

**IMPACT OF MGNREGP ON LIVELIHOOD
SECURITY IN BIJAPUR DISTRICT OF
KARNATAKA: A SAM ANALYSIS**

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PALB 2103

**DEPARTMENT OF AGRICULTURAL ECONOMICS
UNIVERSITY OF AGRICULTURAL SCIENCES
GKVK, BENGALURU-560 065**

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GOURAV KUMAR VANI

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**DEDICATED
TO
THE INVISIBLE HAND**

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CERTIFICATE

This is to certify that the thesis titled "IMPACT OF MGNREGP ON LIVELIHOOD SECURITY IN BIJAPUR DISTRICT OF KARNATAKA: A SAM ANALYSIS" submitted by Mr. GOURAV KUMAR VANI, ID NO. PALB 2103 in partial fulfillment of the requirement for the degree of **Master of Science (Agriculture) in Agricultural Economics** to the University of Agricultural Sciences, Bengaluru, is a record of bonafide research work done by him during the period of his study in this University under my guidance and supervision and that no part of the thesis has previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles.

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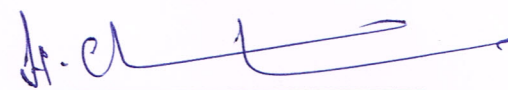
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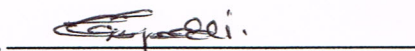
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*Bengaluru
June, 2015*

Gourav Kumar Vani

Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis

GOURAV KUMAR VANI

ABSTRACT

The MGNREGP (Mahatma Gandhi National Rural Employment Guarantee Programme) envisages livelihood security by providing manual work to unemployed people in rural areas who voluntarily accept to work for a minimum wage notified by Government during lean periods of the year. To quantify the impact of the programme on livelihood security, present study was undertaken in Markabbinahalli village of Bijapur district of Karnataka during 2012-13 with financial help from ICRISAT, Hyderabad. Both primary and secondary data were collected. Analytical tools, viz., Social Accounting Matrix, t test, z-test and Fisher's exact probability test were employed to analyze the data. The study found that, additional investment of ₹10 lakhs in MGNREGP in the study village will have only 1.1 percent impact on the village economy which in terms of labour equivalents implied employment to 18 households at the rate of 340 days per annum at a wage rate of ₹ 300 per worker. Major share of this impact was contributed by indirect impact (84 %) due to operation of multiplier effect of investment in MGNREGP. This impact on labour was weak keeping in view the objective of livelihood security. The study also found that there was no gender and caste bias in terms of gain in employment and income. Impact of MGNREGP on migration of participants was also found to be weak. Natural resource conservation activities were predominant under MGNREGP. Increasing MGNREGP wage rate and taking up asset creation works and/or farm operations on labour wage sharing basis on individual farms could be a policy option.

Signature of the Student

Bengaluru
16, June, 2015

(P. S. Srikantha Murthy)
Major Advisor

ಕರ್ನಾಟಕ ರಾಜ್ಯದ ವಿಜಯಪುರ ಜಿಲ್ಲೆಯಲ್ಲಿ ಮಹಾತ್ಮಾ ಗಾಂಧಿ ರಾಷ್ಟ್ರೀಯ ಗ್ರಾಮೀಣ ಉದ್ಯೋಗ ಖಾತ್ರಿ ಯೋಜನೆಯಿಂದ ಜೀವನೋಪಾಯ ಭದ್ರತೆಯ ಮೇಲೆ ಆಗುವ ಪರಿಣಾಮ:

ಸಾಮಾಜಿಕ ಖಾತಾವ್ಯೂಹ ವಿಶ್ಲೇಷಣೆ

ಗೌರವ್ ಕುಮಾರ್ ವಾಣಿ

ಸಾರಾಂಶ

ಮಹಾತ್ಮಾ ಗಾಂಧಿ ರಾಷ್ಟ್ರೀಯ ಗ್ರಾಮೀಣ ಉದ್ಯೋಗ ಖಾತ್ರಿ ಯೋಜನೆಯು ಗ್ರಾಮೀಣ ಪ್ರದೇಶಗಳಲ್ಲಿ ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿ ಬರುವ ನಿರುದ್ಯೋಗಿಗಳಿಗೆ ಸರಕಾರದಿಂದ ಸೂಚಿತ ಕನಿಷ್ಠ ವೇತನದಲ್ಲಿ ಕೆಲಸವನ್ನು ಕೃಷಿ ಚಟುವಟಿಕೆಗಳ ಬಿಡುವಿನ ಅವಧಿಯಲ್ಲಿ ಒದಗಿಸುತ್ತದೆ. ಗ್ರಾಮೀಣ ಜನರ ಜೀವನೋಪಾಯ ಭದ್ರತೆಯ ಮೇಲೆ ಈ ಕಾರ್ಯಕ್ರಮದ ಪರಿಣಾಮವನ್ನು ಪ್ರಮಾಣೀಕರಿಸಲು ಪ್ರಸ್ತುತ ಅಧ್ಯಯನವನ್ನು ಕರ್ನಾಟಕ ರಾಜ್ಯದ ವಿಜಯಪುರ ಜಿಲ್ಲೆಯ ಮಾರ್ಕೆಟಿಂಗ್ ಹಳ್ಳಿಯಲ್ಲಿ 2012-13 ನೇ ಸಾಲಿನಲ್ಲಿ ಹೈದ್ರಾಬಾದಿನಲ್ಲಿರುವ ಇಕ್ರಿಸ್ಟಾಟ್ ಸಂಸ್ಥೆಯ ಆರ್ಥಿಕ ಸಹಾಯದೊಂದಿಗೆ ಕೈಗೊಳ್ಳಲಾಯಿತು. ಪ್ರಾಥಮಿಕ ಮತ್ತು ಪರೋಕ್ಷ ಮಾಹಿತಿ ಎರಡನ್ನೂ ಸಂಗ್ರಹಿಸಿ ವಿಶ್ಲೇಷಣಾ ವಿಧಾನಗಳಾದ ಸಾಮಾಜಿಕ ಖಾತಾವ್ಯೂಹ, ಟಿ ವಿಶ್ಲೇಷಣೆ, ರಫುಡ್ ವಿಶ್ಲೇಷಣೆ ಮತ್ತು ಫಿಶರನ ನಿಖರವಾದ ಸಂಭವನೀಯತೆಯನ್ನು ಬಳಸಲಾಯಿತು. ಈ ಅಧ್ಯಯನವು ಬೆಳಕು ಚೆಲ್ಲಿದಂತೆ ಮ. ಗಾ. ಉದ್ಯೋಗ ಖಾತ್ರಿ ಯೋಜನೆಯ ಮೇಲೆ ರೂ. 10 ಲಕ್ಷ ಹೆಚ್ಚುವರಿ ಹೂಡಿಕೆ ಮಾಡಿದರೆ ಗ್ರಾಮದ ಆರ್ಥಿಕತೆಯ ಮೇಲೆ ಶೇಕಡಾ 1.1 ರಷ್ಟು ಮಾತ್ರ ಪರಿಣಾಮ ಕಂಡುಬರುತ್ತದೆ. ಇದು ಸುಮಾರು 18 ಕುಟುಂಬಗಳಿಗೆ ದಿನಕ್ಕೆ ರೂ. 300 ರ ಕನಿಷ್ಠ ವೇತನದಂತೆ ವರ್ಷಕ್ಕೆ 340 ದಿನಗಳ ಕೆಲಸಕ್ಕೆ ಸಮನಾಗುತ್ತದೆ. ಈ ಪ್ರಭಾವದ ಪ್ರಮುಖ ಭಾಗ ಪರೋಕ್ಷ ಪ್ರಭಾವವಾಗಿದ್ದು (ಶೇ. 84) ಇದರಿಂದ ಮ. ಗಾ. ಉದ್ಯೋಗ ಖಾತ್ರಿ ಯೋಜನೆಯು, ಕಾರ್ಮಿಕರ ಜೀವನೋಪಾಯ ಭದ್ರತೆಯ ಮೇಲೆ ಹಾಗೂ ಈ ಕಾರ್ಯಕ್ರಮದಡಿಯಲ್ಲಿ ಕೆಲಸಮಾಡುವವರ ಮೇಲೆ ಪುಷ್ಪ ಪರಿಣಾಮ ಬೀರಿರುವುದಿಲ್ಲ. ಲಿಂಗ, ಉದ್ಯೋಗ ಹಾಗೂ ಆದಾಯ ಗಳಿಕೆಯಲ್ಲಿ ಕೆಲಸಗಾರರ ಮಧ್ಯೆ ಪಕ್ಷಪಾತವಿಲ್ಲದಿರುವುದು ಈ ಅಧ್ಯಯನದ ಮೂಲಕ ತಿಳಿದು ಬಂದಿದೆ. ನೈಸರ್ಗಿಕ ಸಂಪನ್ಮೂಲಗಳ ಸಂರಕ್ಷಣೆಗೆ ಈ ಯೋಜನೆಯಡಿಯಲ್ಲಿ ವೇತನ ದರ ಹೆಚ್ಚಿಸಿ ರೈತರ ಜಮೀನುಗಳಲ್ಲಿ ಭೂ ಅಭಿವೃದ್ಧಿ ಹಾಗೂ ಕಾರ್ಮಿಕರ ವೇತನ ಹಂಚಿಕೆಯ ಆಧಾರದ ಮೇಲೆ ಬೇಸಾಯ ಚಟುವಟಿಕೆಗಳನ್ನು ಕೈಗೊಳ್ಳುವುದು ಈ ಅಧ್ಯಯನದ ಒಂದು ಪ್ರಮುಖ ನೀತಿ ಸೂಚನೆಯಾಗಿದೆ.

ವಿದ್ಯಾರ್ಥಿಯ ಸಹಿ

(ಪಿ.ಎಸ್. ಶ್ರೀಕಂಠ ಮೂರ್ತಿ)

ಪ್ರಧಾನ ಸಲಹೆಗಾರರು

ಸ್ಥಳ: ಬೆಂಗಳೂರು

ದಿನಾಂಕ: 16ನೇ ಜೂನ್, 2015

Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis



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INTRODUCTION

Mahatma Gandhi National Rural Employment Guarantee Programme is the flagship programme of Government of India as a most significant intervention for employment generation in rural areas. The programme was launched on 2nd February 2006 in 200 most backward districts of India under the National Rural Employment Guarantee Act 2005. Presently programme is implemented in all districts of country.

Objectives of the research study, sponsored by ICRISAT, Hyderabad, were as following

1. To study the impact of MGNREGP on employment and income generation.
2. To study the gender, age and other social dimensions of MGNREGP.
3. To study the asset creation and benefits derived from the assets created.

METHODOLOGY

Study Area: The study was conducted in purposively selected Markabbinahalli of Bijapur District of Karnataka, where ICRISAT conducts VDSA study.

Data Source: Primary Data was collected for agriculture year 2012-13 from the villagers belonging to different occupations, social-economic classifications, totaling up to 100 sample units through stratified sampling. Secondary data was collected from Post office, Banks, Panchayat and ICRISAT VDSA data set.

Analytical Tools: Tools used in analysis were Social Accounting Matrix (SAM) and percentage. SAM of dimension 82X82 was constructed. It was further used to work out household employment multiplier, household income multiplier and output multiplier.

DISCUSSION

From Figure no. 1, it can be said that upon one rupee investment in MGNREGP in study area, household employment, household income and output increased by Re. 0.298, Re. 0.388 and Rs. 1.140 respectively. This result is in line with results of Hirway and Saluja(2008). From Figure No. 2, it can be observed that migration among the participants of MGNREGP was higher (32 percent) as compared to non participants (11 percent) which indicates the failure of MGNREGP to check migration. This result differs from findings of Khera (2006), and Jacob (2008). From figure no. 3, it can be observed that majority of works completed (60.98 percent) were related to natural resource conservation with 52.98 percent of total spending, but average amount spent per work related to natural resource conservation was lower (Rs. 1.86 lakhs) compared to work not related to natural resource conservation (Rs. 2.58 lakhs). This result is in line with findings of Krishnan and Balakrishnan (2014).

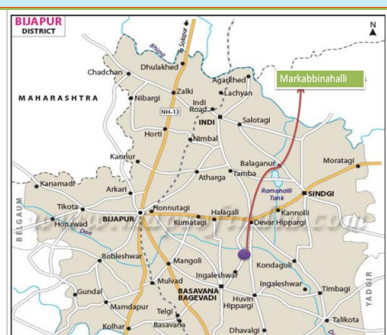
SUMMARY

The study was conducted in Markabbinahalli village in Bijapur district of Karnataka. Both primary and secondary data were used in the analysis. Social Accounting Matrix was used to analyze the multiplier effect of MGNREGP. Multiplier effect of MGNREGP which was Rs. 1.826 is very weak owing to leakages from the village economy. MGNREGP had failed to check the migration of rural workers to urban areas. As envisioned by the policy makers, in the Markabbinahalli Gram Panchayat, more MGNREGP works related to natural resource conservation were taken up.

To sum up, better governance in MGNREGP implementation would have improved multiplier effects on the village economy and would check migration of rural workers to urban areas.

ADVISORY COMMITTEE

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RESULTS

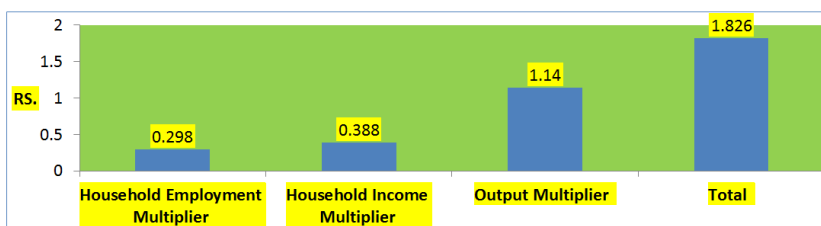


Figure 1: Multiplier Effect of MGNREGP

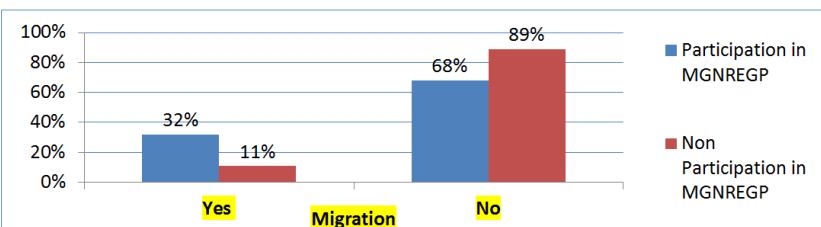


Figure 2: Migration Vs. MGNREGP Participation (2012-13)

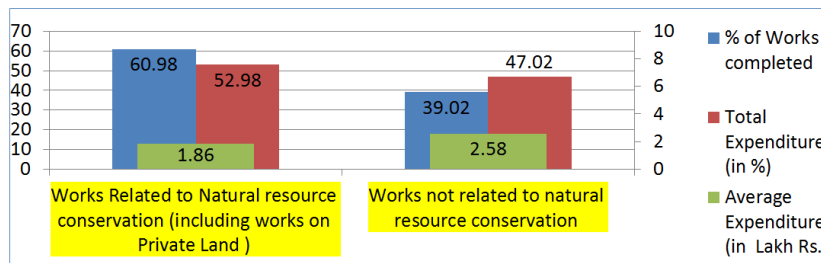


Figure 3: Comparison of Works related to Natural Resource Conservation with other works (FY 2009-10 to FY 2013-14)

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CHAPTER I

INTRODUCTION

India is the third largest economy in the world on purchasing power parity and the tenth largest economy on a nominal basis (Anonymous, 2014). One of the biggest challenges India faces is to provide livelihood security to its citizens, especially to the rural mass beset by seasonal unemployment. Government of India as well as the state governments had given due importance to employment generation and poverty alleviation in rural India in all of their developmental plans and budgetary allocations since independence. This challenge grew into gigantic proportions and became pressing urgency to the policy makers when the Indian population grew by 1.43 percent per annum during 2004-05 to 2006-07 and labour force had grown by 2.02 percent per annum as per XI five year plan document (Yadav and Panda, 2013). Coupled with this high population growth and labour force growth, India faced a high rate of unemployment of 5.3 percent and 8.28 percent of labour force measured on Usual Principal Status(UPS)¹ and Current Daily Status (CDS)² as per NSSO 61st round survey (2004-05) (Datt and Mahajan, 2013). Unemployment rates on current daily status were much higher than those on basis of usual status which underlies the fact that instead of open unemployment, the more serious problem is under-employment. This indicates non availability of regular employment for a majority of workers. To address this challenge, Government of India launched many programmes for job creation from time to time. Prominent among those are Swarnajayanti Gram Swarojgar Yojana, Swarnajayanti Shahari Rozgar Yojana and IRDP among the old ones and National Food For work Programme, Sampoorna Grameen Rozgar Yojana and MGNREGP among the new ones (Anonymous, 2012).

