ROLE OF SEASONAL MIGRATION ON ASSET ACCUMULATION AND MOVING OUT OF POVERTY: THE CASE OF DOKUR VILLAGE IN TELANGANA, INDIA[1]

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Abstract

Rural households in many countries have used temporary or seasonal migration as a strategy to cope with natural shocks such as drought, means of employment and income generation during lean season and to move out of poverty. This paper studies the linkages between migration, employment in economic activities, asset accumulation and poverty reduction among rural households in a drought-prone village of India over the last four decades. The Dokur village of Mahbubnagar district in Telangana State of India experienced persistent drought over a decade. To cope with this situation, many households of the village temporarily migrated to the nearby and faraway cities. ICRISAT had conducted household surveys in Dokur under the Village Level Studies (VLS) and Village Dynamics Studies (VDSA) program since 1975. The present study has used the VLS-VDS dataset (1975-2012) and reorganized sample households into 46 dynasty households. Based on their participation in migration, sample households were grouped into two categories: migrant and non-migrant households. Household income was computed by sources for all households for all the study years. Contribution of migratory income and remittances to the total household income was quantified. To identify the factors responsible for migration decision, Probit analysis was carried out. For each year, sample households were grouped into poor and non-poor category using both lower ($1.25 ppp per day per person) and upper ($2.00 ppp per day per person) poverty line. The study revealed that seasonal out migration helped many households to come out of poverty even though they had experienced a decade of drought. In-depth analysis of asset accumulation behaviour of the households over time revealed important insights regarding their coping mechanism and the process of moving out of poverty.

Keywords: migration, poverty, asset accumulation, drought, dynasty, panel data, India.

[1] Paper presented at the 8th Conference of the Asian Society of Agricultural Economists (ASAE) held on 15-17 October 2014 at the BRAC Centre for Development Management (BRAC-CDM), Savar, Dhaka, Bangladesh.

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1. INTRODUCTION

Rural households in many countries have used temporary or seasonal migration as a means of employment and income generation during the lean season and as a strategy to cope with natural shocks such as drought and move out of poverty (Frank 2003, Vera et.al, 2010; Kunal et al., 2012). Semi-arid or dryland regions of India are characterized by poor soil quality and low rainfall regimes with frequent occurrence of droughts (three out of five years). Seasonality in employment and low absorption capacity for growing labor force often aggravate the situation. With the expansion of road network along with better communication facilities, workers of the dry land regions in India have been constantly looking for opportunities outside their localities which will enable them to increase their economic condition through temporary or seasonal migration.

Available statistics indicate that 20 percent of the workforce in India has been opting for seasonal migration. Seasonal migration of labor is a common phenomenon in drought prone Mahbubnagar district of Telangana. Workers from rural areas go to the nearby and faraway places (Badiani, 2007). It is often argued that there are many positive effects of seasonal migration on the rural sector through the remittances sent by the migrant workers to their family members staying in the villages which help to increase economic welfare of the households in terms of income, asset accumulation and poverty reduction.

Some studies (Vera et.al. 2010) have assessed the effects of migration on the process of asset accumulation using household data from poor rural areas in Mexico. However, results are not conclusive. Research has shown that in the short term, their condition improves and keeps them out of poverty, but in the long term, without appropriate and systematic means to achieve economic independence, their ability to get out of poverty does not change (Manuel, 2010). Empirically testing of such complex things are constrained by lack of longitudinal panel data collected over a long period of time for several generations. We have an unique opportunity to test the situation over a period of four decades for households of a drought prone village of Mahbubnagar district of Telangana state in India. The Dokur village of Mahbubnagar district in Telangana state of India experienced frequent droughts and the village has low employment opportunities particularly during the drought years. To cope with this situation, many households of the village have temporarily migrated to the nearby and faraway cities.

To understand the role of migration on income, asset accumulation and poverty reduction, it is important to know the answer of the following questions: What was the nature and extent of drought in the study village? When and how did the households opt for temporary or seasonal migration as a mechanism to cope with the adversities of drought and as a part of their livelihood strategy? What were the factors contribute towards decision to opt for migration? What was the impact of migration on their employment and income situation? What was the role of migration on asset accumulation of households? Had it helped the

migrant households to move out of poverty? If so, what was the process? We have investigated the case of Dokur and made an effort to answer the above-mentioned questions.

This paper studies the linkages between migration, employment in economic activities, income level, asset accumulation and poverty reduction among rural households in a drought-prone village (Dokur) of India over the last four decades. Specific objectives of the study are as follows:

- To document the long-term drought profile of the Dokur village and Mahbubnagar district using secondary and primary data collected from various sources.
- To understand the situation and factors forcing the Dokur villagers to opt for temporary or seasonal migration as part of their livelihood strategy and as a mechanism to cope with the adversities of drought.
- To study the impact of migration on their employment and income situation.
- To assess the role of migration (remittances) on asset accumulation of households and moving out of poverty.
- To put forward implications of the research findings for development policy.

This paper consists of six major sections. After this introductory section, section 2 discusses about the data sources and methodology used in the study. Section 3 documents the drought profile in the Dokur village and Mahbubnagar district over a long period. Section 4 describes the labor force, employment trends and migration pattern of Dokur villagers. Impact of temporary seasonal migration on household welfare is reported in Section 5. Conclusions and implications for policy are put forward in the last section (Section 6).

2. DATA AND METHODOLOGY

2.1 Data Sources

ICRISAT had conducted household surveys in Dokur under the Village Level Studies (VLS) program for the period 1975-1984, 1989 and 2001-2008. Since 2009, same households are being resurveyed by ICRISAT under the Village Dynamics Studies in south Asia (VDSA) project. The VLS-VDS household surveys have been carried out by resident field investigators who lived in the villages to periodically revisit the same households over the years. The database consists of data collected through 10 well-structured interview modules. These interview modules pertain to family structure, cultivation practices, transactions, employment, and stock position of each respondent, giving insights into key issues such as demographic changes, socioeconomic issues, land use, cropping patterns, infrastructure investments and their maintenance, common property resources, government programs etc. (Walker and Ryan, 1990). In addition to the household and member level datasets, focus group meetings (FGM) and personal interviews with key village informants provided in-depth understanding about the relevant issues.

2.2 Concepts and Definitions

Drought: Drought refers to a situation of scarcity on account of insufficient rainfall, crop failure and a deficiency of moisture in soil. Scientists use long-term normal rainfall as a reference/ If rainfall in a particular year is less than the long-term normal then it is considered as a drought year.

Migration: It is the movement by people from one place to another with the intention of settling temporarily or permanently in the new location. In this study we have considered only seasonal and temporary migration in search of a job by one or more members of the family. .

Asset: An 'asset' in economic theory is an output good which can only be partially consumed or input as a factor of production which can only be partially used up in production. In this study we have considered all six types of assets: agricultural land; residential and agricultural buildings; livestock; stock inventory; financial savings; agricultural tools and consumer durables.

Income: For households and individuals, income is the sum of all the wages, salaries, profits, interest payments, rents and other forms of earnings received in a given period of time The total household income is computed as the sum of income earned by all family members from different sources like crop cultivation, livestock rearing, farm labor, caste occupations, salaries of jobs, business, interests from deposits, gifts and remittances.

