DIRECT AND INDIRECT IMPACT OF NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME ON VILLAGE ECONOMY: A CASE STUDY OF DOKUR VILLAGE IN MAHABUBNAGA, TELANGANA STATE

A Thesis submitted to the University of Hyderabad in partial fulfillment of the requirements for the award of the degree of

DOCTOR OF PHILOSOPHY

IN

ECONOMICS

BY

RAVIKUMAR GOGULAMUDI

Under the supervision of

Prof. S.SANDHYA

SCHOOL OF ECONOMICS
UNIVERSITY OF HYDERABAD
HYDERABAD – 500 046
SEPTEMBER - 2015

UNIVERSITY OF HYDERABAD
SCHOOL OF ECONOMICS
Hyderabad – 500 046.
Phone: 040-23133100, Fax. + 914023012050

CERTIFICATE

Hyderabad

Date:

This is to certify that the thesis entitled "**DIRECT AND INDIRECT IMPACT OF NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME ON VILLAGE ECONOMY: A CASE STUDY OF DOKUR VILLAGE IN MAHABUBNAGAR, TELANGANA STATE**" submitted for the award of the Degree of Doctor of Philosophy in Economics is an original work carried out by him at the School of Economics, University of Hyderabad, Hyderabad, **Ravikumar Gogulamudi** under my supervision. The thesis or any part thereof has not been previously submitted for any other degree or diploma or similar title.

Supervisor
Prof. S. Sandhya

Dean,
School of Economics

DECLARATION

I hereby declare that the present thesis entitled **"DIRECT AND INDIRECT IMPACT OF NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME ON VILLAGE ECONOMY: A CASE STUDY OF DOKUR VILLAGE IN MAHABUBNAGAR, TELANGANA STATE"**, for the Award of the degree of Doctor of Philosophy in School of Economics is an original research work done by me under the supervision of **Professor. S. Sandhya**, School of Economics, University of Hyderabad is a bonafied research work which is also free from plagiarism. The thesis has not been submitted to any other University or Institution for the award of any degree. I hereby agree that my thesis can be deposited in shodhganga/INFLIBNET.

Place: Hyderabad
Date :

Ravi Kumar G
Research Scholar
School of Economics
University of Hyderabad

Acknowledgement

First and above all, I praise God, the almighty for providing me this opportunity and granting me the Capability to proceed successfully.

I take this wonderful opportunity to express my deep sense of gratitude for all those who have helped me in bringing out this thesis successfully.

First, I would like to express my sincere gratitude to my supervisor ***Prof. S.Sandhya*** for accepting me as a Ph.D. student. I would like to thank for her continuous support of my thesis and related research, for her patience, motivation and immense knowledge. I could not have imagined having a better advisor and mentor for my Ph. D study.

I am thankful my Doctoral committee members ***Prof.G.Omkarnath*** and ***Dr. K. Lakxminarayana,*** for their excellent advices for my research work.

I would like to thank International Crop Research Institute for the Semi –Arid Tropics (ICRISAT), Hyderabad for giving me research assistantship for one year.

Special thanks to Dr. M.C.S.Bantilon, Research Programme Director MIP, ICRISAT, Hyderabad for providing financial assistance, and ***Dr. Madhusudhan Bhattarai,*** Principal Scientist (Economics) MIP, ICRISAT, Hyderabad for useful guidance during collection of data and analysis.

I am thankful to ***Prof. Bandi Kamaiah***, Dean, School of Economics and other faculty members in the department who have been always considerate and helpful in all matters.

I am very much thankful to all the members of office staff (School of Economics), especially Venkatesh, Dasu garu and Mahesh (Project Office Assistant) and also IGM Library and staff of University of Hyderabad.

My time at University of Hyderabad was made enjoyable in large part due to the many friends that became a part of my life. I am thankful to my co-roommates for taking care of me, especially **Vijaya Babu, Venkateswarulu, Venkatappa Naik, Kiran anna, Chandu anna, Stevenraj anna, Jagadeesh anna, Suneel anna, Trinath anna, Suresh anna, Anu Radha and Fr. Thomas**

I would also like to thank my younger brother **Vijay kumar Gogulamudi** for his warm love extends to me and **Ravi, Bhanu, Siri, Bhagyalakshmi and B. Lazar** for their support and great care about me.

I am grateful to my parents and it is my responsibility to convey my heartfelt gratitude to my parents without whose immense sacrifices, I would not have been able to come so far in my academic career: **Gogulamudi Jaya Raju and Marthamma.**

It is my mistake if I fail to mention a gratifying name of my Brother-in-law and friend **Zameer Hussain Muhamud**, who has always rendered a thankless assistance and intimate affection shown towards me in difficult part of my life.

Last but not least, I must thank my better half and best friend **Surekha Gogulamudi**, she was always there cheering me up and stood by me through the good times and bad.

Ravi Kumar Gogulamudi.

CONTENTS

CHAPTER – 3

NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME AT GLANCE **41-55**

CHAPTER – 4

PROFILE OF MAHABUBNAGAR DISTRICT AND THE SELECTED STUDY VILLAGE **56 – 75**

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

ACRONYMS

EGS	=	Employment Guarantee Scheme.
GOI	=	Government of India.
NGO's	=	Non – Governmental Organisations
CSS	=	Centrally Sponsored Scheme.
MORD	=	Ministry of Rural Development.
RWP	=	Rural Works Programme.
CSRE	=	Cash Scheme for Rural Employment.
FWP	=	Food for Work Programme
NREP	=	National Rural Employment Programme.
RLEGP	=	Rural Landless Employment Guarantee Programme.
EAS	=	Employment Assurance Scheme.
JRY	=	Jowahar Rozgar Yojana.
SGSY	=	Swarna jayanthi Gram Swarozgar Yojana.
TRYSEM	=	Training Rural Youth for Self-Employment.
IRDP	=	Integrated Rural Development Programme.
SEEUY	=	Self-employment to the Educated Unemployed Youth
SEPUP	=	Self-Employment programme for Urban Poor
NRY	=	Nehru Rozgar Yojana
SJSRY	=	Swarnajayanti Shahari Rozgar Yojana
JPNRGY	=	Jai Prakash Narayan Rojgar Guarantee Yojana
MGNREGA	=	Mahatma Gandhi National Rural Employment Guarantee Act
PMEGP	=	Prime Minister's Employment Generation Programme

UPA	=	United Progressive Alliance.
NAC	=	National Advisory Council.
PRI	=	Panchayat Raj Institutions.
VLS	=	Village Level Studies.
ICRISAT	=	International Crop Research Institute for Sem-Arid Tropics.
GMS	=	Genetically Modified Seeds.
PDS	=	Public Distribution System.
SAM	=	Social Accounting Matrix.
SHGs	=	Self Help Groups.
VDSA	=	Village Dynamic South Asia.
SCs	=	Scheduled Castes
STs	=	Scheduled Tribes.
OBCs	=	Other Backward Castes.
NSSO	=	National Sample Survey Organisation.
APGVB	=	Andhra Pradesh Grameena Vikas Bank.
PACS	=	Primary Agricultural Credit Society.
NFSM	=	National Food Security Mission
IAY	=	Indira Awas Yojan
AAY	=	Antyodaya Anna Yojana
UNDP	=	United Nations Development Programme.
GVA	=	Gross Value Added.
MIS	=	Minor Irrigation Projects

WITH DEDICATION

To My Beloved Brother

Late SRI "Kiran Kumar Gogulamudi"

CHAPTER - I

CHAPTER – 1

1.1. INTRODUCTION

After Independence in 1947, India achieved development in several fronts by adopting five year plan. The economic growth rate was 6.6 percent during 1990-2010, and rose to 7.5 percent during 2010-2014. However, the poor sections are not able to enjoy the growth and the fruits of the Indian economy. "The impressive economic growth of our country has brought smiles on the faces of the rich and the powerful even as the rest suffer in distress and drudgery" (Montek Singh Ahuluwalia, Deputy Chairman of Planning Commission). The two major problems India had faced are poverty and unemployment. The persons below the poverty line in India have been reduced from 45.7 percent in 1983-84 to 37.7 percent in 1993-94, 26.1 percent in 1999-2000, 28.3 percent in 2004-05 and 22 percent in 2011-12. (The official estimate of poverty was measured by the Planning Commission, 2011). Whereas the unemployment rate in India is around 2 percent (NSSO 68th round) during 2011-12.

To overcome the problems mentioned above the Government of India adopted Inclusive growth approach in Eleventh Five Year Plan in 2007. Inclusive growth allows people to contribute to and benefit from economic growth. The Inclusive growth makes efforts more effectively by explicitly creating productive employment opportunities for the poor and vulnerable sections of the society. The main instrument for sustainable and Inclusive growth is productive employment. Employment growth provides new jobs and income for people from wages or self-employment groups. As a part of Inclusive growth, the poor people are included in various programmes launched by the government. Theoretically, the employment programme is one of the ways to involve the poor in the growth process. Employment is an indivisible component of economic development and ensures that both in concept and implementation, employment and development become catalysts of each other. Development economists viewed unemployed labour as a potential source of savings which can be realised by shifting the labour from the traditional sector to the modern sector by generating wage employment.

The origin of Employment Guarantee Scheme (EGS) can be traced back to the 1817 Poor Employment Act, and the 1834 Poor Law Amendment Act in Great Britain

(Blaug, 1963, 1964) and the New Deals programmes of the 1930s in the United States (Bernstein, 1970). Large scale poverty reduction remains the primary objective of more contemporary programmes in the developing countries of Latin America, Africa (Botswana 1960) and Asia (India 1978 Bangladesh 1983).

There are a number of programmes introduced by the Government of India to eradicate poverty through providing employment to the people. People in rural areas face seasonal unemployment and underemployment. In the past, however, special programmes for solving the problem of unemployment and under-employment have often tended to be formulated and implemented. Since 1950 several programmes have been initiated by the Government of India and NGOs to reduce poverty, including increased access to loans, improving agricultural techniques, price supporting policies, providing subsidy on food products and promoting education and family planning etc., There are numerous Centrally-Sponsored Schemes (CSS) designed by the centre, administered by the Ministry of Rural Development (MORD), but implemented by states, with the states generally contributing 25 percent to the cost of the schemes.

1.2. EARLIER EMPLOYMENT SCHEMES

Employment generation has been the major aim of all the rural development schemes reflecting upon the concerns of Nehru "if we are to eradicate poverty, we must first do away with this wide spread of unemployment". Employment programme in India have a long history and are also recognised as major instruments of poverty alleviation in the rural areas. The Government of India has introduced a number of wage employment programmes that aimed to eliminate poverty through providing employment to the people. Wage employment programmes in Independent India started with the Rural Works Programme (RWP), which was introduced in 1961 in selected districts in the country to generate employment for the poor in the lean season. A series of wage employment programmes have followed this programme each trying to improve upon the earlier programme. The major programmes have been the Cash Scheme for Rural Employment (CSRE) and Food for Work Programme (FFWP) in 1970s; followed by the first all India wage employment programme National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) in 1980, Employment Assurance Scheme (EAS), Jawahar Rozgar Yojana (JRY), Swarna Jayanthi Gram Swarozgar Yojana (SGSY) in 1990s. The two major objectives of these

programmes have been the generation of employment for the poor and creation of durable assets, the first objective receiving priority over the second. It is documented that most of the programme could not achieve the objectives fully for various reasons. Table 1 on page 4 briefly provides the list of employment generation programmes and their objectives.

There are a large number of theoretical as well as empirical studies available which examined the impact of employment programmes on poverty (Mahendra Dev, 2001). The employment programme also fits into the thoughts of Nurkse (1957) "who regards surplus labour in low income countries as a potential saving useful for capital formation" (S. Mahendra Dev and Ranade 2001).

In spite of the experience of public works and work fare[1], academicians and policy makers continue to debate on their effect on the poor and society. Sharma (2003) in his article "Rural Development and Self-employment in Punjab" has very aptly concluded that employment is a vital indicator of rural development, particularly in highly populated countries like India. Berg et al (2012) quoting Ravallion's work (1991) viewed that "public works have three potential effects on welfare: a direct effect on workers employed in the public works, effect on shift in labour demand in labour market, and on the increase in productivity".

Public work programmes provide government with an additional mechanism to influence wage rates in the rural unskilled labour market. Since the link between agricultural wages and poverty rates are well established, if public works can influence agricultural wages, then they constitute an attractive policy instrument to reduce poverty.

[1]The concept workfare was launched in the U.S in the late 1960's with the same underlying idea of tying Social benefits to work requirements.

Table 1.1: List of Employment Generation Programmes in India

S.No.	Name of the Programme	Year	Objective/Description
1	Employment Guarantee Scheme of Maharashtra	1972	To assist the economically weaker sections of the rural society.
2	Cash Scheme for Rural Employment (CSRE)	1972	For alleviating the unemployment in rural areas by generating employment.
3	Training Rural Youth for Self-Employment (TRYSEM)	1979	Programme for Training rural youth for self-employment.
4	Integrated Rural Development Programme (IRDP)	1980	All-round development of the rural poor through a programme of asset endowment for self-employment.
5	National Rural Employment Programme (NREP)	1980	To provide profitable employment opportunities for the rural poor.
6	Rural Landless Employment Guarantee Programme (RLEGP)	1983	From providing employment to landless farmers and labourers.
7	Self-employment to the Educated Unemployed Youth (SEEUY)	1983	To provide financial and technical assistance for self-employment.
8	Self-Employment programme for Urban Poor (SEPUP)	1986	To provide self-employment to urban poor through provision of subsidy and bank credit.
9	Jawahar Rozgar Yojana (JRY)	1989	For providing employment to rural unemployed.
10	Nehru Rozgar Yojana (NRY)	1989	For providing employment to urban unemployed.
11	Scheme of Urban Wage Employment (SUWE)	1990	To provide wages employment after arranging the basic facilities for poor people in the urban areas where population is less than one lakh.
12	Employment Assurance Scheme (EAS)	1993	To provide gainful employment during lean agricultural season in manual work to all able bodied adults in rural areas.
13	Swarnajayanti Shahari Rozgar Yojana (SJSRY)	1997	To provide gainful employment to urban unemployed and under employed poor through self-employment or wage employment.
14	Swarna Jayanti Gram Swarozgar Yojana (SYGSY)	1999	For eliminating rural poverty and unemployment and promoting self-employment.
15	Sampoorna Grameen Rozgar Yojana (SGRY)	2001	To provide wage employment and food security in rural areas and also to create durable economic and social assets.
16	Jai Prakash Narayan Rojgar Guarantee Yojana (JPNRGY)	2002-03	Employment guarantee in most poor districts.
17	National Food for Work Programme (NFWP)	2004	To give food through wage employment in the drought affected areas in eight states. Wages are paid by the state government partly in cash and partly in food grains.
18	Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	2005	To create a right based framework for wage employment programmes and makes the government legally bound to provide employment to those who seek it.
19	Prime Minister's Employment Generation Programme (PMEGP)	2008	To generate employment opportunities in rural as well as urban areas through setting up of new self-employment ventures/projects/micro enterprises.

The main goal of the public works programmes, beginning with Community Development programmes in the early 1950's is to establish a network of extension and development services in the village, thereby creating awareness in the rural communities of the potential and means of development. After 1970s employment programmes were launched to provide opportunities of work for the rural poor, particularly in slack employment periods of the year, which would also, at the same time, create durable community assets. Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA), the latest of the employment programmes, is the world's largest employment guarantee scheme. It is one of the flagship programmes of the UPA government that directly touches lives of the poor and promotes inclusive growth. Some researchers found that multiple wage employment programmes running in parallel, and not having public accountability are the reasons for the failure of the programmes in India.

1.3. BACKGROUND OF THE ORIGIN OF MGNREGS PROGRAMME

In 2004, the National Advisory Council (NAC) made an in-depth study on the job guarantee schemes launched by the previous governments and submitted the findings to the United Progressive Alliance (UPA) government. The study revealed that the policies had serious inadequacies in rural areas. There was lack of awareness among the local communities about existence of the government programmes, of planning, of payments, of funds, of contract system etc. The National Advisory Council was then entrusted with the project to transform rural lives in India through social intervention by initiating a new programme called National Rural Employment Guarantee Scheme (NREGS). It is the one of the most progressive legislations enacted since independence. The "NREG Act was notified on 7th September, 2005 the mandate of the Act is to provide 100 days of guaranteed wage employment in the financial year to every rural household whose adult members volunteer to do unskilled manual work" (Ministry of Rural Development). The scheme comes into force on 02 February, 2006 and it was implemented in a phased manner. It was notified in 200 most backward districts in its first phase for implementation. In the Financial Year 2007-08 it was extended to cover another 130 districts in phase two. The remaining districts were notified under NREGS with effect from 1st April, 2008. Since 2008, NREGS has covered the entire country with the exception of the districts that have a hundred percent urban

population. It has been renamed as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

NREGS marks a paradigm shift from the previous wage programmes with its rights-based on the framework and demand driven approach. The Act has become a significant instrument for strengthening grass root level community participation and decentralised governance system by giving an important role to Pachayat Raj Institutions (PRI) in planning, monitoring and implementation.

Some of the NREGS's unique aspects are outlined below:

- It is a demand-driven programme where provision of work is triggered by the demand for work by wage-seekers.
- It provides a legal guarantee of wage employment.
- NREGS programme design is bottom-up, people-centered and self-selecting.

Earlier wage-employment programmes were allocation-based. NREGS is not supply driven but demand driven. Resource transfer under NREGS is based on the demand for employment. It has legal provisions for allowances and compensation in case of failure to provide work on demand and delays in payment of work undertaken.

The NREGS is a national law funded largely by the central government; under this act rural households have a legal right to get not less than 100 days of unskilled manual labour on public works in each financial year. The NREGS is an act and can be amended only by Parliament. The act directs state governments to implement NREG Scheme.

Social audit, a new feature of NREGS, creates unprecedented accountability of performance, especially towards the immediate stakeholders. The outcomes of NREGS report is presented annually by the government of India to the Indian Parliament and State governments to the state Legislature.

1.4. THE OBJECTIVES OF THE NREG Act ARE:

- Ensuring social protection for the most vulnerable people living in rural India through providing employment opportunities;
- Ensuring livelihood security for the poor through the creation of durable assets, improved water security, soil conservation and higher land productivity;
- Aiding in the empowerment of the marginalised communities, especially women, Scheduled Castes (SC) and Scheduled Tribes (ST), through the processes of a rights-based legislation;
- Deepening democracy at the grass-roots by fortifying the Panchayati Raj Institutions and
- Effecting greater transparency and accountability in governance.

The main objectives of the NREGS are providing a safety net for poor rural households through the provision of wages while transforming the rural livelihoods through the creation of productivity enhancing infrastructure (Holmes et al 2010).

In India NREGS provided employment of 2.1 crore to households in 2006-07 and it increased to 5.5 crore in 2010-11. The person days created under the scheme was 90.5 crore days in 2006-07 and 209.3 crore in 2011-12, it shows that a significant increase. The budget outlay for the scheme was increased from Rs.11, 300 crore in 2006-07 to Rs.40, 000 crore in 2011-12 and Rs.33, 000 crores in 2012-13 and it created 163.38 crore person days of work. In all, about Rs.20,15,500 crore has been spent on NRGES till 2012-13, and about 103.11 lakh works have been completed and more than 190 lakh works are under construction.

Under the NREGS the Central government meets 100 per cent cost towards the payment of wage, three fourths of material cost and some percentage of administrative cost. State governments bear one fourth of material cost and administrative cost and also State governments have to bear the cost of unemployment allowance, if work is not provided on time. Since the state governments pay the unemployment allowance, they are heavily incentivised to offer employment to workers. However, it is up to the state government to decide the amount of unemployment allowance, subject to the stipulation that it will not be less than one fourth of the minimum wage for the first thirty days and not less than half of the

minimum wage thereafter. Another area of concern under the scheme has been making payments through banks since September 2008. This is a relatively recent administrative innovation for ending corruption in the scheme. The main objective of wage payments through bank include the perception that payment through banks will increase the possibility of saving and a reduction in the possibility of being cheated by those who distribute wages in the village. The switch from cash to bank payments of wages under the NREGS has been acclaimed by the government of India as the world's largest ever financial inclusion scheme.

1.5. REVIEW OF LITERATURE

Several studies have examined the impact of NREGS both at the macro, as well as micro level over a period of time, and some of them are theoretical and some are empirical. For this thesis, review of studies is done in two sections. Section one presents the review of studies on impact of NREGS on various issues of economy at macro level.

1.5.1 Studies on Impact of NREGS at macro level:

Raghav Gaiha (1997) examined the impact of the employment guarantee programme on agricultural wages, which is an indirect transfer benefit of the employment guarantee scheme. This study is based on the primary data collected as part of village-level-studies (VLS) by the International Crop Research Institute for Semi-Arid tropics (ICRISAT) at regular intervals from 240 households in six sample villages in Maharashtra and Andhra Pradesh during the period 1975 to 1984. The results show that the share of employment guarantee scheme participants in the labour force fell from 17.7 percent in 1979 to 9.4 percent in 1989. There was a significant change in the composition of participants. The short-term effect of employment guarantee scheme on agricultural wage is small, and the long term effect is relatively large. Whereas short-term effect of non-farm wage rises on agriculture wage is high and the long term effect is small. Some changes occur with the inclusion of the data in 1989, the results show that the coefficient of lagged agricultural wages ceases to be significant. Besides, the short and long term effects of both the Employment Guarantee Scheme and non-farm activities on agricultural wages are larger. Employment Guarantee Scheme influenced agricultural wages through i) gains in agricultural productivity through assets created under the Employment Guarantee Scheme leading to a shift in the demand for

agricultural labour; and ii) a higher reservation wage as a consequence of a "guaranteed" employment option in slack periods.

A study conducted in the coastal areas of Andhra Pradesh, **Johnson (2009)** used secondary data provided by the Andhra Pradesh government to estimate the responsiveness of programme participation to changes in rainfall. In order to control for other potential direct impacts of rainfall on participation, the author analysed the impact of rainfall in each agricultural season on NREGA participation in the following nonagricultural (lean) season, the assumption being that NREGA participation in the lean season would increase after a particularly bad agricultural season. Regression estimates of the impact of rainfall (as measured by different weather indicators) on wages per working age adult has done. The findings support the conclusion from other studies that non-normative rainfall during the agricultural season leads to higher overall participation in NREGA programmes during the following lean season and vice versa; good weather leads to lower participation levels. This study too confirmed the impact of MGNREGS as a risk mitigating mechanism for households.

K.Kareemulla, et al, (2009) have examined the impact of the scheme on rural livelihoods and the nature of soil and water conservation works in six villages of Anantapur district in Andhra Pradesh. They found that the major impact of NREGS was the reduction of migration level in the sample villages from about 55 percent to 13 percent. The earnings from NREGS wages accounted for 32 percent of household income. The earnings were used for buying food followed by education of the dependents and health care. The implementation of NREGS had affected the labour supply and wages for agricultural operations. The increase in wages was to the tune of 38 percent during the slack season.

K.N.Nair, et al, (2009) made an attempt to assess the impact of NREGS on employment generation and wages of workers, assets and facilities created and its potential benefits to the larger society. This study is based on both secondary and primary data. Three Panchayats were selected from the Kasara God district in Kerala. They found that there was an increase in consumption expenditure on food and a marginal improvement in savings. They also

observed that due to NREGS, women have also started shouldering household expenses and responsibilities.

Mathew P.M. and Bipasha K (2011) made an attempt to study the performance of the NREGS in India and its impact on poverty. This study is based on the secondary data, for the years 2004-09. It was found that number of people living below the poverty line has increased from 270 million to 325 million, in just five years. They found that the NREGS has given rise to a new work culture; and it has suddenly increased the purchasing power of the poor. It was successful in providing the rural poor a measure of dignity, tangible economic benefit and a motivation for participation in local action. It provided opportunity to break the feudally enforced silence of its victims. NREGS has given people a right and entitlement to create labour intensive infrastructure and assets and to build the human resource base in the country.

Prakash Srivastava (2011) made an attempt to study the impact of NREGS on rural development in India. He found that NREGS created purchasing power among workers. The generated extra income created further demand, which again leads to increase in production, employment and demand and so on in a spiral way. This demand stimulating procedure is called the multipliers.

Singh B.N, et al, (2011) examined the role of NREGS on poverty alleviation, natural resources development and strengthening gross root level democracy. The NREGS works are intended to create permanent assets in the rural area for future needs. The study found that under NREGS, employment opportunities have been increased. After implementation of the Act the minimum wage has been increased and that led to strengthen the livelihood resource base of the rural poor in India. They found that the programme gave chance to promote equity, financial inclusion and also a reduction in distress migration. They concluded that NREGS plays a vital role in fighting against unemployment and eradicating poverty and it can also help to change the face of the rural areas.

Y. Liu and K. Deininger (2011) have examined the targeting of NREGS and the impact of NREGS on some major welfare indicators of its direct beneficiaries. This study was based on the primary data collected from 2500 households in Andhra Pradesh in 2004 before NREGS

had been conceived, in 2006 when implementation had just started, and in 2008 when NREGS operated in the entire state. It examined the direct impact of EGS on participants through three channels, first, direct transfers of Employment Guarantee Scheme financial resources to the participating households which increase income, leading to increase in total consumption and nutritional intake. Second, the increased income encourages poorer households to save and invest, which could eventually help the poor to be involved in diverse productive activities. Third, most of EGS works take the form of irrigation and development and the work sites are often in the participants own fields. The results of the triple difference and propensity score matching point are significant and positive on consumption expenditure, intake of energy and protein and asset accumulation. They concluded that the short term effects of NREGS on participating households were positive and greater than programme cost.

Mukherjee D and Uday Bhanu (2011) studied the impact of NREGS on rural labour market, income of the poor households and overall agricultural production at India level. They found that since, NREGS wage is higher than the prevailing market wage the poor households prefer to work for the scheme. NREGS helps to improve the opportunities and market access to the poor households. The market supply of labour is only related to how the remaining labour days are allocated between own cultivation and the market supply.

Jiban Kumar Ghose (2011) had examined the performance of the scheme and its impact on the rural poor. The study is based on both primary and secondary data. Primary data is collected from five districts of West Bengal. They found that during the study period from 2008-09 to 2010-11 all the districts showed highest employment generation. Major emphasis has been placed on the development of agriculture related activities with the objective of ensuring sustainable growth in agriculture. With the commencement of NREGS works, out migration members shifted back to the villages 86.6 percent in Japaguri, 88.89 percent in Malda, and 81.8 percent in Nadia districts. It was found that 70 percent of households got two full meals throughout the year 2009 due to NREGS. The overall impact of NREGS on food security is positive as it has improved the food security for the majority of households. They suggested a few measures that created more work opportunities under NREGS and

timely wage payment, proper planning of work, proper monitoring of the execution of works for improving the NREGS.

K. Rengasamy and B. Sasi Kumar (2011) studied the state wise-performance of the NREGS in India and its impact on various streams of agriculture and rural agricultural wages. They found that the promise of 100 days employment to one member of every household seeking employment is largely unfulfilled, and there were several inbuilt biases in the execution of NREGS. They also found that after NREGS implementation farm mechanisation and wages have increased as the scheme is working for the last six years.

Usha Rani Ahuja (2011) made an attempt to study the impact of MGNREGA on rural households in agriculturally-backward and agriculturally-advanced regions in terms of employment, income, asset creation, loan repayment, etc, the difference in the socio-economic status of rural households who participate in MGNREGA and who do not participate in MGNREGA for employment and identify the reasons for non-participation of MGNREGA. Both quantitative and qualitative data were collected for the study. To assess the impact of MGNREGA on the macroeconomic variables like employment, wages, and migration, data were collected for the year 2010-2011, using pre-tested schedules by personal interview. In order to quantify the impact of the MGNREGA on the sample beneficiaries, simple tabular analysis in percentage terms has been done. A logit model was estimated to identify the factors that influenced the probabilities of the rural households' decision to participate in the MGNREGA jobs. They found that the farmers owning large size of landholdings and more number of livestock are not much interested in participating in MGNREGA works as they are busy in their own activities. The farmers who have small land and livestock resources are more inclined to work in MGNREGA and their participation is also more. They also revealed that in an agriculturally-backward area participation in economic activities is more for non - beneficiaries as compared to beneficiaries but in agriculturally-developed area, situation is just reverse. On an average, MGNREGA is providing employment to the tune of 18.1 per cent of the total employment of the households.

E Berg S et al (2012) has examined the impact of NREGS on agricultural wages at India level. The effect is positive and significant. They found that NREGS intensity (NREGS

Person days provide per person) treatment in an average district boosted the real daily agricultural wage rates in given district by 1.6 %. They found that the impact of NERGS on male and female wages, the wage effect appears to be increasing gradually and is driven by the gradual increase of the NREGS intensity.

Ravi S and Engler M (2012) have made an attempt to study the impact of NREGS on food security, savings and health outcomes of households. The study was based on primary data collected from a sample of 1064 households across 198 villages in Medak district in Andhra Pradesh. They found that the monthly per capita consumption expenditure has increased by Rs.25.8 per household (not statistically significant) due to NREGS. It also shows that monthly per capita health expenditure of a household has significantly reduced by Rs.8. The number of meals foregone by households has significantly reduced due to NREGS.

Mehtubul Azam (2012) tried to assess the casual impact of NREGS on public work participation, labour force participation and real wages of casual workers by exploiting its phased implementation across Indian districts. For this analysis NSSO larger sample survey data on employment and unemployment conducted in 2007-08 (64^{th} round) data was used and Difference-in Difference method was used. The results show that there has been an increase in the probability of a casual worker to be engaged in public works across all districts between 2004-05 and 2007-08. It is 2.5 percent more in NREGS districts compared to non-NREGS districts. Difference-in-Difference estimates established that NREGS has resulted in a significant increase in public work participation. NREGS had a positive impact on overall labour participation. The positive impact of the NREGS is felt by the decline in labour force participation in NREGS districts is less than that of non-NREGS districts. Real wages of female casual workers have increased by 8 percent in NREGS districts compared to non-NREGS districts. NREGS has been successful in raising the female wages more than the male wages and thus reducing the existing gender wage gap in casual works.

Ahmad Emad (2013) examined the impact of NREGS on expenditure in rural India, using 64^{th} round National Sample Surveys cross section data of households from 461 districts from all states except from Maharashtra. The total sample households were 16,692 for the year 2004-05 and 22,429 for 2007-08. For analysis Difference – in – Difference (DID) estimation method was used. It was found that there was a rise in expenditure of durable goods by 29.1

percent and clothing and bedding by 6.2 percent, indicating that households were investing in long-term assets instead of consuming it immediately. This leads to hypothesise that households have a propensity to smoothing consumption by investing a significant proportion of the transitory income received from NREGS in durable goods and clothing and bedding used it as savings for the future. At the district level it was found that the share of expenditure on cereals and pulses has declined, while there is a rise (not significant) in the share of spending on vegetables, fruits and nuts, sugar and sugar products. They found that there is a shift from staple diets to more expensive vegetables. They concluded that there is a significant impact on cereals, pulses and sugar and sugar products at district level. The variance in consumption goes down for cereals and pulses and increases for sugar and sugar products. They hypothesise that NREGS is increasing the consumption of staple food items for very poor households, as exhibited by the decrease in variance, but it is increasing the inequality in terms of expensive food items like sugar and sugar products within the districts.

Gehreke (2013), who demonstrates that households with access to MGNREGA found an increase in the share of inputs allocated to more profitable crops. According to the author, MGNREGA, by enabling a shift to high risk-profitable crops, raised incomes of small marginal farmers.

Nayana Bose (2013) has examined the impact of NREGS on household consumption expenditures. A cross – sectional consumption data from the consumption expenditure survey conducted by the National Sample Survey Organisation was used in the year 2006-7. For the analysis 184 early implementation districts and 209 late implementation districts were chosen at India level. He found that the programme has a positive and significant impact on consumption, by around 10 percentage points. In the lower caste households there is an increase in per capita consumption expenditure by 12 percentage points in early implementation districts relative to late implementation districts. It indicates that NREGS has increased the consumption among the relatively poor households.

Klonner and Oldiges's study (2014) Analysed secondary data on household consumption from several NSSO rounds on with information on the district-wise roll-out of MGNREGS from 504 districts in all major Indian states, including Jammu and Kashmir and Assam but excluding all other North Eastern states and union territories. A district-level panel was used

with the Fuzzy Regression Discontinuity Design in contrast to difference in differences (DID) estimations. The econometric findings for 2006-08 have been combined with patterns emerging from descriptive statistics for 2003-12. The study clearly brings out that MGNREGA has helped rural households in a sustained manner to smooth consumption between the agricultural peak season and lean season. The study reports that the poverty gap for Phase 1 and Phase 2 decreased. Among SC/ST households both Phase 1 and Phase 2 districts experienced a decline in inequality with the effect for Phase -1 districts being significantly more than that for Phase - 2. The main conclusion of the study is that the programme has been successful not only in increasing consumption levels of particularly vulnerable households but also in reducing these households' exposure to the risk of seasonal drops in consumption. According to the authors, 'the MGNREGS appears to have successfully delivered on its two goals, improving livelihood security and reaching out to most vulnerable rural inhabitants.

Dasgupta et al, (2014) made an attempt to study the effect of the National Rural Employment Guarantee Scheme on Maoist conflict in India during 1999 to 2009. They covered 144 districts across the six central and eastern states and found that 90 percent of Maoist conflict deaths occur in these regions. To estimate the NREGS impact on Maoist conflict, violence, they employed Difference – in – Difference identification strategy based upon the roll-out of NREGS across districts in three phases between 2006 and 2008. They found that the programme caused a large reduction in violence. After three years of programme, there was a decline in the rate of violent incidents, and deaths by approximately 80 percent. Larger violence, reducing effects of NREGS in districts experiencing a negative rainfall shock were connected to greater programme intensity and employment provision during three year period. They found that NREGS has a large impact on rural labour markets in India and reduced the violent civil conflicts by increasing economic conditions.

In a robust econometric analysis, **Zimmerman (2014)** showed the labour-market impacts of MGNREGS. Firstly, in a household time allocation model, the author shows that the flexibility in demand allows households to use the programme 'both as an alternative form of employment and as a safety net after economic shocks.' The author used a regression-discontinuity design to estimate the programme's effects to suggest that MGNREGS is used more as a safety net rather than as an alternative form of employment.

The author estimated a base model which did not include MGNREGA and later introduced MGNREGA in the second model specification. However, it must be noted that the presence of a safety net influenced a household's decision on several parameters. The author concludes, 'Overall, these results suggest that MGNREGA is ineffective at raising private-sector casual wages through increased competitiveness in rural labor markets or a better enforcement of minimum wage laws. The program seems to work better at providing a safety net for rural populations.'