MGNREG (Mahatma Gandhi National Rural Employment Guarantee) Programme is the flagship programme of Government of India aimed at enhancing livelihood security of households in rural areas of the country. This programme was envisaged by the National Development Council (NDC) and was approved by the parliament through an act; National Rural Employment Guarantee Act 2005 (NREGA) on September 7, 2005. This programme was launched on February 2, 2006 as NREGP (National Rural Employment Guarantee Programme) by merger of two ongoing programmes of Sampoorna Grameen Rozgar Yojana (SGRY) and National Food For work programme (NFWP).

¹ UPS: A person is considered working or employed, if the person was engaged for a relatively larger period (over 182 days) in any one or more work related (economic) activities during the reference period of 365 days preceding to the survey. The UPS based unemployment is regarded as a measure of chronic unemployment and open unemployment.

² A person is considered unemployed, if he does not find work even on day or some days during the survey week. This is considered to be the most comprehensive measure of unemployment, including chronic unemployment as well as under-employment.

The mandate of the Act is to provide 100 days of guaranteed wage employment in a Financial Year (FY) to every rural household whose adult members volunteer to do unskilled manual work.

The objectives of the programme include:

- Ensuring social protection for the most vulnerable people living in rural India through providing employment opportunities,
- Ensuring livelihood security for the poor through creation of durable assets, improved water security, soil conservation and higher land productivity,
- Strengthening drought-proofing and flood management in rural India,
- Aiding in the empowerment of the marginalized communities, especially women, Scheduled Castes (SCs) and Scheduled Tribes (STs), through the processes of a rights-based legislation,
- Strengthening decentralized, participatory planning through convergence of various anti-poverty and livelihoods initiatives,
- Deepening democracy at the grass-roots by strengthening the Panchayat Raj Institutions (PRIs) and
- Effecting greater transparency and accountability in governance.

MGNREGA has become a powerful instrument for inclusive growth in rural India through its impact on social protection, livelihood security and democratic governance.

The Act was notified in 200 rural districts in its first phase of implementation (with effect from 2nd February 2006). In Financial year 2007–08, it was extended to an additional 130 rural districts. The remaining districts were notified under MGNREGA with effect from 1st April 2008. Since 2008, MGNREGA has covered the entire country with the exception of districts that have a hundred per cent urban population. In Karnataka, MGNREGP was implemented in three phases; the first phase (2006-07) covered five districts, the second phase, six districts and third phase (from 2008) covered all the 27 districts with exception of Bangalore Urban district.

MGNREGA is the first ever law at global level that guarantees wage employment at an unprecedented scale. The primary objective is augmenting wage employment while secondary objective is strengthening natural resource management through works that address causes of chronic poverty like drought, deforestation and soil erosion and so on as to encourage sustainable development. The process outcomes include strengthening grass-root process of democracy and infusing transparency and accountability in the governance. In this way MGNREGP aims at inclusive growth.

This programme has following salient features (Mann and Pande, 2012)

- It is a demand driven programme. Gram Panchayat to be responsible for identification of the project as per the recommendation of the Gram Sabha and for executing and supervising such works.

- The scheme to be self-selecting in the sense that those among the poor who need work at the prescribed wage rate would report for work under the scheme.
- An applicant not provided employment within fifteen days, to be entitled to a daily unemployment allowance as specified by the state government subject to its economic capacity, provided such rate is not less than a quarter of the wage rate for the first thirty days during the financial year and not less than a half of the wage rate for the remaining period of the financial year.
- For every block, the state government to appoint a programme officer for implementing the scheme.
- Panchayat at the district level to constitute a standing committee of its members to supervise, monitor and oversee the implementation of the programme within the district.
- Central employment guarantee council to be constituted to discharge various functions and duties assigned to the council. Every state government to also constitute a state council for this purpose.
- Central government to establish a national employment guarantee fund. State government to establish state employment guarantee fund for implementation of the scheme.

Concept of Livelihood Security

Livelihood according to the Word Web Dictionary is “*The financial means whereby one lives*”. Livelihood in economic terminology is a wage to the laborer for meeting his/her and his/her family’s basic necessities of the life. It encompasses people’s capabilities, assets, income and activities required to secure the necessities of life.

According to Drinkwater and McEwan (1992), Household livelihood security is defined as “*adequate and sustainable access to income and resources to meet basic needs (including adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration)*”.

Livelihoods can be made up of a range of on-farm and off-farm activities which together provide a variety of procurement strategies for food and cash. Thus, each household can have several possible sources of entitlement which constitute its livelihood. These entitlements are based on the household's endowments and its position in the legal, political and social fabric of society. The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity.

According to Chambers (1989), *livelihoods are secure when households have secure ownership of, or access to, resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies.*

According to Chambers and Conway (1992), ‘A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation: and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.’

Rationale of the study

MGNREG Programme being the world’s largest employment guarantee programme, it is imperative to assess the economic impact of the programme at micro level. There are several studies conducted in the past regarding effect of the MGNREGP programme on labour scarcity for agricultural operations, on income, employment, natural resource conservation, farm & non-farm wages, poverty alleviation and about innovative practices in MGNREGP implementation. But there are only few studies where attempt had been made to identify the impact of MGNREGP on all economic agents of respective sectors of the village economy for a particular village. So far such study has not been done in Karnataka. In addition, study also attempts to look into the asset creation under the programme and socio-economic dimension of the programme.

Objectives of the Study

1. To estimate the output, income and employment multipliers.
2. To analyze gender, age and other social dimensions of MGNREGP.
3. To estimate the asset creation and benefit derived from the assets created.

Hypothesis

1. Multiplier effect of MGNREGA on household sector is higher than that in other sectors in the village economy.
2. Female worker participation is relatively higher than male worker participation in MGNREGP resulting in differential gains in employment and income.
3. Marginalized sections have not benefited significantly by participating in MGNREGP.
4. Aged worker (above 50 yrs) participation is relatively higher than young worker participation in MGNREGP.
5. MGNREGP has reduced migration of rural workers.
6. Natural resource conservation is the predominant activity under MGNREGP.
7. Private asset creation is marginal under MGNREGP

Presentation of the Study

Present research work is organized in six chapters. The first chapter provides a brief introduction along with the specific objectives. In chapter-II, some pertinent reviews are presented in consonance with the study objectives. Chapter-III describes the main

features of study area, sampling framework, database and analytical tools employed in the analysis of data. The empirical results are presented in Chapter-IV followed by critical discussion of results in Chapter-V. Finally, Chapter-VI summarizes the major findings of the study and policy implications.

Limitations of this study

Present study has its own limitations in terms of methodology followed and the degree of generalization done based on the results obtained. These limitations can be summed up as following.

1. Relating to time availability: Since time available for data collection was limited, instead of conducting census survey for data collection, sample survey was done. This results in lower accuracy of estimates and further difficulty in balancing the SAM.
2. Status of MGNREGP in the village: Since MGNREGP was not implemented with vigor in the village; low value of multipliers was obtained. Hence, the result can neither be interpreted as failure of MGNREGP to generate employment and income nor its inherent capacity to generate employment and income.
3. Characteristics of the selected Village: Since the village selected for study has typical complete dry land agriculture and therefore number of activities and volume and value of each activity is less than that would be possible in a typical wet land area.
4. Since SAM is an analysis which takes into account institutions prevailing in the economy and MGNREGP is thought to be demand driven programme, results obtained cannot be generalized to other areas with different institutional setup and different degree of demand for MGNREGP.
5. In this study, the sample village chosen did not represent the village with adequate MGNREGA expenditure, since the choice was based on VDSA village of ICRISAT. Therefore accordingly the results on impact of MGNREGA suffer from this limitation and the choice of VDSA village was based on ICRISAT consideration and not based on MGNREGA expenditure.

CHAPTER II REVIEW OF LITERATURE

This chapter provides brief review of past studies done in the relevant field of research. Such review of literature helps in identifying the gaps in existing field of research, arriving at appropriate methodology and in discussing the results obtained. Following are the reviews of past studies done on the village Social accounting matrix and MGNREGA relevant to current objectives of the study.

2.1 Social Accounting Matrix and Estimation of Output, Income and Employment Multipliers

Adelman *et al.* (1988) studied effect of labour migration on a Mexican village economy for the year 1983 using Social Accounting Matrix approach. Detailed data collection was done on each individual's contribution to family income and family labour and his/her consumption to construct SAM. Interestingly the villages SAM constructed had two rest of the world accounts, one for migration within Mexico and other one for migration to United States of America with all transactions converted to pesos from dollar. The village economy had a trade deficit to the tune of 47 percent and the largest linkage in the village economy was of trading activity through retail followed by livestock. Production linkages within the economy were weak. The largest impact of migration remittances was on landless households as migration was dominant in landless households.

Subramanian and Sadoulet (1990) studied the transmission of production fluctuations and technical change in agriculture sector in Kanzara village of Maharashtra state using Social Accounting Matrix. The SAM was constructed for the agricultural year 1984 (July)-1985 (June). Study used secondary data from the village level studies in Kanzara conducted by ICRISAT; various estimates of consumption from NSSO data and primary data collected from villagers. SAM constructed in this study partially followed ICRISAT criteria to classify households and had eight classes of households. Extrapolation was done to arrive at estimates of the most of the values used in SAM by multiplying the corresponding average for each class of household by the number of households in that class in the village. Agricultural activities were divided into dry and wet agriculture, but agricultural commodity account had no such classification. Activities paid profit directly to institutions.

Building construction, as an activity was not included and materials and labour used were paid directly by household class concerned. Since no formal financial institution was present in Kanzara at that time, interest payments were treated as direct payment by households and activities to the factor account concerned. To estimate the effects of change in technology and weather-induced fluctuations in agricultural output, agriculture was treated as an exogenous account. This study found that irrigation had larger multiplier effect on the village economy than transfers. Investment in dairy sector was found to increase inequality in society because of capital intensive nature of production.

Subramanyan (2007) studied distributional effects of agricultural biotechnology on cotton crop in Kanzara the village of Maharashtra state. Main tool used in the study was SAM constructed for the village economy. In this study, the SAM combined diverse data on all aspects of the economy such as production, consumption, savings and investment, income generation and distribution, transfers and external trade, and income flows. Study used census approach to collect data from each and every household of the village which made the SAM consistent and very accurate representation of the village economy of Kanzara. SAM constructed for this study used commodity account wherein column accounts showed what part of each commodity's total supply comes from each production activity, stocks and imports from the rest of the world.

Author reported that Bt. cotton was associated with a substantial overall generation of rural employment, especially for hired female and family male agricultural labour. While labour requirements for pest control decreased, more labour was employed for harvesting. This had varying implications for different households. Cotton harvesting was largely carried out by hired female labourers, whose employment opportunities and returns to labour improved. Pest control, on the other hand, was mostly done by male members of the family and Bt. technology reduced their employment in cotton production. However, the SAM results showed that, the saved family labour can be re-employed efficiently in alternative agricultural and non-agricultural activities, so that the overall returns to labour would increase. Under irrigated conditions, aggregate household incomes were higher with Bt. cotton than with conventional cotton varieties, however corresponding figures were relatively lower in rain-fed cotton cultivation. Large farm households benefitted significantly from dry land Bt. cotton adoption, much more than their small counterparts. The reason for this seeming paradox is the importance of indirect effects, especially the role of opportunity cost saved on management time. The returns to saved management time in alternative activities appeared to be higher for large farmers than for small farmers. This is because of the fact that large farmers are often more educated and have better resource endowments, which facilitates access to off farm employment and self-employed activities. In spite of higher benefits from Bt cotton for small farmers in a mere farm-level assessment, different opportunity incomes on saved management time led to a situation where large farmers benefitted much more from Bt adoption in an economy-wide framework. So, large farmers had a bigger incentive to use the technology. However, these scale effects were not inherent to the technology.

Hirway *et al.* (2008) in their study on “An Economic Impact Analysis of Works Undertaken under the National Rural Employment Guarantee Act (NREGA)” constructed Social Accounting Matrix for Nana Kotda the village in Gujarat State. Different sectors of the village economy were analyzed to understand its dynamics. It aimed mainly at studying the direct impact of MGNREGP works on reducing unpaid work of poor, especially women, which is characterized by low productivity, low returns and is time consuming and its indirect effect on the village economy. Two sources of data were used for the study. Indian time use survey conducted in 1998-99 was the main source and the focus-group discussions organized in the village served as the supplementary source.

The SAM constructed for Nana Kotda the village consisted of 55 producing sectors, including 13 agricultural sectors, 25 manufacturing sectors and 17 service sectors; 2 factors of production viz., labour and capital; 2 institutions comprising of households and government and transactions with the external world like exports and imports. MGNREGP works were treated as external shocks on the village economy. SAM constructed had only activity account and no commodity account was used. Impact of the substitution of unpaid work by NREGS works on the village economy was analyzed by estimating output, income and employment multipliers. This study found that the maximum impact of MGNREGP works on the village economy was on PDS services for which output multiplier was 2.08 followed by Maize with 1.80 and Wheat sector with 1.79 as output multiplier values. The multipliers obtained were relatively small because of the leakages observed in the form of import of consumption goods. More than half of the backward and forward linkages of new demand generated were not absorbed within the village economy. Commodities imported from outside the village satisfied them. Around 15,494 hours of women labour and 3,315 hours of men per year were spent on unpaid work that could be reduced by MGNREGP works. However, the study also mentioned that there was no guarantee of work provided under MGNREGP. The in-charge of implementation of MGNREGP was not interested in ensuring guarantee of work, and the workers were not capable of demanding work as a right.

Usami (2008) worked on “Construction of Regional Social Accounting Matrix with Natural Resource Accounts: Linking Village/Industry Level Data to Regional Level Studies”. This study had constructed regional (village) SAM to quantify the impacts of globalization on rural economy. It also addressed inter-industry interactions in a region, inter-region interactions through trade in commodities, labour migration, and impacts of globalization on classes of households. It also measured the induced effects from the village to local markets, and to rest of India. This study had also addressed environmental problems such as depletion of water, changes in land use patterns and the resulting degradation of different types of land. This was a regional SAM with natural resource accounts. The villages SAM for Kanzara in Maharashtra State was constructed based on ICRISAT village survey data. Construction of two SAMs in two different years (1984-85 and 2003-04), following the same methodology, made them comparable, since a SAM is a snapshot of the structure of an economy at a given point of time.