Poverty: A conventional way to measure poverty is to establish a poverty line, defined as the threshold level of income needed to satisfy basic minimum food and non-food requirements, and determine the number of households (people) below that line as a percent of the total households (population). This Head-Count Index (HCI) is a measure of the incidence of poverty. This measure is easily understood by general public and hence is popular with policy makers and development practitioners. The limitation of the measure is that it is insensitive to changes in the level and distribution of income among the poor. Estimation of poverty line plays a very important role on the incidence of poverty.

Dynasty household: Is a sequence of households considered as members of the same family.

2.3 Analytical Procedure

Construction of Dynasty household dataset: The sample households surveyed from 1975 to 2012 in Dokur village including the split offs were considered for this analysis. Due to attrition households were replaced with new households of similar characteristics or belonging to the same land holding group. There were also some changes in the sample households and sample sizes over time. Due to this 1975 – 1979, 1983, 2005 – 2012 years were considered in this analysis since only in these years, the respondents belong to the same families or dynasties. Respondents belonging to the same family tree, either parent, children or siblings are considered as belonging to the same dynasty. The base year for this analysis is

considered as 2012 and families which were part of the survey in 2012 and also from 1975 to 2012 in the specific years either themselves or their parents were part of this analysis. If a child becomes the head of household in a particular year, his parent's characteristics like per capita land ownership, assets position, income and credit were assigned to him in years prior to his becoming the head of the household. There 46 such dynasty families in Dokur which were considered for analysis in this paper. Hence it is a balanced panel database of 46 families. All the monetary values were taken in per capita nominal US dollars.

This group contains 21 large, 12 small, 9 medium and 6 landless households from 1975 to 1983 and similar number of farmers from each of landholding groups with some variation in later survey years. Basic characteristics of the sample households are provided in Table 1.

Table 1. Basic Characteristics of the Sample households

Indicators	Periods			
	1975	1983	2005	2012
Household Size	6.17	6.39	5.72	4.83
Children (%)	0.41	0.4	0.26	0.25
Number of Households	18	18	39	46
Female-male Ratio(Child)	0.64	0.92	0.54	1.15
Female-male Ratio(Adult)	1.03	1.06	1.03	0.89
Reproductive Women	0.59	0.44	0.58	0.51
Child-woman Ratio	0.90	0.81	0.53	0.51
Dependency Ration (%)	0.3	0.9	0.39	0.47
Average Age of Head	44	50	49	48
Average Head Years of Education	1.43	1.43	2.54	2.95
Average Per Capita Own Total Area(Hectares)	0.35	0.11	0.32	0.42
Average Per Capita Farm Income(USD Current Price)	33	46	146	463
Average Per Capita Non-Farm Income(USD Current Price)	11	0	108	358
Average Per Capita Total Income(USD Current Price)	44	45	254	821
Average Per Capita Value of Non-land Assets(USD)	511	399	1527	7753

Source: Authors' calculation, based on VDSA Panel Data.

Poverty and Moving-Out of Poverty: For each survey year, sample households were grouped into poor and non-poor category using both lower ($1.25 ppp per day per person) and upper ($2.00 ppp per day per person) poverty line. Total income of all the family members from all sources is added in US $ and per capita income per day was compared with the 1$ for lower limit and 2$ for upper poverty limit to find out the number families below the limit who are regarded as poor.

Poverty levels are computed for each survey year and it is found that certain families once in poverty, were non-poor in later years for a continuous period of at least 3 years, then they were classified as moved out of poverty.

Migration: Based on their participation in migration, each year sample households were grouped into two categories: migrant and non-migrant households. If a family member left the village and lives outside the village in place of work and visits village once in a while then he is considered as temporary migrant. A household having at least one family member as migrant in any survey year is considered as migrant family. Household income was computed by sources for all the study years. Contribution of migratory income and remittances to the total household income was quantified and critical dependence on migratory income during the drought years was examined. To identify the factors responsible for migration decision, fixed effect panel data model was used. Role of temporary migration on asset accumulation and moving out of poverty is studied.

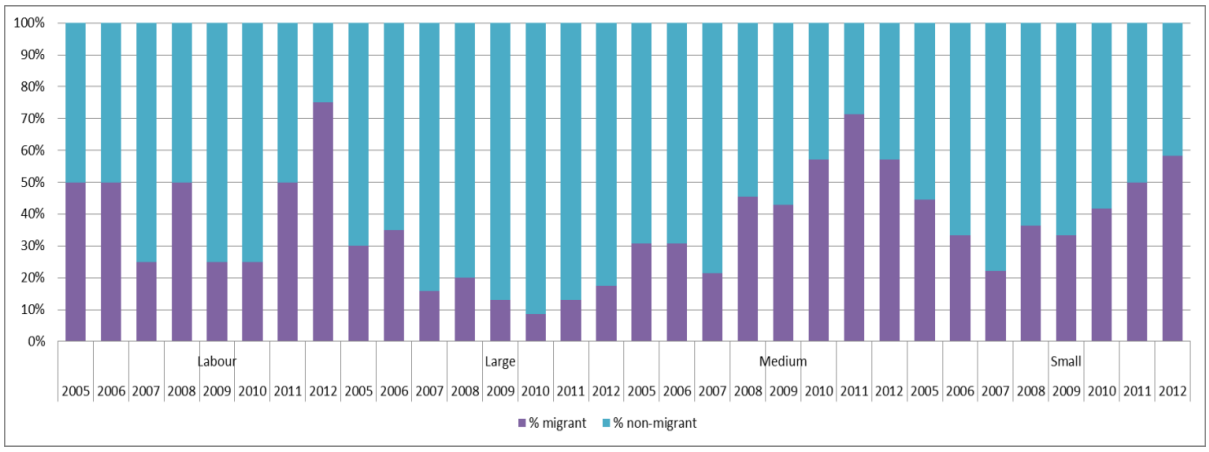
Share of number of migrants show that they constitute 11-18% of the total members of the sample (Table 2). Analysis of the migrants by land holding group reveals that small share of large farmers opt for migration whereas much higher share of farmers in other land holding groups opt for migration (Figure 1).

Table 2. Number of migrants in Dokur dynasty families

Year	Migrants	Non-migrants
2005	32 (14)	190 (86)
2006	39 (18)	178 (82)
2007	28 (13)	186 (87)
2008	35 (16)	183 (84)
2009	28 (13)	190 (87)
2010	24 (11)	187 (89)
2011	27 (13)	189 (88)
2012	36 (17)	181 (83)
Note: Numbers in parentheses are percentages		

Source: Authors' calculation, based on VDSA Panel Data.

Figure 1. Percentage share of migrants by land holding group in dynasty families



Source: Authors' calculation, based on VDSA Panel Data.

