Countering Uncertainties
Strategies for Sustainable Livelihoods

An Assessment of Impact of Poverty Reduction Programmes on the Poor in Rajasthan

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Executive Summary

The nature of poverty and the Poverty Reduction Programmes

1. The poor confront several deprivations including material, low achievements in education and health, vulnerability, exposure to risk, voicelessness and powerlessness. Being poor means that among other things they lack access to five forms of capital, namely, *natural* (land, water and environment), *physical* (roads, buildings), *financial* (banking services), *human* (education, skill and stamina) and *social* (networks of reciprocities). Poverty Reduction Programmes (PRPs) of the Government of India attempt to augment each form of capital and address issues of vulnerability. In recent years they have also addressed poor's voicelessness and powerlessness. The forms of capital and the associated PRP is given in the Table below:

Table: Forms of capital/ vulnerability and Poverty Reduction Programmes

Forms of capital/ Vulnerability	**Programmes to augment poor's capital base**
Natural capital	Million Wells Scheme Jawahar Gram Samridhi Yojana through investment in e.g. surface water bodies
Physical capital	Indira Awas Yojana Jawahar Gram Samridhi Yojana
Financial capital	Swarn Jayanti Gram Swarozgar Yojana (replacing IRDP)
Human capital	Jawahar Gram Samridhi Yojana
Social capital	Swarn Jayanti Gram Swarozgar Yojana by forming Self Help Groups
Vulnerability	Famine Relief Works, National Old Age Pension Scheme, Annapurna Yojana, Public Distribution System
Voicelessness and powerlessness	Swarn Jayanti Swarozgar Yojana through formation of Self Help Grroups; Transferring powers to panchayats

2. The wage employment programmes such as the Jawahar Gram Samridhi Yojana are designed to augment the *natural capital* (common land and water resources used by all) in the villages and also to create *physical capital* such as roads, and *human capital* infrastructure such as school buildings. While construction of these assets is a source of wage earnings for the poor (the first order effect), the long-term impact of surface water bodies, access to wage markets and educational infrastructure (the second order effect) can contribute towards a sustainable impact on poverty.

3. Programmes such as the Million Wells Scheme are designed to enhance the existing asset base of the poor and increase her *private natural capital* and access the common groundwater resource. Such programmes can have a long-term sustainable impact on poverty.

4. The Integrated Rural Development Programme was designed to provide *financial capital* as well as an income-generating asset to the poor. The Swarn Jayanti Rozgar Yojana (SJRY) has replaced the programme. Instead of an individual the new programme provides for benefiting a Self-Help Group. In this manner, the programme not only provides for financial capital to create an asset base but also provides for investment in *social capital*.

5. In addition to addressing the five forms of capital, the PRPs also address *vulnerability* of poor households. Programmes such as National Old Age Pension Scheme, Famine Relief Works, Annapurna Yojana, and Public Distribution System fall under this category.

Part I: Livelihoods in Rajasthan and the Poverty Reduction Programmes

6. This study attempts to analyse the impact of PRPs in the context of livelihoods in Rajasthan. The most important characteristic of livelihoods in Rajasthan is its vulnerability to drought that visits the state very frequently with varying severity. Large fluctuations in annual agricultural production, loss of livestock during drought period, limited access to dependable wage labour, which remains seasonal and uncertain, together make uncertainty and hardships a characteristic feature of livelihoods, especially of the poor. Part I of the study compares the situation as it existed during the 1987 and 1999 droughts in 8 sample villages in two districts, namely, Ajmer and Udaipur.

7. Our study finds that there has been an overall degradation in natural resource endowment in the sample villages in the past more than a decade. Consequently, the returns from private investments in private land or livestock are offset by the negative externalities of degradation. In Udaipur district, in sample villages while one-third farmers irrigated their farms in 1983, the proportion has reduced to less than 6 per cent in 1999. The wells have actually gone dry. Similarly, there has not only been decline in productivity of livestock but also their numbers. The resilience to bounce back from such shocks is higher for (a) resource rich regions compared to resource poor regions and (b) for medium and large farmers than the marginal and small farmers or landless households. Policies and programmes (such as the Drought Prone Area Programme) that increase resilience and reduce uncertainties are inadequate in both size and design. Mere existence of these programmes, thin spread of resources, centralised management and poor implementation contribute to increasing the uncertainties. *In this state of affairs the Poverty Reduction Programmes have a short term effect on poverty reduction and a sustainable impact is hampered.* Unless investments are made to increase resilience in the poor regions and among poor farmers through preventing degradation of natural resource endowment, the impact of PRPs will only be on the margin and not sustainable. In such circumstances newly built roads under the JGSY will not carry marketable agricultural surplus but a depleted stock of human capital for casual labour! Programmes to augment livestock numbers or the yield of existing livestock may not take off. Programmes such as the Million Wells Scheme may provide wells but no water and SJSY may provide for livestock that perishes sooner than later. It is evident that for ensuring success of most PRPs, a long-term drought proofing strategy is desirable in Rajasthan.

Part II: Impact of Poverty Reduction Programmes (PRPs)

8. Part II of the study focusses on PRPs and includes data from 8 more villages in two districts, Pali and Jaisalmer, thus bringing the total to a sample of 16 villages in 4 districts. The programmes covered for detailed inquiry are the employment programmes, the Public Distribution System, the Indira Awas Yojana , the Million Wells Scheme and the Integrated Rural Development Programme (IRDP). The Swarn Jayanti Swarozgar Yojana had not commenced in sample villages at the time of survey.

Employment Programmes

9. The employment programmes (other than famine relief works) provided employment to 5-6 persons per day for no more than 30 days or twice the number of persons for 15 days or a combination thereof. Thus the first order effect of wages provided is limited. The second order effect has been cognizible in all villages. Schemes to build school buildings have helped in human capital formation especially for girls. While the relatively affluent can afford education even if facilities are distant, for the poor the likelihood of access has increased as the distance has reduced. Schemes related to soil and moisture conservation have both direct and indirect impact on the poor. The direct impact has been of being able to irrigate their own lands in a few cases and indirect impact in availability of work as irrigation potential or land productivity in the village has augmented. Schemes such as building a *patwar ghar* for the *patwari* has helped in reducing the transaction costs of the poor as the *patwari* becomes easily accessible. Roads provided access to employment market; This is specially true for remote villages (such as Sagwara in Udaipur and Badora Gaon in Jaisalmer). Other infrastructure created in the village has had an indirect impact as the general level of economic activity in the village increased.

10. The benefits accruing to the poor can be maximised if the public works have a high rate of labour absorption, targets poor regions, targets the poorest, targets time when opportunity cost of labour is the lowest, adequate 5 year planning at the panchayat level for complementary infrastructure. In addition, combined with Food for Work Programmes, the employment programmes can provide guaranteed employment for a certain number of days to targeted poor households.

The Integrated Rural Development Programme (IRDP) and the Swarnjayanti Gram Swarozgar Yojana (SGSY)

11. The Integrated Rural Development Programme (IRDP) attempted a direct attack on poverty by providing access to assets and skills to the poor along with support services and institutional arrangements to help the poor generate additional income to cross the poverty line. The IRDP was only partially successful in meeting the desired objective due to a number of factors. The viability of the projects undertaken is questioned. Institutional support for the poor was missing due to lack of integration among various agencies, namely banks, DRDA, PRIs and NGOs. The temptation to misutilise the loan, given the subsidy, was high. The Swarnjayanti Gram Swarozgar Yojana (SGSY) attempts to provide self employment to the poor in a framework different from the IRDP. It is conceived as a programme for micro enterprise development. There is social mobilisation of the poor before assistance is provided for economic activities. The programme envisages creation of Self Help Groups of the poor and ensuring their capacity building along with planning of activity clusters, infrastructure build up, appropriate technology, credit and marketing.

12. In the IRDP, the beneficiary did not even have information of schemes from which she could make an informed choice, far from an opportunity for articulating her own needs. SGSY provides the group an opportunity to make a more informed choice of the economic activity they undertake. The group can make its own assessment of the skills and various capacities of its members and thus decide a

suitable option. In SGSY there is an opportunity to draw viable schemes so as to ensure adequate and higher returns even to the smallest borrower within the group. In SGSY it is expected that institutional support to the group is likely to be more equal to all members and there is no differentiation on the basis of caste or economic status as evidenced in most IRDP cases.

The Public Distribution System

13. Recurrent droughts in the state are enough justification for continuance of the food security initiatives through a Public Distribution System. The Public Distribution System should continue and include not only the poor but also the transient poor in the drought year. The quota from Fair Price Shops to the poor households needs to be increased to 10 Kg per person. The effective functioning Public Distribution System requires ensuring door step delivery to the Fair Price Shops and increasing the commission since targeting has reduced the number of beneficiaries.

The Indira Awas Yojana

14. The Indira Awas Yojana has some unique features that distinguish it from a number of other programmes. It targets the basic need of housing and deserving beneficiaries, adopts a strategy of social inclusion rather than exclusion, adopts positive gender and social discrimination, and, above all, a strategy conforming trust in people have contributed to the success of IAY. Public Programmes for the poor are generally criticised for not being as successful as desired due to many a shortcoming: faulty planning, centralised decision making, faulty implementation, failure to address basic or felt needs, identification of target groups, lack of necessary linkages, high transaction costs (both for the delivery and the recipient systems), rent-seeking nature of personnel, and so on. The 'Indira Awaas Yojana' (IAY), despite many of these shortcomings may be described as a successful public programme for the poor. It requires ensuring participation in gram sabha when the deserving beneficiaries are identified.

The Millions Wells Scheme

15. The MWS provides for a grant to the marginal and small farmer for a dug well/ deepening or blasting of an existing well. MWS has had a limited success. It has been successful in areas where groundwater is available and can be reached by a dug well. The financial assistance is inadequate to complete the task, yet desirable as it prompts the beneficiary to obtain finance from other sources (usually relatives and friends) and spend own savings. Recognising the necessity of a dug well, friends and relatives generally respond favourably to such needs and underlines the upside of social capital. The economic linkages that get established with the successful investment are sustainable with annual incomes showing an increase of over 100 per cent for beneficiaries who were successful in obtaining water in their wells. Given the nature of groundwater status and problems relating to extraction of water, it is advisable that the programme be undertaken by groups of beneficiaries. It could be a good activity in the SGSY.

Achieving synergy in PRPs

16. In sum, the PRPs address all five forms of capital that the poor lack. The likelihood of the PRPs to have a sustainable impact increases by preventing degradation of natural resources that would increase the resilience of resource poor regions and the resource poor. Wherever, SHGs emerge as part of SJSY, they

could also be involved in planning and implementation of employment and other programmes at the village level. They could be encouraged to form pressure groups that have ability to voice and demand more services from the government and perhaps oversee their implementation at the village level. In this manner a synergy can be achieved by targeting social capital vested in SHGs that leads to building all other forms of capital. Involving the *panchayats in planning and execution of public works is an important step and the SHGs could be encouraged to participate in the processes.*

Chapter I: Introduction

Poverty has multidimensional characteristics encompassing material deprivation, low achievements in education and health, vulnerability, exposure to risk, voicelessness and powerlessness. Poverty is also generally defined as lack of assets. In general, five kinds of assets may be identified: (1) Natural Resource Endowment; (2) Physical infrastructure and services; (3) Financial capital; (4) Human capital and (5) Social capital.

Natural capital

Natural resources are either shared as common property resources or private property. Natural assets in the common property resource category are the forest and pasturelands, surface water bodies and groundwater. Customary norms or a government enforced legal structure determines the regeneration of the natural resources, access to and returns from them. Property rights determine private ownership of natural assets such as land and livestock. It is important to underline the relationship between the "common property " natural assets and the "private property" natural assets. In most regions of the state the endowment of "common property resources" (forest products, grasses etc.) determines the numbers and yield from livestock. Livestock of the poor is generally fed on these common property resources. Returns to the poor from privately owned land are, to an extent, determined by access to surface water bodies and groundwater. Increasing the natural resource endowment that is put to common use would help the poor build their assets. Investing in privately held natural assets of the poor could also give them a sustained source of income

Physical infrastructure and services

Physical infrastructure such as roads provides access to wage labour market. Electricity provides easier access to irrigation, develops the potential for non-farm sector. Social sector infrastructure such as education and health, increase opportunities for livelihoods and augment human capital. Availability of services such as Agriculture Extension and Veterinary, help increase productivity and decrease volatility in production. While such village infrastructure and services would benefit all, the marginal impact is expected to be larger on the poor.

Financial capital

Access to credit institutions, both local and distant, help ensure a less volatile and sustainable livelihood. In some villages, in addition to the formal institutions, Self Help Groups (SHGs) have also emerged.

Human capital

Educational status and good health helps in building capacity for basic labour and skills.

Social capital

Voicelessness and powerlessness are the institutional basis of poverty. Networks of mutual help and reciprocal obligations help build a strong civil society that can help negotiate returns from all sources of capital mentioned above and hence have an impact on poverty.

Poverty Reduction Programmes

There are many programmes designed by the government to augment various forms of capital through various Line Departments. For example, the Education Department addresses the human capital, the Forest Department, the natural capital and so on. These programmes, however, may fail to directly address the needs of the poor. The Poverty Reduction Programmes in many ways address the concerns of the poor and attempt to augment the five forms of capital owned by the poor as seen in Table 1.1.

Table 1.1: Forms of capital/ vulnerability and Poverty Reduction Programmes

Forms of capital/ Vulnerability	Programmes
Natural capital	Direct: Million Wells Scheme Indirect: Jawahar Gram Samridhi Yojana
Physical capital	Direct: Indira Awas Yojana Indirect: Jawahar Gram Samridhi Yojana
Financial capital	Direct: Swarn Jayanti Swarozgar Yojana
Human capital	Indirect: Jawahar Gram Samridhi Yojana
Social capital	Direct: Swarn Jayanti Swarozgar Yojana
Vulnerability	Direct: Famine Relief Works, National Old Age Pension Scheme, Annapurna Yojana, Public Distribution System

There are two important programmes that help the poor build natural capital. The Million Wells Scheme (MWS) provides for a grant to small and marginal farmers to invest in dug wells for providing irrigation to their farms. The Jawahar Gram Samridhi Yojana (JGSY) is an employment generation programme and has provision

for building assets that can augment both natural and physical capital in a village. The programme has been used to build Surface water bodies, roads, school and health buildings and other useful infrastructure which have an indirect impact on poverty. The Indira Awas Yojana is a programme for providing housing for the poor.

The Integrated Rural Development Programme (IRDP), which has now been discontinued, provided financial capital in the form of a bank loan and a subsidy to the poor to purchase an income-generating asset. The drawbacks in the design of the programme and its impact has been the subject of inquiry by many scholars in the past and we do not intend to dwell on it any further. This programme has been replaced by Swarnjayanti Gram Swarozgar Yojana (SGSY), a programme for self-employment. It envisages organisation of the rural poor into Self Help Groups and their capacity building, planning of activity clusters, building infrastructure, technology and marketing. The SHGs would be linked to a bank and also provided some subsidy. The SGSY envisages social mobilisation of the poor before providing financial assistance. In this manner it attempts to build social capital in the villages.

In addition to the above programmes there are those that address vulnerability of the households. Famine Relief Works, pension schemes and the public distribution system would fall under this category.

Livelihoods in Rajasthan

Survival in a fragile ecosystem characterised by dryland areas and uncertain rainfalls is the major struggle for the poor in Rajasthan. Survival for a very large majority (around 70 per cent of the population) is based on agriculture and animal husbandry, which contributes around one-third to the State Domestic Product. In a severe drought year of 2000-01 it is expected to contribute only 28 per cent to the SDP. Adverse climatic conditions characterised by erratic rainfall and frequent visitations of droughts have resulted in wide fluctuations in agricultural output and numbers of livestock. In several years the agricultural output in a particular year has fallen short of the output in the previous year.

Livelihoods of the poor in Rajasthan depend largely on agricultural output, animal husbandry and casual labour. Large annual fluctuations in level of agricultural and animal husbandry activities, mainly due to failure of monsoons result in fluctuations in poor's household income. In drought years, when there is almost complete failure of crops, these households are not even available to recover the costs of agricultural inputs and rely mainly on animal husbandry. In a severe drought situation when even fodder is scarce, their animals die, are sold in distress circumstances or are simply abandoned. The employment based safety-nets though undertaken on a very large scale are grossly inadequate to meet the requirements of the households, a majority of whom may get employment for no more than 15 days. Besides, they incur debt mainly for basic consumption needs as well as for seeds and fertiliser for the next crop. These are some of the characteristics of *transient poverty* in the state of Rajasthan. It is important to note that it is not merely the poor who are affected by these fluctuations in output, but those near the poverty line are also under duress.

Objective of the study:

The main objective of this study is to see the impact of various government interventions including poverty reduction programmes and other sectoral programmes government on developing sustainable livelihoods and reducing poverty.

Sustainable livelihoods in this study means protection from uncertainty and thus creating an environment wherein income flows become more certain than otherwise.

Methodology

A research study on the "Socio economic impact of 1987 drought in Rajasthan" was undertaken by S.S. Acharya at the Department of Agricultural Economics, Rajasthan Agricultural University, Udaipur. Two districts viz. Ajmer and Udaipur were selected purposively. Ajmer district falls in semi arid Eastern Plain and Udaipur in sub humid southern plain and Aravalli hills. The other consideration was that one tehsil of Ajmer district and three thesils of Udaipur district were identified as drought prone areas by the Government of India and Drought Prone Area Programme was being implemented in these areas. In Ajmer district Beawar thesil was selected as it was covered under

the DPAP. In Udaipur district, Kherwara thesil was selected randomly with probability proportion to rural population in the tehsil.

Further, 4 villages from each tehsil, located in four different directions of the centre of the tehsil were picked up randomly. A list of selected villages is given in Table 1.1.

Selection of households

The 1987 Survey selected 40 households from each village for an in-depth study. For each village, a list of rural households was prepared showing the main occupation of each family. From this list 40 households were selected randomly giving due weightage to the distribution of households according to occupation. Thus in all, 320 (2×4×40) rural households were selected for the study.

The present study covers the same villages and follows the sampling method and covers 320 households. Ideally, we would have liked to cover the same households but the primary data for these households could not be recovered. The 1987 drought conditions then become a base-line to compare the present situation. The survey for the present study was undertaken in 1999, following a severe drought.

To obtain a better coverage of poverty reduction programmes, we have selected eight more villages in two tehsils of Pali and Jaisalmer districts as listed in Table 1.2. A brief socio-economic profile of each of the sample villages is given at the end of the Chapter.

Table 1.2: List of selected villages

Name of District (Tehsil)	Direction from Centre	Name of villages selected
Udaipur (Kherwara)	North	Sagwara
	South	Karnauwa
	East	Dhelana
	West	Bawalwara
Ajmer (Beawar)	North	Rampura
	South	Deomali
	East	Shergarh
	West	Sanwa
Pali (Pali)	North	Kalali
	South	Khutani
	East	Jeethra
	West	Chotila
Jaisalmer (Jaisalmer)	North	Deva
	South	Badoda Gaon
	East	Chandan
	West	Sum

The data

Both macro and micro level data were used for the study which were collected from both secondary and primary sources. In the 1987 survey data were collected for the drought year 1987-88 and compared with the most recent normal year – 1983-84. This was ascertained on the basis of information regarding extent of drought in the state and the views of the selected households. For the present study the drought year is 1999-2000 whereas the normal year is 1997-98. Throughout the report the abbreviation NY is used for normal years i.e. 1983-84 and 1997-98 and DY for drought years, i.e., 1987-88 and 1999-2000. These years are referred to as 1983, 1997, 1987 and 1999 for brevity.

Secondary data regarding land use pattern was also collected from district and tehsil sources.

A brief socio-economic profile of sample villages

Table 1.3 shows the basic demographic characteristics of the sample villages as obtained from the Census of India, 1991. The Sex ratio is very low in Jaisalmer district in all its sample villages and lowest in Badoda Gaon, touching a low of 677. In contrast the sex ratio in all the sample tribal villages of Udaipur district is greater than 1000, touching a high of 1209 in Karnuwa. In the sample villages of the other two districts, the ratio is adverse. The population density is lowest in Jaisalmer district as seen in Table 1.3. The average household size in sample villages varies between 5 and 6 with no significant pattern across districts. In half the sample villages the sex ratio in the age group 0-6 was less than the overall sex ratio and higher in the other half villages. The female literacy rate was less than 10 per cent in 12 of the 16 sample villages.

Table 1.3: Basic demographic characteristics of sample villages

Name of Village	Area (ha)	No. of households	Total population	Sex Ratio	Density	Average size of household	Sex ratio in the age group 0-6	Literacy rate		
								Male	Female	Total
Ajmer										
Rampura	289	136	868	955	3.00	6.4	969	52.4	3.9	22.5
Deomali	550	160	788	872	1.43	4.9	891	26.9	0.6	12.4
Shergarh	2212	402	2443	931	1.10	6.1	940	47.2	8.5	22.9
Sanwa	99	55	332	897	3.35	6.0	776	62.7	5.9	25.9
Udaipur										
Sagwara	917	152	820	1175	0.89	5.4	1347	23.9	1.2	9.4
Karnuwa	313	171	985	1209	3.15	5.8	1030	71.6	16.3	32.3
Dhelana	760	230	1364	1024	1.79	5.9	971	60.4	12.6	28.8
Bawalwara	983	372	1852	1042	1.88	5.0	1052	72.6	38.1	44.5
Pali										
Chotila	2352	338	1854	935	0.79	5.5	823	45.0	6.1	20.0
Kalali	2705	239	1491	980	0.55	6.2	902	28.3	2.4	12.1
Khutani	2399	267	1527	926	0.64	5.7	742	37.0	4.7	16.4
Jheethra	1097	169	915	845	0.83	5.4	839	56.8	7.3	27.8
Jaisalmer										
Sam	5726	217	1125	815	0.20	5.2	971	55.0	6.2	25.7
Badoda Gaon	10415	341	1877	677	0.18	5.5	388	58.9	8.0	31.0
Chandan	10355	381	1884	776	0.18	4.9	1094	55.7	12.6	31.0
Dewa	9709	226	1333	799	0.14	5.9	839	48.0	5.7	23.6

Source: Census of India, 1991

Basic Infrastructural facilities in sample villages

The basic social infrastructural facilities in sample villages is given in Table 1.4. Anaganwari Centres are found in 9 of the 16 sample villages. All villages have primary schools. Larger villages also have Middle and Higher secondary schools. Similarly, larger villages have health facility of a PHC/ Dispensary or a Sub Centre. The smaller villages have the services of an ANM. Thus the sample villages are well covered by social services of education and health.

Table 1.4: Basic infrastructural facilities in sample villages

	Anganwari	**Primary**	**Middle**	**Higher Secondary**	**ANM**	**Sub Centre**	**PHC**
Ajmer							
Rampura	√	√			√		
Deomali		√			√		
Shergarh	√	√	√				√
Sanwa	√	√			√		
Udaipur							
Sagwara		√	√		√		√
Karnuwa	√	√			√		
Dhelana		√	√	√	√		
Bawalwara		√	√	√		√	√
Pali							
Chotila		√			√		
Kalali	√	√			√		
Khutani		√			√		
Jheenthra	√	√	√			√	
Jaisalmer							
Sam	√	√	√	√		√	√
Badoda gaon		√	√	√		√	√
Chandan	√	√	√	√		√	
Dewa	√	√	√		√		

Source: Field survey

Social Infrastructure in sample villages

The status of social infrastructure in sample villages is presented in Table 1.5. All villages have a source of drinking water. The villages in Pali and Jaisalmer rely more on Tube wells. In the other two districts, wells and hand pumps are also important sources. Only 3 villages do not have a pucca road. All villages have power connection.