Over the years, the village economy became interdependent on outside economy in both commodity market and financial market. However, a village SAM alone, failed to capture the entire mechanism of interdependence between a village and market town. Introduction of financial assets and liability accounts through additional rows and columns enabled incorporation of financial flows into SAM. This, in turn, facilitated analysis of interdependence of the village economy on market town economy through financial transactions, in addition to factor income receipts and payments. Integration of interactions between economic activities and the environment was made possible by the construction of regional SAM. A regional SAM with natural resource accounts helped in the analysis of extent of depletion of natural resources resulting from production activities as well as household consumption and its impact on the economy. Water, forest and land use accounts, representing natural resources account, were introduced into the

conventional regional SAM. These natural resource accounts were measured in both physical and monetary terms. Water resource accounts consisted of both stock and flow accounts. However, since it was very difficult to get information on stock water in groundwater, reservoirs, lakes and tanks and the stock water for rivers is not well defined, only water flow accounts were considered. Supply and use of water by the households as well as economic activities were measured in the flow accounts and were linked to the regional SAM. Likewise, asset account and flow account together formed the forest accounts. Stocks of standing timber were recorded in the forest asset account. Supply and use of forest products by economic activities including timber, NTFP such as wild plants and honey, forest services like livestock grazing, recreation and tourism, and carbon storage, formed the content of forest flow accounts. Use of land for production and consumption, in physical terms, was shown in the land use accounts. Cultivated land, fallow land, forestland, and other land were the classes of land use included.

2.2 Analysis of Gender, Age and Other Social Dimensions of MGNREGP

Anonymous (2006), conducted a study in two districts of Andhra Pradesh namely, Medak and Rangareddy. This study was conducted in the month of May and June 2006, just three months after launch of the programme on February 2, 2006. Study found that task wages received by MGNREGP workers was ₹88 and ₹95 in Medak and Rangareddy district, respectively which upon conversion to per day wages turned out to be ₹44 and ₹45 per day per person, respectively which was less than the state daily minimum wages of ₹88.

Das and Pradhan (2007) found that Odisha state provided employment to 11.19 lakhs households under NREGP. On an average each household had been provided with 31 days of employment, while no household had completed 100 days of employment.

Vanaik (2008) found that employment generation under NREGP in Hazaribagh of Jharkhand was quite low. In 2007-08, the average employment generated from the 1.23 lakh households that demanded work was only around 34 days. Until June 2008, only 31,658 households had been provided with employment under NREGP.

Kamath *et al.* (2008) conducted a study in Anantapur & Adilabad districts of Andhra Pradesh and Raichur & Gulbarga districts of Karnataka and found that average number of days of work obtained under MGNREGP by the households per year was the highest in Anantapur (31.55) followed by Adilabad (24.96), Raichur (23.59) and Gulbarga (11.9). Percentage of people ready to migrate even if NREGP is implemented properly were the highest in Raichur (11.3 %) followed by Gulbarga (10.6 %), Adilabad (8.3 %) and Anantapur (1%).

Anonymous (2008) conducted a study in Nuapada district (Orissa) and Siddhi district (Madhya Pradesh) and found that the average days of employment provided under NREGA per household was 23.3 and 55.17 days in Nuapada and Siddhi districts, respectively. Average daily wage received under NREGA was ₹59.8 and ₹57.7, respectively, in Nuapada and Siddhi districts which were less than the minimum wage rate prescribed by the respective state governments. Average wage payment received by

households that worked under NREGA were ₹1192 and ₹2146, respectively, in Nuapada and Siddhi districts which was much lesser than ₹6000 estimated baseline for a household that work for 100 days under NGREGA. In Nuapada district NREGA failed to check the migration of people to urban areas due to poor implementation of the scheme while in Siddhi district 60 percent of respondents reported to have stopped migration after implementation of NREGA. Most of the respondents in both study areas worked under road construction activity.

Joshi *et al.* (2008) conducted a study in five districts of Rajasthan (Dungarpur, Jhalawar, Jalore, Banswara and Karauli) and found that the average days of employment for a household was 82.68 in five districts with the highest being observed in Dungarpur (88.58 days) and the least in Jhalawar (71.08 days). Average days of employment for men were 31.16 days with the highest observed in Jhalawar (34.04 days) and lowest in Jalore (21.11 days). Average days of employment in case of women were 51.52 days with the highest observed in Jalore (65.49 days) and the least in Jhalawar (37.04 days). Families working for more than 100 days under MGNREGP were the highest in Dungarpur (11.38 %) and the least in Jalore (2.5 %). Due to implementation of MGNREGP, on an average employment increased by 37.48 percent with the highest increase observed in Jalore (58.53 %) followed by Karauli (54.38 %) and the least was observed in Banswara (28.48 %). Labour migration declined by 3.39 percent on an average in all the five districts with the highest decline observed in Dungarpur (9.03 %), lest in Karauli (0.42 %) and no effect in Jalore. About 11.48 percent of respondents migrated during study period in search of employment and the highest migration was observed in Jalore (22.50 %) and the least in Jhalawar (2.52 %).

Khera (2008) conducted a study in Pati block of Barwani district and Rajpur block of the Siddhi district of Madhya Pradesh and found that the average days of employment per household per year was 85 days compared to just 23 day in Rajpur and 41 days in other states of India. Minimum wage paid per day per person in Pati block was ₹74, much higher compared to ₹58 in Rajpur and ₹62 in other states. The reason for success of MGNREGP in Pati was attributed to Jagruti Adivasi Dalit Sangathan's (JADS) awareness campaign.

Anonymous (2009 a) conducted a study in four districts of West Bengal (Burdwan, Birbhum, Malda and Purulia) and found that the mean number of days of employment received per worker per year under MGNREGP in these four districts was 34.2 days with the highest in Purulia district (44.8 days) while the state average was 25 days. Median numbers of days of employment received per worker per year were the highest in Purulia (45 days) while for all four districts it was 32 days. Only five percent of respondents reported more than 60 days of work received under MGNREGP. No discrimination in the assignment of work and payment of wages was reported. Around 90 percent of MGNREGP workers were reported to have received notified minimum wages for agricultural labourers. Average female work participation rate was 13.1 percent with the highest being 25 percent of Burdwan district. 80 of the workers were younger than 45 years of age and 45.6 percent of workers were younger than 35 years of age.

Anonymous (2009 b) conducted study in four districts of Tamil Nadu (Cuddalore, Dindugal, Kanchipuram, Nagai and Thiruvallur) and found that 38.49 percent of households did not migrate after implementation of MGNREGP. But this study did not establish whether the reduction in migration was only due to operation of MGNREGP. Only 1.25 percent of participants admitted to have got 100-125 days of work under the programme and the highest number of respondents who admitted to having received 100 or more days of employment under the programme were in Cuddalore district (3.36 %). About 34.25 percent of respondents said that they had received employment for 25-50 days followed by 32.23 percent, 17.68 percent and 14.55 percent of respondents admitted to having received employment for below 25 days, 50-75 days, and 75-100 days, respectively. Around 28.73 percent of respondents accepted that they were paid less than minimum wage, which was the highest (56.3 %) in Cuddalore. Participation of workers belonging to SC category was the highest in Nagai district (65.38 %) and it was 44 percent in all the four districts put together. Female worker participation was the highest in Thiruvallur district (88 %) and 77 percent in all four districts of the whole. About 52 percent of workers were between the age group of 18-36 years and participation by young worker was the highest in Kanchipuram (67 %).

Harish *et al.* (2011) conducted a study in Chikamagalur district of Karnataka and found that operation of MGNREGP increased the total number of working days on an average by 16.17 per cent per participating household per year. Average days of employment received by workers under MGNREGP in a year were 32 per household per year. For the participants of MGNREGA, their total income increased by 9.04 per cent and share of income earned from NREGA in their total income was 8.05 per cent per household per year which was much lower than the share of income from agriculture (62.95%) and non agriculture sources (29.25%).

Sarkar and Kumar (2011) conducted a study in Burdwan district of West Bengal concluded that annual per capita income of MGNREGP participants increased by 10 percent from ₹9595 to ₹10,602 in 2008-09 at constant prices over the previous year, but in 2009-10 it has slightly decreased (1.9 %) over the previous year (to ₹10,394). Similarly per capita savings of participants had almost doubled (97.2 % increase) in 2008-09 over 2007-08 and had again increased by 40.3 per cent in 2009-10. The corresponding changes for non- participants were increase by 2.3 per cent and further by 0.5 per cent, respectively, for year 2008-09 and 2009-10.

Ahuja *et al.* (2011) conducted a study in agriculturally backward district of Mewat and agriculturally advanced district of Karnal in Haryana state and found that days of employment generated through MGNREGP were 85 in Mewat region compared to 71 in Karnal region per household per year on an average. MGNREGP contributed 18.1 percent of total employment for a household on average per year in both districts. Study found significant difference in employment generated through MGNREGP between Mewat region (24.6 %) and Karnal (13.7 %) for participating households per year on an average. Study concluded that MGNREGP is a good source for employment generation but it had not been able to check migration from developed region due to high wages prevailing in destinations.

Vanitha and Murthy (2011) conducted study in Mysore district of Karnataka and found that average person days of employment generated under MGNREGP was 57 days and it had increased by 34.52 percent, average number of labour force per family had also increased by 15 percent and the average annual wage income earned increased by 27.35 percent after implementation of MGNREGP.

Esteven *et al.* (2013) conducted a study in 40 villages of four districts of India, namely, Medak (Andhra Pradesh), Chitradurga (Karnataka), Dhar (Madhya Pradesh) and Bhilwara (Rajasthan) and found that average days of employment increased for MGNREGP participants (in the range of 34 % to 73 %) including direct and indirect employment. The highest increase, among all the four districts was noticed in Medak district (73 %). This increased employment led to reduction in migration of landless or unskilled labourers in 29 of the 40 villages. The highest reductions were observed in Bhilwara where 8 out of 10 study villages had 20-100 percent reduction in migration.

2.3 Estimation of Asset Creation and Benefit Derived From the Assets Created

Joshi *et al.* (2008) conducted a study on MGNREGP in five districts of Rajasthan (Dungarpur, Jhalawar, Jalore, Banswara and Karauli) and found that out of 13775 works that were completed in MGNREGP in five districts, maximum number of completed works were observed in Dungarpur district (5208) followed by Banswara (4525) and the least in Jalore (15) during 2006-07 and 2007-08. A maximum number of completed works were under category of water conservation and water harvesting (7303).

Dhananjaya and Prathibha (2011) conducted study using secondary data from Ministry of Rural Development and found that under MGNREGP during 2008-2010 across the country. With respect to assets creation, maximum number of assets were created in the category of water conservation and water harvesting (25 %) followed by rural connectivity (16 %), provision of irrigation facility to land owned by backward classes (17 %), Land development (15.5%), renovation of traditional water bodies (7.5%), micro irrigation works(6%), drought proofing (5.5%), flood control and protection (4.5%) and any other activity approved by Ministry of Rural Development (1.8%).

CHAPTER III

METHODOLOGY

In this chapter a brief description of the study area, sampling frame, database and methods of analysis employed are presented under the following headings:

- 3.1. Description of the study area
- 3.2. Sampling framework and database
- 3.3. Analytical tools and techniques employed

3.1. Description of the study area

3.1.1 Location: The study area selected for conducting research work was Markabbinahalli village in Basavana Bagevadi taluka of Bijapur district in Karnataka. The village is located 45 km. away from district headquarter and near to Devarhippargi town. Details on geographical location of the village are provided in Fig. 3.1.

3.1.2 Demographic characteristics: Markabbinahalli is having a population of 2545 with a sex ratio of 906 and child population of 525 (Desai *et al.*, 2012³). About 22.15 percent of the population (80 out of 400 households) follows Muslim faith while the rest of the population belongs to Hindu faith. Of the total population 6.31, 13.95, 63.26 and 22.15 percent of persons belong to ST, SC, OBC and minority categories, respectively. Out of 400 households, 13.26, 0.76, 65.56 and 20.40 percent of persons belong to ST, SC, OBC and minority categories, respectively.

3.1.3 Occupational Structure: Table 3.1.1 provides details of the occupational structure of Markabbinahalli village. The village economy is agriculture based. A large proportion of the households depend on agricultural wage employment (41%) for their livelihood, followed by farming (39%), caste-based occupation (7%), non-agricultural labour (8%) and others (5%).

3.1.4 Agriculture: Markabbinahalli receives total rainfall of 625 mm per annum with only 41 rainy days in a year. Ninety percent of the land in the village is having deep to medium black cotton soil, and remaining 10 percent of the land is of medium black sandy loam soil type. The village does not have even a single bore well in the village. Due to the brackish water of Dhoni River flowing a kilometer away, groundwater has become saline. So the village does not have irrigated land. Table 3.1.2 provides details of land use pattern in the village. From the Table 3.1.2, it can be observed that the gross cropped area is 928 hectares which is less than total arable land available in the village. This is because the villagers cultivate only one crop per year on their land holding either Kharif or Rabi, due to the problem of irrigation source and moisture retention. Major crops grown during Kharif season are Pigeon pea, Cotton, Sunflower and Onion. Major crops grown during Rabi season are Chickpea, Jowar, Wheat and Safflower.

³ Net additions made to account for increase in population.

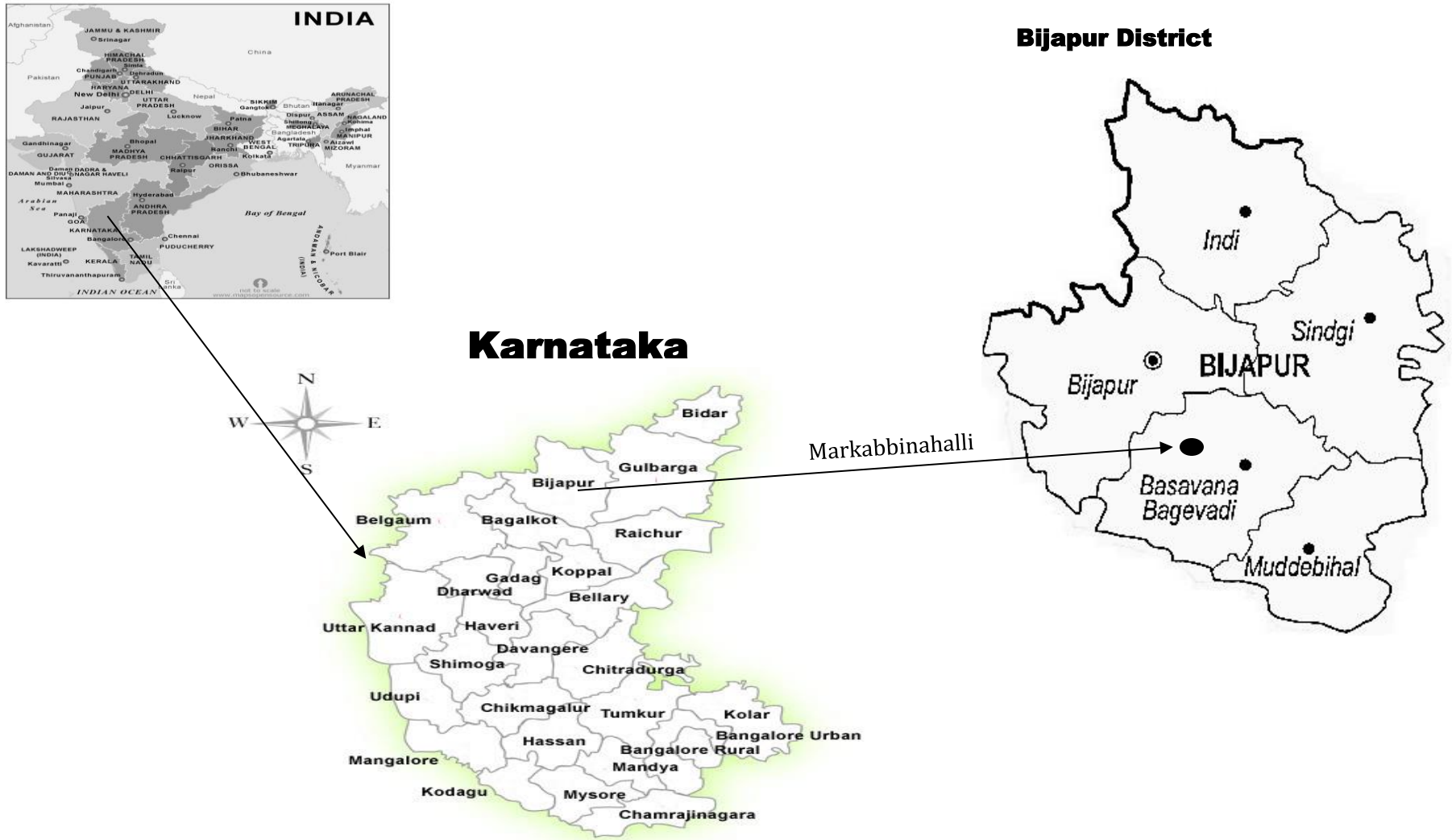


Figure 3.1: Geographical location map of study area [not to scale]

Table 3.1.1: Economic agents of Markabbinahalli village as on 31st May, 2013.