1.5.2 Social Accounting Matrix Studies

Section two shows the studies of social accounting matrix. In these studies, SAM is used as the methodology to study the direct and indirect effects. All these studies observed that SAM framework as a one of the sophisticated methods to examine the sector wise impact and inter linkages between sectors in the village economy.

In this section studies that used the frame work of SAM to assess effectiveness of transactions and transfers taking place in each sectors in economy (Alka Parikh 1996 et al. Arjun Subramanyam 2007 Indira Hirway 2008) at micro level, These studies provided a broad framework and methodology for construction of SAM and developing multipliers to analyse the impact of NREGS on village economy (Dokur).

Irma Adelman et (1987) presents a frame work of Social Accounting Matrix to study the economic structure of Mexican migrant-sending rural economy. The total output of the village is 3.6, while the income multiplier is 1.7 and employment multiplier is 3.0. The overall effect of the increase in productivity has benefited all households. But the distribution was in-equal, as the poorest benefited the least. Review of literature shows that there is more to learn how development takes place from gross root village point of view, by framing and analysing village level SAM.

Parikh Alka and Erik Thorbecke (1996) compared two villages (which are relatively similar-Semi arid), one close to a factory and another located in a remote area; Boriya in Gujarat and Aurepalle in Telangana, by constructing a SAM for the year 1989-1990. The study observed that total income multipliers are much higher when the exogenous injection takes the form of salaries. Salaries generate a total income multiplier of 1.5, followed by

household industries (1.4) and services (1.4). Agricultural activities displayed lower total income multiplier between 1.0 and 1.2. It was found that income of the landless households is affected by the changes in hiring labours account favorably. In the case of Boriya large part of the hired labour income comes from outside of the village, hence provision of the non-farm work improved the agriculture or casual workers development of the region. They found that poverty decreases when the availability of non-farm jobs increases. Their results show that rural decentralisation of industries has contributed considerably to rural development and poverty alleviation in Boriya village.

Katsushi Imai, (2007) examined the indirect effects of targeted interventions of Employment Guarantee Scheme (EGS) in Maharashtra. They concluded that Universal transfer system is more efficient in alleviating poverty than Employment Guarantee Scheme even if the multiplier effects are taken into account. If add the universal transfer of the same budget of the EGS, the total household income will be increased by 1% and the total output will go up by 0.46 – 0.47 %. They suggested that most of the past studies focus only on the direct effects. Hence the village – level SAM or CGE model should be encouraged to analyse the indirect effects of the policy based on the improved household data and researches in many developing countries.

Subramanian (2007), constructed SAM model for a Kanzara village in state of Maharashtra, to study the village level effects of genetically modified (GM) crops at village level. The direct effects which reflect the nature of the technology, captured by partial equilibrium approach and indirect effects that are brought about by technology in terms of employment and wages were analysed. The study notes that policies directed at increasing rural employment opportunities for small and medium farmers could change the incentive structures and distributional outcomes by enabling them to use the saved family labour time more profitably in alternative employment. This could include improvements in infrastructure and access to education and financial markets – that is policies that would also promote overall economic development.

A similar study by **Indira Hirway (2008)** analysed the multiple impacts of NREGS in Nankotda village in Gujarat, by constructing village SAM for 2006-2007. The multiplier analysis has shown a positive impact of NREGS on income, production and employment in

the village. The maximum impact on the increased output generated in the economy is due to increase in the consumption of PDS - output increased in an economy with multiplier of 2.1. The study noted that an increase in demand for wheat by one unit, the total output will increase by 1.8 units; if Jowar increases one unit output will increase by 1.6 units. Likewise, increase in wheat will increase the income by 1.2 units, increase in demand for Jowar increases total income by 0.95 units. The multipliers obtained were relatively small because of the leakages observed. It noted that most of the forward and backward linkages of extra demand were not absorbed within the village economy. Commodities imported from outside the village satisfied them.

The income generation and income distribution caused by community-based tourism in a village in Thailand has been analysed by **Kosam Suriya (2011)** by taking into both direct and indirect effects. The income generation, income multipliers varied from 1.5 – 3.7, and depended heavily on the rate of tourism expansion and the rate of endowment expansion. The value added multiplier is more stable and was clustered around 1.07 and 1.2. The results supported the argument of the uneven income distribution. The richest households gain the highest benefits in both gross and real income terms. The poorest of the household gained the least and in some cases even experienced the drop of their real consumption. The study found that tourism sector can absorb unskilled labours from the poorest and the second poorest households.

Another study by **M. S. Bhatt, (2013)**, analysed the inter-linkages between the tourism sector and other sectors in the economy of India and its linkages with the households and their income. The out-put multiplier effect reveals that a demand injection of one unit in tourism leads to an output increase in tourism by 1.08. A unit demand injection in tourism sector results in an increase in household income by a multiplier of 1.2. He concluded that there is a strong backward linkage with other sectors, particularly the service sector. The study also noted that the forward linkage with some sectors suggests its sensitivity to the changes in other sector's production.

The reviews of studies mentioned above have indicated that the implementation of NREGS has resulted both positive and negative impact on the economy. Some of the studies

found that it increased the cost of cultivation, increased agricultural wages and some have found that it may endanger the food security of the vulnerable sections of the people.

1.6. THE NEED FOR THE STUDY

Several studies examined the performance of NREGS (Khera and Nayak (2009) and Pankaj and Tankha (2010). Berg et al (2012) and Imbert and Papp (2012) found that there is a positive effect of NREGS on agricultural wages in India. A study by Ahamad Emad (2012), examined the impact of NREGS on the expenditure pattern in rural India and found that households have invested a significant proportion of income received from the scheme on durable goods as future savings. The study also found that there is a shift from staple diet to more expensive vegetables. Another study by Nayana Bose (2013) found that NREGS has a positive and significant impact on consumption. The results suggest that NREGS had increased consumption among the relatively poor households and it had significant benefits including better wages, access to employment and safe working conditions.

There is a vast amount of literature that studied the impact of NREGS on wages, consumption expenditure, savings, food security etc., (Ravi and Englar (2009), Liu Deininger (2010) Jha et al (2011). At present degree of impact of NREGS, implementation procedure, irregularities of NREGS has become a hot topic for researchers, academicians and politicians. All the studies concluded that, with the commencement of NREGS significant benefits including better wages, access to employment and safe working conditions have been achieved. Very few studies analysed the direct effects of NREGS, but not many on the indirect effects. The present research work examines the direct and indirect effects of NREGS, inter – linkages between sectors and how NREGS income affects other sectors in the economy. Several studies have taken samples from India, states and district as the unit for their analysis and came out with meaningful conclusions and policy suggestions, very few studies have been conducted at micro level.

Keeping the importance, size and large amount of fund allocation to the public work programme in view, there is need to study the direct and indirect impact of NREGS in the village economy in general and its effect on other sectors in particular. There are only few studies where an attempt had been made to identify the impact of NREGS on all economic

agents of respective sectors of the village economy. The present research work is undertaken to examine the direct and indirect effects at the village level. Therefore such village level studies are not done in Andhra Pradesh.

1.7. OBJECTIVES OF THE STUDY

The main objectives are

1) Developing an empirical Social Accounting Matrix (SAM) for the village Dokur in United Andhra Pradesh. SAM analysis of impact of NREGS interventions in the Village;
2) To examine the multiplier effects - direct and indirect effects of the NREGS on the village economy and
3) To assess and evaluate interlinkages between NREGS interventions and production practices in the context of village economy.

1.8. CHAPTERISATION OF THE STUDY

This thesis is organised into seven chapters: Chapter –1 provides the introduction, review of literature and objectives of the thesis. The Methodology of the thesis and the structure of the Social Accounting Matrix and SAM Multipliers equations are presented in Chapter –2. Chapter – 3 provides the discussion about the National Rural Employment Guarantee Programme at India, Andhra Pradesh and Dokur village level. The profile and socio – economic characteristics of the village is presented in Chapter – 4. Chapter –5 gives construction of Social Accounting Matrix of the village for the year 2011-12. Chapter–6 presents the multiplier impacts of National Rural Employment Guarantee Scheme on village economy. Finally, Chapter -7 provides the conclusions and policy implications.

CHAPTER - II

CHAPTER - 2
METHODOLOGY

2.1. INTRODUCTION

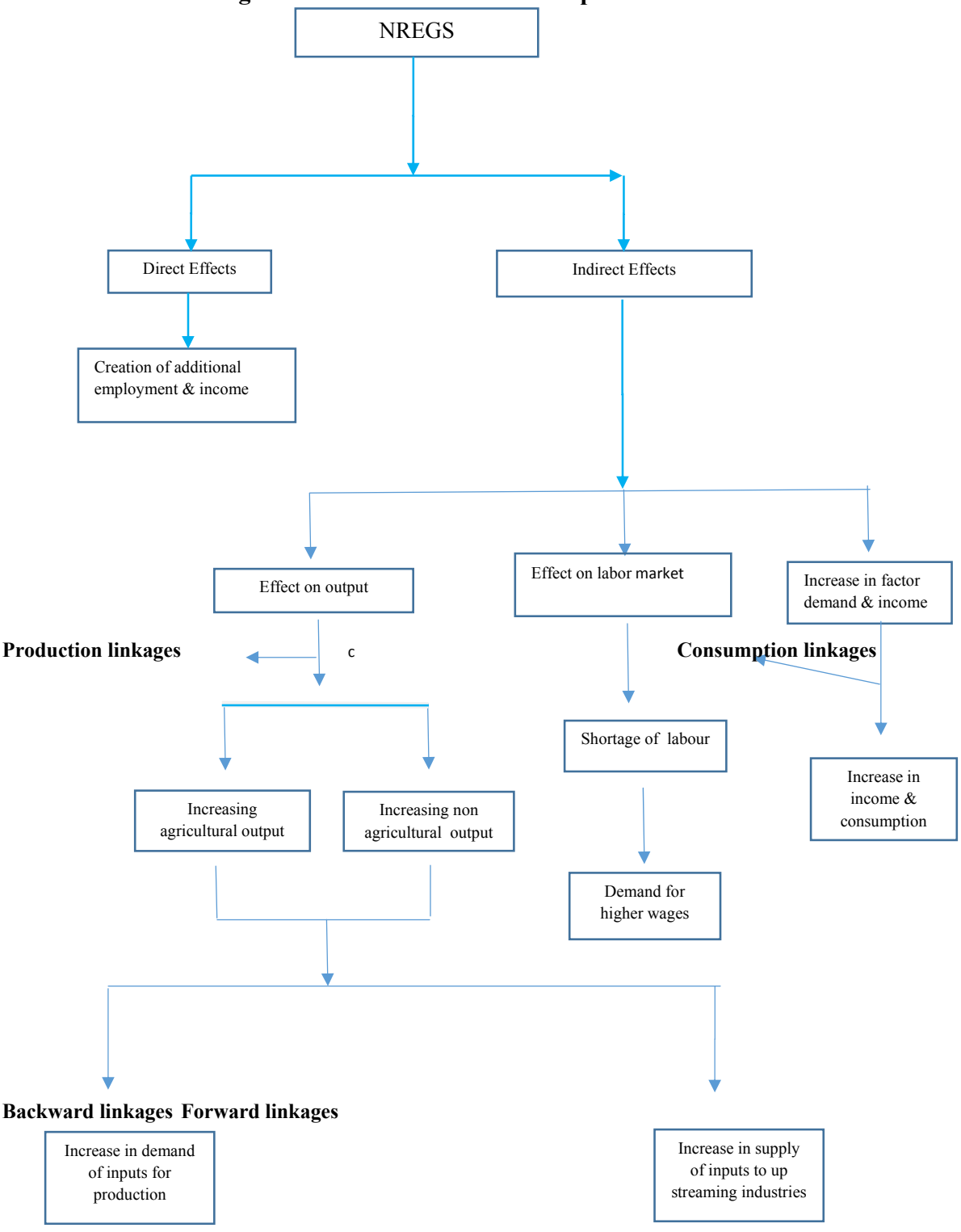
MGNREGS is a flagship programme of Government of India, many state governments have made some modifications with respect to list of works under the scheme, organization of the wage seekers, recording of attendance of the wage seekers, provision of additional remuneration to the wage seekers, mode of wage payment etc. Most of the MGNREGS impact studies have concentrated only on one aspect i.e., stakeholder of the scheme namely wage – seekers.

The impact of the scheme differ from one state to another, even within a state, its impact may vary across the regions and villages due to differences in activities taken up and local endowments. Hence, village level studies would be useful in properly evaluating the impact of the scheme. The present study examines the impact of the scheme in the village level.

The impact of NREGS is likely to differ from village to village depending upon agro-climatic conditions, area irrigated, magnitude of agricultural labour, existing wage rate and employment level in the village. Therefore, it is proposed to examine the multiple impacts of NREGS works on village economy.

When talking about the exogenous demand – side shocks in the village economy; it is referring to the changes in output, income and employment. The effects of the external shocks have direct and indirect effects. Directeffects are those relating to the sector that is directly affected by the shock.

Figure 2.1: Direct and Indirect impact of NREGS



Every government policy has its own effects on the economy; like that NREGS has its own effect on the local economy. There are two types' of effects, direct and indirect effects in the village economy. If demand increases for the NREGS works in the villageit has a direct impact on the employment and income of the people in the village.The direct effect is the creation of additional income to the people through providing additional employment. However, it also has some indirect effects from NREGS works linkages to other sectors. These indirect effects can, in turn, be divided into production linkages and consumption linkages. If all the direct and indirect effects are added, it is themeasure of the shocks -multiplier effect. The indirect effects of the NREGS on the village has been divided into three types. They are 1. Effect on output, 2. Effect on labour market, and 3. Increase in Income.

Due to NREGS implementation in the village there is an increase in the agricultural output through development of the fallow land, desilting of wells and tanks. Non-agricultural productivity is increasing with households using supplementary income to develop rural business and through providing road facilities to nearest towns under the NREGS works. These linkages are called production linkages. Increased output in the village needs more inputs for production; increased demand for inputs increases the supply of inputs to up streaming industries. The figure 2.1 shows the direct and indirect effects of NREGS on village economy.

NREGS provides 100 days of employment to the people in the village in ayear,if theyare willing to do the manual unskilled work. And some of thepeople are interested to do small business with the supplementary income. Because of these reasons, there is a shortage of labour in the labour market and the available labour demand higher wages. Another indirect effect of the programme, is an increase in the demand for factors of production and income of the households, which leads to the change in the pattern and increase in the consumption expenditure. An increase in the consumption expenditure leads to more demand for production, and more production requires more inputs and so on. It shows that the circular flow of income in the economy.

2.2 Framework of Input – Output Analysis: The construction of input-output tables and its application owe their emergence to Professor Wassily Leontief. He started work on the empirical model of the American economy in 1931 and published his first results in 1936 and then in 1941. The first inter-industry work on Government level was taken up in United States during World

War II by the Bureau of Labour Statistics with Leontief as adviser. As a result an input-output table was prepared for 1939 which was more detailed than Leontief's earlier studies. Following this, in many other countries this work was undertaken at official level in the fifties.

In India a beginning was made in this field by individual researchers in early fifties. A number of input-output tables were prepared at national and also at regional (State) level. At official level, however, the first table was prepared for the year 1968-69, jointly by the Central Statistical Organisation(CSO) and Planning Commission and consisted of 60 sectors(NAS January 1978). Since 1973-74, CSO has been constructing and publishing these tables along with auxiliary tables and the reports on methodology and data sources at an approximate interval of 5 years. The latest table relates to the year 1993-94. The published tables for 1989-90 and 1993-94 are for 115 sectors of the economy while for the earlier years these relate to 60 sectors only.

Definition ofInput-Output Table: An input-output table shows the flows of goods and services from each branch (called sector) of the economy to different branches of the economy over a specified period of time (usually a year). For producing the output in any branch of the economy, different types of raw material inputs and capital equipment along with labour are required. The outputs produced may be utilised both for intermediate and final use. The part of the total gross output used as input for further production of goods and services may be termed as intermediate use. The remainder of gross output is directly utilised by final users. These final users may be further subdivided into broad groups such as private and public consumption, private and public investment and exports. The outputs produced by each branch are thus distributed to the other branches that use them as input into their production process and to final consumers. A systematic description of this interdependence among different branches in the economy is provided by the input-output table. The table may also be regarded as a disaggregation of the production accounts in a national accounting system.

The economy is divided into a number of homogeneous sectors each of which is represented in the table by a row and a column. The row corresponding to the sector gives the use pattern of the total supply of the sector while the column gives the details of the inputs absorbed by the sector. The entry into the cell of the i^{th} row and j^{th} column is the quantity of output of sectors ‘i’ consumed as input by sector ‘j’ and is generally denoted by X_{ij}. The output of sector j is denoted as X_j.

The input-output table consists of four quadrants. The first quadrant gives the distribution of that part of the output, which is absorbed by the production sectors of the economy. This quadrant is the most important and largest part of the table. The second quadrant gives the consumption by the final consumers. Its components are, the private consumption expenditure, government current expenditure, gross fixed capital formation, changes in inventories, competitive imports and exports. Quadrants I and IItogether allocate the total output of each sector in the economy. The third quadrant consists of the primary inputs (inputs not being produced) utilised by the different production sectors. The primary inputs consist of the factor payments to labour and capital, indirect taxes, non-competing imports, depreciation, etc. Quadrant I and III together show the total inputs used in production by each sector of the economy. The fourth quadrant records the primary inputs into final demand sectors. Imports consumed directly by the final consumers are recorded in this quadrant in cases where imports are shown by means of a primary row. If the imports are shown as a column with negative entries, then the imports by final consumers will be shown along with other domestically produced goods. The fourth quadrant is generally omitted from the tables. Some typical entries like income of government employees, domestic services and aggregate of final demand vectors are shown in this quadrant.

Table 2.1**:** Schematic arrangement of the input-output table

	Consuming sectors				
	1	2	N	Final demand	Output
Producing sectors					
1	X_{11}	X_{12}	$....X_{1n}$	F_1	X_1
2	X_{21}	X_{22}	$....X_{2n}$	F_2	X_2
:					
n	X_{n1}	X_{n2}	$....X_{nn}$	F_n	X_n
Primary Inputs	V_{11}	V_{12}	$....V_{1n}$	$V_{1, n+1}$	
	V_{21}	V_{22}	$....V_{2n}$	$V_{2, n+1}$	
	V_{k1}	V_{k2}	$....V_{kn}$	$V_{k, n+1}$	
Output	X_1	X_2	$.... X_n$		

X_{ij} is the amount of the output of i^{th} sector utilized as input for the production of j^{th} sector.

F_i is the amount of the final demand of the output of the i^{th} sector and is equal to $C_i + G_i + I_i + E_i - M_i + S_i$.

Where these components of final demand are private consumption, government consumption, investment, exports, imports and changes in inventories, respectively. Where, V_{ij} I= 1, 2, ……, κ, j = 1, 2, …….n, are the different primary input rows.

$V_{1, n+1}$ι = 1, 2, ….., κ are the primary inputs into the final demands.

The model is based on certain assumptions:

i) Each sector produces a single homogenous output with a single input structure and there is no substitution between the outputs of different sectors.

ii) The production function is fixed proportion of Leontief type. In other words, the quantity of each input used by any sector is a constant proportion only of the level of output of that sector, i.e., the amount of each kind of input utilised by a sector varies in direct proportion to its output.

iii) The Hawkins-Simon viability condition must be satisfied by the input-output system. This condition ensures that the level of gross output in each sector is adequate to meet the intermediate and final demands on that sector (in a closed economy) or alternatively the output X_i should not be less than the direct and indirect requirements of the output of this sector for producing the output X_i. The problems that arise due to heterogeneity of commodities and other related problems are discussed in subsequent sections.

The formal structure of the model can be described as follows. Let the economy consist of 'n' sectors. The total distribution of the physical output of each sector can be described by the following 'n' balance equations.

$X_i = \Sigma_j X_{ij} + F_i$, i =1, 2, ……., n---------- Equation - 1

$\Sigma_j X_{ij}$ is the total intermediate demand for the output of sector 'i'. F_i is the sum of the output consumed by all the components of the final demand for sector is output. These equations mean that the output of any sector is equal to the total of the output consumed by different sectors (including the sector itself) and the different components of the final demand. On the basis of the proportionality assumption we can write as

$X_{ij} = a_{ij}X_j$ ---------- Equation - 2

a_{ij} is the requirement of the output of sector i used as input for a unit level production of sector j. The a_{ij}'s are known as the structural or technical coefficients. The above balance equations can be written as

$X_i = \Sigma_j a_{ij}X_j + F_I$ ----------Equation - 3

Or (I - A) X = F

where A(n,n) is the matrix input-output coefficients, X is the vector of outputs and F is the vector comprising of the total final demands. The matrix A is obtained by dividing each column of the flow matrix by the total output of the purchasing sector. The column of coefficients of any sector gives the input structure of the sector. If the coefficients matrix A is given and the level of final demands are estimated, it is possible to solve the equation– 3 (I - A) X = F and estimate the levels of gross output of various sectors.

The input coefficient a_{ij} gives the direct input requirement of the ith sector for the production of one unit of j^{th} sector's output. It does not indicate the indirect or second or higher round effects of producing one unit of the j^{th} sector. For example the production of one unit of a car requires the direct inputs of steel, components and tyres, which in turn require inputs from the output of other sectors for their production and so on in the chain. Through the input-output system, the direct as well as indirect requirements of producing an additional unit of any sector can be estimated.

The equations (I - A) X = F on solving give:

X = (1 - A)-1 F

= R * F

where $R = [r_{ij}]$

The matrix R is known as the Leontief inverse or the matrix multiplier. Here each coefficient r_{ij} represents the amount of output of sector 'i' required directly and indirectly for one unit of final demand for sector 'j'. This matrix shows the full impact of the demand for the output of each

sector on all other sectors. Once the output levels X_i are estimated, the total demand for different kinds of primary inputs can be worked out by multiplying the sectorwise output levels with the corresponding primary input coefficients, e.g., the man-hours required per unit of output of different sectors multiplied with corresponding output levels of these sectors will give the total man-hours required by the producing sectors of the economy. The effect of the final demand requirements on primary inputs can also be estimated by multiplying the primary input rows with (I - A)-1

2.2.1Methodology of Constructing Input-Output Tables:

As the model is based on the input-output coefficient matrix there is immediate problem of the numerical accuracy of the cell entries. The coefficient matrix or the table should be prepared in such a way that assumptions of the model are violated to the minimum extent. There are two types of errors involved while constructing the input-output table — the errors because of not fulfilling the assumptions of the model, and the errors which arise because of the availability of data of varying reliability in different sectors.We will now discuss the methodology of the input-output tablesand the problems associated with them.

Price System

Once it is decided to have the table in money values the next question is about the type of prices to be used to get these values.As the demand and supply are to bebalanced for each sector,it is essential to have a uniform set of prices.The following three types of prices can be defined in this context.

(i) Basic prices:The prices actually received by the producers of commodities and are inclusive of only the costs of material inputs and factor costs.

(ii) Producers prices:The prices paid at the site of proudction.To get the producer's prices net indirect taxes are to be added to the basic prices.

(iii) Purhcaser's prices: These are the prices that are actually paid by the purchasers. These are obtained by adding trade and transport margins to the producer's prices.

The input-output tables can be prepared at any one of these sets of prices.

Applications of Input-Output Analysis:

Input-output techniques are important analytical tools for analysing the structure of production in an economy. These are instruments for analysing a wide range of empirical problems connected with policy and decision making, where aggregate national accounts cannot be used. The techniques rest on the relationship between inputs of raw materials and output of final products. If the interest is in producing one unit of a particular product its impact on the production of other products and also on various factors of production can be known through input-output analysis.

The great advantage of this analysis is that it brings out the indirect internal transactions of the economic system. The techniques have been accepted as one of the most widely used methods for planning and decision making. Variety of input output models have been formulated. Many countries have constructed input-output tables and have used them for policy purposes.

One important application of the I-O system is to point out the inconsistencies, gaps and redundancies in the statisticalsystem of an economy. Because for the construction of an I-O table, the detailed sector wise data are required regarding the inputs used, output produced as well as the use of the different components of the final demand, and consistency must be achieved between the demand and the supply at sectoral level. Thus, the I-O table may be viewed as one comprehensive, detailed and consistent framework for organizing economic statistics. Various components of national accounts could be obtained from the detailed data of the final demand and value added shown in the I-O tables.

The applications, thus, range from presentation of the structure of the productive system to the complex dynamic input-output models used for decision making. Recently, the adaptation of the input-output model even to study the economic impact of pollution abatement policies was done by Chenery and Watanabe (1958) and Deutsch and Syrquin (1986).

2.2.2 Limitations of Input – Output Analysis:

1. Though input – output analysis is important analytical tool in analyzing the structure of production of the economy.
2. It has certain limitations: All of the assumptions of input – output analysis such as homogeneity of input and output, fixed prices and constant returns to scale do not good in most of the practical situations.
3. It cannot capture the socio – economic interdependence and structure of the village economy. Input – Output analysis cannot be applied at micro – level. To come over the above problems of input – output analysis, framework of Social Accounting Matrix (SAM) is used in the present analysis.

Since the main objective of the study isto examine the direct and indirect impact of NREGS onvillage economy. For evaluating the direct and indirect effects, linkages among the sectors and NREGS effect on other sectors, the framework of Social Accounting Matrix (SAM)is used. Social Accounting Matrix is for the study, Dokur village was selected from Devarkadramandal in Mahabubnagar district of Telangana.

There are several reasons for selecting the villageor district. First, the village (and district) has been covered under NREGS from the first year of implementation. In 1975, the socio - economic programme of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) initiated Village-Level Studies (VLS) at six locations in India. The study village is one of the villages selected under the project for conducting multidisciplinary research by agro biological and social scientists in a real farm situation. In addition to this, Mahabubnagar district is one of the drought prone districts in Andhra Pradesh, identified by the Department of Agriculture and Cooperation, Ministry of Agriculture, Government of Indiain 2007.

To capture the socio-economic interdependence and the structure of the village, the village level SAM is constructed. SAM gives the sectorial origin and distribution of income by socio- economic household groups in the village. SAM multipliers also showthe linkages among different sectors of a village economy. The linkages are shown in the form of increase or decrease in the income of different accounts, as and when one rupee is injected into an account.The complete list of households and the details of expenditure of different government

programmes in the village have been collected from the Gram Panchayat office. Detailed information ofvillageand households was collected by using the interview schedule.

The Social Accounting Matrix (SAM) can be regarded as an extension of input-output tables. The framework of input-output tables is used to provide detailed information on the flow of goods and services as well as on the structure of production costs.

2.3.CONCEPT OF SOCIAL ACCOUNTING MATRIX (SAM)

"A Social Accounting Matrix gives the macro and meso economic accounts of a socio-economic system, which captures the transactions and transfers among all economic agents in the system"(Pyatt and Round, 1985; Reonert and Roland –Holst, 1997). In common with other economic accounting systems it records transactions taking place during an accounting period, usually one year.

A SAM can be defined as an organised matrix representation of all transactions and transfers between different production activities, factors of production and households within the economy and with respect to the rest of the world. All the transactions in the economy are presented in the form of a matrix in a SAM.Each row of the SAM gives receipts of an account while the column gives the expenditure, the total of each column should be equal to the total of each corresponding row. Very few studies have constructed SAM at the village level in India, like the studies done by Subramanian and Sadoulet (1990) on Kanzara village in Maharashtra and the recent study by M.R.Saluja and Yadav on Nana Kotda village in Gujarat.

Basicstructure of a Social Accounting Matrix:Activities produce goods and services by combining the factors of production with intermediate inputs. This is shown in the activity column of the SAM (Table 2.1), where activities pay to factors of production, wages, rents, and profits, generated during the production process (that is, value-added). This is a payment from activities to factors, and so the value-added entry in the SAM appears in the activity column and the factor row [R3-C1]. Activities buy commodities to be used as intermediate inputs for production [R2-C1], Adding together value-added and intermediate demand gives the gross output. Commodities are either supplied domestically [R1-C2] or imported [R7-C2]. Indirect sales taxes and import tariffs are paid on these commodities [R5-C2].

Table 2.2 Basic Structure of Social Accounting Matrix

	Activities C1	**Commodities C2**	**Factors C3**	**Households C4**	**Government C5**	**Savings & Investment C6**	**Rest of the World C7**	**Total**
Activities R1		Domestic Supply [R1- C2]						
CommoditiesR2	Intermediate demand [R2 –C1]			Consumption spending (c) [R2 – C4]	Recurrent spending (G) [R2-C5]	Investment Demand (I) [R2-C6]	Export Earnings [R2-C7]	Total Demand
Factors R3	Value added (R3 – C1)							Total factor income
Households R4			Factor payments [R4-C3]		Social Transfers [R4-C5]		Foreign remittances [R4-C7]	Total household income
Government R5		Sales Taxes & import tariffs [R5- C2]		Direct Taxes [R5-C4]			Foreign grants & loans [R5-C7]	Government income
Savings & Investment R6				Private savings [R6-C4]	Fiscal Surplus [R6 –C5]		Current account balance [R6-C7]	Total savings
Rest of the World R7		Import payments (m) [R7 –C2]						Foreign exchange outflow
Total	Gross output	Total supply	Total factor spending	Total household spending	Government expenditure	Total investment spending	Foreign exchange inflow	

This means that the values in the commodity accounts are measured at market prices.Final demand for commodities consists of household consumption spending [R2-C4], government consumption [R2-C5], gross capital formation or investment [R2-C6], and export demand [R2-C7].All of these sources of demand make up the commodity row (payments by different entities for commodities).On their own, the commodity row and column accounts are sometimes referred to as a "Supply–Use Table," or the total supply of commodities and their different kinds of uses or demands.

A SAM is different from an input–output matrix because it not only traces the income and expenditure flows of activities and commodities, but also contains complete information on different accounts, such as households and the government. Households are usually the ultimate owners of the factors of production, and so they receive the income earned by factors during the production process [R4-C3]. They also receive transfer payments from the government [R4-C5] (for example, pensions) and from the rest of the world [R4-C7] (such as remittances received from family members working abroad). Households then pay taxes directly to the government [R5-C4] and purchase commodities [R2-C4]. The remaining income is then saved (or dis-saved if expenditures exceed income) [R6-C4]. The government receives transfer payments from the rest of the world [R5-C7] (for exampleforeign grants and development assistance). It is added to distinctive total tax incometodeterminetotal governmentrevenues. Government spends this income on recurrent consumption [R2-C5] and reallocate tohouseholds [R4-C5]. Difference amongaggregate income andexpenditure is the fiscal excess (or shortage, if expenditure more than the income) [R6-C5].Private savingsaccount for in [R6-C4] and public savings in [R6-C5]. The difference between total domestic savings and total investment demand is total capital inflows from abroad, or what is called the current account balance [R6-C7]. This is also equal to the difference between foreign exchange receipts (exports and foreign transfers received) and expenditures (imports and government transfers to foreigners).

SAM matrix represents a comprehensive accounting of an economy, in the sense that it captures the complete flow of income – from factors of production to households and then back into production. The production sectors buy inputs and services of the factors of production to produce products. In this process, the value added is generated. The only

receipts of the activities come from the sales of its production in the products market, which are spent in intermediate consumption, in the payment of services to the factors of production and in the payment of taxes to the government. Therefore, there are the values of the production to balance the total costs of the economy. On the other hand, the factors of production sell services to the production activities and receive income from them.

2.4.VILLAGESOCIAL ACCOUNTING MATRIX (VSAM)

SAM must always be a square matrix. The rows, denoting the receipts of an account, follow the same ordering as the columns that denote the corresponding expenditure. Hence, an element in the $(i,j)^{th}$ cell of the matrix denotes the receipt of account i from account j, which can also be expressed as the expenditure by account j to be paid to account i. The sum of all the receipts of an account is equal to the sum of all payments of the corresponding account. Hence, the row sums must always be equal to the corresponding column sums.

The following assumptions are used for construction of village SAM:

- Price, Technology, Employment, and Population remain same.
- SAM framework assumes a Keynesian and demand – driven system without resource constraints.
- Production uses linear, fixed proportion technologies and the average and marginal expenditure propensities are the same.

The village Social Accounting Matrix has the following accounts:

1. Activities Account
2. Factors Account
3. Households Account
4. Savings and Investment Account
5. Rest of the World Account

Social Accounting Matrix model is first built to obtain the matrix of coefficients by dividing each element by the corresponding column sum. The SAM is given as the matrix of elements $B_{ij}$with column total as X_j. For Construction of SAM for Dokur village the following components were used:

Table 2.3: Structure of the SAM

	Production	Factors	Households	Govt.	Capital	Rest of the world	Total
Production	B11	0	B13	B15	B16	B17	Y_1
Factors	B21	0	0	0	0	0	Y_2
Households	0	B32	0	B35	0	B37	Y_3
Government	B41	0	B43	B45	B46	0	Y_4
Capital	0	0	B53	B56	0	B57	Y_5
Rest of the world	B61	0	0	B67	0	0	Y_6
Total	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	

ACCOUNTS

1. Activities Account:

a) Agriculture – Cotton, Paddy, Castor and Pigeon pea, Groundnut, and Vegetables crops.

b)Livestock – Milk and Milk products and Meat, Bullocks.

c)Nonfarm and self-employment – Finance, Vegetable vendor, PDS, Transportation, Communication and other services.

d) NREGS – (i) Agriculture, Forestry and Soil and Water conservation (ii) Road connectivity (iii) Sanitation and others.

2. Factors of Production Account:

a) Labour: ownlabour and hiredLabour

b) Capital: It includes the income of self – employment.

3. Households Account:

a) Household: LandlessWorkers, Marginal Farmers, Small Farmers, Medium Farmers, LargeFarmers,

4. Government Account: a. Panchayat - Revenue: Taxes, Grants, Donations; b. Expenditure: Consumption, Investment.

5. Rest of the World Account:

a) Exports

b) Imports

6. Commodities:

a) Agriculture

b) Manufacturing

c) Trade

d) Public services

e) Private Service

f) NREGS

Production requires intermediate goods and the primary factors of production viz., labour and capital.These factor endowments are contributed by the Households, Firms and Government, which in turn receive factor payments as value added. Apart from the value added, village households get income from other sources such as transfers from the government and rest of the world. The income spent as the consumption expenditure on goods and services and for payment of taxes and the rest is saved for the future. The total supply in the economy has to be matched by the demand made by the households and capital formation, i,e purchase of investment goods (Indira Hirway and Saluja).

Advantages of the SAM:

1. A SAM is a powerful system for the organization of information about the economic and social structure of a country, region, and village etc. This ensures that the system is described in a complete and consistent way.

2. SAM frameworks are not limited to economic data. Considerable discussion has been devoted to the extension of SAMs to encompass the social, demographic and environmental features of economic systems (Stone 1982, Keuning, 1994).