3. DROUGHT PROFILE IN DOKUR

Dokur village is located in Devarkadra Mandal of Mahbubnagar district which is about 125 kilometres south of Hyderabad, the capital of Telangana state. The village is 5 kilometers to the west of Devarkadra on an untarred road. Dokur has characteristics representative of the much wider area of the semi-arid tropics: a long hot season between February and mid-June, with temperatures regularly reaching 40°C and relative humidity between 8 and 10%. The winter season between November and January has maximum daytime temperatures ranging between the 20^{o}C to 30^{o}C. The annual average rainfall in Dokur is 760 mm. The rainfall pattern favors farmers since the heavy rains at the beginning of the rainy (kharif) season in June mean that dryland crops are planted sufficiently early to assure their reaching maturity provided the remainder of the monsoon is adequate (Nageswara Rao et al. 2009).

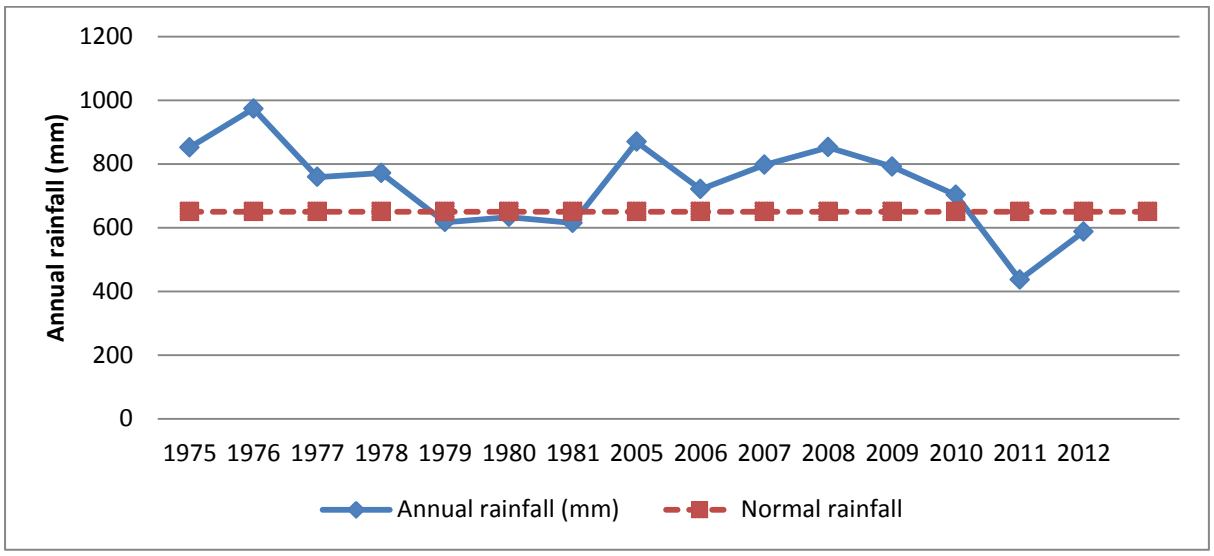
The major crops traditionally grown in Dokur are paddy, castor and groundnut, which owing to irrigation, can be grown in both seasons. Substantial amounts of sorghum are also raised, but only small quantities of pulses, mostly pigeonpea. This pattern of planting is prevalent in the tank command area. In drier areas, a pattern of less paddy and groundnuts and more sorghum predominates. The reasons for low crop productivity are recurrent drought, uneven rainfall, water scarcity, poor soils, prevalence of pest and diseases, and the poor economic condition of farmers.

Persistent droughts (3 out of every 5 years) and the resulting low crop-based incomes have led to villagers embarking on adaptive and coping strategies. A majority of households in Dokur is dependent on labor earnings although they own small patches of land. Lack of employment opportunities in the village, specifically during recurrent droughts, have led to migration to cities in the state and outside it in search of non-farm employment such as driving, mud work, construction, canal digging, as watchmen and caste occupations (washer man, carpenter and barber). Even though the village has several ongoing government-sponsored projects/programs under the district administration's direct supervision to mitigate drought and its impact and to provide alternative livelihood options, only a few families of goldsmiths (kamsali/hamsala), weavers (padmasali), blacksmiths (kammari), potters (kummari), basket-weavers (medari), carpenters (vadla), and barbers (mangali) continue living in the village. Seasonal migration is rampant, perhaps due to the non-availability of employment throughout the year (Deb et al. 2002).

Rain gauges were installed in Dokur village by ICRISAT under the VLS-VDS program and resident investigators monitor the daily rainfall recorded using these instruments since 1975. Normal rainfall for Mahbubnagar district is 650 mm as per the meteorological department standards. Whenever the total quantum of rainfall during the crop year is less than this standard of 650 mm, that year is considered as drought year. Drought occurs very frequently in Dokur Village and in Mahbubnagar District. On an average, drought occurs in 3 out of every five years. During the last century, consecutive years of drought have occurred periodically every 15-20 years in Mahbubnagar district. Annual rainfall data in Mahbubnagar town about 30 km from Dokur indicate that rainfall fell below 650 mm in consecutive years

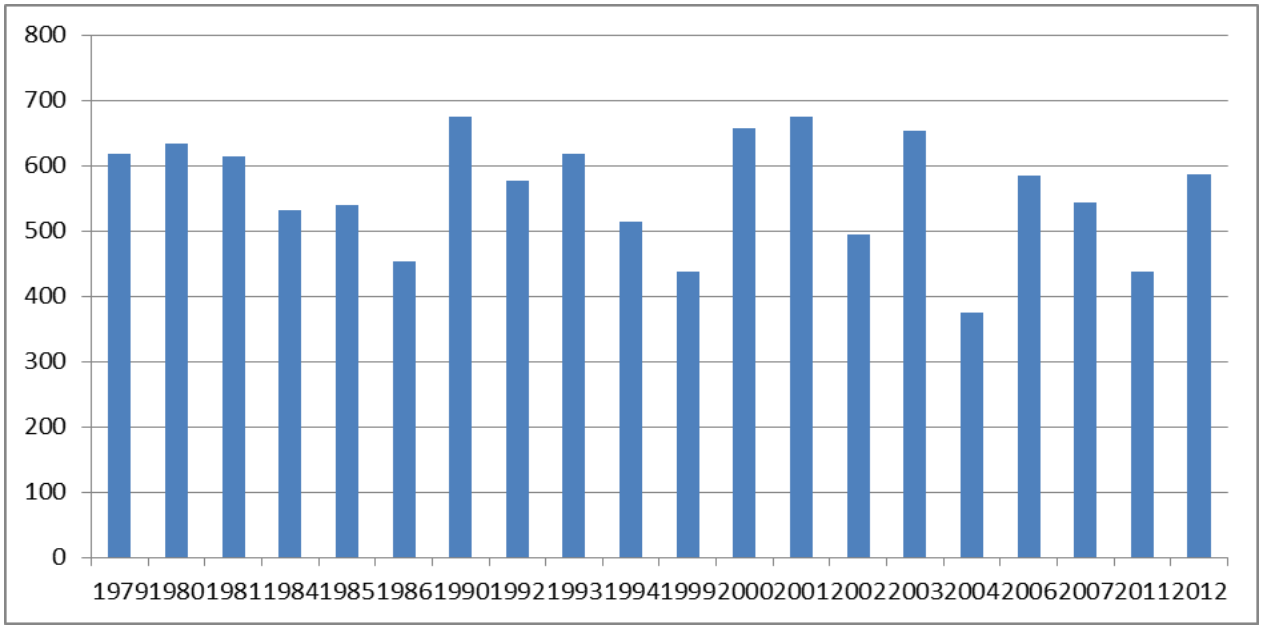
in 1920-23, 1941-42, 1971-72, 1985-86, 1991-96, 2001-2005 and 2009 (Bidinger et al. 1991). Figure 2 presents the annual rainfall (mm) in Dokur and Figure 3 provides a list of drought years in Dokur from 1975 – 2012 along with the annual rainfall in mm.