Particulars	Number	Employment (Persons)
Driver	24	24
Government School*	3	20
Masonry workers	10	10
Ladies tailor	9	9
Hotel (including small tea shops)	7	8
Provision store	7	7
Agri-input shop and grain merchant	5	7
Grinding mill	4	5
Charcoal trader	3	5
Private School & Tuition class	1	5
Doctors	4	4
Anganwadi Centre	2	4
Government Primary Health Centre (Ayurvedic)	1	3
Fair price shop	1	3
Gents tailor	2	2
Black smith and carpenter	2	2
Barber	2	2
Post office	1	2
Kerosene supply shop	1	2
LIC Agent	1	1
Goldsmith	1	1
Cycle repair shop	1	1
Cobbler	1	1
Total	93	128

Source: Survey Work, *including Middle, Primary and Urdu School

Table 3.1.2: Land use pattern in Markabbinahalli village during agricultural year 2012-13.

Particulars	Area (Ha)*
1. Agriculture	936 (93.49)
• Kharif	
1. Pigeon pea	225 (22.47)
2. Cotton	145(14.48)
3. Sunflower	100 (9.99)
4. Onion	28(2.80)
Subtotal	498 (49.74)
• Rabi	
1. Chickpea	200(19.98)
2. Jowar	110(10.99)
3. Wheat	100(9.99)
4. Safflower	20(2.00)
Subtotal	430(42.95)
2. Waste Land	23.1(2.31)
3. Land used for roads, buildings and non-agricultural purposes	15.5(1.55)
4. Land occupied by water resources (tank, river)	22.1(2.21)
5. Gomala Land (Pasture Land)	4.5(0.45)
Total Geographical Area	1001.2 (100)

*Figures in parentheses indicates percentage out of column total.

Source: Markabbinahalli Gram Panchayat Records and Desai *et al.* (2012)

3.1.5 Infrastructure and Facilities: Markabbinahalli has good road connectivity with the nearby town of Devarhippargi, Satihal, taluka headquarter Basavana Bagevadi and district headquarters Bijapur. For drinking water villagers depend on water supplied by Gram Panchayat from nearby the village Satihal. To store water supplied to the village from a nearby village, two water tanks were constructed in the village one by the Government of Karnataka and one by Netherland government.

The village has no community hall and for that purpose, on priority basis construction of Rajiv Gandhi Seva Kendra was taken up two years ago under MGNREGP, which is still under construction. The village has three Government schools, one Urdu medium school up to 8th standard, two Kannada medium schools, one primary-middle school and one high school. The village has one private primary school run by four teachers and one peon. The village also has two Anganwadi Centers. The village has one Government Ayurvedic Health Centre run by one doctor and two assistant staff. All services provided by this public health centre are free for all. In addition, the village has two registered allopathic doctors and two unregistered doctors. The village has one fair price shop and a kerosene distribution shop run by Prathamika Krishi Patten Sahakari Sangha⁴ (PKPS), Satihal and a private Kerosene dealer, respectively. PKPS has its fertilizer Godown located in the village nearby Gram Panchayat building. The village comes under Markabbinahalli Gram Panchayat which has two more villages, in addition, namely, Bomanhalli and Bisnal.

3.2. Sampling framework and database

Stratified sampling method was used in the collection of data from the households. Data were collected for the agricultural year 2012-13 (From 1st June 2012 to 31st May 2013). According to Thorbecke (2000) three main criteria appear important in classifying households *viz.*; a) location, b) resource endowment and wealth and c) occupation of the head of the household. Since study area is a village and agriculture is the dominant type of occupation criteria a) and c) can not be used effectively to classify a heterogeneous household set. In that situation the only apparent natural resource endowment and wealth commonly found is land and hence land holding status and size were used as basis for household classification. In the present study criteria followed for classification of households was based on ICRISAT VDSA Study, wherein households were classified into five strata, namely landless, marginal, small, medium and large land holding household as indicated in Table 3.2.1. Because of the time constraint, from each household stratum only five percent of households were chosen as representative samples. These representative households were chosen to cover all categories of households to truly reflect the village economic conditions. Occupations of the sample households are presented in Table 3.2.2.

Primary data were collected from different economic agents including shops (Agricultural input shop, Canteen, Provision store) and service providers (tailor, barber, drivers, labourers etc.) on the employment provided, receipts and expenditure details for

⁴ PKPS is Kannada name for Primary Agricultural Credit Co-operative Society (PACS).

Table 3.2.1: VDSA household classification and sampling framework

Category of households	Land classification*	Sample Size
Landless	<0.1 ha	6
Marginal	0.1 ha - < 1 ha	3
Small	1 ha - < 2 ha	4
Medium	2ha-<4ha	4
Large	> 4 ha	3
Total		20

Source: * Desai *et al.* (2012)

**Collected from Markabbinahalli Gram Panchayat Records

Table 3.2.2: Occupation matrix of sample households for Markabbinahalli village for agricultural year 2012-13

Sl. No.	Category	LL*	Ma*	S*	Me*	La*	Within village	Outside village	Total Sample
1	Agricultural labour	12	5	13	4	0	30	4	34
2	Anganwadi Aaya	0	0	1	0	0	1	0	1
3	Driver	0	2	0	2	0	2	2	4
4	Bangle seller	0	2	0	0	0	0	2	2
5	Businessman	0	0	0	0	1	0	1	1
6	Carpenter	2	0	0	0	0	1	1	2
7	Clerk	1	0	0	0	0	0	1	1
8	Doctor	0	0	0	0	1	1	0	1
9	Farming (only)	0	0	0	3	2	5	0	5
10	Farm servant	0	0	1	0	0	0	1	1
11	Flour mill operator	0	1	0	0	0	1	0	1
12	Goldsmith	1	0	0	0	0	1	0	1
13	LIC agent	0	0	0	1	0	1	0	1
14	Mechanic	0	0	0	0	1	0	1	1
15	Mason helper	2	1	2	1	0	1	5	6
16	Stoner cutter	2	0	2	0	0	1	3	4
17	Teacher	0	0	0	2	0	2	0	2
18	Total	20	11	19	13	5	45	23	68

Source: Survey work

*LL: Landless, Ma: Marginal, S: Small, Me: Medium, La: Large

the agricultural year 2012-13. List of all the samples taken from different economic agents is provided in Table 3.2.3.

Secondary data were collected from the Government institutions (Panchayat, Anganwadi Centre, School, Post Office, Health Care Centre, financial institutions located in Devarhippargi & Satihal and ICRISAT VDSA database) and websites <http://nrega.nic.in/netnrega> and <http://panchamitra.kar.nic.in>.

Pre-tested well structured schedules were prepared and used to collect data from sample villagers, which included information on the transaction, both within and outside the village, source wise. For testing second to fourth hypothesis (mentioned in first chapter), data collected from web address <http://nrega.nic.in/netnrega> for Markabbinahalli village were analyzed. Data pertaining to financial year from 2011-12 to 2013-14 were collected to test these three hypotheses. For hypothesis fifth, data were collected for Agricultural year 2012-13 from 30 participants and 30 non participants of MGNREGP in Markabbinahalli were analyzed. To test hypotheses sixth and seventh, data pertaining to financial years from 2009-2010 to 2013-14 from web address <http://nrega.nic.in/netnrega> were collected and used.

3.3. Analytical tools and techniques employed

3.3.1 Social Accounting Matrix (SAM)

According to Subramanian (2008) “A SAM is an organized matrix representation of the accounts and transactions of different activities, actual or imputed, within an economy and with respect to the rest of the world”

Social Accounting Matrix is a square matrix and an extension of the Leontief input-output matrix; it is a tool to summarize an economy and its financial as well as non financial (barter) transactions in a meaningful way with flexibility to add social dimensions. SAM consists of all sectors and institutions of the economy. Different sectors of economy consist of agriculture, manufacturing, quarrying, trade, service providers and so on. Institutions include households, Government, and Religious Institutions like Temple, Church etc. SAM also has provision for factors of production, inventories (stock of goods) and the rest of the world. It works on double accounting principle of formal accountancy which states that every debit must be accompanied by corresponding credit in the books of accounts. Every row in SAM records a receipt for respective account and every column in SAM records a payment from the same account. Row and column total should match for each account in SAM. All entries in SAM are in monetary value, not as physical quantities. For the present study SAM of size 82X82 was constructed. Following Subramanian (2007), Thorbecke (2000) and Bellu (2012) a schematic representation of SAM was prepared for the present study and is presented in Table 3.3.1.

Table 3.2.3: Sampling framework for different economic agents in Markabbinahalli village

Particulars	Sample Size
Agri-input shop and grain merchant	5
Anganwadi Centre	2
Barber	2
Black smith and carpenter	2
Charcoal trader	2
Cobbler	1
Cycle repair shop	1
Doctors	2
Driver	5
Fair price shop	1
Goldsmith	1
Government Primary Health Centre (Ayurvedic)	1
Government School*	3
Grinding mill	4
Hotel#	3
Households	20
Kerosene supply shop	1
LIC Agent	1
Mason workers	10
MGNREGP Non Participants	30
MGNRGS participants	30
Post office	1
Private School & Tuition class	1
Provision store	3
SHG	2
Tailor	3
Total	135

Source: Survey Work

including small tea shops,

*including Middle, Primary and Urdu School

Table 3.3.1: Schematic representation of SAM constructed for the present study

	Expenditure							
		Activities	Commodities	Factors	Household	Institutions	Savings and Investment	ROW
Receipts	Activities	-	Domestic Production	-	-	-	-	-
	Commodities	Intermediate Inputs	-	-	Household Consumption	Consumption	Stocks	Exports
	Factors	Value Added	-	-	Value Added	Factor payments	-	Factor earnings
	Household	Profit	-	Factor payments	Inter-Household Transaction	Financial Transfers	Imputed Value of own inputs	Remittances
	Institutions	-	-	-	Taxes and donations	Financial Transfers	-	Receipts
	Savings and Investment	Imputed Value of own inputs	Drawings from stocks	-	Savings	Savings	-	Deficit BOP
	ROW	Imports	-	Factor payments	Payments	Payments	Surplus BOP	-

3.3.1.1 Assumptions of SAM

Various assumptions of SAM listed by Bellu (2012), Thorbecke (2000), Subramanyan (2007), Subramanian & Sadoulet (1990) and Adelman et al. (1988) are presented as following.

- The village economy is an open economy, i.e., there is free movement of goods and services between the village and the rest of the world.
- The village economy has the price elasticity of supply equal to infinity, i.e., the village economy does not suffer from supply side constraints.
- The economy is demand constrained, so that any increase in demand or monetary injection from exogenous account is met by the necessary production.
- All households are the owners of the factors of production. Therefore, all the factor incomes shall accrue to the household account in the SAM directly or indirectly.
- All the adjustments are quantity adjustments and prices do not vary. Input prices do not change either in response to changes in input demand, and the production technology stays unaltered.
- Economic agents take prices as given and all income elasticities are unity.
- The relationship between endogenous and exogenous variables are linear (i.e., hypothesis of lack of substitution between different inputs and factors for all productive sectors and between different final goods for all institutions)
- All the elements of coefficient matrix are assumed to be fixed, i.e., a_{ij} or average expenditure propensities must be calculated from SAM as parameters and marginal expenditure propensities are equal to average expenditure propensities.
- Expenditure equals income in endogenous accounts.

Due to above assumptions SAM is a static analysis.

3.3.2 Details of different accounts

Activities: This account represents production activities in the economy. Activity to Activity cell always remains empty on account of the fact that activities cannot pay to activities. Activity account in column makes payment for all services and goods procured as input in the process of production (Thorbecke, 2000; Subramanian and Sadoulet, 1990). In the row, activity account can receive the money from only commodity account for domestic supplies. This study considers Agriculture and Charcoal Making as the production activity while Agricultural Inputs Trade, Agricultural Commodity Trade, Charcoal Trade, Machinery Services, Tailor, Barber, Grinding Mill, Repair & Maintenance, Private School, Government school, Government Ayurvedic Hospital and SHG are considered as service sector activities. Within Agriculture, Jowar, Wheat, Pigeon pea, Cotton and Chickpea were considered individually while minor crops such as

sunflower, safflower and onion together with livestock were clubbed and were considered as other agricultural enterprises⁵.

Commodities: This account represents the supply of goods and services (both traded and non-traded) within the economy as well as available within the economy as savings/left over stock of the previous year. Commodity account has the same items considered under activity account. Commodity account supplies the goods and services to economy & rest of the world and in turn receives the money from respective accounts. In the column, commodity account makes payment to actionable account and to savings & investment account for domestic supplies and previous year's saved/remaining goods, respectively.

Factors: This account has two components *viz.*; labour services and capital services. Labour services component can further be classified into hired and family labour services or male & female labour services as per the need. The present study uses an earlier classification of labour services. Capital services receive from different activities contribution made by capital and similarly labour services receive the remuneration for providing labour in the different activities. Since factors of production are owned by households, these two sub accounts of factor account transfer the money to household account (Subramanian and Sadoulet, 1990). If labour and capital services are outsourced from rest of the world then factor accounts directly make payments to rest of the world.

Institutions: This account represents Households, the village local government (in the present study Gram Panchayat) and religious institutions (in the present study Temple). The household is shown separated from the Institution column in SAM. The village local government collects funds from state government and also tax from residents of the village. Tax collected is transferred to the state government through rest of the world. Gram Panchayat also spends funds received from the state government on developmental activities and non developmental activities (administrative). Subsidies, pension, grants and aids are shown as financial transfers. Temple receives the donations from the villagers and spends it on various religious activities. If donations exceed expenditure then it is considered as savings of temple.

Households: Households account represents the household sector of the economy. This account makes payment for purchases made by households within and outside the village economy. This account receives the income earned by households from different occupations both within and outside the village economy. Remittances sent and received are also channeled through this account. For the present study households are divided into five VDSA⁶ categories, namely landless, marginal, small, medium and large as presented in Table 3.2.1. These five categories were decided based on a sampling framework stated earlier.

Savings and Investment: This account represents the capital account of the village. This account receives the savings of the households (including cash in hand and stock of goods remaining at the end of the year including crop and livestock output). Savings are

⁵ Other agricultural enterprises are referred to as "Others" in SAM presented in Appendix I.

⁶ VDSA: Village Dynamics in South Asia, A Project undertaken by ICRISAT, Hyderabad.

derived as the residual at the end of the year after deducting the consumption from opening stock at the start of the year and supplied during the year.

This account also receives the imputed value of own inputs used in agriculture and transfers it to households. Commodity account can draw supplies of respective commodity from the stocks or savings of previous year.

For Gram Panchayat to invest in MGNREGP, Panchayat first transfers money to savings and investment accounts and from there it is channeled to MGNREGP commodity account as an investment.

Rest of the World (ROW): This account represents the economy outside the village. If any sector of economy spends on goods and services outside the village, then it is channeled through the rest of the world account. Rest of the world account also channels remittances, receipts and income from outside the village economy. The village economy also has BOP, like every country has. If the current account of the economy has a surplus balance of payment, then it is shown as payment by savings and investment account to rest of the world account and vice versa being true for deficit balance of payment.

