1	0.408	0.227	-0.098	.556(*)	.818(**)	0.056	.781(**)	.733(**)	0.472
Irr.In.	0.408	1	.979(**)	-0.345	0.326	0.326	-0.257	0.524	0.141	0.326
NF.E.(M)	0.227	.979(**)	1	-0.315	0.215	0.173	-0.25	0.39	0.015	0.266
NF.E.(F)	-0.098	-0.345	-0.315	1	0.226	-0.122	.547(*)	0.035	0.223	0.167
P.H.	.556(*)	0.326	0.215	0.226	1	0.338	0.304	.688(**)	.577(*)	0.449
S.D.W	.818(**)	0.326	0.173	-0.122	0.338	1	-0.259	0.498	0.364	0.228
T.F.	0.056	-0.257	-0.25	.547(*)	0.304	-0.259	1	0.054	0.477	0.227
H.E.	.781(**)	0.524	0.39	0.035	.688(**)	0.498	0.054	1	.688(**)	0.505
Rc.1	.733(**)	0.141	0.015	0.223	.577(*)	0.364	0.477	.688(**)	1	.618(*)
Rc.1	0.472	0.326	0.266	0.167	0.449	0.228	0.227	0.505	.618(*)	1

Table A.2 : STATEWISE RANKING OF RURAL DEVELOPMENT

1980-81						
RANKS	STATES	HEALTH f1	EDU f1	AGRI f1	INFRA. f1	C.I.
1	Kerala	2.462	2.691	-0.820	1.218	2.078
2	Punjab	0.494	0.791	2.487	2.063	1.575
3	Maharashtra	0.730	0.436	1.820	-0.163	0.658
4	Tamilnadu	0.555	0.586	0.081	0.713	0.652
5	Haryana	-0.107	-0.151	1.235	1.117	0.495
6	Gujarat	-0.552	0.340	-1.172	0.793	0.005
7	West Bengal	0.606	0.036	-0.484	-0.476	-0.031
8	Karnataka	0.890	-0.154	-0.353	-0.749	-0.075
9	Andhra Pradesh	0.146	-0.476	-0.202	-0.999	-0.500
10	Orissa	-0.644	-0.333	-0.612	-0.836	-0.726
11	Rajasthan	-0.465	-1.277	-0.833	-0.312	-0.875
12	Uttar Pradesh	-1.535	-0.982	-0.177	-0.281	-1.000
13	Bihar	-0.924	-1.161	0.009	-0.983	-1.067
14	Madhya Pradesh	-1.096	-0.913	-0.651	-1.105	-1.188

Table A.3 : STATEWISE RANKING OF RURAL DEVELOPMENT

1985-86						
RANKS	STATES	HEALTH f1	EDU f1	AGRI f1	INFRA. f1	C.I.
1	Kerala	2.546	2.416	-0.864	1.089	2.160
2	Punjab	0.372	0.773	2.856	2.410	1.621
3	Tamilnadu	0.643	0.652	-0.010	0.537	0.682
4	Haryana	-0.064	0.110	1.646	0.639	0.436
5	Maharashtra	0.661	0.474	-0.840	0.015	0.339
6	Gujarat	-0.483	0.267	-0.878	0.752	0.114
7	Karnataka	0.630	-0.109	-0.335	-0.439	-0.013
8	West Bengal	0.529	-0.042	-0.027	-0.784	-0.111
9	Andhra Pradesh	0.211	-0.573	-0.329	-0.940	-0.525
10	Rajasthan	-0.184	-1.426	-0.452	0.033	-0.671
11	Orissa	-0.385	-0.420	-0.680	-1.090	-0.764
12	Madhya Pradesh	-0.934	-0.869	-0.353	-0.814	-1.002
13	Uttar Pradesh	-1.638	-0.970	0.678	-0.382	-1.021
14	Bihar	-1.064	-1.270	0.001	-1.027	-1.246

Table A.4 : STATEWISE RANKING OF RURAL DEVELOPMENT

1990-91						
RANKS	STATES	HEALTH f1	EDU f1	AGRI f1	INFRA. f1	C.I.
1	Kerala	2.677	2.221	-0.858	1.534	2.170
2	Punjab	0.226	0.676	2.905	1.917	1.284
3	Haryana	0.224	0.424	1.451	1.062	0.748
4	Tamilnadu	0.723	0.716	0.251	0.377	0.665
5	Maharashtra	0.652	0.547	-0.759	0.148	0.399
6	Gujarat	-0.210	0.114	-0.272	0.833	0.238
7	Karnataka	0.401	0.087	-0.567	-0.323	-0.002
8	West Bengal	0.413	0.010	0.144	-0.700	-0.088
9	Andhra Pradesh	0.191	-0.649	-0.133	-0.622	-0.406
10	Orissa	-0.419	-0.571	-0.659	-0.957	-0.750
11	Rajasthan	-0.572	-1.484	0.508	-0.370	-0.819
12	Madhya Pradesh	-1.110	-0.703	-0.673	-0.856	-0.996
13	Uttar Pradesh	-1.395	-1.099	0.653	-0.766	-1.076
14	Bihar	-1.090	-1.350	-0.579	-1.277	-1.367