Figure 2. Total annual rainfall (mm) in Dokur during 1975-2012



Source: VDSA rainfall data collected from the Dokur Village

Figure 3. Drought years in Dokur



Source: (1) VDSA rainfall data collected from the Dokur Village for the years 1979-1981 and 2011- 2012; (2) Devarakadra mandal rainfall data for 2003- 2004 and 2006 - 2007; (3) Mahabubnagar district rainfall data for 1984-1986, 1990, 1992-1994 and 1999- 2002 from Boppana et al. 2010.

4. LABOR FORCE, EMPLOYMENT TRENDS AND MIGRATION

4.1 Labor Force

Rural labor force depends to a large extent on the demographic characteristics of the rural population. The age pyramid of the sample households for the initial year (1975) and the most recent year (2012) for male, female and overall population is reported in Table 3.

Table 3. Distribution of the population in sample households by age group (%): 1975-2012

Category	Age Group (Years)	male		Female		Total Population	
		1975	2012	1975	2012	1975	2012
Children	0-4	18.3	8.0	19.6	16.4	18.9	12.2
	5-9	13.3	8.0	7.8	3.6	10.8	5.9
	10-14	15.0	7.1	7.8	7.3	11.7	7.2
Working Age	15-19	6.7	8.0	7.8	5.5	7.2	6.8
	20-24	10.0	15.2	9.8	8.2	9.9	11.7
	25-29	6.7	8.0	5.9	10.9	6.3	9.5
	30-34	5.0	4.5	9.8	9.1	7.2	6.8
	35-39	6.7	9.8	7.8	7.3	7.2	8.6
	40-44	1.7	8.9	3.9	7.3	2.7	8.1
	45-49	3.3	5.4	13.7	2.7	8.1	4.1
	50-54	10.0	4.5	2.0	4.5	6.3	4.5
	55-59	3.3	1.8	0.0	7.3	1.8	4.5
Old Age and Retired	60-64	0.0	3.6	3.9	3.6	1.8	3.6
	65-69	0.0	3.6	0.0	4.5	0.0	4.1
	70+	0.0	3.6	0.0	1.8	0.0	2.7
All Group		100	100	100	100	100	100

Source: Authors' calculation, based on VDSA Panel Data.

Household members are grouped into three categories: Children (up to 14 years), Working Age (15-59 years) and Old Age (60 years and above). In 1975, about more than half of the total population was in the working age category which has now increased to 65%. About 25 percent of the total population was children while 10 percent was old age. More or less the distribution was same for both male and female population. In terms of distribution of

population among different age categories, there was a rising trend of working age population over the years.

One important aspect of the labor force is to know the growth in total labor force and for male and female workers. People aged between 15 and 59 years can be considered as part of the labor force. Between 1975 and 2012, labor force in Dokur village has more than doubled. Growth rate of men in the labor force was higher (142%) than that of women (103%).

4.2 Employment in economic activities

Workers are likely to migrate only if they do not have adequate employment opportunities with satisfactory earning. So, it is important to know distribution of the rural population and their involvement in various activities. To do so, we analysed information collected for all household members about their involvement in various economic and domestic activities. Following Hossain and Bayes (2009), we have defined economic activities as those that generate income for the households or saves household expenditure for the acquisition of the goods and services from the market. This includes employment in agricultural and non-agricultural labor market, and also unpaid work for the household in crop cultivation, homestead gardening, livestock and poultry raising, cottage industry, transport operation, construction, business, and personal services. There are many other activities done mostly by women that are quasi-economic in nature which are not valued in national income accounting. Examples are food processing and preparation of meals for the family members; child care, helping old and sick members of the household; and tutoring of children. If the household had hired workers for doing these jobs, it would involve some expenditure. We have termed these activities as **domestic activities**.

Dokur farmers engage in different economic activities like agriculture, farm and non-farm wage labor, migration, caste occupations, running rice and flour mills, plying autos, running private telephone booths and general shops, and selling milk.

During drought years, agriculture activities are at the minimum level. Especially agriculture labor force does not find work in the village which is the main reason for them to move out to urban areas for work. Most of the migrants perform unskilled non-farm activities like construction, road laying, mud work, stone cutting etc. Some of them are engaged in salaried jobs like service boys in hotels and sales boys in shops. Some people with driving skill hired vehicles and run them to earn their income. Some of them who had basic education and undergone some training worked as teachers. People with some amount of money to invest started petty businesses like pan shop.

Comparison of employment days per member during normal and drought year depicts a clear picture of this scenario. In a drought year, farmers try to reduce the cost of cultivation of crops grown in a small area (Table 4). Hence own farm work days increase and farm labor work days are reduced. Farmers spend more time on domestic work and family works like construction of a house etc. during drought to complete the pending works due to reduction of

agriculture works. Livestock rearing gains more prominence during drought years and farmers employ themselves in running transport vehicles etc.

Table 4. Comparison of working days during Drought and Normal Years

Activities	No.of days of employment	
	Normal Year (2010)	Drought Year (2011)
Own farmwork	60	93
Farm labor	119	72
Own Livestock	105	136
Caste occupations	165	88
Running transport vehicles	297	341
Salaried job	306	259
Business	252	227
Unskilled labour(Non-farmlabor)	135	115
Domestic work	73	121
Own miscellaneous works	33	59
Others	79	18

Source: Authors' calculation, based on VDSA Panel Data.

4.3 Migration from Dokur Village

Dokur villagers have opted for temporary or seasonal migration as well as permanent migration. Permanent migration is the complete movement out of the villages in which case they are no longer considered part of the village. About 30 servicing caste households (washermen and barbers) migrated permanently to Goa and Pune. The majority of labourers migrated to Hyderabad for mud work, construction, hamali (loading and unloading) and private monthly salaried jobs such as watchmen, telephone booth operators, drivers and waiters at hotels and lodges. Labourers received Rs 100–75 per day depending upon the type of work and their gender. Monthly salaries varied between Rs1,500 and Rs 3,000. Out-migration to Maharashtra and Gujarat increased in Dokur from around 1998 when a local labour contractor began offering advance payments of between Rs 7,000–10,000 for migrant labour contracts. Advances were useful for clearing old debts, repairing or reconstructing houses and for meeting marriage expenses. Workers were employed for 9–10 months with a monthly salary of Rs 750–800 with free accommodation and food. Monthly salaries were adjusted against advances. (Deb et al, 2002)