3. SAM depicts the entire circular flow of income for an economy in a (square) matrix.

4. SAM can be used to provide an analysis of the interrelationship between the production structure of an economy, and the distribution of income and expenditure of different households groups.

5. SAM that can use a disaggregated household sector when it is used for modeling the impact of exogenous changes on the system. Unlike a closed input – output model that uses a simple household sector with different types of household (eg. Households with different occupations) displaying different induced expenditure patterns.

6. Last but not least, a SAM can be used as the data base of Computable General Equilibrium (CGE) models. Nowadays these models are widely used to analyse the impact of an economy of range of policy issues, such as trade liberalization policies, fiscal issues, modes of taxation, structural adjustment programmes, impact assement studies, and environmental policy and negotiation related studies etc.

2.5. SAM MULTIPLIER ANALYSIS

SAM is a socio-economic information system that describes all transactions and interactions that occur in an economy in a particular year. It is a way of presenting socio – economic interactions in a consistent and complete way. It is consistent because, for every receipt there is a corresponding out lay, and since both the receiver and the sender of each and every transaction is clearly identified (Sadoulet and Janvry, 1995). For converting the SAM to multiplier first should know which accounts are endogenous and exogenous. Exogenous account includes the rest of the world, i.e., PDS, Centre and State government services, while all other remaining accounts are treated as endogenous. NREGS works in the village will have a multiplier impact on the total income, output and employment. The effect of NREGS has been estimated by using multiplieranalysis treating NREGSprogramme asexternal shockto the village Social Accounting Matrix, Village SAM has been utilised for evaluatingdirect and indirect impact of differentshocks on the economythrough this process.

Social Accounting Matrix model in the equation form can be written as:

$$Y_j = \sum_i w_{ij} + \sum_i x_{ij} \dots\dots\dots\dots\dots\dots Equation\ (1)$$

$$Y_j = \begin{bmatrix} y_i \\ \vdots \\ y_j \end{bmatrix} \ and\ y_j\ is\ a\ vector\ of\ column\ total\ of\ matrix\ Y, y_j\ \ is\ j^{th}\ column\ total.$$

$$W = \begin{bmatrix} w_{11} & \dots & w_{n1} \\ \vdots & \ddots & \vdots \\ w_{n1} & \dots & w_{nn} \end{bmatrix} \ and\ W\ is\ a\ matrix\ endogenous\ accouts;$$

$$And\ X = \begin{bmatrix} x_{n+1,1} & \dots & x_{n+1,n} \\ \vdots & \ddots & \vdots \\ x_{n+k,1} & \dots & x_{n+k,n} \end{bmatrix} \ and\ X\ is\ the\ vector\ of\ Exogenous\ accounts.$$

In SAM model normally activity, commodity, factor and household accounts are assumed to be endogenous. Exogenous accounts are public administration (village Panchayat), savings and investment account and rest of the world account. These exogenous accounts are normally aggregated because of the fact that expenditure from those accounts is all exogenous (Bellu, 2012).

$$a_{ij} = {}^{w_{ij}}/_{y_{ij}} \quad \ldots\ldots\ldots\ldots\ldots\ldots Equation\ (2)$$

$$where\ A = \begin{bmatrix} a_{11} & \ldots & a_{n1} \\ \vdots & \ddots & \vdots \\ a_{1n} & \ldots & a_{nn} \end{bmatrix}$$

The above equation can be written as

$$Y = AY + X \ \ldots\ldots\ldots\ldots\ldots\ldots Equation\ (3)$$

$$(I - A) = X$$

$$Y = (I - A)^{-1} X = MX \ \ldots\ldots\ldots\ldots\ldots Equation\ (4)$$

$$Where\ M = \begin{bmatrix} m_{11} & \ldots & m_{n1} \\ \vdots & \ddots & \vdots \\ m_{1n} & \ldots & m_{nn} \end{bmatrix}$$

Where M is a SAM multiplier matrix consisting of coefficients m_{ij}. Co efficient m_{ij} is the total impact on account i because of unit shock / change in account j.

The Leontief inverse matrix is called the R-matrix or Matrix multiplier, where each element of the matrix say $r_{ij,}$ signifies the output of sector i required directly or indirectly to meet the final demand of sector j. The column sum, hence, give the increase in the gross output of all the sectors that are required in the production of j^{th} sector, resulting from the increase in final demand of jth sector. This is called the output multiplier. Thus the R-matrix shows the full impact of the increase in final demand on output of other sectors. The increase in demand of a sector is first felt as the sector increases its output to meet this additional demand. This is called the direct impact. However, in order to increase its production, the sector would require increased inputs from other sectors. This in turn leads to the generation of additional demand of the input sectors and these sectors need to increase their production. This goes on and on and hence, in a way the whole production system contributes to fulfilling the increased demand of a particular sector. This refers to the indirect impact.

When a sector i increases its production, there is increased demand for inputs from other sectors. This demand, resulting from the absorption effects, is referred to as backward linkages of the sector i. Higher the backward linkages would mean that the expansion of its production is more beneficial to the economy in terms of causing induced production activities (Guo and Planting, 2000). On the other hand, an increase in production by other sectors leads to an additional output from industry i to supply inputs to meet the increased demand. This supply function is referred to asforward linkages. If a sector has highforwardlinkage, it implies that its productionis more sensitive to changes in other sectors income or value added.

2.6. SOURCE OF THE DATA

Both primary and secondary data have been utilised in the thesis.Secondary data was collected from the government website of Ministry of Rural Development. Various types of secondary data including from Gram Panchyat, School, Anganwadi, Post – office, and ICRISAT data base and official websites http://nrega.nic.in, http://nrega.ap.gov.in and http://nrega.telangana.gov.in have been used for the thesis. The total number of households in the village is 545. The households were classified into five categories based on farm size adopted by ICRISAT classification of households. A sample of fifty percent of each category of the households was selected for data collection. Data was collected for the year 2011-12 from 272 households by using the interview schedule in 2014. The interview schedule provides detailed information of socio – economic information like household structure, household assets, education, production and input use, employment and income, land conservation activities, household consumption expenditure, migration and details regarding the NREGS implementation and participation (An interview schedule is provided in Appendix – A). Data was collected from economic agents such as Shops, Canteens, Provision stores, and Service providers (Tailor, Barber, Drivers, Salaried Labour) and so on.Household consumption expenditure data was collected for one month and multiplied with 12 to obtain the consumption expenditure for a year. Collection of household consumption expenditure and livestock data was multiplied with two to get total village level data and for agriculture data was collected for the total cropped area, crop wise in the village for the year 2011-12. The data set collected information about the activities of the households

duringprevious 12 months and this data set is used for the construction of the village Social Accounting Matrix. The present village Social Accounting Matrix was 63x63 size, which include crops in the village, livestock, SHGs, family labour, hired labour. To support information obtained at household level and other village level data, a focus group discussion wasconducted.Different groups of people such as farmers, Anganwadi teachers, Self Help Group members etc., have participated in the focus group discussions.

2.7. LIMITATIONS OF THE THESIS

The thesis has its own limitations in terms of methodology followed. For this research, the sample village is chosen purposively and it did not represent the village with adequate NREGS expenditure. The choice of the village was based on VDSA (Village Dynamics in South Asia) village of ICRISAT. Therefore the results on the impact of NREGS on village economy, suffer from this limitation. Also the village economy assumed to be closed. Another limitation is that the methodology of difference-in-difference approach that was used by some of the researchers to see the impact of NREGS on village economy, could not be applied here since the data was collected at one time point (cross section data). Some of the authors have used fuzzy Regression Discontinuity Design to examine the impact of NREGS on household consumption also could not be used here as it requires data for different points of time and from secondary level such as district.

The data was collected for the year 2011-12 at one time point only, because the Social Accounting Matrix is constructed for the year 2011-12. The crop data was collected for two seasons - kharif and rabi, but in SAM crops have one column. The selected village is from typical complete dry land agriculture area and therefore the number of activities and volume and value of each activity is less than the typical wet land area. Social Accounting Matrix is an analysis which takes into account households prevailing in the economy. Since NREGS is a demand driven programme, the results obtained for this village cannot be generalised to other areas with different households' setup and different degree of demand for NREGS.

****

CHAPTER - III

CHAPTER – 3
NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME AT GLANCE

3.1. INTRODUCTION

Programmes of Employment for providing wage, manifests a long history in India. These programmes always had the objective of poverty alleviation among the rural people. Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is one among those schemes of India. It was launched on 7th September 2005, with aim of providing source of income and livelihood security to the people. "The centerpiece of the Eleventh Five Year Plan's battle against rural poverty was the NREGS. The NREGS is the largest employment programme in human history, which is unlike any other in its scale, architecture and thrust. Its bottom-up, people - centered, demand - driven, self – selecting, right- based design is new and unprecedented. Never have in such a short period so many crores of poor people benefited from a government programme" (Planning Commission, 2012).

The remarks made by UNDP are very significant about NREGS. "NREGS exemplifies the features of a mature democracy, which provides the poor with the right to demand, the right to know and right to dignity, not the right to beg" (UNDP, 2012).

If the adult members of a household are ready to do unskilled manual work, 100 days of employment is promised to them, during a financial year. NREGS is a public works programme. Self-targeting mechanisms are used to solve any challenges in implementing this programme. There is a high rate of success, in this regard. Majority of its beneficiaries are of Schedule Caste, Schedule Tribe and women. NREGS is a right based approach. This has offered fresh answers to the problem of providing social safety in rural areas (Rabe et al .2010).

NREGS has become a powerful tool to overcome the impediments in implementation of rural welfare programmes in India. Though the decentralised manner of implementation is adapted with sufficient checks, huge number of problems still exists. Implementation of the scheme during the peak season of agriculture adversely affects the farmers, as they are unable to pay higher wages to the agricultural labourers. (Imbert et al,

2012). However, a great deal of effort is made to make the needed changes with regard to the season of implementation of the scheme, without affecting the farmers.

Initial year's main concentration was in providing employment under the scheme, totally neglecting the type of works to be taken. There was no clarity regarding the works taken up under the programme. They are not taken majority of durable assets, they provided simple works like bush clearance, pebble collection etc. The programme functionaries thought that providing employment under the programme is the main purpose.

3.2. IMPLEMENTATION AND PERFORMANCE OF NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME

In order to implement the next phase of NREGS, the government of India has initiated several steps. The GOI has notified the guidelines of operation. This is done as per the suggestions of Mihir Shah Committee (Ministry of Rural Development 2012). The area of permissible works as per NREGS has been extended 1. to strengthen the positive correlation between NREGS, agriculture and the other related rural livelihoods, 2. to cater to the request of the State, based on the need of the work in a specific location, and 3. to protect the ecological balance in the interior villages of India. The following conditions have to be fulfilled before implementing the work under NREGS: They are: first, any work should be taken up only for the creation of durable assets. Second, with regard to any work, the preference to decide should be entrusted to the Gram Panchayat, Third, 60:40 ratio for labour: material costs have to be kept up at the Gram Panchyat level; and Fourth, Machineries and Contractors should not be engaged for the work.

The committee also suggested that the main character of NREGS should be based on the demand. It should be founded on "effective planning, strict time schedule; development of human resources; reducing delays in wage payments; strengthening MIS (Medium Irrigation Projects); equal opportunity for vulnerable groups; greater role for civil society organisation; and better social audits and vigilance for transparency and accountability" (Ministry of Rural Development, 2013).

The intention to restrict the programme only to 200 backward districts will reduce the number of beneficiaries of this scheme though the fund requirement may be comparatively reduced**.** (Kulkarni, 2014).

3.3. TRENDS IN EMPLOYMENT AND WAGE PAYMENT UNDER NREGS

The act came into force on 2nd February, 2006. The scheme was implemented in 200 backward districts during the first phase. It was extended to another 130 districts during the second phase. The programme was notified in the rest of the districts from 1st April, 2008 and NREGS was implemented in every district in the country from 2008 except in those districts with hundred percent urban populations. The performance of the scheme may differ from the state to state in the form of implementation, employment provision and local work conditions.

Table 3.1 shows the information about days of employment generation and wage payment under the programme. The data shows in 2006-07, 0.9 billion man days of employment was generated in two hundred districts of India. In the subsequent year, the days of employment generated went up to 1.4 billion days as the scheme was intensified in the districts already brought under the scheme and extension of scheme to one hundred and thirty districts in India.

Table 3.1: Trends in Employment and Wage rate under NREGS in India

S.No	Year	PD	W (Rs)	% wages	HHP	AEMPHH	AW PP	EM
1	2006-07	0.9	58.4	67.9	2.1	42.8	65	27.5
2	2007-08	1.4	107.4	69.9	3.4	42.4	75	46.2
3	2008-09	2.1	182.0	69.2	4.5	47.9	84	81.1
4	2009-10	2.8	255.7	69.7	5.3	53.9	89	110.8
5	2010-11	2.5	256.8	68.3	5.5	46.7	99	118.1
6	2011-12	2.1	248.6	69.7	5.0	42.7	113	107.7
7	2012-13	2.1	274.2	72.9	4.9	44.9	121	101.5
8	2013-14	2.1	292.4	72.8	4.8	45.8	132	109.1

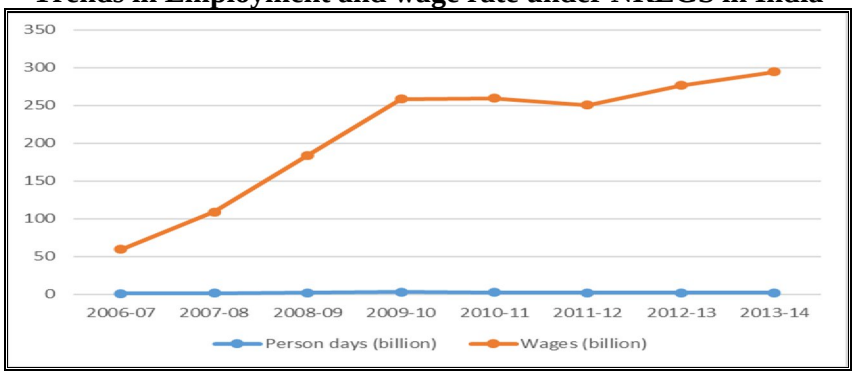
Note: PD = Person days of employment generated in billions, W = Wages in Rs. billions. HH P = Households participated in the scheme in billions, AEMPHH = Average employment days per household, AWPP = Average wage rate per person in Rs, EM = Expenditure on material in billions.
Source: www.nrega.nic.in

Since then employment generated has been steadily increasing with the exception of 2011-12 when there was a marginal decline (Table 3.1 and Graph 3.1). In 2013-14 the employment generated was as high as 2.1 billion person days. The wages under the

scheme was Rs.58.4 billion in 2006-007, and it has increased to Rs.256.8 billion in 2010-11. Further, it had increased to Rs.292.4 billion in 2013-14. The average wage rate per person was Rs.65 in 2006-07 and it had increased to Rs.132 in the 2013-14. The number of households participating in the scheme increased from 2.1 billion in 2006-07 to 4.8 billion in 2013-14, registering a double increase. The average employment generated per household has also increased from 43 to 46 days.

According to the Act, while implementing the projects under NREG Scheme, labour cost and material cost should be in the ratio 60:40. This ratio should be maintained at Gram Panchayat, Mandal and District levels. From the table 3.1, find that the percentage of NREGS expenditure on wages has been higher than that of defined ratio.

Graph 3.1:
Trends in Employment and wage rate under NREGS in India



Source: www.nrega.nic.in. **Source:** As in table 3.1

The expenditure on wages has increased from 67.9 percent in 2006-07 to 72.9 percent in 2013-14. It means that the wage and material ratio was nearly 70:30.

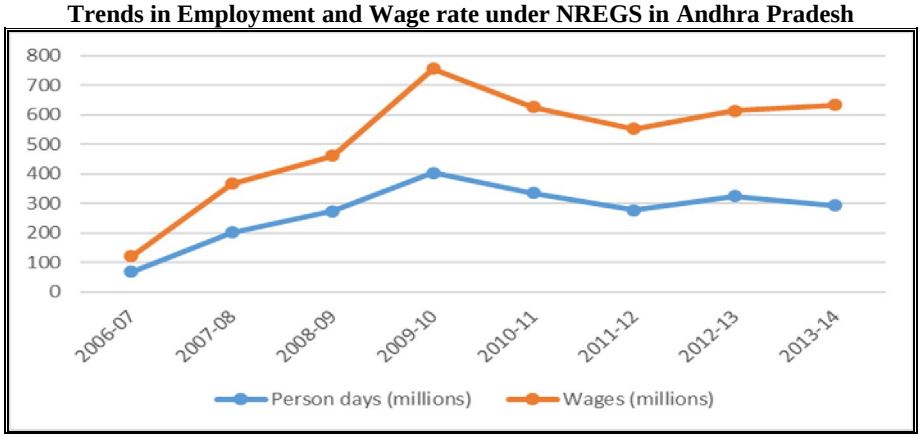
Table 3.2:
Trends in Employment and wage rate under NREGS in Andhra Pradesh

S.No	Year	PD	W(Rs)	HH P	AEMPHH	AW PP	HH/RH
1	2006-07	67.8	53.6	2.1	31.4	81.1	15.1
2	2007-08	201.0	165.7	5.1	41.8	82.4	33.7
3	2008-09	273.5	188.2	6.2	47.9	82.4	40.0
4	2009-10	404.4	352.7	6.4	65.6	89.9	43.2
5	2010-11	335.1	292.2	6.5	54.0	96.0	43.5
6	2011-12	276.7	277.0	5.3	56.4	96.3	34.4
7	2012-13	323.8	289.8	5.9	55.6	104.5	40.8
8	2013-14	293.7	340.5	6.0	49.6	111.9	41.6

Note: PD – Person days of employment generated in millions, W- wages in hundred millions, HH P – Households participated in the scheme in millions, AEMPHH – Average employment days per household, AW PP – Average wage rate per person, HH/RH – Number of Rural households in 2011,
Source: www.nrega.ap.gov.in

Whereas in the case of Andhra Pradesh, NREGS was launched in 2006 in Anathapur district and extended to thirteen districts. It was extended to six more districts on 1st April 2007 and other three districts were brought under the scheme in April 2008. The person days of employment generated in Andhra Pradesh in 2006-07 was 67.8 million days and it has been increasing steadily from 2007-08 to 2013-14.

Graph 3.2:
Trends in Employment and Wage rate under NREGS in Andhra Pradesh



Source: www.nrega.ap.gov.in.
Source: As in table 3.2.

The data from table 3.2 show that the number of households participated in the scheme was 2.1 million in 2006-07, it increased to 6.0 million in 2013-14, showing four times increase. Average employment per household in 2006-07 was 31 days and it increased to 50 days in 2013-14 which is still short of hundred days of employment as per the Act. Average wage per person per day increased from Rs. 81 to Rs. 111 during the above period. Rural household participation rate in the scheme was 15 percent in 2006-07 and it was 41 percent in 2013-14.

Percentage of household job cards in the scheme exhibited broad range of fluctuations. There are some households not participating in the scheme works even though they have job cards. But in bad agricultural years many households are compelled to participate in the scheme.

The employment generated per household is generally higher in Andhra Pradesh than the all India. Wage rate per day per person is marginally lower in Andhra Pradesh than the India. Participation of rural households under the scheme was 41 percent in Andhra Pradesh compared to 28 percent in India.

There are reasons for the decline in the Person days, expenditure on wages, and participation of the households in the scheme in recent years. Often state governments are

not able to implement the scheme effectively, because of inefficient administration and dearth of personnel at the block and panchayat levels for implementation. Another reason was shown as rule by different parties at the Centre and the State.

3.4. SHARE OF THE MARGINALISED GROUPS IN NREGS

The Mahatma Gandhi National Rural Employment Guarantee Act in India offers legal entitlement to rural households, together with wage employment for hundred days during a year. It offers remarkable prospect to India to do justice with vast section of its people in rural areas who live in chronic poverty and are unable to meet their basic needs. Since its implementation in 2006, the NREGS has attracted attention both at national and international level. This can be called as one of the biggest anti-poverty schemes in the world. The scheme provides descent wages to job seekers, bringing the poorest, and the marginalised, like the Scheduled castes (SC) and Scheduled Tribes (ST) households into the mainstream of the society. These groups have been excluded from the main stream of development process. It also offers them a secure source of income, while empowering rural women and Panchayati Raj Institutions (PRIs).

Table 3.3: Share of the Marginalised Groups in NREGS in India

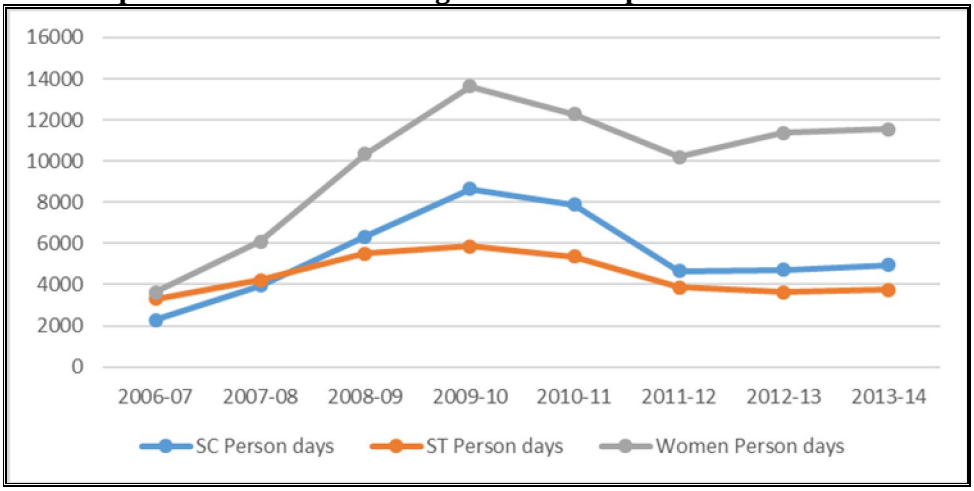
Year	SC PD	% of SCs	ST PD	% of STs	Women PD	% Women	Total PD
2006-07	2295.2	25.3	3298.7	36.4	3637.0	40.1	9231
2007-08	3943	27.4	4207.7	29.2	6109.1	42.4	14260
2008-09	6336.1	29.2	5501.6	25.4	10357.3	47.8	22195
2009-10	8644.8	30.4	5874.4	20.7	13640.4	48.1	28160
2010-11	7875.6	30.6	5361.7	20.8	12274.2	47.7	25512
2011-12	4660.5	22.0	3862.2	18.2	10197.7	48.1	18720
2012-13	4726.7	21.6	3627.8	16.6	11388.5	52.1	19743
2013-14	4941.3	22.6	3758.2	17.1	11554.6	52.8	20254

Note: SC PD = Schedule Caste Person days, lakhs, ST PD = Schedule Tribe Person days, lakhs, Women PD = women Person days lakhs.
Source: www.nrega.nic.in.

There are many indicators which show that this self-targeting scheme succeeds in getting good participation from marginalised groups like the Schedule Castes and Schedule Tribes. More than 40 to 50 per cent of the work at National level was shared by Schedule Castes and Schedule Tribes, during every year of its implementation. Schedule

Castes and Schedule Tribes comprised more than 40 percent of the person-days of employment during the financial year 2011 -12.

Graph 3.3: Share of the Marginalised Groups in NREGS in India



Source: www.nrega.ap.gov.in
Source: As in table 3.3.

The data from table 3.3 show that in India, the percentage of marginalised groups (Schedule Castes and Schedule Tribes) in the scheme in 2006-07 was 25.3 and 36.4 respectively. It increased up to 2009-10, since then the share of the marginalised groups has declined. In the case of women the total employment provided in the scheme has steadily increased from 3637.1 to 11554.6 lakhs during the period 2006-07 to 2013-2014.

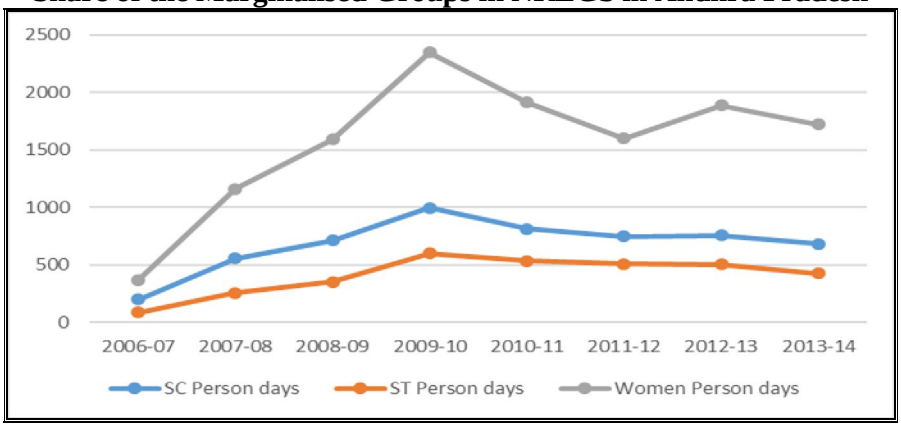
Table 3.4: Share of the Marginalised Groups in NREGS in Andhra Pradesh

S.No	Year	SC PD	% of SCs	ST PD	% of STs	Women PD	% Women
1	2006-07	202.1	29.8	88.3	13.01	371.9	54.8
2	2007-08	557.2	27.8	257.1	12.8	1160.8	57.8
3	2008-09	715.0	26.1	354.3	123.0	1590.7	58.2
4	2009-10	998	24.7	598.8	14.7	2349.6	58.1
5	2010-11	815.0	24.3	537.1	16.02	1912.1	57.1
6	2011-12	747.1	27.0	508.2	18.4	1599.5	57.8
7	2012-13	755.6	23.3	502.7	15.6	1888.9	58.3
8	2013-14	682.3	23.2	427.5	14.6	1724.5	58.7

Note: SC PD = Schedule Caste Person days, ST PD = Schedule Tribe Person days, Women PD = women Person days.
Source: www.nrega.ap.gov.in.

The data from table 3.4 show that in Andhra Pradesh, the percentage of total person days of employment in NREGS programme in 2006-07 was 29.8 for Schedule Castes and 13.1 for Schedule Tribes. From 2006-07 onwards the percentage shares of the marginalised groups was increasing. It was also found by NSSO survey on NREGS that in Andhra Pradesh 42 percent of the beneficiaries were Schedule Castes/Schedule Tribes and 50 percent were Other Backward Castes.

Graph 3.4:
Share of the Marginalised Groups in NREGS in Andhra Pradesh



Source: www.nrega.ap.gov.in. **Source:** As in table 3.4

It may be seen from tables 3.3 and 3.4 that the Scheduled Castes and Scheduled Tribes obtained higher share in the employment created in the country by NREGS, disproportionate to their population in the country. Though share of Scheduled Castes is only 19.2 percent of the total population, they shared 23.2 percent of the benefits of employment from NREGS, during 2013-14. Though the share of Scheduled Tribes is only 9.1 percent of the total population, they shared 14.5 percent of the benefits of employment from NREGS, during 2013-14.

The official data (Ministry of Rural Development, Government of India website) suggest that the share of women in the total NREGS employment in the state progressively increased from 54.7 per cent in 2006–07 to 58.7 percent in 2013-14. It is shown in the Graph 3.4, in recent years the share of women in total employment was disproportionate to their population.

3.5. PERFORMANCE OF NREGS IN DOKUR VILLAGE

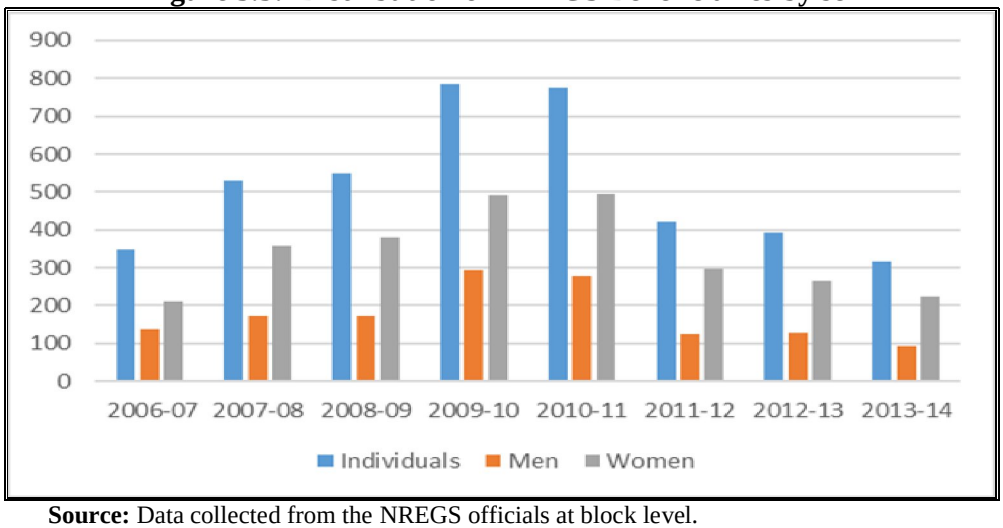
Dokur village is one of the villages in Devarkadra mandal in Mahabubnagar district in Telangana state. Several government welfare schemes are implemented in this village. Among them Mahatma Gandhi National Rural Employment Guarantee Programme is one of the schemes. It was implemented in the village during 2006-07. Under this scheme several works has been conducted in the village. The works are land development in fallow lands of small farmers, desilting of tanks, vandan kalva, cheruvu, filling of abandoned wells, land levelling in ordinary soil, Jungle (bush) cutting, development of land for weaker sections, construction of Indiramma Housing Basement in Dokur, laying of roads to agricultural fields, Individual household latrine work, jelliflora clearance, raising the horticulture plantation etc.,

Table 3.5:
Distribution of NREGS beneficiaries by sex in Dokur village

Year	Individuals	Men	Women
2006-07	347	136	211
2007-08	531	173	358
2008-09	550	171	379
2009-10	785	294	491
2010-11	774	278	496
2011-12	421	124	297
2012-13	394	128	266
2013-14	316	92	224

Source: Data collected from the NREGS officials at block level.

Figure 3.5: Distribution of NREGS Beneficiaries by sex



Source: Data collected from the NREGS officials at block level.
Source: As in table: 3.5

The data of table 3.5 shows the distribution of households working under the scheme by gender. It shows that the total number of persons who worked in the scheme was 4118 persons up to 2013-14. Among the total beneficiaries men were 1396 and 2722 were women beneficiaries. The highest participation rate in the scheme was 785 persons in 2009-10, followed by 774 persons in 2011-12 and 550 persons in 2008 - 09. In the year 2009-10, 294 beneficiaries are men, 491 beneficiaries are women, indicating that participation of women in the scheme is more than the men. The reasons for the higher participation of women in the programme are equal wage for both men and women; availability of work within the village, there is no time bound in the work.

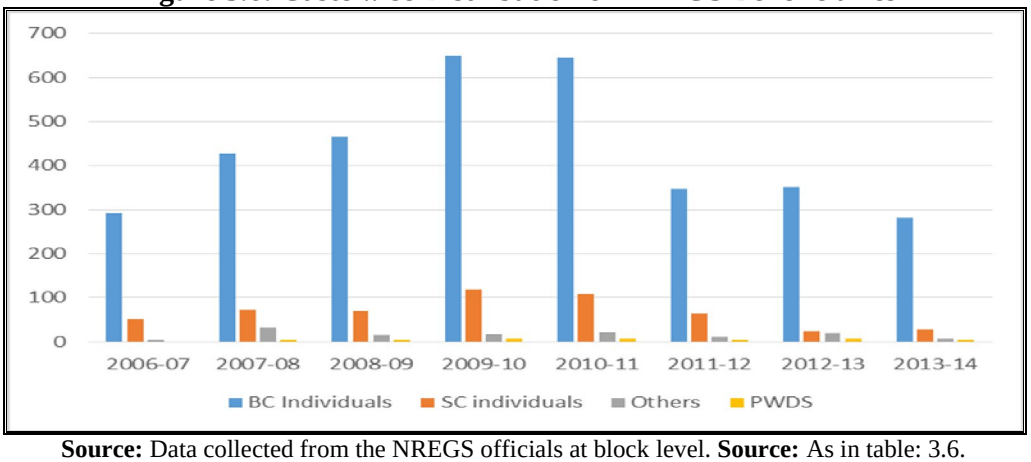
Table 3.6: Distribution of NREGS Beneficiaries by Caste wise in Dokur Village

Year	SC	BC	Others*	PWDS	Total Beificiaries
2006-07	51	291	5	0	347
2007-08	72	428	31	4	535
2008-09	69	466	15	5	555
2009-10	118	650	17	6	791
2010-11	108	644	22	6	780
2011-12	63	347	11	4	425
2012-13	23	351	18	6	400
2013-14	28	282	6	5	321

Source: Data collected from the NREGS officials at block level,*Scheduled Tribes are included in others

Caste wise distribution of beneficiaries is presented in table 3.6. The total number of beneficiaries in the scheme was 347 in 2006 – 07. Among them Scheduled Caste (SC) beneficiaries were 51, Other Backward caste (OBCs) beneficiaries were 291, Others (OC) were 5. The total persons participated in the scheme has increased to 791 persons in 2009-10. From the 2009-10 onwards there was a slight decline in participation of all caste beneficiaries under the scheme up to 2013-14.

Figure 3.6: Caste wise Distribution of NREGS Beneficiaries



Source: Data collected from the NREGS officials at block level. **Source:** As in table: 3.6.

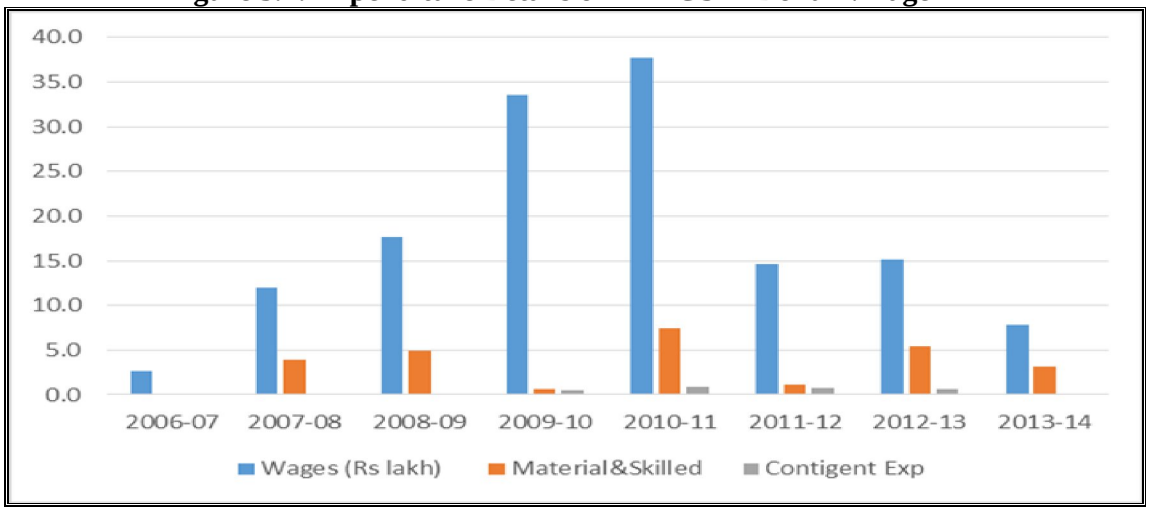
The percentage share of the Other Backward Castes are very high, their percentage of participation in the programme is higher than their share in the total population of the village. Whereas the percentage of Schedule Castes' participation under the scheme was lower than their share in the total population of the village.