Table A.5 : STATEWISE RANKING OF RURAL DEVELOPMENT

RANKS	STATES	HEALTH f1	EDU f1	AGRI f1	INFRA. f1	C.I.
		1995-96				
1	Kerala	2.788	2.064	-1.389	1.535	2.327
2	Punjab	0.221	0.599	3.075	1.805	0.983
3	Tamilnadu	0.739	0.878	0.092	0.353	0.741
4	Haryana	-0.077	0.477	1.553	1.223	0.609
5	Maharashtra	0.471	0.634	-0.644	0.035	0.431
6	Gujarat	-0.149	-0.075	-0.425	0.820	0.204
7	Karnataka	0.577	0.164	-0.379	-0.222	0.200
8	West Bengal	0.078	-0.037	-0.208	-0.845	-0.269
9	Andhra Pradesh	0.301	-0.478	0.000	-0.585	-0.270
10	Orissa	-0.332	-0.525	-0.357	-0.948	-0.644
11	Madhya Pradesh	-0.806	-0.564	-0.293	-0.923	-0.820
12	Rajasthan	-0.630	-1.490	-0.374	-0.214	-0.876
13	Uttar Pradesh	-1.582	-1.118	0.620	-0.770	-1.251
14	Bihar	-0.895	-1.590	-0.023	-1.263	-1.366

Table A.6 : STATEWISE RANKING OF RURAL DEVELOPMENT

RANKS	STATES	HEALTH f1	EDU f1	AGRI f1	INFRA. f1	C.I.
		2000-01				
1	Kerala	2.732	1.815	-0.338	1.513	2.028
2	Punjab	0.643	0.289	2.986	1.769	1.439
3	Haryana	-0.191	0.557	1.812	1.482	0.967
4	Tamilnadu	1.024	0.950	0.297	0.240	0.820
5	Maharashtra	0.355	0.593	-0.928	-0.009	0.179
6	Karnataka	0.621	0.158	-0.547	-0.136	0.127
7	Gujarat	-0.241	-0.273	-0.547	0.637	-0.043
8	Andhra Pradesh	0.096	-0.277	-0.053	-0.563	-0.268
9	West Bengal	0.033	-0.467	-0.179	-0.754	-0.445
10	Orissa	-0.508	-0.488	-0.731	-0.939	-0.787
11	Madhya Pradesh	-0.913	-0.302	-0.710	-0.932	-0.845
12	Uttar Pradesh	-1.037	-0.948	0.600	-0.776	-0.846
13	Rajasthan	-0.811	-1.278	-0.487	-0.269	-0.900
14	Bihar	-0.849	-1.859	-0.224	-1.262	-1.425

Table A.7 : DECADAL GROWTH RATE OF EXPENDITURE AS % OF TOTAL EXPENDITURE (1977-89)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	-2.06	-44.16	-22.58	-34.73	-16.54
Haryana	-4.74	-49.32	-36.15	-37.75	74.74
Maharashtra	9.62	-63.13	-22.03	-42.46	78.75
Gujarat	6.51	-57.89	-47.21	14.15	186.73
Karnataka	-4.10	-34.48	-38.50	-42.42	14.05
West Bengal	0.84	-26.11	-26.73	-26.21	13.59
Tamilnadu	-0.32	-40.37	-20.37	-58.90	60.22
Kerala	-11.02	-74.48	-26.33	-33.48	57.88
Andhra Pradesh	0.11	-38.07	-34.38	-49.80	12.92
Rajasthan	2.04	-64.42	-49.97	-48.07	101.21
Madhya Pradesh	0.24	-42.75	-32.47	-41.73	63.45
Uttar Pradesh	-1.57	-48.64	11.05	-61.99	35.27
Orissa	-0.18	-52.91	-23.25	-42.75	46.93
Bihar	0.27	-35.69	-31.33	-53.00	32.73
All States	-0.41	-49.88	-28.44	-42.74	40.01

Table A.8 : DECADAL GROWTH RATE OF EXPENDITURE AS % OF TOTAL EXPENDITURE (1987-99)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	-28.01	-23.77	-27.70	-66.43	-37.25
Haryana	-45.69	-41.95	-44.97	-52.55	-7.94
Maharashtra	-16.81	20.86	-29.48	-26.97	-1.19
Gujarat	-13.86	-6.69	0.82	-21.81	-10.37
Karnataka	-4.37	-44.89	-14.21	-13.19	34.77
West Bengal	-4.08	14.78	86.33	-45.13	42.05
Tamilnadu	-7.13	19.52	-46.32	-21.41	11.28
Kerala	-5.67	14.49	7.83	61.24	-44.70
Andhra Pradesh	-15.22	-9.44	-8.59	-30.88	-34.07
Rajasthan	-10.74	2.09	16.04	-2.34	5.04
Madhya Pradesh	-9.92	-21.63	-24.13	-38.21	-38.40
Uttar Pradesh	-10.72	-23.79	-2.93	-25.49	-7.30
Orissa	-16.56	13.15	-29.49	-15.22	-7.32
Bihar	-15.19	7.28	-0.02	-44.84	58.21
All States	-14.64	-6.91	10.15	-28.74	10.22