In this paper, our focus is mainly on temporary or seasonal migration. Seasonal migration is the movement of workers and their family members out of the villages for a short period of time as an occupational choice. Seasonal out-migration from Dokur village began in the 1970s but on a very small scale. Outmigration increased more rapidly after 1992 because of the increase in population (leading to fragmentation of land holdings), the lack of work within the village throughout the year, the higher wage rates that were offered outside the village and the evolution of a young generation that were attracted towards urban life. Around 910 people out of 2,737 (more than 30% of Dokur's population) were seasonal migrants to Hyderabad, Nizamabad, Pochampadu and Mahbubnagar within the state, and to

Gujarat and Maharashtra outside Telangana. In 2001, a full census of all households of the Dokur village was carried out which showed that 191 households in Dokur (37% of total households) received income from seasonal migration. Income from migration contributed more than 25% of the total household income. On the other hand, 12% of the households in the village depended primarily (more than 75%) on migration income (Deb et al, 2002)

Seasonal migration is practiced mostly by labor households. Extent of seasonal migration is higher in the drought years than in the normal rainfall years. During the drought years, employment opportunity in the village decreases with reduction in in are under crop cultivation, the demand for labor for other activities also decreases. Labor households have very little asset base in village, so they opt to move out for survival.

In the mid-seventies and early eighties, Dokur experienced in-migration particularly during the peak crop production season especially to meet the demand for paddy cultivation etc. The area under paddy crop decreased drastically due to the non-availability of water in tanks and wells and the failure of borewells. In the face of this decline, villagers sought alternative employment opportunities elsewhere.

Who migrates?

We wanted to know who migrates. Is there any special age group who migrates? Are there any relation with their castes and education? Do the females migrate more or the male workers? Among the 46 dynasty households, 24 to 39 workers participate in seasonal migration. Number varies depending on drought situation. During drought years, number of migrants increases by 60 percent compared to normal rainfall years. Among the migrants, men are more than women (Table 5).

Table 5. Share of migrant members by gender

Survey Year	Migrant members		Non-migrant members	
	% Female	% Male	% Female	% Male
2005	28	72	51	49
2006	36	64	49	51
2007	43	57	48	52
2008	31	69	51	49
2009	29	71	51	49
2010	21	79	51	49
2011	19	81	52	48
2012	28	72	53	47

Source: Authors' calculation, based on VDSA Panel Data.

Around 60-75% of migrants are men. Most of the migrants do not have any formal education while a few of them have primary education. Hence it is obvious that the type jobs they are doing in urban areas are unskilled non-farm works like construction works, stone cutting, mud work and cable work (Table 6).

Table 6. Types of non-farm works performed by migrants among dynasty members in Dokur

	2005	2006	2007	2008	2009	2010	2011	2012
Non-Farm work(Cable, Construction or Mud work)	23	28	24	23	16	12	11	21
Running Transport Vehicles (Auto, Cycle-Rickshaw, Taxi, etc.)		1		1	1		1	2
Service Sector(Working in a hotel, Shop, STD booth)	1	3		2				
Salaried jobs (Full or Part time employment)	7	6	5	7	9	10	13	14
Tailor				1	1			
Business					1			
Mason						1	1	
Others	2	2		1		1	1	
Grand Total	33	40	29	35	28	24	27	37

Source: Authors' calculation, based on VDSA Panel Data.

These migrants do not have any formal education (Table 7) and earning low wages (Table 8).

Table 7. Distribution (%) of migrants by education level

Education category	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Migrant members	**15**	**18**	**13**	**16**	**13**	**11**	**12**	**17**
High school (6 -10)	9	13	14	17	18	29	26	22
Higher education (> 12)	6	0	0	6	7	8	7	11
No Formal Education	48	55	62	40	54	50	41	41
Intermediate (11-12)	15	13	7	17	11	8	7	14
Primary (1-5)	21	20	17	20	11	4	19	14
Non-migrant members	**85**	**82**	**87**	**84**	**87**	**89**	**88**	**83**
High school (6 -10)	21	24	24	22	19	20	19	19
Higher education (> 12)	1	2	4	3	4	6	7	5
No Formal Education	55	49	48	51	49	49	51	50
Intermediate (11-12)	4	4	5	5	7	6	7	6
Primary (1-5)	19	20	18	18	21	20	17	19

Source: Authors' calculation, based on VDSA Panel Data.

Table 8. Average income from migration in US $ in different non-farm activities in Dokur

	2005	2006	2007	2008	2009	2010	2011	2012
Non-Farm work(Cable, Construction or Mud work)	129	140	523	322	110	280	407	700
Profession(Full or Part time employment)	290	432	534	453	477			
Business					213			
Mason						72	1810	
Running Transport Vehicles (Auto, Cycle-Rickshaw, Taxi, etc.)		690		903	232		1742	1147
Salaried Job								
Service Sector(Working in a hotel, Shop, STD booth)	110	145		340		357	882	739
Tailor				104	17			
Others	258	100		8			0	

Source: Authors' calculation, based on VDSA Panel Data.

As education has gained lot of importance and literacy levels have increased, there is gradual increase in the share of persons with technical knowledge and training in teaching etc. The salaried jobs are gaining lot importance. Our analysis also revealed that working age people irrespective of their age participate in seasonal migration. Large proportion of migrants (76-91%) is in the most productive age group of 15-40 years (Table 9). However, relatively less aged population (up to the age 57 years) are taking part in migratory works than a decade before when even the elderly population (aged 60 to 67 years). Thank to various positive developments like normal rainfall accompanied by MGNREGS work, social safety net programs such as old age pension, widow pensions, subsidized food through public distribution system and efforts from self-help groups (SHGs) for employment creation in the village.

Table 9. Distribution (%) of migrant members by age in Dokur dynasty members

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Migrant member	**15**	**18**	**13**	**16**	**13**	**11**	**12**	**17**
children (0 -4)								3
young (5 - 14)	3	3						
adults (15-40)	76	78	90	91	86	83	85	84
old workers (41-60)	18	18	7	9	14	13	15	14
retired group (> 60)	3	3	3			4		
Non-migrant member	**85**	**82**	**87**	**84**	**87**	**89**	**88**	**83**
children (0 -4)	9	7	8	8	11	9	12	14
young (5 - 14)	21	20	17	17	16	17	15	16
adults (15-40)	42	43	45	44	43	45	42	37
old workers (41-60)	19	20	21	19	21	21	21	22
retired group (> 60)	9	11	9	11	9	9	10	11

Source: Authors' calculation, based on VDSA Panel Data.

Linkage between caste and migration: Farmers from higher castes like Reddy, Vysya and Brahmins migrated to work in higher positions like teachers, lawyers and government jobs. Farmers from lower castes like backward castes, scheduled castes and tribes migrated as labourers. The capacity of different caste groups to migrate also influenced the level and nature of diversification. In 2001, 48% households in Dokur had at least one household member involved in seasonal out-migration as a source of livelihood, most of the migrant households belonged to the backward castes (BC) and scheduled castes (SC) (Table 10).