Table 1.5: Social infrastructure in sample villages

Name of villages	**Source of drinking water**				**Roads**		**Electricity**
	Well	**Tube well**	**Handpump**	**Talab**	**Kutcha**	**Pucca**	
Ajmer							
Rampura	√		√		√	√	√
Deomali	√		√			√	√
Shergarh	√		√	√		√	√
Sanwa	√		√			√	√
Udaipur							
Sagwara	√		√			√	√
Karnuwa	√		√			√	√
Dhelana	√		√		√	√	√
Bawalwada	√		√	√	√	√	√
Pali							
Chotila	√	√	√	√	√	√	√
Kalali		√		√	√		√
Khutani		√				√	√
Jheethra		√		√	√		√
Jaisalmer							
Sam	√	√		√	√	√	√
Badoda gaon	√	√	√	√	√	√	√
Chandan	√	√	√	√		√	√
Dewa	√	√		√	√		√

Source: Field survey

Social composition in sample villages

The social composition of the population is given in Table 1.6. The per cent of Scheduled Caste population is higher in the sample villages of Jaisalmer and that of Scheduled tribe population in Udaipur district.

Table 1.6: Composition of Scheduled Castes and Tribes in Sample Villages

Name of villages	**Population**	**SC population**		**ST population**	
Ajmer	**Total**	**Total**	**Percent SC**	**Total**	**Percent ST**
Rampura	868	23	2.7		
Deomali	788	27	3.4		
Shergarh	2443	341	14.0	97	4.0
Sanwa	332	67	20.2	0	0.0
				0	
Udaipur				0	
Sagwara	820		0.0	820	100.0
Karnuwa	985		0.0	969	98.4
Dhelana	1364		0.0	1219	89.4
Bawalwara	1852	132	7.1	804	43.4
				0	
Pali				0	
Chotila	1854	534	28.8	6	0.3
Kalali	1491	313	21.0	0	0.0
Khutani	1527	99	6.5	383	25.1
Jheenthra	915	233	25.5	8	0.9
				0	
Jaisalmer				0	
Sam	1125	625	55.6	76	6.8
Badoda Gaon	1877	143	7.6	0	0.0
Chandan	1884	408	21.7	5	0.3
Dewa	1333	473	35.5	89	6.7

Source: Census of India, 1991

Work Participation

The percentage of economically active population, as measured by the share of main workers in total population is higher than 40 per cent for the male population in all sample villages except Badoda Gaon of jaisalmer district. The feamle work participation is low in all districts except Ajmer.

Table 1.7: Share of main workers in total population in sample villages

Name of villages	**Percentage of main worker**	
	Male	**Female**
Ajmer		
Rampura	51.8	38.7
Deomali	61.3	61.9
Shergarh	54.7	48.5
Sanwa	47.4	44.6
Udaipur		
Sagwara	52.5	0.0
Karnuwa	40.1	3.5
Dhelana	49.3	4.9
Bawalwara	42.4	3.3
Pali		
Chotila	46.6	15.1
Kalali	48.2	9.9
Khutani	48.3	32.6
Jheenthra	48.0	26.5
Jaisalmer		
Sam	49.5	3.8
Badoda gaon	30.0	3.3
Chandan	42.3	7.2
Dewa	46.8	1.4

Arable land

Table 1.8 shows the arable land in sample villages. Very little of the area is irrigated. The irrigated area in most villages is less than 5 per cent. The last column in the Table gives the arable land per capita.

Table 1.8: Irrigated and unirrigated cultivable area (in hectares) and arable area per capita in sample villages

Name of Village	Total population	Irrigated Area	Unirrigated Area	Total arable area	Arable area per capita
Ajmer					
Rampura	868	11	162	173	0.20
Deomali	788	2	164	166	0.21
Shergarh	2443	177	1124	1301	0.53
Sanwa	332	1	60	61	0.18
Udaipur					
Sagwara	820	0	112	112	0.14
Karnuwa	985	2	140	142	0.14
Dhelana	1364	10	147	157	0.12
Bawalwara	1852	0	213	213	0.12
Pali					
Chotila	1854	58	1524	1582	0.85
Kalali	1491	8	2204	2212	1.48
Khutani	1527	0	2051	2051	1.34
Jheethra	915	62	702	764	0.83
Jaisalmer					
Sam	1125	0	814	814	0.72
Badoda Gaon	1877	0	805	805	0.43
Chandan	1884	13	1074	1087	0.58
Dewa	1333	4	686	690	0.52

Source: Census of India, 1991

Major characteristics of villages

In this sub-section we briefly describe some select characteristics of villages as obtained from the field.

Ajmer district

Village Rampura

Village Rampura is unique that 220 households of the total 224 households belong to the Rawat caste and all of them are related to one another. The main occupation is agriculture followed by animal husbandry. It has two water tanks that are also used for irrigation by gravity flow. However, in the last three years no irrigation was possible because of drought conditions.

Village Shergarh

Village Shergarh is a multi caste village and the most numerous households are those of *Raibari, Meghwal and Raigar,* all belonging to the Scheduled Castes. The main occupation of *Raibari* caste is animal husbandry and those of *Raigar* is leather processing and shoe making. They have received suport from various agencies. Some irrigation is made possible by well irrigation.

Village Sanwa

Village Sanwa has a population dependent on agriculture but due to drought in the last three years people have migrated for wage labour. There are 30 *Raigar* households but only 2 are engaged in the traditional occupation of processing leather and shoe making due to the changes in market demand. Some households (or their adult members) have migrated to as far as Bombay where work is available on a more continuous basis. There is a tank in the village used for irrigation by gravity flow and can irrigate about 35 hectares but in the last three years due to drought there has been no irrigation from these tanks. A woman Self Help Groups had started functioning but had not graduated to obtain a loan from the bank.

Village Deomali

Village Deomali is also characteristic that out of 200 households in the village 190 belong to the *gujar* caste and are all related to one another. The entire village land is

in the name of the Devnarayan temple and all villagers are classified as landless. They are not to obtain loans to invest in land. There is a tank in the village used for irrigation by gravity flow but in the last three years due to drought there has been no irrigation from these tanks.

Udaipur district

Village Bawalwara

Bawalwara village is in the midst of the Arravali mountains and has a difficult terrain. The settlement is dispersed and most settlement is on the mountain tops. It is a multi caste village with the most numerous being the Bhil Meena tribe. The main source of earning for the poor is from remittances or earnings brought back by migrating labour population. Agriculture and animal husbandry are other economic activities in which the poor are engaged. There is a rich *Bania* community as well which engages in retail trade and moneylending.

Village Sagwara

Village Sagwara has a mountainous undulating terrain and the population is settled in their hamlets spread over an area of 15 square kilometres. The land holdings are small and the poor population is dependent on wage earnings from casual labour. Due to drought conditions most wells were reported dry at the time of survey due to which *rabi* crop could not be sown. Due to recurring droughts in the two years preceding the survey, 75 per cent of the animal population died.

Village Dhelana

Village Dhelana has an irrigation canal originating from the Somkagda Baandh. Even in the drought years, water was available in the canal. The villagers have developed a method of water sharing between the cultivators at the head and the tail of the village. Most villagers belong to the Bhil tribe.

Village Karnau

Village Karnau is inhabited by the Bheel Meena tribe and their main occupation is wage labour. There are very few water harvesting structures in the village though there is potential for many more.

Pali district

Village Chotila

Village Chotila is a multi caste village dominated by Rajput caste. The main occupation is agriculture. The village is situated in a rocky terrain and stone crushing provides wage labour to the poor hosueholds.

Village Jeethra

Village Jeethra is mainly dependent on rainfed agriculture except a few Rajput farmers who own wells for irrigation. The drought has been severe in the last three years resulting in large scale migration of households for wage labour. Due to paucity of water many households had to abandon their livestock. Drinking water is supplied from Jawai dam by the Public Health Engineering Department.

Village Khutani

The main occupation of the population in Village Khutani is rainfed agriculture. If there is good rain some oilseeds can be produced in the moisture retained by the soil. There is a *talaab* but is not used for irrigation. Drinking water is obtained by pipelines from a neighbouring village Rohat. A philanthrophic organisation also provides tankers for drinking water in times of crisis.

Village Kalali

Village Kalali is a multi caste village. The main occupation is agriculture and most of it is rainfed. There are only 12 wells in the village but only five were used for irrigation at the time of survey due to the severe drought conditions. Drinking water is obtained from Sardarsamand through pipeline. Due to drought conditions there has been a large-scale migration of livestock.

Jaisalmer district

Village Chandan

The main occupation in Village Chandan is agriculture. In animal husbandry the small ruminants, namely, sheep and goat are predominant. There are 37 tube wells as well that are used for irrigation. Some villagers were allotted land in the IGNP command area but could not settle there because of erratic supply of water.

Village Deva

Village Deva is a *gram dani* village but has also adopted the panchayti raj system. The main occupation in Village Deva is agriculture followed by animal husbandry. It has a canal originating from the IGNP benefiting about 40 households and also a few wells that are used for irrigation. It has some woollen *khadi* units.

Village Badoda Gaon

Village Badoda Gaon has a dispersed settlement and people live in small hamlets that dot the entire village. The main occupation is animal husbandry constituted of small ruminants especially goats and sheep. The village has a veterinary centre. There are traditional water harvesting structures such as *talaab* used for drinking water for both human and livestock population. There is a large tract of *sewan* grass in the village. About 400 households have been allotted land in the IGNP command area but have not settled there as yet.

Village Sum

Village Sum is a typical desert village but is known its sand dunes that are of interest to tourists. Tourist infrastructure has developed in the village. People have their occupation tied to tourism activity and approximately 200 households derive partial earnings from engaging in tourism. Camels are maintained for desert *safari.* Households have benefited from tourism and also earn from animal husbandry and dairy activities. It has woollen *khadi* units as well.

Outline of the Study

The study is divided into three Parts.

Part I describes the **basic livelihoods characteristics** and its dependence on agriculture, livestock and wage labour both at the all Rajasthan level and in details of the sample households (of two districts, Ajmer and Udaipur, 8 villages). Chapter II gives an introduction of the Study Area. Chapters III, IV and V respectively examine the role of agriculture, livestock and wage labour.

Part II reviews the **poverty reduction programmes** in details and examines the impact of various government interventions in generating employment, ensuring food security and provision of housing (of all four districts, 16 villages). Chapter VI examines the role of employment programmes and the nature of assets created through these programmes. Chapter VII examines what the Swarnjayanti Gram Swarozgar Yojana (SGSY) learn from the old Integrated Rural Development Programme. At the time of survey, SGSY was not implemented in the sample villages, in fact, its implementation has been rather slow in Rajasthan. Chapter VIII analyses role of the Public Distribution System. Chapter IX gives an in-depth account of the Indira Awas Yojana and Million Wells Scheme.

Part III analyses the poverty reduction programmes in the context of basic livelihood characteristics in Chapter X which also contains a summary and recommendations.

Part I

Chapter II: An Introduction of the Study Area

Chapter III: Livelihoods and Agriculture

Chapter IV: Livelihoods and Livestock

Chapter V: Livelihoods and Wage Labour

Chapter II: An Introduction of the Study Area

This Chapter gives a brief introduction of the study area, examining the rainfall pattern, some demographic characteristics of the sample villages and the sample households, and some shifting patterns in livelihoods.

Rainfall

Most of the rainfall (90 per cent or more) in both districts, Ajmer and Udaipur, is received during the SouthWest monsoon in the months of June-September. The average rainfall of Udaipur district is 62.4 cm. Table 2.1 shows seasonal distribution of rainfall in normal and drought years of the two surveys. In 1987 rainfall fell short by 55 per cent and in 1999, 42 per cent of the normal. The average rainfall of Ajmer is less than of Udaipur at 52.7 cm. In the two drought years the average rainfall fell short by 69 per cent and 38 per cent respectively (Table 2.2).

In the absence of proper rainwater harvesting structures, moisture is not retained in the fields, ponds get dried in a few months, aquifers are not sufficiently recharged and wells get dried up. In extreme cases there may even be shortage of drinking water in some villages.

Table 2.1: Rainfall (in cms) in Different Seasons in Kherwara Tehsil (Udaipur District)

Seasons	1983	1987	1997	1999
South west monsoon (June –Sept.)	73.20 (92.9)	24.6 (86.9)	57.4 (93.6)	35.0 (96.2)
Post monsoon (Oct.-Dec.)	3.8 (4.8)	2.9 (10.2)	2.6 (4.2)	1.3 (3.6)
Winter/North East monsoon (Jan.-Feb.)	-	0.8 (2.9)	-	-
Pre monsoon (March-May)	1.8 (2.3)	-	1.3 (2.1)	0.1 (0.3)
Total	78.8 (100)	28.3 (100)	61.3 (100)	36.4 (100)
Normal	62.4	62.4	62.4	62.4
Deviation from normal	+16.4	-34.1	-1.1	-26

Table 2.2: Rainfall (in cms) in Different Seasons in Bewar Thesil (Ajmer District)

Seasons	1983	1987	1997	1999
South west monsoon (June –Sept.)	61.4 (90.2)	14.9 (90.9)	80.0 (93.8)	32.7 (96.4)
Post monsoon (Oct.-Dec.)	0.5 (0.7)	0.4 (2.4)	4.5 (5.3)	-
Winter/North East monsoon (Jan.-Feb.)	0.1 (0.2)	0.3 (1.8)	-	-
Pre monsoon (March-May)	6.1 (8.9)	0.8 (4.9)	0.8 (0.9)	1.2 (3.5)
Total	68.1 (100)	16.4 (100)	85.3 (100)	33.9 (100)
Normal	52.7	52.7	52.7	52.7
Deviation from normal	+15.4	-36.3	+32.6	-19.8

Demographic characteristics

Population of sample villages

Six out of the eight sample villages have registered increases in population exceeding the percentage growth in the districts as a whole. The sex ratio continues to be favourable to women in the tribal district of Udaipur. In Ajmer the ratio continues to be adverse but has improved in two villages (Table 2.3).

Table 2.3: Population of sample villages

	1981			1991			Per cent change in population
Name of sample villages	Male	Female	Sex Ratio	Male	Female	Sex Ratio	
Udaipur							*+24.5*
Sagwara	309	325	1052	377	443	1175	+29.3
Karnauwa	315	407	1283	446	539	1209	+36.4
Dhelana	483	553	1145	674	690	1024	+31.7
Bawalwara	729	814	1117	907	945	1042	+20.0
Ajmer							+20.0
Rampura	328	301	918	444	424	955	+38.0
Deomali	358	313	874	421	367	872	+17.4
Shergarh	955	912	955	1265	1178	931	+30.9
Sanwa	135	118	874	175	157	897	+31.2

Household size

The average household size in the sample households has declined during the last decade from 6.6 to 6.0 in Ajmer and from 7.1 to 5.7 in Udaipur (Table 2.4). Most of this may be attributed to division of households from joint to nuclear since lower sized households are also characterised by higher dependency ratios. There is a positive and significant correlation between operational holding and household size in Ajmer villages, the correlation coefficient being 0.271. Thus as the size of operational

holdings (size groups explained below) increase the household size also increases. In Udaipur the correlation is not statistically significant.

Table 2.4: Mean household size by operational holdings: 1999 and 1987

Operational holding	Ajmer	Udaipur
Landless	5.8	5.00
Marginal	5.8	5.79
Small	6.1	5.57
Semi-medium	6.1	1.00
Medium and large	17.0	
Total: 1999	6.0	5.7
Total: 1987	6.6	7.1

Dependency Ratio

The dependency ratios are found to decline with increase in operational class holdings (Table 2.5). However, the correlation coefficient between operational holdings and dependency ratio is not found to be significant.

Table 2.5: Dependency Ratio by operation holdings 1999.

Operational holding	Ajmer	Udaipur
Landless	1.02	0.75
Marginal	0.83	0.76
Small	0.76	0.42
Semi-medium	0.65	0
Medium and large	0.70	0
Total	0.80	0.73

Literacy rates

Significant improvements have taken place in the literacy rates between 1987 and 1999 as seen in Table 2.6, which shows the age specific literacy rates. The increase is not restricted to the 6-14 age group but also in the higher age groups. While the former is attributable to increased enrollment in schools the latter shows the impact of programmes such as the Total Literacy Campaign. There are significant changes in female literacy rates, however they continue to be appreciably lower than the male literacy rates. Some of the changes in literacy rates are also attributable to the impact of poverty reduction programmes, as is evident from a discussion latter in the Report.

Table 2.6:Age-group and gender-wise distribution of literacy rates of sample population

Age group	1987		1999		Per cent change	
	Male	Female	Male	Female	Male	Female
Ajmer						
6-14	47.9	4.7	84.0	58.7	+36	+54
15-35	50.2	3.0	66.4	24.0	+16	+21
Above 35	17.0	0.5	43.9	16.4	+27	+16
Total	34.6	2.4	58.3	29.2	+24	+27
Udaipur						
6-14	70.5	29.9	71.0	53.4	0.5	23.5
15-35	74.3	17.8	65.0	25.5	-9.3	7.7
Above 35	37.5	4.9	34.9	4.8	-2.6	-0.1
Total	57.0	16.2	56.2	27.8	-0.8	11.6

Marital status

The incidence of child marriage is low in the sample villages and also seems to have declined as seen in Table 2.7

Table 2.7: Number of children married in 1987 and 1999 among sample households in 1987 and 1999

Age group	Married 1987	Married 1999
Ajmer		
0-5	0	3
6-14	28	10
Udaipur		
0-5	2	0
6-14	4	3

Livelihoods: Shifting Pattern

Livelihood patterns have changed between the reference period. The singular feature common to all districts is the shift towards labour as the main occupation. Most of the cultivator households are also involved in labour activities as their secondary occupation. Intensive irrigated culture in Ajmer has helped some rural artisans to sustain themselves in repair services and is seen in the marginal increase in the proportion of rural artisan households. See Table 2.8.

Table 2.8: Distribution of sample households by main occupation.

	Ajmer 1987	Ajmer 1999	Udaipur 1987	Udaipur 1999
Cultivators	83.8	68.2	58.1	73.2
Labour	10.2	23.7	11.9	18.2
Rural Artisans	0.0	4.4	8.8	1.3
Traders	2.5	0.6	8.1	2.5
Salaried class	5.0	3.1	13.1	5.0

Distribution of land

Land is one of the major resources on which the livelihoods are dependent. It is therefore important to consider the distribution of land in the population. We therefore distribute the households according to the land size groups: Landless, Marginal (less than 1 hectare) Small (1-2 hectares), Semi medium (2-4 hectares) and Medium and large (Above 4 hectares). Various household characteristics are discussed in this Report according to land size groups. Accordingly, the distribution of land in the two districts in given in Table 2.9.

Table 2.9: Distribution of households by land size classes

	Ajmer		Udaipur	
	Number	Per cent	Number	Per cent
Landless	15	9.4	7	4.4
Marginal	95	59.4	138	86.3
Small	33	20.6	14	8.8
semi-medium	16	10.0	1	0.6
medium and large	1	0.6		
Total	160	100.0	160	100.0

One of the major impacts of increase in population is the sub-division of holdings during the decade 1987-99 (See Table 2.10). Landlessness and the number of marginal and small farmers is on the increase. In the process, land distribution has become more skewed. While in 1987 semi-medium and large holdings (above 2 hectares) accounted for 22.5 per cent of the total number and 55 per cent of the area, in 1999 the respective figures are 5.3 per cent and 55 per cent of the area. It may also be pointed out that that the measure of skewness in Ajmer district in 1999 was 2.185 and in Udaipur district 1.476. In fact in Udaipur there was only 1 semi-medium holding in the sample.

Table 2.10: Distribution of landholdings by size groups among sample households in sample villages 1987 and 1999.

Size group	Operational holdings 1987				Operational holdings 1999			
	Number	Percent	Area	Percent	Number	Percent	Area	Percent
Ajmer & Udaipur								
Landless	6	1.9			22	6.9		
0.1 to 1.0 (Marginal)	176	55.0	100.3	22.9	233	72.8	108.6	48.7
1.1 to 2.0 (Small)	66	20.6	96.1	22.0	47	14.7	63.6	28.0
2.1 to 4.0 (Semi Medium)	61	19.1	174.7	40.0	17	5.3	49.0	21.5
Above 4.0 (Medium and large)	11	3.4	66.1	15.1	1	0.0	6.4	2.8
Total	320	100.0	437.2	100	320	100	227.6	101

Chapter III: Livelihoods and Agriculture

In this Chapter we shall examine the changes in Land Use Pattern, Irrigation, Cropping Intensity, Cropping Pattern, Extent of crop failure, and Adoption of improved crop technology in the long term context of drought proofing and sustainability of current agricultural practices.

Land Use Pattern

A comparison of land use pattern between normal and drought years and over a decade reflects to an extent the impact of drought as well as the impact of drought mitigation strategies. The land use pattern for the sample villages is given in Tables 3.1 and 3.2. The pooled reported area of selected villages is given for the two normal and drought years for which data has been collected, namely, 1983-84, the normal year preceding the drought year 1987-88 and 1997-98, the normal year preceding the drought year 1999-00.

Decline in forest area

The forest area in Udaipur villages has reduced by 232 hectares during the reference period and the share in total reported area has declined from 34 per cent to 27 per cent. Though we do not have a measure of density of the forests, people's own oral accounts reveal that the forests were far more dense fifteen years ago. Together, these facts indicate that the process of drought proofing has been reversed in Udaipur villages. In Ajmer villages the area under forests is nil.

Increase in barren and uncultivated area

The reversal of drought proofing is also evident from the increase in barren and uncultivated area in Udaipur villages by 452 hectares between 1983 and 1999, the share in total area increasing from 22 per cent to 33 per cent. In Ajmer villages during the same period the said area has declined by 311 hectares but the decline has not resulted in increase in area under cultivation as seen below but is reflected in substantial increase in culturable waste (104 hectares) and fallow land.

Permanent pastures and grazing land

In Udaipur villages, the permanent pasture and grazing lands have also reduced by 183 hectares (50 per cent) between the two reference points and the entire area now seems to be classified as barren and uncultivable land. In Ajmer villages the area under permanent pastures has been retained.

Net sown area and fallow land

Despite the decline in forest area and the permanent pastures in Udaipur villages and no change in Ajmer villages, the net sown area has declined by 135 hectares between the normal years 1983 and 1997 in Udaipur villages and by 52 hectares in Ajmer villages. In Udaipur villages this decline is of much concern and increases the stress on livelihoods. In drought years, the area under cultivation in Udaipur villages declined by 66 per cent in 1987 and 28 per cent in 1999 compared to the respective normal years. In Ajmer villages this decline was only 7 per cent in 1999-00. These declines are also reflected in substantial areas remaining fallow.

Thus, we find that the land use is substantially under strain in Udaipur villages where the area under cultivation, forest area and permanent pastures has declined substantially and there is significant reversal from a sustainable environment. In Ajmer villages, the land use pattern remains much the same. It seems that during the reference period, attempts were made to bring the barren and uncultivable land under cultivation but most of such land is now classified as old fallow or culturable waste.