3.3.1.3 Balancing of SAM

First step to balance SAM is deciding upon which of the data ready and available are reliable. Choosing most reliable one and then looking for imbalances in the matrix. This step is performed for all the accounts for both receipts and payments. At the end, it must be found out as to why these differences appear. Logical reasoning can help to balance the matrix and if it does not occur the differences must then be passed on to savings and investment account to show as trade surplus.

3.3.1.4 Calculation of Multiplier

Hirway *et al.* (2008) had used following method for calculation of multipliers using a village SAM.

Let SAM model be written as

$$Y_j = \sum_i w_{ij} + \sum_i x_{ij}$$

Where $Y_j = \begin{bmatrix} y_1 \\ \vdots \\ y_j \end{bmatrix}$ And Y_j is a vector of column total of matrix Y , y_j is j^{th} column total;

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

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

In SAM model normally activity, commodity, factor and household accounts are assumed to be endogenous. The present study also assumes the same. Exogenous accounts are public administration (Village Panchayat), savings & 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).

Upon dividing each cell of SAM by its respective column total we get coefficient matrix A whose elements are a_{ij} . Mathematically, it can be represented as

$$a_{ij} = W_{ij}/Y_{ij}$$

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

The above equation can be written as

$$Y = AY + X$$

$$(I - A)Y = X$$

$$Y = (I - A)^{-1}X = MX$$

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

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

There are three types of multipliers, namely; output, household income and employment multipliers. To calculate output, employment and household income multipliers from M matrix select the activity column for which multipliers are to be calculated and then all row values for commodity accounts, labour accounts and household accounts are summed up respectively.

3.3.1.5 Interpretation of SAM multipliers

Output multiplier estimates the change in total output demand of the economy from a unit change in output/investment in a given sector. Employment multiplier estimates the increase in demand for labour from a unit increase in output/investment in a given sector. Household income multiplier estimates the change in income of all household from a unit change in output/investment in a given sector. If output multiplier value is 2 for MGNREGP activity then it implies that for an additional rupee of investment made in MGNREGP, there will be 2 times increase the demand for output in the economy over existing demand for output. Percentage change in output of a particular sector can be referred to as percentage impact. This can be calculated as

$$\text{Percentage Impact on account } i = \frac{m_{ij} * X_j * 100}{B_i}$$

Where, m_{ij} is multiplier value for i^{th} account due to a unit shock in j^{th} account,

X_j is amount of shock in j^{th} account,

B_i is the base value of i^{th} account.

Note: A multiplier value of 2 can be interpreted directly as 200 percent increase on that account only if $B_i = X_j$.

Similarly an employment multiplier value of 0.4 for MGNREGP activity means that for an additional rupee of investment made in MGNREGP there will be 0.4 times increase in demand for labour in the economy. A household income multiplier value of 0.55 for MGNREGP activity implies that due to additional investment made in MGNREGP activity, income of households increase by 0.55 times over the existing income level in the economy.

All increase in output demand or labour demand can be interpreted as real increase and not accruing due to changes in price level because SAM analysis assumes prices as constant and exogenous to analysis.

3.3.2 Fisher's Exact Probability Test (Mc Hug, 2009)

The Fisher's exact probability test is an extremely useful non parametric technique to analyse discrete data (either nominal or ordinal) when the two independent samples are small in size. It is used when all scores from two independent random samples fall into one or the other of two mutually exclusive classes. In other words, every subject in both groups obtains one of two possible scores. The scores are represented by frequencies in a 2X2 contingency table as follows:

Worker's status			Total
	Migrated	Not Migrated	
Participated in MGNREGP	A	B	A+B
Not Participated in MGNREGP	C	D	C+D
Total	A+C	B+D	N

The MGNREGP Participants and non participants are two independent groups, such as experimental and controls. The column headings are status of migration as migrated and not migrated. The test determines whether the two groups differ in the proportion with which they fall into the two classifications. In the above table, A, B, C and D stand for frequencies. For the data in the table, it would determine whether participation and non participation in MGNREGP differ significantly in the proportion of migration and non migration attributed to them.

The appropriate test statistic is the Fisher Exact Probability test given by

$$p = \frac{(A+B)!(C+D)!(A+C)!(B+D)!}{N!A!B!C!D!}$$

If p value is less than or equal to chosen level of significance then null hypothesis can be rejected at chosen level of significance for one tail test. Rejection of null hypothesis implies participants and non participants differ significantly in the proportion of migration and non migration attributed to them.

To calculate sample estimate of odds ratio following formula is used,

$$Odds\ Ratio = \frac{Odds1}{Odds2}$$

Where

$$Odds1 = \frac{\text{Probability of migration of MGNREGP worker}}{\text{Probability of non migration of MGNREGP worker}}$$

$$Odds2 = \frac{\text{Probability of migration of non MGNREGP worker}}{\text{Probability of non migration of non MGNREGP worker}}$$

Each Odds shows the probability of migration verses non migration of a particular type of worker. Odds ratio shows as to how many times a MGNREGP worker is likely to migrate as a non MGNREGP worker.

3.3.3 Student's t Test (Assuming Equal Population Variance) (Gupta, 2011)

Student's t test is used for testing the hypothesis of no difference between the two independent random samples when sample size is less than 30 and population variance are not known. t test to test the hypothesis given two independent random samples of size n_1 and n_2 with means \bar{X}_1 & \bar{X}_2 and standard deviations S_1 and S_2 are as following

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S} \ast \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$$

Where S = combined standard deviation (or pooled standard deviation)

And S is calculated as follows;

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

If calculated value of t be $> t_{0.05}$ ($t_{0.01}$) the difference between the sample means is said to be significant at five percent (one %) level of significance. Otherwise the data are said to be consistent with the null hypothesis.

3.3.4 F-test and ANOVA (Gupta, 2011)

F-test is used for testing equality of variance in population based on sample variance. To carry out the test of significance F ratio is calculated as follows

$$F = \frac{\text{Large Estimate of Variance}}{\text{Smaller Estimate of Variance}}$$

If S_1^2 is larger estimate of variance and S_2^2 is smaller estimate of variance then F ratio can be calculated as $F = \frac{S_1^2}{S_2^2}$.

The calculated value of F-test is compared with the table value for v_1 and v_2 degrees of freedom at five or one percent level of significance. If calculated value of F is greater than the table value then the F ratio is considered significant and null hypothesis is rejected. F-test has been used to test the assumption of equal population variance before using student's t test discussed above and for ANOVA which is discussed below.

The analysis of variance frequently referred to by the contraction ANOVA is a statistical technique specially designed to test means of more than two quantitative populations are equal. ANOVA is used to test for the significance of the difference among sample means via the mechanism of the F-test for testing for the significance of difference between two variances, but the test is so designed that the variances being compared are different only if the means under consideration are not homogeneous. In this way, significant values indicate that the means are significantly different from one another.

Calculation of F-ratio for ANOVA is as follows:

$$F = \frac{\text{Between column Variance}}{\text{Within column Variance}}$$

Analysis of Variance (ANOVA) Table: One-Way Classification Model

Source of Variation	SS(sum of squares)	ν Degrees of freedom	MS Mean Square	Variance Ratio of F
Between samples	SSC	$\nu_1 = c-1$	MSC=SSC/(c-1)	MSC/MSE
Within samples	SSE	$\nu_2 = n-c$	MSE=SSE/(n-c)	
Total	SST	n-1		

Where

SST=Total sum of squares of variations;
 SSC= Sum of squares between samples (columns);
 SSE=Sum of squares within samples (rows);
 MSC=Mean sum of squares between samples;
 MSE= Mean sum of squares within samples;
 n=total number of all observations;
 c= number of samples.

If calculated value of F is greater than the table value, it is concluded that the difference in sample means is significant, i.e., it could not have arisen due to fluctuations of sample population. On the other hand, if the calculated value of F is less than the table value, the difference is not significant and has arisen due to factors other than treatment effect.

3.3.5 z-test: Test of Significance for Large Samples (Gupta, 2011)

The z-test is based on the normal probability distribution and is used for judging the significance of several statistical measures, particularly the mean. The z-test can be used for judging the significance of difference between means of two independent samples in case of large samples or when population variance is known. For a situation

where sample size is greater than 30 and population variance is known following formula can be used to test for significance of difference between two means.

$$Z = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{\sigma_{p1}^2}{n_1} + \frac{\sigma_{p2}^2}{n_2}}}$$

Where \overline{X}_1 & \overline{X}_2 are the respective means of two independent samples and σ_{p1}^2 & σ_{p2}^2 are the two known variances for two samples of n_1 & n_2 size, respectively.

The calculated value of a z - test statistic can be compared with the critical value of z statistics. If the calculated value of the z - statistic is lower than the critical value at chosen level of significance, then the null hypothesis of no difference between the two population means can be accepted. Otherwise alternate hypothesis can be accepted.

CHAPTER IV RESULTS

Results obtained from the analysis of data collected for study are presented objective-wise in this chapter.

4.1 Objective 1: To estimate the output, income and employment multipliers.

4.1.1 Hypothesis 1: Multiplier effect of MGNREGP on household sector is higher than that in other sectors in the village economy.

Social accounting matrix prepared for the Markabbinahalli village for agricultural year 2012-13 is provided in Appendix I along with a technical coefficient matrix and results of simulations. An aggregated Social Accounting Matrix (SAM) is presented in Table 4.1.1 and Table 4.1.1A provides multiplier matrix for SAM provided in Table 4.1.1. This SAM provides the snapshot of Markabbinahalli village economy in brief for agricultural year 2012-13. Among all the accounts of SAM presented in Table 4.1.1, household account has the largest size followed by agriculture, service sector (excluding trade) and trade. The village Economy of Markabbinahalli has a trade surplus of approximately ₹12.53 crores⁷.

Table 4.1.2 provides the impact of Rs.10 lakhs additional investment in MGNREGP on the village economy. Here impact of increase in MGNREGP funding was the highest on hired labour service with 2.92 percent increase in size of the activity followed by small farm family households expenditure (1.02 % increase), landless family household expenditure (0.95 % increase), repair and maintenance services (0.88 % increase) and expenditure on Fair price shop (0.8 % increase) among major increase observed with 1.1 percent increase in total size of economic activity and production. Out of all the endogenous accounts considered, 12 of all them had a zero multiplier value and hence not shown in Table 4.1.2 but column total for fourth column also includes base value for these accounts. These accounts were cotton commodity, trade (including trade in Jowar, Pigeon pea, cotton, wheat, chickpea and charcoal), Government school, Government hospital, Anganwadi centre and Self-Help Group (SHG).

Results provided in Table 4.1.2 are summarized in Table 4.1.3 as output, household income and employment multiplier. Output, household income and employment multiplier values were 1.14, 0.39 and 0.30 but percent change was the highest in household income at 2.25 followed by 1.4 for output and 0.48 for employment. This proves the hypothesis that impact of MGNREGP on household sector was higher than in any other sector of the economy. Thus research hypothesis is accepted.

Output multiplier value of 1.14 for MGNREGP activity implies that for an additional rupee of investment made in MGNREGP, there will be 1.14 times increase the demand for output in the economy over existing demand for output.

⁷ Payment made by Savings and Investment account to Rest of the World account in Table 4.1.1.

Table 4.1.1 Aggregated social accounting matrix for Markabbinahalli village (values in ₹ 000') for agricultural year 2012-13

	Activity					Commodity					Factor Services		HOUSE	INST	S&I	ROW
	Agri	Char	NREGA	TRD	OTH	Agri	Char	NREGA	TRD	OTH	L	C				
Agri	0	0	0	0	0	34237	0	0	0	0	0	0	0	0	0	0
Char	0	0	0	0	0	0	1830	0	0	0	0	0	0	0	0	0
NREGA	0	0	0	0	0	0	0	1503	0	0	0	0	0	0	0	0
TRD	0	0	0	0	0	0	0	0	17420	0	0	0	0	0	0	0
OTH	0	0	0	0	0	0	0	0	0	26539	0	0	0	0	0	0
Agri	1096	0	0	7234	0	0	0	0	0	0	0	0	3403	0	0	23600
Char	0	0	0	820	0	0	0	0	0	0	0	0	1010	0	0	0
NREGA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1503	0
TRD	2014	0	0	500	12	0	0	0	0	0	0	0	1454	0	500	12940
OTH	2919	0	0	216	73	0	0	0	0	0	0	3420	10165	0	35	9711
L	8675	915	422	416	241	0	0	0	0	0	0	0	1035	364	0	5208
C	3634	0	0	0	0	0	0	0	0	0	0	0	4751	0	0	0
HOUSE	8185	915	0	4226	13572	0	0	0	0	0	16777	0	4798	4688	6044	2703
INSTI	0	0	0	1	46	0	0	0	0	0	0	0	7	0	0	6510
S&I	5845	0	0	0	262	1096	0	0	0	0	0	214	11695	1505	0	0
ROW	1869	0	1081	4006	12333	0	0	0	0	0	500	4751	23591	7	12534	0
Total	34237	1830	1503	17420	26539	35333	1830	1503	17420	26539	17277	8385	61907	6563	20616	60672

Where Agri.: Agriculture, Char: Charcoal, TRD: Trade (includes both Agro-input and commodity), OTH: Other service providers, L: Labour Services (including family labour), C: Capital Services, HOUSE: Households, INSTI: Institutions (Panchayat and Temple), S& I: Savings and Investment, ROW: Rest of the World

Table 4.1.1A: Multiplier matrix for aggregated social accounting matrix for Markabbinahalli village for agricultural year 2012-13.

	AGRI	CHAR	NREGS	TRD	OTH	L	C	HOUSE	INST
AGRI	1.113	0.092	0.025	0.506	0.049	0.090	0.020	0.093	0.071
CHAR	0.017	1.024	0.006	0.063	0.012	0.023	0.005	0.024	0.018
NREGS	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
TRD	0.084	0.038	0.010	1.078	0.020	0.037	0.008	0.038	0.029
OTH	0.295	0.274	0.075	0.230	1.147	0.268	0.468	0.276	0.212
L	0.300	0.563	0.297	0.198	0.041	1.059	0.017	0.061	0.102
C	0.175	0.112	0.031	0.112	0.059	0.110	1.024	0.113	0.087
HOUSE	0.791	1.336	0.367	0.781	0.705	1.309	0.287	1.348	1.036
INST	0.001	0.001	0.000	0.001	0.002	0.001	0.001	0.001	1.001
Total	2.776	3.439	1.811	2.969	2.036	2.897	1.830	1.954	2.556

Where AGRI.: Agriculture, CHAR: Charcoal, NREGS: MGNREGP, TRD: Trade (includes both Agro-input and commodity), OTH: Other service providers, LABOUR: Labour Services (including family labour), CAPITAL: Capital Services, HOUSE: Households, INSTI: Institutions Temple. Here institution does not include Village Panchayat because Village Panchayat is considered as an exogenous account.

Table 4.1.2: Impact of ₹10 lakhs additional investment in MGNREGP on the village economy: Results of a simulation.