Table 10. Share of migrants from different caste groups

	1975	1976	1977	1978	1979	1983	2005	2006	2007	2008	2009	2010	2011	2012
Migrant							35	35	20	33	24	26	35	39
Bc							56	75	100	80	91	92	94	83
Fc							31	25	0	13	0	0	0	6
Sc							13	0	0	7	9	8	6	11
Non-migrant	100	100	100	100	100	100	65	65	80	67	76	74	65	61
Bc	72	72	72	72	72	72	80	70	65	68	66	65	60	64
Fc	24	24	24	24	24	24	20	23	30	29	31	32	37	36
Sc	4	4	4	4	4	4	0	7	5	3	3	3	3	0

Source: Authors' calculation, based on VDSA Panel Data.

In Dokur about 60% of the migrant households belonged to the Telaga (BC) and Madiga castes. Scheduled and backward castes were better placed to migrate for a number of reasons. First, it was socially acceptable for the women of scheduled and backward caste households to carry out various labour roles, whilst women of forward caste households were expected to occupy themselves only with household work. Even if their activities in the village were limited, scheduled and backward caste women could seek out migrant labour opportunities for themselves, or take over the agricultural and other work usually done by men in the village when men themselves migrated. Second, whilst for forward caste households, involvement in many of the labour opportunities available would represent a step down the social ladder, for scheduled (and sometimes backward) caste households, labour opportunities were often either commensurate with their current social status or represents a step up the social hierarchy. Finally, there were certain caste occupations that were particularly valued and required special skills (for example blacksmiths or teachers). These activities tended to be those of forward or backward castes and were forcefully protected by households to prevent people of other castes entering the occupation. Thus, for some forward or backward castes, there was an advantage to be had by focusing on a particular niche activity. A small number of these households (belonging to weaving, business, goldsmiths and service castes) migrated permanently to towns where they could access larger markets. (Deb et al, 2002)

Factors Affecting Decision for Seasonal Migration

Seasonal migration from the Dokur village is influenced by both push and pulls factors. Push factors include drought, lack of employment and income opportunity in the village. Pull factors include higher wages and income earning opportunities, etc. Probit anlysis was performed to understand the influencing factors of the decision of a member to migrate. A result of the probit analysis is presented in Table 11.

Table 11. Econometric analysis of migration over the years using probit analysis

Dependent variable= Participation in migration dummy, 1 if participant		
	Coefficient	Significance
Constant	-2.572	**
Labor household dummy	0.430	**
Percent irrigated area	-0.094	*
Own total area per capita	-25.300	**
Inadequate employment opportunity to serve as a wage labor	0.670	**
Drought dummy	-0.217	*
Non-land assets per capita (USD)	-0.00009	**
Male dummy	0.465	**
Working age (15-59) dummy	1.507	**
Years of education	0.036	**
Base year assets (USD)	-0.00007	
Pseudo R2 = 0.2701		
Log likelihood = -593.90327		
Number of obs = 2448		

Note: * and ** represent that coefficients are significant at 5% and 1% level respectively

Source: Authors' calculation, based on VDSA Panel Data.

Dependent variable was whether the person had migrated in a particular year or not. If yes, then the variable would have a value of 1, otherwise 0. Estimated coefficients showed that likelihood of a worker to opt for seasonal migration is higher if the person comes from a labor household, has less land or non-land assets. Likelihood to opt for migration increased if the person is male rather than a female. Education of the person contributed positively towards participation in seasonal migration. If the workers is relatively young person (age less than 55 years) then he or she is likely to migrate. Dummy for drought year was positive implying that migration is likely to be higher in the drought year than in a normal rainfall year. It is because there is lack of employment opportunity in the village during the drought year. Our results also indicated that if a household employment opportunity is inadequate to engage the workforce of the family ready to work as a wage labor then the person is likely to take part in seasonal migration.

On the other hand, persons having more land ownership are less likely to opt for seasonal migration. Similarly persons having more amounts of non-land assets were less likely to

migrate. Female workers having comparable socio-economic back ground with their male counterpart had less likelihood to opt for seasonal migration.

Reasons for migration: Our association with the village for a long-time gave us a unique opportunity to know the underlying reasons and destinations for migration. Agricultural work is seasonal and there are inadequate employment opportunities in the village throughout the year. Therefore, workers have to search for employment outside their village during off-season. Out migration for any non-farm work provides higher and relatively regular income. Caste occupations like goldsmiths, washer men, barbers etc. have no demand in the village anymore. Since it is difficult for them to move to other occupations, they are forced to out-migrate for employment. Movement of washer men to Pune, barbers to Goa and goldsmiths to Hyderabad is very common due to high demand for their work in those locations. The younger generation prefer to work in cities since they feel that their position in society will be elevated by this act. Complete liberty, absence of parental restrictions and control attracts them to move to cities.

Reduction in seasonal migration in the recent years after the introduction of MGNREGS: Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) was introduced in Dokur in 2006, it started showing impact in a few years and successful in controlling out-migration from Dokur from 2008. Participants of the scheme who are mostly small land owners and landless households benefitted through employment during the lean season and it contributed to their food security.

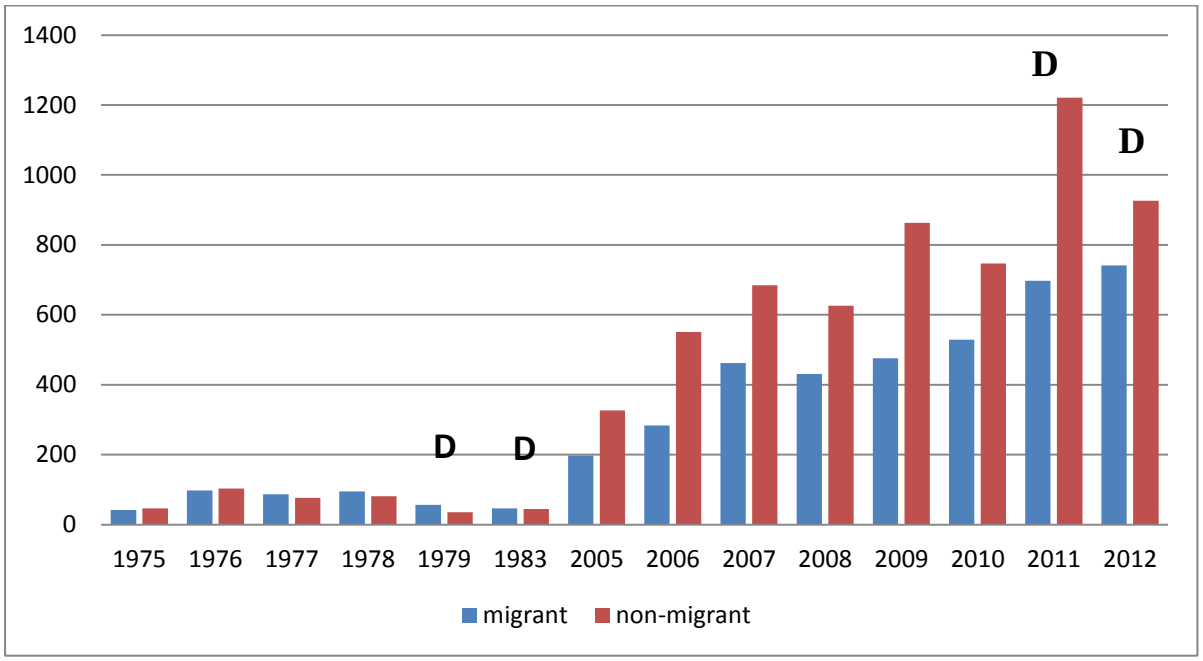
5. IMPACT OF MIGRATION ON HOUSEHOLD WELFARE

Migration has enhanced household welafare of the Dokur villagers, We have discussed impact of migration on income of the household, asset accumulation and on poverty reduction.