Table 3.1: Land Use Pattern: Sample villages of district Udaipur

Particulars	NY: 1983	DY: 1988	Percent change over NY	NY:1997	DY:1999	Percent change over NY
Forest	1045.2	700	-33	813	813	0.0
	(34.3)	(23.1)		26.9	26.9	
Land not available for cultivation						
(a) Land put to non agricultural uses	53.4	90	68	71	71	0.0
	(1.8)	(3.0)		2.3	2.3	
(b) Barren and uncultivated land	655.8	949	45	1107	1107	0.0
	(21.5)	(31.4)		36.6	36.6	
Sub total	709.2	1039	46	1178	1178	0.0
	(23.3)	(34.4)		38.9	38.9	
Other uncultivated land excluding fallow land						
(a) Permanent pasture and grazing land	363.1	363	*	180	180	0.0
	(11.9)	(12.0)		5.9	5.9	
(b) Miscellaneous tree crops and groves	0	0	0	0	0	0.0
				0.0	0.0	
© Culturable waste	153.1	185.5	21	131	185	41.2
	(5.0)	(6.1)		4.3	6.1	
Sub Total	516.2	548.5	6	311	365	17.4
	(16.9)	(18.1)		10.3	12.1	
Fallow land						
(a) Current fallow	30.7	252.5	722	74	80	-8.1
	(1.0)	(8.3)		2.4	2.6	
(b) Old fallow	57	251	340	77	160	115.6
	(1.9)	(8.3)		2.5	5.3	
Sub Total	87.7	503.5	474	151	240	58.9
	(2.9)	(16.6)		5.0	7.9	
Net sown area	687.2	235.5	-66	552	395	-28.4
	(22.6)	(7.8)		18.2	13.1	
Total reported area	3045.2	3026.5	-1	3026	2991	0.0
	(100)	(100)		100.0	100.0	

Source: Tehsil records

Table 3.2: Land Use Pattern: Sample villages of District Ajmer

Particulars	NY: 1983	DY: 1988	Percent change over NY	NY:1997	DY:1999	Percent change over NY
Forest	0	0	0	0	0	0
Land not available for cultivation						
(a) Land put to non agricultural uses	214	304	42	122	122	0.0
	(6.9)	(9.8)		3.9	3.9	
(b) Barren and uncultivated land	532	431	-19	313	313	0.0
	(17.0)	(13.8)		10.0	10.0	
Sub total	746	735	-1	435	435	0.0
	(23.9)	(23.6)		14.0	14.0	
Other uncultivated land excluding fallow land						
(a) Permanent pasture and grazing land	432	459	6	459	459	0.0
	(13.9)	(14.7)		14.7	14.7	0.0
(b) Miscellaneous tree crops and groves	70	0	-100	0	0	
	(2.2)	(0.0)		0.0	0.0	
© Culturable waste	435	206	-53	539	605	12.2
	(13.9)	(6.6)		17.3	19.4	
Sub Total	937	665	-29	998	1064	6.6
	(30.0)	(21.3)		32.0	34.1	
Fallow land						
(a) Current fallow	5	139	2680	72	119	65.3
	(0.2)	(4.5)		2.3	3.8	
(b) Old fallow	53	204	285	286	266	-7.0
	(1.7)	(6.5)		9.2	8.5	
Sub Total	58	343	491	358	385	7.5
	(1.9)	(11.0)		11.5	12.4	
Net sown area	1378	1374	*	1326	1233	-7.0
	(44.2)	(44.1)		42.5	39.6	
Total reported area	3119	3117	*	3117	3117	0.0
	(100)	(100)		100.0	100.0	

Source: Tehsil records

Irrigation facilities

Irrigation is an important resource to agriculture but the mere existence of the resource does not ensure availability of irrigation. The water aquifers and reservoirs need to be adequately recharged to use the existing potential. In the absence of adequate replenishment of the water resources, the irrigated area and the productivity also fluctuates.

Area under irrigation

Between 1983 and 1997 the area under irrigation has increased in both districts – 2.3 times in Udaipur villages and 5.4 times in Ajmer villages. Nevertheless, in the drought year of 1987 the percentage change in Udaipur was –76 per cent but it increased in Ajmer villages by 23 per cent. The rains in the year 1986 in Ajmer were enough to irrigate more area in 1987. However, the following Table shows the irrigated area by source in the sample villages. It is pertinent to note that while in 1983 the source for irrigation in Udaipur villages was only wells and 27 hectares was irrigated, only 6 hectares was irrigated by wells in 1997 and the remaining by a canal from a small dam. This shows the depletion of groundwater in the Udaipur villages.

Table 3.3: Area irrigated in sample villages (hectares)

Villages of	NY: 1983	DY: 1988	Percent change	NY:1997	DY:1999	Per cent change
Udaipur	27.3 (2.9)	6.5 (2.6)	-76	63 (9.4)	4 (1.2)	-93.6
Ajmer	61.0 (3.2)	75.0 (5.3)	23	393 (18.8)	227 (13.8)	-42.2

Note: Figures in parentheses are percentages of respective gross cropped areas

Table 3.4: Area irrigated by source of irrigation in sample villages

Source of Irrigation	Ajmer		Udaipur	
	NY:1997	DY:1999	NY:1997	DY:1999
Ponds	90		57	
Wells	303	227	6	4
Total	393	227	63	4

An analysis of sample households

We begin with a note of caution regarding comparison of sample household data of the two surveys of 1988 and 1999. The sampling design of both surveys has been the same and in the category of cultivators households were selected at random. Still, the data if used for comparisons is amenable to sampling errors. Due to sub-division of holdings in the decade, the average size of holdings has reduced and there are far

more marginal and small farmers than in the past. Hence, comparison of absolute numbers needs to be made with some caution.

Decline in per cent of cultivators with well irrigation facilities between 1983 and 1999

The main sources of irrigation in the two districts are wells and tube wells. Over the years due to insufficient recharge of the aquifers, the percentage of farmers being able to irrigate their farms from wells and tube wells has declined significantly. Their wells have actually gone dry or have very little water for irrigation. As seen in Table 3.5, the per cent of farmers having wells declined from 79 per cent to 61 per cent in Ajmer villages and from 33 to 6 per cent in Udaipur villages.

Table 3.5: Percent farmers with well irrigation facilities and area irrigated per well

District	Percent farmers	Number of farmers and (area irrigated per well)		Percent farmers	Number of farmers and (area irrigated per well)	
		NY: 1983	DY: 1988		NY: 1997	DY:1999
Ajmer	79.4	127 (0.56)	126 (0.08)	61.3	98 (0.62)	54 (0.47)
Udaipur	33.1	53 (0.41)	57 (0.07)	5.6	9 (0.74)	8 (0.55)

The uncertainty of using irrigation potential

A detailed distribution of cultivators by land size class and having access to irrigation facilities is given in Table 3.6. Accounting for irrigation from all sources, wells, tube wells, ponds and canals, 78 per cent cultivators in Ajmer and 23 per cent in Udaipur had access to irrigation in 1997 and 1999. The uncertainty of supply from these resources is evident from Table 3.6, where even in a normal year, not all farmers are able to irrigate their land and their proportion falls drastically in drought years wherein $1/4^{th}$ to $1/5^{th}$ actually irrigate their lands. Availability of water in wells and ponds is the major constraint. A comparison across land-size classes shows that small farmers are marginally worse off than larger cultivators in Ajmer district. In Udaipur the situation is much the same across different classes.

Table 3.6: Distribution of households having irrigation facilities from wells/ tube wells/ canal and per cent actually using them in drought and normal years: 1999 and 1997

Operational holding	Ajmer				Udaipur			
	No	A	B	C	No	A	B	C
Marginal	95	63	30	93	138	22	16	93
Small	33	82	30	70	14	22	40	100
Semi-medium	16	100	19	88	1	100	0	100
Medium and large	1	100	0	100		0		
Total	145	78	28	87	153	23	19	95

Note: No: Number of farmers
A: Per cent of farmers having access to irrigation
B: Per cent of farmers using irrigation among those having access: DY:1999
C: Per cent of farmers using irrigation among those having access: NY:1997

Area under irrigated holdings and actual area irrigated

The total area under irrigated holdings (combined Ajmer and Udaipur villages) of sample households was 118 hectares in 1983 and 65 hectares in 1999. Both the sub-division of holdings and availability of water explain the decline. It is not possible to decompose the two for the years 1983 and 1988 for partial availability of data. Nevertheless, the decline in area under well irrigation in Udaipur is significant and of major concern where most wells have gone dry. Besides from Tables 3.8 and 3.9 it is clear that cultivators are able to irrigate only 2/3rd of the area under their operational holdings in a normal year and only 1/6th to 1/10th of the area in a drought year.

Table 3.7: Area under irrigated holdings by source of irrigation: Sample households

Source	NY: 1983	DY: 1988	Percent change	NY: 1997	DY:1999	Percent change
Ajmer						
Wells				60.3	25.1	
Canals/ Tanks				4.3	0.0	
Tanks						
Udaipur						
Wells				5.0	4.4	
Canals/ Tanks				14.6	0.0	
Total						
Wells	117.5	16.8	- 85.7	65.3	29.5	- 55.0
Canals/ Tanks	14.4	0.0	- 100.0	18.9	0.0	- 100.0

Table 3.8: Mean size of irrigated holdings and their distribution by classes of operational holdings

Operational holding	Ajmer			Udaipur		
	Mean	Sum	Per cent	Mean	Sum	Per cent
Marginal	0.2	23	35	0.1	13	64
Small	0.5	17	26	0.4	5	25
Semi-medium	1.3	20	32	2.2	2	11
medium and large	4.8	5	7	.	.	
Total	0.4	65	100	0.1	20	100

Table 3.9: Distribution of actual irrigated area in drought year and normal year by size class of holdings.

Operational holding	Ajmer		Udaipur	
	DY:1999	NY:1997	DY:1999	NY:1997
Marginal	5.6	20.6	1.12	8.3
Small	2.9	7.5	0.6	2.9
Semi-medium	1.9	11.7	0.0	1.6
medium and large	0.0	3.2		
Total	10.4	42.9	1.8	12.8

Cropping Intensity

Cropping intensity (ratio of gross cropped area to net sown area) reflects the extent of multiple cropping adopted by the cultivators. Table 3.10 shows cropping intensity for various years. The data shows that the cropping intensity has declined between the normal years in Udaipur villages from 138 to 121 and increased in Ajmer villages from 141 to 158. In drought years compared to the normal years, too there is a decline in cropping intensity, reflecting higher decrease in cropped area compared to decrease in net sown area.

Table 3.10: Cropping Intensity in sample villages

	NY:1983			DY: 1987			NY: 1997			DY: 1999		
	NSA	GCA	CI	NSA	GCA	CI	NSA	GCA	CI	NSA	GCA	CI
Udaipur	687	951	138	235	252	107	552	669	121	395	459	116
Ajmer	1378	1940	141	1374	1411	103	1323	2090	158	1233	1642	133

Cropping Pattern of sample villages

The combined cropping pattern of sample villages for the years 1983, 1987, 1997, 1999 are presented in tables 3.11 and 3.12 for the Udaipur villages and Ajmer villages respectively. Between the normal years 1983 and 1997, the Gross Cropped Area has declined in Udaipur villages from 951 hectares to 835 hectares, a decline of 12 per cent (As reported above, there has been a decline in Net sown area as well). The decline in area under cultivation is directly attributable to degradation of land and depletion of water resources. Corrective measures are needed to restore land under

cultivation as well as prevent further degradation. Unless this is done food security will also be at a stake.

Depletion of small water bodies including those in the private lands in Udaipur villages has resulted in decline in area under paddy from 179 hectares in 1983 to 79 hectares in 1997. The area under jowar has also declined by 35 hectares and under urad by 26 hectares. The only crop which has registered a marginal increase, is maize from 332 hectares to 350 hectares, which is not very significant. In both kharif and rabi there is a shift from more water intensive crops such as paddy and wheat to maize and gram.

The impact of drought is very visible in both the drought years of 1988 and 1999 where in the gross cropped area has fallen by 73 per cent and 41 per cent respectively. The shift in cropping pattern has been towards less water intensive crops.

In Ajmer villages, there is no significant difference between net sown area in 1983 and 1997 and the gross cropped area has also increased from 1940 hectares by 9 per cent, most of it is attributable to increased irrigation potential. There has been no significant shift in cropping pattern between the two normal years for the kharif crops but a significant shift is observed towards wheat and barley from other crops during the rabi. The promotion of HYV seems to be behind this shift. See Table 3.13. The Table shows the use of HYV in sample villages.

During drought years there is a significant shift towards less water intensive crops like jowar, which also provide fodder in case of crop failure. This, however, did not happen during the rabi of 1999, when cultivators preferred to grow wheat over less water intensive oilseeds. This was despite the shortage of groundwater but the decision seems to be governed by the expected prices of oilseeds, which have remained low in recent years due to import of edible oil. Thus despite lower returns from wheat (see yield results in a following section) oilseeds were not grown. In the absence of price support policies for oilseeds, cultivators adopt an environmentally unsustainable agriculture.

Table 3.11: Cropping pattern: District Udaipur

(Area in hectares)

Kharif	NY: 1983	DY: 1988	Percent change over NY	NY:1997	DY:1999	Percent change over NY
Maize	332.2	227.0	-31.7	350	325	-7.1
	(49.8)	(92.7)		70.7	77.6	
Jowar	76.2	4.0	-94.8	31	26	-16.1
	(11.4)	(1.6)		6.3	6.2	
Paddy	179.1	1.0	-99.4	79	21	-73.4
	(26.9)	(0.4)		16.0	5.0	
Bajra	15.5	1.0	-93.5			
	(2.3)	(0.4)				
Urad	56.3	9.0	-84.0	29	29	0.0
	(8.4)	(3.7)		5.9	6.9	
Moong	0	0	0			
Other Kharif pulses	3.5	0	-100.0	6	16	166.7
	(0.5)			1.2	3.8	
Oilseed crops	0	0	0		1	
					0.2	
Cotton	0	0	0			
Others	4.2	3.0	-28.6		1	
	(0.6)	(1.2)			0.2	
Total	667.0	245.0	-63.1	495	419	-15.4
	100	100		100.0	100.0	
Rabi						
Wheat	119.1	4.5	-96.2	102	23	-77.5
	(41.9)	(57.7)		30.0	34.8	
Barley	33.4	1.1	-96.7	8	7	-12.5
	(11.8)	(14.1)		2.4	10.6	
Gram	38.6	0	-100	54	32	-40.7
	(13.6)	(0)		15.9	48.5	
Rapeseed and Mustard	30.8	0	-100	6		
	(10.8)			1.8		
Others	62.1	2.2	-96.5			
	(21.9)	(28.2)				
Total	284.0	7.8	-97.2	340	66	-80.6
	100	100		100.0	100.0	
Gross Cropped Area	951	253	-73.3	835	485	-41.9

Table 3.12: Cropping pattern during Normal and drought years in selected village: District Ajmer

(Area in hectares)

Kharif	NY: 1983	DY: 1988	Percent change over NY	NY:1997	DY:1999	Percent change over NY
Maize	326.0	137.0	-58.0	296	414	39.9
	(25.3)	(10.3)		21.8	28.9	
Jowar	589.0	551.0	-6.5	636	718	12.9
	(45.8)	(41.3)		46.9	50.0	
Paddy	0	0	0			
Bajra	77.0	507.0	+558.4	79	61	-22.8
	(6.0)	(38.0)		5.8	4.3	
Urad	7.0	0	-100	3	3	0.0
	(0.5)			0.2	0.2	
Moong	76.0	99.0	+30.2	109	49	-55.0
	(5.9)	(7.4)		8.0	3.4	
Other Kharif pulses	8.0	0	-100.0	29	26	-10.3
	(0.6)			2.1	1.8	
Oilseed crops	48.0	15.0	-68.7	60	30	-50.0
	(3.7)	(1.1)		4.4	2.1	
Cotton	128.0	19.0	-85.1	134	127	-5.2
	(10.0)	(1.4)		9.9	8.9	
Others	27.0	6	-77.8	10	7	-30.0
	(2.1)	(0.4)		0.7	0.5	
Total	1286.0	1334.0	+3.7	1356	1435	5.8
	100	100		100.0	100.0	
Rabi						
Wheat	139.0	9.0	-93.5	424	207	-51.2
	(21.3)	(11.7)		54.4	73.9	
Barley	131.0	46.0	-64.9	262	26	-90.1
	(20.0)	(59.7)		33.6	9.3	
Gram	176.0	1.0	-99.4	23	14	-39.1
	(26.9)	(1.3)		3.0	5.0	
Rapeseed and Mustard	0	3.0		30	3	-90.0
		(3.9)		3.9	1.1	
Others	208.0	18	-91.3	40	30	-25.0
	(31.8)	(23.4)		5.1	10.7	
Total	654.0	77.0	-88.2	779	280	-64.1
	100	100		100.0	100.0	
Gross Cropped Area	1940	1411	-27.2	2135	1715	-19.7

Table 3.13: Percentage of farmers using HYV and fertilisers

	Percent farmers			Amounts		
	NY: 1997	DY: 1999	% point change	NY:1997	DY: 1999	Percent change
HYV or improved seeds	35.0	23.1	-11.9	4504 Kg	2080 Kg	- 53.8
Farm yard manure	62.8	52.2	- 10.6	9293 Qtls	7398 Qtls	- 20.4
Urea	40.6	21.9	- 18.7	4665 Kg	1719 Kg	- 63.2
DAP	40.9	19.1	- 21.8	5325 Kg	2443 Kg	- 54.1
Pesticides	0.6	0.3	- 0.3	5 Kg	2 Kg	- 60.0

Changes in productivity during 1997-1999.

Significant increase in productivity has occurred during the decade in four crops, namely, jowar, bajra, barley and wheat: 40, 29, 10 and 50 per cent respectively. See Table 3.14. This does not come as a surprise as while in 1988 only 3 farmers were using High Yielding Varieties, their number in 1999 was 35 per cent. Besides 40 per cent farmers also use urea and DAP. However, there has been loss in fodder in jowar and bajra by 14 and 38 per cent respectively but increase in barley and wheat by 7 and 17 per cent respectively. In HYV wheat there has been a shift from dwarf variety to long varieties while in bajra the case has been vice-versa. The change in barley is not so significant, while decline in jowar fodder is of some concern. Table 3.14 also shows significant yield losses in drought years across all crops in both grain and fodder.

Table 3.14: Yield rates of grain and fodder during 1988 and 1999 surveys.

	Productivity of grain		Productivity of fodder		Productivity of grain		Productivity of fodder	
	NY: 1997	DY: 1999	NY: 1997	DY: 1999	NY: 1983	DY: 1988	NY: 1983	DY: 1988
Maize	13	2.05	24.83	3.59	13.6	0.8	25.1	35.6
Urad	5.02	0.88	7.25	1.4	5.4	-	7.3	-
Jowar	10.56	4.18	29.1	12.16	7.5	0.1	33.9	1.1
Paddy	8.53	1.44	12.86	10.46	9.5	-	15.8	6.2
Moong	6.75	1.88	5.68	2.46	6.0	-	7.4	-
Bajra	12.6	6.25	20.67	12.4	9.8	0.1	33.1	11.7
Pulses	7.15	2.62	11.19	4.07	8.6	-	12.7	-
Cotton	17.56	14.1	3.13	0		-	-	-
Oilseeds	9.14	0.94	6.25	0	3.8	-	8.0	-
Rapeseed and mustard	6.25		0		4.9	-	18.1	-
Barley	18.32	2.08	23.57	2.08	16.7	13.8	22.1	16.5
Wheat	25.25	10.45	29.96	12.79	16.8	12.5	25.7	20.5
Gram	0		22.92		10.5	18.2	12.1	27.3

Fluctuations in production

Rajasthan agriculture is characterised by extreme volatility in crop production, as discussed earlier. In the sample households it is found that the marginal and small farmers are affected more than the other farmers. Among other reasons, access to irrigation is one of the factors. The larger farmers are able to offset some crop losses during the *kharif* by production in *rabi.* See Table 3.15.

Table 3.15: Mean value of agricultural products (Rs) and per cent loss of output between normal and drought year.

Operational holding	Ajmer		Per cent loss	Udaipur		Per cent loss
	DY:1999	NY:1997		DY:1999	NY:1997	
Marginal	1659	8475	-80	1051	3885	-73
Small	5072	15468	-67	3123	10745	-71
semi-medium	11254	35958	-69	5800	37800	-85
medium and large	217215	290520	-25	.	.	
Total	4981	15044	-67	1272	4734	-73

Fluctuations in crop residuals

Crop residuals are an important source of fodder for the livestock population. Separate data for crop residuals are not collected in the state. In the event of a crop failure due to drought conditions, crop residuals still command value as they are important inputs in animal husbandry. In Ajmer villages the crop residuals amounted to 26 per cent of the value of crop production in the drought year compared to 18 per cent in the normal year. In Udaipur villages these percentages were 118 and 36 per cent respectively. The large percentage in Udaipur villages in the drought year shows a higher extent of crop failure. The higher percentage of crop residuals in the normal year compared to Ajmer villages shows that in Ajmer cash crops with lower value of residuals are more than in Udaipur.

Table 3.16: Mean value of agricultural by-products (Rs) and per cent loss of output between normal and drought year.

Operational holding	Ajmer		Per cent loss	Udaipur		Per cent loss
	DY:1999	NY:1997		DY:1999	NY:1997	
Marginal	632	1516	-58	1299	1425	-9
Small	1945	3760	-48	3329	3814	-13
semi-medium	2455	6759	-64	5400	12200	-56
medium and large	26250	23500	12	.	.	
Total	1309	2757	-53	1512	1714	-12

The total loss in the drought year was of Rs 16,69,067 compared to the normal year for the sample households in Ajmer villages. In Udaipur this loss was of Rs 5,60,730. For BPL households this loss was respectively Rs 372370 (for 49 households) and Rs 440160 (for 109 households) in the two districts or Rs 7599 and Rs 4038 per household respectively. It is perhaps not possible for the government to compensate these losses.

Table 3.17: Mean value of agricultural products and by-products (Rs) and per cent loss of output between normal and drought year.

Operational holding	Ajmer		Per cent loss	Udaipur		Per cent loss
	DY:1999	NY:1997		DY:1999	NY:1997	
Marginal	2291	9990	-77	2350	5310	-56
Small	7017	19228	-64	6452	14559	-56
semi-medium	13709	42718	-68	11200	50000	-78
medium and large	243465	314020	-22	.	.	
Total	6290	17801	-65	2783	6448	-57

Chapter IV: Livelihoods and Livestock

The importance of livestock in Rajasthan

Livestock is an important resource for Rajasthan and becomes more important for survival especially in the drought year. We present the share of agriculture and livestock in the net state domestic product for selected years in Table 4.1. Comparing the shares of agriculture and livestock, we find that the product originating from livestock is 1/3rd to 1/4th of the share of agriculture in a normal year and half to over 100 per cent in a drought year. These ratios are significant and are generally overlooked in policy planning.

Table 4.1: Share of Agriculture and Livestock in State Net Domestic Product: Selected years

	Share of Agriculture	Share of Livestock	NSDP (Rs lakhs)
1983-84			
Rajasthan	41.9	10.3	704263
Ajmer	27.3	9.4	25989
Udaipur	24.9	8.7	49846
1987-88			
Rajasthan	26.7	11.2	943649
Ajmer	13.2	9.9	37412
Udaipur	12.1	16.4	60016
1990-91			
Rajasthan	37.6	7.5	1828141
Ajmer	23.1	5.6	72337
Udaipur	21.9	8.7	119670

Fluctuations in Livestock numbers

Livestock are primary victims of drought. Their numbers decline in a drought year but given a favourable environment would increase again in normal years. After the drought of 1987-88, though the numbers of indigenous cattle increased but has not reached the level of 1983. In Udaipur the numbers have continued to decline. The numbers of sheep and goat have increased since 1988 at the all Rajasthan level. In Ajmer the numbers of sheep have not reached the 1983 level but the number of goats have increased by 8 per cent over the 1983 numbers. In Udaipur both the numbers of sheep and goats have continued to decline and are pointer to degradation of environment and instability in livelihoods. Between 1983 and 1997, the numbers of sheep have declined by 63 per cent and goats by 37 per cent in Udaipur district. See Tables 4.2, 4.3 and 4.4.

