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Poverty in Remote Rural Areas in India: A Review of Evidence and Issues

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Abstract

An analysis of the regional pattern of poverty in India allows us to identify a number of spatial poverty traps. These are characterized by low levels of geographical capital and social-political marginalization. Prima facie, these include vast tracts of dryland regions in the western-southern regions and forest based economies in the central-eastern regions. While the main constraints faced by the former emanate from the regions' weak agro-climatic conditions, the problems faced by the poor in the forest based regions originate from a complex mix of factors, including physical isolation, low social capabilities and a failure of entitlements to the region's rich natural resources. Apparently these two sets of regions face different kinds of poverty conditions and follow different strategies to cope with that.

Ironically the poverty situation, as reflected in the official statistics, depicts a rather contrary scenario with dryland regions having lower incidence of poverty despite their adverse agro-climatic conditions vis-à-vis the forest based regions. To a large extent this could be due to the relatively more diverse and developed market economies, out-migration as an important livelihood strategy and the fovourable agrarian conditions with better rights over land and other natural resources. Apparently, all these factors are missing the forest based economies, and the socio-political isolation of the people, especially the tribals, makes the situation worse. Understanding these dynamics is very important for formulating a long-term strategy for the amelioration of poverty, especially the chronic poverty, in these regions.

The present paper attempts to look into the dynamics of poverty, especially chronic poverty in the light of the existing analyses as well as evidence from various parts of remote rural areas in India. This is based mainly on a review of the existing literature encompassing wide-ranging themes as well as issues on the theme. The paper also provides a fresh evidence on the correlates of poverty in terms of income as well as human capabilities, and also on the interface between the two. The review of evidence and issues has been subsequently used for drawing policy implications for amelioration of poverty across dryland and forest based regions in India.

JEL Classification: **O13, O18, R11**

Keywords : ***Poverty; Remote rural areas***

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Poverty in Remote Rural Areas in India: A Review of Evidence and Issues

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1. The Context

While as large as three fourth of India's poor live in rural areas, yet poverty is concentrated in certain geographical regions. For instance, by 1993-94 about 50 per cent of the rural poor were concentrated in the four most populated states viz; Bihar, Uttar Pradesh, Maharashtra, and Madhya Pradesh (Chaudhri, 2000). However, if one looks at the incidence of poverty at regional level, one finds a more diverse picture with some of the regions in Assam, Orissa, Tamil Nadu, West Bengal, and Rajasthan having more than 40 per cent of the rural population living under poverty conditions (NIRD, 2000). This suggests that apart from population size *per se*, rural poverty is characterized by certain deep-rooted processes, superimposed on the relatively weak endowment and/or access to natural resources in a large number of states and regions in the country. To a large extent, poverty, emanating from the deep-rooted factors or processes is likely to be chronic in terms of both-duration as well as severity.

The phenomenon of spatially determined poverty traps has been recognized world over. For instance, a recent study covering a large number of developing countries notes that majority of rural poor are located in difficult areas defined as areas with: low potential agriculture, fragile ecology, week infrastructure, poor connectivity, and weekly functioning of markets (Farrington and Gill, 2002). To a large extent, these difficult areas are constituted by hilly or mountain regions. According an estimate, nearly one quarter of Asia's poor live in mountain areas. They are rain-fed farmers, forest dwellers, highlanders, and indigenous people (UNDP, 1997; in IFAD, 2002). Similarly, it is estimated that a large proportion (i.e. nearly 60 per cent) of the world's population lives in marginal lands a large proportion of which is prone to frequent shocks of droughts. Hence, about half of the two million people living in dry land regions are likely to be poor (Dobie, Philip, 2001; UNDP, 2001). Together these evidences suggest spatially concentrated pattern of poverty world over, and the critical importance of mobility in the process of economic growth therein.

Given the specific significance of some of the spatial features of poverty, the Government of India right from the early stage of planning, had adopted an area-based approach to facilitate economic development in some of the 'difficult' areas as noted above. This was manifested through explicit recognition of certain 'backward regions' in the First Five Year Plan (Government of India, 1981). Essentially, the idea was to identify certain areas particularly, rural areas, which suffer from specific disadvantage/s such that 'they hamper the capacity of the people living over there to realize the developmental potential of the region'. Recognising the importance of the area specific needs, the National Commission of Agriculture, in the early seventies, noted that " special programmes are necessary to create facilities and thereby promote balanced regional development. These areas should receive due consideration in allocation of resources for the development of the requisite infrastructures. In the cost benefit analysis for investments in these areas due regard should be paid to social returns"(Government of India, 1981).

Subsequently, a National Committee was set up to look into the problems of backward areas, which recommended six categories of regions for providing special developmental support. These were: desert areas, chronically drought affected, tribal areas, hilly areas, chronically flood affected, and coastal areas affected by salinity. While most of these areas, except for tribal regions, are characterized in terms of the natural resource endowment, it was envisaged that perpetual 'backwardness' in a region could be caused by certain social, economic, and political forces. Thus, the concept of backwardness was extended to incorporate aspects like presence of a feudal agrarian structure, lack of market and/or formal support system, absence of industrial development, and socially marginalized communities (community based characteristics). Subsequently, a number of special schemes were designed and implemented over the past three decades so as to help people in these areas to overcome the spatial disadvantage and create a conducive environment for development of these 'backward' or disadvantaged regions. P*rima facie,* this may provide a policy backdrop, within which chronic poverty in India's remote rural areas could be examined.

1.1 Regional Disparities: Convergence Vs. Divergence

Over time a significant amount of efforts have gone into developing some of these disadvantaged areas especially, tribal and hilly regions. Unfortunately, it is

difficult to find the level of development in these regions as the Indian data set does not permit separate analysis of the six categories of regions noted above. Alternatively, if one looks at the analyses of regional disparity at state level, one may find some resemblance of convergence in economic growth at least till the late eighties (Dholakia, 1994). The more recent experience however, suggest a tendency of divergence and polarization (Nagraj, 2000; Bhalla, 2000b; Dasgupta, et. al, 2000). Together the evidences tend to suggest that basic investment made by state during the early phase of planning did help reducing the initial handicap of some of the lagging regions. Nevertheless, the momentum seems to have been lost as the economy started progressing on a higher growth path especially, in the post nineties.

To a large extent, divergence in economic growth could be attributed to availability of the two sets of infrastructure viz; irrigation and road plus railways, which played a critical role in determining the growth of agriculture and industrial sector respectively. What is however, crucial to note is that whereas the growth did exert a positive influence on poverty reduction in general, its impact on the specific backward regions or spatial poverty traps has been fairly limited. Hence, it appears that while the backward areas might have experienced some improvements in terms of indicators like literacy, life expectancy, agricultural productivity, transport and mobility etc., the impact does not seem to be robust enough to pull these areas out of poverty on a sustained basis.

Prima facie, two processes seem to have worked in this context: (i) Increased mobility as well as human capabilities may have reduced the incidence of poverty to some extent. And, (ii) increased agricultural productivity due to new crop technology and market development might have reduced severity of poverty especially, in the wake of the increased population pressure on land and water resources. But, poverty might have continued to be long duration among most of the people who failed to migrate out and/or who did not have entitlement to the basic factors of production except labour.

The above phenomenon seems to have been reflected in terms of certain stylized features of rural poverty in India (Mehta and Shah, 2002). For instance, incidence as well as severity of poverty is higher among tribal vis-à-vis non-tribal population. Similarly, a large part of the hilly areas, especially in the North-East regions, continues to have higher incidence of poverty (NIRD, 2000). On the other hand, some of the dry land regions in states like Haryana, Rajashtan,

Maharashtra, and Karnataka have very high incidence of rural poverty, despite the fact that all these states, except Rajasthan, are economically more developed in terms of growth in state domestic product (SDP).

The above observations reinstate the finding by Nagraj (2000) that the trend in poverty reduction is not systematically linked with the growth process. And that, a large part of the poverty reduction since the eighties could be attributed to the state's investment in public works and relief measures. These evidence, by and large, suggest that poverty, especially in the disadvantaged regions continue to exist because the basic features leading to 'backwardness' remain more or less unchanged. Against these, there is an increasing recognition of the fact that agricultural growth in some of the lagging regions can help reducing rural poverty (Shand and Bhide, 2000; Fan and Hazell, 2000; Radhakrishna, 2002). But, this mechanism does not seem to work universally as several other factors like agrarian structure, stability in food grain prices, and above all, incentives for developing land and water resources may determine the link between agricultural growth and poverty reduction at the state and regional levels.

One of the major factors weakening the link is lack of land ownership. This is clearly indicated by Gaiha, (1995) who notes that although rural poverty and agricultural income are inversely related the impact is stronger among land holding classes; for the landless price of food grains play a much more important role given the oligopsonistic labour markets. Given the fact that over 40 per cent of the rural households are landless or semi-landless (Shah, 1997; Reddy, N. 2002), and that the proportion is likely to increase along with rise in population, the positive impact of agricultural growth, witnessed since the eighties may not persist in future.

Moreover, vast tracts of dry land regions are highly susceptible to year-to-year fluctuations in agricultural production and thereby to the fluctuations in food grain prices. A substantial part of the rural households in these areas therefore, are likely to remain in poverty despite rapid agricultural growth (Gaiha and Deolalikar, 1993). Besides these, there are a large numbers of forest-based areas where agricultural growth may not exert substantial influence on the forest dependent communities. Exit from poverty among these rural households in dry land as well as forest based regions is possible only if agricultural growth is accompanied by other support systems like public works programmes (Sen, 1996), effective food

distribution system, and in certain cases opportunities for diversification of work force especially, in industrially developed states.

Thus it appears that the reality is fairly mixed and context specific. Whereas growth especially, in agricultural sector, has helped mitigating the adverse impact of population pressure, increased mobility along with the state's investment in public works programmes have also helped containing further increase in incidence of rural poverty especially, during the period of adverse agro-climatic conditions like droughts or floods. However, a number of rural areas seem to have been bypassed by both these processes owing to the various factors noted earlier. These, essentially, may constitute spatial poverty traps, where a large proportion of rural population is caught in severe, long duration, and multi-dimensional poverty because of a logjam of several constraints- natural, economic, market or administrative, social, and political (Bird, et.al, 2001).

1.2 Need for a Fresh Review: Scope of the Study

Unfortunately, there are no systematic studies on the processes of development and poverty reduction in the various categories of 'backward regions' or the spatial poverty traps described above. Understanding the dynamics of sustained poverty thus, becomes crucial so as to be able to help overcome the spatial disadvantages faced by some of the backward areas despite the explicit policy interventions to help improving the conditions in these regions over a long period of time. The present paper attempts to look into the dynamics of poverty, especially chronic poverty in the light of the existing analyses as well as evidence from various parts of remote rural areas in India.

The paper is based mainly on a review of the existing literature encompassing wide-ranging themes pertaining to poverty in remote rural areas in India. These include studies focusing on various categories of backward regions on the one hand, and those dealing with various aspects of poverty and the processes leading to that in these regions. Given the vastness as well as diversity (besides the large population of researchers working on the theme!), it is a herculean task to undertake an exhaustive review. For instance, there are a number of studies on regional aspects of development especially, at state level. Similarly, there are sector specific studies having an important bearing on poverty such as agriculture, industries, forest, mining, education, infrastructure etc. analyzing variations across the major states. Also, there is a vast body of literature on tribal

communities dealing with various aspects of their socio-economic conditions and changes therein over a period of time. Finally, a plethora of evaluation studies focus on the impact of various developmental schemes and interventions in some of the poorer states. What is however, missing in most of these studies is a specific focus on poverty, especially chronic poverty across typologies of backward areas or remote rural areas. To a large extent, this could be attributed to the fact that estimates of income poverty are not available for remote rural areas with spatial poverty traps. Hence, what is being attempted here is to look into a selective set of studies dealing with (a) extent of income poverty and human capabilities in the backward regions; and (b) explanation of income poverty and its interface with human capabilities.

1.3 Defining Remote Rural Areas with Respect to Chronic Poverty in India

Conceding the fact that agricultural growth has a significant impact on reduction of poverty in rural areas, identification of remoteness should focus primarily on the factors constraining agricultural growth. Problems with respect to accessing the primary sources of agricultural production viz; land, including forest, and water should therefore, form the core of RRAs with respect to chronic poverty in India (Chambers et. al; 1989). This, in fact, is quite in tune with the approach adopted by the Government of India while defining various types of backward regions. The official approach, as noted above, also goes beyond agronomic potential and natural capital by taking into consideration socio-political factors such as agrarian system, community based characteristics, administrative and market support, and sectoral diversification especially, industrial growth. Accordingly, the six-way classification suggested by the National Committee on Development of Backward Areas try to cover most of these aspects assuming that the socio-political aspects listed above would, by and large, overlap with the basic constraints in terms of natural capital. The categories of backward areas identified by the Committee include hilly areas, areas of tribal concentration, chronically flood affected areas, drought prone areas, coastal regions, and desert areas (Government of India, 1981).

By extending this approach further, we have tried to identify two broad categories of regions that face spatial disadvantages due to agronomic constraints and/or socio-political marginalisation. These areas refer to dry land and forest-based regions respectively (See Table 1). While the former may also cover desert areas, the latter would cover hilly and tribal regions. Given the significant amount

of overlap among different categories of backward areas, it is likely that the forest-based regions may also cover a part of the flood prone areas especially in the eastern states. It is also likely that a large part of the forest areas has virtually become dry land, and that tribals are also found to be concentrated in some of the dry land regions (Shah, et. al; 1998). This kind an of overlap is difficult to resolve while creating broad typologies of RRAs especially when the idea is also to conduct empirical enquiry into the dynamics of development or deprivation in these areas.

Having defined the two categories, the next step is to identify the areas under dry land and forest-based regions. This has been done at two stages. The first stage involved classification of the major states by taking into consideration the size of dry land or forest areas. The second stage involved identification of districts. This leaves out Punjab and Haryana because of the high agronomic potential, Kerala because of overall good performance with respect to multidimensional poverty, and Tamil Nadu having a somewhat mixed profile. Apart from these, states like Jammu-Kashmir, Himachal Pradesh, Arunachal Pradesh and the North-Eastern states have not been covered due to lack of comparable data at district and regional levels. The former has been adopted from the official delineation of drought prone and desert areas. For the latter, identification of district has been done by taking into consideration area under forest and/or proportion of tribal population. The underlying assumption is that a large part of the hilly regions also have larger concentration of forest areas as well as tribal population. Together the states in these two sets of regions account for 77 per cent of the total geographical area and 81 per cent of the total population in the country.

Prima facie, the dual scenario of rural poverty in India suggests a complex mix of factors -geographical, economic and social- that put these regions at disadvantage. By and large, the constraints faced by dry land regions emanate from the region's weak agro-climatic conditions and the state's neglect in terms of appropriate investment in developing the region's land and water resources. Compared to these the poverty in the forest -based regions is largely an outcome of failure of entitlement to the region's rich natural resources, besides physical isolation and low social capabilities among the tribal people. Apparently people in these two sets of regions face different kinds of poverty and have different strategies to cope up with that. The twofold scenario of rural poverty in Table 1 indicates that incidence of poverty in dry land regions is likely to be low and

transient in nature whereas that in forest-based regions is more widespread and chronic.