Particulars	Multiplier value	Impact of additional investment of ₹10 lakhs in MGNREGP activities (₹)	Base Value of account for Agriculture Year 2012-13 (₹)	Percentage Impact
MGNREGP	1.00000	10,00,000	15,02,741	66.55
HLS	0.28844	2,88,438	98,75,531	2.92
Landless family	0.10710	1,07,097	1,12,82,571	0.95
Small farm family	0.09502	95,019	92,88,363	1.02
Marginal farm family	0.06963	69,632	1,04,40,276	0.67
Large farm family	0.05969	59,690	2,02,44,151	0.29
Medium farm family	0.05679	56,790	1,06,52,084	0.53
Provision Stores	0.03701	37,015	50,31,080	0.74
Capital Services	0.02918	29,178	83,84,979	0.35
Other commodities	0.01162	11,622	38,31,617	0.30
HMS	0.01088	10,885	31,28,018	0.35
Jowar commodity	0.01033	10,332	25,69,774	0.40
OCT	0.01031	10,314	14,65,594	0.70
FLS	0.00994	9,938	74,00,994	0.13
Charcoal making	0.00778	7,781	18,29,654	0.43
Fair price shop	0.00728	7,277	9,07,825	0.80
Doctor	0.00679	6,795	9,22,101	0.74
TSP	0.00549	5,490	88,91,502	0.06
Canteen	0.00511	5,108	7,05,050	0.72
Tailor	0.00419	4,192	6,13,825	0.68
Post office	0.00418	4,184	16,81,297	0.25
Private School	0.00402	4,021	5,20,028	0.77
Wheat commodity	0.00265	2,646	25,22,986	0.10
PPC	0.00256	2,555	88,80,075	0.03
Grinding mill	0.00229	2,294	3,16,240	0.73
Chickpea commodity	0.00223	2,232	83,25,896	0.03
Black smith	0.00163	1,632	3,91,902	0.42
Barber	0.00119	1,192	1,64,250	0.73
Agri-inputs trade	0.00106	1,055	35,14,000	0.03
R & M	0.00063	633	72,000	0.88
Gold smith	0.00023	226	32,600	0.69
Cobbler	0.00022	216	1,82,400	0.12
Temple	0.00001	7	2,145	0.33
Total	1.85549	18,55,486	16,90,99,228	1.1

Where TSP: Transport Service Providers, R & M: Repair and Maintenance, PPC: Pigeon pea Commodity, HMS: Hired Machinery Services, HLS: Hired Labour Services, OCT: Other Commodity Trade, FLS: Family Labour Services.

Table 4.1.3: Summary of impact of ₹10 lakhs additional investment in MGNREGP on the village economy

Particulars	Base Value of account for Agriculture Year 2012-13 (₹)	Multiplier	Impact of Investment in MGNREGP	
			₹	Per cent change
Output	8,15,28,134	1.14	11,39,000	1.40
Employment	6,19,07,445	0.30	2,98,000	0.48
Household Income	1,72,76,525	0.39	3,88,000	2.25

Similarly an employment multiplier value of 0.3 for MGNREGP activity means that for an additional rupee of investment made in MGNREGP there will be 0.3 times increase in demand for labour in the economy. A household income multiplier value of 0.39 for MGNREGP activity implies that due to additional investment made in MGNREGP activity, income of households increase by 0.39 times over the existing income level in the economy.

4.2 Objective 2: To analyze gender, age and other social dimensions of MGNREGP

4.2.1. Hypothesis 1: Female worker participation is relatively higher than male worker participation in MGNREGP works resulting in differential gains in employment and income.

To test the hypothesis of no significant difference in days of participation and income between the female and male worker participants under MGNREGP, Z test was used. The results of Z test provided in Table 4.2.1 shows that P value for two tail test is 0.549 which is more than chosen level of significance (5%). Hence null hypothesis cannot be rejected and with respect to employment it can be concluded that there was no significant difference between male and female participation in MGNREGP with regards to gains in employment. Wage income being product of days of employment & wage rate, and same wage structure for all participants irrespective of gender, hence, there was no significant difference in income of male and female MGNREGP participants. Thus it can be stated that research hypothesis has been rejected and there was no differential gains in employment and income for female participant compared to male worker of MGNREGP

Table 4.2.1: Results of z-test for significance of difference between male and female worker participation rate in MGNREGP works for financial years 2011-12 to 2013-14.

Particular	Male	Female
Average employment (Days)*	39.44	37.75
Variance	429.93	320.52
Observations	100	87
Hypothesized Mean Difference	0	
Z	0.599	
P(Z<=z) two-tail	0.549	
z Critical two-tail	1.959	

*These figures are not per annum values but are averages per worker for three years.

4.2.2. Hypothesis 2: Marginalized sections have not benefited significantly from participating in MGNREGP works.

To test the significance of difference in employment generated for workers and households belonging to SC and others category from MGNREGP, t test was used. Before using t test, to make sure about the equality of variance of two samples F test was employed. Results of F test are presented in Table 4.2.2. it can be observed that P value for F static is 0.34, for both workers and households, which is more than 0.05 ,i.e., chosen level of significance, therefore null hypothesis of equality of variance can not be rejected. Hence t test with assumption of equality of variances can be applied. From Table 4.2.2, it can be observed that two tail P values for t test statistic are 0.30 for workers and 0.14 for households which are more than the chosen level of significance (5% level), hence null hypothesis cannot be rejected. Therefore it can be concluded that there was no significant difference in employment (days) received by the workers and households belonging to two categories. Thus research hypothesis is proved and it can be said Marginalized sections have benefited significantly from participation in MGNREGP works.

Table 4.2.2: Combined results of F test and t test for equality of variance and mean in employment of workers and households belonging to SC and others category for financial years 2011-12 to 2013-14.

Particulars	Workers		Households	
	SC	Others	Others	SC
Average Employment per worker (Days)*	42.44	38.07	118.60	176.83
Variance	414.01	372.11	7962.79	9174.57
Observations	25	162	52	6
F Test				
Df	24	161	51	5
F	1.11		0.87	
P(F<=f) one-tail	0.34		0.34	
F Critical one-tail	1.59		0.42	
t test with equality of variance assumption				
Pooled Variance	377.55		8070.99	
Hypothesized Mean Difference	0		0	
Df	185		56	
t Stat	1.05		-1.50	
P(T<=t) two-tail	0.30		0.14	

*These figures are not per annum values but are averages per worker for three years.

From the figure 4.1, it can be observed that only two households could cross the 100 days of employment per household guaranteed by the Government of India. These two households belong to Others category. While mean days of employment are more for SC category households, none of the household could reach 100 days of guaranteed employment.

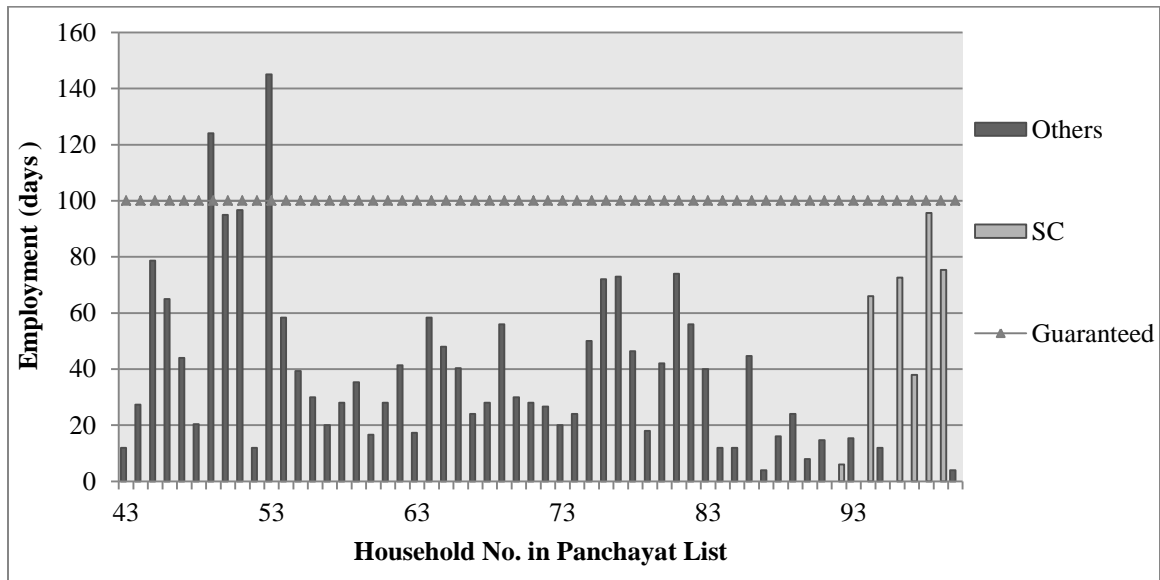


Figure 4.1: Average employment (days) per annum received by households under MGNREGS (from April 2011 to March 2014)

4.2.3. Hypothesis 3: Aged worker participation (above 50 years) is relatively higher than young worker participation in MGNREGP

Participation rate is measured by days of employment per worker in MGNREGP. More the days of employment, more is the participation by the worker under the programme. To test the difference in participation rate by among the three different age group single factor ANOVA was used. Results of single factor ANOVA are presented in the Table 4.2.3.

From the summary of the three different age groups, it can be said that average days of employment for workers belonging to youngest group (61.26 days) was the highest followed by middle age group (44.5 days) and at least by the most aged working group (18.86 days). In a comparative manner, Coefficient of variation was the least for the youngest age group followed by middle age group and at the last by old age group which shows that these groups are more, less and the least consistent across the households worked under MGNREGP, respectively.

Since P value for F statistic is less than 0.05 i.e. chosen level of significance and therefore null can not be accepted at five percent level of significance. Hence it can be said that participation rate among the three different age groups were significantly different. Thus research hypothesis is rejected and it can be said that aged worker participation was not higher than young worker participation.

Table 4.2.3: Summary of work participation by different age groups and results of single factor ANOVA for significance of difference between aged worker participation and young worker participation (days) during financial years 2011-12 to 2013-14.

Summary of work participation (days) by worker of different age groups						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>	<i>SD</i>	<i>CV</i>
for 18-35 age group	58	3553	61.26	2727.91	52.23	85.26%
35-50 age group	58	2581	44.5	2004.25	44.77	100.60 %
50 and above age group	58	1094	18.86	969.95	31.14	165.11%
Results of Single Factor ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	52888.70	2	26444.35	13.91	2.5x10 ⁻⁰⁶	3.05
Within Groups	325020.51	171	1900.70			
Total	377909.22	173				

4.2.4. Hypothesis 4: MGNREGP has reduced migration of rural workers

To test hypothesis that MGNREGP had reduced migration of rural workers, Fisher's exact probability test using R version software was applied to 2X2 contingency Table 4.2.4. Here null hypothesis tested was that workers participating and not participating in MGNREGP had equal probability of migrating from Markabbinahalli village during agricultural year 2012-13. This is equivalent to testing null hypothesis of estimated odds ratio does not differ significantly from one.

From the Check Box 1, it can be said that estimated Odds ratio of 3.5 implies that worker participating in MGNREGP is 3.5 times more likely to migrate than a worker not participating in MGNREGP. Significance of this estimated odds ratio is indicated by P-value. Since P-value (0.09894) is more than 0.05 .i.e., chosen level of significance, null hypothesis can be accepted at five percent level of significance. Therefore estimated odds ratio of 3.5 is not significantly different from 1. Hence there is no significant difference in probability of migration of a worker participating and not participating in MGNREGP. Therefore it can be concluded that MGNREGP had no effect on migration of rural workers. Thus it can be stated that research hypothesis cannot be accepted and MGNREGP had not reduced migration of rural workers.

Table 4.2.4: Migration and participation in MGNREGP in Markabbinahalli village (for agricultural year 2012-13)

Status	Migration		Total
	Migrant	Non Migrant	
Participant	8 (67)	4(33)	12
Non Participant	17(35)	31(65)	48
Total	25(41.67)	35(58.33)	60

- Figures in parentheses indicate percentage out of row total.
- Of the total 30 MGNREGP participants interviewed as per Government list, 18 participants did not confirm their participation in MGNREGP and hence clubbed under Non participants.

Check Box 1: Result of Fisher's exact test for migration and participation in MGNREGP in Markabbinahalli village (for agricultural year 2012-13)

<p>Fisher's Exact Test for Count Data</p> <p>P-value = 0.09894</p> <p>Alternative hypothesis: true odds ratio is not equal to 1</p> <p>95 percent confidence interval: [0.8117057, 18.6531655]</p> <p>Sample estimates: odds ratio 3.564552</p>
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4.3 Objective 3: To estimate the asset creation and benefit derived from the assets created.

4.3.1 Hypothesis 1: Natural resource conservation is predominant under MGNREGP

&

4.3.2 Hypothesis 2: Private asset creation is marginal under MGNREGP

The details of types of completed and ongoing works during period financial year 2009-10 to 2013-14 for Markabbinahalli Gram Panchayat are presented in Table 4.3.1. Markabbinahalli Gram Panchayat covers three villages, viz.; Markabbinahalli, Bomanhalli and Bisnal., it can be seen from the Table 4.3.1, out of works completed during financial years 2009-10 to 2013-2014, the highest number of works completed were related to rural connectivity (21.95 %) followed by drought proofing and works on Private land of SC/ST/LR⁸ or IAY beneficiaries (19.51 %) each, land development (14.63 %), water conservation & water harvesting structure (10.98 %), flood control and

⁸ LR: Land Rehabilitation.

protection (8.54 %), renovation of traditional water bodies (2.44 %), Bharat Nirman Rajeev Gandhi Seva Kendra and other works (1.22 %).

Out of 107 ongoing works as on 31st March 2014, 60.75 percent of works were taken up on private land of SC/ST/LR or IAY beneficiaries followed by renovation of traditional water bodies (14.95 %), rural connectivity (7.48 %). Number of ongoing works relate to flood control and protection, land development and other works were five each (4.67 %) followed by drought proofing (2.81 %). Non of the works related to Bharat Nirman Rajeev Gandhi Seva Kendra and Water Conservation & water harvesting structure were going on.

Out of total expenditure of ₹175.92 lakhs incurred on works completed during financial years 2009-10 to 2013-2014, the highest expenditure was on drought proofing works (32.70 %) followed by rural connectivity (31.82 %), water conservation & water harvesting structures (10.06 %), land development (7.74 %), construction of Bharat Nirman Rajeev Gandhi Seva Kendra (5.13 %), renovation of traditional water body (4.06 %), flood control and protection (3.18 %), works on Private Land (2.98 %) and the least amount was spent on other works (2.33 %).

For the Markabbinahalli Panchayat during financial years 2009-10 to 2013-14, average expenditure per work per year was ₹2.15 lakhs. The Highest average expenditure per work per year was on Bharat Nirman Rajeev Gandhi Seva Kendra (₹9.01 lakhs) followed by other works (₹4.10 lakhs), drought proofing (₹3.60 lakhs), renovation of traditional water bodies (₹3.58 lakh), rural connectivity (₹3.11 lakhs), Water conservation and water harvesting structure (₹1.97 lakhs), land development (₹1.14 lakhs), flood control and protection (₹0.8 lakh) and the least average spending on works done on Private Land (₹0.33 lakh). From Table 4.3.1 reveals that works on private land constituted about 20 percent of the total works completed and 2.98 percent of the total expenditure incurred on all works completed during financial years 2009-10 to 2013-14. This proves the hypothesis made earlier that “Private Asset creation is marginal under MGNREGP”.

Table 4.3.2 provides information on type of works related to natural resource conservation and those not related to natural resource conservation after reclassification of information provided in Table 4.3.1. Works related to natural resource conservation included drought proofing, water conservation & water harvesting structures, renovation of traditional water bodies, flood control & protection and works on Private Land of SC/ST/LR or IAY beneficiary. Works executed on private land of SC/ST/LR or IAY beneficiaries included afforestation, construction of bund, farm pond and water channel construction, desiltation of tanks. Works not related to natural resource conservation included land development, rural connectivity, construction of Bharat Nirman Rajeev Gandhi Seva Kendra and other works. Other works include construction of school, hospital/ any other building or any work not covered under aforesaid categories of work and permitted by Ministry of Rural Development, Government of India.

Table 4.3.1: Details on number of works and expenditure pattern according to type of work executed in Markabbinahalli Gram Panchayat for financial years 2009-10 to 2013- 14.