Table 4.2: Numbers of Livestock in Rajasthan

				Percent change between		
	1983	1988	1997	1983-88	1983-97	1988-97
Indigenous cattle	13465730	10846838	11946285	-19.4	-11.3	10.1
Cross bred	38615	74263	2122537	92.3	5396.7	2758.1
She buffaloes	5225915	5576543	8575798	6.7	64.1	53.8
Sheep	13430788	9932323	14312493	-26.0	6.6	44.1
Goats	15479521	12577513	16936956	-18.7	9.4	34.7

Table 4.3: Numbers of Livestock in District Ajmer

				Percent change between		
	1983	1988	1997	1983-88	1983-97	1988-97
Indigenous cattle	493629	365416	468065	-26.0	-5.2	28.1
Cross bred	3886	7401	13392	90.5	244.6	80.9
She buffaloes	150554	129975	271177	-13.7	80.1	108.6
Sheep	775208	566956	714009	-26.9	-7.9	25.9
Goats	521757	453990	563849	-13.0	8.1	24.2

Table 4.4: Numbers of Livestock in District Udaipur

				Percent change between		
	1983	1988	1997	1983-88	1983-97	1988-97
Indigenous cattle	1377030	990992	956890	-28.0	-30.5	-3.4
Cross bred	6205	9973	13342	60.7	115.0	33.8
She buffaloes	461034	400560	400612	-13.1	-13.1	0.0
Sheep	662619	394960	244017	-40.4	-63.2	-38.2
Goats	1350060	1101769	850773	-18.4	-37.0	-22.8

Distribution of livestock by size of operational holdings among sample households

Large ruminants

On an average the numbers of cattles and buffaloes owned by the higher sized operational holdings are only marginally higher or equal to those owned by smaller sized operational holdings as evident from Tables 4.5 and 4.6 for Udaipur and Ajmer villages respectively. The average numbers of milching cattle and buffaloes owned are .9 and .7 respectively in a normal year in Ajmer villages, the average for Udaipur villages is 0.3 and 0.2. In Udaipur, a striking feature is the number of dry cattle and buffaloes, which even in a normal year averaged 0.9 and 0.5 respectively. Thus the numbers of dry cattle and buffaloes were respectively 2 and 3 times more than those in milk. In the drought year the numbers were 5 and 3.3 times more. These dry cattle and buffaloes are a drain on the natural resources but are maintained (as we shall see later in a low productive economy) in the hope of their getting pregnant. These

Table 4.5: Distribution of livestock by operational size holdings: Udaipur Villages (NY: 1997) and (DY: 1999)

Operational holding		Number of milching cows		Number of milching buffalo		No. of goats		No. of Sheep		No. of dry cows		No. of dry buffaloes		No. of bullock pair		No. of hen	
		DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY
Landless	Sum	0	1	4	4	10	13	0	0	4	4	4	3	6	6	2	2
	Mean	(.0)	(.1)	(.6)	(.6)	(1.4)	(1.9)	(.0)	(.0)	(.6)	(.4)	(.6)	(.4)	(.9)	(.9)	(.3)	(.3)
marginal	Sum	33	47	23	27	467	407	22	15	151	133	85	66	196	187	33	46
	Mean	(.2)	(.3)	(.2)	(.2)	(3.4)	(2.9)	(.2)	(.1)	(1.1)	(1.0)	(.6)	(.5)	(1.4)	(1.4)	(.2)	(.3)
small	Sum	4	4	7	6	104	88	0	0	19	14	11	9	17	13	5	5
	Mean	(.3)	(.3)	(.5)	(.4)	(7.4)	(6.3)	(.0)	(.0)	(1.4)	(1.0)	(.8)	(.6)	(1.2)	(.9)	(.4)	(.4)
semi-medium	Sum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mean	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)
Total	Sum	37	52	34	37	581	508	22	15	174	151	100	78	219	206	40	53
	Mean	(.2)	(.3)	(.2)	(.2)	(3.6)	(3.2)	(.1)	(.1)	(1.1)	(0.9)	(0.6)	(0.5)	(1.4)	(1.3)	(0.3)	(0.3)

Table 4.6: Distribution of livestock by operational size holdings: Ajmer Villages (NY: 1997) and (DY: 1999)

Operational holding		Number of milching cows		Number of milching buffalo		No. of goats		No. of Sheep		No. of dry cows		No. of dry buffaloes		No. of bullock pair		No. of hen	
		DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY
Landless	Sum	0	0	0	0	18	17	226	230	2	2	1	0	0	0	0	0
	Mean	(.0)	(.0)	(.0)	(.0)	(1.2)	(1.1)	(15.1)	(15.3)	(.1)	(.1)	(.1)	(.0)	(.0)	(.0)	(.0)	(.0)
marginal	Sum	68	84	43	75	230	239	151	181	40	31	23	22	11	10	0	
	Mean	(.7)	(.9)	(.5)	(.8)	(2.4)	(2.5)	(1.6)	(1.9)	(0.4)	(.3)	(.2)	(.2)	(.1)	(.1)	(.0)	
small	Sum	37	40	25	21	164	160	282	67	13	9	15	5	5	5	0	
	Mean	(1.1)	(1.2)	(.8)	(.6)	(5.0)	(4.8)	(8.5)	(2.0)	(0.4)	(.3)	(.5)	(.2)	(.2)	(.2)	(.0)	
semi-medium	Sum	11	18	16	13	14	5	36	62	9	8	6	4	1	0	0	
	Mean	(.7)	(1.1)	(1.0)	(.8)	(.9)	(.3)	(2.3)	(3.9)	(0.3)	(.5)	(.4)	(.3)	(.1)	(.0)	(.0)	
Medium and large	Sum	0	3	5	4	0	4	0	50	0	0	0	0	0	0	0	
	Mean	(.0)	(3.0)	(5.0)	(4.0)	(.0)	(4.0)	(.0)	(50.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	
Total		116	145	89	113	426	425	695	590	64	50	45	31	17	15	0	
		(.7)	(.9)	(.6)	(.7)	(2.7)	(2.7)	(4.3)	(3.7)	(0.4)	(0.3)	(0.3)	(0.2)	(0.1)	(0.1)	(.0)	

numbers are relatively small in Ajmer district and are only part of the birth cycle. Though the distribution of large ruminants seems egalitarian in terms of numbers, the same caanot be said about their quality and milk yield as discussed later.

Small ruminants

The numbers of small ruminants are largely distributed in favour of the small and marginal holdings and also the landless (The only exception being the only medium and large farmer in Ajmer district who maintains a large flock of 50 sheep). However, within this group the average is more in favour of the smallholdings than the marginal and the landless in case of goats. The landless households in Ajmer villages own on an average 15 sheep and these are the main source of their livelihoods. Thus in both Ajmer and Udaipur villages, the poor keep more small ruminants than the non-poor and are dependent on the common property resources for grasses and fodder.

The increasing vulnerability of livestock

A characteristic of a drought year in Rajasthan is that a large number of livestock perish, as discussed earlier. The sample households are no exception. Tables 4.7 and 4.8 show the number of livestock that perished or were sold or abandoned in distress during the 1999 drought. In Ajmer villages around 10 per cent of the milching cows and buffaloes died during the drought year and around 16 per cent of the buffaloes were sold. Most of the dry buffaloes survived the drought. Only a few goats perished but their numbers are not different from those in a normal year. However, about 14 per cent of the sheep were lost during the year.

In Udaipur villages the impact of drought was far more severe as their dependence on natural resources and the commons is higher. About 40 per cent of the milching cows, 48 per cent dry cows, 34 per cent buffaloes, goats and bullocks perished during the year.

The total loss of livestock during the drought year in the sample households during the 1999 drought was Rs 3 lakhs in Ajmer villages and Rs 7 lakhs in Udaipur villages. See Tables 4.9 and 4.10.

Table 4.7: Number of livestock owned by sample households, numbers died, sold, purchased, gifted, abandoned in the normal year: 1997 and the drought year 1999: District Ajmer

	Number		Died		Sold		Purchased		Gifted		Abandoned	
	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY
Milching cows	145	116	3	17	4	5	1	0	0	0	0	0
Dry cows	50	64	0	2	0	0	0	0	0	0	0	0
Buffaloes	113	89	0	8	2	14	1	2	0	1	0	0
Dry Buffaloes	31	45	0	2	0	2	0	0	0	0	0	0
Goats	425	426	6	36	20	21	0	4	0	0	0	0
Sheep	590	695	4	108	0	37	0	6	0	0	0	0
Bullocks	15	17	0	4	0	1	0	0	0	0	0	0
Poultry	0	0	0	0	0	0	0	0	0	0	0	0
Hen	0	0	0	0	0	0	0	0	0	0	0	0

Table 4.8: Number of livestock owned by sample households, numbers died, sold, purchased, gifted, abandoned in the normal year: 1997 and the drought year 1999: District Udaipur

	Number		Died		Sold		Purchased		Gifted		Abandoned	
	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY
Milching cows	52	37	0	15	0	0	0	0	0	1	0	0
Dry cows	151	174	0	83	0	0	0	0	2	0	0	0
Buffaloes	37	34	0	8	0	0	1	0	0	0	0	0
Dry Buffaloes	78	100	0	34	0	0	1	0	0	0	0	0
Goats	508	581	0	198	19	13	0	0	0	0	0	0
Sheep	15	22	0	5	0	0	0	0	0	0	0	0
Bullocks	206	219	1	75		2	8	13	0	0	0	0
Hen	53	40	0	0	0	0	0	0	0	0	0	0

Table 4.9: Value of animals died, sold and purchased (Rs) District Ajmer

	Died		Sold		Purchased	
	NY:1997	DY:1999	NY:1997	DY:1999	NY:1997	DY:1999
Milching cows	16000	45000	14000	12400	2000	0
Dry cows	0	6500	0	0	0	0
Buffaloes	0	42000	6000	61000	5000	19000
Dry Buffaloes	0	15000	0	10000	0	0
Goats	10000	54100	19000	23100	0	4002
Sheep	2400	124400	0	22500	0	3000
Bullocks	0	18800	0	500	0	0
Hen	0	0	0	0	0	0
Total	28400	305800	39000	129500	7000	26002

Table 4.10: Value of animals died, sold and purchased (Rs) District Udaipur

	Died		Sold		Purchased	
	NY:1997	DY:1999	NY:1997	DY:1999	NY:1997	DY:1999
Milching cows	0	34500	0	0	0	0
Dry cows	0	106600	0	0	0	0
Buffaloes	0	73000	0	0	5000	0
Dry Buffaloes	0	106200	0	0	0	5000
Goats	0	207900	16300	10800	0	0
Sheep	0	2500	0	0	0	0
Bullocks	2000	215300	0	7000	12000	54300
Hen	0	0	0	0	0	0
Total	2000	746000	16300	17800	17000	59300

Decline in the total number of livestock owned by sample households between 1983 and 1999

Table 4.11 shows the number of livestock owned by the 320 sample households of the two districts for various years. Once again, it may be pointed out that the sample households are different, the average holding size and livestock owned have decreased due to sub-divisions. The Table tells the decline in animal wealth owned by 320 households in 1983 and a comparable 320 households 16 years later. The per household numbers of livestock between 1983 and 1999 have declined thus: cows have reduced by 75 per cent, buffaloes 53 per cent, goats and sheep 60 per cent, bullocks 60 per cent and the poultry birds by 100 per cent.

Table 4.11: Decline in animal wealth between 1983 and 1999

	NY: 1983	DY: 1998	NY: 1997	DY: 1999
Cows	1540	1114	398	391
Buffaloes	561	394	259	268
Goats and sheep	4455	3556	1538	1724
Bullocks	614	515	221	236
Poultry	231	220	0	0

Milk yield

The milk yield rates of buffaloes, cows and goats for normal and drought years are given in Tables 4.12 to 4.14. The yield rates are low even in a normal year. The highest milk yield rate of buffaloes among semi-medium operational holdings averages about 9 litres per day during the lactation period. For all other categories of operational holdings the yield rates are lower. The differences in yield rates are attributable more to the feed and fodder inputs that higher sized operational holding

cultivators are able to provide than the quality of the livestock. In Udaipur villages the yield rates are almost one-fourth of that in Ajmer villages. A similar pattern is observed in the case of cows and buffaloes. Comparable figures for the period 1983-88 for Ajmer and Udaipur villages combined are given in Table 4.15. When compared to productivity levels in later years, it can be seen that productivity of livestock has not improved over the years. The total loss in value of milk output between 1997 and 1999 is given in Tables 4.16 and 4.17. The total loss to the sample households has been Rs 80,000 in Udaipur villages and Rs 527,000 in Ajmer villages.

Table 4.12: Milk yield in normal and drought years: buffaloes (litres per annum)

Operational holding	Ajmer		Udaipur	
	NY:1997	DY:1999	NY:1997	DY:1999
Landless	.	.	250	215
Marginal	983	1038	389	309
Small	1841	1302	373	265
Semi-medium	2700	1837	350	200
Medium and large	.	.	.	.
Total	1351	1206	378	288

Table 4.13: Milk yield in normal and drought years: cows (litres per annum)

Operational holding	Ajmer		Udaipur	
	NY:1997	DY:1999	NY:1997	DY:1999
Landless	.	.		185
Marginal	807	718	250	159
Small	1239	1003	228	30
Semi-medium	818	681	310	.
Medium and large	.	1095	.	.
Total	945	799	234	156

Table 4.14: Milk yield in normal and drought years: goats (litres per annum)

Operational holding	Ajmer		Udaipur	
	NY:1997	DY:1999	NY:1997	DY:1999
Landless	90	70	.	.
Marginal	278	221	91	80
Small	175	194	132	158
Semi-medium	143	96	.	.
Medium and large	.	35	.	.
Total	230	192	97	92

Table 4.15: Productivity of livestock during normal and drought years on sample farms Ajmer and Udaipur villages (litres per annum):

Particulars	1983	1987	Per cent change
Cow milk	585	444	-24
Buffalo milk	908	616	-32
Goat wool	157	104	-33

Table 4.16: Loss in value of milk output (1997-99): Udaipur (Rs.)

Operational holding		Cow	Buffalo	Goat	Total
Landless	Sum	0	0	0	0
	Mean	(.0)	(.0)	(.0)	(.0)
Marginal	Sum	-22215	-38060	-12255	-72530
	Mean	(-234)			(-763)
Small	Sum	-2520	-4140	-420	-7080
	Mean	(-76)			(-215)
Semi- medium	Sum	0	0	0	0
	Mean				
Medium and large	Sum	0	0	0	0
	Mean				
Total	Sum	-24735	-42200	-12675	-79610
	Mean	(-154)	(-263)	(-79)	(-497)

Table 4.17: Loss in value of milk output (1997-99): Ajmer (Rs.)

Operational holding		Cow	Buffalo	Goat	Total
Landless	Sum	0	0	-490	-490
	Mean	(.0)	(.0)	(-33)	(-33)
Marginal	Sum	-136650	-141598	-238761	-517009
	Mean	(-1438)	(-1490)	(-2513)	(-5442)
Small	Sum	-57985	-48130	-13100	-119215
	Mean	(-1757)	(-1458)	(-396)	(-3612)
Semi- medium	Sum	-24185	+131040	+3030	109255
	Mean	(-1551)	(+8190)	(+189)	(+6828)
Medium and large	Sum	0	0	0	0
	Mean	(.0)	(.0)	(.0)	(.0)
Total	Sum	-219450	-58688	-249321	-527459
	Mean	(-1371)	(-366)	(-1558)	(-3296)

Sutainability of livestock in Rajasthan

Livestock rearing continues to be an important asset for the poor, though the numbers owned per household have declined in the last two decades. In the recent drought of 1999, many households lost their livestock. Cultivators with larger operational holdings in the districts own mainly large ruminants and their productivity is also higher than those owned by the cultivators with small holdings. The small ruminants are owned mainly by the poorer sections of the society and they have to rely on the natural resource endowment in their villages. In Udaipur this endowment has reduced drastically and is reflected both at the numbers of livestock as obtained from the

Livestock Census as well as from the household data of sample villages. The productivity of livestock has remained abysmally low.

Policies or programmes that ensure fodder availability through the drought years are missing, though during a drought year fodder is procured on an emergency basis from nearby states. Programmes that would ensure the sustainability of natural resource endowment did not have an impact in the sample Udaipur villages. The network of dairies in the Ajmer villages has ensured an income stream to the Ajmer villages. However, the network could not save cattle deaths during the drought years.

Chapter V: Livelihoods and Wage Labour

Major occupational shifts in rural population have been observed in the sample villages (See Table 2.5). The singular feature common to all districts is the shift towards labour as the main occupation. Most of the cultivator households are also involved in labour activities as their secondary occupation. The pattern at the all Rajasthan level also reflects a marginal shift in occupation towards casual wage employment. It is important to note that the shift is also transient. (See Table 5.1). While in the drought year of 1987, 25 per cent male reported casual wage employment as their main occupation, this declined to 14 per cent in 1997 (higher by only 3 per cent points over 1997-78. Similarly, in the sample villages, comparing the occupation in the two drought years of 1987 and 1999 reveals that the proportion of labour households increased from 10 per cent in 1987 to 23 percent in Ajmer villages and 12 to 18 per cent in Udaipur villages. Thus wage labour has become the major source of livelihood not only for those who describe casual wage employment as their main occupation but also those in the self-employed category (mainly cultivators).

Table 5.1Percentage Distribution of workers by Status Categories in Rajasthan

Year	Rural	
	Male	Female
Self employment		
1977-78	84	91
1983	81	89
1987-88	68	82
1997	80	93
Salaried regular employment		
1977-78	6	1
1983	6	1
1987-78	7	2
1997	6	1
Casual wage employment		
1977-78	11	8
1983	13	10
1987-88	25	16
1997	14	6

Source: NSSO Reports, Central Sample

Conditions of wage labour in sample villages

Availability of casual labour within the village forces out –migration for a majority of households in the sample. The number of days of casual labour outside the village far exceeds the number within village. The earnings from wage labour outside village are higher than those within village as both the number of days spent outside the village are higher and so are the wages. Table 5.2 shows the pattern of average number of days of wage labour and average earnings per labour. There is more outmigration in a drought year than in a normal year in both Ajmer and Udaipur villages. The average earnings in Ajmer viallges are highe rthan in Udaipur villages atleast within the village. However, since from Udaipur, the out-migration is to distant places and for greater number of days, the average earnings are higher. However, as evident from Table 5.3 no more than 20 per cent casual labour in Ajmer and 7 per cent in Udaipur receive the minimum wages of Rs 60 for most time in the year. It is also worth noting that the number of days women have worked as casual labour are less than those by men ad the wages received are also lower.

Table 5.2: Employment profile of casual labour among sample households

	Ajmer		Udaipur	
	M	F	M	F
Average days in a year that an adult is employed as casual labour				
DY: Within village	71	42	71	66
DY: Outside village	97	67	111	90
NY: Within village	65	45	78	73
NY: Outside village	90	72	115	90
DY: Total	102	66	105	67
NY: Total	93	70	108	76
Average earnings per adult labour who gets employed as wage labour (Rs)				
DY: Within village	4244	1900	3077	2244
DY: Outside village	5070	3262	6207	3600
NY: Within village	3323	1795	2991	2100
NY: Outside village	3919	3054	6307	4050
DY: Total	9314	5162	9284	5844
NY: Total	7242	4849	9298	6150
Average wages received per day (Rs)				
DY: Within village	54	42	43	34
DY: Outside village	52	50	54	40
NY: Within village	48	39	37	29
NY: Outside village	45	45	53	45

Table 5.3: Per cent distribution of persons by wages normally received

	Ajmer		Udaipur	
	M	F	M	F
DY: Within village				
Less than Rs 20			1	3
Rs 20-40	44	82	81	97
Rs 40-60	28	6	13	
Rs 60	6	12		
Above Rs 60	22		5	
DY: Outside village				
Less than Rs 20	3			
Rs 20-40	7	31	9	100
Rs 40-60	70	54	77	
Rs 60	13		7	
Above Rs 60	7	15	7	
NY: Within village				
Less than Rs 20		5	4	13
Rs 20-40	54	80	88	87
Rs 40-60	29	15	2	
Rs 60			1	
Above Rs 60	17		5	
NY: Outside village				
Less than Rs 20	3			
Rs 20-40	7	31	9	100
Rs 40-60	70	54	77	
Rs 60	13		7	
Above Rs 60	7	15	7	

Unemployment

In the month of May-June 1999 when the survey was carried out, it was found that the unemployment rates of adult members of the household in the last 15 days of the date of enquiry were very high. These are presented in Table 5.4.

Table 5.4: Average number of days unemployed in the last 15 days of survey during May-June 1999

	Ajmer		Udaipur	
Average number of days unemployed	M	F	M	F
	12.7	11.5	12.3	12.8

Composition of income

The share of wage income in total income is significant and shows the relative importance for different categories of landholding classes. In Ajmer district the share of wage income in total income is more than 40 per cent for the landless, marginal and small farmers even in a normal year. In drought years this share is around 10 per cent points higher. In Udaipur the share of wage income in total income is higher than in Ajmer. The role of wage earnings from outside the village is also important. See Tables 5.5 and 5.6.

Table 5.5: Distribution of income by various sources (District Ajmer)

	Agriculture		Livestock		Wage labour within		Wage labour outside		Salaries		Total	
	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY
Landless	0	0	44	45	27	31	21	21	8	3	100	100
marginal	3	3	20	22	32	38	29	14	17	24	100	100
small	6	8	32	33	17	19	26	18	20	22	100	100
semi-medium	13	6	51	59	17	16	10	9	9	10	100	100
medium and large	24	27	42	44	7	4	2	2	26	23	100	100
Total	13	13	42	46	17	16	12	9	8	8	100	100

Table 5.6: Distribution of income by various sources (District Udaipur)

	Agriculture		Livestock		Wage labour within		Wage labour outside		Salaries		Total	
	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY	DY	NY
Landless	0	0	21	20	59	60	11	12	10	9	100	100
marginal	9	19	13	10	21	18	32	29	24	24	100	100
small	13	22	22	20	24	19	11	15	31	25	100	100
semi-medium	80	93	20	7	0	0	0	0	0	0	100	100
medium and large	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	19	15	12	23	20	27	25	8	8	100	100

State intervention during the drought period

During the drought period the state provides employment through drought relief works. Comparing the 1987 and 1999 drought situations, the demand for work was fulfilled far more in the former year (Table 5.7). The following Table 5.8 shows that 77 per cent men and 68 per cent women who were available for work did not get employment in relief works in the year 1999-2000. This situation of large scale unemployment is likely to be more in the current year.

Table 5.7: A comparison of 1987 and 1999 relief works

Individual's employment in relief works	1987	1999
Did not need employment	16.3	10.0
Partially employed	78.7	39.3
Full employment as per need	1.6	5.8
Did not get employment but available for work	2.8	44.9

Source: Survey data

Table 5.8: Employment in Relief Works 1999-2000

Male	
Percent of those available for work employed in relief works	23.3
Mean number of days employed	12
Mean wages paid (Rs)	36.47
Female	
Percent of those available for work employed in relief works	31.6
Mean number of days employed	17
Mean wages paid (Rs)	33.15

The need for large scale employment programmes in Rajasthan

The above description of sample villages shows that the rates of unemployment are high especially in a drought year. Though some work is available, the wages received by the casual labour are far below the minimum wages and the total earnings from wage labour does not exceed Rs 10,000 in a year. Besides the proportion of casual labour among the occupation categories is on the rise.

The rate of growth of labour force in the state has been high as a consequence of a high rate of population growth (2.8 per cent during 1991-2001). The quality of labour force is also of major concern as 74 per cent of the main workers are illiterate. And as already pointed out, there has been an increase in the rate of casualisation of labour force and the proportion of cultivator households is on the decline in rural areas. Besides the rate of employment creation in the state has been lower than the rest of India (Report of the Advisory Committee on Employment, Government of Rajasthan, 1991). The employment growth in private sector has been dismal. Organised manufacturing sector provides a very small share in total employment, so much so that public sector employment in departments of education and police together employ more persons than organised industrial sector. Even in the mining sector, which seemed to hold maximum growth prospects for employment generation, the growth of labour absorption in the sector has been poor. Macro policies also have not favoured a high employment growth as they have promoted capital intensive modes of production. Mechanisation in mining and services sector is on the increase cutting

down the person days of employment creation. Moreover, the pattern of economic growth has been such that employment opportunities for skilled, semi-skilled and unskilled labour have remained low.