Table 2 presents broad characterization of dry land and forest-based regions in India. Prima facie, it appears that incidence of poverty in dry land region is relatively lower than that in the forest-based regions, and that it is likely to be more of transitory rather than chronic in nature. However, there is a strong possibility that the present low level of poverty in dry land regions might get transformed into severe and long duration poverty especially, if the wide spread over exploitation of ground water is not checked. On the other hand, poverty in forest-based economies is not only wide spread, but is also likely to be severe and long duration. Nevertheless, the region has a better potential to get out of the syndrome of chronic poverty provided, right kind of policies and institutions are in place.

The diverse pattern of poverty among dry land and forest-based regions has been aptly summarised by a recent study on rural development in India. It has been noted that 'drier states (in west) harbour lesser poverty proportions than the wetter ones (in east). In general the states, which were under the Zamindari regime of the yesteryears and have experienced relatively ineffective agrarian and land reforms and thereafter green revolution, have been the losers, while those in the west, have been gainers. Within these contours if the monsoon fails, all suffer and, and vice versa' (NIRD, 2000).

In an earlier study Chambers et. al (1989) developed a typology of poverty as core and periphery. Describing the typology, it is noted that in the 'core' poverty there is more landlessness; limited involvement of poor in non-farm employment; and dependence and exploitation are more mediated by social relations. 'Peripheral' poverty, in contrast, is linked more with water scarcity, resource degradation, lack of infrastructure and distance from markets; and dependence and exploitation are more commercial and more bureaucratic in relations with contractors and officials. Incidentally, the typology developed by chambers is in conformity with the earlier observations by Dasgupta (1975) from a study of 126 villages in five agro-climatic zones in the country. Pertinently, the authors note that core and peripheral conditions can be found in the same taluka, district, and state though, mapping them is difficult. While one recognizes the fact that pockets of remoteness may exist over most of the space, a feasible approach for a macro study like this, would however, require some broad based

categorization. To a large extent, this typology corresponds to the categorization of forest-based and dry land regions noted above.

What is the nature of poverty and what are the major factors responsible for sustaining or alleviating poverty in these two sets of regions? These issues have been examined in the light of the available literature, and subsequently by an empirical analysis of determinants of poverty across districts and regions in the two sets of RRAs in India.

The paper is divided into five sections including the introduction. The next section reviews the dynamics of poverty in dry land regions, followed by a review of poverty in forest-based regions in section 3. Section 4 examines determinants of poverty at the levels of districts as well as regions. The last section summarises the discussion and identifies issues for further investigation.

2. Poverty in Dry Land Regions: A Review

There is no official delineation of dry land regions in India except for the one adopted for identifying districts to be covered under the Drought Prone Area Programme (DPAP)- a major policy intervention in these regions. Nevertheless, attempts have been made to define dry land regions under the specific situations (ICRISAT-ICAR,1999; Fan et al, 2000; Shah et. al, 1998).

Recognising the critical importance of agronomic potential in determining the poverty- outcome, it might be useful to define dry lands by focusing primarily on the moisture deficiency. (Shah et. al, 1998) have tried to identify dry land by considering three sets of factors: (i) areas located in agro-climatic regions 1 to 12; (ii) length of the growing period (LGP) < 180 days; and (iii) proportion of gross irrigated area between 40 and 50 per cent. Accordingly, 53 per cent of the total cropped area is defined as dry lands.

This section tries to understand dynamics of poverty in the light of some of the basic features of the dry land regions represented by the DPAP-districts in five major states in India (See Table 3). Following observations emerge from Table 3:

(i) DPAP districts have significantly lower density of population and also lower urbanization in most of the states.

To an extent lower density of population in DPAP district is likely to have resulted from higher incidence of migration especially, of male workers. This is reflected in terms of higher sex ratio among DPAP districts in three out of the five states viz; Gujarat, Maharashtra, and Karnataka. Accordingly, infant mortality is also found to be lower among DPAP districts in these three states. Apparently, this kind of coping strategy seems to have been supported by relatively higher level of industrial development in these three states vis-à-vis Andhra Pradesh and Rajasthan. This suggests that out migration is facilitated by sectoral diversification in the three states. Proportion of non-farm employment however, is lower among DPAP vis-à-vis non-DPAP districts in all the states. This, once again, reinstates importance of migration as an important livelihood strategy in dry land regions.

(ii) Nevertheless, higher sex ratio is not so much a reflection of better status of human or social development for, female literacy is found to be lower among DPAP districts in all the states irrespective of the sex ratio.

(iii) Land productivity is lower among DPAP districts in most of the states except Karnataka. To a large extent, this is due to lower proportion of irrigated to the total cropped area. What is however, important to note is that extent of irrigation is fairly substantial in some of the DPAP areas though, much of this is likely to be directly dependent on rainfall and also non-sustainable in the long run.

(iv) Finally, developmental index (for infrastructure) is also lower among DPAP districts. Together these factors lead to higher incidence of poverty in DPAP vis-à-vis non-DPAP districts as reflected by the proportion of population below poverty line.

2.1 Incidence of Poverty: Hidden Vs. Explicit

As noted earlier, incidence of poverty is likely to be lower in dry land regions. While there are no systematic estimates for poverty in dry land regions, a recent analysis based on state level comparison indicates that the incidence of poverty has been lower among drought prone (DP) vis-a vis non-drought prone (NDP) states (Conroy et. al; 2001). In 1993-94, the proportion of poor in DP-states was 29 per cent vis-à-vis 37 per cent in NDP-states.

A similar pattern was also observed within the areas under Semi Arid Tropics (SAT) in India. In a detailed study by Kelley and Rao (1995) it was observed that there were significantly fewer absolutely poor people residing in the more

marginal rural environment i.e. districts with productivity less than Rs. 500 per hectare. In terms of severity of poverty there was no significant association with the marginal lands. In turn, this implied that incidence of rural poverty is greater in higher-potential regions within SAT in India. Prima facie, this sounds counter intuitive. Nevertheless, it perhaps, suggests a widely observed pattern of out migration and the resultant low density of population among the marginal areas under dry land conditions.

The above observations have been further substantiated by Conroy et.al (2001) characterizing dry lands as having lower incidence of rural poverty but, higher urban poverty as larger proportion of the rural workforce has to depend on non-farm employment within or outside the rural areas.

Given the dynamics of migration especially for long duration rather than seasonal migration, rural poverty in dry land regions is likely to be more a transient phenomenon, influenced by rainfall related uncertainties in farm production. Hence in terms of typology, a large part of the poverty in dry land regions is likely to be transitory in nature. This has been evidenced by a detailed analysis based on the panel data collected by ICRISAT. According to the study by Singh and Binswanger (1993) covering three SAT-regions, poverty was clearly not a permanent household characteristic. The study observed that out of the 218 households, 131 (i.e. 60 %) were initially poor. After nine years 48 (i.e. 37 %) of these households had income above the poverty line, and another nine (i.e.10 %) of the initially 87 non-poor households became poor despite considerable growth in average income of the sample households. What is however, more important is that the average absolute income gains were about the same or larger for the initially poor as for the initially non-poor. Moreover, because the initially poor have been able to accumulate productive wealth, their gains are not a transitory one.

While this is quite encouraging, generalisation needs further scrutiny especially, with respect to the access to irrigation. For instance, there is a wide variation in terms of extent of irrigation across the three locations from which sample had been selected. The percentage of irrigated area ranged from 42 in Mehboobnagar to 16 in Akola, and that, the proportion of irrigated area had increased over time. A large part of the poverty reduction is likely to be due to increased access to irrigation. In that case, the sample may not represent a larger picture of dry land regions especially, those with spatial poverty traps.

A close look at the results obtained from the above analysis suggests that Mehboobnagar, having the highest proportion of irrigated area, happened to have gained more in terms of poverty reduction. This was mainly because many poor households in this region were extremely poor, who experienced a higher increase in income than the non-poor. This is in conformity with the earlier finding by Gaiha (1987), who noted that poor households improved their income position and resource base while the non-poor were not able to do so.

Together the above observations suggest a somewhat dichotomous situation with respect to poverty in dry land regions. This, by and large, is characterized by some features of dynamism among poorer households due to increased employment opportunities on the one hand, and stagnancy among non-poor households, already having access to irrigation on the other. It may however, be noted that a part of the income growth among poor is likely to be due to the state interventions in the form of drought relief measures or employment guarantee scheme especially, in Akola (Maharashtra). Similarly, it s likely that some of the non-poor might get into a poverty syndrome especially, in the event of unsustainable use of ground water resources in the long run.

2.2 Low agronomic Potential and High Valued Crops

Recently, ICRISAT and ICAR have come up with a detailed categorisation of rain fed agriculture considering activity- based zones. Tables 4 and 5 provide information about the classification of the zones as well as productivity of different activities in each zone. It is observed that the value of crop output per hectare varies significantly, from Rs. 1634 in zone 4 to Rs. 10,031 in zone 14. Incidentally, 6 out of the 16 zones having a total value of output of less than Rs. 6000 per hectare are located in some of the NSSO-regions with high incidence of rural poverty. These include parts of Maharashtra, Madhya Pradesh, Rajasthan, Karnataka, and Uttar Pradesh.

An important feature of the dry land region however, is low agronomic potential, not so much in terms of yield-levels but, more in terms of frequent fluctuations in yield due to inadequate and/ or uncertain rainfall. As a result of the low agronomic potential land productivity is found to be fairly low and also variable. According to the estimates provided by Fan and Hazell, (2000), average land productivity during 1981 and 1994 was Rs. 8485, 6464, and 3291 in areas categorized as irrigated, high potential rain-fed, and low potential regions

(consisting mainly of dry land regions) in the country. It is important to note that low-potential regions had registered a decline in land productivity, compared to previous year, in the case of 6 out of 14 years; for irrigated and high potential rain-fed regions the incidence of decline was observed in 3 and 1 years respectively.

The above observation is further substantiated by the estimates of incidence of instability in cereal production. Instability was observed to be very high in some of the dry land states like Gujarat (58 %); Rajashtan (39 %); Maharashtra (29 %) as compared to states like Punjab, Kerala, West Bengal, Uttar Pradesh, Madhya Pradesh, and Assam where instability is about or less than 10 per cent. Incidentally, most of the states showing low instability in cereal production constitute irrigated or high potential regions noted above (WFP, 2001; Sawant and Achuthan, 1995).

The phenomenon of higher uncertainty has been considered the most distinguishing aspect of dry land agriculture in semi-arid tropics (Walker and Ryan, 1990). It has been noted that higher rainfall uncertainty at the planting stage induces area variability, which often looms larger in conditioning crop income volatility than fluctuation in yield. This is what makes the poverty in dry land a transitory rather than a long duration phenomenon, which eventually leads to overall low incidence of poverty in these regions. The more concerning feature as observed by the study is that 'rainfall induced uncertainties in crop income may also have serious ramifications in terms of devising a sustainable crop insurance or credit scheme'. Non-existence of an effective credit system for a long time, might exert a deepening impact on poverty with the result that, many of the transient poor might end up being chronic poor in the long run; or else, they might migrate out.

2.3 Coping Mechanism

Prima facie, there are four sets of coping mechanism being adopted for overcoming the basic constraints of low agronomic potential in the region. First, dry land regions have lower density and larger land holdings. But, this feature is likely to disappear along with increasing population. Second, increasing efforts for drought relief measures by the state. Third is specialization in high valued commercial crops like oil seeds, spices, and horticulture etc. Fourth, and

perhaps, most important is out-migration. Since the first two are somewhat exogenously determined, the latter two may however, need further probing.

(a) Predominance of High Valued Crops and Diversified Farming System

According to the estimates prepared by (Shah et.al, 1998), dry lands in India constitute 45 per cent of the total area under cereal production; 66 per cent of the area under oil seeds; and 68 of the area under non-food crops. A number of studies have gone into examining the impact of commercialization on Indian agriculture. Among these, is a seminal work by Nadkarni (1985) providing a vivid account of how it works in a dry land vis-à-vis wet regions in the case of three south Indian states viz; Karnataka, Tamil Nadu and Andhra Pradesh. The study observed that, to a large extent, commercialisation of agriculture in dry land regions has helped increase income among cultivating households across different categories of land holdings. It is however, noted that commercialisation has been facilitated by substantial contribution of labour from the landless households, which also tend to gain in terms of employment as well as higher wage rates. Overall therefore, commercialisation seems to have a poverty reducing impact, though it increases inequality within the village. The important feature of commercialization is that it tends to work more effectively in the area, which has large scale adoption of commercial crops rather than in isolated and less commercialised regions. Remoteness thus, plays an important role in determining the poverty reducing impact.

Fortunately, predominance of cash crops like oil seeds, is a part of the agronomic features, which needs to be tapped through right kind of technology and policy support. But, as fairly well recognised, agricultural research and development (R & D) in India has been heavily tilted towards irrigated farming (Jodha, 1990) with a result that farmers in dry land regions are pushed to grow more of irrigated crops and varieties. The result is often disastrous. For instance, this kind of crop-choice may lead to over depletion of ground water resources, the sustainability of which is being increasingly threatened. What is however, worse is that, the temptation of ensuring a requisite level of income may lead many farmers to go for a highly risky investment, which given the uncertain rainfall conditions, may result in crop failure and bankruptcy. The increasing incidence of suicidal cases among cotton growers from different parts of dry land regions, is partly, a manifestation of lop sided R & D and price structures that distort the crop choice and hamper long term sustainability of dry land farming.

Besides growing high-valued crops, dry land regions also have natural advantages in terms of adopting a more diversified farming system especially, with livestock producing milk, wool, and meat. The recent categorisation of zones in India's SAT takes into consideration this aspect. Accordingly, 5 out of the 15 dry land zones (excluding irrigated rice in zone 1) have livestock as an important activity (ICRISAT, 1999). Given the fact that livestock economy is losing ground in most of the dry land regions, and that dairying is increasingly getting associated with availability of irrigation, sustainability of livestock as a coping mechanism is increasingly getting reduced.

(b) Migration as a Coping Mechanism

Given the initially low agronomic potential and the limited technological support, migration turns out to be an important coping strategy especially among the land less and the poor (NIRD, 2000; Bilsborrow, 1992). The phenomenon though, difficult to establish at macro level, has been substantiated by a number of micro level studies from various dry land regions in the country (Haan, 1999; Shah, 2001; Mosse, et. al, 2002; Lipton, 1980; Reddy, 2002; Singh, Manjit, 2002).