Type of work	Completed	On Going	Total Expenditure (₹Lakh)	Average Expenditure (₹Lakh)
Rural connectivity	18 (21.95)	08 (07.48)	55.98 (31.82)	3.11
Drought proofing	16 (19.51)	03 (02.81)	57.52 (32.70)	3.60
Land development	12 (14.63)	05 (04.67)	13.62 (07.74)	1.14
Water conservation and water harvesting structure	09 (10.98)	0 (0.00)	17.70 (10.06)	1.97
Flood control and protection	07 (08.54)	05 (04.67)	05.59 (03.18)	0.80
Renovation of traditional water bodies	02 (02.44)	16 (14.95)	07.15 (04.06)	3.58
Bharat Nirman Rajeev Gandhi Seva Kendra	01 (01.22)	0 (0.00)	09.01 (05.13)	9.01
Other works	01 (01.22)	05 (04.67)	04.10 (02.33)	4.10
Sub Total				
Works on Public Land	56 (80.49)	42 (39.25)	170.67 (97.02)	3.05
Works on Private land of SC/ST/ LR or IAY beneficiary	16 (19.51)	65 (60.75)	05.25 (02.98)	0.33
Grand Total	82	107	175.92	2.15

- Figures in parentheses indicate percentage from respective column total.

To test the hypothesis that “Natural Resource Conservation is predominant under MGNREGP” total and average expenditure for two categories of work i.e., works and not related to natural resource conservations were calculated. From Table 4.3.2, it can be said that out of 82 works completed during financial years 2009-10 to 2013-2014, works related to natural resource conservation constituted 60.98 percent while works not related to natural resource conservation constituted 39.02 percent. This result proves the hypothesis that natural resource conservation was predominant under MGNREGP in Markabbinahalli Gram Panchayat during financial years 2009-10 to 2013-2014. Out of total expenditure of ₹175.92 lakhs incurred under MGNREGP, 52.98 percent of the

expenditure was on works related to natural resource conservation. Hence both in terms of number of works undertaken and expenditure incurred works related to natural resource conservation had a predominant share. This supports the hypothesis made by the research worker. Figure 6 to 13 shows various assets created in the Markabbinahalli village and walk view of the Markabbinahalli village.

Table 4.3.2: Summary of expenditure on works completed according to category of works for Markabbinahalli Gram Panchayat during financial years 2009-10 to 2013- 14.

Category of work	Number of Works completed	Expenditure (₹Lakh)		Position from Average Expenditure on all works
		Total	Average	
Related to Natural resource conservation (including works on Private Land)	50 (60.98)	93.21 (52.98)	1.86	Below
Not related to natural resource construction works	32 (39.02)	82.71 (47.02)	2.58	Above
Total	82	175.92	2.15	

- Figures in parentheses indicate percentage to respective column total.



Plate 1: Rajiv Gandhi Seva Kendra under construction as part of MGNREGP in Markabbinahalli village. [Dated 10-05-2013]



Plate 2: Drainage constructed under MGNREGP in Markabbinahalli village. [Dated 10-05-2013]



Plate 3: Public toilet constructed under MGNREGP in Markabbinahalli village. [Dated 10-05-2013]



Plate 4: Compound wall for Government middle school constructed under MGNREGP in Markabbinahalli [Dated 10-05-2013]



Plate 5: Digging of village pond undertaken in MGNREGP in Markabbinahalli village. [Dated 10-05-2013]



Plate 6: A close inside view of Markabbinahalli village showing need to construct cemented road along with sewage channels to carry water and household waste. [Dated 10-05-2013]

CHAPTER V

DISCUSSION

This chapter discusses findings of the study presented in chapter four. Here the aim is to analyze the reasons for the outcomes which are presented objective wise under following sessions.

1. SAM, Multiplier Analysis and Livelihood Security.
2. Gender, Age and Other Social Dimensions of MGNREGP.
3. The Asset Creation and Benefit Derived from the Assets Created Under MGNREGP.

5.1 SAM, Multiplier Analysis and Livelihood Security.

The results of the multiplier analysis presented in Table 4.1.2 show that the overall impact of MGNREGP was 1.1 percent on the village economy. Maximum impact was observed in Hired labour services (2.92 %), the expected area where MGNREGP had been expected to have the highest impact. But this increase was very small due to the low intensity of MGNREGP works and very large size of agricultural labour services in the village economy as revealed by the SAM presented in Table 4.1.1 (₹86.8 lakhs⁹, i.e., 50.23 percent of total labour receipts in village) and very weak linkages of MGNREGP with the rest of the accounts. This 2.92 percent impact on labour account was equal to 961 labour days¹⁰ or providing full time employment to three households in a year at the rate of 340 days of employment per annum [from Table 4.1.2]. This was a very weak effect similar to the one observed by Hirway et al. (2008) for MGNREGP in Nana Kotda village in Gujarat.

The second largest impact was observed on small family households (1.02 %) followed by landless family households (0.95 %), repair & maintenance shop (0.88 %), PDS shop (0.80 %) and Private School (0.77 %). [as presented in Table 4.1.2]

From simulations it was observed that on the whole impact of additional investment of ₹10 lakhs in MGNREGP on the village economy was only 1.1 percent increase in the volume of transaction in aggregate or ₹18,55,486, but in labour equivalents it implies 6184 labour days or full time employment to 18¹¹ households at the rate of 340 days of employment per year per household. In this indirect impact on labour employment was 84.46¹² percent of total impact of 1.1 percent. This impact was very weak keeping in view the objective of livelihood security embedded in the framework of MNGREGA.

⁹ Payment made by Agriculture account to Labour service account in Table 4.1.1.

¹⁰ ₹288438/₹300 per day ≈961 labour days

¹¹ Here all calculations are done at prevailing agricultural wage rate of ₹300 per day.

₹18,55,486/ ₹300 per day≈ 6184 labour days; 6184 labour days/ 340 days per household ≈18 households

¹² 100-(961/6184)*100≈ 84.46

Possible reasons for low impact of MGNREGP in making an impact on the village economy could be as follows

1. MGNREGP in the village was carried out on a very small scale. Total outlay in MGNREGP in year 2012-13 was to the tune of ₹15 lakhs. This sum is even lesser than the size of charcoal account (₹18.3 lakhs) which provides employment throughout the year unlike MGNREGS meant to provide employment during lean periods of year.
2. Linkages of MGNREGP with other accounts were very weak. MGNREGP spent money only on hired labour services in the village. All material components were procured from outside the village which amounted to ₹10.81 lakhs, about 72 percent of total expenditure incurred under MGNREGP. Most of the money out of material expenditure was incurred on purchase of cement, bricks and steel for construction of Rajiv Gandhi Seva Kendra in Markabbinahalli village. This reflects the fact that projects with high capital needs and long gestation periods have low multiplier effects at least temporarily.
3. Proportion of labour services among overall outlay was only 28 percent as against 60 percent mandated. This sum was ₹4.2 lakh, only a meager 4.25¹³ percent of total labour income in the village.
4. Agricultural wage rate (₹300 per day) and non-farm wage rate (₹350 per day) in the study area were higher than the MGNREGP wage rate of ₹174 per day. On an average, in a year, a family worked for 27 days under MGNREGP, 80 days in non-farm activities and 253 days in agriculture sector. With the prevailing wage rates for different activities, the total family income was ₹1,08,598¹⁴. Income from MGNREGP (₹4698) formed only 4.32 percent of total annual family income. So, the workers in the village were not attracted to MGNREGP works.
5. Instead of being a demand driven programme, MGNREGP had become programme prepared and executed by office bearers as per their wishes. Hence local people did not show much interest in making a programme a big success. Instead, they preferred to migrate to nearby as well as far-off places like Solapur and Bengaluru to earn higher income. Income from temporary labour migration was a huge amount, ₹52.1 lakhs for whole village, which was 13 times higher than labour earnings from MGNREGP (₹4.2 lakhs).

5.2 Gender, Age and Other Social Dimensions of MGNREGP.

5.2.1 Gender: Results presented in Table 4.2.1 reveals that female to male employment ratio was 87¹⁵ female per 1000 male employed. This ratio is quite low compared to sex ratio of 906 female per 1000 male prevailing in the village. However, Anonymous (2009 b) found an average female work force participation ratio of 77 percent in four districts of Tamil Nadu. Findings of present study are in conformity with the results of Anonymous (2009 b).

¹³ $4,20,000 * 100 / 98,75,531 = 4.25\%$

¹⁴ $300 * 253 + 27 * 174 + 80 * 350 = 1,08,598.$

¹⁵ 87 female to 100 male.

Moreover, there was no significant difference between male and female participants of MGNREGP with regards to gains in employment. This may be due to the fact that female labour gets higher wage rate in MGNREGP (₹174 per day) compared to agriculture labour work (₹150 per day) or for working as household maids (₹400-600 per month). Hence female working days (12.58 days per annum) were not significantly different from male working days (13.13 days per annum) under MGNREGP [Table 4.2.1]. However, this result is not in conformity with findings of Joshi *et al.* (2008) who reported that average days of employment per year in case of men and women were 31.16 days and 51.52 days, respectively under MGNREGP in Rajasthan.

5.2.2 Social Category: On the whole for all categories, average days of employment received by a worker and a household per year under MGNREGP were 13 days and 42 days, respectively [Table 4.2.2]. This result is similar to findings of Vanaik (2008)¹, Anonymous (2008)² and Kamath *et al.* (2008)³ who found average days of employment received per year per household to be around 34 days¹, 23 & 55 days for Nuapada & Siddhi districts² and 12 days to 32 days,³ respectively.

It was found that there was no significant difference in employment (days) received by workers and households belonging to two categories viz.; SC and others. For workers belonging to SC category average days of employment received per year were 14 days compared to 13 days for others category [Table 4.2.2]. Average days of employment received per household per year were 59 days per household belonging to SC category compared to 40 days for others category [Table 4.2.2]. This means that hardly 4 adult members from SC household participated in MGNREGP for 14 days compared to 3 adult members for 13 days from others.

Lack of awareness about MGNREGP and higher income earned through migration (₹500 per person per day) had impacted participation of households belonging to SC category in MGNREGP. This is evident from the fact that out of 187 workers who participated in MGNREGP in three years (2011-14) only 25 workers belonged to SC category which constitutes only 13.3 percent of work participation by SC category worker compared to 13.95 percent and 13.26 percent of people and households belonging to SC category in the Markabbinahalli village, respectively. This result is in sharp contrast to the findings of Indian Anonymous (2009 b) wherein SC category worker participation in MGNREGP was 44 percent of total workers in four districts of Tamil Nadu.

Out of 187 households which participated in MGNREGP works in Markabbinahalli village, only two families could complete 100 days of guaranteed employment which constitutes only 1.07 percent of households that participated in MGNREGP. This result is similar to the findings of Anonymous (2009 b) wherein the corresponding figure was 1.25 percent and Joshi *et al.* (2008) found corresponding ratio varying from 2.5 percent to 11.38 percent. Findings of Das and Pradhan (2007) showed that no household had completed 100 days of guaranteed employment. However in case of Markabbinahalli, no household belonging to SC category could complete 100 days of guaranteed employment.

5.2.3 Age and Migration: It was found that there existed significant difference in participation rate among workers belonging to different age groups. In Markabbinahalli village, participation in the programme by workers aged 50 years and above was only 6 days per annum compared to 20 and 14 days per annum by workers aged 18 to 35 years and 35 to 50 years, respectively. This result was similar to findings of the Indian Institute of Management, Calcutta wherein 80 percent of workers participating in MGNREGP were younger than age of 45 years in West Bengal and Indian Institute of Technology, Madras wherein about 52 percent of worker in age group of 18-36 years in Tamil Nadu.

MGNREGP has not been very effective in checking migration of villagers to cities in search of work. This result is in conformity with findings of previous studies that MGNREGP has been weak in checking migration of rural workers to cities (Joshi and Singh, 2008; Anonymous, 2009). However, the findings of the present study seem to be contradicting itself in the sense that migration of younger workers as well as participation of young workers in MGNREGP, both are high. It is possible because MGNREGP did not employ more than 187 people in three years in Markabbinahalli which means only 62 people per year, constituting only 3.6 percent of economically active population and 2.4 percent of total population, worked under MGNREGP.

5.3 The Asset Creation and Benefit Derived from the Assets Created under MGNREGP

It was found that natural resource conservation was predominant under MGNREGP, both in terms of expenditure and number of works undertaken. Markabbinahalli Gram Panchayat is in Bijapur district which is under Semi Arid conditions and rainfall is very low. Hence natural resource conservation is of utmost importance for the region as whole and therefore works related to natural resource conservation had predominant position among all works executed both, by expenditure and by number of works undertaken (similar to the findings of Joshi *et al.*, 2008; Dhananjaya and Prathibha, 2011). However, percentage of works completed under MGNREGP related to water conservation and water harvesting were low (10.98 % of total works executed and 18 % of works related to natural resource conservation in Markabbinahalli during 2009-10 to 2013-14). This seeming paradox is due to presence of saline water in Dhoni River which in turn has resulted in saline ground water, unsuitable both for domestic use and crop cultivation.

Works on Private land of SC/ST/LR or IAY beneficiaries was marginal, which may be because of the poor knowledge of MGNREGP provisions among majority of the respondents as could be observed during survey work.

CHAPTER VI

SUMMARY & CONCLUSION

6.1 Introduction

India faces the challenge of providing livelihood security to increasing labour force. Livelihood security consists of assets, activities, entitlements and coping mechanism for people. MGNREGP provided the right platform to launch the activities to strengthen the asset base and provides entitlement in the form of right to 100 days of guaranteed employment for adult members of the rural households. It also provides a good coping mechanism by providing work during lean periods of the year and asset building at the community level and at the individual level for the disadvantaged people of society.

To assess the impact of MGNREGP in dry land area of Karnataka, this study was conducted in the Markabbinahalli village of Bijapur district during the agricultural year 2012-13. Selection of the village was done as stipulated by funding agency, ICRISAT. The selected village has neither dug well nor bore-well and is completely dependent on rains for cultivation of crops.

6.2 Objectives of the Study

The study was following objectives.

1. To estimate the output, income and employment multipliers.
2. To analyze gender, age and other social dimensions of MGNREGP.
3. To estimate the asset creation and benefit derived from the assets created.

6.3 Methodology

To conduct the study both primary as well as secondary data were collected. Purposive sampling was done, to include all economic activities and institutions in order to construct village SAM, used in the collection of data from the households. Data were collected for agricultural year 2012-13 (From 1st June 2012 to 31st May 2013). Primary data were collected from different economic agents including shops, hotels, schools, repair shop, labourers and so on regarding employment provided, receipts and expenditure details for the agricultural year 2012-13. Secondary data were collected from Government institutions and ICRISAT VDSA database and websites <http://nrega.nic.in/netnrega> and <http://panchamitra.kar.nic.in>. Pre-tested well structured schedules were prepared and used to collect data from the respondents. In the schedules information on the transactions, both within and outside were recorded separately and source wise.

The data were analyzed using relevant tools and these were Social Accounting matrix (SAM), z-Test, t-Test, F-Test, ANOVA and Fisher's exact probability test. SAM helped in calculation of multiplier values for MGNREGP while rests of the tools were used to test the hypothesis statistically.

6.4 Findings of the study

Findings of the study are as following

- Among all accounts of SAM constructed for Markabbinahalli village, household account was of the largest size followed by agriculture, service sector (excluding trade) and trade.
- MGNREGP had output, household income and employment multiplier values of 1.14, 0.39 and 0.30 respectively for agricultural year 2012-13 for Markabbinahalli village.
- Results of simulations showed that for Rs. 10 lakhs additional investment in MGNREGP in Markabbinahalli village, the highest impact will be on household income (2.25 percent) followed by the village output (1.4 percentage) and employment (0.48 percent).
- From simulation results it was found that of all the individual activities and commodities in the village economy of Markabbinahalli, the highest impact was on hired labour services (2.92 percent increase) followed by small family household expenditure (1.02 percent), landless family household expenditure (0.95 percent) and repair and maintenance service (0.88 percent).
- Results have shown that on an average a household received 360 days of employment throughout the year and MGNREGP through its multiplier effect had provided employment to 18 households for 340 days a year. Of the total employment generated due to MGNREGP, 84 percent of the effect was on account of indirect demand for labour in other sectors of the village economy caused by multiplier effect. This shows that MGNREGP is yet to make a strong impact on livelihood security for the workers in the study village.
- There was no gender and caste bias in terms of gain in employment and income for MGNREGP participants.
- Participation across different age groups was found to be significantly different, workers belonging to age group 18 to 35 years and 35 to 50 years participated more than that of workers aged 50 years and above.
- Participation in MGNREGP had no effect on worker's migration status for agricultural year 2012-13 for Markabbinahalli village.
- Natural resource conservation was found to be predominant, both in terms of number of works undertaken and expenditure and private asset creation was marginal under MGNREGP for works completed during financial years 2009-10 to 2013-14 for Markabbinahalli Gram Panchayat.