Large scale employment programmes are launched during the drought period in the state. The state has witnessed a large demand for employment in the rural areas, especially where three-year successive droughts have affected livelihoods severely. In many villages the demand exceeds the opportunities available by almost 1000 per cent, i.e. in a village of 500 households only 50 get an opportunity to work at any given point of time. The severity of unemployment is such that people are going *helter-skelter* in search of employment. Their desperation levels are so high that very often they get into quarrels to be enrolled at the famine relief work site. This dismantling of social capital in the village is of major concern as it fractures the social relationships. Migration to urban areas has not solved the problem. In Jaipur alone where 200-300 labourers gather at a single *chaukti* in search for employment, no more than 90 are able to find work (data provided at a symposium on Need for Employment Guarantee Act in Rajasthan, IDS, July 7, 2001).

In the monsoon months when people return to their villages to cultivate their lands is the time when they are most vulnerable with famine relief works closed and little money in hand. They end up borrowing heavily for both sustenance and agricultural inputs at very high rates of interests and play right into the hands of the moneylenders, pawning their bare belongings or even liquidating their assets.

In the absence of any paid employment, in some areas they have been forced to cut their *khejri* trees and sell them at throwaway prices. In forest areas the tribals are forced into cutting trees. Thus there has been a threat to the already fragile environment of the state.

Considering the dismantling of social capital, an increase in indebtedness and assetlessness and also an environmental degradation, there is a need for support in rural areas in terms of employment opportunities, which may come through large-scale employment programmes.

Food for Work

The Janata Government launched the Food for Work programme in 1977 when there were enough food stock in the country. It was later incorporated into the JRY and the RLEGP Schemes. The system of distribution developed problems due to large utilisation and was subsequently abandoned. The demand for food for work has again surfaced as several states including Rajasthan, M.P, Gujrat, Orissa and Chattisgarh face severe drought situations.

Rajasthan Government was the first state to launch the food for work programme in the country in 1997 and it is due to its initiative in recent months that the programme has been revived. However, due to several Ministries namely Food, Rural Development, Finance, Agriculture, Water Resources, and also, Planning Commission, being involved the allocation of food grain for the programme has been little. Decisions have to be taken at the ministerial level where Ministers of all concerned Ministries meet to sanction the allocation. There seems to be no urgency at that level.

Each wage labour can be paid only 5 kgs of wheat as part of wages. Higher allocations are not made as the central government fears trafficking of food grains. If only 5 kg of grain is distributed as part of wages another Rs. 37 have to be paid in cash and Rs 24 are needed for the material component. Thus, for every 5 kgs released, the State Government has to manage finance of Rs. 61. Therefore, the demand for giving 10 kgs as wages is justified.

Presently food grain is being distributed through the Employment Assurance Scheme (EAS). EAS has also changed its character from being a demand driven to an allocation driven scheme. The allocation in JGSY, in the state of Rajasthan averages Rs.50, 000 per annum to each Gram Panchayat, which is a very small amount for creating sustainable rural infrastructure and employment.

The Employment Guarantee Act

The origin of Employment Guarantee Act in Maharashtra is traced to the people's movements that emerged during the 4 year drought period (1970-74) when even large

farmers owning 30 acres of land were looking for work at famine relief sites. On May 15-16, 1973 people from every district of the state came on to the streets demanding an Act that would ensure employment for all in need. It was a demand that came across clearly to the state government as 20 lakh people including 6 lakh people from the organised sector in Bombay and Pun, unemployed poor and youth were on the streets. The Employment Guarantee Act was passed in the Assembly in 1978. The middle class in Maharashtra became sensitive to the needs of the hour and did not oppose the direct professional tax and the cess on some commodities such as petrol, and diesel. An Employment Guarantee Fund was therefore established and as of now Rs 900 crores are collected every year from taxes so imposed.

The Employment Guarantee Scheme (EGS) in Maharashtra

The Employment Guarantee Scheme provides legal right to manual work at minimal wages. People avail of their right to work. Fifty people together apply to the Tehsildar for work and the work is to be provided. If the Tehsildar fails in her duty, she is liable to pay the wages from her salary. . Another important aspect of the EGS is that it provides employment on private land as well. A large plantation programme on private lands is being carried out in the state under the EGS. Since 1986 the EGS has been forced to reduce its allocation in the wake of liberalisation and structural adjustments.

Linking employment to growth

EGS can provide an opportunity to the state to not only provide employment to the poor but also create rural infrastructure. Development policies and employment programmes may not be divorced from one another. The policy makers need to be sensitive to the degradation of environment. It requires linking the understanding of development with the "literacy of resources". This would lead to sustainable development. Building an infrastructure that results in long term drought proofing and increasing land productivity needs to be an important policy goal for planning in Rajasthan. Infrastructure creates positive externalities and there is ample scope for such infrastructure creation in the rural areas, such as roads, pastureland development and rainwater harvesting systems. It is this infrastructure that will lead to sustainable development and income generation at the household level in the state and reduce the demand for large-scale employment programmes in the future.

The need for an Employment Guarantee Act in Rajasthan

The on going schemes for employment generation including famine relief works are far from adequate in terms of meeting the demand for employment in the State. An effective Drought Management Policy can not only mitigate and prevent drought in the long-term but can also create employment to meet the unmet demand for employment. This would also create infrastructure that would increase the income and employment in the future leading to sustainable development. The EGA would also provide a guarantee to employment. A guarantee is judicious.

The Feasibility of an Employment Guarantee Scheme in Rajasthan

The total wage bill to generate 100 person days of employment for 25 lakh persons (for one member each of the 25 lakh BPL households in Rajasthan) will be Rs 1500 crore per annum. In addition 40 per cent is required as material component. The taxable capacity of the people of Rajasthan to contribute to the required resources needs to be explored. While a substantial amount can come from the Employment Guarantee Fund so established, the remaining can come from the existing schemes and loans from institutions such as the NABARD from its Rural Infrastructure Development Fund. Besides, the food stocks in the country are likely to remain at the present levels for at least the next 5 years. The alternative uses of the foodgrain stock are few. Export possibilities are limited, given the prices in the international markets. The opportunity cost of holding the foodgrain, perhaps, is higher than expending them on programmes such as the Food for Work.

Part II

Chapter VI: The Impact of Employment Programmes

Chapter VII: The Integrated Rural Development Programme and the Swarnjayanti Gram Swarozgar Yojana

Chapter VIII: Food Security and the Public Distribution System

Chapter IX: Impact of Indira Awas Yojana and the Million Wells Scheme

Chapter X: District-wise comparison of Poverty Reduction Programmes

Chapter VI: The Impact of Employment Programmes

Ever since the Third Five -Year Plan employment programmes have been one of the main practices for poverty reduction. They provide employment, create durable assets that enhance the existing village infrastructure and may be a source for food for labour households if compensated by food for work. One of the main arguments in favour of employment programmes is that they are expected to ensure participation of the poorest through self-targeting particularly when wages are rather low to attract only those who have few other income earning opportunities. This may not be always true in practice, as we shall see later. The second argument in favour of employment programmes is that of building village infrastructure. How much does the infrastructure created help in providing income flows to the poor would depend on the nature of the assets created. If such income streams do not flow the only benefit to the labour is in the form of *current* benefits, namely wages received. However, there are several possibilities and a range of benefits that the poor can receive depending on the specific design of the programme. The programme designs have changed time and again in the last 35 years, which are summarised in Table 6.1.

In designing employment programmes there have been six notable shifts in the last 35 years:

- The *primary focus* has changed from generating employment to creating village infrastructure.
- A separate programme has been generated for utilisation of *surplus foodgrain* to provide employment and ensure food security.
- Targeting *people* has changed from self targeting to selective groups such as the landless labourer and the below poverty line households in the JGSY
- Targeting *areas* with pronounced seasonal unemployment has been discontinued.
- Assuring number of employment days to a household has also been discontinued.
- The rural assets to be created will be *demand driven* and the programme will be run by the *panchayats.*

Table 6.1: Changes in design of employment programmes 1960 to 1999

Programme	Period	Objectives
Rural Manpower Programme (RMP)	1960 - 1969	Provide employment to 2.5 million persons *in areas exposed to pronounced seasonal employment*
Crash Scheme for Rural Employment (CSRE)	1971 - 1974	Provide employment to 1000 persons in 350 districts through *labour intensive works* and create durable assets
Drought Prone Area Programme (DPAP) Rural Works Programme (Later restructured as Area Development Programme)	1971 - 1973	Mitigating the severity of scarcity conditions by organising labour intensive and production oriented works so as to generate considerable employment
Food for Work Programme (FWP)	1977 - 1980	(i) to generate gainful employment to large number of unemployed and under-employed persons both men and women in the rural areas which will improve their incomes and consequently their nutritional levels; (ii) to create durable community assets and strengthen the rural infrastructure which will result in high production and better living standard in rural areas; and (iii) Utilisation of surplus foodgrain for development of human resources
National Rural Employment Programme (NREP)	1980 - 1989	Generation of *additional* gainful employment; creation of durable community assets; and raising of *nutritional standards* of the poor
Rural Landless Employment Guarantee Programme (RLEGP)	1983 - 1989	Provide 100 days of employment to atleast one member of the landless household
Jawahar Rozgar Yojana (JRY)	1989 - 1999	Primary objective: generate additional gainful employment for the unemployed and under-employed persons both men and women in the rural areas through creation of rural economic infrastructure, *community and social assets, particularly, in favour of the poor* and more so, with an aim at improving quality of life in rural areas
Employment Assurance Scheme (EAS)	1993-1999	Provide 100 days of assured employment to a person in 1752 backward blocks in the *lean agricultural period in the form of manual work*
Food for Work Programme II	2000-	Augmenting food security through wage employment in drought affected rural areas
Jawahar Gram Samridhi Yojana (JGSY)	1999 -	Primary Objective: Creation of demand driven community village infrastructure including (I) durable assets at the village level and (ii) assets to enable the rural poor to increase the opportunities for sustained employment. Secondary objective: Generation of supplementary employment for unemployed poor (Below poverty line) in the rural areas

Besides, the above shifts in strategies the scale and impact of programmes are also some of the relevant aspects that need to be considered. In Rajasthan, like other drought prone states, Famine Relief Works are also an important source of employment for the poor.

We shall discuss the relevance of employment programmes for Rajasthan in the above context. The discussion will be based on employment works undertaken between 1995-2000 in 16 villages in the four districts of Rajasthan. Tables 6.2a, 6.2b, 6.2c, 6.2d presents the expenditure on public works under various schemes in 16 villages of the 4 sample districts. Detailed account is presented for two selected villages which shows the diverse nature and the number of works undertaken in the villages in 5 year period. The impact in one of the villages is presented in Box 1.

Table 6.2a: Employment Generated through Employment Programmes and Area Development Programmes in Sample Villages during (1995-2001) in District Ajmer

Name of Programme	Total (Rs)	Material (Rs)	Wages (Rs)	Employment Days
Centrally sponsored scheme				
EAS	1326480	795890	530590	8843
JRY	828890	497334	331556	5526
JGSY	1,00,000	60000	40000	667
MP Fund	437608	262565	175043	2917
Total	**2592978**	**1615789**	**1077189**	**17953**
State Sponsored Schemes				
AGAK	495785	297470	198315	3305
Total	**495785**	**297470**	**198315**	**3305**
Area Development Programme				
MRGC	269000	1,61400	107600	1793
Total	**269000**	**1,61400**	**107600**	**1793**
Famine Relief Work				
FRW	2651985	1591190	1060795	17680
Total	**2651985**	**1591190**	**1060795**	**17680**
Grand Total	**6009748**	**3665849**	**2443899**	**40731**

Note:
EAS: Employment Assurance Scheme
JRY: Jawahar Rozgar Yojana
JGSY: Jawahar Gram Samridhi Yojana
MP Fund: Member of Parliament Fund
AGAK: Apna Gaon Apna Kaam
MRGC: Minor Rural growth Centre
FRW: Famine Relief Work
DDP: Desert Development Programme
DPAP: Drought Prone Area Programme
BADP: Border Area Development Programme
TJTK: Tees Jila Tees Kaam

Table 6.2b: Employment Generated through Employment Programme and Area Development Programmes in Sample Villages during (1995-2001) in District Pali

Name of Programme	Total (Rs)	Material (Rs)	Wages (Rs)	Employment Days
Centrally Sponsored Scheme				
JRY	1160367	696220	464147	7736
EAS	573438	344063	229375	3823
JGSY	347375	208425	138950	2316
MP Fund	417568	250540	167028	2784
Total	**2498748**	**1499248**	**999500**	**16659**
State Sponsored Scheme				
AGAK	259485	155690	103793	1729
TJTK	524480	314688	209792	3497
Total	**783965**	**470378**	**313585**	**5226**
Area Development Programme				
DDP	319572	798930	479358	5326
MRGC	95133	237833	142700	1586
Total	**414705**	**1036763**	**622058**	**6912**
Famine Relief Work				
FRW	2107950	1264770	843180	14053
Total	**2107950**	**1264770**	**843180**	**14053**
Grand Total	**5805368**	**4271159**	**2778323**	**42850**

Note: See Table 6.2a for abbreviations

Table 6.2c: Employment Generated through Employment Programmes and Area Development Programmes in Sample Villages during (1995-2001) in District Jaisalmer

Name of Programme	Total (Rs)	Material (Rs)	Wages (Rs)	Employment Days
Centrally sponsored scheme				
JRY	1944900	1166940	7,77960	12966
EAS	793000	475800	317200	5287
JGSY	974000	584400	389600	6493
MP Fund	746000	447600	298400	4973
Total	**4457900**	**2674740**	**1,783,160**	**29719**
State sponsored scheme				
AGAK	1,13500	68100	45400	757
10^{th} Finance commission	210000	126000	84000	1400
TJTK	1477800	1048680	699120	11652
Total	**1801300**	**1242780**	**828520**	**13809**
Area Development Programme				
BADP	6136300	3681780	2454520	40909
MRGC	100000	60000	40000	667
DDP	5044000	3026400	2017600	33627
Total	**11280300**	**6768180**	**4512120**	**75203**
Famine Relief Work				
FRW	1203000	721800	481200	8020
Total	**1203000**	**721800**	**481200**	**8020**
Grand Total	**18742500**	**11407500**	**4993320**	**126751**

Note: See Table 6.2a for abbreviations

Table 6.2d: Employment Generated through Employment Programme and Area Development Programmes in Sample Villages during (1995-2001) in District Udaipur

Name of Programme	Total (Rs)	Material (Rs)	Wages (Rs)	Employment Days
Centrally sponsored scheme				
JRY	965280	579168	386112	6435
EAS	512000	307200	204800	3413
JGSY	60000	36000	24000	400
SGSY	150000	90000	60000	1000
MP Fund	339300	203580	135720	2262
Total	**2026580**	**1215948**	**810,632**	**13510**
State Sponsored Scheme				
AGAK	180000	108000	72000	1200
10^{th} Finance Commission	674000	404400	269600	4493
Total	**854000**	**512400**	**341600**	**5693**
Famine Relief Work				
FRW	1389425	833655	555770	9263
Total	**1389425**	**833655**	**555770**	**9263**
Grand Total	**4270005**	**2562003**	**1708002**	**28466**

Note: See Table 6.2a for abbreviations

Box 1: Public works undertaken in Village Deomali (District Ajmer)

An inventory of various works undertaken in a village Deomali (District Ajmer) since 1995 is given in Table 6.1. These include works undertaken in other schemes for generating employment such as the Jawahar Rozgar Yojana, Famine Relief Works, *Apna Gaon Apna* Kaam and so on. A total number of 17 works have been undertaken in the last 5 years. We shall discuss the importance of some of these assets created.

1. *Patwar Ghar:* The *Patwar Ghar* ensured that the patwari stayed in the village and was no more a seldom visitor. The transaction costs of the villagers to go and meet the patwari in the nearby town or city were substantially reduced and the work speeded up. The *Patwar Ghar* could also be used to organise small meetings of village groups.

2. *Construction of school building:* The construction of the school building is an interesting and important example of convergence of various employment schemes. Two rooms and a veranda were constructed during famine relief works of 1995-96, one room and a veranda through JRY works, where the villagers also contributed 20 per cent of the cost and a room, a veranda in the EAS programme and the boundary wall during the famine relief works of 1999-00.

Some of the more obvious impacts of the construction of school building are the availability of space for children, upgradation of the school, increased retention, no holiday during rains, improvement in educational standards and so on. However, there are more important implications from the above example:

- Even larger projects can be undertaken through employment schemes though the work may be distributed over a couple of years. This has probably become possible as a result of decentralised planning.
- Convergence of schemes is possible as each scheme has the required flexibility.
- The activity undertaken had approval and appreciation of the village community.
- Employment schemes that create such durable assets can also be linked to villager's own contribution in terms of labour and/ or material.

3. Deepening of Deosagar talab: In many villages water harvesting sturctures are given a top priority by the village community. These water bodies not only collect surface water but also recharge the groundwater, increasing the irrigation potential.

4. *Deonarain gate, dharamshala, seedhi, mela ground etc.:* A religious place, *Deonarain* temple has been resurrected using JRY money. Besides infrastructure has been developed to support the annual fair in the temple. This has increased the economic activity in the village.

5. *Dairy Bhawan:* A building for dairy has been constructed resulting in more trust in the organisation. The cost incurred on rental accommodation has been done away with. Group meetings are held in the dairy building giving the group an identity and a place to take decisions. Feed can now be stored properly.

6. A number of other works of community interests have been undertaken, such as roads and common wells.

Impact on beneficiaries of the scheme: The amount received as wages by the labour households is small and does not add up enough to purchase a durable asset. Yet it helps them to meet some of their basic requirements of food and they need not migrate for the days they are employed in the works. Women also benefit as they command their wages. The number of days employed in a work seldom exceeds 15 days. This is a very small per cent of the total days that an adult works for wages.

Impact on the productivity of resources at the village level: While socially productive assets have been created in the village, the land and water resources have largely remained untouched. In Rajasthan villages there is scope for watershed development on a very large scale. Successful cases have been reported especially in the last three years. These programmes generate positive externalities for both agriculture and animal husbandry development. They are also labour intensive. However, the JGSY does not allow such large-scale projects.

Table 6.3: Employment generation works undertaken in village Deomali in Ajmer District during the period 1995-2000.

Description	Programme	Labour	Material	Total	N Days	Work-period
1. Patwari's office	FRW	35965	64500	100465	803	1995-96
2. Construction work in school						
• 2 Rooms and veranda	FRW	47722	79053	126795	1124	26/2/96
• Boundary wall of Secondary school	FRW	50605	53412	104017	704	30/4/99
• Room and veranda of Middle school	JRY	31377	58298	89678	-	1997-98
· School room and veranda	EAS	47557	47118	94675	-	1997-98
3. Dev Sagar						
• Repair and deepening work	FRW	29759	-	-	953	31/7/96
• Devsagar digging sand,	FRW	148335	185950	334285	2151	10/7/99
4. Common Drain	FRW	38370	47058	85428	1243	31/12/96
5. Repair of village *talab*	FRW	24514	5000	29514	460	5/8/96
6. Public well						
• Construction of common well	FRW	103517	78010	181527	1879	3/11/98
• Deepening of common well	FRW	23352	15800	39132		1999-2000
7. Construction of Pond	FRW	126489	123511	250000	2420	10/6/99
8. Construction of Rest house near Devnarayan gate	AGAK	35156	63748	98904		1996-97
9. Construction of Rest house in Devnarayan temple	M.P.	37868	63803	101608		1999-2000
10. Community hall I	EAS	99521	100458	199979		1997-98
Community hall II	EAS	117532	115295	232827		1997-98
11. Dairy building	AGAK	45483	79467	124950		1997-98
12. Stairs in Devnarayan temple	AGAK	38834	67096	105930		1997-98
13. Construction of stage	JRI-I			23958		1994-95
14. Construction of Rest house	JRY	25710	39000	64710		1999-2000
15. PHC Building	JRY	140719	159142	299861		1999-2000
16. Mela ground bridge	TFC	20198	19440	39635		1999-2000
17. Deomali-Sheopura way	JRY	29220	19765	49985		1997-98
18. Construction of Deomali-Lalawas road	JRY-I	49764		49764		1998-99
19. Construction of cemented road leading Deomali	JRY-15%	55331	52600	100931		1998-99
20. Repairing of Common water source (panghat)	FRW	12879	36808	49687	178	1999-2000
21. Construction of Deomali-Peethawas road	FRW	31080		31080	385	1999-2000

Table 6.3a: Employment generation works undertaken in village Badoda Gaon in Jaisalmer District during the period 1995-2000.

SN.	Programmes	Scheme	Total Expenditure	Material	Labour	Man Days Generated	Year
1.	**Construction works in Schools**						
	Teachers Rooms Sec. School	BADP	130500	78300	52200	985	95-96
	Class room Sec. School	BADP	261000	156600	104400	1970	95-96
	Girls Primary School Boundary	FRW	99000	59400	39600	747	95-96
	Secondary School Laboratory	BADP	138000	82800	55200	1042	96-97
	Basketball coat	BADP	158000	94800	63200	1192	96-97
	Play ground Boundary	FRW	343760	206256	137504	2594	97-98
	Girls school Toilet	FRW	10000	6000	4000	75	98-99
	School Building (Brahmin)	BADP	200000	120000	80000	1509	98-99
	School Boundary (Brahmin)	BADP	200000	120000	80000	1509	98-99
	Primary School Teachers Room	BADP	160000	96000	64000	1208	98-99
	Primary School Class rooms	EAS	110000	66000	44000	830	98-99
	Rajiv Gandhi School (Sukhi)	FRW	200000	120000	80000	1509	99-00
	Repair Primary School	JGSY	50000	30000	20000	377	99-00
	Boundary Boys School	JGSY	110000	66000	44000	830	99-00
	Teachers room (Brahmin)	BADP	156000	93600	62400	1177	99-00
2.	**Water Tank Construction and Repair**			0	0	0	
	Tanka (Dhani Kalyan Singh)	DDP	40000	24000	16000	302	95-96
	Tanka Repair (Dhani Dahion)	JRY	10000	6000	4000	75	97-98
	Tanka Repair (Dhani Girdhari)	JRY	10000	6000	4000	75	99-00
	Tanka (Brahmin Dhani)	JGSY	50000	30000	20000	377	99-00
3.	**Tube Well**	BADP	875000	525000	350000	6604	97-98
4.	**GLR Construction**	BADP		0	0	0	
	Dhani Brahmin	BADP	39000	23400	15600	294	98-99
	Dhani Hukam Singh	BADP	39000	23400	15600	294	98-99
	RWSS Dhani Brahmin	BADP	715000	429000	286000	5396	98-99
5.	**Construction of Community Meeting Halls**			0	0	0	
	Para Ajit singh	JRY	99700	59820	39880	752	96-97
	Para Omji	JRY	55300	33180	22120	417	96-

							97
	Para Meghwal	JRY	55300	33180	22120	417	97-98
	Para Lukhji	JRY	48990	29394	19596	370	98-99
	Para Chaniya Singhliya	JRY	58800	35280	23520	444	98-99
	Dhani Ratni	MP Fund	90000	54000	36000	679	99-00
6.	Other Works			0	0	0	
	Sugni Nadi	EAS	120000	72000	48000	906	98-99
	Boundary wall of Govt. Building	FRW	140000	84000	56000	1057	97-98
	Repair of TAGB Building	JGSY	30000	18000	12000	226	99-00
	Road Construction Mulana	BADP	96000	57600	38400	725	96-97
	Total			2939010	1959340	36969	

The Impact of Employment Schemes

The opportunity cost of labour

The opportunity cost of labour in public works or the income foregone that they could have derived from other sources in the absence of these works is one of the important components in determining the impact of employment schemes. Famine Relief Works are undertaken during the period when unemployment is highest (See Table 5.7a.) and the opportunity cost very low. However, the same is not true for all other public work programmes, namely EAS and JRY. Eighty per cent of these works in all sample districts during the period 1995-2000 have been carried out in the month of January to March when the opportunity cost of labour is high, atleast in three of the four districts, namely, Pali, Ajmer and Udaipur. Thus the timing of the project implementation will determine whether the impact on incomes will be high or low.