Table 3.7:
Expenditure details of wage and material components in NREGS in Dokur village (in Rs)

Year	Wages (Rs lakh)	Material &Skilled (Rs in lakhs)	Contingent Exp. (Rs in lakhs)	Total (Rs in lakhs)
2006-07	2.6	0	0	02.6
2007-08	12.0	3.8	0	15.8
2008-09	17.6	4.9	0	22.5
2009-10	33.5	0.65	0.4	34.6
2010-11	37.8	7.5	0.8	46.1
2011-12	14.6	1.1	0.7	16.5
2012-13	15.2	5.3	0.6	21.2
2013-14	7.8	3.1	0.1	11.0

Source: Data collected from the NREGS officials at block level

Figure 3.7: Expenditure Details of NREGS in Dokur village



Source: Data collected from the NREGS officials at block level
Source: As in table: 3.7.

The data of table 3.7 shows the details of expenditure of the scheme. The total expenditure of the scheme was Rs.15.9 lakhs, of which Rs.12.0 lakhs was used for the wages of unskilled labour, Rs.3.8 lakhs was spent on the material and skilled labour in the year 2007-08. The total expenditure under the scheme has increased to Rs.46.1 lakhs, expenditure on wages was Rs.37.7 lakhs, amount spent on material and skilled labour

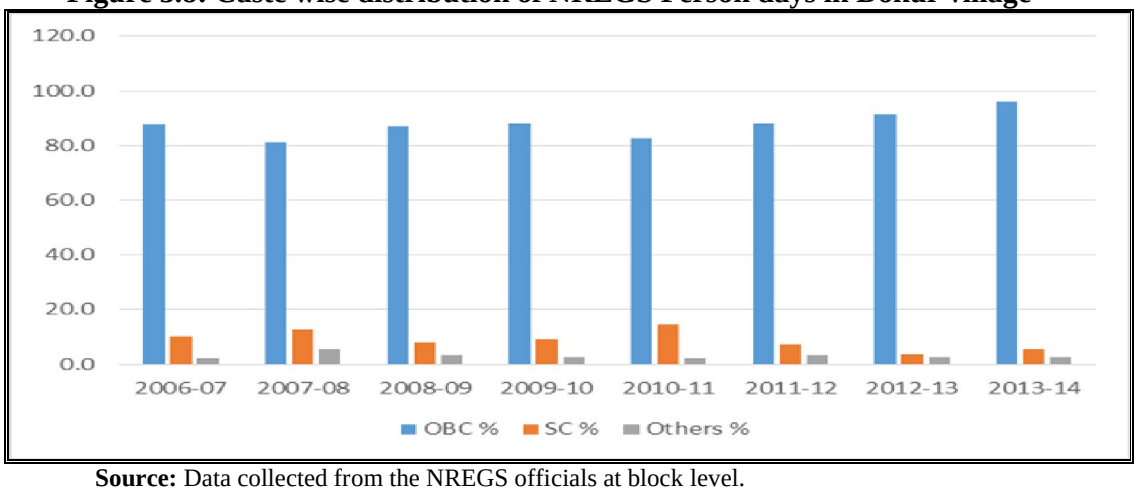
Rs.7.5 lakhs and the expenditure of contingency Rs.0.8 lakhs in the year 2010-11. After that there is a sharp decline in expenditure on all components of the scheme.

Table 3.8:
Distribution of Person Days among the households by caste in Dokur village

Year	No.of Person days (SC)	%	No.of Person days (BC)	%	No.of Person days (Others)*	%	Total Person Days
2006-07	320	10.0	2795	87.6	75	2.3	3190
2007-08	1954	12.5	12646	81.0	828	5.3	15428
2008-09	1665	7.8	18546	86.8	671	3.2	20882
2009-10	3221	9.1	3943	88.1	924	2.7	8088
2010-11	5185	14.5	29556	82.8	726	2.1	35467
2011-12	1077	7.2	13076	87.9	490	3.3	14643
2012-13	534	3.6	13320	91.2	374	2.6	14228
2013-14	352	5.5	6047	95.9	170	2.7	6569
Total	14308	12.1	99929	83.3	4258	3.6	118495

Source: Total data collected from the NREGS officials at block level. *Schedule Tribes are included in others.

Figure 3.8: Caste wise distribution of NREGS Person days in Dokur village



Source: Data collected from the NREGS officials at block level.
Source: As in table: 3.8.

Table 3.8 shows that, the distribution of person days among the households by caste in the village. The total number of person days created under the programme in the village is 118495 during the period 2006-07 to 2013-14. Out of which the percentage share of the Other Backward Castes was 84.3, Schedule Castes was 12.1, and others were 3.6.

The data from the table 3.9 show that the performance of the National Rural Employment Guarantee Scheme in Dokur village. Under the scheme total person days of

employment generated in 2006-2007 was 3190 days, it has increased from 15428 days in 2007-08 to 35467 days in 2010-11, and there is a sharp decline in the man days under the scheme in subsequent years.

Table 3.9: Trends in Employment and Wage Rate under NREGS in Dokur village

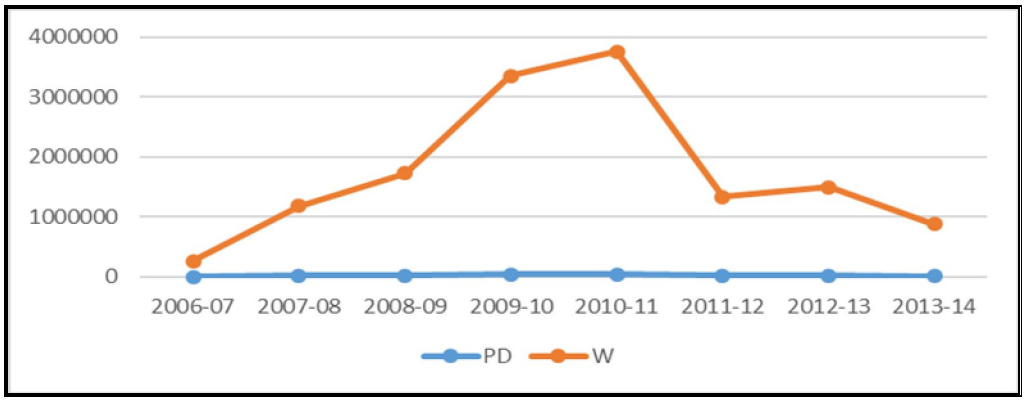
S.No	Year	PD	W (Rs. lakhs)	HH P	AEMPHH	AW PP	HH 100 days
1	2006-07	3190	2.6	228	13.4	82.1	2
2	2007-08	15428	11.8	349	44.7	76.9	37
3	2008-09	20882	17.3	346	61.7	82.6	61
4	2009-10	35088	33.5	438	80.1	95.5	134
5	2010-11	35467	37.6	415	86.0	105.8	135
6	2011-12	14643	13.3	272	54.7	98.0	43
7	2012-13	14240	14.9	246	59.4	103.9	48
8	2013-14	6569	8.8	214	29.4	123.6	6

Note: PD – Person days of employment generated, W- wages in Rs. lakhs, HH P – Households participated in the scheme, AEMPHH – Average employment days per household, AW PP – Average wage rate per person, HH 100 days – Number of Households completed 100 days employment.

Source: www.nrega.ap.gov.in.

Expenditure on wages under the scheme was Rs. 2.6 lakhs in 2006-07; it increased to Rs. 37.6 lakhs in 2010-11. Further, there was a slight decline in the wages; in 2013-14 it was Rs. 8.8 lakhs. Average wage per person per day was Rs.82.1 in 2006-07 and it increased to Rs.123.6 in 2013-14. The percentage share of expenditure on wages under the scheme in the village was 96.9 percent in 2006-07; it declined to 83.4 in 2009-10. In 2010-11 and 2011-12 the percentage of expenditure on wages were 67.9, 79.4 percent respectively. It shows that labour cost and material cost ratio was 90:10 in very first year, higher than the defined ratio in the scheme. The ratio came down to 65:35 in 2010-11, again it started increasing, in 2013-14 it was 80:20 ratio. It means that increased share of the budget of NREGS was used for wages in village. This indicates that budget was not available for material and administrative work. In the early days of the scheme, more people were interested to work under the programme and almost all households got registered under the scheme. Out-migrants from the village also came back to village to participate in the scheme and they registered their names in the scheme.

Figure 3.9: Trends in Employment and wage rate under NREGS in Dokur



Source: Data collected from NREGS officials at block level.
Source: As in table: 3.9.

The households' participating in the Scheme in 2006-07 was 228, it has increased to 438 households and declined to 214 in 2013-14. The mean person days per family were 13.3 days in 2006-07, 86.1 days in 2010-11 and declined to 29.4 days in 2013-14. The number of households completed 100 days under the scheme in the village was high as 134, 135 households in 2009-10 and 2010-11 respectively. Number of households completed hundred days under the scheme has declined from 2010-11 onwards and it declined to 48 households in 2013-14. The reason for decline in the household participation in the scheme was due to non-implementation of scheme properly and delay in wage payments. The wages of other section is more than the NREGS wages.

3.6. CONCLUSIONS

Several government welfare schemes are implemented in India since Independence. Among them Mahatma Gandhi National Rural Employment Guarantee Programme is one of the schemes.

The number of households participating in the NREGS increased from 2.1 billion in 2006-07 to 4.8 billion in 2013-14 at all India level, registering a double increase. The average employment generated per household has also increased from 43 to 46 days. It was also found that the average wage rate per person was Rs.65 in 2006-07 and it had increased to Rs.132 in the 2013-14. Whereas in the case of Andhra Pradesh, the number of households participated in the scheme was 2.1 million in 2006-07, it increased to 6.0 million in 2013-14, showing four times increase. Average employment per household in 2006-07 was 31 days and it increased to 50 days in 2013-14 which is still short of

hundred days of employment as per the Act. Average wage per person per day increased from Rs. 81 to Rs. 111during the above period.

The total number of persons who worked in the scheme was 4118 persons up to 2013-14. Among the total beneficiaries, men were 1396 and 2722 were women beneficiaries. It was found from the secondary level data from Village Assistant in Dokur village out of 4118 NREGS beneficiaries, 66 percent are female workers and 34 percent are male workers, indicating that women are employed more in the scheme.

The number of households participated in the scheme in the village was 228 households in 2006-07, it increased to 438 households in 2009-10 showing double increase and decline to 214 in 2013-14. Average employment per household in 2006-07 was 13 days and it increased to 86 days in 2010-11 and decline to 29 days in 2013-14. Average wage per person per day increased from Rs. 82 to Rs. 123 during the period 2006-07 to 2013-14.

CHAPTER - IV

CHAPTER - 4

PROFILE OF MAHABUBNAGAR DISTRICTAND THE SELECTED STUDY VILLAGE

4.1. Profile of the Mahabubnagar District:

Mahabubnagar district is one of the drought prone districts in united Andhra Pradesh. The geographical area of Mahabubnagar, according to census 2011, is 18.4 thousand sq.kms which is 6.7 percent of the state geographical area (275 thousand sq.kms). Some of the district level data is given in table 4.1.

Table 4.1: Mahabubnagar District Statistics in 2011

Particulars	Mahabubnagar
Area (‘000 sq km)	18.4
Revenue Divisions	5
Mandals	64
Panchayats	1348
Villages	1550
Towns	7
Population (lakhs)	40.42
Males (lakhs)	20.46
Females (lakhs)	19.95
Rural population (lakhs)	34.45
Urban population (lakhs)	6.07
Literacy	56.05
Scheduled Caste (lakhs)	6.01
Scheduled Tribe (lakhs)	2.79
Rainfall (mm)	604
Electricity availability (%)	100
Net irrigated Area (lakhs ha)	1.41
Gross irrigated area (lakhs ha)	1.78

Source: Statistics of 2011 Census

The data from table 4.1 show that the profile of Mahabubnagar district. There are 64 mandals consisting of 1550 villages and 1348 Gram Panchayats. The total population of the district was 40.4 lakhs, comprising of 20.4 lakh males and 19.9 lakh females, it accounting 4.6 percent in the total state population. In the total population rural population is 34.4 lakh and 6.0 lakh urban populations have registered. The population of scheduled caste and scheduled tribe is 6.0 lakhs and 2.7 lakhs respectively, accounting for 17.1 percent and 7.9 percent of the total population of the district as against the state average of 16.1 percent and 6.5 percent respectively.

Table 4.2: Area, Population and Density of Population of Mahabubnagar District (2011 Census)

State/ District	Area ('000 sq.km)	Total population (persons)	Density (no. of persons per sq. km)
Mahabubnagar	18.4 (6.7%)	40, 42,191 45(4.78%)	219
Andhra Pradesh	275.0	8,45,80,777	308

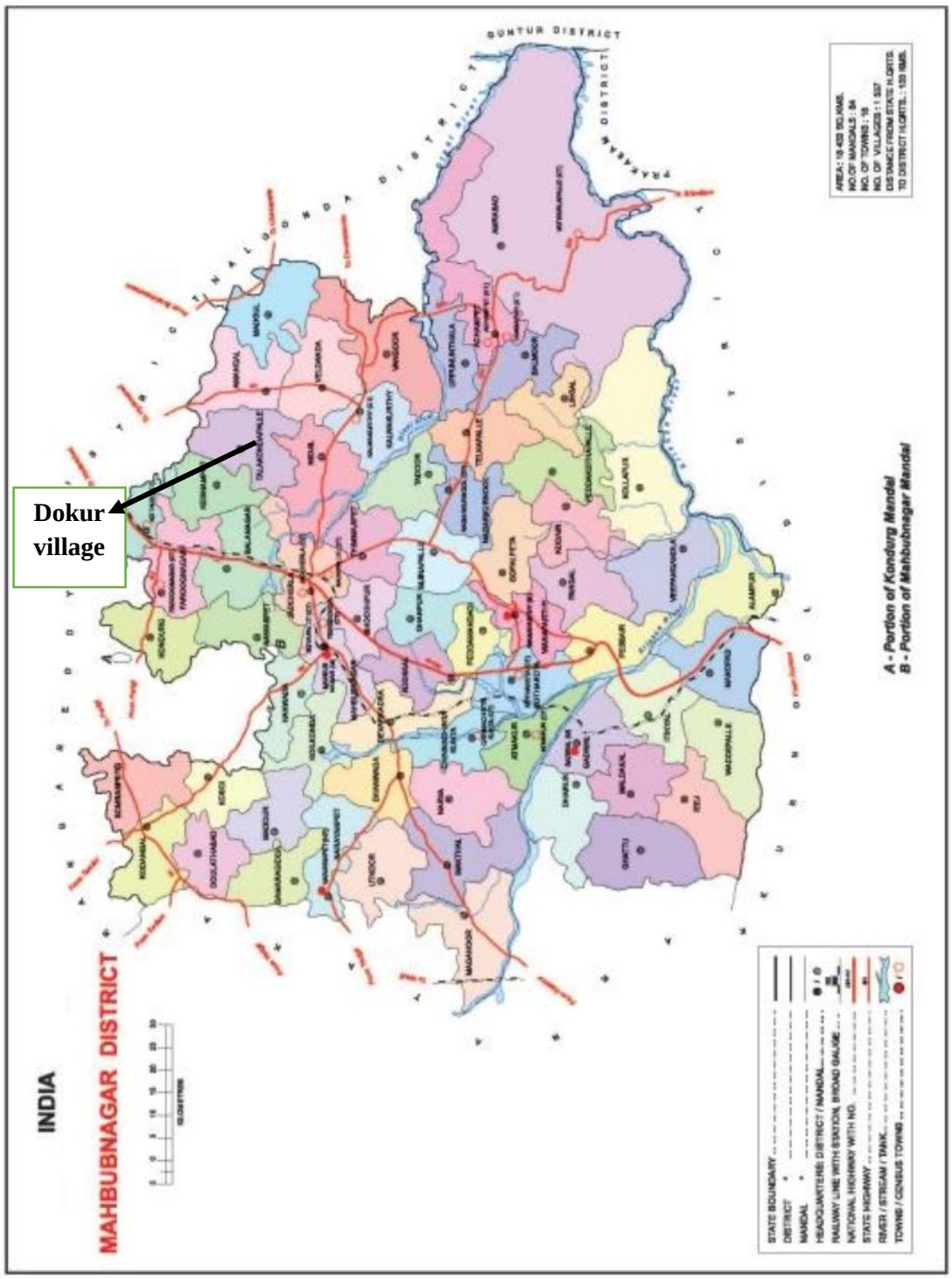
Source: Statistics of 2011 Census.

The data from table 4.2 show that the Area, Population and density of population of Mahabubnagar District. The density of the population for Mahabubnagar is 219 per sq. km and 308 per sq. km for Andhra Pradesh as per 2011 Census. Most of the population in the state is living in rural areas (73 percent) while the percentage of population living in urban areas is 27 only. The corresponding percentages for Mahabubnagar are 62 and 38. As per the census 2011 the decadal growth of population of Mahbubnagar is 15.0 percent. The sex ratio is 975 females per 1000 males as against the state average of 992. Literacy rate is 56.0 percent, male and female literacy rate stood at 66.2 percent and 45.6 percent respectively. The percentage of literate population in district is 56.0, 66.2 percent for males and 45.6 percent for females, the lowest among all the districts in united Andhra Pradesh.

4.2. URBAN LOCAL BODIES AND REVENUE DIVISIONS

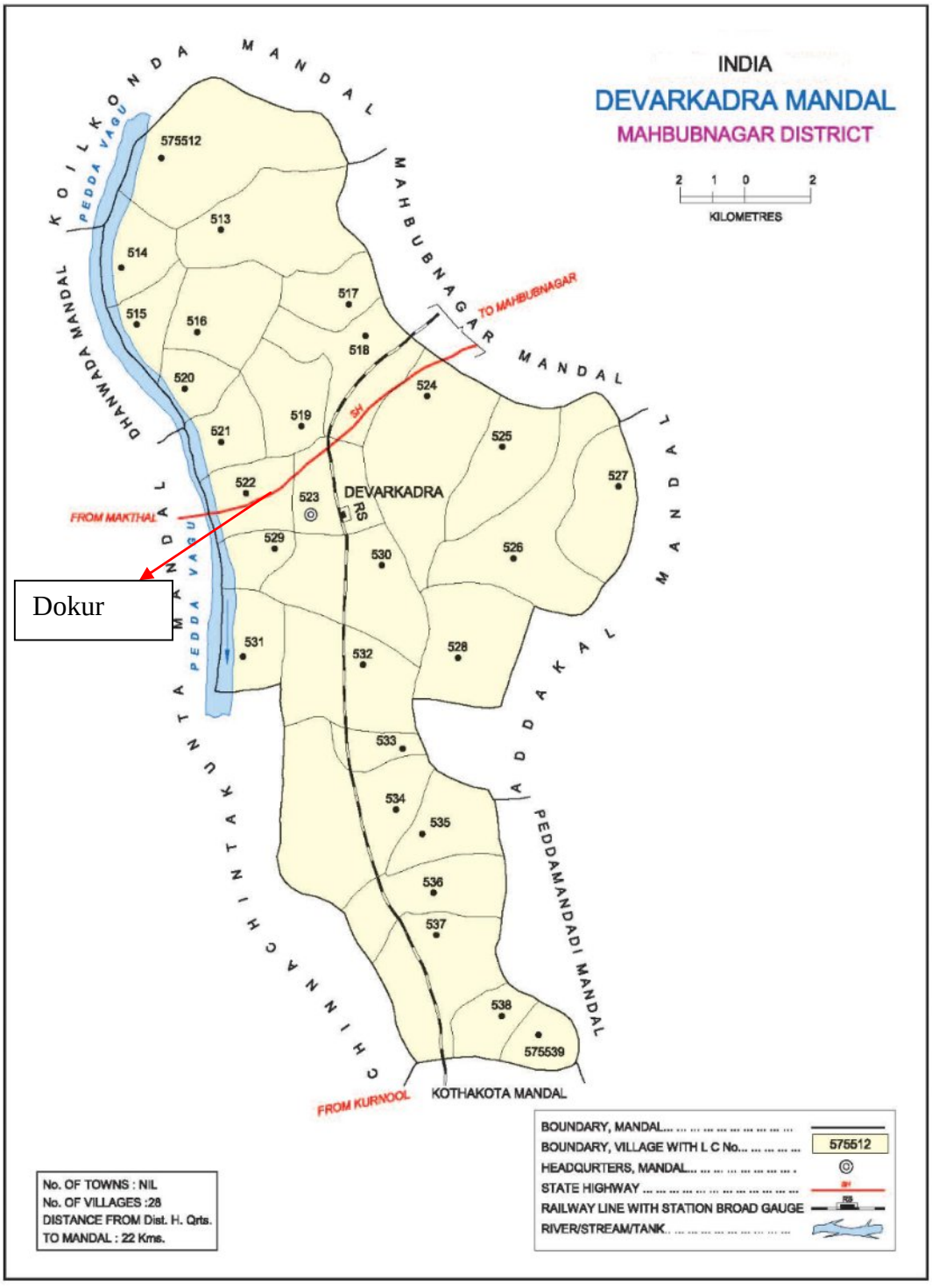
The district headquarter is the largest urban area in the district. In Mahabubnagar there are four municipalities (Mahabubnagar, Narayanpet, Wanaparthy and Gadwal) and five Revenue Divisions. They are Narayanpet, Nagarkurnool, Wanaparthy, Mahabubnagar and Gadwal. Among the revenue divisions Mahabubnagar is the largest division covering 19 mandals, followed by Narayanpet 15 mandals, Nagarkurnool 14 mandals, Gadwal and Wanaparthy each covers 18 mandals. The map of the district is given in Figure 4.1.

Figure 4.1: District Map of Mahabubnagar District



350

Figure 4.2: Map of Devarkadra Mandal



375

Devarkadra mandal (sub district) is one of the mandals (sub districts) in the Mahabubnagar district. As per the Census 2011 the population in Devarkadra is 58358, of which 29490 were males and 28895 were females. The male population is 50.5 percent and female population is 49.5 percent. The children below the age 0-6 years are 7479, 3950 males and 3529 females. Literate people in the sub district are 26947, of which males are 16179, females were 10768. The literacy rate is 27.7 percent among males and 18.4 percent among females.

4.3. PROFILE OF DOKUR VILLAGE

The location map of Dokur village in the mandal is given in figure 4.2. Dokur village is selected for the thesis purposively. Dokur is a small village, in Mahbubnagar district of Telangana state. It was selected as one of the sites for Village-Level Studies (VLS) by the ICRISAT. The village studies were initiated in 1975 by the Economics Programme of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, in Hyderabad. Dokur village is situated in Devarkadra mandal. Dokur is situated 130 km away from Hyderabad.

The village is drought-prone and adequately represents the semi-arid tropics. The annual maximum temperature of the village is 40°C and minimum temperature is 20° C, while the normal rainfall in the village is 730 mm, distributed erratically. Traditionally, agriculture has been the main livelihood of the villagers. However, over time, due to persistent drought and drying up of irrigation water sources, agricultural productivity and cultivated area declined drastically. This led to fallowing of land season after season, enabling bushes to grow extensively. The major crops grown are Paddy, Groundnut, Castor, Pigeonpea and Cotton. Out migration to cities, mainly to Hyderabad, to work in construction projects has been on the rise.

4.4. HISTORICAL BACKGROUND / DEVELOPMENT OF THE VILLAGE

During the last three decades, Dokur village has progressed to varying degrees in terms of social, political, economic, technological, institutional and infrastructural, educational, and religious advancement. With the decline in income from agriculture during the last decade, non-farm sector and out migration and other occupations became more important sources of income. Owing to this, net household income and per capita income have increased, despite the general decrease in the viability of agriculture. The

household real income has increased from Rs.5641 in 1975-76 to Rs.19794 in 2010-11, more than doubled in the last decade. Poverty levels have declined from 92 percent in 1977 to 35 percent in 2006 and consumption levels improved considerably although a few households still suffer from energy- and protein deficiency. Out migration is more in Dokur. Lack of employment opportunities in the village, especially during recurrent droughts, has led to migration of villagers to cities within and outside the state in search of non-farm employment. The majority of the households depend on labour earnings although they own farm land. The majority of the permanent migrants are generally interested in returning to the village to work on their fields if the rainfall is favorable for agriculture.

ICRISAT collected information on various socio-economic factors, infrastructure facilities etc. Look of this village from 1975-76 onwards and the data is collected every year. The data of the beginning point and for the year 2011-12 are compared (Table 4.3). Dynamic changes (rural transformation) were noticed in the village between these two time points. Changes in traditional rural industries, the employment, consumption structure and the social structure were noticed. Transport facilities have increased and at present the village is connected to town by buses and auto – rickshaws. Literacy level and the number of graduates and post- graduates have increased.

Table 4.3: General information of the Dokur village, 1975 to 2011-12

Description	**1975-76**	**2011-12**
Availability of education	Primary school	Higher secondary school
Graduates	07	95
Post – graduates	00	21
Literacy rate (%)	16 %	70%
Anganwadi Centres	01	03
Primary School	01	01
Higher Secondary School	00	01
Electricity facility (%)	60 %	100%
Private School	00	00
Milk	NA	750 liters/ day
Credit facilities	Money lenders	APGVB at Koukuntla, Co-op Bank, SBH at Devarkadra and Money lenders
Self Help Groups	00	35
Medical Facilities	1 RMP	1RMP & 1IRHS clinic
Tractors	00	20
Sprayers	00	20
Radio	50	03
Televisions	00	70 %
Water for Drinking	Hand Pump	60 % Households have Taps
Gas connections	00	60 % Households

Source: Village Level Studies by ICRISAT

The village is fully electrified, agriculture is mechanised with the availability of tractors, sprayers, etc. The above changes indicate that a huge transformation has taken place in the village with regard to infrastructure and other facilities.

4.5. EDUCATION AND HEALTH FACILITIES IN VILLAGE

In the village educational awareness and opportunities have significantly improved, because of better facilities provided by the village panchayat along with the District Education department's financial support. A primary school was established in 1966 and upgraded to high school level in 2007. First Anganwadi centre was set up in 1993 and the second on 2008. Private schools have also opened at a distance of about five to seven km from the village, near Devarkadra. There are 45 students (26 male and 19 female) enrolled in the Anganwadis and 329 students (161 male and 168 female) in the primary and high schools. The government is supporting the construction of a Kendriya Vidyalaya (Gurukula Patasala) for the benefit of female students studying in Standards 6-10. Under the Adult Education Programme, an evening school provides education to illiterate adult villagers. Literacy rates and awareness of educational opportunities have significantly improved in the village. Average years of schooling have increased for both male and female children in the village male children 7.8 years and for female children 7.6 years.

Healthcare facilities in the village have improved a lot and are better than earlier. In the village Institute for Rural Health Studies (IRHS) Clinic has been established in 1989. It provides the basic healthcare services to the villagers. One R.M.P. doctor is available in the village and Primary health centre is functioning within seven kilometers distance from the village.

4.6. LAND MARKET IN THE VILLAGE

Distribution of land ownership in the village is consistent with three trends: Decrease in the landlessness; increasing the equality; and declining farm size. Landholding size in the village is small (average land holding size 1.8 hectares) and scattered, because of individual farming etc. Most of the households got land ownership by purchasing land, and received from the land tenancy Act or from various Government programmes.

The total land available in the village is 1358 hectares, land in the village is used for several purposes, for agriculture 1303 hectares, for roads and buildings and non –

farm activities 23 hectares, for water resources like tank, river 20 hectares and for railway track and station 12 hectares. Land is the major component in the asset basket of the households and it contributes about 70 percent of the total assets. The average total asset per household is Rs.80, 000. Several types of soil was available in the village: Sandy 3 percent (Dubba), Red 55 percent (Erra), Shallow black 13 percent (Nalla), White salty 5 percent (Choudu), Red Pebbles 22 percent and silt 2 percent (Ondru).

4.6.1 Irrigation Facilities in the village:

Availability of irrigation facilities influences the welfare of the households. In the early years, few farmers had irrigation facilities like open wells and tanks. Now more farmers have access to irrigation as they have drilled bore wells, through availing the subsidy from the government. There are 260 bore wells, 110 open wells, three ponds, one river, in the village. Among them 170 bore wells, three open wells, and two ponds are working. Water from ponds, tanks and river is not used for irrigation, and is used for storage of water to recharge bore wells. From the sample households it was found that the total area was 802 acres, out of which cultivated area is 422 acres, irrigated area is 271 acres, leased in area is 19 acres.

4.7. SOURCES OF INCOME OF HOUSEHOLDS IN THE VILLAGE

The data from table 4.4 show that the households farm and non-farm income. A lot of change in the income levels of people was noticed in the village and there has been a change in the source of income over the years. The percentage of the farm income was reduced from 45 in 2005 to 35 in 2010, while income from non – farm income has increased from 54.2 percent in 2005 to 64 percent in 2010.

Table 4.4: Distribution of Households' Income by farm and non-farm activities

Year	Farm Income (in Rs)	%	Non-farm Income (in RS)	%	Total Income (Rs)
2005	29173.2	45.8	34570.2	54.2	63743.4
2006	33634.6	39.8	50857.7	60.2	84492.3
2007	41341.0	40.5	60613.4	59.5	101954.4
2008	29854.0	27.4	79194.3	72.6	109048.3
2009	52133.7	38.1	84639.6	61.9	136773.3
2010	40754.6	35.2	75069.0	64.8	115823.6
2011	75663.6	48.8	79356.7	51.2	155020.3
2012	86995.1	56.1	68204.6	43.9	155199.7

Source: Village Level Studies by ICRISAT

The main sources of rural transformation are technological change in agriculture and increase in non – farm income. Technological change in agriculture has been considered the trigger of the income and employment diversification of villagers. From 1992-2004 Dokur village experienced a continuous drought. To cope with continuous droughts they adopted crop diversification, choosing non- farm employment activities and out migrated from the village. The households' income doubled during 1975-78 and 2005-10, though a reduction in the farm income, except during the drought time. In early 1970's, 77 % of household income came from agriculture and related works, after 2007 share of the agriculture and related works was changed, it declined to forty three percent and the rest is from non-agricultural sector. Because of the income diversification inequalities among the households increased in recent years. Income inequalities were as high as 55 percent during 2005–06 and 50 percent during 2006–07 to 2008-09 (A.A.Reddy 2013).

4.7.1 Agricultural wages in Dokur:

There was a very slow pace of increase in the wages of both male and female up to 2006. However, from 2007 onwards, there was a faster growth in the wages for both men and women. At the same time NREGS was also implemented in the state from 2006 onwards. Table 4.5 shows the wage rates for men and women in the village during 2005 – 2014.

Table 4.5: Agricultural Wage Rates in Dokur village

Per day (Rs)

Year	Male		Female	
2005	60	-	40	-
2006	65	(8.3)	45	(12.5)
2007	65	(0.0)	45	(0.0)
2008	100	(53.8)	75	(66.7)
2009	120	(20.0)	90	(20.0)
2010	150	(25.0)	115	(27.8)
2011	180	(20.0)	120	(4.3)
2012	200	(11.1)	130	(8.3)
2013	250	(25.0)	150	(15.4)
2014	250	(0.0)	200	(33.3)

Source: Village Level Studies by ICRISAT, Values in the parentheses are growth rates.

The real farm wages were almost stagnant during 2000 – 2006; from 2007 onwards wage rates for both men and women labourers have increased. There was a gap between the male and female wage rates in the village, farm wages as well as non – farm

wages are higher for men than for women. Farm servants who worked for large farmers a decade ago are not easily available at present, because availability of several opportunities in non – farm sector. People in the village do not want to continue as servants, they want to take land from large farmers for cultivation purpose through leasing – in. Due to persistent droughts and fallowing of lands, employment opportunities are very low in the village leading to increase in non – farm employment.

4.8. Other facilities:

Several facilities are there in the village very few important facilities are presenting under the other facilities. They are credit facilities in the village and facilities for women empowerment are given below.

4.8.1 Credit Facilities:

In India the most common problem in rural areas is the lack of investment in infrastructure development and socio – economic activities. It is very difficult to get credit at affordable interest rates in rural areas. In Dokur village most of the people depend on the money lenders to get credit. Recently government is providing financial support through banks and other schemes. The villagers meet their credit requirements from the Andhra Pradesh Grameena Vikas Bank (APGVB), Primary Agricultural Credit Society (PACS) and two nationalised banks (Andhra Bank and State Bank of Hyderabad) located at Devarkadra, about seven kilometers away. Even then, rural credit market in the village is dominated by money lenders may be because of problems in getting credit from the banks.

4.8.2 Women Empowerment:

There are thirty five Self Help Groups in the village; all the groups were linked to near-by banks. Each group consisting of 10 – 15 members, each one has to save Rs.30 per month. Banks are providing loans to each Self Help Group depending on their savings in the bank, for starting business, for buying livestock etc. Self Help Groups (SHGs) and farmers get loans from these institutions at very reasonable interest rates. Among all the thirty five groups only thirty groups are working actively, remaining five groups are not functioning properly because of non-repayment of loans; some members are not interested to continue with the group etc. In addition, there are about 20 private money

lenders operating in the village, who provide loans to a considerable number of households.

4.9. MIGRATION IN DOKUR VILLAGE

During the time of drought villagers had implemented several strategies to face the situation like crop diversification, looking for more employment opportunities and migrating to cities. Seasonal migration is very high in the village; at least one person from every household has migrated to cities for better employment opportunities. In village, 50 percent of the households migrated to cities seasonally as well as whole year.

NREGS has not reduced the out-migration from the village. In the initial years of the scheme people were interested to work in the scheme. It was found that after 2010 migration to Hyderabad has come down and again has increased in 2013. Maharashtra is showing the same trend, migration to Gujarat has shown increasing trend until 2011 after that started to decline. Out migration to other places there was an increasing trend. On the whole total migration has shown an increasing trend over a period of time.