Table 6.1: Summary of MGNREGP participation by different categories participants during financial years 2011-12 to 2013-14

		SC	Others	Overall
Numbers employed	Household	6	52	58
	Worker	25	162	187
Average days of employment received per annum	Household	59	40	42
	Worker	14	13	13
Average Number of family members worked under MGNREGP per annum		4	3	3

6.5 Policy Implications

Present study has important policy implications for policy makers, which are listed as follows.

1. Scale of MGNREGP should be large enough to have economy wide significant and substantial impact on output, employment and income.
2. Selection of activities to be taken up under MGNREGP should be done in such a way as to have activities with strongest linkages with rest of the village economy and material needs to be procured from within the village.
3. Increase the wage rate under MGNREGP and take up asset creation works and/or farm operations labour wage sharing basis on individual farms which would be a win-win situation for workers, farmers and programme implementing agency.
4. Community works like road and lane construction, drainage and public toilet construction, especially for women, and Swachh Bharat Activities aimed at betterment of village as a whole which would have better multiplier effects of MGNREGP and would generate enough jobs and check migration.
5. Creating more awareness among villagers about MGNREGP and its salient features would make participation more inclusive and transparent.
6. Material to labour ratio of 40: 60 must be adhered to without compromising on quality of assets created or works completed.

CHAPTER VII

REFERENCES

- ADELMAN, I., TAYLOR, J. E., AND VOGEL, S., 1988, Life in a Mexican village: a SAM perspective. *The Journal of Development Studies*, **25**(1): 5-24.
- AHUJA, U. R., TYAGI, D., CHAUHAN, S., AND CHAUDHARY, K. R., 2011, Impact of MGNREGA on Rural Employment and Migration: A Study in Agriculturally-backward and Agriculturally-advanced Districts of Haryana. *Agricultural Economics Research Review*, **24**:495-502.
- ANONYMOUS, 2006, Report on implementation of NREGA in Andhra Pradesh, Chattisgarh, Jharkhand and Madhya Pradesh (May-June, 2006), Centre for Budget and Governance Accountability, New Delhi, Report submitted to MoRD on 15 September 2006.
- ANONYMOUS, 2008, An Assessment of Performance of National Rural Employment Guarantee Programme in terms of its Potential for creation of Natural Wealth in India's villages, Centre for Science and Environment, New Delhi, Report submitted to MoRD.
- ANONYMOUS, 2009 a, Professional Institutional Network NREGA Draft Report, IIM Calcutta, Report submitted to MoRD in April, 2009.
- ANONYMOUS, 2009 b, Evaluation of National Rural Employment Guarantee Act in Cuddalore, Dindugal, Kanchipuram, Nagai and Thiruvallur district of Tamil Nadu (May –June, 2009), IIT Madras.
- ANONNOYMOUS, 2012, *Indian Economy*, Upkar Prakashan, Agra: 220-221.
- ANONNOYMOUS, 2014, *Gross Domestic Product: World Development Indicators Database*, World Bank, 1st July 2014, Web Published.
- BELLU, LORENZO GIOVANNI, 2012, *Social Accounting Matrix (SAM) for analysing agricultural and rural development policies Conceptual aspects and examples*, FAO, Rome, Italy, Web Published.
- CHAMBERS, R., 1989, Editorial introduction: vulnerability, coping and policy. *IDS Bull.*, **2**(2):1-7.
- CHAMBERS, R. AND CONWAY, G., 1992, Sustainable rural livelihoods: practical concepts for the 21st century. IDS Discussion Paper Number 296. Brighton, UK, Institute of Development Studies.

- DAS, V. AND PRADHAN, P., 2007, Illustration of change. *Economic and Political Weekly*, **42**(32):3283-3287.
- DESAI, T.S., NAGESWARA RAO, G.D., KIRESUR, V.R. AND BANTILAN, M.C.S., 2012, *Markabbinahalli Village at a Glance*, International Crops Research Institute for the Semiarid Tropics, Patancheru, Andhra Pradesh.
- DHANANJAYA, K., AND PRATHIBHA, M., 2011, Role of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in Rural Asset Creation in India –An Analysis. *Journal of Global Economy*, **7**(4):275-291.
- DRINKWATER, M. AND MCEWAN, M., 1992, *Household food security and environmental sustainability in farming systems research: developing sustainable livelihoods*. Paper presented to the Adaptive Planning Research Team Bi-annual Review Meeting, Mangu, Zambia, 13-16 April.
- DATT, G. AND MAHAJAN, A., 2013, *Indian Economy*, S. Chand & Company Pvt. Ltd New Delhi: 436-472.
- ESTEVEZ, T., RAO, K. V., SINHA, B., ROY, S. S., RAO, B., JHA, S., SINGH, B.A., PATIL, V., SHARMA, N., RAO, S., MURTHY, I. K., SHARMA, R., PORSCHE, I., BASU, K., AND RAVINDRANATH, N. H., 2013, Agricultural and livelihood vulnerability reduction through the MGNREGA. *Economic Political Weekly*, **48**(52): 94-103.
- GUPTA, S. P., 2011, *Statistical methods*. Sultan Chand & Sons, New Delhi: 656-700.
- HARISH, B. G., NAGARAJ, N., CHANDRAKANTH, M. G., MURTHY, P. S., CHENGAPPA, P. G., AND BASAVARAJ, G., 2011, Impacts and Implications of MGNREGA on Labour Supply and Income Generation for Agriculture in Central Dry Zone Of Karnataka. *Agricultural Economics Research Review*, **24**(5):485-494.
- HIRWAY INDIRA, SALUJA, M.R. AND BHUPESH YADAV, 2008, The Impact of Public Employment Guarantee Strategies on Gender Equality and Pro-poor Economic Development. UNDP Research Project No. 34.
- JOSHI, V., SINGH, S., AND JOSHI, K. N., 2008, Evaluation of NREGA in Rajasthan. *Institute of Development Studies, Jaipur, Monograph*, 79.
- KAMATH, R., MURTHY, R., AND SASTRY, T., 2008, NREGA Surveys in Anantapur, Adilabad, Raichur and Gulbarga (2007–08). *MoRD and UNDP Sponsored, Indian Institute of Management, Bangalore*.
- KHERA, R., 2008, Empowerment guarantee act. *Economic and Political Weekly*, **43**(35): 8-10.

- MANN, N., AND PANDE, V., 2012, *MGNREGA Sameeksha: An Anthology of Research Studies on the Mahatma Gandhi National Rural Employment Guarantee Act, 2005 2006–2012*. Orient Blackswan Private Limited, New Delhi, India: 1-3.
- McHUGH, M. L., 2009, The odds ratio: calculation, usage, and interpretation. *Biochemia Medica*, **19**(2):120-126.
- SARKAR, P., AND KUMAR, J., 2011, Impact of MGNREGA on Reducing Rural Poverty and Improving Socio-economic Status of Rural Poor: A Study in Burdwan District of West Bengal. *Agricultural Economics Research Review*, **24**:437-448.
- SUBRAMANIAN, S., AND SADOULET, E., 1990, The transmission of production fluctuations and technical change in a village economy: a social accounting matrix approach. *Economic Development and Cultural Change*:131-173.
- SUBRAMANYAN, A., 2007, Distributional effects of agricultural biotechnology in a village economy: The case of Cotton in India. *Ph.D. thesis*, University of Hohenheim, Germany.
- THORBECKE, E., 2000, August,. The use of Social Accounting Matrices in modeling. In *26th general conference of the international association for research in income and wealth Cracow, Poland (Vol. 27)*.
- USAMI, YOSHIFUMI, 2008, Construction of Regional Social Accounting Matrix with Natural Resource Accounts: Linking Village/Industry Level Data to Regional Level Studies, College of Life and Environmental Sciences, Osaka Prefecture University, Japan.
- VANAİK, A., 2008, NREGA and the Death of Tapas Soren. *Economic and Political Weekly*, **43**(30):8-10.
- VANITHA, S. M., AND MURTHY, P. S., 2011, An Economic Analysis of MGNREG Programme in Mysore District of Karnataka. *Agricultural Economics Research Review*, **24**: 415-422.
- YADAV, N. AND PANDA, M., 2013, *Indian Economy*, Arihant Publication (India) Limited, Meerut:220-221.

<http://nrega.nic.in/netnrega>

<http://panchamitra.kar.nic.in>



APPENDIX I

**Dept. of Agriculture Economics
U.A.S, GKVK, Bengaluru-65**

***Title: "Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka:
A SAM Analysis"***

Schedule for Grain Merchant/ Agri. Input trader

Name of owner: _____ name of shop: _____ mobile no.: _____

Annual turnover (Rs.): _____ monthly earning (Rs.): _____

1. Details of transaction

commodity	Value (Rs.)	Purchased from		Sold to		Remarks
		Within	Outside	Within	Outside	

2. Details of expenditure

Items of expenditure	Amount (Rs.)	Paid to	Remarks
Electricity bill			
Rent monthly			
Lease amount and period			
Wages monthly			
Newspaper			
Loading and unloading charges			
Communication Charges			
Transportation cost			
Warehousing cost			
Travelling cost			
Diesel charges			
Petrol charges			
Taxes			
Donation			
Other charges			

3. Details of capital expenditure

Name of Capital expenditure made	Amount(Rs.)	Item of capital expenditure purchased from		Remarks
		Within the village (Rs.)	Outside the village (Rs.)	
1.				
2.				
3.				



APPENDIX II

**Dept. of Agriculture Economics
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***Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka:
A SAM Analysis”***

Schedule for household

Name of the respondent:

Size of family:

Mobile no.:

Card holder: APL/BPL

1. Details of family member employment

Working Family members	M/F	Age (years)	Participation in MGNREGP	Occupation	Education	Place of work	MGNREGP wages (Rs.)	Income earned (Rs.)
1.								
2.								
3.								
4.								
5.								
6.								

2. Details of other sources of income

Source of income	Income earned (Rs.)	Location of source of income	Frequency of income generation	Remarks
1.				
2.				
3.				
4.				
5.				
6.				

3. Details of benefits received under different government schemes.

Name of scheme or programme	Monetary benefits (Rs.)	Non-monetary benefits	Remarks

4. Details of remittance

Remittance	In or out	Amount (Rs.)	Frequency	Remarks
1.				
2.				
3.				
4.				
5.				

5. Details of family expenditure

Items of expenditure	Average expenditure (Rs.)	From whom/where		Frequency of purchase	Remarks
		Within the village (Rs.)	Outside the 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 currency					
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, jatre.					
Stationary items					
School & college fees					
Donations					
Repairs in home					
Repair of bike or vehicle					
Construction work					
Rent					
Lease amount					
Taxes					
Others					



APPENDIX III

**Dept. of Agriculture Economics
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Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis”

SCHEDULE FOR PDS

Name of distributor:

Mobile No.:

1. Details of transactions of PDS

Particulars	Quantity	Amount (Rs.)	Remarks
Rice			
Wheat			
Sugar			
Kerosene			
Others			

2. Details of expenditure made

Particulars	Purchased from		Frequency of purchase or payment	Amount (Rs.)	Remarks
	Within village	Outside village			
1. Electricity					
2. Repair/ maintenance					
3. Salary or wages					
4. Lease amount					
5. Transportation					
6. communication charges					
6. Tax					
7. Others					

2. How much commission is fixed for distributor?

3. Who pays for loading and unloading charges?

4. Are you a resident of this village?



APPENDIX IV

**Dept. of Agriculture Economics
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Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis”

Schedule for Provision Store

Name of owner: _____ name of shop: _____ mobile no.: _____
Annual turnover (Rs): _____ monthly earning (Rs.): _____

Details of transaction

commodity	Value (Rs.)	Purchased from	Sold to	Remarks
Food grains				
FMCG				
Snacks and chats				
Kirana items				
Tobacco products				
Stationery				
First aid items				
Electric goods				
Others				

2. Details of expenditure

Items of expenditure	Amount (Rs.)	Paid to	Remarks
Electricity bill			
Rent monthly			
Lease amount and period			
Wages monthly			
Newspaper			
Loading and unloading charges			
Communication Charges			
Transportation cost			
Travelling cost			
Diesel charges			
Petrol charges			
Taxes			
Donation			
Other charges			

3. Details of capital expenditure

Name of Capital expenditure made	Amount (Rs.)	Item of capital expenditure purchased from		Remarks
		Within the village (Rs.)	Outside the village (Rs.)	
1.				
2.				
3.				
4.				



APPENDIX V

**Dept. of Agriculture Economics
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Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis”

Schedule for Service Providers (Barber/Tailor/Repair and Maintenance Shop etc.)

Name:

Mobile no.:

1. Details of services provided

Type of service	Charges per service (Rs.)	Services provided in a month		Remarks
		Within village	Outside village	
1.				
2.				
3.				
4.				

2. Details of expenditure made by

Particulars	Purchased from		Frequency of purchase or payment	Amount (Rs.)	Remarks
	Within village	Outside village			
1.inputs					
2.Electricity					
3.Rent					
4.Lease amount					
5.Salary or wages					
6.Transportation					
7.Repairs					
8.communication charges					
9. Tax					
10. Donations					
11.Others					

3. Details of capital expenditure

Name of Capital expenditure made	Amount (Rs.)	Item of capital expenditure purchased from (Rs.)		Remarks
		Within village	Outside village	
1.				
2.				
3.				
4.				



APPENDIX VI

**Dept. of Agriculture Economics
U.A.S, GKVK, Bengaluru-65**

***Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka:
A SAM Analysis”***
Scheduler for School

Name of the school: _____ name of the principal: _____
 Mobile no. of principal: _____ no. of the students in the school: _____
 Fees collected from students: _____

1. Details of expenditure of non-resident teachers within the village

Particulars	Amount (Rs.)	Frequency	Remarks
Transportation			
Food and snacks			
Beverage			
Others			

2. Details of Mid day meal programme

Particulars	Quantity		Value (Rs.)	Remarks
	Within	outside		
Rice				
Vegetables				
Pulses				
Wheat				
Spices				
Edible oil				
Sugar				
Salt				
Others				

3. Details of expenditure made by school

Particulars	Amount (Rs.)		Remarks
	Within	outside	
Stationary			
Furniture			
Repairs			
Sports material			
Others			

4. Details of free educational material provided by school

Particulars	Quantity		Value (Rs.)	Remarks
	Within	outside		
Text book				
School dress				
Bicycle				
Others				



APPENDIX VII

**Dept. of Agriculture Economics
U.A.S, GKVK, Bengaluru-65**

Title: “Impact of MGNREGP on Livelihood Security in Bijapur District of Karnataka: A SAM Analysis”

Schedule for Savings and Borrowings

1. Details of savings

Savings mobilizing agency	Amount of saving (Rs.)	How frequently savings are mobilized	Interest rate received on savings (%)	Location of saving agency		Remarks
				Within village	Outside village	
1.						
2.						
3.						
4.						

2. Details of borrowing

Sources of borrowings	Amount of loan (Rs.)		Interest rate (%)	Location of source		Frequency of installments	Installment paid (Rs.)	Remark
	Short term	Long term		Within village	Outside village			
1.								
2.								
3.								
4.								