Scale of the programmes

Table 6.4 shows the total employment generated by employment programmes including the Area Development Programmes and the Famine relief works in the

sample villages, district wise. The number of days of employment generated in a year per BPL household is

The number of days that a household receives employment in a year through public works did not exceed 25 in our sample households. It averaged 12 days for men and 17 for women (among those who were actually employed) including the famine relief works. It may be recalled that only one member of the household is employed during this period. The unmet demand for employment exceeded 44 per cent during the drought year of 1999. See Table 5.7a.

Table 6.4: Average number of days employed in employment programmes per BPL household per annum (including famine relief works)

District	No. of Man Days generated during 1995-2000	No. of BPL HH	No. of Days employed per BPL HH per annum
Ajmer	40731	292	28
Jaisalmer	126751	329	77
Pali	42850	279	31
Udaipur	28466	914	6

In a situation where the supply of labour far exceeds the demand, there is a need for more work and therefore larger programmes. The small size of programmes makes targeting difficult as seen below.

Targeting the poor

In the regular works (JGSY) the number of days of employment created is even lower as the labour component in total expenditure is lower than in famine relief works. In construction works usually 5 or 6 labour get employed. Invariably, these are selected by the *sarpanch*, and include that labour who have closer relations with her. It is

possible to give this labour employment for the entire duration of the work, which is usually 30-40 days. While the skilled labour, namely the mason, may continue for the duration of the work, the *sarpanch* invariably rotates the work force. Howsoever much the *sarpanch* rotates the labour, still it may not be possible for her to give employment to all who wish to work or to residents of villages other than the village where the work is carried out.

In the wake of excess supply of labour, selection of labour becomes difficult for anyone who manages the programme. This situation is no where near the environment of self-targeting. When there is excess supply of labour self-targeting is not possible. Thus limiting the employment opportunities to the BPL households in the JGSY is a logical step.

Assets created and their impact on the poor

Box 1 presents a Case Study of a village in the selected districts. It finds that a range of assets has been created and almost all of them have proved to have some impact on the poor. The quality of assets created if not to be ranked very high is not dismal either. Our observations counter the general perception that quality of assets is poor. One of the reasons for high quality of assets in Rajasthan is that they are demand driven as the *panchayats* decide on the nature of works undertaken. Besides, as listed in the two case studies, the relevance of assets created in the villages is self evident.

The apparent impact on the poor of various assets has been the following:

- Schemes to build school buildings have helped in human capital formation especially for girls. While the relatively affluent can afford education even if facilities are at a distant, for the poor the likelihood of access has increased as the distance has reduced;
- Schemes related to soil and moisture conservation have both direct and indirect impact on the poor. The direct impact has been of being able to irrigate their own lands in a few cases and indirect impact in availability of work as irrigation potential or land productivity in the village has augmented;
- Schemes such as building a *patwar ghar* for the *patwari* has helped in reducing the transaction costs of the poor as the *patwari* becomes easily accessible;

- Roads provided access to employment market; This is specially true for remote villages (such as Sagwara in Udaipur and Badora Gaon in Jaisalmer);
- Other infrastructure created in the village has had an indirect impact as the general level of economic activity in the village increased.

The impact in selected villages could be higher than in the present if a village infrastructure plan is carefully laid out. The possibilities of doing this are immense in a state like Rajasthan because of availability of land and the unmet need for water harvesting, augmenting groundwater potential and greening the pastures and cultivable areas.

How can the poor benefit most from employment schemes?

The above discussions suggest a number of practices that can benefit the poor:

1. *Kind of public work:* Public works with a *high rate of labour absorption* that can ensure future income flows to the poor are the most desirable. Watershed development schemes that can augment availability of water for irrigation or pasture development that can support livestock owned by the poor deserve to be taken on a priority. Road construction (that ensures poor's access to labour market) and other infrastructure (that enhances economic activity in the village or reduces transaction costs) could follow this.
2. *Area targeting:* Instead of thinly spreading the available resources in a large state like Rajasthan, employment schemes need to address remote areas for their infrastructure is expected to be weak. Each district has some areas whose remote location itself denies them access to various services.
3. *Targeting the poor:* Given the *large supply of labour* it may be desirable to target the below poverty line households, SC, ST and possibly women among these groups.
4. *Targeting time:* The poor will gain most from participation in employment programmes when their *opportunity cost is the lowest*.

5. *Planning:* The *panchayats* need to work on a five - year plan basis to improve the infrastructure in their villages. They should also be able to project demand for employment days for BPL and APL households. While these plans get aggregated at the district level, the *Zilla Parishads* need to look for funds to get these works executed. Some of these works will come under the JRY. The present arrangement of asking proposals from panchayats to prepare the annual action plans equivalent the value of 125 per cent of its share of funds allocated in the preceding year seems *ad hoc.* It does not integrate with other programmes of infrastructure building that can be taken up with the help of other existing Line Department interventions.
6. *Augmenting resources for employment programmes:* The RIDF can be used judiciously in many ways. In areas where poverty is low, the *panchayats* be encouraged to pay back the RIDF loan through user charges. In areas where poverty is high, the government undertakes to pay back the RIDF loans. Over the Plan period states should be encouraged to take more advantage of RIDF. Thus the proportional share of centre in JRY should progressively decline.
7. *Encouraging complementary infrastructure:* Even larger projects can be undertaken through employment schemes though the work may be distributed over a couple of years. This has probably become possible as a result of decentralised planning. Convergence of schemes is possible as each scheme has the required flexibility. The activity undertaken had approval and appreciation of the village community. Employment schemes that create such durable assets can also be linked to villager's own contribution in terms of labour and/ or material. In this manner the total allocation to the JRY is likely to increase. At the same time it can create a pre-projected employment cover/ guarantee.
8. *Providing for guaranteed employment:* We may like to think in terms of providing guaranteed employment, which can be assured through Food for Work Programmes (FWPs). The FWPs are self selecting programmes and can provide not only employment but also ensure food security at the household level.
9. *Encouraging pressure groups:* The programmes should encourage formation of pressure groups not only for planning but also execution so that transparency is maintained and right to information, if required, could be exercised. This would help reduce malpractices in public works.

Chapter VII: The Integrated Rural Development Programme (IRDP) and the Swarnjayanti Gram Swarozgar Yojana (SGSY)

The Integrated Rural Development Programme (IRDP) attempts a direct attack on poverty by providing access to assets and skills to the poor and to provide support services and institutional arrangements to help the poor generate additional income to cross the poverty line. There are three basic assumptions behind the formulation of IRDP. First, rural development becomes a reality only at the level of the household. Second, the poor cannot take advantage of the growth stimuli because they do not have the assets and requisite skills; and third a large number of them are potential entrepreneurs provided they have assets and are supported by conducive institutional framework. The IRDP was only partially successful in meeting the desired objective due to a number of factors. The viability of the projects undertaken are questioned. Institutional support for the poor was missing due to lack of integration among various agencies, namely banks, DRDA, PRIs and NGOs. The temptation to misutilise the loan, given the subsidy, was high.

The Swarnjayanti Gram Swarozgar Yojana (SGSY) attempts to provide self employment to the poor in a framework different from the IRDP. It is conceived as a programme for micro enterprise development. There is social mobilisation of the poor before assistance is provided for economic activities. The programme envisages creation of Self Help Groups of the poor and ensuring their capacity building along with planning of activity clusters, infrastructure build up, appropriate technology, credit and marketing.

The IRDP in sample villages

Table 7.1 shows the district wise break up of IRDP beneficiaries in sample villages by sector. The largest numbers of beneficiaries are in the primary sector. There are 77, 62, 43 and 33 per cent beneficiaries in this sector respectively in Jaisalmer, Ajmer, Pali and Udaipur districts. The Table also shows the per cent assets still intact. Overall 30 per cent of beneficiaries have their assets intact. Table 7.2 shows the income generated by major sectors.

Table 7.1: District wise breakup of beneficiaries by sector and intactness of asset in sample villages

	Ajmer		Udaipur		Pali		Jaisalmer		Total	
	No.	Intact	No.	Intact	No.	Intact	No.	Intact	No.	Intact
Agriculture										
Bullock Pair	8	1	15	3	7	1			30	5
Bullock Cart	3								3	0
Camel Cart					15	2	14	4	29	6
Diesel Pump Set	5	1							5	1
Sub total	16	2	15	3	22	3	14	4	67	12
% beneficiaries making productive use of assets		12.5		20.0		13.6		28.6		17.9
Animal Husbandry										
Buffalo	14	3	4	1	10	1			28	5
Cow					13	2	42	26	55	28
Sheep	7		5	1	18	3	26	11	56	15
Goat	14	3	8	3	12	2	38	12	72	20
Sub total	35	6	17	5	53	8	106	49	211	68
% beneficiaries making productive use of assets		17.1		29.4		15.1		46.2		32.2
Manufacturing										
Readymade			2						2	0
Rope Making			1						1	0
Carpentry			1		2		3	1	6	1
Black Smith	1				1		1		3	0
Leather work	3	1	1	1	4	1	3	1	11	4
Sub total	4	1	5	1	7	1	7	2	23	5
% beneficiaries making productive use of assets		25.0		20.0		14.3		28.6		21.7
Tertiary										
Retail Shop	4	3	16	7	9	3	17	5	46	18
Repairing	3	1	1	1	1				5	2
Other			5	1			2	1	7	2
Sub total	7	4	22	9	10	3	19	6	58	22
% beneficiaries making productive use of assets		57.1		40.9		30.0		31.6		37.9
Grand total	62	13	59	18	92	15	146	61	359	107
% beneficiaries making productive use of assets		21.0		30.5		16.3		41.8		29.8

Table 7.2: Average net income generated from IRDP asset per household by major sector

(Rs)

District	Primary	Secondary	Tertiary	All sectors
Ajmer	1486	3900	2315	1911
Jaisalmer	1982	5000	3620	2569
Pali	1742	2305	3061	2343
Udaipur	1166	300	1680	1236

Table 7.3 provides a comparative picture of the beneficiaries in the four sample districts and the V Round of Concurrent evaluation of IRDP in Rajasthan, 1997. The impact of 2/3 consecutive years of drought can be seen from the fact that in the four sample districts only 32 per cent of the beneficiaries opting for animal husbandry have their livestock assets put to productive uses compared to 49 per cent in the V Round. The V Round sample being large is representative of the entire state and the findings of the evaluation are reported in the following paragraphs.

Table 7.3: Distribution of IRDP beneficiaries in sample districts and V Round of Concurrent Evaluation by Activity

Activity	Four sample districts		IRDP V Round	
	Number of beneficiaries	Per cent beneficiaries making productive use of assets	Number of beneficiaries	Per cent beneficiaries making productive use of assets
Agriculture	67	18	267	58
Animal Husbandry	211	32	996	49
Manufacturing	23	22	235	76
Tertiary	58	38	1079	53
Total	359	30	2577	54

What can the SGSY learn from the IRDP?
(Based on findings of the IRDP V Round)

Making an informed choice

Only 11 percent beneficiaries were given assets for Agriculture and irrigation, 40 percent for animal husbandry, 9 percent for manufacturing and the remaining in the tertiary sector. Among small and marginal farmers only 8 percent opted for agriculture based schemes and 22 percent for animal husbandry. Remaining opted for schemes in the manufacturing and services sectors. However, choice was determined by what was offered to the beneficiary. The beneficiary did not even have information of schemes from which he could make an informed choice, far from an opportunity for articulating her own needs. *SGSY provides the group an opportunity to make a more informed choice of the economic activity they undertake. The group can make its own diagnostics of the skills and various capacities of its members and thus decide a suitable option.*

Making productive use of assets

Only 47 percent of the beneficiaries were found to be making productive use of the asset at the time of survey. Consequently, 46 percent beneficiaries generated Nil income at the time of survey. From those making productive use of the asset, more beneficiaries generated higher level of income when higher was the level of assistance received. Thirty nine percent beneficiaries generated annual income Upto Rs 3700, 13 percent between Rs 3701-7500 and 3 percent above Rs 7500. *In SGSY there is an opportunity to draw viable schemes so as to ensure adequate and higher returns even to the smallest borrower within the group.*

Crossing the poverty line

In all, 22 percent old beneficiaries were able to cross the poverty line of Rs. 11,000. As many as 23 percent beneficiaries are still below the old poverty line of Rs 6400. *There is a possibility in the SGSY that all members of the group are able to cross the poverty line particularly if they shift to one single occupation by choosing an activity, which then becomes their primary economic activity.* The incidence of crossing the poverty line was higher among males, General (other than OBC, SC and ST) category of social status, those with education above primary, larger households, agriculture and tertiary sectors in the IRDP Schemes and small and marginal farmers. *In SGSY*

the it is expected that the differences in education, social status and occupation will no more be an explanatory factor in the household crossing the poverty line. This is so because the institutional support to the group is likely to be more equal to all members and there is no differentiation on the basis of caste or economic status.

Logistic Regression

A mulitivariate logistic regression analysis was carried out to estimate the probability of two events to occur: 'Making productive use of the asset' and 'Moving above the poverty line' using the data of the Concurrent Evaluation of the IRDP (V Round).

Probability of making productive use of the asset

Those households who have own assets in the form of land or skills for self-employment in non-agriculture have a higher probability than agriculture and non-agriculture labour in making productive use of the IRDP asset. The probability of making productive use of the asset is lower for Rural Labour (those generating more than half of their income from wage labour). That is, the maintenance of the asset and generating supplementary income seems to have higher opportunity cost compared to the wage incomes foregone by the rural labour household. The probability of making productive use of the asset declines with the lapse of each year. This suggests that the assets provided have a short life thus providing transient relief. Probability increases with increase in investment in the IRDP and higher educational status.

Probability of moving above the poverty line

The probability of moving above the poverty line is higher for those with education level of primary and above. The probability is higher for small and marginal farmers than others and higher for higher amount of investment. Households who rely for their livelihoods on the labour market are to a great extent not able to generate sufficient income from the assets provided to enable them to cross the poverty line. The poorer households, inspite of their vulnerability attempt far more to make productive use of the IRD asset reflecting their sincerity and willingness to participate in the programme. But they fail to generate sufficient income to move above the poverty line. This is the major dilemma that the IRD Programme has to encounter.

The Swarnjayanti Gram Swarozgar Yojana (SGSY)

Rajasthan has been a late starter to the concept of Self Help Groups, the first step to SGSY. In the sample villages we came across only one BPL women SHG which had started functioning but had not matured to obtain a loan from the Bank. While in other states the SHG movement was initiated by NGOs, the main task of NGOs in Rajasthan has been in the areas of natural resource management, education and health. However, during the last few years, the SHG movement has picked up both among the NGOs and the state institutions.

Recommendations

Statistical evidence shows that as the male workers are increasingly reaching out to manufacturing and services sectors, the proportion of female workers in the primary sector is on the increase. Evidence is also for larger decline of self-employment in agriculture and non-agriculture among males than in females. The IRDP had made provision for giving 30 percent assets to women beneficiaries. This provision was made with the moral thrust to reach out to the most deprived groups. Our Report suggests that there is an economic rationale to provide for assets for women beneficiaries as their role in the primary sector as well as self-employment is increasing relatively. However, this evaluation also shows that women beneficiaries have been less successful in crossing the poverty line. Therefore a different support structure for women beneficiaries as well as institutional changes are required in programme implementation. *The SGSY has opportunities to build women's groups with special support structure to them.*

The IRDP aimed at adding-on to the assets owned by the poor so that they can generate additional income. When the assets so transferred complemented the assets already owned by the poor, the success rate is higher. In other words, the Programme was more successful when the asset provided buildt-on the existing assets rather than when it simply added-on. For example when small farmers and marginal farmers were given equipment for irrigation or livestock that feeds on the crop waste grown in their farms, the success rate was higher and it was lower when a landless agricultural labour owned livestock. The vulnerability of the households was considerably reduced in the former case and considerably increased in the latter. *The SGSY can build-on the existing privately owned natural capital and human capital of the members that form the group.*

The household industries are on the decline. Yet some artisans need to be supported. The best way to do it is to make institutional arrangement at the bank by providing a cash-credit limit to such artisans who are still tied to household industries. *The SGSY can build micro enterprises for groups of rural artisans and provide a high level of institutional support.*

Chapter VIII: Food Security and the Public Distribution System

This Chapter studies two aspects of food security, namely, availability and access to food (See Acharya 1999) for households in Rajasthan. It argues why public food security interventions are important for the state of Rajasthan and therefore the Public Distribution System needs to be strengthened, as well as, why in a severe drought situation that the state currently faces, the central government needs to release food stocks for Food for Work Programmes in a large measure to ensure entitlements of the poor.

Sagar (2000) in a study of PDS and Food Security in Rajasthan (reference period 1995) concluded that:

> "Large fluctuations in agricultural production and recurrent droughts in one part of the state or the other make the transitory component of food insecurity more severe… Such a situation, existing alongside poor market and transport infrastructure facilities in large parts of rural Rajasthan, makes it difficult to evaluate the efficacy of the PDS in terms of conventional measures such as price advantage and supplementing of nutrition requirements… The importance of PDS operations in the state is high due to the fact that it provides access to food by reinforcing the tenuous market infrastructure in large parts of the state …".

We argue that while in the present the transitory component of food security is of utmost importance as the state reels under severe drought for the third year in succession, the PDS needs to be strengthened to reach the most vulnerable households and regions throughout the year.

The Chapter is divided into 4 sections. Section I analyses food availability in the state and the level and growth of agricultural production. Section II gives a brief review of the history of droughts in the state. Section III discusses food security concerns and the PDS. Section IV presents the conclusions.

I. Food Availability: Level and Growth of Agricultural Production: The Question of Sustainability

Area cultivated and irrigated

The gross cropped area in the state has increased from 14 million hectares in 1958-59 to 21 million hectares in 1998-99 (achieving a peak of 22 million hectares in 1997-98) but there are wide fluctuations from year to year due to erratic rainfall. The coefficient of variation in area sown of foodgrains alone was 8 per cent in the last three decades (1971-01). See Table 8.1. The fluctuations are far more for Kharif crops and more so in the arid dryland regions of the state. The net cropped area has stabilised around 17 million hectares. The gross irrigated area in 1998-99 was 7 million hectares, which is around one-third of the gross cropped area. Out of this two-thirds is irrigated by wells and tube wells, the recharge of which is directly dependent on rainfall. The remaining 28 per cent is irrigated by canals and 5 per cent by other sources including tanks. In a fragile eco-system, both the increase in area under cultivation and irrigation has been a cause of much concern and forms a part of the debate on sustainability of food security being achieved by increased irrigation.

Table 8.1: Coefficient of variation in area sown and production of foodgrains and oilseeds (various years)

	1970s	1980s	1990s	1971-2000
Foodgrains				
Area	4.9	10.0	8.6	7.9
Production	19.2	21.7	20.2	28.6
Oilseeds				
Area	11.8	26.5	12.9	
Production	23.0	47.5	16.9	

Source: Department of Economics and Statistics, Government of Rajasthan

The shift in cropping pattern

The gross cropped area in the state increased from 16.9 million hectares in TE 1974-75 to 20.9 million hectares in TE 1997-98. Until the 1970s, the cropping pattern was heavily biased towards foodgrains. In the 1980s, a major shift in cropping pattern was witnessed in favour of oilseeds. While the average area under foodgrains has remained around 12.7 million hectares, the area under oilseeds increased from 1.2 million hectares to 4.0 million hectares (Table 8.2). The share of foodgrains in gross cropped area declined from 75 per cent in the TE 1975-76 to 61 per cent in TE 1997-98. Within foodgrains the relative decline is more pronounced in small millets, minor

cereals and pulses. Land vacated by cereals has been occupied by soyabeen in the kharif and to an extent rapeseed and mustard in the rabi. The share of oilseeds in the gross cropped area increased from 8 per cent in TE 1975-76 to 19 per cent in TE 1997-98. This shift is also important from an environmental perspective, as oilseeds require almost 1/6th irrigation than wheat, which has been vacated for oilseeds. However, expansion of rapeseed and mustard has also been on marginal lands, which have come under cultivation and also irrigation using water saving devices. The sustainability of such a shift in cropping pattern therefore requires a more careful analysis.

Table 8.2: Distribution of area under Kharif and Rabi major crops (various years)

Million hectares

	TE 1975-76	TE 1997-98	1999-00	2000-01
Kharif				
Cereals	6.4 (38)	6.2 (30)	5.6 (29)	5.6
Pulses	2.2(13)	2.1 (10)	1.4 (8)	2.0
Oilseeds	0.7(4)	1.1 (5)	1.1 (5)	1.3
Rabi				
Cereals	2.3 (14)	2.7 (13)	2.8 (14)	2.1
Pulses	1.7 (10)	1.8 (9)	1.0 (5)	0.9
Oilseeds	0.6 (4)	3.0 (14)	2.6 (13)	1.6
Total (Kharif and Rabi)				
Cereals	8.7 (52)	8.9 (43)	8.4 (43)	7.7
Pulses	3.9 (23)	3.9 (19)	2.4 (13)	2.9
Oilseeds	1.3 (8)	4.1 (19)	3.7 (18)	2.9

Note: Fifures in parentheses are per cent of the gross cropped area. For the year 2001-01 the figures are estimated.
Gross cropped area for the year is not available
Source: Department of Economics and Statistics, Government of Rajasthan

Yet another impact on the cropping pattern is of the prices received by the farmers for their produce vis-vis the expenditure incurred. Acharya (2000) finds that the barter terms of trade have deteriorated in Rajasthan particularly in the 1990s (Acharya 2000). The prices received by the farmers for rapeseed and mustard, wheat and gram either decreased on increased only marginally. In 1994-95 they were considerably lower than in the previous year. In 1994-95 the Government liberalised the imports of edible oils and pulses and reduced the custom duty on these commodities to abysmally low levels. The prices received by farmers did not compensate for the increase in input prices resulting in the deterioration of the barter terms of trade. Even increase in productivity could not compensate for the same. The impact on production of oilseeds is beginning to be felt, although it is too early to predict a decline based on the production figures of a drought year.

Production of foodgrains and its composition

The gross foodgrains production in the state grew at the annual rate of 2.1 per cent during the period 1971-2001, accelerating mainly in the 1990s (Tables 8.3 and 8.4). Between the TE 1975-76 and TE 1997-98, the average annual cereal production doubled from 51 lakh tonnes to 102 lakh tonnes (Table 8.5). In TE 1997-98 this production averages 231 Kg per capita per annum amounting to 2195 daily calorie equivalent. However, this is only part of the story and the hidden truth lies in the composition of output and its distribution between kharif and rabi.

Vyas (1996) has shown concern over decline in area and production of bajra and small millets (Table 8.4), the coarse grains for the arid region, which also are more nutritive than wheat. Similarly, the area under pulses shows a declining trend. Wheat and oilseeds have shown an increasing trend in area, production and yield.