Table 4.6
Major Seasonal Out-migration pattern in Dokur - Number of People

Year	Hyderabad	Maharshtra	Gujarat	Other Places	Total
2005	220	120	100	80	520
2006	300	100	75	75	550
2007	500	120	100	80	770
2008	500	100	100	50	750
2009	500	100	100	50	750
2010	500	100	100	50	750
2011	300	150	100	150	700
2012	400	100	75	200	775
2013	450	150	100	250	950
2014	500	150	100	200	950

Source: Village Level Studies by ICRISAT.

The nature and extent of migration in Dokur is quite interesting. Migrants were employed in different occupations at the place of destination. The data of table 4.6 shows the nature and extent of migration of the Dokur village. After 2011 villagers are not interested to work in the scheme, they are interested in other non – farm employment and migration to cities. The reasons for this are delays in wage payment and low wages in the scheme compared to wages from outside works and so the out migration continued. In the construction sector daily wage for female is Rs.250 and for male is Rs.350.

Whereas NREGS provides employment only on seasonal basis women and old males are main workers in the scheme; others prefer to migrate. If there is no NREGS people will sit at home or migrate to other places.

Table 4.7: Occupations of out migrants from Dokur Village During 1975-76 to 2011-12

Employment	Distance (Kms)	Place of work	Gender	Wage Rate
Construction work, loading & unloading work, road laying etc.	50 -1500	Hyderabad, Pune, Goa, Ahemadabad, Boarda, Bombay	Both male and Female	Rs.10000 /- in advance plus free boarding and lodging.
Washer men	> 500	Pune and Goa	Male and Female	Rs.3000 to 5000 per month
For Driving	150	Hyderabad and Mahabubnagar	Male	Rs.2500 to 4000 per month
Servers in Restaurants and lodges etc.	100	Hyderabad and Mahabubnagar.	Male	Rs.3000 to 4000 and free boarding and lodging.
Auto Service	5 -150	Devarkadra, Mahabubnagar, Hyderabad.	Male	Rs.150-250 per day
Work in shops, Companys, other works.	5-50	Devarkadra, Mahabubnagar	Male	Rs.3000 to 4500 per month.
Servants in Homes	25-150	Mahabubnagar, Hyderabad.	Female	Rs.1000 to 1500 per month
Caste occupations, Barbers, Carpenters, Goldsmiths, Plumbers	10 -25	Mahabubnagar, Devarkadra, Hyderabad, Pune.	Male	Rs.150 to 250 per day

Source: Village Level Studies by ICRISAT.

The data of table 4.7 indicates that the out migrants from the village are engaged in different non- agricultural activities in cities and earning more wages in the place of destination.

4.10. GOVERNMENT PROGRAMMES IMPLEMENTED IN THE VILLAGE

Several government programmes were implemented in the village: Public Distribution System (PDS), Self Help Groups (SHG), National Food Security Mission (NFSM), Penssion scheme, Mid – day – meals programme in schools. Indira Awas Yojan (IAY), Antyodaya Anna Yojana (AAY) etc. The latest wage employment programme is NREGS. The total number of families benefiting from the Public Distribution System are

495, among them 485 are below poverty line (white cards) and 10 cards are above poverty line (pink cards). PDS is providing subsidy on rice, kerosene, and sugar etc., In addition 49 families are getting benefits under Anna Antyodaya Yojana (AAY) from Public Distribution System. Under the pension scheme 223 persons are benefited 118 old age, 79 widowed, 24 handicapped, and 2 weaver pensioners.

Village has one primary school up to 7^{th} standard; it was upgraded into a higher secondary school. The present strength of the school is 329. Mid – day – meals scheme has been implemented in the school. Under this scheme 280 students are benefitting. In 1975, villagers were dependent on hand pump for their drinking water. Two overhead tanks were subsequently constructed in 1994 and in 2002, and these are connected to 188 households and 10 public taps.

The latest government scheme introduced by the government of India is Mahatma Gandhi National Rural Employment Guarantee Scheme. The main aim of the scheme is to provide livelihood security to the most vulnerable people living in rural areas by providing hundred days of employment in a year, to the adult member who volunteers to do unskilled manual work. The main focus of the scheme is to create to employment opportunities to women and a provision is made for the development of land and water resources on the private lands of households of Scheduled Castes (SC), Scheduled Tribes (ST), below Poverty Line, Indira Awas Yojana housing and land reform beneficiaries. Under this programme, 438 households got benefitted and generated 35088 working days. Durable assets were created like repairing roads, construction of check dams, desilting of field channels etc.

4.11. DEMOGRAPHIC AND SOCIO ECONOMIC PROFILE OF THE SAMPLE HOUSEHOLDS

The total number of households in the village is 545. The households were classified into five categories based on farm size adopted by ICRISAT classification of households. A sample of fifty percent of each category of the households was selected for data collection. Data was collected for the year 2011-12 from 272 households by using an interview schedule**.** From the household survey data was collected on the structure, education, assets, production, input use, land conservation activities, employment, income and consumption expenditure.

Table 4.8: Distribution of Sample Households by Caste

Category	No.of Households	Percentage
Scheduled Caste	26	9.6
Other Backward Caste	217	79.8
Others*	29	10.7
Total	272	100

Source: Field Survey, 2011-12, * Schedule Tribes are included in others.

The data from table 4.8 show that the sample households by caste wise. The total sample households are 272, out of which 217 households are Other Backward Castes, 29 households are Others and 26 households are Schedule Castes. In the total sample households 79.8 percent are Other Backward Castes, 10.7 percent are Others and 9.6 percent are Schedule Castes.

Table 4.9: Distribution of Sample Households by Farm size in the Village

Size of Landholding	No. of Households	%
Landless Households	28	10.3
Marginal Farmer Households	120	44.1
Small Farmer Households	84	30.9
Medium Farmer Households	28	10.3
Large Farmer Households	12	4.4
Total	272	100

Source: Field Survey, 2011-12

The data from table 4.9 show that the households are classified into five categories according to the size of the landholding. They are 28 Landless households (10.3), and 120 Marginal farmers, (44.1), and 84 Small farmers (30.9), 28 Medium farmers (10.3), and 12 Large farmers (4.4).

Table 4.10: Distribution of Sample Households by Main Occupations in the Village

Main Occupation	No.of Households	Percentage
Farming	81	29.8
Caste occupations	35	12.9
Agricultural labourers	89	32.7
Non-Agricultural labourers	40	14.7
Others	27	9.9
Total	272	100

Source: Field Survey, 2011-12

The data from table 4.10 shows that, out of 272 households in the village, 81 households depend on agriculture, 35 households on caste based occupations, 89 households are agricultural labourers, 40 households are non-agricultural labourers, and

27 households depend on other non – farm activities. The Dokur village economy is small, open and predominantly agricultural. In the village 29.8 percent of households depend on agriculture, 12.9 percent rely on caste based occupations. 32.7 percent of the households are agricultural labourers, 14.7 percent of the households are non-agricultural labourers, auto rickshaw drivers, and rice and flour mills workers, while 9.9 percent dependent on other non – farm activities such as selling milk, running petty businesses, salaried jobs in government and NGO's.

Table 4.11:
Distribution of Population from Sample Households by age and sex

Age Group	Male	% of Males	Female	% of Females	Total
0-14	121	18.3	125	20.8	246
15-39	271	40.9	226	37.6	497
40-59	151	22.8	139	23.1	290
60+	119	18.0	111	18.5	230
Total	662	100.0	601	100.0	1263

Source: Field Survey 2011-12

The data from table 4.11 show that the total sample population of the village is 1263, out of which the male population is 662 and female population is 601. The percent of male and female persons are high in 15-39 and 40-59 age groups.

Table 4.12:
Distribution of Sample Population by Educational levels in Dokur village

Literacy	Number of Persons
Illiterates	433
Primary Education	267
Secondary and Matriculates	392
Higher Secondary	123
Graduates	36
Post-graduates	12
Total	1263

Source: Field Survey, 2011-12.

The data from table 4.12 indicate that in the village out of 1263, 433 are illiterates, 267 are with primary education, 392 are with secondary and matriculates, 123 are with higher secondary education, 36 are graduates and 12 are post – graduates.

National Rural Employment Guarantee Scheme is grounded in the village from 2006 onwards. Out of 272 sample households, 146 households participated in NREGS during 2011-12. The demographic and socio-economic profile of the people of NREGS households is given below:

Table 4.13: Distribution of Total Persons and NREGS Participants by sex and age from the Sample households

Age Group	Males		% of NREGS Males	Females		% of NREGS Females	Persons		% of NREGS Persons
	Total	NREGS		Total	NREGS		Total	NREGS	
0-14	71	0	0	72	0	0	143	0	0
15-39	168	25	14.9	175	43	24.6	343	68	19.8
40-59	72	58	80.6	71	41	57.7	143	99	69.2
60+	54	38	70.4	32	32	100	86	70	81.4
Total	365	121	33.2	350	116	33.1	715	237	33.1

Source: Field Survey, 2011-12.

The data from table 4.13 show that the percentage of NREGS persons are high in 40-59 and 60 plus age groups indicating that mostly middle aged and old persons are participating in NREGS. It was also found that the percentage of NREGS female participants is higher in 15-39 and 60 plus age groups compared to males.

Table 4.14:NREGS Participants by Sex and Age

Age group	Males	Females	Total	% of Males	% of Females
15 – 39	25	43	68	20.7	37.1
40 – 59	58	41	99	47.9	35.3
60 +	38	32	70	31.4	27.6
Total	121	116	237	100.0	100.0

Source: Field Survey, 2011-12

The data from table 4.14 shows that from the sample households male participation is slightly higher than that of female. Of the males, 20 percent are in the age group 15-39, 47 percent is 40-59 and 31 percent in 60 plus age group. The corresponding percentages for females are 37, 35, and 27. The distribution of sample household's by caste and person days of employment is given in table 4.15.

Table 4.15: Distribution of Sample Households by Caste and Employment days of NREGS in Dokur

Social Groups	No of HH Participated	No of persons	No of Person days
Schedule Caste	19	38	950
Other Backward Caste	121	190	7600
Others*	6	9	315
Total	146	237	8865

Source: Field Survey, 2011-12, *Schedule Tribes are included in Others.

The data from table 4.15 shows that the total number of households participated in the NREGS programme in 2011-12. The households participated in the NREGS programme was 146, out of which 19 households were Schedule Castes, 121 households were Other Backward Castes and 6 households were others. The number of beneficiaries in the programme was 237 and the number of person days created under the programme in the village was 8865 in the year 2011-12.

Table 4.16:
Share of farm and non-farm income among Households for the year 2011-12 (in Rs)

Size of Landholding	No. of Households	Farm Income (Rs)	%	Non-farm Income (Rs)	%	Total
Landless households	28	238753	10.3	2077490	89.7	2316243
Marginal farmers	120	3064358	32.6	6344957	67.4	9409315
Small farmers	84	4283930	55.5	3430727	44.5	7714657
Medium farmers	28	2470738	56.7	1890619	43.3	4361357
Large farmers	12	4038219	75.5	1312797	24.5	5351016
Total	272	14095997	48.4	15056592	51.6	29152589

Source: Field Survey, 2011-12.

The income source of the sample households in the village for the year 2011-2012 is given in table 4.16. Overall the share of farm income was 48.4 percent and non-farm income was 51.6 percent in the year 2011-12 in the village. It shows that the share of farm and non-farm income among different categories of households in the village. The share of the farm income was 75.5 in the large farmer households. The share of non-farm

income was highest 89.7 percent in the landless households, followed by marginal, small, and medium farmer households.

Table 4.17 NREGS income and other income of the sample households for the year 2011-12 in Dokur

Size of Landholding	No. of HH	No. of Persons	No. of. PD	NREGS Wages (in Rs)	AW HH (in Rs)	WPP PD	PD HH	Other Income (in Rs)	Total Income	% of NREGS Income
Landless households	16	19	620	77856	4866	126	39	1528813	1606669	4.8
Marginal farmers	74	124	4675	536850	7255	115	63	5739711	6276561	8.6
Small farmers	43	69	2670	305050	7094	114	62	5781668	6086718	5.0
Medium farmers	11	22	785	99000	9000	126	71	3622181	3721181	2.7
Large farmers	2	03	115	13500	6750	117	58	5057567	5071067	0.3
All	146	237	8865	1032256	34965	116	61	21729941	22762197	4.5

Source: Field Survey, 2011-12.

Note: PD: Person days; AW HH: Average Wage per Household; WPP PD: Wage per Person per Day; PD HH: Person Days per Household;

Table 4.17 presents the NREGS income and other income of the sample households in the village for the year 2011-12. The total sample households participated in the village was 146 households; expenditure on the wages in the scheme was Rs.1032256. The average wage per household was Rs.34965. The highest number of households participated in the scheme was marginal farmer households (74), because the population of the marginal farmer households are high in the village. The number of persons in the scheme was 237 in 2011-12. The number of person days created under the scheme was 8865, the person days per household was 61, and the average wage per person was Rs.116 in the village.

Table 4.18

Average Agricultural and Non-Agricultural Wages Before and After NREGS

Category of Wages	Before NREGS (in Rs) 2006		After NREGS (in Rs)2014	
	Males	Females	Males	Females
Agriculture wage	100	70	250	100
Non-agriculture wage	150	70	300	150

Source: Field Survey, 2011-12.

The data from table 4.18 indicates that there is a substantial increase in the wages of both male and female after NREGS and more so among males which may be directly

due to NREGS or because of implementation of NREGS the demand for labour increased in the village and so there is an increase in agricultural wages.

Table 4.19:
Income from Remittances by the Migrant Households in the Village 2011-12 (in Rs)

Size of Landholdings	No. of. HH	No. of Persons	Remittances (in Rs)	%	ARHH (in Rs)	AR PP	Other income (in Rs)	%	Avg. other income /HH
Landless	11	25	285000	18	25909	11400	1321669	82	120152
Marginal	29	65	741900	12	25583	11414	5534661	88	190850
Small	15	37	456500	7	30433	12338	5630218	93	375348
Medium	6	14	201000	5	33500	14357	3520181	95	586697
Large	2	10	140000	3	70000	14000	4931067	97	2465533
Total	63	151	1824400	8	28959	12082	20937797	92	332346

Source: Field Survey, 2011-12.
Note: No. of HH: No. of Households; ARHH: Average Remittances per household; AR PP: Average Remittances per Person.

Table 4.19 presents the distribution of remittances between the households in the village in the year 2011-12. In the village about 151 persons from 63 households have migrated to cities for better employment opportunities and were sending remittances to the families. The total income from remittances was Rs.1824400, and the average income per household was Rs.28959. The percentage share of the remittances in the total income was more for the marginal farmer households (40.7), followed by the small, landless and medium farmer households, 25.0, 15.6, 11.0 percent respectively.

According to the Village Level Studies conducted by ICRISAT, migration is high in the village. Fifty percent of the households migrate to cities seasonally as well as in the whole year.

From the field survey it was found that out of 272 households 63 households have migrated to cities (24%) and were earning income ranging from Rs.20000 to Rs.120000 per annum. From the remittances income, 50 percent is used for the clearing debts, 10 percent for child marriages and 20 percent for the construction of houses. The remaining income is used for the education (2%), agriculture (4%), livestock and land purchasing (7%), savings (5%) and other purposes (2%) indicating that the income from remittances is used mostly for clearing debts.

4.12. CONCLUSIONS

Primary data was collected from 272 households in Dokur village. Out of which 79.8 percent are Other Backward Castes, 10.7 percent are Others and 9.6 percent are Schedule Castes. In the total sample households 44.1 percent are marginal farmers, 30.9 percent are small farmers, 10.3 percent are landless, 10.3 percent are medium farmers and 4.4 percent are large farmers. In the village 29.8 percent of households depend on agriculture, 12.9 percent rely on caste based occupations. 32.7 percent of the households are agricultural labourers, 14.7 percent of the households are non-agricultural labourers, auto rickshaw drivers, and rice and flour mills workers, while 9.9 percent dependent on other non – farm activities such as selling milk, running petty businesses, salaried jobs in government and NGO's.

The total number of sample households participated in the NREGS programme was 146. Of this 121 households belong to Other Backward Castes, 19 households to Schedule Castes and 6 households to Others. The number of beneficiaries in the programme was 237 and the number of person days created under the programme in the village was 8865. The average person days per household was 61 in the year 2011-12 indicating that the programme is successful in the village. The percentage of NREGS persons are high in 40-59 and 60 plus age groups indicating that mostly middle aged and old persons are participating in NREGS. It was also found that the percentage of NREGS female participants is higher in 15-39 and 60 plus age groups compared to males.

In the village about 151 persons from 63 households have migrated to cities for better employment opportunities during 2011-12. The remittances income sent by them to the families was Rs.1824400, and the average annual income per household was Rs.28959. From the remittances income, 50 percent is used for clearing debts.

CHAPTER - V

CHAPTER - 5

SOCIAL ACCOUNTING MATRIX OF DOKUR VILLAGE FOR 2011-12

5.1. INTRODUCTION

The village economy of Dokur is predominantly agricultural in nature, with 23.8 percent of households engaged in crop cultivation and animal husbandry. Labour work is the main occupation in the village (farm labourers and nonfarm labourers). The village has 3006 population consisting 545 households. The village economy is poorly diversified with about 60 percent of households having primary sector activity as their main source of income either as owners or as labourers. More than 70 percent of households have more than three subsidiary occupations. Due to single work couldn't give them full time work or income from single job not sufficient to meet their needs. The village has about 1358 hectares of land, of which 1303 hectares is agricultural land; 20 hectares of land occupied by water resources. The rest of the land is under non – agricultural use, largely under human settlement.

The contribution of each sector in the economy of the village, and how the important changes are taking place in each sector with NREGS intervention needs to be examined. To get sector – wise analysis, SAM is used. Social Accounting Matrix uses principle of National Accounting System, but extends it to include the functional and households distribution of income. Thus, a SAM provides a comprehensive and detailed picture of all transactions taking place in an economy. Pattern of production, their use of factors, role of government, the source and distribution of income of all households are all accommodated systematically in a matrix form. It enables us to understand the mutual relationship between the employment, the distribution of income and structure of production.

Detailed SAM with 63 accounts are made for the village. But since they are too huge to present here, the aggregated SAM with 17 accounts for Dokur village are given in table 5.1. Some key considerations in the design of these SAM are discussed below.

A SAM provides comprehensive and detailed information of all transactions taking place in a village. The major transactions appearing in the SAM are:

(1) The allocation of value added to the factors (labour and capital) by production activities yielding the pattern of factor use and the consequent factorial income distribution,

(2) Given the household resources endowment and factor ownership (in particular, the amount of land owned and the amount of human capital possessed by households), the factorial income distribution, mapped into the distribution of household income earned by different socio economic household groups, and

(3) The corresponding expenditure patterns (consumption on different goods and services, savings, direct taxes, and imports) of the various socio economic groups.

The rows of the SAM show the receipts or income of each account, while the columns describe the expenditures made by the accounts. Since the SAM follows the principle of double entry bookkeeping, each row total is the same as its corresponding column total. For the construction of Dokur SAM, output of different sectors, its value added and consumption of different components of final demand sector wise data is required. Each sectors value added is divided in to own labourers, hired labourers and investment.

5.2. DESIGNING A SAM FOR DOKUR VILLAGE FOR THE YEAR 2011-12

The village Social Accounting Matrix for Dokur village consists of the following five components.

1. Production activities account:
    - Crop sector: Paddy, Cotton, Castor and Pigeon pea, Groundnut, Fruit & vegetable crops. Cultivation of above crops is divided into Kahrif and Rabi crops, but in SAM only one column for each crop.
    - Live Stock Sector: Wool and meat, Milk and milk products, Cow dung manure and bullocks.
    - Manufacturing sector: A small Rice mill.
    - Services: Public service (such as welfare schemes, education), Private Services.
2. Factors of Production account:
    - Family labourers
    - Hired labourers

- Capital

3. Households account:
    - Households: By land holding size: Landless, Marginal farmers, Small farmers, Medium farmers and Large farmers.
    - Self-employed in non - agriculture
4. Government account: Village Panchayat (local body), School and Anganwadi centers are taken as the government. The village Panchayat receives the water tax and it does not have house tax from households as income, because this village is one of the villages that comes under the drought prone areas, and Government grants from outside the village. Grants for the development activities like for house construction, which are treated as expenditure for the Panchayat along with its other expenditure.
5. The Rest of the World account: It shows the income of sectors and workers going out and coming into village. Many people have migrated to the nearby towns and cities from the village. However, most of those who have migrated with the families, which might indicate that they earned enough to support the family in the new place. Very few of the migrated are engaged in well-paid jobs, most of them are working as construction labours, servants in homes and hotels.

There are 37 production sectors; initial 5 crops from Paddy to Groundnut come under agriculture, where most of the products are produced in village itself. Sectors 6 to 9 are livestock production. Activities under Flour mill, Carpenter, Rice mill, Basket making come under the non-farm production. Private services include Provisional store, Cable operator, Meat shop, Barber, Electrician, and Transport services etc., Remaining items such as Public Distribution System, Anganwadi centre, Government School, and Panchayat come under the public services. Households accounts are divided into five categories; namely Landless, Marginal, Small, Medium, and Large Farmers. The production cannot divide from products, due to the availability of data on products directly from the market for inputs and outputs. Hence, the Social Accounting Matrix is in the form of commodity X commodity matrix. It is obtained from supply and use matrix.

To construct the framework of Social Accounting Matrix, crops normal yields has been taken in 2011-12. Survey was conducted at the household level to collect data on all entities and sector wise expenditure of different types of households and data about occupation and education levels of all household members was collected.

Table 5.1: Aggregate SAM of the village for the year 2011-12

	Agriculture	Livestock	Village Production Activities	Private Services	Public Services	MGNREGA	SHG	Labour	Capital	Landless	Marginal	Small	Medium	Large	Migration	Govt.	ROW
Agriculture	1001776	18300	0	0	245748	0	0	0	0	0	7334777	1240527	2238416	6308888	0	0	24176956
Livestock	0	0	0	0	0	0	0	0	0	74100	253138	177950	162901	221662	0	130200	2083850
Village production activities	0	0	0	0	0	0	0	0	0	65650	62950	56800	56300	67300	0	0	357400
Private services	1028918	31800	16000	30300	10000	0	0	0	0	1032288	1684683	1257541	954246	1385240	0	0	83000
public services	0	0	0	0	0	0	0	0	0	111031	224955	156980	76787	40596	0	0	444314
MGNREGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1334000	0
SHG	0	0	0	0	0	0	0	0	0	442109	699418	570764	628073	664036	0	0	0
Hired Labour	3363001	148000	82500	564000	171800	0	0	0	0	0	0	0	0	0	0	0	0
capital	1562210	733500	5000	185500	50000	0	554400	0	0	0	0	0	0	0	0	0	0
Landless	0	14250	70000	172310	171405	366400	350000	883351	53318	0	0	0	0	0	935000	0	197306
Marginal	6128716	1218300	242300	328860	143176	466400	500000	2073353	560218	0	0	0	0	0	891800	0	0
Small	8567859	690200	4000	325360	110906	266400	400000	907294	231417	0	0	0	0	0	670000	0	0
Medium	4941476	131500	54400	244040	95179	166400	500000	295253	270247	0	0	0	0	0	712000	0	31868
Large	8476437	55150	6000	40360	54448	66400	350000	110050	543289	0	0	0	0	0	440000	0	0
Migration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3648800
Government	0	0	0	0	0	0	0	0	0	4000	4000	5000	5000	5000	0	0	1441202
ROW	7494996	94600	80200	368452	0	2000	0	60000	1432119	1484161	2289202	8707875	3320640	1449412	0	0	0
Total	42565389	3103800	560400	2259182	1052662	1334000	2654400	4329301	3090610	3213339	12553123	12173437	7442363	10142134	364800	1466204	32464696

The information of expenditure and income of households collected except salaried and wage labourers. For instance, data taken about Paddy production, it included information of price of the paddy yield in the fields (Area x Yield x Price), price of other products, expenditure on inputs such as seeds, chemicals, etc. The income details were collected from salaried and labour households. Data on activities, expenditure and income taken from Schools, Panchayat etc.

Details of NREGS workers in the village were also collected. The income of labour contains the wage and few workers getting salaries for their work as helpers. There are some labourers who went towns to get income. To develop SAM framework and multiplier (Multiplier is a factor of proportionality that measures how much an endogenous variable changes in response to change in some exogenous variable) analysis, columns in the SAM were crop production, livestock, non - farm production etc. Household savings have been put in the capital account. The complete SAM is given in table 5.5.

The inverse of the SAM (Inverse have been taken only for sectors where there is production in the village). Each column of the inverse matrix from (row) 1 to 21 gives the output of the village economy. Different sector's output increases, due to increase in the final demand of each sector by one unit. Rows from 24 to 26 give the employment multiplier of the village, while rows from 27 to 31 provide the income multiplier of the village.

The data from the table 5.1 gives the detailed information of aggregated SAM of Dokur village. Rows, 1 to 7 give the revenue of the production activities. It is the expenditure of households, consumption of intermediate goods for production and exports. The columns give the expenditure payment to factors of production, expenditure on inputs and payments to imports of materials and labour. The row 8 provides the factors of production. It is the revenue of the family labourers as well as hired laborers worked inside the village and income of labour worked outside the village. The row 9 presents the investment, which is the savings of the households. Rows 10 to 14 show the household income from factors of production, grants from the government. A corresponding column gives the expenditures of households, taxes paid and the savings of the household. Row16 provides the revenue of the panchayat in the form of taxes and the corresponding column represents the government spending. Last row and column gives details of exports and imports of the village. From the outlook of this research work, Social Accounting Matrix is strong tool to the transparency of income distribution and the labour composition of production. It allows one via simulations

of hypothetical policy intervention scenarios to examine the impact of different NREGS works.

5.3. CONTRIBUTION OF DIFFERENT SECTORS TO VILLAGE ECONOMY

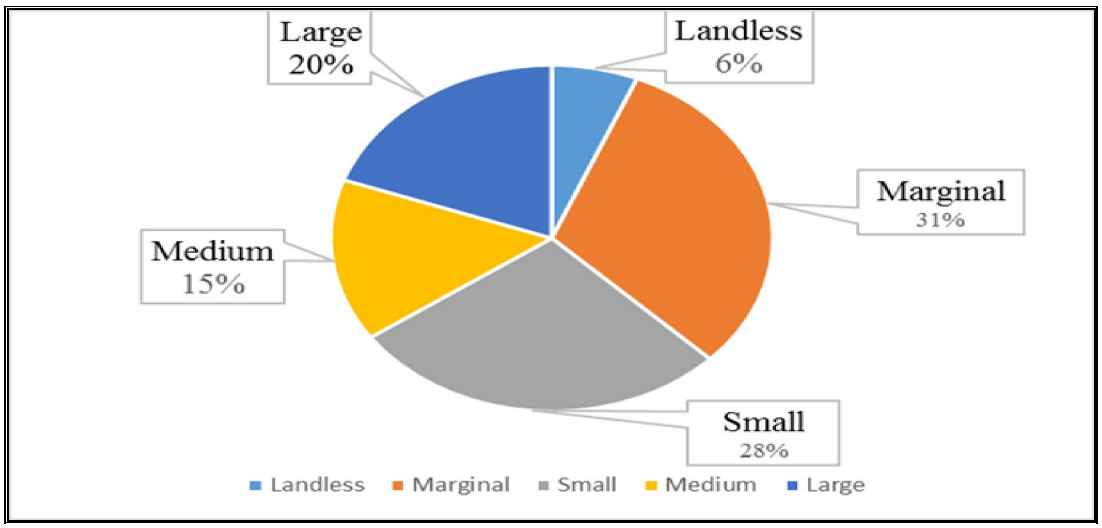
Dokur village economy is small, open and predominantly agricultural. In the village 23.8 percent of households depend on agriculture, while 15.2 percent rely on caste based occupations. Around 26.6 percent of the households are agriculture labour, 20.1 non-farm labour, while 14.1 are dependent on other non – farm activities. The major crops grown are Paddy, Groundnut, Castor, Pigeon pea and Cotton.

Table 5.2:
Distribution of Income among Household groups in the Village for the year 2011-12

Farm Size	No. of Households	Population	Total Income Rs.(Millions)	Income per Household (Rs.)	Per capita Income (in Rs)
Landless	56	308	3.2	57381.1	10432.9
Marginal	240	1320	12.5	52304.7	9509.9
Small	169	929	12.1	72032.2	13103.8
Medium	56	317	7.4	132899.3	23477.5
Large	24	132	10.1	422588.9	76834.3
Total	545	3006	45.5	83531.0	15144.5

Source: Field survey 2011-12.

Figure 5.1: Percentage share by Different households in Total Income



Source: AS in table 5.2

Table 5.2 shows that the distribution of income among households, the average income per household is Rs.83531.0, and per capita is Rs.15144.5. The maximum income is earned by marginal farmers followed by small and large farmers. The lowest income is earned by landless households. Agriculture accounts for 43.3 percent of the total value of the output of all sectors followed others by 33.0 percent, it consisting of self employed in non-agriculture outside the village. It needs to be noted that more than 62 percent of the households in the village depend on agriculture, but the contribution of agriculture to the village output is 40 percent only.

Table 5.3: Crops Grown in Dokur

Kharif crop (hectares)		**Rabi (hectares)**		**Annual / Perennial (hectares)**	
Paddy	101.2	Ground Nut	72.9	Mango	8.1
Castor	44.5	Paddy	48.6	Citrus	10.1
Pigeonpea	20.2				
Cotton	4.8				
Others	11.3				
Total	182.2		121.5		18.2

Source: Field Survey 2011-12.

The data from table 5.3 show that the crops grown in Dokur village. In kharif season total cultivated area was 182.2 hectares, out of which Paddy was 101.2 hectares, Castor was 44.5, Pogeonpea was 20.2, Cotton was 4.8 and other crops was 11.3. In rabi season cultivated area was 121.5 hectares, of which Groundnut was 72.9 hectares, Paddy was 48.6 hectares indicate that Paddy is the main crop in the village.

- **Agriculture:** Agriculture is the main economic activity in Dokur. Paddy, Cotton, Castor, Pigeon pea and other crops are the major crops grown in the village. Forty percent of land is irrigated and Sixty percent of area is rain fed. Agriculture in the village shows annual fluctuations due to the variations in the rainfall. Due to the fluctuations in crop production, cultivation has become burden for the farmers, making small and marginal farmers highly vulnerable. Farmers are cultivating single crop in their lands due to lack of irrigation facilities, and in sometimes single crop is also not possible to cultivate. As the employment opportunities are very less in the village, landless, marginal and small farmers migrate to nearby towns.

- **Animal Husbandry:** Animal husbandry is another source of income and occupation to the households in the village. It provides main or secondary income to the tune of Rs.3.1 million to the villagers. Sheep rearing is another major occupation. Households sell all surplus milk to the hotels, inside as well as outside the village and also to the households in the village.

- **Non- agricultural Sector:** Non – agricultural enterprises which are located in the village contribute to 13 percent of the total output in the village. All the workers in the village are local except some school teachers. There is no social protection to the workers in the village except for those in government services.

- **Other accounts:** The factors earn income from different activities of the village or from outside. The earnings are paid off to households. The households thus earn profits from activities and factor income and remittances.

Table 5.4:
Distribution of total Production by Sectors in 2011-12

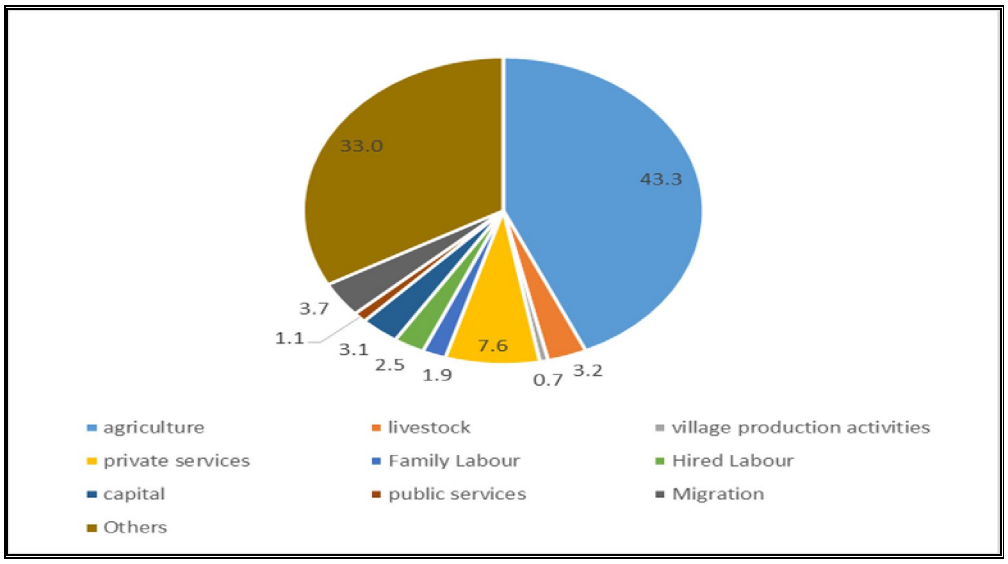
Sector	Output Rs (millions)	% total
Agriculture	42.57	43.3
Livestock	3.1	3.2
Village productions	0.6	0.7
Family Labour	1.8	1.9
Hired Labour	2.4	2.5
Capital	3.1	3.1
Services	7.4	7.6
Government services	1.1	1.1
Migration	3.6	3.7
others	32.4	33.0
Total	98.4	100

Source: Field Survey 2011-12.

Table 5.4 describes the contribution of all the sectors to the total production in the village. The total production value of the village is Rs.98.4 million, of this agricultural sector contributes Rs.42.5 million. Livestock contribution to the total production is Rs.3.1 million and the village production (non-farm production) of Rs.0.6 million. The contribution of

family labourers and hired labourers is Rs.1.8 and 2.4 million respectively. Rs.32.4 million comes from the rest of the world (outside village). Even though the situation of agriculture is bad in the village, it is contributing more to the total production. Figure 5.2 shows the Sectoral Distribution of output in the village.

Figure 5.2: Sectoral Distribution of Output



Source: As in table 5.4

5.4. DISAGGREGATE SOCIAL ACCOUNTING MATRIX FOR DOKUR VILLAGE FOR THE YEAR 2011-2012

Table 5.5 contains the disaggregate SAM of Dokur village for the year 2011-2012, where it shows of all transactions taking place in an economy. It enables us to understand the mutual relationship between the employment, the distribution of income and structure of production.