Apart from low and uncertain returns from agriculture, declining size as well as quality of common property resources (CPRs) have also led to deepening of poverty (Jodha, 1986). This in turn, has led to a significant increase in out-migration especially, among the landless and the poor (Chopra and Gulati, 2001). Following the seminal study by Jodha (1986), a number of studies have tried to examine the poor's dependence on CPRs. The evidence of late, however, deviates from the earlier finding about the significant dependence of the poor on CPRs. Strangely the recent studies suggest only limited dependence on CPRs among the poor (Iyengar and Sukla, 1999; Nadkarni,1996) possibly because there is nothing much to depend any more due to severe depletion of these resources. The poor from dry land regions thus, seem to be increasingly dependent on migratory income. This phenomenon has been observed by a number of studies examining the impact of droughts or efficacy of drought relief programmes in different parts of the dry land regions in the country.

The emerging perspective on migration thus, recognizes it as an integral part of the livelihood strategy rather than as an aberration or as a transitory phenomenon. In terms of impact, there seems to be some consensus that migration tends to contribute much to the host economy and that it leads to

higher rates of labour force participation. Nevertheless, there is little evidence that migration reduces inequality between areas of origin and of destination (Haan and Rogaly, 2002). What is however concerning is that migration, in absence of appropriate interventions for land and water development, might lead to further depletion of ground water resources by inducing private investment in wells.

A number of studies have enquired into the conditions of migrants at the place of destination. Most of the studies suggest that these migrants especially, from the marginalised areas, have to face hostile environment in terms of employment, exploitative institutions such as contract-labour, living conditions, loss of identity etc. at the place of migration. While most of these features are fairly common particularly in the case of distress migration, one of the important aspects, specific to migrants from dry land region could be long duration and/or permanent migration of a large number of households to the regions with better agronomic conditions and/or better opportunities for diversification. The long history of out-migration from dry land region might have helped building up strong social capital inducing a chain of long duration migrants from the region.

Another implication of sustained out-migration from dry land regions could be higher wage rates. This could be further supported by relatively higher importance of livestock economy absorbing a major part of household labour on the one hand, and high valued cash crops on the other. Increasing development of ground water resources might further push the wage rate for local labour. While there is no systematic evidence on wage rate differential across dry land and the other regions, the issue needs detailed probing so as to be able to understand the dynamics of local labour markets and out-migration from the region.

Together the evidence discussed above suggest that the hitherto low incidence of poverty, with predominance of transient poor, in dry land region is based on the two sets of mechanisms, which appear quite fragile at least at this point in time. These are (i) out-migration; and (ii) depletion of ground water. The non-sustainability of both these mechanisms emanate from the fact that on the one hand out-migration is increasingly getting constrained due to overcrowding of surplus labour force pushed out of rural areas in urban centers (Bhalla, 2000). On the other hand, development of ground water has also reached a danger mark implying that future availability of water, in absence of the requisite

measures for recharge, is going to be lower than the present level. A combined effect of both these might lead to worsening of poverty in dry land regions with increase in incidence poverty consisting of a larger proportion of people trapped in long duration poverty.

2.4 Depletion of Ground Water: The Issue of Sustainability

Ironically development of ground water is both- a short-term remedy and at the same time, a likely cause for chronic poverty in the long run. The problem of depleting ground water seems to have been worsened since the late eighties, the period which has been marked by (a) diffusion of high yielding varieties; and (b) frequent occurrences of droughts.

Table 6 depicts the levels of ground water depletion among Indian states. It is observed that the states with very high level of ground water exploitation like Rajashtan, Gujarat, Maharashtra, Karnataka, and also Tamil Nadu have exploited more than 30 per cent of the available ground water resources (WFP:2001). What is however, more concerning is that a large part of the ground water exploitation is through tube wells, which are fast becoming the single largest source of irrigation in the country (Shah, et.al; 1998; Shinoda, T, 2003). The growth of tube wells has been particularly alarming since the eighties. Between 1977-79 and 1988-90, the area irrigated by tube wells had increased by more than 300 per cent. The situation seems to have been aggravated further during the nineties as reflected by a large number of areas, especially in dry land regions, getting classified as dark zones where further depletion of ground water is banned. Similarly, the number of wells getting defunct is also increasing at a rapid rate. All these together suggest non-sustainability of ground water resources for containing poverty especially, chronic poverty in dry land regions.

A part of this phenomenon is reflected by the fact that the impact of droughts, given the level of precipitation, has increased during the last decades. Importantly, more than availability of food grains, the impact of drought is felt in terms of scarcity of drinking water as well as fodder essential for supporting life-human as well as livestock (Shah, 2001). A large proportion of people thus, is faced with frequent shocks in terms of insecurity of the basic sources of survival viz; employment and income, asset base (i.e. livestock), food, and drinking water. The extent to which this could be recouped through the state's support for relief

measures would, to a large extent, determine the poverty outcome. The next section discusses this aspect.

2.5 Impact of Policy Interventions: Drought Prevention and Drought Relief

The above description of dynamics of livelihood and poverty in India's dry land regions suggest a dichotomous situation, where the regions have been able to overcome chronic poverty through a number of factors- structural (i.e. Ryotwari system), agro-climatic (i.e. conducive for high valued crops); and physical (i.e. mainly in plains). Nevertheless, it does ring an alarm bell, which was sounded way back in the mid-eighties by Nadkarni (1985) who noted that "drought proneness unattended to can be an important reason for endemic poverty". It was further noted that "while interventions to overcome drought proneness through irrigation and industry have altered the environment and reduced poverty, poverty still persists. For new institutional forces have emerged in a manner that they accentuate inequality and even produce backlash effects on traditional adaptation to environment" (ibid). Evolving effective policies for drought proofing and calibrating the institutional forces that are creating backlash impact thus, have to be the major plank of developmental processes, if the risk of a wide spread endemic poverty in dry land region, is to be averted.

Given this backdrop, attempts have been made to understand and revive the traditional coping strategies adopted by people in different parts of dry land regions. While there is a lot to learn from how people in these regions have dealt with droughts, the policies at present, have to address some of the new challenges (and also opportunities) in terms of population pressure and resources; institutions; and technologies (Jodha, 1990). For instance, the state's perspective, especially in the post Green Revolution period, is to assume the primary responsibility of providing at least food and fodder to the people affected by droughts. Accordingly, the official policies have been influenced by considerations of 'drought relief' rather than drought proofing or prevention. This is despite the fact that the Drought Prone Area Programme was designed mainly as a drought-proofing strategy.

Recognising the need for reorienting the policy, a Technical Committee was appointed to look into the functioning of DPAP scheme in different parts of the country. The Committee headed by Dr. C.H.H. Hanumantha Rao observed that lack of clarity about the objectives to be achieved had led to a shift in the focus of

these programmes (Government of India, 1994). As result, the programme, despite having spent a large amount of funds, has not helped solving the basic problem of increasing the productivity of areas by conserving soil and moisture and thereby, reducing the impact of droughts on human life. On the contrary, it is widely believed that drought conditions in the country are increasing and ecological degradation is proceeding unabated especially in drought prone and desert areas. The main reasons for this degradation have been large-scale denudation of forest cover leaving the land vulnerable to soil and water erosion. In Rajasthan, 18 drought years of different magnitudes have been observed in the past 32 years. Another study in Rajasthan reveals that, on an average, as much as 40.4 per cent of the precipitation or rainwater goes untapped, and only 6.9 per cent is used for recharging the ground water. In some districts of Tamil Nadu, water table is reportedly going down by 1 ft. every year. It has been reported that in the dark blocks in Uttar Pradesh where more than 75 per cent ground water has been exploited and where rainfall level is 700 mm, as much as 50-70 per cent of the run-off from rainfall is wasted (p.11).

The official policy therefore, reiterated the need to focus on the basic objective of 'restoring ecological balance on a watershed basis within the framework of area development plans' (Government of India, 1994). While this is a commendable move, the actual implementation of watershed programmes in dry land regions do not provide clear evidence on drought proofing and poverty reducing impact of the programme (Kolavalli, 2002; Shah, 2001; Mehta, L. 2000).

An important policy implication of the above scenario is, continued emphasis on relief measures especially, through employment programmes like 'food for work'. Unfortunately, these programmes work somewhat better in relatively developed states like Maharashtra and Gujarat but, not in poorer states like Rajasthan or Madhya Pradesh (Hirway, 1997). On the whole the state expenditure on relief works programme seems to have exerted a positive impact on poverty as indicated by the NSSO-estimates during 1987, which was one of the worst droughts covering a large part of the country. A similar observation has also been made by a recent study by Radhakrishna (2002) who notes that in the rain fed regions where agriculture has stagnated, real wages have improved. This could be attributed to expansion of employment programmes and perhaps, by political mobilisation of labour. The question however, is in the absence of increased labour productivity can this kind of wage increased be sustained?

Moreover, ensuring public expenditure on employment generation programmes is getting increasingly difficult especially, under the new policy environment. This in turn has started reflecting in terms of slowing down of poverty reduction during the nineties (Sen, 1996). Similarly, targeted food distribution in some of the southern states like Andhra Pradesh has also stared dwindling due to a resource crunch. Also, the state monopoly in terms of providing food has created a huge system of corruption, which eventually has become an accepted norm among the communities. Breaking this self-perpetuating system is almost impossible given the nature of the polity. The result is- wide spread migration as well as hunger among some of the poorer states like Rajasthan. Besides these, it is imperative to go beyond the state and explore options for people's own initiatives where the state could operate as a facilitator rather than as a provider. A number of initiatives especially, in terms of water harvesting, provision of drinking water, and grain banks have come up, though scattered in coverage and are small in size. The need is to consolidate these experiences and evolve an institutionally sustainable mechanism for drought proofing (Rao and Deshpande, 2002; Shah, 2001).

It is therefore, essential that the next round of policy formulation starts taking cognizance of the increasing severity of droughts. For, it is likely that in absence of a structural shift in the composition of agricultural growth, and the institutional arrangements for drought relief measures, large parts of dry land regions may get trapped into chronic poverty and at times, hunger deaths as reported recently in states like Rajasthan, Madhya Pradesh, and Orissa. Since some of these policy aspects are more generic rather than specific to the dry land regions alone, we will get back to them in the last section.

3. Chronic Poverty in Forest Based Regions

As noted earlier, forest-based regions have been defined in a manner so as to incorporate two other associated features viz; hills or mountain topography, and indigenous or tribal communities. A plethora of literature exists, describing conditions of widespread and acute poverty in these regions. Apart from physical remoteness and lack of infrastructure, poverty in these regions, is seen to be essentially linked to problems of property rights (or entitlement), and social marginalisation. Thus, compared to dry land areas, the forest-based regions, defined as above, represent a more complex interface (or a log jam) of the forces

that cause poverty, exiting which is almost impossible. Table 7 presents some of the basic features of these regions.

It is observed that the population density is fairly low in the forest based districts is significantly lower than the rest of the districts in the state. However, there is no systematic pattern of sex ratio across the two sets of districts. For instance sex ratio is found to be higher among forest based districts in three out of the six states viz; Bihar, Madhya Pradesh an Uttar Pradesh; it almost same in the case of West Bengal; and lower in the case of Orissa and Assam. Similarly, literacy rate is found to be lower among forest based regions in the case of Bihar, Madhya Pradesh and Orissa; in the other three states literacy is found to be higher in forest based districts vis-à-vis the rest. But, infrastructural development index is found to be lower among forest based regions in the case of four states except Assam and Uttar Pradesh. Finally, land productivity is found to be significantly lower among the forest based districts in case of majority of the states except Assam and Madhya Pradesh. Together, the above observations bring out two important features. First, Assam appears to be an outlier, with most of the indicators being favourable in the case of forest vis-à-vis other districts. And second, absence of any difference in developmental indicators across the two sets of districts within the state may partly be due to inaccuracy in identifying forest areas due to non-availability of data at a more disaggregated level i.e. below the districts.

3.1 Multiple Discrimination and Mainstreaming

As noted earlier, most of the areas comprising the forest-based regions constitute a part of the states with predominantly zamindari or feudal agrarian relations. What perhaps make it worse is the legal structure governing the forest areas. Most of these laws that were designed during, and continued after the colonial period. Basically, these laws were meant to deprive the local communities off from their traditional rights hence, their stakes in the long-term management of the resources. Finally, the policies adopted for development of the indigenous or tribal communities in the post-independence era have been over occupied with the idea of mitigating physical remoteness by mainstreaming the people and their economies. To a large extent, this was done at the cost of strengthening the resource base of these region in a manner that may provide a special niche to the region while interfacing with the mainstream economies. The

special niche would emanate primarily from the region's relatively rich natural resource base, traditional knowledge, and social institutions.

Ideally, the policies should have worked in tandem with these inherent strengths where infrastructure and other developmental programmes could work as facilitators to build upon the inherent strengths of the people as well as regions. But, 'mainstreaming' processes under the tribal development programmes happened to have put these communities at a relative disadvantage by imposing the norms of 'good performance', that are relevant for the mainstream economies. This in short is a description of a long drawn process of marginalisation and multiple discrimination faced by people in the forest based regions.

The Indian literature provides a good critique of this process- conceptual as well as empirical (Baviskar, 2001; Dubey (1967); Singh, K.S, 2002). While we do not get into the details of these already well researched issues, the process of marginalisation has been summed up as a situation 'geographical concentration and minority status' of tribal communities (Shah, et.al; 1998). This takes the form of what is described as 'internal colonialism, resource emasculation, and subjugation of interlocked modes of exploitation wielded by a non-tribal axis of power'. According to the study, tribal population is getting more dispersed, either due to development related displacement or distress migration. The result is intensification of minority status where a large mass of the tribal people are increasingly getting alienated from the process of governance and decision making.

While this is a fairly comprehensive account of what has, by and large, happened in most parts of the forest-based regions, it is imperative to note that some of these areas have undergone changes and that, the community over there is under a transition mainly due to the increased mobility and interaction with the mainstream economies. It is this transition, rather than the initial conditions of exploitation *per se*, that needs a closer scrutiny in order to understand the dynamics of deprivation and poverty in these regions. Similarly, if there are pockets of forest-based regions having experienced positive changes, notwithstanding the state-monopoly of forests and the associated resource depletion as well as increased population pressure, such changes need to be assessed properly. The subsequent discussion focuses mainly on the literature that deals with some of these issues.

3.2 Areas with High Agronomic Potential and Irony of Floods and Droughts

As noted earlier, a large part of the forest-based regions are endowed with relatively favourable agronomic conditions especially, with moderate to high rainfall, better soil, and vegetative (or tree) cover. As a result, the average land productivity is almost double that of the low potential areas in dry land regions (Fan et.al., 2000; also see Table 7). Unfortunately, most of these high potential regions had lagged behind in technology based growth in agriculture mainly due to the less conducive agrarian structure, low level of infrastructure and market development, and above all, resource crunch for promoting public investment in land and/or water resources. Over time, some of these constraints seem to have been reduced thus, resulting into a significant growth in agricultural production especially, food grain production in some of the eastern regions like West Bengal, Assam, Madhya Pradesh, Orissa (Singh, S and Bahlla, S, 1997). The studies examining agricultural performance during the post-eighties clearly suggest emergence of acceleration in output growth in most of the central-eastern states except Rajasthan (Sawant and Achutan, 1995). Overall, the increase in agricultural production in the high-potential areas has been attributed to some kind of a catching up effect in these lagging regions (Fan et. al., 2000).