Table 8.3: Growth rate of production of foodgrains and oilseeds (various years)

	1970s	1980s	1990s	1971-2000
Foodgrains	-1.87	0.83	3.3	2.1
Oilseeds	-2.52	16.12	2.9	9.5

Source: Based on CMIE data

Table 8.4: Compound growth rates of some important crops between the trienna ended 1972-73 - 1994-95

	Rajasthan			India		
Crop	Area	Production	Yield	Area	Production	Yield
Jowar	-1.9	-1.7	0.2	-1.5	1.2	2.7
Bajra	-0.1	1.3	1.3	-0.9	0.5	1.4
Maize	0.8	0.7	-0.1	0.2	2	1.8
Small millets	-4.6	-6.8	-1.8	-3.8	-3	0.8
Wheat	1.9	4.5	2.6	1.5	4.2	2.7
Barley	-3.4	-2.4	1	-4.7	-2.6	2.2
Gram	-0.3	0.1	0.3	-0.7	-0.1	0.6
Arhar	-1.2	-1.6	-0.3	1.4	1.3	-0.1
Total foodgrains	0.1	1.8	1.8	0	2.5	2.5
Kharif foodgrains	-0.3	0.8	1.1	-0.2	2.1	2.3
Rabi foodgrains	0.5	2.6	2	0.5	3.4	2.9
Groundnut	-2.6	2.3	2.7	0.5	1.5	1.1
Rapeseed - mustard	9.9	12.1	1.8	2.7	5.2	2.4

Source: CMIE, July 1996, cited in Vyas (1996)

Table 8.5: Distribution of production under Kharif and Rabi crops (various years)

(Lakh tonnes)

	TE 1975-76	TE 1997-98	1999-00	2000-01
Kharif				
Cereals	23	34	27	22
Pulses	4	5	1	3
Oilseeds	2	9	9	9
Rabi				
Cereals	28	68	71	58
Pulses	6	14	8	7
Oilseeds	2	24	25	16
Total: Rabi and Kharif				
Cereals	51	102	98	80
Pulses	10	19	9	10
Oilseeds	4	33	34	25

Note: Figures for 2000-01 are provisional

Source: Department of Economics and Statistics, Government of Rajasthan

In the TE 1997-98, 12.8 million hectare was under foodgrains. Two-third of this area was under was under kharif, very largely rainfed, and contributed only 38 per cent of the total output as against one-third of the area being under rabi but contributing 62 per cent of the food grain output. While Rajasthan agriculture is correctly defined as "rain-fed", the contribution of rabi cereals was double the kharif cereals in the TE 1997-98. In the two severe drought years of 1999-2000 and the following year, the rabi output shall be 2.8 times the kharif. In such years, the drawl of groundwater is far in excess of the recharge. Large investments are made by farmers to deepen their wells, increasing their costs, which in the final analysis may turn out to be both economically and environmentally unviable.

To sum up, three aspects of composition of area and output in the state need to be emphasised:

- Both area and output are characterised by wild year to year fluctuations. This puts livelihoods of small and marginal farmers, particularly those 45 per cent without irrigation under strain. These along with agricultural labourers need food security at all times.

- The shift to cash crops, namely oilseeds, which provided substantial cash flows even to the small farmer is threatened by deterioration in the barter terms of trade.

- The increasing biotic pressure on the fragile eco-systems, absence of adequate investments and appropriate management to augment and conserve land and water resources, population growth, macroeconomic policies that provide inducement to over-exploit the natural resource are factors that contribute to explain the environmental factors that will influence the food security of the state in the long run.

II. Droughts in Rajasthan

Droughts visit Rajasthan frequently. In the last 45 years, 1956 to 2001, one or the other area in the state has been affected by drought (See Table 8.6). Drought conditions are declared by the government based on information collected on 'damage caused to crops'. Droughts are a result of wide annual fluctuations in rainfall and the failure to meet the demand for water in a particular region.

Table 8.6: Drought situation in Rajasthan: Samvat 2013-2056

Year	Samvat	Districts affected	Villages affected	Affected population crores
1956-57	2013	7	1353	00.92
1957-58	2014	14	6581	22.72
1958-59	2015	6	1309	10.77
1959-60	2016	-	-	-
1960-61	2017	18	4634	20.91
1961-62	2018	5	379	04.07
1962-63	2019	10	1248	-
1963-64	2020	18	6367	47.25
1964-65	2021	15	3156	12.85
1965-66	2022	24	11452	55
1966-67	2023	24	10079	45.25
1967-68	2024	12	2383	15.24
1968-69	2025	26	22915	131.63
1969-70	2026	23	11977	71.12
1970-71	2027	7	480	03.02
1971-72	2028	13	6139	30.6
1972-73	2029	26	18722	136.88
1973-74	2030	-	-	-
1974-75	2031	25	19873	-
1975-76	2032	-	-	-
1976-77	2033	-	-	-
1977-78	2034	19	12253	92.45
1978-79	2035	26	5609	33.2
1979-80	2036	26	31095	240
1980-81	2037	26	21395	167.79
1981-82	2038	26	23246	200.12
1982-83	2039	26	22606	171.62
1983-84	2040	3	282	-
1984-85	2041	21	10276	92.02
1985-86	2042	26	26859	219.80
1986-87	2043	27	31936	252.70
1987-88	2044	27	36252	317.37
1988-89	2045	17	4497	43.45
1989-90	2046	25	14024	120.67
1990-91	2047	-	-	-
1991-92	2048	30	30041	289.00
1992-93	2049	12	4376	34.66
1993-94	2050	25	22586	246.81
1994-95	2051	-	-	-
1995-96	2052	29	25478	273.82
1996-97	2053	21	5905	55.29
1997-98	2054	24	4633	14.91
1998-99	2055	20	20069	215.07
1999-2000	2056	26	23406	261.79
2000-01	2057	31	30583	330.41

Source: Government of Rajasthan

III. Food Security Concerns and PDS

The need for food security

The level and growth of food production in the state is satisfactory but the sustainability of the same is questionable. Besides, the fluctuation in production of foodgrains especially those in the kharif season affect those households the most who are entirely dependent on rain-fed agriculture. Almost 45 per cent land holdings size less than 2 hectares do not have irrigation facilities. Moreover, there are households who need food security in practically all times, given their livelihood patterns. We shall next discuss such households drawing evidence from our own field surveys.

Food security at the household level

Table 8.7 is based on the sample households of our study. It shows how in a drought year only 7 per cent households are able to grow the requirements for household consumption for the entire year compared to 45 percent in a normal year. Moreover, 27 per cent households in the four districts produce foodgrains that last them less than 3 months and they, of course, are more vulnerable in a drought year. It is for these households that food security needs to be ensured throughout the year. In most of these households atleast one member migrates seasonally for wage labour.

Table 8.7: Percent distribution of households by months of food grain requirements that are met by own production (sample)

	12 months or more		0-3 months	
	NY	DY	NY	DY
Overall	45	7	27	88
Ajmer	49	8	20	83
Jaisalmer	22	5	51	86
Pali	59	11	6	79
Udaipur	25	1	19	89

Ensuring Food Security

Ensuring food security at the household level can be done in two ways. The first is through the Public Distribution System and the other is through ensuring entitlements of poor households through wage programmes or programmes such as the Food for Work.

The Public Distribution System

The Economic Review of the Government of Rajasthan describes the Public Distribution System (PDS) as "an essential element of the government's safety net to the poor". The Food and Civil Supplies Department of the State is managing the PDS. There are 19346 authorised Fair Price Shops (FPS) in the state. Outs of these 14710 are operational in rural areas and the remaining in the urban areas. The cooperative sector manages 5188 shops and the remaining are in the private sector. Fair price shops get their quota of rationed commodities from wholesalers appointed by the state governments who in turn collect the allocated quota of these commodities from the FCI godowns (or a depot of an oil company). A "Doorstep Delivery System" is in place wherein wholesalers collect commodities from the FCI after making payment and in turn supply the commodities to FPS on credit. The transportation cost is borne by the government.

Sagar (2000) finds that this system does not function strictly in this order. According to his study on the PDS in Rajasthan, the wholesalers first collects money from FPS owners and delivers the commodity 15 or 30 days later. A number of leakages are reported including underweighing, collection of unloading charges and in some cases transportation costs as well. The main findings of the study of sample households in four districts include the following:

- Households covered by Poverty Alleviation Programmes (PAP) purchased 58 to 170 per cent more wheat from FPS than the non-PAP households did. In one RPDS village the PAP households took their entire entitlement of wheat.
- The main beneficiaries of the PDS wheat purchases are the poor marginal and small farmers and agricultural labourers.
- The share of PDS wheat in cereal consumption of households declined with the increase in Monthly Per Capita Expenditure Classes (MPCE) in two districts out of the 4 covered by the study. In other two districts this relationship was found to be neutral.

Sagar also finds that the FPS provide support to the scanty market infrastructure particularly in underdeveloped villages. The importance of PDS operations in the state is high due to the fact that it provides access to food by reinforcing the tenuous market infrastructure in large parts of the state.

Some findings of a recent survey of FPS

A survey of the PDS in 18 blocks of 12 districts of the state was undertaken in January 2001. The reference period was October-December 2000. The main findings are summarised below:

- In one-sixth of the FPS no wheat had been distributed during the reference months. Only one-third of the villages had regular distribution (i.e. every month for these three months).
- In FPS where wheat reached, all BPL households drew their full quota of 20 Kg per month. Thus low offtake of PDS wheat cannot be attributed to the failure of households to draw their rations, Instead, low offtake seems to be due to inadequate coverage and irregular distribution.
- It is sometimes claimed that offtake is low because many households do not have cash to buy their monthly quota. The survey found that such households are a small minority.

PDS supplies as per cent of total consumption

The households connsumed an appreciable proportion of wheat from FPS as per cent of total foodgrain consumption. This was higher in drought year than in normal year (Table 8.8). Also the dependence of the BPL is also found to be higher which corroborates the Sagar (2000) findings. In the most vulnerable areas like Udaipur the dependence on FPS is far more than in other districts. In districts like Jaisalmer in the arid region, the preference is for bajra, which incidentally does not form part of the PDS.

Table 8.8: Offtake from FPS as per cent of total consumption

Year	Ajmer	Udaipur
BPL		
DY	11	43
NY	8	34
APL		
DR	15	41
NR	8	31

Some success of PDS

In spite of its limitations, the PDS has helped maintain the average annual consumption of foodgrain as is evident from Table 8.9. In the 1987 drought survey of the same villages, the per annum consumption was reported to be 160Kg per capita in Normal year and 167Kg in Drought Year .

Table 8.9: Average Consumption of grain by households in Drought and Normal years

BPL	Kgs
DY	1019
NY	1051
APL	
DY	1063
NY	1091

Performance of PDS in Rajasthan

The performance of PDS in Rajasthan when compared to other main wheat consuming states in terms of "offtake" as percent of "allocation" by the central government is the lowest though it has improved through the years (Table 8.10).

Table 8.10: Percent off take of wheat: select states for BPL households

State	1997-98	1998-99	1999-00
Bihar	93	93	103
Gujarat	110	110	99
Madhya Pradesh	62	62	76
Maharashtra	83	83	87
Rajasthan	55	55	73
Uttar Pradesh	96	96	97
West Bengal	92	92	96

Source: Foodgrains: Monthly Bulletin, November 2000, Government of India

The overall offtake by FPS is 61 per cent of their allotted quota in 2000-01. There are significant district-wise variations as can be seen in Table 8.11.

Table 8.11: Distribution of districts by off take as percent of allotment for BPL households

Percent	Districts
Up to 20	Jhalawar, Kota, Tonk
20-40	Alwar, Baran, Bundi, Dausa, Sawaimadhopur
40-60	Ganganagar, Jaipur, Karauli
60-80	Banswara, Barmer, Dholpur, Jalore, Jhunjhunu
80-100	Bikaner, Churu, Dungarpur, Jaisalmer, Jodhpur, Nagaur, Pali, Rajsamand, Sikar, Sirohi, Udaipur
Overall:	61 per cent

Source: Foodgrains: Monthly Bulletin, November 2000, Government of India

Why do some FPS do not obtain their "allotment"?

In the current year, only BPL households are availing their quota of 20 Kg from FPS. The prices fixed for APL households is the "economic cost" which is more than the market price and hence their offtake is negligible. The door step delivery is made possible by the wholesaler only if the FPS Allocation is 100 quintals or more. In less than this they are paid a transport allowance of Rs 6 per quintal. In one such FPS the monthly quota is of 44 quintals. The actual transport cost to transfer this is Rs 500 while the FPS receives only Rs 284. Besides, loading and unloading costs of Rs 1

each is to be borne by the FPS owner. The FPS also has to pay in advance to the wholesaler. In such circumstances the distribution line is weak. Unless such weak links like credit facilities are corrected and door step delivery ensured, the "offtake" will continue to lag.

Access to food

Providing entitlements can ensure access to food. In a severe drought year such as the present, there is much need to ensure access to food. Reports of deaths due to combined effect of dwindling livelihoods, declining health, decline in food intake, surviving on mere corn gruel have been reported in a section of the Press (Mishra: 2001). This year, people's own strategy to migrate to Gujarat for work has failed due to earthquake. There have been demonstrations outside the FCI godowns for release of foodgrains.

The state government's financial position is weak. It has opened works according to the allocations made in the Calamity Relief Fund. However, the work days fall far short of the demand for relief works. According to Survey1 of 1987 and 1999 drought situations, the demand for work was fulfilled far more in the former year. See Chapter V for details. It may be recalled that 77 per cent men and 68 per cent women who were available for work did not get employment in relief works in the year 1999-2000. This situation of large scale unemployment is likely to be more in the current year.

The perception of civil society organisations

Leading civil society organisations who are playing an advocacy role for the last one year or more, have two major demands for ensuring food security. The first demand is to increase the quota of foodgrains to 10 Kg per unit per month in the household as was the case in the 1987 drought and the distinction between the BPL and APL be removed till the next crop is harvested. The second demand is to raise employment ceiling to 20 lakh person days of employment per day for 4 months to help people mitigate drought (though even this will fall short of employment to all that demand work. According to the 1991 census there were 1.4 million agricultural labourers and 8.18 million cultivators). A part of this payment may be made through Food for Work

Programme at the rate of 10 Kg wheat as part of wages and Rs 14 per day be paid in cash. The total wage would then be Rs 60 per person per day, valuing wheat at the rate of Rs 4.60 per Kg. This employment programme would require 2.4 lakh tonnes of wheat, which is only 5 per cent of the total foodgrain stock with the FCI.

Conclusions

- Recurrent droughts in the state are enough justification for continuance of the food security initiatives through a Public Distribution System.
- At an aggregate level the state has achieved "self-sufficiency" in food production in a *normal year*. But these normal years are very few and in-between. The same cannot be said of security at the household level for more than half the population of the rural areas, which survives on its own meagre production and incomes from casual farm and non-farm employment.
- Even the "self-sufficiency" achieved by mining scarce water resources may not be viable both from economic and environmental perspectives.
- The Public Distribution System in the state is functioning but needs further push to ensure door step delivery and probably short term credit facilities to the FPS.
- The BPL households presently buy their full quota of 20 Kg of wheat whenever it is made available at the FPS. The perceived reluctance of the BPL of not buying their full quota is a false perception.
- The demands raised by civil society organisations to increase the quota to 10 Kg per unit and made applicable for all households in the severe drought conditions, and to release 2.4 lakh tonnes for Food for Work is justified. The justification lies in the fact that the shortfall in foodgrain production in 2000-01 is projected to be 18 lakh tonnes less than in 1999-00 and 22 lakh tonnes than in TE 1997-98.

Chapter IX: Impact of Indira Awas Yojana and the Million Wells Scheme

I Meeting basic needs, social inclusion, positive gender and social discrimination: A successful Indira Awaas Yojana

Public Programmes for the poor are generally criticised for not being as successful as desired due to many a shortcoming: faulty planning, centralised decision making, faulty implementation, failure to address basic or felt needs, identification of target groups, lack of necessary linkages, high transaction costs (both for the delivery and the recipient systems), rent-seeking nature of personnel, and so on. The 'Indira Awaas Yojana' (IAY), despite many of these shortcomings may be described as a successful public programme for the poor. A number of factors such as, targeting basic needs and deserving beneficiaries, a strategy of social inclusion rather than exclusion, positive gender and social discrimination, and, above all, a strategy conforming trust in people have contributed to the success of IAY. This success needs to be understood and underlined so as to act as input in various other public programmes. However, there are, at the same time, some shortcomings in the programme that need to be overcome.

Housing is one of the basic needs of the poor and ranks next only to food and clothing. A basic housing structure would provide the poor adequate shelter and create an enabling environment for better health and sanitation as well as safe storage space for foodgrains, seeds and other belongings. It could also create substantial opportunities for additional employment and economic activity for the household, if the space is utilised for a home-based industry. Above all, a *pucca* dwelling unit raises social status, self-esteem and self-confidence of the members of the household.

Rural housing is a problem of immense magnitude. Shortage of housing units in the rural areas of India was estimated to be 18.8 million in 1985 (Government of India, 1985, Seventh Five Year Plan 1985-90). Needless to say that it is the poor who do not have a proper dwelling unit. As part of the effort to ameliorate the shortage and help the poor, IAY was started in May 1985.

The Indira Awaas Yojana

The IAY aims at providing financial help in the form of a grant for construction of dwelling units or conversion of unserviceable *kutcha* dwelling units to *pucca* or semi-*pucca* dwelling units for rural families. Preference in the allotment of dwelling units is given to a female member of the beneficiary household or to both husband and wife. The priority in the selection of beneficiaries is in the following order:

i) Freed bonded labourers;
ii) SC/ST households;
    SC/ST households, who are victims of atrocity;
    SC/ST households headed by widows and unmarried women;
    SC/ST households affected by flood, fire, earthquake, cyclone and similar natural calamities;
    Other SC/ST households.
iii) Non- SC/ST households;
iv) Physically handicapped;
v) Families/ widows of personnel from defence services/ para-military forces, killed in action, ex-servicemen and retired members of the para-military forces;
vi) Displaced persons on account of developmental projects, nomadic, semi-nomadic and de-notified tribals and families with disabled members subject to the condition that these households belong to poverty line category.

The Government of India allocates targets (i.e. the number of beneficiaries) to the states that pass them on to the District Rural Development Agencies/ Zilla Parishads. These, in turn, inform the Gram Panchayat of the number of dwelling-units to be constructed panchayat-wise under the IAY during a particular financial year on the basis of allocations made and targets fixed. Thereafter, the Gram Sabha

/ Village Panchayat meeting selects the beneficiary/ beneficiaries from the list of eligible households according to the IAY guidelines and priorities fixed. The number is restricted to the target allotted. No type design has been specified except the fact that the plinth area of the dwelling units should not be less than twenty square meters. The layout, size and type design of the IAY dwelling units can be in accordance with the desire and preference of the beneficiary/ beneficiaries, keeping in view the local conditions and the need to provide ample space, kitchen, sanitary facilities, smokeless *chulha* etc., and also the community perceptions, preferences and cultural attitude.

Ceiling on construction assistance under the IAY has increased over the period of the scheme to Rs. 20,000/- in 'Plain Areas' and Rs. 22000/- in 'Hilly/ Difficult Areas'. In Plain Areas, assistance given for construction of a dwelling unit including s*anitary latrine* and s*mokeless chulha* is Rs. 17,500/- and in Hilly/ Difficult Areas the assistance for the same is Rs. 19,500/-. An additional assistance of Rs. 2,500/- is provided for infrastructure and common facilities in case the dwelling units are not built in cluster/ microhabitat approach.

The beneficiary bears full responsibility for construction of the dwelling units. He/ she makes own arrangements for construction material, skilled workmen and family labour, etc. The identified beneficiary applies for the grant and is given the same in two instalments as the construction work progresses.

An evaluation

All the 24 beneficiaries in the eight villages had built dwelling units from the grant received between 1986 and 1999 (See Table 9.1).

Table 9.1: Number of IAY beneficiaries in 16 sample villages of four districts during the period 1986-99

District	Number of beneficiaries
Ajmer	**15**
Udaipur	**59**
Pali	**19**
Jaisalmer	**27**

The unit cost has been increased from Rs. 11300 in 1986-87 to Rs. 17200 in 1996-97. This increase, however, has not kept pace with the Consumer Price Index of Agricultural Labour (CPIAL). While the unit cost increased by 54 per cent between 1986-87 and 1996-97, the CPIAL increased by 260 per cent (base year for CPIAL: 1986-87= 100). The actual expenditure on dwelling units exceeded the grant in 98 per cent of the cases. This is not surprising as the amount sanctioned is low and has not increased as much as the CPIAL as discussed earlier.

As per information collected from the DRDA officials in the various districts, it can be inferred that the scheme is fairly well administered. There are relevant bodies to oversee the implementation of the scheme and vigilance committees have also been constituted in all the districts. Technical assistance is available in all districts, though in some it needs to be made available at the block level as well. All beneficiaries, according to the district authorities, are recommended either by the *gram sabha* or the village panchayats, leaving no room for manipulation by other vested interests. The only lapse on the part of implementing authorities has been that they have been unable to substantially motivate the beneficiaries to construct sanitary latrines and smokeless *chulhas*.

Design and implementation of the scheme remains **supply driven**; based on the planners perceived demand for dwelling units by poor rural families. No attempts have been made to mobilise the existing demand for dwelling units from the Gram Sabha, at least not in Rajasthan. One possible method could have been that the Gram Sabha made a full list of households and prioritised them according to their social status. They could have revised the lists every year. They could have also looked for alternative sources to meet housing

needs. The scheme in its present form, dispenses the patronage of the state and is perceived in the same manner by the panchayat bodies and the recipients. The Gram Sabha is only a convenient conduit for the state and does not own the scheme itself. However, given these constraints, the IAY programme has many other features that have made it successful, viz. prioritisation, location of dwelling units, trust and positive gender and social-discrimination.

The scheme has rightly **prioritised the beneficiaries** and given due importance to freed bonded labourers and widows of SC/ST households. Besides, preference in the allotment of dwelling-units is given to a female member of the beneficiary household or to both husband and wife.

The programme, unlike some rural development programmes does not practice 'social exclusion'. It needs to be underlined that it envisages that dwelling units should be located on individual plots in the main habitation of the village. They could also be built in a cluster within a habitation so as to ensure safety and security, nearness to work place and social communication and facilitate the development of infrastructure such as internal roads, drainage and drinking water supply. Such 'inclusion' policies are commendable as the beneficiary households acquire a better status *within* their own village. In this sense the IAY has followed **a policy of inclusion for the erstwhile socially excluded groups**. The flexibility in the scheme is also noteworthy. Many IAY dwelling units built in clusters, a little away from the main habitation remained unoccupied. This experience rightly led the planners to change to building dwelling units on individual plots in the main habitation. Discontinuation of this strategy can be seen as helpful in accelerating the processes of social inclusion.

As mentioned earlier, the beneficiary bears full responsibility for the construction of dwelling units. They make own arrangements for construction material, skilled workmen and family labour, etc. This ensures quality of construction, greater satisfaction and acceptance of the programme. In this manner, the programme can also be singled out for having **faith in the beneficiary** and his/her skills to undertake the organisation of construction-

work, rather than the usual approach of contracting such works where quality is doubtful.

The conscious gender discrimination in the implementation, namely, awarding the benefit to female members of beneficiary households was observed in 74 per cent cases. Such discrimination is likely to have a perceptible shift in the status of women in the long run. However, on the one hand where women's practical needs for housing have been met, their strategic need for empowerment has not been taken care of. They could have been empowered by being required to participate in the various processes involved in getting their names approved by the gram sabha and obtaining the grant. In most places, we found that men participated in gram sabha and were involved in transactions, while women affixed their signatures/ thumb impressions. In this sense, the gender-agenda has commenced but remains unfinished.

Yet another agenda of the IAY of **positive discrimination in favour of SC/ ST/ OBC** has been achieved to a very great extent. Both gram sabha and implementing authorities have exhibited consciousness of their obligations to the deprived. However, only 3 per cent of the widows and unmarried women in the total sample were targeted. In Rajasthan, 6 per cent of all rural women fall in this category. Thus more women households could have been targeted. A reason for such low targeting is that women generally do not participate in gram sabha meetings.

The IAY has also **trusted the beneficiaries** to utilise the grant for the purpose for which it has been sanctioned. The contractors and village panchayats have not been involved in the actual construction activity especially in the last 5 years. The beneficiaries used the amount themselves to buy materials and pay the mason, if necessary. They worked their own labour as well. The trust has been fulfilled as all beneficiaries except one have built their dwelling units and all have received both instalments in which the grant is disbursed. The state has

not reposed as much trust in other programmes meant for the poor as in the IAY and the trust has not been belied. All completed dwelling units, at the time of survey, were found to be occupied.

A discouraging factor, however, has been the **transaction costs** reflected in the high time lag between receipt of assistance after sanction and between the two instalments; though only 7 per cent of the beneficiaries reported encountering and paying-off rent seeking officials. Among them 45 per cent paid more than Rs 1000 each. This **level of corruption**, though quite low, needs to be reduced to nil.