Table 5.5 Disaggregate Social Accounting Matrix of Dokur Village for the year 2011-12

	Paddy	Castor	Pigeon pea	Cotton	Groundnut	Cows	Buffalos	Sheep's & Goats	Ox	Provisional Stores	Carpenters
Paddy	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalos	0	0	0	0	0	0	0	0	0	0	0
Sheep's & goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0
Provisional stores	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0

Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
	Paddy	**Castor**	**Pigeon pea**	**Cotton**	**Groundnut**	**Cows**	**Buffalos**	**Sheep's & Goats**	**Ox**	**Provisional Stores**	**Carpenters**
Paddy	29700	0	0	0	0	7000	8000	0	3300	0	0
Castor	0	55000	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	917076	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0
Provisional Stores	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0
Mechanic	7642.5	60000	25010	4000	7810	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0
Electrician	187642.5	50000	25000	8000	97810	0	0	0	0	0	0
Transportation	18742.5	22000	100020	24000	391240	0	0	0	0	16000	0
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0

Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
Family Labour	501950	110000	125025	30000	489050	3000	3000	10000	2000	72000	0
	Paddy	**Castor**	**Pigeon pea**	**Cotton**	**Groundnut**	**Cows**	**Buffalos**	**Sheep's & Goats**	**Ox**	**Provisional Stores**	**Carpenters**
Hired labour	1250950	220000	100020	60000	476006	10000	60000	20000	40000	0	0
Rent	775589	209000	45009	24000	508612	145000	407000	60000	121500	185500	5000
Landless	0	0	0	0	0	10000	3000	1250	0	76950	70000
Marginal	4095904	989153.1	172933.9	8875.99	861848.9	10200	8100	1200000	0	28000	30800
Small	5846799	857266.1	122343.6	17751.98	1723698	13200	14100	652500	10400	0	0
Medium	2962895	1318871	98819.36	8875.99	552014.2	4000	50000	77500	0	12000	50400
Large	6795256	462594	123524.2	17751.98	1077311	8500	29050	7600	10000	0	0
Migration	0	0	0	0	0	0	0	0	0	0	0
Panchayat	0	0	0	0	0	0	0	0	0	0	0
Row	1533649	2322617	2209700	135600	1293430	46850	47750	0	0	0	76600
Column Total	24006720	6676501	3147405	338855.9	8395906	257750	630000	2028850	187200	390450	232800

	Flourmill	**Rice Mill**	**Basket Mmaker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transport**	**PDS**	**MGNREGA**
Paddy	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0
Sheep's &goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0

Provisional Stores	0	0	0	0	0	0	0	0	0	0	0
	Flourmill	**Rice Mill**	**Basket Mmaker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transport**	**PDS**	**MGNREGA**
Carpenters	0	0	0	0	0	0	0	0	0	0	0
Flourmill	0	0	0	0	0	0	0	0	0	0	0
Rice mill	0	0	0	0	0	0	0	0	0	0	0
Basket maker	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
Paddy	0	0	0	0	0	0	0	0	0	144000	0
Castor	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	101748	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0

Provisional Stores	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0
	Flourmill	**Rice Mill**	**Basket Mmaker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transport**	**PDS**	**MGNREGA**
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	10000	0
Transportation	0	15000	1000	2800	1500	0	10000	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
Family Labour	12000	7000	20000	20000	15000	0	25000	0	432000	0	0
Hired Labour	0	43500	0	0	0	0	0	0	0	60000	0
Rent	0	0	0	0	0	0	0	0	0	50000	0
Landless	0	0	0	0	0	0	0	0	95360	0	366400
Marginal	0	211500	0	0	7500	0	208000	0	85360	0	466400
Small	1000	0	3000	0	0	0	250000	0	75360	0	266400
Medium	4000	0	0	19200	0	132480	0	0	80360	0	166400
Large	6000	0	0	0	0	0	0	0	40360	0	66400
Migration	0	0	0	0	0	0	0	0	0	0	0
Panchayat	0	0	0	0	0	0	0	0	0	0	0

Row	0	0	3600	0	0	0	0	368452.5	0	0	2000
Column Total	23000	277000	27600	42000	24000	132480	493000	368452.5	808800	365748	1334000

	SHG's	**Anganwadis**	**Govt. Schools**	**Paddy**	**Castor**	**Pigeon pea**	**Cotton**	**Groundnut**	**Cows**	**Buffalo's**	**Sheep's & Goats**	**Ox**
Paddy	0	0	0	24006720	0	0	0	0	0	0	0	0
Castor	0	0	0	0	6676501	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	3147405	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	338855.9	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	8395906	0	0	0	0
Cows	0	0	0	0	0	0	0	0	257750	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	632000	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	2028850	0
Ox	0	0	0	0	0	0	0	0	0	0	0	187200
Provisional Stores	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0	0

Angawadis	0	0	0	0	0	0	0	0	0	0	0	0
Govt.schools	0	0	0	0	0	0	0	0	0	0	0	0
Paddy	0	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0	0
	SHG's	**Anganwadis**	**Govt. Schools**	**Paddy**	**Castor**	**Pigeon pea**	**Cotton**	**Groundnut**	**Cows**	**Buffalo's**	**Sheep's & Goats**	**Ox**
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0	0
Provisional Stores	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	0	0	0	0

Family Labour	0	0	0	0	0	0	0	0	0	0	0	0
Hired Labour	0	76800	35000	0	0	0	0	0	0	0	0	0
Rent	554400	0	0	0	0	0	0	0	0	0	0	0
Landless	350000	80625	90780	0	0	0	0	0	0	0	0	0
	SHG's	**Anganwadis**	**Govt. Schools**	**Paddy**	**Castor**	**Pigeon pea**	**Cotton**	**Groundnut**	**Cows**	**Buffalo's**	**Sheep's & Goats**	**Ox**
Marginal	500000	64500	78676	0	0	0	0	0	0	0	0	0
Small	400000	56438	54468	0	0	0	0	0	0	0	0	0
Medium	500000	46763	48416	0	0	0	0	0	0	0	0	0
Large	350000	24188	30260	0	0	0	0	0	0	0	0	0
Migration	0	0	0	0	0	0	0	0	0	0	0	0
Panchayat	0	0	0	0	0	0	0	0	0	0	0	0
Row	0	0	0	0	0	0	0	0	0	55000	0	0
Column total	2654400	349314	337600	24006720	6676501	3147405	338855.9	8395906	257750	687000	2028850	187200

	Provisional stores	**Carpenters**	**Flourmill**	**Rice mill**	**Basket maker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transportation**
Paddy	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0

Provisional Stores	390450	0	0	0	0	0	0	0	0	0	0
Carpenters	0	232800	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	23000	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	277000	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	27600	0	0	0	0	0	0
	Provisional stores	**Carpenters**	**Flourmill**	**Rice mill**	**Basket maker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transportation**
Barber	0	0	0	0	0	42000	0	0	0	0	0
Mechanic	0	0	0	0	0	0	24000	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	132480	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	493000	0	0
Electrician	0	0	0	0	0	0	0	0	0	368452.5	0
Transportation	0	0	0	0	0	0	0	0	0	0	808800
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
Paddy	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0

Provisional Stores	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0
Flourmill	0	0	0	0	0	0	0	0	0	0	0
Rice mill	0	0	0	0	0	0	0	0	0	0	0
Basket maker	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0
	Provisional stores	**Carpenters**	**Flourmill**	**Rice mill**	**Basket maker**	**Barber**	**Mechanic**	**T.V. Cable Operator**	**Meat Shop**	**Electrician**	**Transportation**
Mechanic	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0
Electrician	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	0	0	0
Family labour	0	0	0	0	0	0	0	0	0	0	0
Hired labour	0	0	0	0	0	0	0	0	0	0	0
Rent	0	0	0	0	0	0	0	0	0	0	0
Landless	0	0	0	0	0	0	0	0	0	0	0
Marginal	0	0	0	0	0	0	0	0	0	0	0
Small	0	0	0	0	0	0	0	0	0	0	0
Medium	0	0	0	0	0	0	0	0	0	0	0
Large	0	0	0	0	0	0	0	0	0	0	0
Migration	0	0	0	0	0	0	0	0	0	0	0

Panchayat	0	0	0	0	0	0	0	0	0	0	0
Row	4620252	0	6000	100000	0	12000	80462.5	198720	264000	10000	37600
Column total	5010702	232800	29000	377000	27600	54000	104462.5	331200	757000	378452.5	846400

	PDS	**MGNREGA**	**SHG's**	**Anganwadis**	**Govt. Schools**	**Family Labour**	**Hired Labour**	**Rent**	**Landless**	**Marginal**	**Small**	**Medium**
Paddy	0	0	0	0	0	0	0	0	0	0	0	0
Castor	0	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	0	0	0
Buffalo's	0	0	0	0	0	0	0	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0	0
Provisional Stores	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	0	0	0	0
Rice Mill	0	0	0	0	0	0	0	0	0	0	0	0
Basket Maker	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	0	0	0	0
Mechanic	0	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	0	0	0	0
Meat Shop	0	0	0	0	0	0	0	0	0	0	0	0

Electrician	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
PDS	0	0	0	0	0	0	0	0	0	0	0	0
MGNREGA	0	1334000	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	2654400	0	0	0	0	0	0	0	0	0
Anganwadis	0	0	0	349314	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	337600	0	0	0	0	0	0	0
Paddy	0	0	0	0	0	0	0	0	0	7334777	1240527	2238416
	PDS	**MGNREGA**	**SHG's**	**Anganwadis**	**Govt. Schools**	**Family Labour**	**Hired Labour**	**Rent**	**Landless**	**Marginal**	**Small**	**Medium**
Castor	0	0	0	0	0	0	0	0	0	0	0	0
Pigeon pea	0	0	0	0	0	0	0	0	0	0	0	0
Cotton	0	0	0	0	0	0	0	0	0	0	0	0
Groundnut	0	0	0	0	0	0	0	0	0	0	0	0
Cows	0	0	0	0	0	0	0	0	0	74437.5	51550	67325
Buffalo's	0	0	0	0	0	0	0	0	74100	178700	126400	95576
Sheep's & Goats	0	0	0	0	0	0	0	0	0	0	0	0
Ox	0	0	0	0	0	0	0	0	0	0	0	0
Provisional Stores	0	0	0	0	0	0	0	0	769988.4	1254486	1002141	781946.4
Carpenters	0	0	0	0	0	0	0	0	0	0	0	0
Flour Mill	0	0	0	0	0	0	0	0	5650	7950	6800	6300
Rice Mill	0	0	0	0	0	0	0	0	60000	55000	50000	50000
Basket Maker	0	0	0	0	0	0	0	0	0	0	0	0
Barber	0	0	0	0	0	0	0	0	12000	15000	8000	6000
Mechanic	0	0	0	0	0	0	0	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0	0	0	0	18600	129000	89400	18600
Meat Shop	0	0	0	0	0	0	0	0	201400	216900	110900	101600
Electrician	0	0	0	0	0	0	0	0	0	0	0	0

Transportation	0	0	0	0	0	0	0	0	30300	69297	47100	46100
PDS	0	0	0	0	0	0	0	0	37650.5	161359.4	112951.6	37650.5
MGNREGA	0	0	0	0	0	0	0	0	0	0	0	0
SHG's	0	0	0	0	0	0	0	0	442109	699418	570764	628073
Anganwadis	0	0	0	0	0	0	0	0	0	0	0	0
Govt. Schools	0	0	0	0	0	0	0	0	73380	63596	44028	39136
Family Labour	0	0	0	0	0	0	0	0	0	0	0	0
Hired Labour	0	0	0	0	0	0	0	0	0	0	0	0
	PDS	**MGNREGA**	**SHG's**	**Anganwadis**	**Govt. Schools**	**Family Labour**	**Hired Labour**	**Rent**	**Landless**	**Marginal**	**Small**	**Medium**
Rent	0	0	0	0	0	0	0	0	0	0	0	0
Landless	0	0	0	0	0	107108	776242.4	53318.3	0	0	0	0
Marginal	0	0	0	0	0	800405	1272948	560218.3	0	0	0	0
Small	0	0	0	0	0	784905	122389	231417.3	0	0	0	0
Medium	0	0	0	0	0	130905	164348	270247.3	0	0	0	0
Large	0	0	0	0	0	53702	56348	543289.3	0	0	0	0
Migration	0	0	0	0	0	0	0	0	0	0	0	0
Panchayat	0	0	0	0	0	0	0	0	4000	4000	5000	5000
Row	365748	0	350000	0	2000	0	0	1432119	1484161	2289202	8707875	3320640
Column total	365748	1334000	3004400	349314	339600	1877025	2392276	3090610	3213339	12343123	12173437	7442363

	Large	Migration	Panchayat	Row	Total
Paddy	0	0	0	0	0
Castor	0	0	0	0	0
Pigeon pea	0	0	0	0	0
Cotton	0	0	0	0	0
Groundnut	0	0	0	0	0
Cows	0	0	0	0	0
Buffalo's	0	0	0	0	0
Sheep's & Goats	0	0	0	0	0
Ox	0	0	0	0	0
Provisional Stores	0	0	0	0	0
Carpenters	0	0	0	0	0
Flour Mill	0	0	0	0	0
Rice Mill	0	0	0	0	0
	Large	**Migration**	**Panchayat**	**Row**	**Total**
Basket Maker	0	0	0	0	0
Barber	0	0	0	0	0
Mechanic	0	0	0	0	0
T.V. Cable Operator	0	0	0	0	0
Meat Shop	0	0	0	0	0
Electrician	0	0	0	0	0
Transportation	0	0	0	0	0
PDS	0	0	2072346	0	0
MGNREGA	0	0	0	0	0
SHG's	0	0	0	0	0
Anganwadis	0	0	0	0	0

Govt. Schools	0	0	0	0	0
Paddy	6308888	0	0	6692112	24006720
Castor	0	0	0	5026884	6676501
Pigeon pea	0	0	0	3045657	3147405
Cotton	0	0	0	338855.9	338855.9
Groundnut	0	0	0	7478830	8395906
Cows	64437.5	0	0	0	257750
Buffalo's	157224	0	0	55000	687000
Sheep's & Goats	0	0	0	2028850	2028850
Ox	0	0	0	0	187200
Provisional Stores	1202140	0	0	0	5010702
Carpenters	0	0	0	232800	232800
Flour Mill	2300	0	0	0	29000
Rice Mill	65000	0	0	97000	377000
Basket Maker	0	0	0	27600	27600
Barber	5000	0	0	8000	54000
Mechanic	0	0	0	0	104462.5
	Large	**Migration**	**Panchayat**	**Row**	**Total**
T.V. Cable Operator	600	0	0	75000	331200
Meat Shop	126200	0	0	0	757000
Electrician	0	0	0	0	3748452.5
Transportation	51300	0	0	0	846400
PDS	16135.9	0	0	0	365748
MGNREGA	0	0	1334000	0	1334000
SHG's	664036	0	0	0	3004400
Anganwadis	0	0	0	349314	349314
Govt. Schools	24460	0	0	95000	339600
Family Labour	0	0	0	0	1877025
Hired Labour	0	0	0	0	2452276
Rent	0	0	0	0	3090610
Landless	0	935000	0	197305.7	3213339
Marginal	0	891800	0	0	12553123
Small	0	670000	0	0	12173437
Medium	0	712000	0	31868	7442363
Large	0	440000	0	38872	10106789
Migration	0	0	0	364880	3648800
Panchayat	5000	0	0	3382364	3405346
Row	1414068	0	0	0	32850095
Column Total	10106789	364880	3405346	32850095	**0**

5.5. CONCLUSIONS

It was found that there are 37 production sectors in the village from the SAM of Dokur. They are agriculture, livestock, private services include provisional store, cable operator, meat shop, barber, electrician, transport services and non-farm activities, (Flour mill, Carpenter, Rice mill, Basket making) for 2011-12.

The average income per household is Rs.83531.0, and per capita income is Rs.15144.5 for the year 2011-12. The maximum income is earned by marginal farmers followed by small and large farmers. The lowest income is earned by landless households. It was also found that the total production value of the village for the year 2011-12 is Rs.98.4 million, of this agricultural sector contributes Rs.42.5 million. Livestock contribution to the total production is Rs.3.1 million and the village production (non-farm production) of Rs.0.6 million. The contribution of family labourers and hired labourers is Rs.1.8 and Rs.2.4 million respectively. Rs.32.4 million comes from the rest of the world (outside village). Even though the situation of agriculture is bad in the village, it is contributing more to the total production.

CHAPTER - VI

CHAPTER-6

MULTIPLIER ANALYSIS

6.1. INTRODUCTION

This chapter analyses the impact of NREGS on the village economy of Dokur. The analysis has been done through estimating the multipliers. For calculating multipliers NREGS was treated as an external shock in the Social Accounting Matrix (SAM). As seen before, Social Accounting Matrix is the thorough book keeping system. From this circular flow of income can capture, how income from production sector moves to factors of production, and from there channelised to households as their income; these households in turn spend this income in the commodity market making it come back to the production sector. Dokur village SAM has the following accounts: 1) Agriculture, livestock, village nonfarm sector, private services, all of which come under production activities account, 2) Factors account: Capital and Labour, 3) Households: Households in the village, Government, etc. and rest of the world; consisting of persons coming in and going out of the village and value of the sectors.

A SAM is a socio-economic information system that describes all transactions and interactions that occur in an economy in a particular year. It is a way of presenting socio – economic interactions in a consistent and complete way. It is consistent because for every receipt there is a corresponding out lay and since both the receiver; and the sender of each and every transaction is clearly identified (Sadoulet and Janvry, 1995). NREGS works in the village will have a multiplier impact on the total output, income and employment of the village economy.

6.2. MULTIPLIER EQUATION

To convert the SAM into a multiplier framework, the first question to be addressed is which accounts should be endogenous and which accounts exogenous. The exogenous sectors in the village SAM is the rest of the word, the central and state government services, and the ration shop. All other accounts are treated as endogenous.

The village SAM has been used for calculating the direct and indirect effects of several shocks from the outside on economy.

SAM model can be written as follows:

$$Y_j = \sum_i w_{ij} + \sum_i x_{ij} \ldots\ldots\ldots\ldots\ldots Equation\ (1)$$

$$Y_j = \begin{bmatrix} y_t \\ \vdots \\ y_j \end{bmatrix} \text{ and } y_j \text{ is a vector of column total of matrix } Y, y_j \text{ is } j^{th} \text{ column total.}$$

$$W = \begin{bmatrix} w_{11} & \cdots & w_{n1} \\ \vdots & \ddots & \vdots \\ w_{n1} & \cdots & w_{nn} \end{bmatrix} \text{ and } W \text{ is a matrix endogenous accouts;}$$

$$And\ X = \begin{bmatrix} x_{n+1,1} & \cdots & x_{n+1,n} \\ \vdots & \ddots & \vdots \\ x_{n+k,1} & \cdots & x_{n+k,n} \end{bmatrix} \text{ and } X \text{ is the vector of Exogenous accounts.}$$

In SAM model normally activity, commodity, factor and household accounts are assumed to be endogenous. Exogenous accounts are public administration (village Panchayat), savings and investment account and rest of the world account. These exogenous accounts are normally aggregated because of the fact that expenditure from those accounts is all exogenous (Bellu, 2012).

$$a_{ij} = {}^{w_{ij}}/_{y_{ij}} \quad \ldots\ldots\ldots\ldots\ldots\ldots Equation\ (2)$$

$$where\ A = \begin{bmatrix} a_{11} & \cdots & a_{n1} \\ \vdots & \ddots & \vdots \\ a_{1n} & \cdots & a_{nn} \end{bmatrix}$$

The above equation can be written as

$$Y = AY + X \ldots\ldots\ldots\ldots\ldots Equation\ (3)$$

$$(I - A) = X$$

$$Y = (I - A)^{-1} X = MX \ldots\ldots\ldots\ldots\ldots Equation\ (4)$$

$$Where\ M = \begin{bmatrix} m_{11} & \cdots & m_{n1} \\ \vdots & \ddots & \vdots \\ m_{1n} & \cdots & m_{nn} \end{bmatrix}$$

Where M is a SAM multiplier matrix consisting of coefficients m_{ij}. Co efficient m_{ij} is the total impact on account i because of unit shock / change in account j.

The multipliers measure the responses of the economy to a change in demand of a sector. When the total output of a sector increases or decreases, it affects the village economy directly and indirectly. Direct effects are the immediate effects associated with the change in the final demand for a particular sector or industry. The indirect effects or the secondary effects are due to backward linkages of sectors. The multiplier results are shown in the following section.

6.3. THE OUTPUT, INCOME AND EMPLOYMENT MULTIPLIERS

The output multiplier for a sector is defined as the total value of production by all the economy required to satisfy one unit of final demand for that sector's output. For example, if one unit of final demand is increasing in the animal husbandry sector (i.e., milk), this will require inputs in terms of feed of livestock (different crops), which, in turn, will increase the demand for the output of these crops. To increase the output of these crops, increase in inputs (seed, fertilizers, labour etc.) is needed. The increased employment of labour will result in their higher income, which will increase in their expenditure. The increased expenditure will need more output and so on. These are called indirect requirements.

The income or value added (labour + capital) multiplier gives an estimate of the direct and indirect income changes resulting from one unit change in output. The employment multiplier provides the direct and indirect changes that are taking place due to one unit change in output. "These multipliers are obtained by multiplying the output multiplier of each sector with the relevant employment coefficient. The employment coefficient of each sector presents the number of person days generated per unit of output (say for per thousand rupees)". (Source: Indira Hirway, Saluja and Yadav).

In the inverse Social Accounting Matrix every row provides the increase or decrease in the final demand. In inverse SAM rows from 1 to 20 gives increase in the output of different sectors due to one unit increase in the final demand of that sector. Rows 27-31 describe the effect of the increased purchasing power on the income of various sections of the population. Rows from 51 to 53 provide the income multipliers, while 54-58 rows gives the scheme effect on income of the different sections of households. For instance, a unit of increase in labour demand increases income from paddy by 0.20 units, Castor income by 0.14 units and so on. Below table 6.1 presents the output, income, and employment multipliers.

Table 6.1: Unit change in Output, Income Because of Change in Different Sectors final Demand

	PADDY	CASTOR	PIGEONPEA	Cotton	GROUNDNUT	COWS	BUFFOLWS	SHEEPS &GOATS	OX	PROVISIONAL STORES	CARPENTERS
PADDY	1.81	0.55	0.25	0.45	0.63	0.52	0.59	0.88	0.65	0.60	0.43
CASTOR	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIGEONPEA	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
COTTON	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROUNDNUT	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00
COWS	0.01	0.01	0.00	0.01	0.01	1.01	0.01	0.01	0.01	0.01	0.01
BUFFOLWS	0.03	0.02	0.01	0.02	0.02	0.02	1.02	0.03	0.02	0.03	0.02
SHEEPS &GOATS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
OX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
PROVI STORES	0.21	0.15	0.07	0.14	0.18	0.14	0.16	0.23	0.18	1.21	0.19
CARPENTERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
FLOURMILL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RICE MILL	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
BASKET MAKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BARBER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MECHANIC	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CABLE OPERATOR	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01
MEATSHOP	0.03	0.02	0.01	0.02	0.03	0.02	0.02	0.03	0.03	0.04	0.04
ELECTRICIAN	0.01	0.01	0.01	0.03	0.02	0.00	0.00	0.01	0.01	0.01	0.00
TRANSPORTATION	0.02	0.02	0.04	0.09	0.07	0.01	0.02	0.02	0.02	0.06	0.02
PDS	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01
NREGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHGS	0.13	0.09	0.04	0.08	0.11	0.09	0.10	0.13	0.11	0.13	0.12
FAMILY LABOUR	0.10	0.07	0.08	0.18	0.15	0.06	0.06	0.08	0.07	0.27	0.06
HIRED LABOUR	0.10	0.07	0.05	0.21	0.10	0.07	0.13	0.06	0.25	0.04	0.03
RENT	0.22	0.16	0.07	0.18	0.22	0.68	0.78	0.22	0.80	0.65	0.17
LANDLESS	0.11	0.07	0.05	0.13	0.10	0.12	0.11	0.10	0.15	0.30	0.37
MARGINAL	0.51	0.38	0.20	0.37	0.44	0.36	0.40	0.92	0.48	0.50	0.34
SMALL	0.54	0.33	0.16	0.29	0.51	0.29	0.29	0.63	0.36	0.36	0.18

MEDIUME	0.30	0.32	0.10	0.16	0.23	0.18	0.27	0.23	0.21	0.23	0.33
LARGE	0.58	0.26	0.13	0.24	0.39	0.32	0.37	0.32	0.40	0.32	0.17
MIGRATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	FLOUR MILL	**RICE MILL**	**BASKET MAKER**	**BARBER**	**MECHANIC**	**T.V.CABLE OPERATOR**	**MEAT SHOP**	**ELECTRICIAN**	**TRANSPOR TATION**	**PDS**	**NREGS**	**SHGS**
PADDY	0.87	1.12	0.61	0.73	0.90	0.71	0.72	0.00	0.74	1.99	0.74	0.74
CASTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIGEONPEA	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.28	0.01	0.00
COTTON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROUNDNUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COWS	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.01
BUFFOLWS	0.03	0.04	0.02	0.03	0.03	0.03	0.03	0.00	0.03	0.02	0.03	0.03
SHEEPS &GOATS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROVI STORES	0.24	0.28	0.19	0.23	0.24	0.24	0.21	0.00	0.24	0.17	0.27	0.23
CARPENTERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FLOURMILL	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RICE MILL	0.01	1.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.01
BASKET MAKER	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BARBER	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MECHANIC	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CABLE OPERATOR	0.01	0.02	0.01	0.01	0.02	1.01	0.01	0.00	0.01	0.01	0.01	0.01
MEATSHOP	0.04	0.04	0.03	0.03	0.04	0.03	1.03	0.00	0.04	0.03	0.05	0.04
ELECTRICIAN	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.00	0.01	0.04	0.01	0.01
TRANSPORTATION	0.02	0.08	0.05	0.09	0.09	0.02	0.04	0.00	1.02	0.03	0.03	0.02
PDS	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.00	0.02	1.01	0.02	0.02
NREGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
SHGS	0.15	0.16	0.11	0.14	0.14	0.16	0.12	0.00	0.14	0.10	0.16	1.14

FAMILY LABOUR	0.60	0.15	0.80	0.59	0.74	0.07	0.13	0.00	0.61	0.08	0.08	0.08
HIRED LABOUR	0.05	0.23	0.04	0.05	0.06	0.04	0.05	0.00	0.05	0.23	0.05	0.05
RENT	0.20	0.24	0.15	0.19	0.20	0.19	0.17	0.00	0.20	0.30	0.21	0.40
LANDLESS	0.13	0.17	0.12	0.13	0.14	0.09	0.09	0.00	0.24	0.13	0.38	0.23
MARGINAL	0.54	1.27	0.55	0.51	0.93	0.28	0.72	0.00	0.63	0.45	0.66	0.52
SMALL	0.57	0.42	0.64	0.49	0.60	0.26	0.79	0.00	0.59	0.35	0.48	0.44
MEDIUME	0.40	0.25	0.19	0.67	0.25	1.16	0.17	0.00	0.31	0.22	0.30	0.37
LARGE	0.58	0.40	0.24	0.28	0.34	0.26	0.26	0.00	0.33	0.37	0.32	0.44
MIGRATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	FAMILY LABOUR	HIRED LABOUR	RENT	LANDLESS	MARGINAL	SMALL	MEDIUME	LARGE	MIGRATION
PADDY	0.75	0.84	0.54	0.35	1.22	0.31	0.71	1.29	0.74
CASTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIGEONPEA	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01
COTTON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROUNDNUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COWS	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01
BUFFOLWS	0.03	0.03	0.02	0.04	0.04	0.02	0.03	0.04	0.03
SHEEPS &GOATS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROVI STORES	0.22	0.29	0.14	0.35	0.28	0.14	0.23	0.31	0.27
CARPENTERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FLOURMILL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RICE MILL	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.02	0.02
BASKET MAKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BARBER	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
MECHANIC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CABLE OPERATOR	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
MEATSHOP	0.03	0.05	0.02	0.08	0.04	0.02	0.03	0.04	0.05
ELECTRICIAN	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01
TRANSPORTATION	0.02	0.03	0.01	0.03	0.03	0.01	0.02	0.03	0.03
PDS	0.02	0.02	0.01	0.02	0.03	0.01	0.01	0.01	0.02
NREGS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHGS	0.13	0.17	0.08	0.20	0.16	0.08	0.16	0.18	0.16
FAMILY LABOUR	1.07	0.09	0.05	0.10	0.10	0.04	0.07	0.10	0.08
HIRED LABOUR	0.05	1.05	0.03	0.03	0.07	0.02	0.04	0.08	0.05
RENT	0.19	0.23	1.12	0.25	0.24	0.11	0.19	0.26	0.21
LANDLESS	0.14	0.42	0.07	1.12	0.11	0.05	0.09	0.12	0.36
MARGINAL	0.71	0.86	0.37	0.28	1.42	0.14	0.28	0.44	0.55
SMALL	0.69	0.37	0.26	0.22	0.41	1.13	0.26	0.43	0.47
MEDIUME	0.24	0.26	0.20	0.14	0.25	0.09	1.16	0.25	0.37
LARGE	0.30	0.33	0.36	0.18	0.42	0.12	0.26	1.44	0.40
MIGRATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

6.4. NREGS IMPACT ON VILLAGE ECONOMY

In table 6.2 multiplier effect of Rs.133400 investment in NREGS is presented as output, employment and household income multipliers. From the SAM analysis it was found that the total output multiplier is 4.1, i.e if the demand for NREGS work increases by Rs. 1, the total output of the economy increases by Rs.4.1. If the demand for NREGS work increases by one unit, the employment in the economy increases by 3.9 units. If the demand for NREGS works increases by Rs.1 the total household income increases by Rs 3.4 for the year 2011-12. Of all the three multiplier effects, total output had highest value of 4.1 followed by employment and household income.

Table 6.2: Summary of impact of NREGS on Dokur village Economy.

Particulars	Multiplier value
Output multiplier	4.1
Employment multiplier	3.9
Household Income multiplier	3.4

Table 6.3 presents the income, output and employment multipliers of different sectors. The output multiplier indicates the coefficients by which output will increase. There is increase in the expenditure due to an external shock. For example, if there is an increase in the consumption of rice by Rs.1000 because of NREGS works, the total production of rice will be increased by Rs.2320 (1000*2.32). It also shows that a unit rise in the demand for rice will increase the total output by 2.32 units. The maximum impact on output generated in the village is because of the increase in the rice mill and consumption of Public Distribution System - with multipliers 2.81 and 2.71 respectively, followed by sheep and goats with a value of 2.41, and flour mill with multiplier of 2.42. Hence, if the consumption of these sectors is more in the village it will lead to increased demand creation.

The income multipliers show that if there is an increase in demand for rice by one unit, it will increase the total income by 2.04 units, while increasing demand for castor by one unit increases total income by 1.36 units. The impact of multipliers will increase when the activities like processing of food and other commercial activities are taking place within the village.

Table 6.3: Multipliers of Output, Income and Employment of Different Sectors

Income	Output multipliers	Income multipliers	Employment multipliers
Paady	2.32	2.04	0.42
Castor	1.89	1.36	0.29
Pigeonpea	1.45	0.63	0.20
Cotton	1.87	1.19	0.57
Groundnut	2.23	1.67	0.48
Cows	1.85	1.26	0.81
Buffolows	1.96	1.44	0.97
Ox	2.07	1.60	1.13
Sheep& goats	2.41	2.19	0.37
Provisional Store	2.13	1.71	0.96
Carpenter	1.88	1.41	0.26
Flourmill	2.42	2.22	0.86
Ricemill	2.81	2.51	0.61
Basketmaker	2.07	1.75	1.00
Barber	2.32	2.08	0.82
Mechanic	2.52	2.25	1.00
T.V.Cable operator	2.24	2.07	0.31
Meat shop	2.22	2.02	0.35
Electrician	1.00	0.00	0.00
Transporttion	2.29	2.10	0.86
PDS	2.71	1.52	0.61
NREGS	2.34	2.14	0.34
SHGS	2.27	1.99	0.52
Migration	2.34	2.15	0.34

Increase in demand for paddy (rice) by one unit will result in the increase of the income of the marginal farmers by 1.22 units, small farmers by 0.31 units, while that of large farmers and medium farmers is increased by 1.29 units and 0.71 units respectively. It is interesting to note that the increase in demand for paddy by one unit is expected to rise the income of landless people by 0.35 units. The differences between multipliers arise from the income and output structures in the economy.

Employment multipliers of the sectors can be interpreted as number of working days created in village due to an increase in the output in sector because of the increased expenditure on that product arising from an external event in the form of increased labour income. When there is an additional expenditure on rice due to increased expenditure by labour, the final demand for rice increases. Because of this employment days also increases as per the multipliers. Multipliers of all the sectors are multiplied with the additional expenditure incurred by the labour household in respective sectors.

The results of employment multiplier show that a one unit demand for rice increases, the employment by 0.42 percent in the economy, while for castor employment increase is 0.29 units on. Employment multiplier is high for Ox 1.13 (Bullock cart activities), followed by Basket making with 1.00 and Mechanic 1.00 (non-farm employment) indicating that non-farm employment is increasing.

6.5. THE IMPACT OF NREGA WORKS ON THE VILLAGE ECONOMY

For estimating the impact of NREGS on other sectors of the village economy, policy simulations have been done by using the equation – 4

$$Y = (I - A)^{-1} X = MX \ldots\ldots\ldots\ldots Equation\ (4)$$

M represents the SAM multiplier Matrix,

m_{ij} shows the impact on i account due to injection of unit shock in account j.

Simulation can be obtained by multiplying the M with X. Where M is the SAM multipliers matrix, X is the exogenous (external shock) account. NREGS wage expenditure is considered as external shock to the economy, and the scheme wage expenditure is distributed among the households in proportionate to their expenditure ratio. For getting the impact of

NREGS on output and households income in the village, NREGS wage expenditure column is multiplied with the SAM multiplier matrix.

As part of NREGS different works like land development in fallow lands, delisting of field channel and construction of individual household latrine works have been undertaken in the village during the year 2011-2012.

Works taken under the scheme in the year 2011-12 was 46, out of which 41 works are in progress and 5 works have been completed. There were 43 households who have completed 100 days of employment of NREGS in the village. The total cost of NREGS works that have been incurred in the village was Rs.1334000; all of which was the labour cost. The effect of the cost on the economy is worked out by assuming its distribution as that of the total income of labour. Because of the NREGS works in the village, 11.7 percent GVA (Gross Value Added) was generated in agriculture and livestock, 5.2 percent in village services, and 19.5 percent in labour and capital. The total cost of NREGS works has been distributed between the household and other sectors in the ratio of household expenditure. The income share of different households in the village were 7.1 percent for landless, 27.6 percent for marginal farmers, 26.7 percent for small farmers, 16.3 percent for medium farmers and 22.3 percent for the large farmers.