Table A.9 : DECADAL GROWTH RATE OF PER CAPITA EXPENDITURE UNDER VARIOUS HEADS (1977-89)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	94.61	10.96	53.83	29.69	65.83
Haryana	78.25	-5.17	19.46	16.48	226.96
Maharashtra	91.78	-35.49	36.41	0.66	212.71
Gujarat	136.94	-6.33	17.44	124.78	296.90
Karnataka	74.03	18.89	11.60	52.01	106.96
West Bengal	64.38	20.45	19.45	-7.73	85.17
Tamilnadu	100.91	-7.66	23.31	5.22	148.10
Kerala	48.64	-57.37	23.06	67.16	163.73
Andhra Pradesh	71.34	6.00	12.31	-14.09	93.27
Rajasthan	101.51	-29.74	-1.19	2.55	299.91
Madhya Pradesh	82.41	4.17	22.89	6.03	197.42
Uttar Pradesh	75.50	-8.43	97.99	-32.24	141.19
Orissa	76.23	-16.86	35.51	1.09	159.41
Bihar	94.60	24.80	33.26	-8.79	157.58
All States	84.93	-12.20	25.48	14.87	163.41

Table A.10 : DECADAL GROWTH RATE OF PER CAPITA EXPENDITURE UNDER VARIOUS HEADS (1987-99)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	12.55	19.18	13.04	-47.52	-1.89
Haryana	12.91	20.68	15.02	-1.35	91.40
Maharashtra	19.09	73.03	0.96	4.55	41.46
Gujarat	12.70	22.08	31.94	2.29	88.45
Karnataka	61.95	-6.67	46.86	1.05	128.22
West Bengal	32.54	14.95	30.06	1.16	40.95
Tamilnadu	47.32	77.04	12.57	-0.93	77.58
Kerala	80.26	49.09	41.11	39.58	4.77
Andhra Pradesh	14.84	22.68	23.83	-6.37	-10.69
Rajasthan	15.49	32.08	58.40	26.36	35.05
Madhya Pradesh	69.36	47.35	45.02	16.17	15.82
Uttar Pradesh	47.02	-8.47	67.37	26.63	21.35
Orissa	20.84	63.88	2.12	22.79	34.22
Bihar	-0.58	25.76	17.20	-35.34	85.46
All States	30.02	32.51	36.87	-0.03	45.13

Table A.11 : DECADAL GROWTH RATE OF EXPENDITURE AS RATIO OF SDP
(1977-89)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	25.12	-28.66	-22.58	-16.62	2.38
Haryana	12.53	-40.13	-36.15	-26.46	17.05
Maharashtra	25.55	-57.77	-22.03	-34.10	30.04
Gujarat	56.06	-38.31	-47.21	-19.11	73.00
Karnataka	15.06	-21.39	-38.50	-30.92	-8.47
West Bengal	24.73	-8.60	-26.73	-37.44	4.49
Tamilnadu	20.80	-44.48	-20.37	-61.73	0.89
Kerala	6.74	-69.39	-26.33	-20.20	18.14
Andhra Pradesh	4.37	-35.43	-34.38	-47.67	-14.23
Rajasthan	17.51	-59.02	-49.97	-40.20	39.11
Madhya Pradesh	22.36	-30.12	-32.47	-28.88	28.04
Uttar Pradesh	24.95	-34.80	11.05	-51.75	55.10
Orissa	50.52	-28.99	-23.25	-13.66	55.89
Bihar	34.73	-13.59	-31.33	-36.85	23.14
All States	24.06	-39.37	-13.44	-34.67	21.68

Table A.12 : DECADAL GROWTH RATE OF EXPENDITURE AS RATIO OF SDP
(1987-99)

States	DEVELOPMENT	EDUCATION	HEALTH	AGRICULTURE	INFRASTRUCTURE
Punjab	-14.27	-9.22	-13.89	-60.02	-19.23
Haryana	-16.19	-10.42	-15.08	-26.77	16.96
Maharashtra	-20.35	15.72	-32.48	-30.07	-17.43
Gujarat	-22.06	-15.58	-8.78	-29.26	-15.64
Karnataka	15.82	-33.26	3.89	5.14	28.85
West Bengal	-23.67	-8.66	48.29	-36.30	86.27
Tamilnadu	-29.53	18.03	-46.99	-22.38	-17.00
Kerala	11.80	-7.53	-12.91	30.22	15.79
Andhra Pradesh	-11.01	-4.93	-4.04	-27.44	-16.97
Rajasthan	-12.69	-0.14	13.50	-4.47	-14.26
Madhya Pradesh	9.98	25.87	21.86	-0.77	7.95
Uttar Pradesh	-7.91	-21.39	0.12	-23.15	-2.18
Orissa	17.40	59.21	-0.79	19.29	16.03
Bihar	10.21	39.40	29.92	-28.32	69.23
All States	-2.05	-0.82	-4.27	-24.06	13.09