What is however, ironical is that most of these regions are either flood or drought affected. To a large extent, both these are closely linked to depletion of forest resources resulting mainly from the faulty policies as noted above. Table 8 provides information about deforestation in some of the major states with a sizeable forest area. It is observed that between 1978-79 and 1999, all the major states with larger area of forest (except Bihar) had registered higher rate of deforestation as compared to the all India average. The proportion of decline in forest area was as high as 15 per cent in Himachal Pradesh and 13 per cent in Orissa, followed by Assam and Uttar Pradesh with a decline of about 6 per cent. Moreover, there are evidences suggesting that by 1990, almost 60 per cent of the area under forest was degraded (in Shah, et.al;). As a result, about half of the forest area in the country has a crown density of less than 40 per cent. This indicates dismal status of forests, where a large proportion of India's poor live.

While we do not get into the details of what has caused large-scale deforestation in these regions, its impact on impoverishment is fairly clear. This is reflected in terms of increasing incidence of droughts in some of the forest regions in

Madhya Pradesh, Orissa, Bihar, West Bengal etc. Ironically, the impact if not incidence, of droughts is felt more severely in some of these forest-based regions vis-à-vis dry land regions like Gujarat, Maharashtra, Karnataka. Apart from the resource crunch faced by these poorer states to manage relief work programmes, the more acute impact of droughts in these regions is due to the fact that till recently, a substantial part of people's livelihoods depended on forest, which in certain areas, has depleted almost completely. While this sounds somewhat similar to that of ground water depletion in dry land regions, the basic difference between the two is that pertaining to the property rights regimes. Whereas the former is governed by private property regimes, the latter has happened mainly under the state monopoly. This might make the regeneration process more difficult in the case of forest, as the people depending on these resources, may have only a limited say in decision-making as well as management of these resources.

Following exerts from a report on the droughts in Kalahandi in Orissa sums up the dynamics of deprivation in a forest-based region (Mahapatra, R, 2001) "for over 100 years, the undivided districts of Kalahandi-Balangir-Koraput popularly known as KBK region comprising nine districts now- have survived drought. The current one is said to be the worst, affecting 90 per cent of the region. But the dark images ironically reflect how an imbecile system is smothering a population of one million into death and turning ecological prosperity into a catastrophe. Life was easier earlier: forests provided livelihood for six months and agriculture the rest of the year. A few decades ago the entire landscape was green. A web of some 30, 000 traditional water harvesting structures helped the Kalahandi region tide over some of its worst famines. It also made the region one of the richest in east India. It produced more rice than any other princely states. Despite the recurring droughts, farmers harvested so much rainwater in these structures that there was no water scarcity. Rain never failed Kalahandi. Mismanagement did. Like in the past, it still rains heavily, but the rainwater is not harvested. The tanks are still there, but silted up. A slight shortfall in rainfall now triggers a large-scale crop failure. So agriculture is a difficult prospect for survival for more than 50 per cent of the population. "Kalahandi's poverty is amid plenty," says Shiv Shankar Patnaik, Kalahandi's district panchayat president"(pp. 30-34).

The other negative fall out of deforestation is floods and land slides in hilly areas within these regions. According to an estimate the population affected by floods, heavy rains, land slides and cyclones are significantly high in most of the forest

based regions viz; Bihar, Uttar Pradesh, West Bengal, Assam located mainly in the Brahmaputra and the Gangetic basins. In fact, flood is a regular feature of most of these regions, which not only destroys the standing crop but, also damages the soil.

Thus, poised with the double disadvantages, people in the forest-based regions can neither depend on forest resources nor on agriculture unless forests are regenerated and their traditional stakes in the resources are reinstated. The history of tribal movements in India thus, depicts various forms of resistance over the issues of property rights and control over forest resources.

3.3 Tribal Resistance: A Way to Achieve Coping Strategies

Tribal movements in India date back to the early eighties, where the main focus was to resist against intruders of different kinds. The post-colonial movements have been mainly for autonomy, cultural safeguards, and settlement of land rights etc. More recently, the focus has shifted to the issue of control over forest resources (other than settlement of land for agriculture), identity, and ethnicity (Singh, K.S, 1998). In fact, the growing concern for environment has given a new meaning to the tribal resistance, which assumes that reinstating the stakes of the people is a key to sustainable management of forest resources. In absence of this, depletion will continue by various sections of the society- forest dwellers, industrialists, and the forest bureaucracy. To an extent creation of Jharkhand as well as Chhatisgarh is a manifestation of tribals' awareness towards self-governance and control over the forest resources.

More recently, there has been a significant upsurge of resistance against displacement of the tribal communities, associated with mining and other developmental projects in forest regions (Das, Vidhya, 2001). To a large extent, this is a continuum of the long sustained resistance against the various forms of alienation that took place through intrusion of non-tribals from within and out side India. In fact, the existing literature provides a rich documentation of how different rulers, at different points in time, had devised mechanisms to settle non-tribals who could practice better agriculture and thereby contribute more in terms of revenue to the state. Apparently, tribals also got benefited through clear titles, land-settlement and protection of the land-rights. But this took place as part of a larger process, which shifted the economic base from forest to agriculture, where tribal were at a relative disadvantage.

Moreover, the issue of faulty land records and lack of transparency remains a major stumbling, block even now, in establishing clear entitlement to the land resources. There still prevails a complex cobweb of exploitative institutions and agencies consisting of money-lenders, capitalist farmers, functionaries of Revenue Department, and other state supported developmental agencies. Together these forces reinforce the age-old practices of land alienation, which by no means has reduced over time (Karuppaiyan, 2000).

On the other hand, having settled the tittles for agricultural land, the state went on tightening the controls over remaining forest resources by establishing its monopoly ownership. As noted earlier, the process of alienation was invoked during the colonial period and was continued ever after that. Under the present regime, tribals do have their traditional rights but, these rights can be exercised only under the overarching management controls by the state. In that sense, tribals have been separated out from what constituted their basic source of livelihood. In fact, Joint Forest Management is also a variant of the same device in which people have been in involved in management of forests in a manner that the basic rules of the game have been laid down, almost unilaterally by the state. Development of the various forms of participatory forest management since the post-eighties, should thus, be seen in the light of the basic anomaly in the forest policy. The real task therefore, is to break the vicious circle of 'lack of entitlement-degradation-poverty' in large parts of the forest-based regions in India.

3.4 Emergence of Participatory Institutions

Ever since the Forest Policy Statement of 1894, people in the forest-based regions have been blamed for degradation of forest resources. While this might be partly true, the fact remains that degradation continues to persist even after the state having assumed a legal control over these resources. *Prima facie,* three sets of processes seem to be responsible for this. First, exploitation by external agencies leading to perpetual poverty among the local communities. Second, failure of the developmental programmes to provide sustainable livelihoods based on forest-ecology, to the increasing population. And third, monopoly induced extraction of forest resources by the state- functionaries, with and without involvement of the people. Hence, apart from the protected areas, forests became subject to more or less an open-access rather than a regulated-access regime of common property resources. Degradation is an obvious outcome under

this situation, where passing on the blame among the foresters and the people is name of the game!

Involving people in protection and thereby making them officially responsible for management of forest emerged as an inevitable strategy if, the objective was to reduce degradation and/or reduce the state's share in the responsibility (or blame for) forest management. Joint Forest Management essentially, is an outcome of this realisation, supported by a number of good examples of traditional practices and institutions for protection of forests by the communities. The Government policies, of late, have been to revive, promote, and strengthen some of these traditional institutions such as 'Van Panchayats' in different parts of the country especially, Uttar Pradesh, Orissa, West Bengal.

A number of studies have gone into examining the experience of JFM and other participatory initiatives in forest regions (Ballabh, et. al, 1999; Khare, 2000). To a large extent, these studies bring out a mixed outcome especially, in terms of their impact on the poor households, as noted in the case of participatory watershed management. What is however, surprising is that, experience from some of the traditional institutions like Van Panchayats in Uttar Pradesh is not clearly positive. To a large extent, this supports the earlier observation by Jodha (1990) regarding the declining relevance of some of these institutions under the changing operating environment- legal, administrative as well as political.

Upsurge of Panchayati Raj institutions is an important development, characterising the changing environment. Similarly, the presence of other institutions like cooperatives, and other channels for gaining economic and/or social power may exert their influence on the traditional, especially kinship-based centers of power and institutions. While it is difficult to get into the details of a wide range of initiatives in the field of participatory forest management, it is clear that the traditional institutions ought to get adapted to the new power equations. Unfortunately, the process of adaptation, more often than not, proves self-destructive as it leads to overshadowing of the mainstream power structure, which is largely exploitative. Similarly, the reservation policy has also created a separate class of elites within the tribal communities. The dilemma of 'mainstreaming' thus continues (Mathur, K.S. 2002).

3.5 Economic Diversification without Local Linkages

The forest-based regions also happen to be rich in mineral resources. This, potentially, can be used for promoting diversification of economies, especially through development of mineral base industries and the associated activities like transport etc. But this does not seem to be happening as reflected in the composition of state domestic products (SDP) as well as workforce diversification at the state level (Table 9). For instance, primary sector is found to have a relatively larger share i.e. >36 per cent in most of the states, comprising forest-based regions except West Bengal. This is despite the fact that mineral based activities have a relatively larger share in SDP in the case of forest-based states like Assam, Bihar, MP, and Orissa. *Prima facie,* this might be due to certain inherent features of mineral based industries that have limited forward linkages within the region (Shah and Hirway, 2002). Similarly, the freight equalisation policy has also resulted in bypassing the home-economies where development of minerals or their processing had taken place.

Essentially the above characterisation of limited local linkages for economic development is part of a larger phenomenon often described as 'poverty in the midst of plenty'. The processes of internal colonialisation thus, get extended beyond forests and tribal communities, impinging on the overall development of the state economies. This brings us back to the initial characterisation where feudal systems in most parts of the forest-based economies were seen as a major source of sustained poverty, irrespective of the faulty policies of forest management. In fact, what one observes is an alliance of the erstwhile feudal power structure within these states with the mainstream polity at the national level, which reinforced the minority status among tribal communities. This is why the forest bureaucracy is found to be much more powerful in the forest-based regions with a feudal background; and also that political pressure for promoting value addition activities based on rich natural resources within the regions did not emerge. The forest-based regions thus, have been pushed into the 'BIMARU' syndrome, of which they are constituent parts.

3.6 Improved Connectivity, Capabilities, and Mobility

Notwithstanding the structural constraints and the state patronage to that, developmental policies have played positive role in terms of improving the conditions of marginalised people within these regions. This has been reflected

in terms of a number of initiatives taken up for improving social and physical infrastructure. Some of these also get reflected in terms of indicators like literacy, mobility, and political representation. For instance, literacy rate among tribals has increased from a dismal level of around 8 per cent in 1961 to about 24 per cent in 1991. Similarly, connectivity through road and communication network has also increased substantially in a large number of districts within forest-based regions. This, along with increasing population pressure might have increased the stream of out-migration from these regions. In turn, a process of chain migration might have set in whereby those, who earlier, were non-migrants also find it not only necessary but also easy to move out. While a large part of this migration is likely to be distress –induced, it nevertheless opens up new options and avenues for some of those who would have liked to move but, could not do so because of lack of information, transport facilities, and financial as well as social capital.

The recent developments in terms of amendments in Panchayati Raj is also likely to provide larger space for tribals and other communities in these marginalised regions. Initial experiences suggest alignment of the emerging leadership with the mainstream polity especially, through party lines. This would mean stratification and fragmentation within the communities. But, this is a larger process, which could hardly be wished away. Also, the classical image of a homogenous and equitous tribal society does not exist any longer. Rather the tribals, like all other communities, are undergoing a significant transition (Shah et. al; 1998) on various fronts- economic, social, and cultural. What is crucial in this context is that they should be able to use the increased political space for consolidation of their collective interests by reviving and adapting certain traditional institutions especially, pertaining to their interface with land, forest, and water. This is a major task for those who try to organize the communities, based on issues rather than on party lines. The nuances of some of the major tribal movements in the recent period therefore, are important to gauge. The existing literature deals with this aspect by providing detailed profiles of tribal movements in different parts of the country (Singh, K.S 1998; Shah, Ghnashyam(2002); Suresh Singh 2002; Dubey(1967); Baviskar 2001). While we do not get into discussing the rich literature on the theme, it is essential that analysis of chronic poverty in forest-based regions engages significantly in reflecting on some of the contemporary movements in the region.

4. Correlates of Poverty among Different Categories of Regions

This section examines correlates of poverty among different categories of areas. The analysis has been carried out in two stages. First a macro level exercise for all the districts and regions separately. The second stage involves identification of the factors affecting poverty in three categories of districts and regions. These are dry land, forest-based, and the rest. The last category is likely to cover a large part of the irrigated and high potential rain-fed regions.

Adopting the official concept, poverty has been captured in terms of income or expenditure. Since there are no systematic estimates of poverty at district level, the analysis of correlates of income poverty has been confined to regions for which the official estimates are available. The problem at the regional level however, is that the demarcation of dry land and forest-based areas are somewhat crude. This has been done by using categorisation of districts and applying a thumb rule of majority to identify a region as dry land or forest-based. Hence, if majority of districts within a region falls into a particular category, the entire region has been labeled under that that. This procedure of course, has obvious limitations. Yet we have followed that for the want of a better alternative, given the data constraints. This however, has been supplemented by an analysis of interrelationships between the factors influencing poverty. This exercise has been done both at district as well as regional levels.

Correlates of poverty have been examined by using 16 variables representing natural, human, and physical assets along with economic development. While most of these variables are estimated at district level, we have used them to derive regional estimates by applying appropriate weights. This still leaves certain anomalies in estimation of some of the critical variables like proportion of area under forest, proportion of irrigated area, proportion of wasteland etc. For, the estimates obtained from the land-use statistics, reflect the official categorisation rather than the actual status of land (Iyengar, 1998). To an extent, these problems in land use data have also affected the classification of forest-based regions. The problem has aroused especially in the case of some of the forest-based districts with higher (than the cut-off) proportion of area under forest. However, forests in many of these districts have been depleted so badly that the area does not have much resemblance of the forest-ecology in other parts of the country, where depletion is not so severe. In any case the data do not reflect anything on the quality of land or forest etc. As a result, some of the

districts/regions having higher proportion of forest area without much forest on that may get classified as forest-based areas, though, its actual status might be more closer to dry land areas. South-West Madhya Pradesh is a case in point in this context, where a majority of the region is being considered as drought prone districts under DPAP.