Recommendations

As seen from the above discussion, the IAY has largely been a successful programme in Rajasthan. Some inherent weaknesses in the programme have also been highlighted above. A few recommendations for improvement of the programme are as under:

The ward/ gram sabhas and eligible beneficiaries need to take a pro-active role in implementing the IAY. The ward sabha (which incidentally has become the nodal point of planning and executing governmental schemes in Rajasthan) may draw a complete list of eligible beneficiaries in the ward and prioritise the same. All women of BPL households must attend this ward sabha. Since the IAY has to do mainly with women, it may be prudent to have a sabha exclusively for women who qualify for selection in IAY. Wherever women are not ward *panchs/ sarpanchs*, an alternative arrangement can be thought of or the men ward *panchs* be allowed to attend the meeting. Women officials at the district/ block/ village level may be deputed to these meetings.

Once the lists are finalised, the Zilla Parishad/ District Rural Development Agency's Governing Body members and the Vigilance Committee may visit each panchayat to verify the same in a gram-sabha before approval by the DRDA authorities. Many implementation stages, like applications for grant of assistance, could then be dispensed with. The DRDA could inform the

beneficiary of her turn. When the beneficiary completes the required part of construction using her own resources, a cheque may be sent in her name (most BPL households have a bank-accounts. If not, they may be encouraged to open an account at the earliest).

The amount sanctioned for building dwelling units may be increased by 10 per cent each year or, still better, linked to the CPIAL.

II Towards Sustainable Development: Million Wells Scheme

The objective of the scheme is to provide dug wells to SC/ ST, freed bonded labour and small and marginal farmers among BPL households. A maximum amount of Rs 35,000 per well is given to the beneficiaries. In Rajasthan 24,728 households benefited from this scheme between 1992-98.

The Million Wells Scheme (MWS) attempts to fulfil a dream of those poor small and marginal farmers who do not have access to irrigation water and a possible source is only a dug well. An assured source of irrigation would ensure sustainable livelihood, as the linkages are obvious: increase in cropping intensity, total farm production, increase in numbers of livestock and so on. Most farmers accumulate to invest in dug wells, which is invariably their first investment priority.

This is a target oriented programme and the selection of beneficiaries is on the lines of the IAY excepting the fact that only landed poor are considered for selection. Presently, the ceiling is of Rs 35,000 per beneficiary. Like the IAY, the beneficiary bears full responsibility for construction of the dwelling unit. He/ she makes own arrangements for construction material, skilled workforce and family labour.

In our sample villages there were 8 beneficiaries in Ajmer district and 12 in Udaipur district and 2 in Pali district. While in Ajmer beneficiaries received the grant for digging new wells, in Udaipur most beneficiaries received grant for deepening/ blasting of wells.

All 22 beneficiaries used the grant for digging wells. However, only two-thirds (14 beneficiaries) could obtain water. The remaining one-third did not strike water table. All 14 beneficiaries who struck water also spent their own savings/ borrowed amounts for digging wells as the amount sanctioned was grossly insufficient. On an average they spent 114 per cent of what they received from the government.

The 14 beneficiaries are now able to take an additional *rabi* crop. These households no more migrate for wage labour except in a drought year. They have doubled their livestock wealth and are now able to sell milk. They have started accumulating and their first investment will be in buying a diesel/ electric pump set.

Thus we find that MWS has had a limited success. It has been successful in areas where groundwater is available and can be reached by a dug well. It is not surprising that in Jaisalmer there has been no finance in the sample villages and in Pali only two beneficiaries received finance and both could not reach the water table. The finance is inadequate, yet desirable as it prompts the beneficiary to obtain finance from other sources (usually relatives and friends) and spend own savings. Recognising the necessity of a dug well, friends and relatives generally respond favourably to such needs and underlines the upside of social capital. The economic linkages that get established with the successful investment are sustainable with annual incomes showing an increase of over 100 per cent.

Chapter X: District-wise comparison of Poverty Reduction Programmes

In the foregoing Chapters, we have discussed the impact of various poverty reduction programmes in the sample villages. In this Chapter, we shall make a comparison of various programmes at the district level. We shall see what attempts have been made to meet the district specific needs for poverty reduction and how the villager's perceive the benefits. We shall concentrate on two types of programmes, namely those which generate or protect existing community assets while generating employment for the poor and those programmes which enable building of the privately owned assets of the poor. In this Chapter we shall also see the importance of Area Development Programmes and compare some features of the State sponsored programmes and the Centrally sponsored programmes.

Relative importance of various employment programmes

The relative importance of various employment programmes in sample districts is shown in Table 10.1. We find that area development programmes are relatively more important in employment generation in the desert districts of Jaisalmer and Pali. In Ajmer and Udaipur districts more employment has been generated through centrally sponsored schemes such as JRY, EAS and JGSY than any other scheme. However the contribution of famine relief work is also significant in Ajmer and Udaipur districts.

Table 10.1: Percent Employment days generated under various schemes in sample districts

	Ajmer	Pali	Jaisalmer	Udaipur
Centrally sponsored schemes	44.1	38.9	23.4	47.5
State Sponsored Schemes	8.1	12.2	10.9	20
Area Development Programme	4.4	16.1	59.3	0
Famine Relief Work	43.4	32.8	6.3	32.5
Grand Total	100.0	100	100	100

Source: Tables 6.2a-6.2d

Table 10.2 captures the relative investment in employment programmes in the sample districts given the intensity of poverty. This has been achieved by dividing the total investment in the sample villages during the period 1995-2000 by the number of BPL households. Our findings suggest that the investment through employment programmes in the poorest district, namely, Udaipur, is not in proportion of the poor households in the district.

Table 10.2: Per BPL household investment through employment programmes in sample districts during the five year period 1995-2000

Districts	Per BPL household investment through employment programmes (Rs.)
Ajmer	20581
Jaisalmer	50968
Pali	20808
Udaipur	4672

Centrally sponsored schemes for employment generation

Between the tears 1995-2001 the Employment Assurance Scheme, the Jawahar Rozgar Yojana, the Jawahr Gram Samridhi Yojana and the MP Fund were available to construct community assets. The villagers have appreciated the construction of community assets as they either fulfilled one or more of their common needs. Across all sample districts, the funds have been utilised to generate mostly social infrastructure, namely, school buildings and health infrastructure or economic infrastructure such as roads or shops. The latter are constructed by the panchayati raj samities and become a constant source of revenue for the panchayats. This pattern has been repeated in all sample districts without any significant differences. A detailed analysis of such works has been presented in Chapter VI for two villages, namely, Badoda Gaon of Jaisalmer district and Deomali of Ajmer district. The villagers have expressed satisfaction at the construction works and also their usefullness. However, these schemes have not addressed some basic needs such as those of drinking water wherever and whenever this is a problem. In the Chotilla village of Pali district, this problem was most acutely felt throughout the year. However, investments have gone into Panchayat Bhawans and other social infrastructure but not towards solving the basic problems.

We reproduce Table 6.4 below to compare the average district-wise man days generated by employment programmes including famine relief works and the Area Development Programmes in sample villages during the period 1995-2000. Udaipur is the poorest district in the sample as is also evident from the highest number of BPL households in the Udaipur sample villages. However, it is seen that the average number of days employment generated per BPL household is 6 per BPL household, which is the least among all districts. In Jaisalmer district, the number of days is the highest due to the coverage of the Area Development Programmes. If properly targeted each BPL household in Jaisalmer can get about 77 days of employment.

However, in Udaipur district the number is far from adequate leading to out-migration in search of labour.

Table 10.3: Average number of days employed in employment programmes per BPL household per annum (including famine relief works and Area Development Programmes)

District	No. of Man Days	No. of BPL HH	No. of Days employed per BPL HH
Ajmer	40731	292	28
Jaisalmer	126751	329	77
Pali	42850	279	31
Udaipur	28466	914	6

State Sponsored Schemes

There are two state sponsored schemes, namely, Apna Gaon Apna Kaam and Tees Jile Tees Kaam. In both schemes, contributions are invited from a donor or from contribution by the villagers themselves and a matching grant is provided by the state government to undertake a construction work. In all sample villages, wherever this kind of work has been undertaken, a large hall, a *dharamshala,* or a dairy building has been constructed. In such works, in sample villages only single donors have come forward for the scheme and the name of the donor is displayed on the building, which gives her/ him status raising self esteem. All these buildings, so constructed add value to the economic or social activity in the village. The difference between the state and centrally sponsored scheme is quite obvious, the former being more participatory than the latter. Nevertheless, this scheme has been implemented only in large villages where the likelihood of a donor is high. Besides, the resources earmarked for the programme by Rajasthan State are very thin.

Area Development Programmes

Area Development Programmes, namely the Desert Development Programme and the Border Area Development Programme in Pali and Jaisalmer districts have helped in meeting some of the basic needs like water. In the village Badoda Gaon in Jaisalmer water tanks and tube-wells have been constructed through Area Development Programmes. These Programmes were in fact designed to restore an ecological balance. This was to be achieved mainly by soil and moisture conservation on a watershed basis. In practice, however, different works have been undertaken by

different departments ignoring the advantages of complementarity of works in a watershed. So we find, that water tanks have been constructed by a department but with absence of soil conservation works, the water conservation is not as efficient. Also, the geographical spread being large, works have been largely spread out. The advantages that poor get from Area Development Programmes can be enormous. The poor benefit a lot from the common lands that are the main source of fodder for their animals, fuelwood and wild fruits. In this village we find that tanks were constructed in 1995-96 but the soil conservation works were sanctioned in the year 2000. The village is recently being covered in the "cluster approach", the advantages of which can be seen in the following village description.

The profile of the DDP has also changed in the last two decades, as is evident from the experience of village Deva, district Jaisalmer. The village has a canal of the Indira Gandhi Nahar Project. The canal has become the major source of drinking water. The DDP funds have been used to provide drains and an anicut where water can be stored. Besides works have been undertaken in a "cluster approach" covering more than 100 hectares of land. Drinking Water is now cleaner in the tank. Three more large water *tankaas* have been constructed where water is stored. The water utilisation is more efficient. Plantations have been made that provide fuelwood and some fodder for cattle as well as protection from sun. The local grass *sewan* known for its quality fodder has been sown in about 20 hectares. There is sufficient drought proofing as well and the animal mortality has declined according to the villagers. Animal husbandry camps have been organised where animals have been vaccinated, treated for disease.

In yet another village Sum, district Jaisalmer, the results of past efforts can now be seen. In the year 1985-86, the Forest Department made plantations in an area of 10,000 hectares where according to villagers more than a 100,000 *babool* plants were planted. They have now grown into a forest providing not only a natural beauty but also feed and fodder for goats and sheep. Furthermore they have stabilised the sand dunes.

Integrated Rural Development Programme

The impact of Integrated Rural Development Programme is discussed in Chapter VII. The district-wise success rate is reproduced in Table 10.4.

Table 10.4 : District wise success rate of IRDP in sample villages

District	Per cent beneficiaries with their assets intact
Ajmer	21
Udaipur	31
Pali	16
Jaisalmer	42

Source: See Table 7.1

Table 10.4 shows that the IRDP has been most successful in District Jaisalmer in spite of the fact that a large number of these are animal husbandry units and the climate is most harsh in the district. The relative success of the Programme in Jaisalmer can partially be attributed to the success of the DDP Programme. The Area Development Programmes have been successful in reducing "area poverty" to a great extent as seen from the description above. In Udaipur district the highest number of beneficiaries are in the Retail shop category and half of them have retained the asset. This scheme has helped in creating market support structures where it is absent due to inaccessible distances.

Conclusions

This chapter highlights the relative importance of Area Development Programmes in the desert districts. The programmes have been successful in not only generating employment but have reduced the area poverty in the region. In these districts the impact is also felt on the IRDP beneficiaries where the proportion of beneficiaries making productive use of the asset is high. Among sample districts, Jaisalmer and Pali fall in this category. The impact of other centrally sponsored schemes such as JRY and EAS is similar across districts. Permanent assets have been created and the villagers across the districts have described these as useful. This chapter also brings out the relative importance of Famine Relief works in providing employment, especially during the crisis period. Some state-sponsored schemes where there is contribution from public have been successful but only in large villages.

Part III

Chpater XI : Summary and Recommendations

Chapter XI: Summary and Recommendations

This study finds that the livelihoods in Rajasthan are characterised by both natural and man-made uncertainties. Large fluctuations in annual agricultural production, loss of livestock during drought period, limited access to dependable wage labour, which remains seasonal and uncertain, together make uncertainty a characteristic feature of livelihoods. Besides, the land, livestock and human productivity is low. There has been an overall degradation in natural resource endowment. The negative externalities of degradation offset the return from private investment, which does not yield the desired return. The negative externalities are also associated with not only decline in productivity of livestock but also their numbers. Policies and programmes that may reduce uncertainties and improve productivity while at the same time arrest the degradation of natural resources are inadequate. On the contrary, the mere existence of these programmes as well as poor implementation and consequently poor returns, primarily due to thin spread of resources and centralised management contribute to man-made uncertainties. We shall summarise the main findings of the study and give four sets of recommendations for future planning.

Land Use Pattern

There are regions in the state where the area under cultivation, forest area and permanent pastures has declined substantially and there is significant reversal from a sustainable environment. There are regions where attempts were made to bring the barren and uncultivable land under cultivation but most of such land is now classified as old fallow or culturable waste. Cultivating the barren and uncultivable land reduces the area under open pastures and reduces the space available for grazing by livestock.

Irrigation potential

Increasing the irrigation potential without ensuring recharge of groundwater has resulted in dry wells and depleted water tables. In some areas there is mining of fossil water. Those cultivators who had assured irrigation are now uncertain about the potential of their own wells despite deepening of wells.

Livestock

Livestock rearing is an important economic activity in Rajasthan. It contributes 10-60 per cent of the household income. This share increases in a drought year when crops fail. However, in a drought year the existence of livestock is at a stake. In some regions there has been a decline in actual numbers in the last two decades, in others, the numbers of livestock owned per poor household has declined in the last two decades. In general, cultivators with larger operational holdings own mainly large ruminants and their productivity is also higher than those owned by the cultivators with smallholdings. The small ruminants are owned mainly by the poorer sections of the society and they have to rely on the natural resource endowment in their villages. In many regions this endowment has reduced drastically and is reflected both at the numbers of livestock as obtained from the Livestock Census as well as from the household data of sample villages. The productivity of livestock has remained abysmally low.

Policies or programmes that ensure fodder availability through the drought years are missing, though during a drought year fodder is procured on an emergency basis from nearby states. Programmes that would ensure the sustainability of natural resource endowment did not have an impact in the sample Udaipur villages. The network of dairies in the Ajmer villages has ensured an income stream to the Ajmer villages. However, the network could not prevent cattle deaths during the drought years.

Impact of on-going Drought Prone Area Programme

A sustainable impact of Drought Prone Area Programme was hardly visible in the sample villages. Some irrigation ponds have been created but their recharge has not been enough. One of the reasons has been that the finances available in the Programme have been thinly spread and sporadic works have been undertaken without much planning. Thus, the total effect of the interventions has been minimal.

Recommendations I:

1. **A drought proofing strategy needs to be at the centre of planning in an eco-system characterised by recurrent droughts. This is necessary as the livelihoods of the poor are severely affected during the drought period and the effectiveness and returns to the poor of any rural development measure or a private investment is limited. Thus, large**

scale watershed development programmes are required that not only increase the productivity of privately owned land but also build surface water bodies, recharge the groundwater, improve the forest cover and regenerate the pasture lands.

2. **The centralised implementation of watershed development programmes has not been effective. The 73rd Amendment allows such development works to be carried out by the *panchayats*. This is likely to ensure effective implementation of the programmes.**

3. **In a drought prone state programmes for availability of fodder throughout the year are needed. While regeneration of pasturelands may contribute to availability, fodder banks need to be created at village levels where grasses and crop residuals can be stored. These banks may be owned by the *panchayats.***

4. **The dairy network has helped in improving the production of milk. These networks need to be strengthened and expanded.**

Wage labour

Major occupational shifts in rural population have been observed in the sample villages. The singular feature common to all districts is the shift towards casual labour as the main occupation. Most of the cultivator households are also involved in labour activities as their secondary occupation. The rates of unemployment are high especially in a drought year. Though some work is available, the wages received by the casual labour are far below the minimum wages and the total earnings from wage labour seldom exceed Rs 10,000 in a year. Women wages are lower than men's wages in the labour market.

Long term employment prospects

Despite growth in the Rajasthan economy, the rate of employment creation in the state has been lower than the rest of India. In many sectors such as mining and road construction, which were considered to be labour intensive have witnessed increased mechanisation. The total resources needed to clear the backlog of unemployment in 1991 was estimated to be Rs.15,000 crores by the Employment Advisory Committee, 1991. These resources do not seem to be available.

The employment programmes

The employment programmes have been successful in providing some employment to the rural poor. They have not discriminated against women in terms of wages. However, the demand for employment far exceeds the availability. This demand reaches very high levels in the drought years. Despite these limitations, employment programmes have created socially useful and durable assets in the villages. They have reduced the transaction costs of households as well as provided quality services (through e.g. school and health infrastructure). In some villages it has also increased the productivity of land where irrigation infrastructure could be created.

Recommendations II:

1. *The need for an Employment Guarantee Act in Rajasthan*

The on going schemes for employment generation including famine relief works are far from adequate in terms of meeting the demand for employment in the State. An effective
Drought Management Policy can not only mitigate and prevent drought in the long-term but can also create employment to meet the unmet demand for employment.
This would also create infrastructure that would increase the income and employment in the future leading to sustainable development.

The EGA would provide a guarantee to employment. A guarantee is judicious.

2. The Feasibility of an Employment Guarantee Scheme in Rajasthan

The total wage bill to generate 100 person days of employment for 25 lakh persons (for one member each of the 25 lakh BPL households in Rajasthan) will be Rs 1500 crore per annum. In addition 40 per cent is required as material component. The people of Rajasthan have a taxable capacity to contribute to the required resources. While a substantial amount can come from the Employment Guarantee Fund so established, the remaining can come from the existing schemes and loans from institutions such as the NABARD from its Rural Infrastructure Development Fund. Besides, the food stocks in the country are likely to remain at the present levels for at least the next 5 years. The alternative uses of the foodgrain stock are few. Export possibilities are limited, given the prices in the international markets. The opportunity cost of holding the foodgrain, perhaps, is higher than expending them on programmes such as the Food for Work.

3. Employment programmes

Employment works with a higher rate of labour absorption, i.e. , from works which generate more income and employment in the future need to be designed. There is a need to target region where there is a demand for employment, target the poor and most importantly target time, when the opportunity cost of labour is the lowest. In Rajasthan these months are May, June, September and October (and decidedly not February and March).

4. Implementation of employment programmes

While employment programmes need to be dovetailed to the larger planning for rural infrastructure (infrastructure created in the state is found to be socially useful), the *panchayats* need to work on a five - year plan basis to improve the infrastructure in their villages. They should also be able to project demand for employment days for BPL and APL households. While these plans get aggregated at the district level, the *Zilla Parishads* need to look for funds to get these works executed. Some of these works will come under the JGSY. (Presently, the outlay under employment schemes averages Rs 50,000 per *panchayat,* of which Rs 30,000 can be spent on employment. This is too thin an amount to create durable asset in the village). Other sources of funds such as the RIDF need to be utilised for the same.

4. Food for Work Programmes

Guaranteed employment can be assured through Food for Work Programmes (FWPs). The FWPs are self selecting programmes and can provide not only employment but also ensure food security at the household level.

What can the Swarnjayanti Gram Swarozgar Yojana learn from the Integrated Rural Development Programme

The SGSY can build on many experiences of the IRDP as given below (At the time of survey in none of the sample villages SHGs had been formed, which are the first step to the implementation of the SGSY).

Make an informed choice

SGSY provides the group an opportunity to make a more informed choice of the economic activity they undertake. The group can make its own assessment of the skills and various capacities of its members and thus decide a suitable option.

Making productive use of assets

In SGSY there is an opportunity to draw viable schemes so as to ensure adequate and higher returns even to the smallest borrower within the group.

Designing efficient schemes

In SGSY there is an opportunity to draw viable schemes so as to ensure adequate and higher returns even to the smallest borrower within the group. The SGSY can build-on the existing privately owned natural capital and human capital of the members that form the group. The SGSY can build micro enterprises for groups of rural artisans and provide a high level of institutional support.

Crossing the poverty line

There is a possibility in the SGSY that all members of the group are able to cross the poverty line particularly if they shift to one single occupation by choosing an activity, which then becomes their primary economic activity.

Discrimination

In SGSY it is expected that the differences in education, social status and occupation will no more be an explanatory factor in the household crossing the poverty line. This is so because the institutional support to the group is likely to be more equal to all members and there is no differentiation on the basis of caste or economic status.

Food Security and the Public Distribution System

Recurrent droughts in the state are enough justification for continuance of the food security initiatives through a Public Distribution System. At an aggregate level the

state has achieved "self-sufficiency" in food production in a *normal year*. The "self-sufficiency" achieved by mining scarce water resources may not be viable both from economic and environmental perspectives. The *normal years* are very few and in-between. The same cannot be said of security at the household level for more than half the population of the rural areas, which survives on its own meagre production and incomes from casual farm and non-farm employment. The BPL households presently buy their full quota of 20 Kg of wheat whenever it is made available at the FPS. The perceived reluctance of the BPL of not buying their full quota is a false perception. The demands raised by civil society organisations to increase the quota to 10 Kg per unit and made applicable for all households in the severe drought conditions, and to release 24 lakh tonnes for Food for Work is justified. The justification lies in the fact that the shortfall in foodgrain production in 2000-01 is projected to be 18 lakh tonnes less than in 1999-00 and 22 lakh tonnes than in TE 1997-98.

Recommendations III:

The Public Distribution System should continue and include not only the poor but also the transient poor in the drought year. The quota from Fair Price Shops to the poor households needs to be increased to 10 Kg per person. The effective functioning Public Distribution System requires ensuring door step delivery to the Fair Price Shops and increasing the commission since targeting has reduced the number of beneficiaries.

Direct Income Transfer: Indira Awas Yojana

Public Programmes for the poor are generally criticised for not being as successful as desired due to many a shortcoming: faulty planning, centralised decision making, faulty implementation, failure to address basic or felt needs, identification of target groups, lack of necessary linkages, high transaction costs (both for the delivery and the recipient systems), rent-seeking nature of personnel, and so on. The 'Indira Awaas Yojana' (IAY), despite many of these shortcomings may be described as a successful public programme for the poor. A number of factors such as, targeting basic needs and deserving beneficiaries, a strategy of social inclusion rather than exclusion, positive gender and social discrimination, and, above all, a strategy conforming trust in people have contributed to the success of IAY. This success needs to be understood and

underlined so as to act as input in various other public programmes. However, there are, at the same time, some shortcomings in the programme that need to be overcome.

The ward/ gram sabhas and eligible beneficiaries need to take a pro-active role in implementing the IAY. The ward sabha (which incidentally has become the nodal point of planning and executing governmental schemes in Rajasthan) may draw a complete list of eligible beneficiaries in the ward and prioritise the same. All women of BPL households must attend this ward sabha. Since the IAY has to do mainly with women, it may be prudent to have a sabha exclusively for women who qualify for selection in IAY. Wherever women are not ward *panchs/ sarpanchs*, an alternative arrangement can be thought of or the men ward *panchs* be allowed to attend the meeting. Women officials at the district/ block/ village level may be deputed to these meetings.

The amount sanctioned for building dwelling units may be increased by 10 per cent each year or, still better, linked to the CPIAL.

Million Wells Scheme

The MWS has been successful in regions where groundwater is available. We have seen farmer beneficiaries investing from their own savings and borrowings from friends and relatives. In Rajasthan this programme could successfully be linked to the SGSY where a group of poor beneficiaries could benefit from a larger investment required to extract water for irrigation from a common well (or a tube well).

Recommendation IV:

The IAY and MWS are programmes of direct income transfer to build an asset so important for the poor who have been found to make full use of the financial resources provided to them. These programme needs to continue with some procedural changes. The MWS can be linked to the SJSY.