5.1 Income

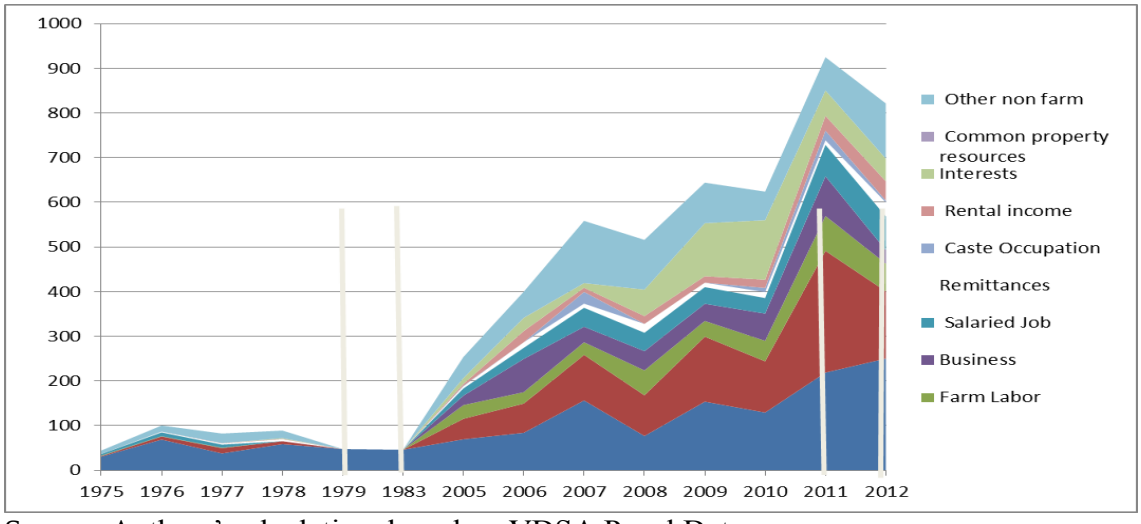
Per capita real income has gradually increased over time for both migrant and non-migrant households of Dokur village (Figure 4 and Figure 5). Income from both farm and non-farm sources have increased. Growth in per capita real income was slow in the seventies and eighties. Per capita income growth was much higher in the recent years particularly after 2005. During the last four decades, per capita income of all households increased by 11 times. It has increased from USD 75 in 1975-1977 to USD 790 in 2010-2012. During the same period, income of migrant households has increased from USD 75 to USD 655 while it has increased from USD 75 to USD 964 for non-migrant households. Within a span of only eight years (2005 and 2012) per capita income increased by three times for migrant households (from USD 198 to USD 741) and four times for non-migrant households (from USD 327 to USD 926). During the mid-seventies and eighties, income had drastically fallen in the drought years (like 1979 and 1983), but in the recent years (2011 and 2012) because of migration, implementation of employment generation schemes such as MGNREGA and non-farm work opportunities in the village, villagers do not experience such fall in income.

Figure 4. Per capita income trends in US $ Dokur dynasty households over time: 1975-2012



Source: Authors' calculation, based on VDSA Panel Data.

Figure 5. Per capita income in US $ from different sources in Dokur



Source: Authors' calculation, based on VDSA Panel Data.

Amount of returns migrants were getting ranged from 110 US $ to 300 US$ per year in 2005. Over time these returns have gradually increased and in recent years they were 7-10 times more.

Econometric analysis of panel data model by feasible generalized least squares was executed to find out the determinants of the household income. Results (Table 12) indicate that

agricultural (land, farm equipment, livestock inventory) and non-land assets have positive influence on income. Cultivation of high yielding modern varieties also increases in the income. Household characteristics such as age of household head, number of years of education influence the income in a positive way. Inadequate employment opportunity to work as a wage labourer forces the farmer to work in employment guarantee schemes and hence increases the income of the household. Higher dependency ratio reduces the income. It also shows that migrants have lesser income compared to non-migrants.

Table 12. Major factors influencing household income using panel model generalized least squares

Dependent variable= Income per capita in US $		
	Coefficient	Significance
Constant	-79.88	
Total area per capita	3226.15	**
Percent irrigated area	3.96	
Farm equipment value pc USD	0.07	
Livestock inventory value pc USD	0.19	**
Non-land assets (USD) per capita	0.04	**
Dependency ratio	-48.42	*
Head years of education	15.93	**
Age of household head	3.94	**
Borrowings pc USD	0.07	
Inadequate employment opportunity to serve as a wage labor	131.99	**
Migration dummy	-36.66	
Log likelihood = -4558.902		
Wald chi2(11) = 1171.77		

Note: * and ** represent that coefficients are significant at 5% and 1% level respectively

Source: Authors' calculation, based on VDSA Panel Data.

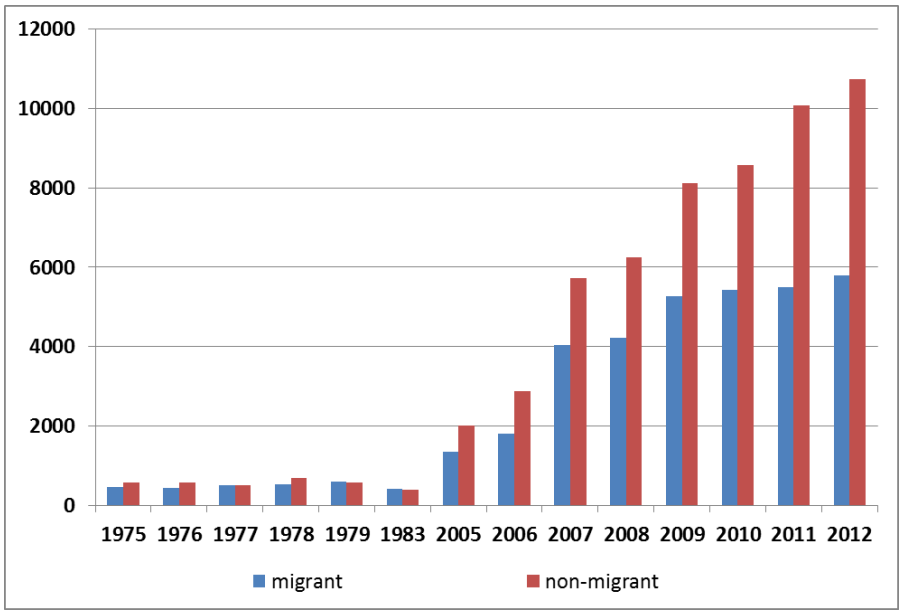
5.2 Asset accumulation

Dokur households have accumulated assets in the form of agricultural land, livestock, agricultural buildings like cattle shed, non-agricultural assets like residential houses, stocks of farm produce and farm inputs, tools and machines used in crop production and caste occupations etc., consumer durables and financial assets like savings. Figure 6 shows the trends in asset accumulation for migrant and non-migrant households. Per capita ownership of total assets for all households has increased by 14 times, from USD 513 in 1975 to USD 7946 in 2012. During this period, per capita asset ownership increased by 20 times for migrant households (from USD 468 in 1975, to 1357 in 2005, and then to 5795 in 2012) and 20 times for non-migrant households. People migrating to urban areas brought a broader range of food products, new styles of clothing and other consumer goods back to the villages when they returned from contracts. Migrant households with similar level of income were able to accumulate more consumer durables such as television, refrigerator, fan, furniture, utensils, cooking instruments than their non-migrant counterpart.