Similarly, many of the dry land regions have higher proportion of irrigated area vis-à-vis areas with better rainfall. But, this irrigation is highly variable depending on rainfall and non-sustainable as we have discussed above. Also, depletion of ground water for irrigation might bring conflicting results in terms of increased land productivity on the one hand, and increased salinity (i.e. waste land) on the other. Using a somewhat lower cut-off (of say, about 25%) of proportion of irrigated area as being done for identifying drought prone districts might exclude many areas having greater resemblance of dry land regions but, actually get classifies under the category of 'other'.

Given these limitations, we have tried to capture some broad pattern of correlates of (a) income poverty; and (b) human capabilities like literacy, and infant or child mortality for which district level estimates were readily available. In what follows we present main findings of the analysis of correlates for the two sets of indicators.

4.1 Income Poverty

As noted earlier the factors explaining poverty and human capabilities have been categorised into four major groups viz; demographic, natural resource endowment, infrastructural development, and economic diversification. Prima facie, it is hypothesised that income poverty would be significantly influenced by natural resource endowment (like land, forest, irrigation) and access to physical infrastructure (like road, electricity, communication etc.). Demographic factors and economic diversification could get adapted to these basic sets of operating environment whereas, social and political empowerment might facilitate the process of adaptation. Of course, this dynamics is influenced by certain exogenous factors and processes like the property rights regime, macro level strategy for growth, and historically determined inequality of economic growth. Given this basic perspective, we have tried to identify the major factors influencing income poverty (in terms of HCR) across four sets of regions.

Table 10 presents the results of the correlation exercise. It is observed that at macro level, i.e. for all the regions taken together, poverty is significantly associated with natural resource endowment in terms of irrigation along with land and labour productivity on the one hand, and electricity, and infrastructural development on the other. Higher land and labour productivity in agriculture in turn, also induces rural (male) wages to rise, which in turn has a poverty reducing impact. To a large extent, this confirms the existing evidence on the critical role of agricultural growth in poverty reduction brought out through more sophisticated analyses at the all India level. Incidentally, rural poverty is found to be closely associated with urban poverty at regional level. Does the same dynamics operate in each of the RRAs viz; dry land and forest-based regions?

The results in Table 10 suggest that the dynamics is somewhat different. For instance, within dry land regions, natural endowment like irrigation is not influencing poverty nor does infrastructure as it was observed at macro level. What however, seems to have been unfolding is the dynamics of out-migration especially, from the areas having larger proportion of wasteland. Strangely wasteland is found to be negatively associated with poverty, *which prima facie,* may suggest higher incidence of out-migration from these regions. This in turn, gets reflected in terms of a positive correlation between rural and urban poverty within a region. Out-migration also results in reduced workforce in agriculture and thereby, having a negative association with poverty. Together this may indicate lower poverty in areas with high incidence of wasteland and higher level of labour productivity presumably because of out-migration. As a result a part of the rural poverty may get shifted to urban areas and eventually get evened out across the two. This phenomenon is likely to have been reflected by relatively higher rate of urbanization in the states with predominance of dry land region vis-à-vis forest based regions as seen in Table 2.While we do not have data by region to substantiate the migration-mediated impact on poverty, the existing literature does support this phenomenon at macro level (NIRD, 2000) as well as state level (Shah, 2002).

Compared to dry land region, the pattern in the forest-based regions is different. Here, migration does not seem to be working as an important correlate of poverty. For, rural poverty does not have any significant association with urban poverty. Instead, what seems to be effecting is occupational diversification within rural areas, rather than in urban areas as might be the case in dry land regions. Similarly, access to electricity is also found to be important for reducing poverty

in forest-based regions. Labour productivity once again, turns out to be a significant correlate of rural poverty with an inverse relationship.

The remaining regions in the category of 'other' shows a somewhat similar pattern to that observed at macro level. Here, irrigation turns out to be an important correlate of poverty with electricity and labour productivity also having significant correlation. Urban poverty is also positively associated with rural poverty. To an extent, this might be due to the fact that many of the high potential rain-fed regions fall into this category, where incidence of both- rural as well as urban poverty is high.

It may however be noted that regions with significantly high proportion of rural poverty i.e. 50 per cent or more is found to be concentrated mainly in forest based regions (see Table 11). Nevertheless, pockets of widespread poverty like these exist in all the three categories of regions. To a large extent this could be attributed to the fact that the observed level of rural poverty is already mediated by population movements (say, from rural to urban and from dry to wet areas); and also through the processes of economic diversification, determined by certain exogenous factors. What we observe therefore, is a net outcome after accounting for these two (and some other) mediating processes.

We also tried to examine the impact of regions in determining the incidence of poverty across three categories of regions viz; dry land, forest based, and other. This was done with the help of a multiple regression model by using categories of regions as dummy. Two dummies were used distinguishing forest based vs. dry land, and forest –based vs. other. The results indicated that whereas size of the family, extent of waste-land (with a negative sign), and proportion of workers in rural non-farm employment were important determinants of poverty, the regional dummies did not emerge as significant factor influencing poverty. To an extent, this could be due to the difficulties to identifying regions strictly in terms of the three categories, and partly due to the impact of migration within and across regions. Since migration is one of the most important mediating factors influencing the spatial distribution of poverty, the analysis is likely to be incomplete in absence of an appropriate variable capturing out-migration. Nevertheless, a negative association between wasteland and poverty could be treated as reflecting low incidence of poverty among dry land regions where wasteland is mainly concentrated. Apparently, the negative association between the two likely to have been mediated through large-scale out-migration from

these regions. These issues however need careful scrutiny possibly by obtaining evidence at micro level.

4.2 Human Capabilities

The results presented in Table 10 do not indicate significant correlation between income poverty and the indicators of human capability viz; literacy, especially among females; and child mortality. The only exception is a negative association between female literacy and poverty in forest-based regions. For the rest, level of poverty does not seem to have exerted any favourable impact on improving human capabilities, captured through the above variables. This suggests absence of any significant association between income and capability poverty. To an extent, this is somewhat at variance with the larger picture of congruence between the head count poverty ratio and human development index at state level (Mehta and Shah, 2002). There were however, major exceptions to this pattern in the case of Andhra Paradesh, Rajasthan, and Maharashtra and somewhat among Orissa, and Uttar Pradesh besides Kerala, representing an extreme case. Since all the five states are covered under one of the two categories of RRAs, and also that these states constitute a large proportion of the poor in India, the pattern observed here is a better reflection of what actually obtains in some of the poorer areas in the country. It would therefore, be useful to understand the factors explaining higher levels of human capabilities in the two sets of RRAs in India.

Tables 12 a & b presents the factors having significant correlation with female literacy. It is observed that female literacy, to a large extent, is influenced by (a) rate of population growth; (b) proportion of non-farm employment; and (c) electricity reflecting physical remoteness. These three factors are present in at least three out of the four sets areas. The other factors having significant association at the macro level pertain to land productivity, rural (male) wage rate, household size and child mortality. To a large extent, this confirms the pattern observed at the all India level where higher productivity of land along with higher wage rates and better infrastructural support enhance female literacy, which in turn, leads to child mortality. On the other hand, high rate of population and larger family size reduce the chance of female literacy. A somewhat similar pattern has been observed among ‘other’ regions, but not in dry land and forest-based regions. Here non-farm employment and electrification turn out to be

significant factors with population growth also being significant in the case of dry land region.

We also tried to examine the correlates of female literacy at district level by taking several more variables. Here, apart from confirming the pattern observed in the case of regions at macro level, it suggests diverse pattern across different categories of areas. For instance, population growth has negative impact on female literacy in dry land regions, the relationship is found to be positive in forest based regions. However, with respect to population density as well as urbanisation the relationship is found to be positive across all areas. Another important feature is a negative association between female literacy and proportion of tribal population especially among forest-based areas where a large proportion of tribals reside. Conversely, female literacy is found to be positively related with infrastructural development, land as well as labour productivity, and non-farm employment. All these confirm a positive influence of economic development on human capabilities.

With respect to IMR a negative association is observed with most of the developmental indicators such as urbanisation, infrastructural development, land as well as labour productivity and also non-farm employment. Importantly, female literacy has exerted negative impact on IMR in all the categories of areas. Nevertheless, the direct link with income poverty is found to be significant only in the case of forest-based regions as shown in Table 10.

4.3 Correlates of Productivity

As noted earlier, labour productivity in agriculture seems to have exerted positive impact on poverty reduction. Labour productivity was found to be negative in all four categories of areas (Table 10). Compared to this, land productivity did not appear to have significant impact on poverty except at macro level. Similarly impact of irrigation is also found at macro level as well as for the 'other' regions having better rainfall and/or soil-moisture profile- but not on dry land or forest-based regions. This is somewhat strange as it deviates from the generally observed phenomenon of poverty reducing impact of irrigation not only at the macro level but, also within dryland regions. It would therefore, be useful to understand the correlates of some of these basic factors that may have significant bearing on poverty- even within the two sets of RRAs viz; dry land and forest-based regions.

Tables 12 a & b provides information about the factors having significant association with land and labour productivity. It is observed that at the macro level, land productivity is positively influenced by proportion of area under irrigation, and negatively associated with proportion of wasteland. In turn, higher land productivity is associated with higher labour productivity as well as wages. A positive relationship between land and labour productivity is also found in the case of forest-based regions and also in 'other' regions, but not in dry land regions. Similarly, irrigation does not show any systematic association with land productivity in dry land regions. This is surprising especially, because land productivity is generally found to be lower among DPAP vis-à-vis non-DPAP districts as already noted in Table 3. Together these suggest a positive impact of irrigation across all regions or districts taken together but not within dry land region or DPAP districts.

To an extent, a weak association between irrigation and land productivity, especially within dry land region, might be attributed to the problem of specification. The irrigation variable, defined as proportion of irrigated area, reflects the extent rather than intensity and dependability of irrigation, which is particularly important under the dry land conditions. It is likely that land productivity in a dry land region or a district is influenced more by intensity rather than the extent of irrigation, and more so if the rainfall had been sub-normal in the year for which data have been obtained. Ideally, a triennium average should be taken to capture the variations in productivity as well as irrigation across space. This however was not possible because of the non-existence of the readily available data at district level. The pattern is more or less similar in the case of labour productivity as seen from Table 12 (b).

If we look at the district level pattern, we find that irrigation shows a positive impact on land productivity both in dry land as well as forest-based regions, but not at macro level. Higher level of land productivity however is positively related with higher value of agricultural production per capita in all the four sets of areas while taking district as unit of analysis. In turn, the positive impact of land productivity is also found in terms of improved female literacy and also on reduced infant mortality. Infrastructural development seems to be playing an important role in triggering this process of change except in dry land districts.

Overall, the analysis of correlates reconfirms some of the existing patterns especially, at micro level. But, more importantly it highlights certain divergence

from the generally observed pattern of the impact of critical factors like population growth, irrigation, land productivity, infrastructural development, and work force diversification when we looked at the patterns at region or district levels. While a part of the divergence could be due to inappropriate specification of the factors and their classification across the four categories of areas, the analysis presented above, may still provide broad indications of the differential dynamics of poverty reduction obtaining across the categories of areas. This is very crucial for policy formulation, which essentially should be preceded by a detailed enquiry into the two sets of RRAs, at the regional and sub-regional levels. Future enquiry into poverty in India's remote rural areas should therefore aim at finding out the dynamics that work at the margin, rather than capturing the average picture of the larger pattern that obtains at the macro level. In this context, the foregoing analysis may provide some basis for launching a new set of enquiry, which would specifically focus on: What has changed in the RRAs over time? What has been the impact of these changes on people's livelihood as well as well being? And who benefited from these changes and why?

5. Summing Up

The foregoing analysis presented a review of the existing literature on poverty in remote rural areas, and also provided some fresh evidence on the correlates of poverty in different categories of areas. Considering the fact that there have not been many studies, focusing on 'remoteness' and its links with poverty especially, chronic poverty in India, the analysis had to adopt an 'area-cum-issues' approach for scanning and selecting the studies to be incorporated in the review. To a large extent, the literature selected for the review has encompassed analyses of economic development, with special reference to agriculture, and poverty or human capabilities in some of the marginalised areas, termed as 'backward regions' in the Indian planning. Obviously this covers a huge amount of literature, given the size and diversity of the country, and also the ever increasing academic community from different disciplines of social sciences working on the themes within and outside India. The strategy adopted therefore, was not only being selective but also being thematic and issues-based.

Five sets of aspects have been covered by the review. These are: (i) the debate on spatial or regional inequalities in Indian economy and the likely explanation for that. This set the stage for placing the specific constraints faced by RRAs in a

larger context. (ii) Evolving a relevant definition of RRAs with respect to poverty in the light of the processes that have led to spatial inequalities or marginalisation. (iii) Providing a profile of the two sets of areas, defined as RRAs viz; dry land and forest-based regions. (iv)The third aspect has been intertwined with a detailed discussion on the constraints faced as well as coping strategies adopted by people in the two sets of regions. And (v) Presenting some fresh evidence on the correlates poverty in terms of income as well as human capabilities and the interface between the two. The paper therefore is some kind of a blending of a literature review along with an analysis of poverty dynamics in the two sets of RRAs. It however, does not claim to be exhaustive in terms of the coverage of studies as well as the issues having special bearing on understanding the dynamics of chronic poverty in India's remote rural areas. Nevertheless, it is hoped that the review would provide a sufficiently large canvass and also a framework within which issues having some amount of consensus can be placed and the questions requiring further probing could be raised.

Given this backdrop, this section summarises some of the major observations emerging from the review and identifies issues that need further probing in order to obtain a more context specific understanding of poverty especially, chronic poverty in India's remote rural areas.

5.1 Major Observations

(i) Development of spatially marginalised areas has been an important feature of planning in India. Nevertheless, the growth imperatives superceded these concerns. As a result, poverty got concentrated in certain geographically contiguous areas in the central–east regions. To a large extent, these regions are characterised by adverse agrarian relations but with better natural capital especially, forest, minerals, and soil.

(ii) High incidence of poverty however, is confined not only to the above set of regions. There are pockets of severe poverty even within relatively more developed states like Maharashtra, Karnataka, Andhra Pradesh. Poverty in these regions is linked more closely to the low agronomic potential and frequent shocks like droughts. While poverty, affected by droughts is likely to be more transitory in nature, non-sustainability of natural resource use may lead to situations of endemic poverty in these regions.

(iii) Thus, spatial poverty traps thus, could be identified mainly in the two sets of regions, broadly classified as forest-based and dry land. Whereas the former has high incidence of chronic poverty in duration sense, the latter may have more of transient poverty, which if unattended, could be converted into chronicity.

(iv) Given the basic differences in operating environment, coping mechanism also varies across the two sets of regions. Ground water development, commercialisation of agriculture, economic diversification as well as the associated infrastructural development, and migration, are the major features of coping mechanism in dry land regions. Over depletion of ground water resources of late, is posing a major challenge to the coping mechanism in these regions. Notwithstanding these, ability to organise drought relief programmes due to better availability of financial resources and also political commitments, may also help in the process of coping with frequent droughts.