Table 6.4: Increased Output due to NREGS works in the Village during 2011-12 (Rs)

Output	Base output (Rs)	Increased output (Rs)	% change
Agriculture	42565388	931501	2.2
Live stock	3103800	50000	1.6
Village production	666400	18971	2.8
Private services	7482216	413259	5.5
Family labour	1877025	799266	42.6
Hired labour	2452276	716676	29.2
Capital	3090610	116790	3.8

The above table 6.4 shows the impact of the employment guarantee programme on the output in the village. From the table it can be inferred that the family and hired labourers have

the highest increase in output with Rs.799266, Rs.716676 respectively, followed by private services Rs.413259. With regard to percentage increase, family labour accounts for highest percentage rate of 42.6%, followed by hired labour 29.2 per cent and Private services 5.5 percent. However livestock (1.6%) agriculture (2.2%) and village production (2.8%) all have registered only significant increase. This is because more people in the village are dependent on labor work for livelihood.

Table 6.5:

Increased Income due to NREGS works in the village for the year 2011-12(Rs)

Income	BaseIncome (Rs)	Increased Income(Rs)	% change
Landless	3213340	321782	10.0
Marginal	12553123	1552360	12.6
Small	12173436	1538885	12.4
Medium	7442363	881540	11.8
Large	10142134	1025753	10.1
Total	45524398	5320321	11.7

Table 6.5 gives the information about the increase in household income due to the NREGS works in the village. The household income increased slightly more than the output. The overall income increase has been Rs.5320321, which is 11.7 percent increase of the base income. The highest percentage increase in the income was observed for marginal farmer households (12.6 percent), followed by small farmer households 12.4 percent. However though, all the different household groups have observed an increase around (10.0%) The maximum income has been derived from marginal, small and large farmer households, indicating that from the income created by NREGS might have led to the creation of increased demand for food. The labour households also might have been benefited relatively more because they have experienced direct impact of the employment guarantee programme as a part of wage income.

This chapter shows with the help of SAM that the NREGS has a very favorable impact on the economy of Dokur. Contrary to the prevalent opinion that wage employment programmes do not help the poor much, the above analysis shows that wage employment is a good policy for increasing the village output, income of the households in the village in general and for

enhancing those of the poor in particular. Though NREGS is useful for the poor, it should be planned and carried out properly, and then it helps more not effectively only in enhancing the income of the poor, but also in giving impetus to the village economy as a whole.

6.6. CONCLUSIONS

Three multipliers were obtained from SAM of Dokur village. They are output multiplier 4.1, employment multiplier 3.9, and income multiplier 3.4. The multipliers imply that if the demand for NREGS work increases by Rs.1, the total output of the economy increases by 4.1. If the demand for NREGS work increases one unit, the employment in the economy increases by 3.9 units and that of the total income increases by Rs.3.4 for the year 2011-12. This indicates that the programme has direct effect on village economy.

The output multiplier (which indicates that the coefficient by which output will increase) shows that there is increase in the expenditure due to an external shocks. The sector wise analysis of output multiplier depicts the highest multiplier for Rice mill 2.81 followed by Public Distribution System 2.71 and Mechanic 2.52. Employment multipliers of sectors have been interpreted as number of working days created in the village due to increase in the output in sector, because of the increased expenditure on that product arising from an external event in the form of increased labour income. It was found that highest employment multiplier is generated for Ox 1.13 (Bullock cart activiries), Mechanic 1.00, and Basket making 1.00; i.e predominantly Non-farm employment. When the income multiplier is analysed sector wise, it was found that the highest multiplier is for Rice mill 2.51, followed by Mechanic and Flour mill with 2.25, 2.22 respectively. The findings indicating that the NREGS impact is more on non-farm activities in the village for 2011-12.

CHAPTER - VII

CHAPTER – 7

SUMMARY AND POLICY IMPLICATIONS

After Independence in 1947, India achieved development in several fronts by adopting five year plan. The economic growth rate was 6.6 percent during 1990-2010, and rose to 7.5 percent during 2010-2014. However, the poor sections are not able to enjoy the growth of the Indian economy. “The impressive economic growth of our country has brought smiles on the faces of the rich and the powerful even as the rest suffer in distress and drudgery” (Montek Singh Ahuluwalia, Deputy Chairman of Planning Commission). The two major problems India had faced are poverty and unemployment. The persons below the poverty line in India have been reduced from 45.7 percent in 1983-84 to 37.7 percent in 1993-94, 26.1 percent in 1999-2000, 28.3 percent in 2004-05 and 22 percent in 2011-12. (The official estimate of poverty was measured by the Planning Commission, 2011). Whereas the unemployment rate in India is around 2 percent (NSSO 68^{th} round) during 2011-12. To come over the above problems the Government of India adopted inclusive growth approach in Eleventh Five Year Plan in 2007. Inclusive growth allows people to contribute to and benefit from economic growth.

Employment generation has been the major aim of all the rural development schemes reflecting upon the concerns of Nehru “if we are to eradicate poverty, we must first do away with this wide spread of unemployment”. Employment programmes in India have a long history and are also recognised as major instruments of poverty alleviation in rural areas. Wage employment programmes in Independent India started with the Rural Works Programme (RWP), which was introduced in 1961 in selected districts in the country to generate employment for the poor in the lean season. A series of wage employment programmes have followed this programme each trying to improve upon the earlier programme. The two major objectives of these programmes have been the generation of employment for the poor and creation of durable assets, the first objective receiving priority over the second. It is documented that most of the programmes could not achieve the objectives fully for various reasons.

In spite of the experience of public works and work fare, academicians and policy makers continue to debate on their effect on the poor and society. Sharma (2003) in his article “Rural Development and Self-employment in Punjab” has very aptly concluded

that employment is a vital indicator of rural development, particularly in highly populated countries like India. The main goal of the public works programmes, beginning with Community Development Programmes in the early 1950's is to establish a network of extension and development services in the village, thereby creating awareness in the rural communities of the potential and means of development. After 1970's employment programmes were launched to provide opportunities of work for the rural poor, particularly in slack employment periods of the year, which would also at the same time create durable community assets. Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA); the latest of the employment programmes, is the world largest employment guarantee scheme.

Several studies have examined the impact of NREGS both at the macro, as well as micro level over a period of time, and some of them are theoretical and some are empirical. For this thesis, review of studies is done in two sections. Section one presents the review of studies on impact of NREGS on various issues of economy at macro level. Section two shows the studies of social accounting matrix. In these studies, SAM is used as the methodology to examine the direct and indirect effects. All these studies observed that SAM framework as a one of the sophisticated methods to examine the sector wise impact and inter linkages between sectors in the village economy.

K.Kareemulla, et al, (2009) have examined the impact of the scheme on rural livelihoods and the nature of soil and water conservation works in six villages of Anantapur district in Andhra Pradesh. They found that the major impact of NREGS was the reduction of migration level in the sample villages from about 55 percent to 13 percent. K.N.Nair, et al, (2009) made an attempt to assess the impact of NREGS on employment generation and wages of workers, assets and facilities created and its potential benefits to the larger society. They found that there was an increase in consumption expenditure on food and a marginal improvement in savings. They also observed that due to NREGS, women have also started shouldering household expenses and responsibilities.

Prakash Srivastava (2011) made an attempt to study the impact of NREGS on rural development in India. He found that NREGS created purchasing power among workers. The generated extra income created further demand, which again leads to

increase in production, employment and demand and so on in a spiral way. This demand stimulating procedure is called the multipliers.

There are also some recent studies in India, which used the frame work of SAM to assess effectiveness of transactions and transfers taking place in each sectors in economy (Alka Parikh 1996 et al. Arjun Subramanyam 2007 Indira Hirway 2008) at micro level, These studies provided a broad framework and methodology for construction of SAM and developing multipliers to analyse the impact of NREGS on village economy (Dokur).

Several studies examined the performance of NREGS (Khera and Nayak (2009) and Pankaj and Tankha (2010). Berg et al (2012) and Imbert and Papp (2012) found that there is a positive effect of NREGS on agricultural wages in India. A study by Ahamad Emad (2012), examined impact of NREGS on the expenditure pattern in rural India found that households have invested a significant proportion of income received from the scheme on durable goods as future savings. The study also found that there is a shift from staple diet to more expensive vegetables. Another study by Nayana Bose (2013) found that NREGS has a positive and significant impact on consumption.

There is a vast amount of literature that studied the impact of NREGS on wages, consumption expenditure, savings, food security etc., (Ravi and Englar (2009), Liu Deininger (2010) Jha et al (2011). At present degree of impact of NREGS, implementation procedure, irregularities of NREGS has become a hot topic for researchers, academicians and politicians. All the studies concluded that, with the commencement of NREGS significant benefits including better wages, access to employment and safe working conditions have been achieved. Very few studies analysed the direct effects of NREGS, but not many on the indirect effects. The present research work examines the direct and indirect effects of NREGS, inter – linkages between sectors and how NREGS income effects other sectors in the economy. Several studies used all India, states and district level data as the unit for their analysis and came out with meaningful conclusions and policy suggestions, very few studies have been conducted at micro level.

Objectives of the Thesis:

The main objectives are

1. Developing an empirical Social Accounting Matrix (SAM) for the village Dokur in United Andhra Pradesh. SAM analysis of impact of NREGS interventions in the Village.
2. To examine the multiplier effects - indirect and direct effects of the NREGS on the village economy.
3. To assess and evaluate interlinkages between NREGS interventions and agricultural production practices in the context of village economy.

The impact of NREGS is likely to differ from village to village depending upon agro-climatic conditions, area irrigated, magnitude of agricultural labour, existing wage rate and employment level in the village. Therefore, it is proposed to examine the multiple impacts of NREGS works on village economy. Every government policy has its own effects on the economy, like that NREGS has its own effect on the local economy. There are two types' of effects, and they have direct and indirect effects in the village economy. The direct effect is the creation of additional income to the people through providing additional employment. Whereas indirect effects of the NREGS on the village has been divided into three types. They are 1. Effect on output, 2. Effect on labour market,3. Increase in Income.

Since the main objective of the thesis is to examine the direct and indirect impact of NREGS on village economy. For evaluating the direct and indirect effects, linkages among the sectors and NREGS effect on other sectors, the framework of Social Accounting Matrix (SAM) is used. For this thesis, Dokur village was selected from Devarkadra mandal in Mahabubnagar district of Telangana.

To capture the socio-economic interdependence and the structure of the village, village level SAM is constructed. SAM gives the sectorial origin and distribution of income by socio- economic household groups in the village. SAM multipliers also show the linkages among different sectors of a village economy. The linkages are shown in the form of increase or decrease in the income of different accounts, as and when one rupee is injected into an account.

The Social Accounting Matrix (SAM) can be regarded as an extension of input-output tables. The framework of input-output tables is used to provide detailed information on the flow of goods and services as well as on the structure of production costs. A SAM can be defined as an organised matrix representation of all transactions and transfers between different production activities, factors of production and households within the economy and with respect to the rest of the world. All the transactions in the economy are presented in the form of a matrix in a SAM. Each row of the SAM gives receipts of an account while the column gives the expenditure, the total of each column should be equal to the total of each corresponding row.

Village Social Accounting Matrix

SAM must always be a square matrix. The rows, denoting the receipts of an account, follow the same ordering as the columns that denote the corresponding expenditure. Hence, an element in the $(i,j)^{th}$ cell of the matrix denotes the receipt of account i from account j, which can also be expressed as the expenditure by account j to be paid to account i. The sum of all the receipts of an account is equal to the sum of all payments of the corresponding account. Hence, the row sums must always be equal to the corresponding column sums.

The following assumptions are used for construction of village SAM:

- Price, Technology, Employment, Population remains same.
- SAM framework assume a Keynesian and demand – driven system without resource constraints.
- Production uses linear, fixed proportion technologies and the average and marginal expenditure propensities are the same.

The village Social Accounting Matrix has the following accounts:

1. Activities Account
2. Factors Account
3. Households Account
4. Savings and Investment Account
5. Rest of the World Account

Social Accounting Matrix model is first built to obtain the matrix of coefficients by dividing each element by the corresponding column sum. The SAM is given as the matrix

of elements B_{ij} with column total as X_j. For Construction of SAM for Dokur village the following components were used.

ACCOUNTS

1. Activities Account:

a) Agriculture – Cotton, Paddy, Castor and Pigeon pea, Groundnut, and Vegetables crops.

b) Livestock – Milk and Milk products and Meat, Bullocks.

c) Nonfarm and self-employment – Finance, Vegetable vendor, PDS, Transportation, Communication and other services.

d) NREGS – (i) Agriculture, Forestry and Soil and Water conservation (ii) Road connectivity (iii) Sanitation and others.

2. Factors of Production Account:

a) Labour: own labour and hired Labour

b) Capital: It includes the income of self – employment.

3. Households Account:

a) Household: Landless Workers, Marginal Farmers, Small Farmers, Medium Farmers, Large Farmers,

4. Government Account: a. Panchayat - Revenue: Taxes, Grants, Donations; b. Expenditure: Consumption, Investment.

5. Rest of the World Account:

a) Exports

b) Imports

6. Commodities:

a) Agriculture

b) Manufacturing

c) Trade

d) Public services

e) Private Service

f) NREGS

SAM Multipliers:

SAM is a socio-economic information system that describes all transactions and interactions that occur in an economy in a particular year. It is a way of presenting socio – economic interactions in a consistent and complete way. It is consistent because, for every receipt there is a corresponding out lay, and since both the receiver and the sender

of each and every transaction is clearly identified (Sadoulet and Janvry, 1995). For converting the SAM to multiplier first should know which accounts are endogenous and exogenous. Exogenous account includes the rest of the world, i.e., PDS, Centre and State government services, while all other remaining accounts are treated as endogenous. NREGS works in the village will have a multiplier impact on the total income, output and employment. The effect of NREGS has been estimated by using multiplier analysis treating NREGS programme as external shock to the village Social Accounting Matrix. Village SAM has been utilised for evaluating direct and indirect impact of different shocks on the economy through this process.

Social Accounting Matrix model in the equation form can be written as:

$Y = W + X$ ---------- Equation – (1)

Where W consists of endogenous accounts and X is the exogenous account.

$A_{ij} = W_{ij} / Y_j$, or $Wij = A_{ij} * Y_{ij}$ ---------- Equation – (2)

Where A_{ij} gives the requirement of account i for one unit account j.

The above equation can be written as

$Y = AY + X$ ---------- Equation – (3)

$(I-A)\ Y = X$

$Y = (I-A)^{-1}\ X = (m_{ij})\ X = MX$, or $Y = MX$ ---------- Equation – (4)

Where M is Social Accounting Matrix multiplier, m_{ij} is the total impact on account i, because of a unit shock in j (Indira hirway, Saluja and Yadav 2008).

The Leontief inverse matrix is called the R-matrix or Matrix multiplier, where each element of the matrix say $r_{ij,}$ signifies the output of sector i required directly or indirectly to meet the final demand of sector j. The column sum, hence, give the increase in the gross output of all the sectors that are required in the production of j^{th} sector, resulting from the increase in final demand of jth sector. This is called the output multiplier. Thus the R-matrix shows the full impact of the increase in final demand on output of other sectors. The increase in demand of a sector is first felt as the sector increases its output to meet this additional demand. This is called the direct impact. However, in order to increase its production, the sector would require increased inputs

from other sectors. This in turn leads to the generation of additional demand of the input sectors and these sectors need to increase their production. This goes on and on and hence, in a way the whole production system contributes to fulfilling the increased demand of a particular sector. This refers to the indirect impact.

Both primary and secondary data have been utilised in the thesis. Secondary data was collected from the government website of Ministry of Rural Development, various types of secondary data including from Gram Panchyat, School, Anganwadi, Post – office, and ICRISAT data base and official websites http://nrega.nic.in, http://nrega.ap.gov.in and http://nrega.telangana.gov.in have been used for the thesis. The total number of households in the village is 545. The households were classified into five categories based on farm size adopted by ICRISAT classification of households. A sample of fifty percent of each category of the households was selected for data collection. Data was collected for the year 2011-12 from 272 households by using the interview schedule in 2014. The interview schedule provides detailed information of socio – economic information like household structure, household assets, education, production and input use, employment and income, land conservation activities, household consumption expenditure, migration and details regarding the NREGS implementation and participation (An interview schedule is provided in Appendix – A). Data was collected from economic agents such as Shops, Canteens, Provision stores, and Service providers (Tailor, Barber, Drivers, Salaried Labour) and so on. Household consumption expenditure data was collected for one month and multiplied with 12 to obtain the consumption expenditure for a year. Collection of household consumption expenditure, and livestock data was multiplied with two to get total village level data and for agriculture data was collected for the total cropped area, crop wise in the village for the year 2011-12. The data set collected information about the activities of the households during previous 12 months and this data set is used for the construction of the village Social Accounting Matrix. The present village Social Accounting Matrix was 63x63 size, which include crops in the village, livestock, SHGs, family labourers, hired labourers. To support information obtained at household level and other village level data, a focus group discussion was conducted. Different groups of people such as farmers, Anganwadi teachers, Self Help Group members etc., have participated in the focus group discussions.

Limitations of the Thesis:

The thesis has its own limitations in terms of methodology followed. For this research, the sample village is chosen purposively and it did not represent the village with adequate NREGS expenditure. The choice of the village was based on VDSA (Village Dynamics in South Asia) village of ICRISAT. Therefore the results on impact of NREGS on village economy, suffer from this limitation.

The data was collected for the year 2011-12 at one time point only, because of the Social Accounting Matrix constructed for the year 2011-12. The crop data was collected in two seasons - kharif and rabi, but in SAM crops have one column. The selected village is from typical complete dry land agriculture area and therefore number of activities and volume and value of each activity is less than the typical wet land area. Social Accounting Matrix is an analysis which takes into account households prevailing in the economy. Since NREGS is a demand driven programme, the results obtained for this village cannot be generalised to other areas with different household's setup and different degree of demand for NREGS.

Third chapter gives the details about days of employment generation and wage payment under the programme at national, state and village level. It also provides the share of the marginalised groups and women in the scheme. The performance of the scheme may differ from the state to state in the form of implementation, employment provision and local work conditions. The data shows in 2006-07, 0.90 billion man days of employment was generated in two hundred districts of India. In the subsequent year, the days of employment generated went up to 1.4 billion days as the scheme was intensified in the districts already brought under the scheme and extension of scheme to one hundred and thirty districts in India.

Since then employment generated has been steadily increasing with the exception of 2011-12 when there was a marginal decline. In 2013-14 the employment generated was as high as 2.1 billion person days. The wages under the scheme was Rs.58.4 billion in 2006-007, and it has increased to Rs.256.8 billion in 2010-11. Further, it had increased to Rs.292.4 billion in 2013-14. The average wage rate per person was Rs.65 in 2006-07 and it was Rs.132 in the 2013-14. The number of households participated in the scheme increased from 2.1 billion in 2006-07 to 4.8 billion in 2013-14 registering a double

increase. The average employment generated per household has also increased from 43 to 46 days.

Where as in the case of Andhra Pradesh, NREGS was launched in 2006 in Anathapur district and extended to thirteen districts. It was extended to six more districts on 1st April 2007 and other three districts were brought under the scheme in April 2008. The person days of employment generated in Andhra Pradesh in 2006-07 was 67.8 million days. The employment days generated under the scheme has been increasing steadily from 2007-08 to 2013-14. The number of households participated in the scheme was 2.1 million in 2006-07, it increased to 6.0 million in 2013-14 showing four times increase. Average employment per household in 2006-07 was 31 days and it increased to 50 days in 2013-14. Average wage per person per day increased from Rs. 81 to Rs. 111 daily in the above period. Rural household participating rate in the scheme was 15 percent in 2006-07 and it was 41 percent in 2013-14.

The employment generated per household is generally higher in Andhra Pradesh than the all India. Wage rate per day per person is marginally lower in Andhra Pradesh than the India. Participation of rural households under the scheme was 41 percent in Andhra Pradesh compared to 28 percent in India.

There are reasons for the decline in the Person days, expenditure on wages, and participation of the households in the scheme in recent years. Often state governments are not able to implement the scheme effectively, because of inefficient administration and dearth of personnel at the block and panchayat levels for implementation. Another reason was shown as rule by different parties at the Centre and the State.

In India, the percentage of marginalised groups (Schedule Castes and Schedule Tribes) in the scheme in 2006-07 was 25.3 and 36.4 respectively. It increased up to 2009-10, since then the share of the marginalised groups has declined. In the case of women the total employment provided in the scheme has steadily increased from 3637.1 to 11554.6 lakhs during the period 2006-07 to 2013-2014.

In Andhra Pradesh the total person days of employment in NREGS programme in 2006-07 was 29.8 for Schedule Castes and 13.1 for Schedule Tribes. From 2006-07 onwards the percentage shares of the marginalised groups was increasing. It was also found by NSSO survey on NREGS that in Andhra Pradesh 42 percent of the beneficiaries were Schedule Castes/Schedule Tribes and 50 percent were Other Backward Castes.

The Schedule Castes and Schedule Tribes obtained higher share in the employment created in the country by NREGS, disproportionate to their population in the country. Though share of Schedule Castes is only 19.2 percent of the total population, they shared 23.2 percent of the benefits of employment from NREGS, during 2013-14. Though the share of Schedule Tribes is only 9.1 percent of the total population, they shared 14.5 percent of the benefits of employment from NREGS, during 2013-14. The official data (Ministry of Rural Development, Government of India website) suggest that the share of women in the total NREGS employment in the state progressively increased from 54.7 per cent in 2006–07 to 58.7 percent in 2013-14.

Under this scheme several works has been conducted in the village. The works are land development in fallow lands of small farmers, desilting of tanks, vandan kalva, cheruvu, filling of abandoned wells, land leveling in ordinary soil, Jungle (bush) cutting, development of land for weaker sections, construction of Indiramma Housing Basement in Dokur, laying of roads to agricultural fields, Individual household latrine work, jelliflora clearance, raising the horticulture plantation etc.,

The total number of persons worked in the scheme was 4118 persons up to 2013-14. Among the total beneficiaries men were 1396 and 2722 were women beneficiaries. The highest participation rate in the scheme was 785 persons in 2009-10, followed by 774 persons in 2011-12 and 550 persons in 2008 09. In the year 2009-10, 294 beneficiaries are men, 491 beneficiaries are women indicating, that participation of women in the scheme is more than the men. The reasons for the higher participation of women in the programme are equal wage for both men and women; availability of work within the village, there is no time bound in the work.

The total expenditure of the scheme was Rs.15.9 lakhs, of which Rs.12.0 lakhs was used for the wages of unskilled labour Rs.3.8 lakhs was spent on the material and skilled labour in the year 2007-08. The total expenditure under the scheme has increased to Rs.46.1 lakhs, expenditure on wages was Rs.37.7 lakhs, amount spend on material and skilled labour Rs.7.5 lakhs and the expenditure of contingency Rs.0.8 lakhs in the year 2010-11. Distribution of person days among the households by caste in the village, the total number of person days created under the programme in the village is 118495 during the period 2006-07 to 2013-14. The total person days distributed among the beneficiary households by caste wise, the share of the Other Backward Castes in total

person days was 99929 days, Schedule Castes share was 14308 days, Others share was 4258 days.

In Dokur village, total person days of employment generated in 2006-2007 was 3190 days, it has been increased from 15428 days in 2007-08 to 35467 days in 2010-11, and there is a sharp decline in the man days under the scheme in subsequent years. Expenditure on wages under the scheme was Rs. 2.6 lakhs in 2006-07; it increased to Rs. 37.6 lakhs in 2010-11. Further, there was a slight decline in the wages; in 2013-14 it was Rs. 8.8 lakhs. Average wage per person per day was Rs.82.1 in 2006-07 and it increased to Rs.123.6 in 2013-14. The percentage share of expenditure on wages under the scheme in the village was 96.9 percent in 2006-07; it declined to 83.4 in 2009-10. In 2010-11 and 2011-12 the percentage of expenditure on wages were 67.9, 79.4 percent respectively. It shows that labour cost and material cost ratio was 90:10 in very first year higher than the defined ratio in the scheme. The ratio came down to 65:35 in 2010-11, again it started increasing in 2013-14 it was 80:20 ratio. It means that increased share of the budget of NREGS used for wages in village. This indicates that budget was not available for material and administrative work.

The households participated in the Scheme in 2006-07 was 228, it has been increased to 438 households and declined to 214 in 2013-14. The mean person days per family were 13.3 days in 2006-07, 86.1 days in 2010-11 and declined to 29.4 days in 2013-14. The number of households completed 100 days under the scheme in the village was high as 134, 135 households in 2009-10 and 2010-11 respectively. Number of households completed hundred days under the scheme has declined from 2010-11 onwards and it declined to 48 households in 2013-14. The reason for decline the household participation in the scheme was due to non-implementation of scheme properly, delay in the wage payments. The wages of other section is more than the NREGS wages.

Fourth chapter presents the profile and socio – economic characteristics of the village. The village is drought prone and adequately represents the semi-arid tropics. Traditionally, agriculture has been the main livelihood of the villagers. However, over time, due to persistent drought and drying up of irrigation water sources, agricultural productivity and cultivated area declined drastically. This led to fallowing of land season after season, enabling bushes to grow extensively. The major crops grown are Paddy,

Groundnut, Castor, Pigeonpea and Cotton. Out - migration to cities, mainly to Hyderabad, to work in construction projects has been on the rise.

In the village educational awareness and opportunities have significantly improved, because of better facilities provided by the village Panchayat along with the District Education department's financial support. A primary school was established in 1966 and upgraded to high school level in 2007. First Anganwadi Centre was set up in 1993 and the second on 2008. Private schools have also opened at a distance of about five to seven km from the village, near Devarkadra. There are 45 students (26 male and 19 female) enrolled in the Anganwadis and 329 students (161 male and 168 female) in the primary and high schools.

Distribution of land ownership in the village is consistent with three trends: Decrease in the landlessness; increasing the equality; and declining farm size. Landholding size in the village is small (average land holding size 1.8 hectares) and scattered, because of individual farming etc. Most of the households got land ownership by purchasing land, and received from the land tenancy Act or from various government programmes.

A lot of change in the income levels of people was noticed in the village and there has been a change in the source of income over the years. The percentage of the farm income was reduced from 45 in 2005 to 35 in 2010, non – farm income has increased from 54.2 percent in 2005 to 64 percent in 2010.

The households' income doubled during 1975-78 and 2005-10, though a reduction in the farm income, except during the drought time. In early 1970's, 77 % of household income came from agriculture and related works, after 2007 share of the agriculture and related works was changed, it declined to forty three percent and the rest is from no-agricultural sector. The real farm wages were almost at stagnant during 2000 – 2006; from 2007 onwards wage rates for both men and women laborers have increased. There was a gap between the male and female wage rates in the village, farm wages as well as non – farm wages are high for men.

In India most common problem in rural areas is lack of investment for infrastructure development and socio – economic activities. It is very difficult to get credit at affordable interest rates in rural areas. In Dokur village most of the people depend on the money lenders to get credit.

The nature and extent of migration in Dokur is quite interesting. Migrants were employed in different occupations at the place of destination. Seasonal migration is very high in the village; at least one person from every household has migrated to cities for better employment opportunities. In village, 50 percent of the households migrated to cities seasonally as well as whole year.

Several government programmes were implemented in the village: Public Distribution System (PDS), Self Help Groups (SHG), National Food Security Mission (NFSM), Penssion scheme, Mid – day – meals programme in schools. Indira Awas Yojan (IAY), Antyodaya Anna Yojana (AAY) etc. The latest wage employment programme is NREGS.

The total number of households in the village is 545. The households were classified into five categories based on farm size adopted by ICRISAT classification of households. A sample of fifty percent of each category of the households was selected for data collection. Data was collected for the year 2011-12 from 272 households by using an interview schedule**.** From the household survey data was collected on the structure, education, assets, production, input use, land conservation activities, employment, income and consumption expenditure.

The total sample households are 272, out of which 217 households are Other Backward Castes, 29 households are Others and 26 households are Schedule Castes. In the total sample households 79.8 percent are Other Backward Castes, 10.7 percent are Others and 9.6 percent are Schedule Castes.

In the village 29.8 percent of households depend on agriculture, 12.9 percent rely on caste based occupations. 32.7 percent of the households are agricultural labourers, 14.7 percent of the households are non-agricultural labourers, auto rickshaw drivers, and rice and flour mills workers, while 9.9 percent dependent on other non – farm activities such as selling milk, running petty businesses, salaried jobs in government and NGO's.

The total sample population of the village is 1263, out of which the male population is 662 and female population is 601. The percent of male and female persons are high in 15-39 and 40-59 age groups. In the village out of 1263, 433 are illiterates, 267 are with primary education, 392 are with secondary and matriculates, 123 are with higher secondary education, 36 are graduates and 12 are post – graduates.

National Rural Employment Guarantee Programme is grounded in the village from 2006 onwards. The percentage of NREGS persons are high in 40-59 and 60 plus age groups, indicating that mostly middle aged and old persons are participating in NREGS. It

was also found that the percentage of NREGS female participants is higher in 15-39 and 60 plus age groups compared to males.

From the sample households male participation is slightly higher than that of female. Of the males, 20 percent are in the age group 15-39, 47 percent is 40-59 and 31 percent in 60 plus age group. The corresponding percentages for females are 37, 35, and 27.

The households participated in the NREGS programme was 146, out of which 19 households were Schedule Castes, 121 households were Other Backward Castes and 6 households were others. The number of beneficiaries in the programme was 237 and the number of person days created under the programme in the village was 8865 in the year 2011-12.

Overall the share of farm income was 48.4 percent non-farm income was 51.6 percent in the year 2011-12 in the village. The share of farm and non-farm income among the different categories of sample households in the village was 75.5 in the large farmer households. The share of non-farm income was highest 89.7 percent in the landless households, followed by marginal, small, and medium farmer households.

The total households participated in NREGS programme in 2011-12 in the village was 146 households; the number of persons was 237. The person days per household was 61, and the average wage per person was Rs.116 in the village. In the village about 151 persons from 63 households have migrated to cities for better employment opportunities and were sending remittances to the families. The total income from remittances was Rs.1824400, and the average income per household was Rs.28959. The percentage share of the remittances in the total income was more for the marginal farmer households (40.7), followed by the small, landless and medium farmer households, 25.0, 15.6, 11.0 percent respectively.

From the field survey it was found that out of 272 households 63 households have migrated to cities (24%) and were earning income ranging from Rs.20000 to Rs.120000 per annum. From the remittances income, 50 percent is used for the clearing debts, 10 percent for child marriages and 20 percent for the construction of houses. The remaining income is used for the education (2%), agriculture (4%), livestock and land purchasing (7%), savings (5%) and other purposes (2%) indicating that the income from remittances is used mostly for clearing debts.

Fifth chapter provides the structure of village Social Accounting Matrix. To get sector – wise analysis, SAM is used. Social Accounting Matrix uses principle of National Accounting System, but extends it to include the functional and households distribution of income. Thus, a SAM provides a comprehensive and detailed picture of all transactions taking place in an economy. Pattern of production, their use of factors, role of government, the source and distribution of income of all households are all accommodated systematically in a matrix form. It enables us to understand the mutual relationship between the employment, the distribution of income and structure of production.

A SAM provides comprehensive and detailed information of all transactions taking place in a village. The major transactions appearing in the SAM are:

(1) The allocation of value added to the factors (labour and capital) by production activities yielding the pattern of factor use and the consequent factorial income distribution,

(2) Given the household resources endowment and factor ownership (in particular, the amount of land owned and the amount of human capital possessed by households), the factorial income distribution, mapped into the distribution of household income earned by different socio economic household groups, and

(3) The corresponding expenditure patterns (consumption on different goods and services, savings, direct taxes, and imports) of the various socio economic groups.

The village Social Accounting Matrix for Dokur village consists of the following five components.

1. Production activities account:
    - Crop sector: Paddy, Cotton, Castor and Pigeon pea, Groundnut, Fruit & vegetable crops. Cultivation of above crops is divided into Kharif and Rabi crops, but in SAM only one column for each crop.
    - Live Stock Sector: Wool and meat, Milk and milk products, Cow dung manure and bullocks.
    - Manufacturing sector: A small Rice mill.

- Services: Public service (such as welfare schemes, education), Private Services.

2. Factors of Production account:
    - Family labourers
    - Hired labourers
    - Capital
3. Households account:
    - Households: By land holding size: Landless, Marginal farmers, Small farmers, Medium farmers and Large farmers.
    - Self-employed in non - agriculture
4. Government account: Village Panchayat (local body), School and Anganwadi centres are taken as the government. The village Panchayat receives the water tax and it does not have house tax from households as income, because this village is one of the villages that comes under the drought prone areas, and Government grants from outside the village. Grants for the development activities like for house construction, which are treated as expenditure for the Panchayat along with its other expenditure.
5. The Rest of the World account: It shows the income of sectors and workers going out and coming into village. Many people have migrated to the nearby towns and cities from the village. However, most of those who have migrated with the families, which might indicate that they earned enough to support the family in the new place. Very few of the migrated are engaged in well-paid jobs, most of them are working as construction labourers, servants in homes and hotels.

There are 37 production sectors; initial 5 crops from Paddy to Groundnut come under the agriculture, where most of the products are produced in village itself. Sectors 6 to 9 are livestock production. Activities under Flour mill, Carpenter, Rice mill, Basket making come under the non-farm production. Private services include Provisional store, Cable operator, Meat shop, Barber, Electrician, and Transport services etc., Remaining items such as Public Distribution System, Anganwadi centre, Government School, and Panchayat come under the public services. Households accounts are divided into five categories; namely Landless, Marginal, Small, Medium, and Large farmers. The production cannot divide from products, due to the availability of data on products

directly from the market for inputs and outputs. Hence, the Social Accounting Matrix is in the form of commodity X commodity matrix. It is obtained from supply and use matrix.

To construct the framework of Social Accounting Matrix, crops normal yields has been taken in 2011-12. Survey was conducted at the household level to collect data on all entities and sector wise expenditure of different types of households and data about occupation and education levels of all households' members was collected.

Details of NREGS workers in the village were also collected. The income of labour contains the wage and few workers getting salaries for their work as helpers. There are some labourers who went towns to get income. To develop SAM framework and multiplier (Multiplier is a factor of proportionality that measures how much an endogenous variable changes in response to change in some exogenous variable) analysis, columns in the SAM are crop production, livestock, non - farm production etc. Household savings have been put in the capital account.