Econometric analysis of panel data model by feasible generalized least squares was carried out to examine the determinants of non-land asset accumulation. The results (Table 13)

indicate that adoption of modern or high yielding varieties, area under irrigation increase the asset accumulation. Older people and persons with higher education are expected to have more accumulation of assets. Inadequate employment opportunity to serve as a wage labourer implying working in government organized rural employment guarantee schemes increase the assets. It also shows that migrants have lesser assets compared to non-migrants. Higher dependency ratio reduces the assets.

Figure 6 . Per capita asset accumulation (US $) in Dokur by migrants and non-migrants



Source: Authors' calculation, based on VDSA Panel Data.

Table 13. Factors influencing asset accumulation using panel generalized least squares

Dependent variable= non-land asset accumulation		
	Coefficient	Significance
Constant	569.00	
Migrated family dummy (1= at least one family member is a migrant)	-1091.91	*
Inadequate employment opportunity to serve as a wage labor	1242.09	*
Dependency ratio	-980.24	*
MV adoption rate	38.18	**
Percent irrigated area	90.89	
Age of hh head	22.30	
Years of education of hh head	140.08	*
Log likelihood = -6457.037		
Wald chi2(7) = 101.93		

Note: * and ** represent that coefficients are significant at 5% and 1% level respectively

Source: Authors' calculation, based on VDSA Panel Data.

5.3 Poverty Situation

We were interested to know whether seasonal migration has played any role in poverty reduction among the Dokur villagers and particularly to the migrant households. We have studied poverty situation among the sample households in Dokur using both Lower Poverty Line ($1.25 ppp per day per person) and Upper Poverty Line ($2.00 ppp per day per person). For each year, sample households were grouped into poor and non-poor category using both lower and upper poverty line. Our analysis revealed that poverty was rampant among all types of households in the seventies and eighties (Table 14). Poverty was declining but at a very low rate. Poverty reduction was rapid since 2005 for both migrant and non-migrant households. In 2011 and 2012, none of the households were poor. However, some households are experiencing up and down situation across years. They are transient poor (Table 15).

Table 14. Trends in poverty among migrant and non-migrant families of Dokur

	Migrant			Non-migrant		
	No of hhs	No of poor households	%poor	No of hhs	No of poor households	%poor
1975	26	26	100	20	20	100
1976	26	26	100	20	19	95
1977	26	24	92	20	20	100
1978	26	23	88	20	18	90
1979	26	26	100	20	20	100
1983	26	24	92	20	20	100
2005	26	14	54	20	9	45
2006	26	6	23	20	1	5
2007	26	2	8	20	0	0
2008	26	2	8	20	1	5
2009	26	2	8	20	1	5
2010	26	1	4	20	0	0
2011	26	0	0	20	0	0
2012	26	0	0	20	0	0

Source: Authors' calculation, based on VDSA Panel Data.

Table 15. Number of migrants vs. poverty

	Migrant	Non-migrant	Total
Moved out of poverty	19	22	40
Transient poverty	3	2	5
Total	22	24	46

Source: Authors' calculation, based on VDSA Panel Data.

Multiple factors have contributed for moving out of poverty. These are: (i) Intensification of agriculture through adoption of modern varieties (MVs), changes in cropping pattern; (ii) Diversification of agriculture (cultivation of high value crops, non-crop farming activities, integration of crop-livestock) and engagement in non-farm activities; (iii) Migration (seasonal and temporary) and commuting to nearby and faraway places for increased employment and earning; (iv) Ownership of irrigated or dry land(v) Social safety net programs such as employment guarantee schemes (MGNREGA) and subsidized food distribution under PDS contributed positively.

Econometric analysis using random effects probit model (Table 16) revealed that higher owned area either dry or irrigated, ownership of farm equipment, livestock reduces the probability of being poor. More years of experience in farming, higher education also reduces the probability of being poor. Participation in social safety net programs like MGNREGA programs and migration reduces the poverty. Higher dependency ratio increases the probability of household being poor.

Table 16. Determinants of poverty situation by panel probit model

Dependent variable: poverty situation, poor=1, 0=non-poor		
	Coefficient	Significance
Constant	2.538	**
Total own area per capita	-18.711	*
Percent irrigated area	-0.106	
Farm equipment value pc USD	-0.006	**
Livestock inventory value pc USD	-0.003	**
Dependency ratio	0.074	
Years of education of head	-0.219	**
Age of household head	-0.011	
Inadequate employment opportunity to serve as a wage labourer	-2.269	**
Migration dummy (1=migrant)	-0.507	
Log likelihood = -249.26016		
Wald chi2(10) = 149.58		

Note: * and ** represent that coefficients are significant at 5% and 1% level respectively.

Source: Authors' calculation, based on VDSA Panel Data.

5.4 Health Condition and Child Welfare: The main nuisance of migration in Dokur is the AIDS. In most of the cases farmers went to urban areas for work leaving the family behind. They were sharing common accommodation with fellow workers in project sites wherever they were working. This had led to illegal relations and culminated in AIDS. This is highly prevalent and a major disaster of especially migrants from Dokur to tourist places like Goa, Mumbai and some places in Gujarat. Some of the farmers also faced some health issues due to change in weather and water. Gandhi et al., (2008) gave a comparison of the general and sexual health status of migrants and non-migrants. Compared to non-migrant villagers, the

health of the migrants was relatively poor, with 36 % of the respondents complaining of ill-health and of considerable difficulties in handling daily tasks, especially at the migration sites. 29 % of the migrants suffered from sexually-related illnesses (gonorrhoea and syphilis being the common illnesses in Dokur). Migrants proved to be at a higher risk with respect to general as well as sexual health. Farmer couple migrating for work leaving the children and elder family members behind was a common feature in Dokur. In such situations the children lack care and attention and resulting in strained relations and children inculcating bad habits etc. The societal bondage and relations with friends and relatives also get affected negatively.

6. CONCLUSIONS

Dokur villagers have experienced frequent droughts. Drought has affected their livelihoods. To cope with the situation they had migrated to many different places on a temporary basis. Our results have shown that economically down trodden households generally opted for migration. Income of both migrant and non-migrant households has increased over time. Poverty has declined. In the most recent years (2011 and 2012) none of the sample households were poor. Seasonal migration helped the Dokur villagers to move out of poverty and contributed positively towards asset accumulation.

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