The above features are relatively rare in most of the forest-based regions. While migration is a common feature across the two, its dynamics is likely to be different as forest-based regions may still provide some base for livelihood because of the relatively rich natural resources in the region. There are however, areas within forest-based regions, which also have a fair amount of resemblance with dry land conditions but, without the favourable features thereof. This happens because of the severe depletion of forest and the resultant frequent droughts. These areas thus, face a situation of double disadvantages. The coping mechanism in the forest-based regions therefore, has to rest mainly on collective resistance and political representation particularly for reinstating people's stakes in management of the region's rich natural resources.

(v) The analysis of correlates of poverty reconfirmed some of the macro level processes such as critical importance of irrigation and agricultural productivity along with development of non-farm activities. These, in turn, exert positive impact on human capabilities though; there is no direct link between income poverty and human capabilities.

There is however, a significant variation in the pattern of correlates of poverty and human capability across the two sets of regions viz; dry land and forest based. The present analysis is severely constrained by availability of right kind of indicators at more dis-aggregated level i.e. for the region as well as districts. A more careful handling of some of the important variables like extent of dryness, quality of forests, severity of poverty might help understanding the differential patterns of poverty across the two sets of regions. Supplimenting these, with

carefully conducted micro studies therefore, is essential for taking further the discourse on chronic poverty in India's remote rural areas.

5.2 Looking Forward

The next stage of enquiry into chronic poverty in India's remote rural areas should focus more the following aspects:

A. Understanding the dynamics of poverty, especially long duration poverty, in a region facing different levels of depletion of natural resources especially, ground water, pastures, and forests.

B. Examining the impact of social and political capital on explaining poverty at region as well as household levels. And, identification of critical minimum levels of some the basic factors, including physical connectivity, for mitigating poverty on a sustained basis.

C. Understanding the interface between income and capability poverty and people's perception about how it operates (ought to be).

D. Examining the pattern of migration in a comparative framework across the two sets of regions viz; dry land and forest-based.

E. Processes of collective resistance for gaining greater control over and involvement in management for forest and other natural resources and their impact on empowerment among different categories of poor and on the polity within the states with forest based regions.

Table 1: Factors Affecting Chronic Poverty in Remote Rural Areas

States and Factors	Remote Rural Areas	
	Drought Prone	Flood Prone and Hilly
Major States/ Regions	Rajasthan (92%), Gujarat (88%), Maharashtra (81%), Karnataka (68%), Andhra Pradesh (65%), Tamil Nadu (61%)	Assam (31%), Hills Orissa (30%),– South Madhya Pradesh (30%),– South Western Bihar (15%) , South Uttar Pradesh (Uttarakhand), (80%) North East States Entire Region
Social Alienation	Higher Proportion of Scheduled Caste Households	Predominance of Scheduled Tribes
Structural	Ryotwari and/or Jagirdari Land Relation with a Fewer Intermediaries between Owners and Tillers	Zamindari land Relations with Large Number of Intermediaries Between Owners and Tillers
Population Growth and Access to Natural Resources and Modern Production Technology	Large but less productive land holidings Higher degree of commercialization and Neglect of Common Property Resources, Break Down of Collective Institutions Low Population Pressure Due High Out-migration Low Untapped Agronomic Potential Over Utilisation of Natural Resources viz; Water, CPLRs	Limited Access to Forest Resources; High Dependence of Common Property Resources; Collective Institutions Subsistence Crops, Low Level of Input Use High Population Pressure Moderate to High Agronomic Potential Moderate Use of Natural Resources viz; Water, Forests
Sectoral and Infra-structural evelopment	Relatively more diversified Economies with developed industrial and/or mining sectors	Less diversified Economies Despite the Substantial Mineral Resources
Access to Markets	Better development of Physical Infrastructure like road, electricity, communications and input-output markets for farm sector	Low development of physical infrastructure and markets

Table 1 (Contd…)

Policy Support	Special Programmes for Nutrition Security in Tamil Nadu, Andhra Pradesh; Employment Guarantee Schemes in Maharashtra; Good Network of Drought Relief in Gujarat Generally Weak Public Distribution System	Neglect of Agricultural Development and Inappropriate Forest Policies Overlooking People's Stakes Extremely weak Public Distribution System
Coping Strategy	Workforce Diversification in Industrially Developed States High Incidence of Inter-state Migration from Less Industrialised States Increased Private Water Investment in Ground water	Limited Avenues for Workforce Diversification Relatively Lower Incidence of Inter-State Migration Negligible Private Investment in Agriculture
Nature of Poverty	Poverty with Non-Sustainable Coping up Strategies because of the Higher Depletion of Natural Resources and Significant Social Cost of Out-migration	Chronic Poverty with Significant Scope for Increasing the Total Earnings from the given Land and Water Base and Improved Management of Forests with Participation of the Poor.

Table 2: Important Features of the States: Dry Land and Forest-Based (1991)

Variables	Popu-lation Density	Urban Popu-lation	NFW	Sex Ratio-rural	Literacy Female	IMR	ST	Agri. Produc-tion	Land Produc-tivity	Irri-gation	Wasteland as % of total Geographical area	Dev. Infra.	HCR (Rural)
Unit	Sq.km	%	%	'f/1000m	%	'/1000 birth	%	Rs.per capita	Rs./Ha.	% GCA		Index	%
Sl.No.	1	2	3	4	5	6	7	8	9	10	11	12	13
FOREST BASED STATES													
Assam	286	10.8	26.0	937	43.0	92	12.5	1087	6434	--	4.16	104	45.01
Bihar	496	13.4	17.6	921	22.6	75	7.6	539	4356	40	15.16	91	58.21
Madhya Pradesh	149	22.9	22.5	943	29.2	133	21.2	985	2766	17	15.72	87	40.64
Orissa	203	16.9	24.2	895	34.6	125	22.2	1396	4614	30	13.63	101	49.72
UP	473	19.8	27.0	884	25.0	99	0.3	970	5203	57	10.47	112	42.28
West Bengal	767	27.5	43.5	940	47.0	62	5.6	964	7580	22	7.76	102	40.80
DRYLAND STATES													
Andhra Pradesh	242	26.9	28.8	972	32.7	55	6.3	1332	4392	41	19.68	104	15.92
Gujarat	211	34.5	40.2	934	48.6	78	14.9	1166	2446	27	17.66	105	22.18
Karnataka	235	30.9	32.6	960	44.3	74	4.3	1700	3495	22	11.94	106	29.88
Maharashtra	256	38.7	38.5	934	52.3	74	9.3	938	2202	15	19.62	107	37.93
Rajasthan	129	22.9	28.4	910	20.4	87	12.4	973	1559	24	25.18	87	26.46
India	274	25.7	32.5	939	39.3	77	8.08	1899	8578	34	17.49	100	37.27

Note: 'Wasteland' excludes the area under 'Shifting Cultivation'.
NFW: Non Farm Workers; IMR: Infant Mortality Rate; ST: Schedule Tribe; HCR: Head Count Ratio.

Source: (i) Profiles of Districts, CMIE, October 2000; (ii) Census of India Hand Book 1991;
(iii) Hirway, Indira and S Mahendra Dev, "Eliminating Poverty in India Exploring Possibilities".
(iv) Wasteland Atlas of India Vol.II, National Afforestation and Eco-Development Board (NAEB), Ministry of Environment & Forest, Government of India, New Delhi, 1995.

Table 3: Comparative Profile of Dry Land and Non-Dry Land Districts Among Selected States in India (1991)

Variables	Unit	Andhra Pradesh		Gujarat		Karnataka		Maharashtra		Rajasthan	
		DPAP	NDPAP	DPAP	NDPAP	DPAP	NDPAP	DPAP	NDPAP	DPAP	NDPAP
Density	Sq.km	195	291	180	325	226	313	225	263	102	202
Urban	%	22.5	29.2	30.5	42.9	22.7	55.8	24.8	48.7	20.9	25.7
Sex Ratio-rural	'f/1000m	958	980	941	916	961	955	950	917	904	918
Literacy-rural	%	35.4	35.9	51.8	56.4	44.5	64.7	53.1	58.0	27.9	34.1
Literacy-female	%	28.7	34.8	45.2	55.8	37.7	64.4	44.0	58.4	18.1	23.6
ST	%	4.5	7.3	9.2	26.7	5.0	2.2	11.0	8.1	15.8	7.6
Forest	%	17.6	24.4	7.3	20.2	9.8	42.7	11.0	22.3	7.4	3.7
Main Worker-female	%	32.3	35.8	25.4	27.3	31.8	22.2	37.3	30.0	29.3	24.8
BPL(Rural)	%	26.5	28.8	20.5	49.3	26.6	96.5	22.4	79.5	32.0	16.9
Dev. Infra.Index		87.1	103.5	82.1	93.4	92.5	111.1	109.7	94.4	82.9	95.6
Agri.Production	Rs.per capita	44.2	73.3	34.1	57	41.1	150.2	41.9	34.6	15.7	28.6
Land Productivity	Rs./Ha.	3377	5407	2194	2698	3798	3192	2112	2292	1281	1837
Irrigation	% GCA	27.0	51.4	29.5	28.0	20.9	31.6	18.5	10.8	14.9	42.7

Note: BPL: Below Poverty Line.

Source: (i) Profiles of Districts, CMIE, October 2000
(ii) Census of India Hand Book 1991

Table 4: Crop-Based Systems among Semi-Arid Zones in India

Zone	Crop-Based Systems
2	Rapeseed/mustard-dairy zone of western Rajasthan and northwestern Madhya Pradesh (deep green)
3	Irrigated wheat-dairy zone of central Madhya Pradesh and Uttar Pradesh(dark blue)
4	Dairy-sheep and goats-pearl millet zone of far-western Rajasthan (purple)
6	Cotton-dairy-groundnut zone of Gujarat (light yellow)
7	Rainfed rice dominant zone of Bihar, West Bengal, Madhya Pradesh, and small parts of Maharashtra (bright yellow)
8	Dairy-rainfed wheat-chickpea zone of central Madhya Pradesh (light pink)
9	Soybean dominant zone of western Madhya Pradesh (dark orange)
10	Rainy-season sorghum-cotton-airy system of central Maharashtra (light orange)
11	Rainy-season sorghum fruit and vegetables zone of western Maharashtra and parts of Madhya Pradesh (light blue)
12	Groundnut dominant zone of southern Andhra Pradesh and peninsular Gujarat (deep pink)
13	Post rainy-season sorghum dominant zone of Western Maharashtra and north central Karnataka (shaded green)
15	Fruit and vegetables-rainfed rice zone of Orissa and parts of West Bengal (dark red)
16	Dairy dominant zone of the northern hills of Uttar Pradesh (aquamarine)

Source: ICAR / ICRISAT District – level Database.

Table 5: Value of Crop and Livestock Activities (Rs.ha.[1]) in 16 Rainfed Zones for Triennia Ending 1971 and 1993

Zone	Value of total output[1] (Rs. ha^{-1})		Value of total output[2] (Rs. ha^{-1})		Value of fruit and vegetables (Rs. ha^{-1})		Value of dairy + small ruminants (Rs. Ha^{-1})		Value of dairy activities (Rs. ha^{-1})		Value of sheep and goats (Rs. ha^{-1})	
	1969-71	1991-93	1969-71	1991-93	1969-71	1991-93	1969-71	1991-93	1969-71	1991-93	1969-71	1991-93
1	5579	9214	4965	7756	760	1318	614	1458	480	1269	134	189
2	3899	6106	2929	4609	97	167	970	149	7725	1208	245	289
3	4705	7056	3755	5603								
4	2048	2666	1422	1634	16	44	626	1032	271	628	355	404
5	5675	7992	4357	5783	659	686	1318	2210	1096	1890	221	320
6	5559	7374	4729	5732	181	559	829	1642	726	1506	103	136
7	6005	9791	5180	7648	749	1536	825	2143	681	1741	143	402
8	3551	5444	3020	4410	161	203	530	1034	460	973	71	62
9	4087	7482	3585	6543	240	357	502	939	422	853	80	86
10	3167	6300	2731	5447	174	593	436	853	353	739	82	114
11	3337	6675	2981	5901	464	873	356	774	279	651	77	124
12	6844	9544	5931	8159	565	971	913	1385	631	1138	282	247
13	3446	6113	3119	5429	202	552	327	684	207	529	121	155
14	6585	11637	5869	10031	795	1279	716	1606	501	1331	215	275
15	6985	10094	6581	9357	1889	3485	404	738	238	510	166	228
16	6843[3]	10133	4117[3]	5742	344[3]	529	2727[3]	4391	2370[3]	3981	356[3]	410
ID	7564	14104	6465	11919	677	1187	1099	2185	975	2001	124	185

1. Includes all crops, fruit and vegetables, and livestock.
2. Includes all crops + fruit and vegetables.
3. Based on 1979-81 data.

ID = Average of all irrigated districts not included in the typological classification.

Source: ICAR / ICRISAT District – Level Database (Table 7, p. 31).

Table 6: Environmental Sustainability Indicators Among Major States in India

State	Area not Under Forest as a % of Total Geographical Area (1996-97)	Percentage of Ground water Exploitation % of net draft to available Gr. Water resources (1992-93)	Percentage of Area under non- legu-minous crops to total Gross cropped Area (1995-96)	Degraded Land as % Total Geographical Area (1996-97)
Andhra Pradesh	82.80	23.64	70.54	38.79
Assam	68.80	4.48	100.00	35.23
Bihar	84.70	19.19	86.65	28.30
Gujarat	93.90	41.40	73.36	49.62
Haryana	98.80	83.88	92.52	75.68
Himachal Pradesh	76.30	18.04	99.98	27.50
Karnataka	83.10	31.26	76.4	39.20
Kerala	73.40	15.28	86.84	37.23
Madhya Pradesh	69.50	16.49	63.88	34.80
Maharashtra	85.70	30.39	78.42	28.89
Orissa	69.70	8.42	89.53	44.58
Punjab	97.30	93.85	98.56	42.93
Rajasthan	96.20	50.63	78.84	103.44
Tamil Nadu	86.40	60.44	75.32	14.21
Uttar Pradesh	88.50	37.66	88.32	29.77
West Bengal	90.80	24.18	97.23	42.66

Source: Food Insecurity Atlas of Rural India. (Table 2.6)

Table 7: Comparative Profile of Forest and Non-Forest Based Districts in Selected States in India, 1991

Variables	Unit	Assam		Bihar		Madhya Pradesh		Orissa		Uttar Pradesh		West Bengal		India
		Forest	Others	Forest	Others	Forest	Others	Forest	Others	Forest	Others	Forest	Others	
Density	Sq.km	145	337	241	679	139	189	167	381	761	618	457	946	274
Urban	%	15.9	8.1	18.9	11.9	16.4	31.4	19.6	11.0	19.1	19.9	13.9	31.3	25.7
Sex Ratio-rural	'f/1000m	930	942	960	913	956	923	853	982	952	879	941	940	939
Literacy-rural	%	51.8	46.1	31.9	34.3	36.1	37.7	39.3	50.3	46.9	35.9	51.1	51.4	44.7
Literacy-female	%	47.0	40.4	11.8	10.7	29.3	29.2	30.2	43.9	36.0	24.3	40.3	48.9	39.3
ST	%	14.4	11.8	31.2	1.6	30.3	9.3	29.3	6.9	1.1	0.2	10.5	4.2	8.1
Forest	%	23.7	11.9	31.0	7.0	37.6	13.6	39.7	13.0	43.9	3.6	26.0	4.2	22.6
Main Worker-female	%	21.5	22.1	12.7	5.7	37.0	26.9	26.3	8.9	28.4	11.1	15.9	9.9	22.3
Dev. Infra.Index		99.1	88.7	67.1	96.2	75.7	81.9	97.6	102.6	102.2	98.0	81.9	90.8	100
Agri. Production	Rs.per capita	67.1	55.3	38.4	43.4	29.2	25.7	46.1	47.5	109.2	63.7	193.7	97.3	
Land Productivity	Rs./Ha.	4483	4026	2974	3791	2780	2627	3549	4313	3718	4934	6257	8688	8578
Irrigation	% GCA	NA	NA	8.44	46.22	19.02	17.99	28.21	37.26	57.47	53.88	10.92	23.76	38.66

Note: GCA: Gross Cropped Area.

Source: (i) Profiles of Districts, CMIE, October 2000; (ii) Census of India Hand Book 1991

Table 8: Change in Forest Areas Among Selected States in India

States	Area Under Forest(%)	Area Under Forest(%)	Change(%)
Year	1978-79	1999	1978-79 to 1999
Assam	36.47	30.20	-6.27
Bihar	16.84	15.23	-1.61
Himachal Pradesh	39.01	23.50	-15.51
Madhaya Pradesh	34.64	29.73	-4.91
Orissa	43.33	30.21	-13.12
Uttar Pradesh	17.35	11.55	-5.80
West Bengal	13.33	9.42	-3.91
INDIA	22.73	19.39	-3.34

Source: Statistical Abstract 1980 & 2000

Table 9: Sectoral Composition of Workforce and Net State Domestic Product (NSDP)-by States

State	% Share in	Primary	Secondary (Mining)	Tertiary
Forest States				
Assam	NSDP	39.34	15.29 (3.4)	45.36
	Workforce	74	5.6	20.40
Bihar	NSDP	38.72	26.51 (4.2)	34.77
	Workforce	82.4	4.6	13.00
MP	NSDP	43.96	24.42 (3.6)	29.21
	Workforce	77.50	8.4	14.10
Orissa	NSDP	38.62	22.10 (4.5)	39.27
	Workforce	75.80	7.5	16.70
UP	NSDP	42.58	19.57 (0.6)	37.85
	Workforce	73.00	9	18.00
West Bengal	NSDP	33.13	25.49 (0.1)	41.38
	Workforce	56.50	17.8	25.70
Dry States				
AP	NSDP	35.54	18.00 (1.2)	47.18
	Workforce	71.20	10.5	18.30
Gujarat	NSDP	25.55	39.74 (0.3)	34.70
	Workforce	59.80	17.9	22.40
Karnataka	NSDP	35.59	22.87 (0.2)	41.54
	Workforce	67.40	13.2	19.50
Maharashtra	NSDP	17.77	34.94 (0.4)	47.29
	Workforce	61.50	15.8	22.70
Rajasthan	NSDP	44.51	18.96 (1.9)	34.48
	Workforce	71.60	9.9	18.50

Notes: % share of NSDP are for the year 1994-95 and % share of workforce are for the year 1991.
Figures in the brackets are % share of Mining and Quarrying in NSDP

Source: National Account Statistics of India 1950-51 to 1996-97, EPW Research Foundation

Table 10: Correlates of Rural Poverty (HCR) Across NSS Regions in India: 1993-94

Variables	All	Dry	Forest	Other
POVERTY				
OPL Rural(87-88)				
OPL Rural(93-94)				
OPL Urban(87-88)	0.331*			0.696**
OPL Urban(93-94)	0.462**	0.570*		0.670**
DEMOGRAPHIC				
Population Growth				
Household Size				
HUMAN CAPABILITIES				
Female Literacy			-0.693**	
Child Mortality				
LAND				
Land Productivity	-0.274*			
Rural Wage (Male)	-0.289*			
Waste Land		-0.590**		
Labour Productivity	-0.394**	-0.510*	-0.455+	-0.467*
Gross Area Irrigated	-0.297*			-0.485*
ECONOMIC DIVERSIFICATION				
Rural NFW	-0.246+		-0.544*	
INFRASTRUCTURE				
Electricity	-0.485**		-0.558*	-0.625**
Safe Drinking Water				
Medical Facilities				
Post & Telegraph	0.386**	0.601**	0.507*	

Note: OPL is the Poverty Line based on the official norm and updated using disaggregated price adjustment suggested by Minhas et al (1988).
*: Sig. at 1 percent
**: Sig. at 5 percent
+ : Sig. at 10 percent

Source: (i) Counting the Poor, SARVEKSHNA Analytical Report Number 1, 1998;
(ii) India Rural Development Report 1999, NIRD, Hyderabad, India.

Table 11(a): Correlates of Female Literacy Among NSS Regions in India

Variables	All	Dry	Forest	Other
POVERTY				
OPL Rural(87-88)			-0.688**	
OPL Rural(93-94)			-0.693**	
OPL Urban(87-88)				
OPL Urban(93-94)	-0.286*		-0.658**	
DEMOGRAPHIC				
Population Growth	-0.584**		-0.657**	-0.711**
Household Size	-0.306*			-0.527*
HUMAN CAPABILITIES				
Child Mortality	-0.377**			-0.711**
LAND				
Land Productivity	0.431**			
Rural Wage (Male)	0.440**			0.510*
Waste Land				
Labour Productivity				
Gross Area Irrigated				
ECONOMIC DIVERSIFICATION				
Rural NFW	0.627**	0.486*	0.769**	0.680**
INFRASTRUCTURE				
Electricity	0.472**	0.560*	0.683**	
Safe Drinking Water				
Medical Facilities	0.292*			

Note: OPL is the Poverty Line based on the official norm and updated using disaggregated Price adjustment suggested by Minhas et al (1988).
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: (i) Counting the Poor, SARVEKSHNA Analytical Report Number 1, 1998;
(ii) India Rural Development Report 1999, NIRD, Hyderabad, India.

Table 11 (b): Correlates of Female Literacy Across Different Categories of Districts

Variable	All Districts	Dry Districts	Forest Districts	Other Districts
DEMOGRAPHIC				
Population Growth		.392	.267*	
Sex Ratio (Rural)		.273		
Density (Rural)	.270**	.545**	.341**	.325**
ST		.267*	-.353**	.182*
HUMAN CAPABALITIES				
Infant Mortality	-.366**	-.515**	-.260*	-.372**
Literacy (Rural)	.689**	.937**	.608**	.638**
Literacy (Female)				
LAND				
Forest	.168*			.317**
Gross Irrigated Area	.118*			.219**
Agricultural Productivity	.207**	.320**		.214**
Land Productivity	.213**	.394**	.410**	.234**
Waste Land				
ECONOMIC DIVERSIFICATION				
Urbanisation	.505**	.538**	.388**	.529**
Main Workforce (Female)			-.311*	
Non Farm Workers	.569**	.546**	.594**	.582**
INFRASTRUCTURE				
Development Infrastructure Index	.330**		.546**	.310**
Road	.239**	.613**		.267**
Composite Index	.210**	.457**		.172*

Note: The Composite Index includes six facilities viz. primary school, any medical facilities, hand pump for safe drinking water, post office, approach through 'pucca' road and electricity available for any purpose in the village.
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: Profiles of Districts, CMIE, October 2000; 1991 Census Hand Book; Census of India, 1991, Availability of Infrastructural Facilities in Rural Areas of India: An Analysis of Village Directory Data.

Table 11(c): Correlates Child Mortality Among NSS Regions in India

Variables	All	Dry	Forest	Other
POVERTY				
OPL Rural(87-88)				
OPL Rural(93-94)				
OPL Urban(87-88)				
OPL Urban(93-94)				
DEMOGRAPHIC				
Population Growth	0.630**	0.674**		1.000**
Household Size				0.620**
HUMAN CAPABILITIES				
Female Literacy	-0.377**			-0.711**
LAND				
Land Productivity				
Rural Wage (Male)				
Waste Land	0.309*			
Labour Productivity				
Gross Area Irrigated				
ECONOMIC DIVERSIFICATION				
Rural NFW	-0.298*			-0.647**
INFRASTRUCTURE				
Electricity				
Safe Drinking Water				
Medical Facilities				
Post & Telegraph				-0.740**

Note: OPL is the Poverty Line based on the official norm and updated using disaggregated price adjustment suggested by Minhas et al (1988).
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: (i) Counting the Poor, SARVEKSHNA Analytical Report Number 1, 1998;
(ii) India Rural Development Report 1999, NIRD, Hyderabad, India.

Table 11(d): Correlates of Infant Mortality Rate Across Different Categories of Districts

Variable	All Districts	Dry Districts	Forest Districts	Other Districts
DEMOGRAPHIC				
Population Growth	.119*			
Sex Ratio (Rural)		-.290*		
Density (Rural)	-.224**		-.517**	-.278**
ST	.188**	.319*		
HUMAN CAPABALITIES				
Infant Mortality				
Literacy (Rural)	-.244**	-.466**	-.308*	-.173*
Literacy (Female)	-.366**	-.515**	-.260*	-.372**
LAND				
Forest				-.145*
Gross Irrigated Area				
Agricultural Productivity				
Land Productivity	-.161**	-.346		-.209**
Waste Land				
ECONOMIC DIVERSIFICATION				
Urbanisation	-.355**			-.384**
Main Workforce (Female)				
Non Farm Workers	-.401**		-.310*	-.447**
INFRASTRUCTURE				
Development Infrastructure Index	-.249**			-.367**
Road		-.388*	.414**	
Composite Index	-.370**	-.423**		-.351**

Note: The Composite Index includes six facilities viz. primary school, any medical facilities, hand pump for safe drinking water, post office, approach through 'pucca' road and electricity available for any purpose in the village.
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: Profiles of Districts, CMIE, October 2000; 1991 Census Hand Book; Census of India, 1991, Availability of Infrastructural Facilities in Rural Areas of India: An Analysis of Village Directory Data.

Table 12(a) : Correlates of Land Productivity Among NSS Regions in India

Variables	All	Dry	Forest	Other
POVERTY				
OPL Rural(87-88)				
OPL Rural(93-94)				
OPL Urban(87-88)				
OPL Urban(93-94)				
DEMOGRAPHIC				
Population Growth	0.630**	0.674**		1.000**
Household Size				0.620**
HUMAN CAPABILITIES				
Female Literacy	-0.377**			-0.711**
LAND				
Land Productivity				
Rural Wage (Male)				
Waste Land	0.309*			
Labour Productivity				
Gross Area Irrigated				
ECONOMIC DIVERSIFICATION				
Rural NFW	-0.298*			-0.647**
INFRASTRUCTURE				
Electricity				
Safe Drinking Water				
Medical Facilities				
Post & Telegraph				-0.740**

Note: OPL is the Poverty Line based on the official norm and updated using disaggregated price adjustment suggested by Minhas et al (1988).
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: (i) Counting the Poor, SARVEKSHNA Analytical Report Number 1, 1998;
(ii) India Rural Development Report 1999, NIRD, Hyderabad, India.

Table 12 (b): Correlates of Land Productivity Across Different Categories of Districts

Variable	All Districts	Dry Districts	Forest Districts	Other Districts
DEMOGRAPHIC				
Population Growth	-.137*	-.464**		-.207**
Sex Ratio (Rural)		.331**		
Density (Rural)		.318**	.295*	
ST			-.418**	
HUMAN CAPABALITIES				
Infant Mortality	-.161**	-.346**		-.209**
Literacy (Rural)	.239**	.410**	.427**	.265**
Literacy (Female)	.213**	.394**	.410**	.234**
LAND				
Forest	.234**	.329**		.429**
Gross Irrigated Area		.323**	.284*	
Agricultural Productivity	.723**	.420**	.499**	.828**
Land Productivity				
Waste Land				-.213*
ECONOMIC DIVERSIFICATION				
Urbanisation				
Main Workforce (Female)			-.625**	
Non Farm Workers			.417**	
INFRASTRUCTURE				
Development Infrastructure Index	.181**		.338**	.160*
Road	.154*			.257**
Composite Index		.282*		

Note: The Composite Index includes six facilities viz. primary school, any medical facilities, hand pump for safe drinking water, post office, approach through 'pucca' road and electricity available for any purpose in the village.
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: Profiles of Districts, CMIE, October 2000; 1991 Census Hand Book; Census of India, 1991, Availability of Infrastructural Facilities in Rural Areas of India: An Analysis of Village Directory Data.

Table 12(c): Correlates of Labour Productivity Among NSS Regions in India

Variables	All	Dry	Forest	Other
POVERTY				
OPL Rural (87-88)	-0.507**	-0.522*		-0.668**
OPL Rural (93-94)	-0.394**	-0.510*		-0.467*
OPL Urban (87-88)	-0.405**			-0.687**
OPL Urban (93-94)	-0.426**			-0.628**
DEMOGRAPHIC				
Population Growth				
Household Size	0.418**			0.495*
HUMAN CAPABILITIES				
Female Literacy				
Child Mortality				
LAND				
Land Productivity	0.506**		0.610*	0.503*
Rural Wage (Male)	0.414**	0.494*		
Waste Land	-0.288*			
Gross Area Irrigated	0.663**			0.818**
ECONOMIC DIVERSIFICATION				
Rural NFW				
INFRASTRUCTURE				
Electricity	0.381**			0.501*
Safe Drinking Water	0.495**			0.642**
Medical Facilities		0.520*	0.587*	
Post & Telegraph				

Note: OPL is the Poverty Line based on the official norm and updated using disaggregated price adjustment suggested by Minhas et al (1988).
*: Sig. at 1 percent
**: Sig. at 5 percent

Source: (i) Counting the Poor, SARVEKSHNA Analytical Report Number 1, 1998;
(ii) India Rural Development Report 1999, NIRD, Hyderabad, India.

References

Asthana, M.D. and Pedro Medrano (2001). *Towards Hunger Free India: Agenda and Imperatives*, World Food Program, Manohar Publication, New Delhi.

Bage, Lennart. (2002). *Assessment of Rural Poverty: Asia and The Pacific, Asia and The Pacific Division- Programme Management* Department, International Fund for Agricultural Development, Rome.

Ballabh V, Shibani Dave and Kulbhushan Balooni. (1999). *Why Local Resources Management Institutions Decline: A Comparative Analysis of Van Panchayat and Forest Protection Committees*, 1999, Institute of Rural Management, Anand, Gujarat, India.

Banskota, Mahesh et.atl.(2000). *Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia,* ICIMOD, Kathmandu, Nepal.

Bhalla, Sheila (2000), Behind Poverty: The Qualitative Deterioration of Employment Prospects for Rural Indians, Paper presented at the *Third Asian Conference of Agricultural Economists* (ASAE), Institute of Development Studies, Jaipur, October 18-20.

Bhalla, Sheila.(1997). Trends in Poverty, Wages and Employment in India, *Indian Journal of Labour Economics*, 40 (2), pp 213-222.

Bhaviskar, Amita.(2001). Written on the Body, Written on the Land: Violence and Environmental Struggles in Central India, *Working Paper 02-10*, Institute of International Studies, Berkeley

Bilsborrow, Richard E. (1992). Rural Poverty, Migration, and the Environment in Developing Countries: The Case Studies, *Policy Research Working Paper 1017*, The World Bank.

Bird, Kate, Hulme, David and Shepherd, Andrew (2001), *Chronic Poverty and Remote Rural Areas*, Paper presented at workshop on Chronic Poverty, Manchester, February.

Chambers, Robert et.al.(1989). *To The Hand of The Poor: Water and Trees*, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.

Chaudhri, D.P. (2000), Sustainable Agriculture, Poverty Alleviation and Food Security in Asia: The Perspective for the 21st Century, Paper presented at the III ASAE Conference, Institute of Development Studies, Jaipur, October 18-20.

Chopra, Kanchan and Gulati, S C.(2001). Migration, Common Property Resources and Environmental Degradation: Interlinkages in India's Arid and Semi-arid Regions, Sage Publication, New Delhi.

Conroy, Czech, S.Iyengar, Viren Labor and G. Bhaskara Rao, (2001). HH Livelihood and Coping Strategies in Semi-arid India: Adapting to Long-term Changes, *Research Report for SPWD,* GIDR, Ahmedabad, India.

Das, Vidhya. (2001). Orissa: Mining Bauxite, Maiming People, *Economic and Political Weekly*, 36(28), p. 2612-2614.

Dasgupta, Biplab.(1975). A Typology of village socio-economic systems from Indian Villages Studies, *Economic and Political Weekly*, special number August, p. 1395-1414.

Dasgupta et al, (2000). Growth and Interstate Disparities in India, *Economic and Political Weekly*, 35(27), p 2413-22.

Dholakia, R.(1994). Spatial Dimension of Acceleration of Economic Growth in India, *Economic and Political Weekly*, 29(35), p. 2303-09.

Dobie, Philip.(2001). *Poverty and The Drylands*, The Global Drylands Partnership, UNDP, September 2001.

Dube, B.K. and F. Bahadur. (1967). *A Study of the Tribal People and Tribal Areas of Madhya Pradesh*, Tribal Research and Development Institute M.P. Bhopal, Government of Madhya Pradesh,

Fan, Shenggan and Hazell, Peter, (2000). Should Developing Countries Invest More in Less-Favoured Areas? An Empirical Analysis of Rural India, *Economic and Political Weekly*, 35(17), p.1455-64.

Fan, Shenggen; Hazell Peter; Thorat, S.K. (2000), Impact of Public Expenditure on Poverty in India, *Economic and Political Weekly*, 35(40), September 30, p. 3581-88.

Farrington, John and Gerard J. Gill (2002). *Natural Resource Perspectives,* ODI, No.79, May 2002.

Gaiha Raghav (1995) Does Agricultural Growth Matter in Poverty Alleviation? *Development and Change*, 26(2), p. 287-304.

Gaiha Raghav. (1987). Poverty, Agricultural Growth and Prices in Rural India: A Critique and an Extension, *Development and Change*, 18(4), p. 557-94.

Gaiha, R and Deolalikar, A.(1993). Persistent, Expected and Innate Poverty: Estimates for Semi-Arid Rural South India 1975-1984, *Cambridge Journal of Economics,* 17(4): 409-21.

Government of India (1994). *Report of the Technical Committee on Drought Prone Areas Programme and Desert Development Programme*, Ministry of Rural Development, April-1994.

Haan, Arjan De (1999). Livelihoods and Poverty: The Role of Migration – A Critical Review of the Migration Literature, *Journal of Development Studies*, 36(2), December 1999, p.1-47.

Haan, Arjan De and Rogaly, Ben, (2002). Introduction: Migrant Workers and Their Role in Rural Change, *The Journal of Development Studies*, 38(5), p 1-13.

Hirway, Indira. (1997). 'Issues in Special Employment Programmes and Agricultural Development Perspective' in *Agricultural Development Paradigm for the Ninth Plan under New Economic Environment,* Bhpat M Desai(ed), Oxford and IBH, New Delhi, p. 88-107.

IAFD. (2002). *Assessment of Rural Poverty: Asia and the Pacific*, International Fund for Agricultural Development, Rome

ICRISAT & ICAR.(1999). *Typology Construction and Economic Policy Analysis for Sustainable Rainfed Agriculture*, Patancheru 502 324, Andhra Pradesh, India.

Iyengar, Sudarshan.(1998). 'Land Use Statistics: Implications for Environment Database' , *Working Paper No.98,* Gujarat Institute of Development Research, Gota, Ahmedabad.

Iyengar, S and N.Sukla, (1999). 'Regeneration and Management of Common Property Land Resources (CPLRs) in India: A Review' *Working Paper 110*, Gujarat Institute of Development Research, Gota, Ahmedabad.

Jodha, N.S. (1986). Common Property Resources and Rural Poor in Dry Regions of India, *Economic and Political Weekly*, July 5, 30(27), p. 1169-81.

Jodha, N.S.(1990). Drought Management: The Farmer's Strategies and Their Policy Implications, International Institute for Environment and Development, Paper No. 21, September, 1990.

Jodha, N.S.(2000). Poverty Alleviation and Sustainable Development in Mountain Areas: Role of Highland-Lowland Links in the Context of Rapid Globalisation in Mahesh Banskota et. al.(ed). *Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia,* International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, p.541-570.

Karuppaiyan, E.(2000). Alienation of Tribal Lands in Tamil Nadu: Panel Data Analysis, *Economic and Political Weekly*, 35(37), September 9, 2000, p.3343-3350

Kelley, T.G and Parthasarathi Rao, P. (1995). Marginal Environment and the Poor-evidence from India, *Economic and Political Weekly*, 30(40), p.2429-95.

Kelley, T.G., Jayawant, M. and Parthasarathi Rao, P. (1997). Rainfed Agriculture Typology in India, *Economic and Political Weekly*, 32(26), p.A68-70.

Khare, Arvind, Sarin, Madhu, Saxena, NC, Palit, Subhabrate, Bathla, Seema, Vania, Farhad and Satyanarayana, M., (2000). *Joint Forest Management: Policy, Practice and Prospects,* India Country Study, WWF of Nature-India and IIED, UK.

Kolavalli, Shashil and Kerr, John.(2002). Mainstreaming Participatory Watershed Development, *Economic and Political Weekly*, 37(3), p. 225.

Kreutzmann, H.(2000). Improving Accessibility for Mountain Development: Role of Transport Networks and Urban Settlements in Mahesh Banskota et. al.(ed). *Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia,* International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, p.485-514.

Lipton, Michael, (1980). Migration from Rural Areas of Poor Countries: The Impact of Rural Productivity and Income Distribution, *World Development*, Vol.8, p.1-24.

Mahapatra, L.K.(2002). Social Movement Among Tribes in India in K. Suresh Singh(ed.) *The Tribal Situation in India, Indian* Institute of Advance Study, Rashtrapati Nivas, Shimla, p. 371-381.

Mahapatra, Richard and Ranjan Panda, (2001). Special Report on Kalahandi, *Down to Earth*, March 31, 2001, p.30-34.

Mathur, K.S.(2002). Tribe in India: A Problem of Identification and Integration in K. Suresh Singh(ed.) *The Tribal Situation in India,* Indian Institute of Advance Study, Rashtrapati Nivas, Shimla, p.427-430.

Mehta A.K. and Amita Shah.(2002). *Chronic Poverty in India: Incidence, Causes and Policies*, Chronic Poverty Research Center-Working Paper, 2002

Mehta, Lyla. (2000). Drought Diagnosis: Dryland Blindness of Planners, *Economic and Political Weekly*, 35(27), p.2439.

Mishra, S.N.(1998). Tribal Studies of India Series T 184, "*Antiquity to Modernity in Tribal India: Ownership and Control of Resources Among Indian Tribes"*, Vol III, Inter-India Publications, New Delhi.

Mosse, David, et al, (2002). Brokered Livelihoods: Debt, Labour Migration and Development in Tribal Western India, *The Journal of Development Studies*, 38(5), p.59-87.

Nadkarni, M V.(1985). *Socio-Economic Conditions in Drought Prone Areas*, Concept Publishing Company, New Delhi.

Nadkarni, M.V. (1996). "Poverty, Dependence on CPLRs and Economic Development", in Jyoti Parikh and B.Sudhakar Reddy (eds.), *Utilisation of Common Property Land Resources Through Co-operatives: A Step Towards Sustainable Development*, Seminar Proceedings, Indira Gandhi Institute of Development Research, Mumbai, p.100-110.

Nagaraj, R, (2000). Special Article: Indian Economy Since 1980: Virtuous Growth or Polarisation?, *Economic and Political Weekly*, 35(32), August 5, 2000, p.2831-2839.

Nelson, M.R. et. al.(1997). *Report of the Study on CGAR Research Priorities for Marginal Land*. Consultative Group on International Agricultural Research(CGAR), Technical Advisory Committee Secretariat, FAO, Rome.

NIRD (2000), *India: Rural Development Report: Regional Disparities in Development and Poverty*, National Institute of Rural Development, Hyderabad.

Planning Commission, Government of India, (1981). Report on *"Development of Drought Prone Areas and Desert Areas"*, National Committee on The Development of Backward Areas, September, 1981.

Planning Commission, Government of India, (1981). Report on *"Development of Tribal Areas",* National Committee on The Development of Backward Areas, June, 1981.

Planning Commission, Government of India, (1981). Report on *"Development of Backward Hill Areas"*, National Committee on The Development of Backward Areas, March, 1981.

Planning Commission, Government of India, (1981). Report on "Development of Chronically Flood Affected Areas", National Committee on The Development of Backward Areas, November, 1981.

Planning Commission, Government of India, (1981). Report on "*Development of North Eastern Region"*, National Committee on The Development of Backward Areas, November, 1981.

Planning Commission, Government of India, (1981). Report on *"General Issues Relating to Backward Areas Development"*, National Committee on The Development of Backward Areas, November, 1981.

Planning Commission, Government of India, (1983). Report on "*Expert Group on Estimation of Proportion and Number of Poor*", Chapter 5, New Delhi.

Radhakrishna, R. (2002), Agricultural Growth, Employment and Poverty: A Policy Perspective, Economic and Political Weekly, 37(3); p.243-250.

Rajuladevi, A.K.(2001). Food Poverty and Consumption among Landless Labour Households, *Economic and Political Weekly*, 36(28), p.2656-64.

Rao, V M and Deshpande, R S. (2002). Food Security in Drought-Prone Areas: A Study in Karnataka, *Economic and Political Weekly*, 37(35), pp 3677.

Reddy, D.N. (2002). Changing Agragarian Relation and Rural Labour: Certain Emerging Issues, The Indian Journal of Labour Economics, 45(1), January-March, p.47-68.

Sawant, S.D. and C.V.Achuthan.(1995). Agricultural Growth across Crops and Regions: Emerging Trends and Patterns, *Economic and Political Weekly*, 30(12), p.A2-12.

Sen, Abhijit, (1996) Economic Reforms, Employment and Poverty: Trends and Options, *Economic and Political Weekly*, 31(35), September1997, p.2459-78.

Shah, Amita, (1997). Food Security and Access to Natural Resources: A Review of Recent Trends, 1997, *Economic and Political Weekly*, 7(26), June 28, 1997, p.A-46-54

Shah, Amita (2001). 'Drought-proofing: Exploring Wide Options' in M.D.Asthana et.al.(ed.) *Towards Hunger Free India: Agenda and Imperatives*, World Food Program, Manohar Publication, New Delhi, p.137-148.

Shah, Amita and Hirway, Indira, (2002). Mineral-based Industries in Backward Regions: Scope for Sustainable Employment, *The Indian Journal of Labour Economics*, Conference Issue, 45(4), p.793-806.

Shah, Ganshyam. (2002). Social Movement and the State, Reading in Indian Government and Politics-4, Sage Publication, New Delhi.

Shah, Mihir et.al.(1998). *India's Drylands: Tribal Societies and Development through Environmental Regeneration*, OUP, Delhi.

Shand, Ric and S Bhide, (2000). Sources of Economic Growth: Regional Dimensions of Reforms, 2000, *Economic and Political Weekly*, 35(42), October 14, 2000, p.3747-3757.

Shukla, R.S.(2000). *Forestry for Tribal Development*, Wheeler Publication, New Delhi.

Singh RP and Binswanger Hans,(1993). Income Growth in Poor Dryland Areas in India's Semi-arid Tropics, *Indian Journal of Agriculture Economics*, 48 (1), p.51-64.

Singh, K. Suresh.(2002). *The Tribal Situation in India*, Indian Institute of Advance Study, Rashtrapati Nivas, Shimla.

Singh, K.S.(1998). Tribal Studies of India Series T 185, *"Antiquity to Modernity in Tribal India: Tribal Movement in India"*, Volume IV, Inter-India Publications, New Delhi.

Singh, S and Bhalla, (1997). Recent Development in Indian Agriculture: A State Level Analysis, *Economic and Political Weekly*, 32(13), p.A2-18.

Singh, Manjit.(2002). Bondage Among Migrant Labourers in Punjab, Seminar on Labour Mobility in a Globalising World: Conceptual and Empirical Issues, V V Giri National Labour Institute, September 18-19, 2002.

Sinha, Surjit.(2002). Tribal Solidarity Movement in India: A Review in K. Suresh Singh(ed.) *The Tribal Situation in India*, Indian Institute of Advance Study, Rashtrapati Nivas, Shimla, p.382-394.

Shinoda, T. (2003). The Other Gujarat: Social Transformations Among Weaker Sections, Popular Prakashan, Mumbai.

UNDP, (2001), *Human Development Report*, Oxford University Press, New Delhi.

UNDP. (1997).*Human Development Report 1997,* Oxford University Press, New York.

Walker, Thomas S. and James G. Ryan. (1990). *Village and Household Economies in India's Semi-arid Tropics*, The John Hopkins University Press, Baltimore and London.

White, H. and Anderson, E. (2001) 'Growth versus distribution: does the pattern of growth matter?', *Development Policy Review* 19(3), 267-90.

World Food Programme (2001), *Food Insecurity Atlas of Rural India*, M.S. Swaminathan Research Foundation, Chennai.