The inverse of the SAM (Inverse have been taken only for sectors where there is production in the village). Each column of the inverse matrix from (row) 1 to 21 gives the output of the village economy. Different sector's output increases, due to increase in the final demand of each sector by one unit. Rows from 24 to 26 give the employment multiplier of the village, while rows from 27 to 31 provide the income multiplier of the village.

The average income per household is Rs.83531.0, and per capita is Rs.15144.5. The maximum income is earned by marginal farmers followed by small and large farmers. The lowest income is earned by landless households. Agriculture accounts for 43.3 percent of the total value of the output of all sectors followed others by 33.0 percent, it consisting of self employed in non-agriculture outside the village. It needs to be noted that more than 62 percent of the households in the village depend on agriculture, but the contribution of agriculture to the village output is 40 percent only.

The total production value of the village is Rs.98.4 million, of this agricultural sector contributes Rs.42.5 million. Livestock contribution to the total production is Rs.3.1 million and the village production (non-farm production) of Rs.0.6 million. The contribution of family labourers and hired labourers is Rs.1.8 and Rs.2.4 million respectively.

Sixth chapter analyses the impact of NREGS on the village economy of Dokur. The analysis has been done through estimating the multipliers. For calculating multipliers NREGS was treated as external shock in the village Social Accounting Matrix.

The multipliers measure the responses of the economy to a change in demand of a sector. When the total output of a sector increases or decreases, it affects the village economy directly and indirectly. Direct effects are the immediate effects associated with the change in the final demand for a particular sector or industry. The indirect effects or the secondary effects are due to backward linkages of sectors.

In the inverse Social Accounting Matrix every row provides the increase or decrease in the final demand. In inverse SAM rows from 1 to 20 gives increase in the output of different sectors due to one unit increase in the final demand of that sector. Rows 27-31 describe the effect of the increased purchasing power on the income of various sections of the population. Rows from 51 to 53 provide the income multipliers, while 54-58 rows gives the scheme effect on income of the different sections of households. For instance, a unit of increase in labour demand increases income from paddy by 0.20 units, Castor income by 0.14 units and so on.

From the SAM analysis it was found that the total output multiplier is 4.1, i.e if the demand for NREGS work increases by Rs. 1, the total output of the economy increases by Rs.4.1. If the demand for NREGS work increases by one unit, the employment in the economy increases by 3.9 units. If the demand for NREGS works increases by Rs.1 the total household income increases by Rs 3.4 for the year 2011-12. Of all the three multiplier effects, total output had highest value of 4.1 followed by employment and household income.

The output multiplier indicates the coefficients by which output will increase. There is increase in the expenditure due to external shock. For example, if there is an increase in the consumption of rice by Rs.1000 because of NREGS works, the total production of rice will be increased by Rs.2320 (1000*2.32). It also shows that a unit rise in the demand for rice will increase the total output by 2.32 units. The maximum impact on output generated in the village is because of the increase in the rice mill and consumption of Public Distribution System - with multipliers 2.81 and 2.71 respectively, followed by sheep and goats with a value of 2.41, and flour mill with multiplier of 2.42.

Hence, if the consumption of these sectors is more in the village it will lead to increased demand creation.

The income multipliers show that if there is an increase in demand for rice by one unit, it will increase the total income by 2.04 units, while increasing demand for castor by one unit increases total income by 1.36 units. The impact of multipliers will increase when the activities like processing of food and other commercial activities are taking place within the village.

Increase in demand for paddy (rice) by one unit will result in the increase of the income of the marginal farmers by 1.22 units, small farmers by 0.31 units, while that of large farmers and medium farmers is increased by 1.29 units and 0.71 units respectively. It is interesting to note that the increase in demand for paddy by one unit is expected to rise the income of landless people by 0.35 units. The differences between multipliers arise from the income and output structures in the economy.

Employment multipliers of the sectors can be interpreted as number of working days created in village due to an increase in the output in sector, because of the increased expenditure on that product arising from an external in the form of increased labour income. When there is an additional expenditure on rice due to increased expenditure by labour, the final demand for rice increases. Because of this employment days also increases as per the multipliers. Multipliers of all the sectors are multiplied with the additional expenditure incurred by the labour household in respective sectors.

The results of employment multiplier show that a one unit demand for rice increases, the employment by 0.42 percent in the economy, while for castor employment increase is 0.29 units on. Employment multiplier is high for Ox 1.13 (Bullock cart activities), followed by Basket making with 1.00 and Mechanic 1.00 (non-farm employment) indicating that non-farm employment is increasing.

For estimating the impact of NREGS on other sectors of the village economy, policy simulations have been done by using the equation – 4

$Y = (I – A)^{-1} X(m_{ij}) X = M X,$ ---------- Equation – (4)

M represents the SAM multiplier Matrix,

m_{ij} shows the impact on i account, due to injection of unit shock in account j.

Simulation can be obtained by multiplying the M with X. Where M is the SAM multipliers matrix, X is the exogenous (external shock) account. NREGS wage expenditure is considered as external shock to the economy, and the scheme wage expenditure is distributed among the households in proportionate to their expenditure ratio. For getting the impact of NREGS on output and households income in the village, NREGS wage expenditure column is multiplied with the SAM multiplier matrix.

Because of the NREGS works in the village, 11.7 percent GVA (Gross Value Added) was generated in agriculture and livestock, 5.2 percent in village services, and 19.5 percent in labour and capital. The total cost of NREGS works has been distributed between the household and other sectors in the ratio of household expenditure. The income share of different households in the village were 7.1 percent for landless, 27.6 percent for marginal farmers, 26.7 percent for small farmers, 16.3 percent for medium farmers and 22.3 percent for the large farmers.

The impact of the employment guarantee programme on the output in the village show, that the family and hired labourers have the highest increase with Rs.799266, Rs.716676 respectively, followed by private services Rs.413259. With regard to percentage increase, family labour accounts for highest percentage rate of 42.6, followed by hired labour 29.2 per cent and Private services 5.5 percent. However livestock (1.6%) agriculture (2.2%) and village production (2.8%) all have registered only significant increase. This is because more people in the village are dependent on labour work for livelihood.

The increase in household income due to the NREGS works in the village. The household income increased slightly more than the output. The overall income increase has been Rs.5320321, which is 11.7 percent increase of the base income. The highest percentage increase in the income was observed for marginal farmer households 12.6 percent, followed by small farmer households 12.4 percent. However though, all the different household groups have observed an increase around (10.0%) The maximum income has been derived from marginal, small and large farmer households, indicating that from the income created by NREGS might have led to the creation of increased demand for food. The labour households also might have been benefited relatively more because they have experienced direct impact of the employment guarantee programme as a part of wage income.

MAIN FINDINGS AND POLICY IMPLICATION OF THE THESIS

This thesis shows with the help of SAM that the NREGS has very favorable impact on the economy of Dokur. Contrary to the prevalent opinion that wage employment programmes do not help the poor much. The above analysis shows that wage employment is a good policy for increasing the village output, income of the households in the village in general and for enhancing those of the poor in particular.

The total number of sample households participated in the NREGS programme was 146, out of which 121 households belong to Other Backward Classes, 19 households to Schedule Cates and 6 households to others. The number of beneficiaries in the programme was 237 and the number of person days created under the programme in the village was 8865. The average person day per household was 61 in the year 2011-12 indicating that the programme is successful in the village.

It was found from the secondary level data from (Village Assistant) in Dokur village 66 percent of female workers and 34 percent male workers participated in NREGS programme indicating that women are employed more in the scheme.

It was found that there are 37 production sectors in the village from the SAM of Dokur. They are agriculture, livestock, private services include provisional store, cable operator, meat shop, barber, electrician, transport services and non-farm activities, (Flour mill, Carpenter, Rice mill, Basket making) for 2011-12. Among all the sectors non-farm activities got highest multiplier of 4.3 followed by livestock 4.2 and agriculture 3.8 indicating that non-farm sector played an important role in the village.

Three multipliers were obtained from SAM of Dokur village. They are output multiplier 4.1, employment multiplier 3.9, and income multiplier 3.4. The multipliers imply that if the demand for NREGS work increases by Rs.1, the total output of the economy increases by 4.1. If the demand for NREGS work increases one unit, the employment in the economy increases by 3.9 units. If the demand for NREGS works increases by Rs.1 the total income increases by Rs.3.4 for the year 2011-12 indicating that the programme has direct effect on village economy.

The output multiplier indicate that the coefficient by which output will increase, there is increase in the expenditure due to an external shocks. When the output multiplier is analysed sector wise, it was found that the highest multiplier for Rice mill 2.81 followed

by Public Distribution System 2.71 and Mechanic 2.52. Employment multipliers of sectors can be interpreted as number of working days created in the village due to increase in the output in sector, because of the increased expenditure on that product arising from an external in the form of increased labour income. It was found that highest employment multiplier is for Ox 1.13, Mechanic 1.00, and Basket making 1.00 (Non-farm employment). When the income multiplier is analysed sector wise, it was found that the highest multiplier is for Rice mill 2.51, followed by Mechanic and Flour mill with 2.25, 2.22 respectively. The findings indicating that the NREGS impact is more on non-farm activities in the village for 2011-12.

The impact of the scheme on income is positive, the highest percentage increase in the income was found for marginal farmer households (12.6) followed by small farmer households (12.4) percent.

NREGS works have shown a positive impact on the village economy, given the positive multiplier effect and higher forward and backward linkages, NREGA is a much better scheme than earlier employment programmes implemented by the government. However, it was noticed from the field work that there are some flaws relating to its implementation, like provision of 100 days of employment and delay in wage payment.

The findings suggest that continuing NREGS is good to the weaker sections in the village. But due care should be taken by the implementing authorities while preparing plans of work, such that it benefits village both in short and long term. Further, to reduce the migration, employment days under the programme should be increased to 100 per household as per the Act.

BIBLIOGRAPHY

BIBLIOGRAPHY

Aiyar, Yamini and Salimah Samji, “Transparency and Accountability in NREGA: A Case study of Andhra Pradesh”,Accountability Initiative Working Paper no.1, 2009.

Amarender A. R, “Rural Transformation Since 1970’s in Dokur Village of Andhra Pradesh, India” Working Paper, International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana, 2013.

Ambasta, P, Shankar P.S.V and Mihir Shah, “Two Years of NREGS: The Road Ahead”, Economic and Political Weekly, Vol.43,No.8, 2008.

Amir Ullah Khan and M.R.Saluja, “Impact of the NREGP on Rural Livelihoods”, Indian Development Foundation, 2008.

Anupama G.V. and Uttam Deb, “Role of Seasonal migration on Asset accumulation and Moving out of poverty: The case of Dokur village in Telangana, India”, Paper presented at the 8th Conference of the Asian Society of Agricultural Economics (ASAE), October, 2014.

Arunachalam P.(A) “Mahatma Gandhi National Rural Employment Guarantee Act and poverty in India”, Serials publications, 2011.

Arunachalam P.(B) -. Poverty and Mahatma Gandhi National Rural Employment Guarantee Scheme.

Banerjee, Kaustav, “Rights in Theory and Practice: A Case Study of the NREGA”, in Manoranjan (Ed), Social Development Report 2010 the land Question and Marginalised, Oxford University Press, New Delhi, 2011.

Basnta k. Pradhan, M.R.Saluja and Shalabh K.Singh, “Social Accounting Matrix for India: concepts, construction and Applications”, Sage Publications, New Delhi,2006.

Bell L.G, “Social Accounting Matrix (SAM) for analyzing Agricultural and rural development Policies”, EasypolMODUEL130, Analytical tools, FAO, 2012.

Berg, Erlend, et al. "Can Rural Public Works Affect Agricultural Wages? Evidence from India, CSAE Working Paper WP/2012-05, May, 2012.

Bhatt M.S. “Social Accounting Matrix to Study Socio – Economic Linkages of Tourism Sector - A Case study of India”, Indian Economic Review, Vol. XLVIII, No.2, 2013.

Biju P.A, Bhaskar C, Raghabendra C and Suma Nath, “Wage employment:Impact of MGNREGS inBardhaman, West Bengal”, Journal of Rural Development, Vol.32, No.1, 2013.

Bimal Saxena, (2011) “The National Rural Employment Guarantee Act: A Scheme For The Poor”, NREGA: Issues and Challenges”, Aph Publishing Corporation.

Bose, N.“Raising consumption through India’s National Rural Employment Guarantee Scheme”, Vanderbilt University, October 2013.

Breisinger et. al, “Social Accounting Matrices and SAM – based Multiplier Analysis: An Introduction with exercises, Food Security in Practice”, technical Guide -5, Washington D.C, International Food Policy Research institute, April, 2010.

Chabra S, Raina R.L and Sharma G.L, “MGNREGA – A Step towards Meeting the Challenges of Inclusive Growth: A Study of Six States”, LBS Journal of Management and Research, Vol.8 No.1, 2010.

Chakraboty P, “Implementation of the National Rural Employment Guarantee Act in India: Spatial Dimension and Fiscal Implications”, Working Paper no.505, Levy Economics Institute of Bard College, 2007.

Chhaya Datar, “Failure of National Rural Employment Guarantee Scheme Maharashtra”, Economic nd Political Weekly, 2007.

Dasgupta, A. et.al, “Anti –Poverty programs can reduce violence: India’s Rural Employment Guarantee Maoist conflict”, Social Science Research Network, September 13, 2014.

Deeraja C, Madhuri N.V, and Anataripa, “Factors Facilitating Participation of Women in Mahatma Gandhi NREGS”, Research Report Series No.98, National Institute of Rural Development, Hyderabad, 2013.

Dev. S. Mahendra, “India’s (Maharashtra) employment guarantee scheme:lessons from long experience”, from edited book ‘Employment for Poverty Reduction and Food Security’, 1995.

Dev. S. Mahendra, “Social and Economic Security in India, Institute for human Development”, Institute for Human Development, 2001.

Dev. S.Mahendra,“Alleviating poverty and Maharashtra Employment Guarantee scheme”, economic and political Weekly, Vol.30, No. 41/42, October, 1995.

Diego Maiorano, “The politics of the Mahatma Gandhi National Rural Employment Act in Andhra Pradesh”,World Development, Vol.58, 2014.

Dreze, Jean,"Famine prevention in India, Political economy of Hunger", Clarendon press Oxford scholarship online, 1990.

Dough Johnson and Ajay T, "NREGA in Andhra Pradesh: Seven Lessons from the Data", Focus Note No.4, Centre for Micro Finance, Chennai, 2009.

Edward, Taylor J and Irma Adelman, "Village Economies: *The Design, Estimation, and Use of Village wide Economic Models*" Cambridge University Press. 1996.

Edward, Taylor J, "The New Economics of labour Migration and the Role of Remittances in the Migration Process", International Migration, Vol.37 (1), 1999.

Elisabeth S and Alain de J,"Quantitative Development Policy Analysis", The Johns Hopkins University Press, 1995.

Emad, A,"Effects of Mahatma Gandhi National Rural Employment Guarantee Scheme on Expenditure in rural Households", Department of Economic, Colgate University, 2013.

EriknThorbecke, "The Use of Social Accounting Matrices in Modelling", paper Prepared for the 26th General Confrence of The International Association for research in Income and Wealth, 2000.

Galab S., E.Revathi, P.Prudhivkar Reddy and C.Ravi, "Mahatma Gandhi National Rural Employment Guarantee Programme in Andhra Pradesh: An Assessment", LBS Journal of Management and Research, Vol.8 No.1, 2010.

Gehrke, G. "Does the Indian Employment Guarantee reduce households' risk exposure? Assessing the effects of the NREGA on crop choice". German Development Institute (2013),.

Grace Carswell and Greet De Neve, "MGNREGA in Tamilnadu: Astory of Success and Transformation", Journal of Agrarian Change, Vol.14, No.4, 2014.

G.S.Bhalla and Peter Hazell, "Rural Employment and Poverty Strategies to Eliminate Rural Poverty within a Generation", Economic Political Weekly, Vol. 38, No.33, 2003

GOI, "The National Rural Employment Guarantee Act 2005 Operational Guidelines" Ministry of Rural Development, Government of India, New Delhi, 2005.

GOI, "National Rural Employment Guarantee Act", Annual Report, Ministry of Rural Development, New Delhi, 2008.

GOI, "National Rural Employment Guarantee Act", Report to the People, Ministry of Rural Development, New Delhi, 2010.

GOI, "MGNREGA Sameeksha: Anthropology of Research Studies", Ministry of Rural Development, orient Black Swan, New Delhi, 2012.

Gupta B and Abhiroop Mukhopadhyay, "Local funds and Political competition: Evidence from the National Rural Employment Guarantee Scheme in India", ESID Working Paper No. 42, 2014.

Imbert, Clément, and John Papp, "Labor Market Effects of Social Programs: Evidence from India's Employment Guarantee", Paris School of Economics, August 02, 2012.

Indrakanth S. "Making MGNREGS more effective", Paper presented at a National Seminar on Development of Scheduled Caastes and Scheduled Tribes: Opportunities, achievements and Challenges, organized by Centre for Planning, Monitoring and Evaluation, National Institute of Rural Development, Hyderabad, 2013.

Indira Hirway, Saluja MR and Bhupesh Yadav, "The Impact of Public Employment Guarantee Strategies on Gender Equality and Pro-poor Economic Development", UNDP Research Project No. 34, 2008.

Irma Adelman and Taylor J. Edward, "Life in A Mexican village: A Social Accounting Matrix Perspective", Working Paper No.443, Department of Agricultural and Resource Economics, University of California, August, 1987.

Jiban, K, "Impact of National Rural Employment Guarantee Act on Wage Rates, food security And Rural - Urban migration in West Bengal", Study Report, Agro – Economic Research Centre, Visva Bharati Santiniketan. October, 2011.

Johnson, Doug Available at: http://ifmrlead.org/can-workfare-serve-as-a-substitute-for-weather insurance- the-case-of-nrega-in-andhra-pradesh/. ifmrlead.org. [Online] (2009),.

Kalarani R and Sasi Kumar "State level Performance of MGNREGA in India: A Comparative Study", International Multidisciplinary Research Journal, Vol. 1(10) (2011).

Kalyani Sahoo, "National Rural Employment Guarantee Act and its Impact on Rural Wages" Internship Report Submitted to International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana, July 12, 2013.

Katsushi, I. and R. Holway**. "**Targeting Versus Universalism: An Evaluation of Indirect effects of the Employment Guarantee Scheme in India", Department of Economics, University of London, 2007.

Khera, R. and Nayak, N, “Women workers and perceptions of the National Rural Employment Guarantee Act”, Economic and Political Weekly, 44 (43), 49-57, October 29, 2009.

Khera R, “The Battle for Employment Guarantee”, Oxford University Press, 2011.

Khera R, and Nandini Nayak, “Women workers and Perceptions of the National Rural Employment Guarantee Act”, Economic and Political Weely, Vol. XLIV, No.43.

Kareemulla K and K.Srinivas Reddy, “Sol and Water Conservation Works through NREGS in Andhra Pradesh- an Analysis of Livelihood Impact”, Agricultural Economics Research Review, Vol.22 (conference number) (2009).

Klonner, S. and C. Oldiges, “Employment Guarantee and its Welfare Effects in India’, MGNRGA -Taking Stock and Looking Ahead Proceedings of the International Conference on MGNREGA, Mumbai: IGIDR, 26-28 March (2014).

Liu, Y. and Deininger, K., “Welfare and Poverty Impacts of India's National Rural Guarantee Scheme: Evidence from Andhra Pradesh”, Policy Research Working Paper -6543 Agriculture and Rural Development Team, July 2013.

Manikandan, A.D, “Application of the NREGS in the Food Crop Sector for improving food security in Kerala: A Theoritical Analysis”, The Asian Economic Rec\view, Vol.53, No:2, The Indian Institute of Economics, Hyderabad, 2011.

Mathew P.M and Bipasha K “Impact of Rural Employment Guarantee Programme and Poverty in India”, Serial Publications, Delhi (2011).

Megan Sheahan,Yanyan Liu, Christopher B and Sudha Narayanan, “The Political Economy of MGNREGS Spending in Andhra Pradesh”, International Food policy Research Institute, Discussion Paper No.01371,2014.

MRD, Ministry of Rural Development (2006) “The National rural Employment Guarantee Act 2005 (NREGA): operational Guidelines”, 2nd Edition, Delhi.

Mukherjee and Uday Bhanu Sinha "Understanding NREGA: A simple Theory and Some facts" Working Paper No.196, Centre for Development Economics, Delhi School of Economics (2011).

Mehtabul Azam, "The impact of Indian job guarantee scheme on labor market outcomes: Evidence from a natural experiment" The Institute for the Study of Labour (IZA) Discussion Paper- 6548, May 2012.

Nageswara Rao GD, and Anand Babu P, "Dynamics and Development Pathways in the Semi – Arid Tropics: Dokur Village Profile,Research Bulletin No.23, International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana,2009.

Nandini Singh, "Impact of MGNREGA on Migration and Asset Creation", Internship Report Submited to International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana, July 12, 2013.

Nurkse, Ragnar, problems of Capital formation in underdeveloped countries, Basil, Blackwell, Oxford, 1957.

Parikh A and Erik Thorbeck "Impact of Rural Industrialisation on Village Life and Economy: A Social Accounting Matrix Approach", Economic Development and Cultural Change, Vol.44, No.2, January, 1996.

Pradhan K. B, M. R. Saluja, and Akhilesh K. Sharma "A Social Accounting Matrix for India 2007-2008" Working Paper – 326, Institute of Economic Growth, University of Delhi Enclave 2013.

Praduman Kumar and P.K.Joshi, "Household Consumption Pattern and Nutritional Security among Poor Rural Households: Impact of MGNREGA", Agricultural Economics Research Review, Vol.26 No.1,2013.

Preeti Kathuria, "Role of NREGA – 2005 Poverty Eradication in Remote Tribal Areas of Madhya Pradesh", International Research Journal, Vol.2, Issue.14, 2010.

P.S.Srikantha Murthy and Indumati, "Economics Analysis of MGNREGA – in the Drought Prone States of Karnataka, Rajhasthan and Irrigation - dominated State of Andhra Pradesh", Agriculture Economics Research Review, Vol.24, 2011.

Pereira L.A de Silva and Bourguignon (Eds.) "Techiniques and Tools for Evaluating the Poverty Impact of Economic Policies",World Bank and Oxford University Press, 2003.

Pyatt, G. and Round, J. I. (Eds) “Social Accounting Matrices: A Basis for planning”, The World Bank, Washington, D.C, Report No.9950, September 30, 1985.

Raghabendra Jha et. Al, “Capture” of anti – poverty programs: An analysis of the National Rural Employment Guarantee Programme in India, Journal of Asian Economic Volume.20, Issue 4, P 456-464, 2009.

Raghabendra J, Gaih R and Shankar S, “National Rural Employment Guarantee Programme: Some Recent Evidence”, ASARC working Paper No.4/2008, 2008.

Rama Krishna, et. al.“Dokur Village at Glance, International Crops Research Institute for the Semi-Arid Tropics”, Patancheru, Andhra Pradesh, 2011.

Ravallion M, Gaurv D and Shubam C “Does Maharashtra’s Employment Guarantee Scheme Guarantee Employment? Effects of the 1988 Wage Increase”, Economic Development and Cultural Change, Volume 41, Issue 1, January, 1993.

Ravallion, M, “Reaching the Rural poor through public employment, Arguments, Evidence and lessons from South Asia,” The World Bank observer, Vol.6, no. 2, July, 1991.

Ravallion M, “Evaluating Anti-Poverty Programmes”, Hand Book of Development Economics, Vol.4 (2008).

Reddy DN, “NREGS and Indian Agriculture: opportunities and challenges”, Working paper No. 01/2011, Institute for Human Development, New Delhi, 2011.

Reddy DN et al, “Rural Non- farm Employment and Rural Transformation in India” Working paper series No. 57, International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana, 2014.

Reddy DN et al, “Impact of MGNREGA on Rural Labour Markets”, Working Paper Series No. 5 8,International Crop Research institute for Semi-Arid Tropics (ICRISAT), Telangana, 2014.

Richard Mahapatra, Neha Sakhuja and Sandip Das, “The National Rural Employment Guarantee Act: opportunities and Challenges”, Centre for Science and Environment, New Delhi, 2008.

Rinku Murgai and Martin Ravalion, “Employment Guarantee in Rural India: What Would It Costs and How Much Would It Reduce Poverty”, Economic and Political Weekly, 2005.

Rukmini Thanka and Anjor Bhaskar, “National Rural Employment Guarantee Scheme in India:Impact and Implementation Experiences”, International Seminar Report, by

Institute for Human development and Centre de Science Humaines, New Delhi, 2008.

Saluja MR and Bhupesh Yadav. “Social Accounting Matrix for India 2003-04”, India Development Foundation, India, (2006).

Sarswat Deepak, “Effect of Employment Guarantee on access to Credit: Evidence from Rural India”, MPRA Paper No.34671, 2011.

Saxena N.C,“Rural Poverty Reduction through Centrally Sponsred Schemes”, Indian J Med Res, 126, 2007.

Shah Amith “MGNREGS in Gujarat: Intial Experience and Early Signals”, LBS Journal of Management Reaserch, Vol.8,No.1, 2010.

Shah A. and Mehta, A.K, “Experience of the Maharashtra Employment Guarantee Scheme: Are there lessons for NREGS?” Indian Journal of Labour Economics, Vol.51,No.2, 2008

Shamika R. and Engler, “Workfare in Low Income Countries: An effective way to fight poverty? Case of India's NREGA” Working Paper, Indian School of Business, July, 2009.

Shankar S. “Production and Distribution in a dryland village economy”, pages: 59-100. Chapter in Taylor, E J. and Adelman I, In Village Economies the Design, Estimation, and Use of Village wide Economic Models, Cambridge University Press, 1996.

Shylashri Shankar and Raghav Gaiha, “Networks and Anti –Poverty Programmes: The NREG Experience”, ASARC Working Paper 05, 2011.

Siddharatha and AnishVanaik, “CAG Report on NREGA: Fact and Fiction”, Economic and Political Weekly,Vol.43, No.25, 2008.

Singh, S.P and Mahipal, “ Implementation of the National Rural Employment Guarantee Act: Process and Progress”, journal of Economics and Social Development, Vol. 3, no.1&2, 2007.

Srivastva P, (2011), “MGNREGS and its impact on Rural Indian Economy”, Aph Publishing Corporation.

Subramanyan A. “Distributional effects of agricultural biotechnology in a village Economy: *The case of Cotton in India*”. Ph.D. thesis, University of Hohenheim, Germany, 2007.

Subramanyan A and Quaim M "Village wide Effects of Agricultural Biotechnology: *The case of Bt Cotton in India*", World Development, Volume 37, Issue 1, January 2009.

Suresh Babu, Hanumantha Rao and Dhanyashree, "Impact of MGNREGS on Scheduled Castes in Tamil Nadu", Paper presented at a National Seminar on Development of Scheduled Caastes and Scheduled Tribes: Opportunities, achievements and Challenges, organized by Centre for Planning, Monitoring and Evaluation, National Institute of Rural Development, Hyderabad, 2013.

Suriya, K. "Impact of Community – based Tourism in a Village Economy in Thailand: *An analysis with VCGE model"*, University of Bonn, 2009.

Tadele Ferede agaje, "Groeth linkages and policy effects in a village economy in Ethiopia: An Analysis of interactions using a social accounting matrix (SAM) framework", Research Paper, University of Antwerp, 2008.

Usha Rani Ahuja, Dhushyant Tyagi, Sonia Chauhan and K.R.Chaudhary "Impact of NREGA on Rural employment and Migration: A study Agriculturally Backward and Agriculturally Advanced Districts of Haryana", Agricultural Economics Research Review, Vol.24 (Conference Number) 2011.

Vipin Negi, "MGNREGA towards ensuring the Right to work in rural India", working Paper No.32, Centre for East and South East Asian Studies, Lund University, Sweden, 2010.

Zimmerman, Laura (2013), 'Why Guarantee Employment? Evidence from a large public works program', paper presented at IGIDR conference onMGNREGA, University of Michigan, Februrary.

Web sites:

http://www.nrega.nic.in/

http://www.nrega.ap.gov.in/

http://www.nrega.telangana.gov.in/

http://www.icrisat.org/

http://www.jstor.org/

School of Economics
University of Hyderabad
Household Survey in Dokur

House No	Village	Mandal	District

A) Particulars of the household

Head of the household name: **Surname:**

Caste: **M/F:** **Age:**

Mobile Number:

Household Size: **Male:** **Female:**

A) Details of Household Members:

S. No	Name	Age	Sex	Education	Agriculture work	Non agricultural Work

B) Details of Source of Income

Source of Income	Income earned	Location	Frequency of Income/ monthly/ daily

C) Details of Family Expenditure

Items of expenditure	Quantity/ price	From whom /where		Frequency of purchase	Remarks
		Within village Rs	Outside village Rs		
Food grains fair price shop					
Sugar fair price shop					
Kerosene fair price shop					
Kirana items					
Cooking Gas					
Edible oil					
Milk					
Milk based products					
Meat					
Fruits					
Vegetables					
Flowers					
Sweets and condiments					
Mobile charges					
Petrol					
Diesel					
Transportation					
Dish TV					
Electricity					
Medical					
Cosmetics					
Cloths					
Tailor					
Washer man					
Barber					
Utensils					
Consumer durables like furniture					
Electronic items					
Foot wares					
Occasion like marriage, jatra.					
Stationary items					
School & college fees					
Donations					

Repairs in home					
Repair of bike or vehicle					
Construction work					
Rent					
Lease amount					
Taxes					
Others					

D) Details of Savings and Borrowings

Saving Agency	**Amount Rs**	**Frequency**	**Borrowings**	**From whom/ interest**
Remittances				

E) Land Particulars: (No. of Acres)

Particulars	**Area Owned**	**Leasing in Particulars**		**Leased out Particulars**		**Operated Area**
		Extent	**Type**	**Extent**	**Type**	
1	**2**	**3**	**4**	**5**	**6**	**7**
Total Area						
Irrigated by canal						
Irrigated by tank stream						
Irrigated by well and bore well						
Un irrigated/RF						

F) Agricultural Related Instruments:

A) Traditional: Instruments Per Crop Used. If Yes price paid

Name	**Plough**	**Year/price**	**Cart**	**Year/price**	**Any others (Specify)**
Number					
Do You Lease out If Yes, money earned					
Do You Lease in					

B) Modern: If Yes price paid

Name	**Tractor and appliance**	**Harvesters**	**Pump sets**	**Sprayers**	**Any other (Specify)**
Number					
Year of purchase					
Do You Lease out If yes, Price					
Do You Lease in					

C. Production and Crop Grown

Crops	**Area**		**Output**		**Retained for Self-Consumption**		**Output sold**			
	Last Year	This Year	Last Year	This Year	Last Year	This Year	**Channel***		**Quantity**	
							Last Year	This Year	Last Year	This Year

*** 1. Village trader with mortgage of output**
2. Village trader without mortgage
3. Regulated Market 4. Town trader 5. Others (specify)

G) Details of Cost of Cultivation (2012-13)

A) Details of Cost of Inputs

Rain fed crops	Area (Acres)	Seeds		Fertilizers		Pesticides		Manures		Other
		Qty.	Price	Qty.	Price	Qty.	Price	Qty.	Price	
Irrigated										
Total										

	Area	Kharif	rabi	HH members				Hired worker/ Permanent work				Causal daily worker				Contract worker			
Rain fed crops				**No**	**M/F**	**Rs**	**Man days**	**No**	**M/F**	**Rs**	**Man days**	**No**	**M/F**	**Rs**	**Man days**	**No**	**M/F**	**Rs**	**Man days**
Irrigated																			
Total																			

H) Details of Live Stock:

Name	**Number**	**Value Rs**	**Production Milk**		**Meat**		**Eggs**	
			Qty.	**Price**	**Qty.**	**Price**	**Qty.**	**Price**
Cows								
Buffalos								
Bullocks								
Poultry/Hens								
Goat/Sheep								

A) Cost of Production:

	Milk		Wool		Meat		Own /brought in market
	Qty.	Price	Qty.	Price	Qty.	Price	
Green fodder							
Dry fodder							
Medicines							
Concentrates							
Person Days	**Persons own**		**Persons Hired**		**Hours per day**		**Price/Value**
Animal Grazing							
Tending Animals							
Others							

I) Whether Household Employed in Services (2012-13): Yes: No:

S.No	Within village	Outside village	Male/Female	Income (Monthly)
Private services				
Pvt.Shop				
Pvt.Factory				
NGOs/Coop.				
Others				
Public services				
Govt				
Semi Govt.				
Others				

J) Details of Labour Household

Sector	Within		outside		Persons		Person days		Wage per day	
	M	F	M	F	M	F	M	F	M	F
Agriculture										
Construction										
Animal husbandry										
Others										
Total										

K) Details of Self-employed in Non-Agriculture:

Type	Own / Hired	Person Days	Wages/ day

Details of Self-employed in Non-Agriculture (Professional) Carpenter

Type	Input Qty./Where	Value	Production	Hired persons

Details of Self-employed in Non-Agriculture (Professional) Barber

Type	Input Qty./where	Value	Production	Income / month

Details of Self-employed in Non-Agriculture (Professional) Mechanic

Type	Input Qty./where	Value	Production	Income / month

Details of Self-employed in Non-Agriculture (Professional) Hotels

Type	Input Qty./where	Value	Production	Income/month

L) SCHEDULE FOR MGNREGP AND NON WORKER

Details of family head

Name:		BPL/APL card holder	M\F
Mobile no.		Education:	
Age:	caste:	participation in NREGP: yes or no	

1. Details of wage rate (in Rs.)

	Before MGNREGP participation				**After participation in MGNERGP**			
Market wage rate received	**Agriculture**	**Construction**	**Other**		**Agriculture**	**Construction Amount**	**Other**	
			Amount	**Type**			**Amount**	**Type**
Man								
Woman								

Details of family members

Working Family member	**Age (years)**	**Education level**	**Occupation**	**Income level (Rs.)**	**Total no. of days of employment received in a year**		**Remarks**
					Within village	**Outside village**	
1.							
2.							
3.							
4.							
5.							

Details of MGNREGP participation

Family member	**No. days worked under MGNREGP**	**Wages received (Rs.)/ Day**	**Type of work participated in**	**Remarks**
1.				
2.				
3.				
4.				

Details of other Govt. Scheme participation

Name of the scheme	**Wages received (Rs.)**	**No. of days of employment received**	**In which village\city \state**	**Other Benefits received**	**Remarks**
1.					
2.					
3.					
4.					
5.					
6.					

2. Details of migration

Migrated member name	**Duration of migration (days)**	**Period of migration (Kharif,rabi,summer, whole year)**	**Place of migration**	**Type of work engaged upon migration**	**Wage rate received upon migration (Rs.)**	**After NREGA migration stopped or not**

Any other Benefits from Migration: