Macro-Economic Impact of MGNREGA in India: An Analysis in CGE Modeling Framework

RESEARCH PROPOSAL
Presented to
Partnership for Economic Policy (PEP)

By
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INDIA

15 June 2015
1. **Abstract (100 to 250 words)**

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE thematic foci, complete with a brief description of the data that will be used.

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), a social security measure of the Government of India that started in 2005, aims at generating employment for rural unskilled labourers at minimum statutory wage on self-selection basis through create rural assets. An expenditure of INR 389.77 billion by the government in the year 2012-13 under MGNREGA generated 2.11 billion person-days employment. Many researchers have analysed the impacts of the MGNREGA in terms of specific programme objectives in partial equilibrium frameworks, which have limited implications, given the complex inter-linked real world. A study adopting general equilibrium approach will provide more useful policy analysis. Therefore, the proposed study aims to evaluate the macro-economic impacts of the expenditure under the MGNREGA in a CGE modeling framework, and to conduct a comparative study of the various alternative policy options.

The main data sources will be SAM 2007-08 (which is based on I-O table 2007-08), Expenditure under MGNREGA, Prices, etc.

It is expected that the findings will improve the understanding of the macro-economic impacts of MGNREGA vis-à-vis other alternative policy options, and provide insight to policy makers and researchers. Further, it will contribute significantly to the discourse on social protection programmes.

The proposed study broadly addresses the issues relating to public expenditure under social protection programmes and rural labour market (specifically wages, skill updation of the labourer,
and gender gap in wages). Thus, it basically relates to improving the targeting of public expenditure and social assistance (i.e. PAGE theme 1).

2. Main research questions and contributions

Explain the focus (or key questions) of your research and its policy relevance.

2.1. Explain why you think this is an interesting research question and what the potential value added of your work might be (knowledge gaps). You might want to explain whether or not this question has been addressed before in this context (including key references), and if so, what do you wish to achieve (in addition) by examining the question again?

India is one of the fastest growing economies in the world, but the growth has bypassed certain sections of society. Exclusion and poverty are the country’s most significant developmental challenges. Social protection consists of government policies and programmes designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people’s exposure to risks, and enhancing their capacity to manage economic and social risks, such as unemployment, exclusion, sickness, disability and old age (Sharma et al. 2014). Social protection programmes are one of the remedial instruments of a government to reduce poverty and promote inclusiveness. Since poverty and inclusiveness are developmental challenges to many economies, like India, these programmes have found a place in the agenda of many governments in recent years (ILO 2014).

The high growth pattern as witnessed in India has augmented the rural and urban disparities and among different classes of households. The rural population, dependent mainly on agriculture and allied activities, is presently trapped in poverty and deprivation. The rural labourers, especially unskilled ones, remain unemployed or underemployed for most of the time due the seasonal variation in the agricultural employment. The situation becomes worse during droughts and natural disasters. It causes rural-urban migration and thus adds to the pressure on limited urban resources. Rural development is crucial for the inclusive and sustainable growth of an economy. The policy of the employment guarantee scheme is one of the policies which address this issue.

The employment guarantee scheme is not a new scheme; it has been well known since the Poor Employment Act 1817; the Poor Law Amendment Act 1834 in Great Britain (Blaug, 1963, 1964); and the New Deal programmes of the 1930s in the United States (Kesselman, 1978). In India, this provision of public works during famine may be traced to the 4th century BC (mentioned in Arthashastra, a book written by Kautilya, a political economist). Recently, such schemes have been adopted by both developed and developing countries with multi-dimensional purposes such as employment generation, reducing social gaps in wages, poverty reduction, building and maintaining public infrastructure, etc. Some notable examples of such schemes, mainly for poverty alleviation, are found in Chile (1987), India (1978), Pakistan (1992), Bangladesh (1983), Philippines (1990), Botswana (1960) and Kenya (1992).
The provision of employment guarantee directly transfers income to the poor through employment in public works on the basis of self selection (Drèze and Sen, 1991; Lipton 1996; von Braun, 1995; Besley and Coate, 1992; Besley and Kanbur, 1993). It provides income insurance during seasonal unemployment in agricultural labour market (Basu, 2007) by building capital assets and influencing rural-urban migration by preventing displacement of families in search of jobs and food (Drèze and Sen, 1991).

In India, social protection programmes have been initiated through legislation in the third decade of the twentieth century (ILO, 2014). There have been many central government-sponsored rural employment programmes since 1960. The Maharashtra Employment Guarantee Scheme, introduced in 1970, has been the most important programme at state level. Following its successful implementation, the central government introduced the National Rural Employment Guarantee Act in 2005, which was renamed as Mahatma Gandhi National Rural Employment Guarantee Act in 2009. The act entitles every rural household to a minimum of 100 days of paid work in a financial year at the statutory wage rate for casual works in creating rural assets such as road building, restoration of water bodies, land improvement, etc. The basic merit of such programme is that it helps in targeting beneficiaries (Ravi and Engler, 2015). The MGNREGA not only sets the lower floor of the wage rate in rural areas and generate rural income but also promotes gender equality in terms of wages and opportunity. It has a wider impact on the economy than merely enhancing the income of certain sections of society than is generally understood.

Initially, the act was notified in 200 rural districts in its first phase of implementation (with effect from 2 February 2006). It was later extended to cover entire country since 2008 with the exception of districts that have a hundred per cent urban population. The expenditure under MGNREGA (INR 88.23 billion) in the year 2006-07 generated 0.91 billion person days employment in the country. It rose to INR 389.77 billion in the year 2012-13 which accounted for 5.95 percent of expenditure under social services and 1.37 percent of the total expenditure in the same year. It generated 2.11 billion person-days employment in the year 2012-13 out of which 52.08 percent was for the women. What is noteworthy is that almost entire employment has been generated under the scheme for the marginalized segment of the society, for example 21.72 percent and 16.34 percent of the employment generated in 2012-13 went for the Scheduled Caste the scheduled tribes respectively, the most socially marginalized groups.. Therefore, it is a very significant intervention for inclusive growth in rural India.

There have been many studies on the impact analysis of the MGNREGA. Azam (2012) has shown its positive impact on agricultural wages. Imbert and Papp (2013) have observed that the programme’s higher private earnings (indirect benefits) are almost the same as wage earnings (direct benefits). Afridi et al. (2013) have found that women’s participation in the MGNREGA have improved children’s educational outcomes. The programme has had significant, positive impact on consumption expenditure, energy intake, and asset accumulation (Liu and Deiniger 2010; Ravi and Engler 2015). Thus, the MGNREGA has become a powerful instrument for inclusive growth in
rural India through its impact on social protection, livelihood security and democratic governance (Ministry of Rural Development, Government of India, 2012). Despite such evidence of success, some criticisms have also come from economists and policy analysts, for example Drèze and Khera (2009) have observed that it meets only a fraction of rural labour demand and that there is a wide inter-state variation. There have been discussions in different policy forums as to its benefits reaching out to the poor.

However, these studies, mentioned above, have been conducted in a partial equilibrium framework, and do not capture the macro-economic impacts of the MGNREGA that are generated due to the inter-dependence and inter-linkages in the real world market economy. We are not aware of any study that has analysed the impact of the MGNREGA in a general equilibrium framework. Sharma et al. (2014) have conducted a study in the SAM framework; it measures the impact of the MGNREGA in terms of output, income, revenue and employment, but is silent on the impact on wages, prices, and long-term impact, which is due to the limitation of the SAM framework. Therefore, it is very useful to conduct a study in a computable general equilibrium (CGE) modeling framework.

The proposed study aims to evaluate the macroeconomic impacts of MGNREGA as also impacts of certain alternative policy options as counterfactuals using CGE Modelling. Therefore, the main research questions of the present endeavour are:

1. What are the macro-economic impacts of expenditure under the MGNREGA?
2. What are the impacts of the MGNREGA on rural wages and gender gap in wages in the rural labour market?
3. What are the short run and long run impacts of MGNREGA?

The following are the counterfactuals:

1. What will be the macro-economic impacts, if the expenditure under MGNREGA is withdrawn?
2. What will be the macro-economic impacts if the expenditure under MGNREGA is withdrawn and the same amount is
   (i) given directly to beneficiaries (impacts due to conversion of MGNREGA to a direct cash transfer scheme)?
   (ii) spent on rural infrastructure such as road construction, restoration of water bodies, and land improvement without any statutory minimum wage?
   (iii) spent on skill generation? (*This counterfactual will be considered, if time will permit.*)
3. What are the short run and long run impacts of these alternative policy options?

The study will evaluate the macro-economic impacts on:

1. Output (sectoral and aggregate)
2. Income (corporate and households’ income)
3. Employment (sectoral and aggregate)
4. Wages (sectoral)
5. Commodity prices
6. Government revenue (direct and indirect taxes)
7. Income distribution across quintile classes of rural and urban households
8. Welfare gain

Social security programmes are usually evaluated in terms of fiscal cost and achievement in terms of stated objectives. In view of competing claims on resources at one level and the desire to maintain fiscal stability at another level, there is always some hesitation on the part of policy makers to continue the provisions of social security programmes. The positive macro-economic impacts, as we have shown in our recent study on the SAM framework (Sharma et al. 2014), provide a strong rationale for continuing, even enlarging, such programmes. The extension of the study by using a CGE framework, instead of a SAM framework, as we did in a recent study, would facilitate the simulation of policy options as counterfactuals. Thus, the findings of the proposed study can be expected to view the social security programmes in a different perspective.

2.2. Describe the specific policy issues/needs that your research aims to address; how your potential outcomes/findings may be used in policymaking?

- Justify timing of your research in terms of policy and socioeconomic needs/context – e.g. reference to existing/planned/potential policies at the national level.
- Evidence of previous consultation with potential users (e.g. policymakers and key stakeholders) to help define your research question is strongly encouraged. Include a list of names, institutions and email addresses when possible.

Recently, a new government has come to power in India. A major thrust of the new government is governance and development. It has shown strong intention to review the social protection programmes and redesign them to augment development process in the country. MGNREGA is one programme about which certain miss giving were expressed in some quarters recently. However, in the recent budget 2015-16, the government has not only continued the programme but also enhanced the allocation by INR 12 billion. In fact, in the wake of the recent extensive damage to
crops in India because of untimely rains, the government is planning to increase the number of days of employment from 100 to 200 days in the affected areas. As such the importance of MGNREGA as an important social security measure has been reinforced in the current regime. Therefore, there is a great need for evaluating the MGNREGA from a different perspective, such as the general equilibrium framework. This is the most important motivation for undertaking this study; apart from getting better insights into the working of the programme. Further, a comparative analysis of the macro-economic impacts of MGNREGA and counterfactuals at the time when the new government is reviewing the social protection programmes has far reaching significance for both policy makers as well as researchers.

Our recent study, Economic Impacts of Social Protection Programmes in India: An Illustrative Exercise in SAM Framework (Sharma et al., 2014), analyzes the output, income, employment and revenue effects of expenditure under selected social programmes viz. MGNREGA, Indira Aawas Yojana and National Social Assistance Programme in the year 2011-12 through SAM framework. This study finds that the increment in output and income is 2.81 times and 1.77 times of the initial expenditure respectively; the increment in employment is 9.12 million person-days; and the increment in revenue is almost one-fifths of the initial expenditure. This study has been presented in an IHD Seminar in which a bunch of experts from IHD as well as other institutions. Another study which mainly deals with impact of social protection programmes on income generation and income distribution across households (presented in the International Conference on "Poverty and Deprivation in South Asia" at Banaras Hindu University, Varanasi and in the conference on “Economy of Tomorrow” at Institute of Economic Growth, New Delhi) shows that social protection programmes have impact on the income distribution across the households and the income distribution may be in favour of the poor, if these are targeted to them. Further, the findings of these studies have also been discussed in the session on ‘social protection’ in the international conference on Meeting the Challenges of Employment and Social Protection in South Asia at India International Center, New Delhi. These studies have been widely appreciated by researchers and policy makers who participated in the conferences/seminars. Given the limitations of SAM framework as a method of analysis, we are persuaded to conduct more rigorous study in CGE modelling framework to analyze the long term impacts of these programmes. Some researchers and policy makers (viz. Dr. Pronab Sen, Chairman, National Statistical Commission, India; Shri S. M. Vijayanand, Special Secretary, Ministry of Rural Development, Govt. of India; Dr. Savita Sharma, Advisor, Perspective Planning Division, NITI Ayog; Dr. S. R. Hashim, Former Member Secretary, Planning Commission and Former Chairman, UPSC; Prof. Alakh N. Sharma, Director, IHD) emphasized the need to analyse the macro economic impacts (especially wages, prices, gender gaps in wages and employment) of such programmes with alternative policy options in a dynamic framework.

We have consulted a few potential users for the proposed study in both formal and informal interactions and have received encouragement for the study. Many have agreed to participate actively in the expert consultation workshops and seminars, if project is approved. Some of them...
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<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
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### 3. Methodology

Presentation of the specific techniques that will be used to answer the research questions and how exactly they will be used to do so. Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so. Explain if these methods have already been used in the context you are interested in (including key references).

The objective of the MGNREGA is to ensure livelihood security for the poor through creation of durable assets, improved water security, soil conservation and higher land productivity. It generates income for the poor in the process of durable rural assets. The increased income, thus the poor earn, affects the demand of commodities in the economy. Further, the fixation of minimum statutory wage for the unskilled workers under MGNREGA has impact on the supply of labourer, especially, in the agriculture sector which absorbs huge number of unskilled labourers in the rural area. Thus, this programme has economy-wide impact by influencing commodity market, factor market, household income as well as government revenue.

The real world is very complex and inter-connected. Any exogenous change (i.e. policy, technology, etc) has direct as well as indirect impact on different sectors and parts of the economy due to their inter-linkages. The computable general equilibrium (CGE) model captures the interactions between sectors and economic agents keeping key macro-economic balances. In general, it is mainly based on neo-classical assumptions. Given the specific features, the CGE models are applied for policy analysis.

The proposed study will use PEP-1-t CGE Model which is a recursive-dynamic CGE model. The dynamic CGE model for the economy will enable us to evaluate both the short term and long term macro-economic impacts of expenditure under the MGNREGA and similar policy options. The
impact of training programmes to unskilled workers on the rural labour market and other macro-economic variables also requires a dynamic framework. The income transfer to the poor through alternative policy options like direct cash transfer directly affects their commodity basket of consumption. To incorporate this information in the model, a dynamic CGE model is highly useful analytical tool.

**Steps**

1. **Modification of Social Accounting Matrix (SAM) for the year 2007-08 for India.**

   We have a 32-sector SAM for the year 2007-08 for India (Sharma et al.2014) with two factors of production (viz. Labour and Capital) and five household categories for both rural and urban areas. The household categories are categorized in quintile classes based on monthly per capita expenditure for both rural and urban areas.

   **Recategorization of Factors of Production and Households**

   Given the nature of the study, the factors of production will be divided into three categories—labour, capital, and land. Further, the labour will be disaggregated into male and female labour. The male and female labour will be further disaggregated into unskilled semi-skilled and skilled labour.

   In addition to it, if required, these household categories may be further disaggregated into occupational categories (e.g. agricultural labourer, non-agricultural labourer, agricultural self employed, non-agricultural self employed, salaried class, casual labourer, etc).

   **Main Features of the Programme**

   The mandate of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 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. To ensure that the spirit of the Act is not diluted and wage employment is the main focus, MGNREGA mandates that in the total cost of works undertaken in a village, the wage expenditure to material expenditure ratio should be 60:40. Further, the focus of the scheme shall be on the following works in their order of priority:-

   (i) Water conservation and water harvesting;

   (ii) Drought proofing (including afforestation and tree plantation);

   (iii) Irrigation canals including micro and minor irrigation works;

   (iv) Provision of irrigation facility, horticulture plantation and land development facilities to land owned by households belonging to the Scheduled Castes and Scheduled Tribes or below poverty line families or to beneficiaries of land reforms or to the beneficiaries under the Indira Awas Yojana of the Government of India or that of the small farmers or marginal
farmers as defined in the Agriculture Debt Waiver and Debt Relief Scheme, 2008;

(v) Renovation of traditional water bodies including desilting of tanks;

(vi) Land development;

(vii) Flood control and protection works including drainage in water logged areas;

(viii) Rural connectivity to provide all-weather access; and

(ix) Any other work which may be notified by the Central Government in consultation with the State Government.

The above details of the programme clearly indicate that the programme mainly aims to generate employment in rural areas while creating some durable assets i.e. capital formation in the rural areas. Therefore, it is the construction sector in the rural area which provides the employment to the unskilled rural labourers by creating some assets.

**Disaggregation of Construction Sector and Gross Fixed Capital Formation**

In the I-O Table, provided by Central Statistical Organization, Government of India, there is only one construction sector. To disaggregate it into public and private construction sectors, the required additional information is not available. However, from a village SAM, we may obtain coefficients of construction sector which may be applied as coefficient of construction activities under MGNREGA. Similarly, the sector wise ratios of Gross Fixed Capital Formation (GFCF) in a village SAM may be used for preparation of GFCF through MGNREGA. Therefore, in the proposed study, the construction and GFCF will be disaggregated as follows:

**(a)** Disaggregation of construction sector into two, namely ‘MGNREGA Construction’ and ‘Other Construction’.

Given the specific nature of the programme, the GVA in ‘MGNREGA Construction’ sector will be given to only unskilled labourers. In ‘Other Construction’ sector, the GVA will be disaggregated into unskilled labourers, semi-skilled labourers, skilled labourers, capital and land. Further, the all above categories of labour will be disaggregated into male and female.

**(b)** Disaggregation of GFCF into two, namely ‘MGNREGA GFCF’ and ‘Other GFCF’

2. **Construction of a dynamic CGE model for the proposed study.**

PEP-1-t CGE Model will be applied for the study. If required for the proposed study, it will be modified in consultation with the resource persons.

Financing MGNREGA Expenditure: We assume that the MGNREGA expansion will be
financed by government revenue. The budget deficit which arises due to MGNREGA expansion will be met by raising taxes. *(If time will permit, we will also analyze if the MGNREGA expansion will be met by borrowing, as an alternative scenario)*

3. **Analyzing the macroeconomic impacts of the MGNREGA Programme**

The model will be simulated for following scenarios

(a) Increasing government expenditure sufficient to provide 100 days employment to each household

(b) Withdrawing expenditure under MGNREGA

(c) Withdrawing expenditure under MGNREGA and the same amount is given directly to beneficiaries (impacts due to conversion of MGNREGA to a direct cash transfer scheme)

(d) Withdrawing expenditure under MGNREGA and the same amount is spent on rural infrastructure such as road construction, restoration of water bodies, and land improvement (MRNREGA Construction sector, as discussed above) without any statutory minimum wage.

(e) Withdrawing expenditure under MGNREGA is withdrawn and the same amount is spent on skill generation *(This scenario will be analyzed, if time will permit).*

4. **Data requirements and sources**

This is a critical part of the proposal. The key issue is to explain the reason for the use of the particular data. You must establish that they are ideal for the question you wish to address. Please consult the "Guide for designing a research project proposals" for more detail.

The proposed study will mainly based on SAM for India for the year 2007-08 (Sharma et al., 2014) which is based on latest available input-output table 2007-08 provided by Central Statistical Office, government of India. This is a 32-sector SAM for the year 2007-08 for India (Sharma et al.2014) with two factors of production (viz. Labour and Capital) and five household categories for both rural and urban areas. The household categories are categorized in quintile classes based on monthly per capita expenditure for both rural and urban areas. As discussed in the section 3 (i.e. Methodology), this SAM will be modified further, given the requirement of the proposed study.

5. **Policy influence plan (or research communication strategy)**

- Referring to the policy context described in section 2.1., identify potential users of your research findings, including policymakers and other key stakeholders. Provide a list of institutions and, whenever possible, specific individuals to be targeted for effective policy influence. Please also indicate whether you have already made contacts within the institutions.

- How, in the elaboration and execution of your project (from design to dissemination), will you consult/communicate with these users to both gather their inputs and keep them informed of your project (expected contributions and uses), in order to increase chances of your findings to be taken up into policymaking?

You can refer to PEP's research communications strategy and guidance to have a better idea of what is expected in terms of activities for policy outreach and dissemination.

The proposed study will be conducted in active consultation with Ministry of Rural Development (Government of India and various state governments), NITI AYOG (formerly Planning Commission of India), National Statistical Commission of India, International Labour Organization, World Bank, United Nations Development Programme, NGOs working in the areas of rural development and researchers working in the areas of SAM, CGE modeling and rural development. There are many potential users of the proposed study and the number will increase with time through dissemination and distribution of the findings. Some of them are following:

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<tr>
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<td>Dr. G. Manjunath, Assistant Labour Commissioner</td>
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<td>ILO</td>
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<td>NREGA Watch</td>
<td>Prof. Jean Dreze</td>
<td>NGO</td>
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<td>Andhra Pradesh Non-Governmentan Organizations Alliance</td>
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<td>Ms. Renana Jhabvala</td>
<td>NGO</td>
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<td>Laurie Baker Centre for Habitat Studies</td>
<td>Dr. K. P. Kannan, Chairman and Managing Director</td>
<td>Researcher &amp; Institution</td>
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<td>Center for Development Alternatives</td>
<td>Prof. Indira Hirway, Chairman</td>
<td>Researcher &amp; Institution</td>
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<td>Institute of Economic Growth, Delhi</td>
<td>Prof. B. K. Pradhan, Head, Development Planning Centre, Institute of Growth</td>
<td>Researcher &amp; Institution</td>
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<td>India Development Foundation</td>
<td>Prof. M. R. Saluja, Distinguished Professor</td>
<td>Researcher &amp; Institution</td>
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<tr>
<td>Institute of Social and Economic Change, Bangalore</td>
<td>Dr. S. Madheswaran</td>
<td>Researcher &amp; Institution</td>
</tr>
<tr>
<td>Asian Development Research Institute, Patna</td>
<td>Dr. P.P. Ghosh, Director</td>
<td>Researcher &amp; Institution</td>
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<td>Ranchi University</td>
<td>Dr. Ramesh Sharan</td>
<td>Researcher &amp; Institution</td>
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<tr>
<td>Institute of Development Alternatives Chennai</td>
<td>Dr. J. Jeyaranjan</td>
<td>Researcher &amp; Institution</td>
</tr>
<tr>
<td>Institute of Social Studies Trust</td>
<td>Dr. Ratna M. Sudarshan,</td>
<td>Researcher &amp; Institution</td>
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<tr>
<td>(ISST) New Delhi</td>
<td>Advisor</td>
<td>Researcher &amp; Institution</td>
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<tr>
<td>Indian Institute of Technology, Delhi</td>
<td>Dr. Reetika Khera, Associate Professor</td>
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<tr>
<td>Indira Gandhi Institute of Development Research, Mumbai</td>
<td>Dr. Mahendra Dev S, Director</td>
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<tr>
<td>Institute of Development Studies, Jaipur</td>
<td>Varsha Joshi</td>
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<tr>
<td>Council for Social Development</td>
<td>Prof. Ashok Pankaj, Senior Fellow</td>
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<tr>
<td>Center for Development Alternatives</td>
<td>Prof. Indira Hirway, Director</td>
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<tr>
<td>Indian Statistical Institute, Kolkata</td>
<td>Dr. Buddhadeb Ghosh, Associate Scientist</td>
<td></td>
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<tr>
<td>Jawaharlal Nehru University</td>
<td>Prof. Ravi Srivastava</td>
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<tr>
<td>Council for Social Development, Hyderabad</td>
<td>Dr. D.N. Reddy, ICSSR National Fellow</td>
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</table>

**Research Communication Strategy**

Communication strategy would specifically aim at reaching out to opinion and policy makers. Salient features of the communication strategy include;

1. Identifying audiences for different communication mediums

A data base would be developed through compilation of various mailing lists that are available with the institute. This would ensure building a strong constituency of relevant practitioners, policy makers and stakeholders who would receive various forms of communication material, including print and electronic communication. Information collected from local, national, regional levels would be shared with all relevant stakeholders, academicians, experts, institutions and sponsors etc. through mass mailing option.

2. Development of effective external communication material to share research findings across different stakeholders

3. Wider information dissemination strategies for knowledge sharing: Consultations/Workshops/Seminars: For effectively communicating an on-going dialogue or the outputs and activities (i.e. the process) of the research, workshops / consultations/seminars would be organised

An initial consultation has already been done with the faculties at the IHD. The institution has wide experience of research on MGNREGA. Further, views are sought as to the usefulness of the study from the following persons viz. Dr. Pronab Sen (Chairman, National Statistical Commission, India), Shri S. M. Vijayanand (Special Secretary, Ministry of Rural Development, Govt. of India), Dr. Savita Sharma (Advisor, Perspective Planning Division, NITI Ayog), Dr. S. R. Hashim (Former Member Secretary, Planning Commission and Former Chairman, UPSC), and Prof. Alakh N.
Sharma (Director, IHD). We received some useful suggestions such as to incorporate the issues of formal and informal labourers, skilled and unskilled labourers and women in our study. We are also advised to use latest available information about the economy as much as possible as the government has redefined certain sectoral activities in national accounting.

An inception workshop will be organized at the initial stage of the study to obtain inputs from various stakeholders (concerned government officials, ILO, World Bank, UNDP, FAO, researchers, and NGOs) and to sharpen the research focus.

An expert consultation workshop will be held at the middle stage of the study to share the methods, theories and assumptions adopted in construction of the SAM and the CGE model with experts and researchers working in this area for obtaining their comments and suggestions. The feedback obtained in this workshop will be applied to modify and to improve the SAM and CGE model.

A capacity building workshop will also be held for young researchers working in this area to discuss methods to use the data from different sources consistently and to construct a SAM and CGE model. It will raise their interest in the ongoing study and enable them to use these as a policy analysis tool.

An international seminar/workshop will be organized before the submission of the final report to share findings and get comments and suggestions from various stakeholders. The feedback obtained in this seminar/workshop will be considered for modification, if needed, and appropriate policy recommendations.

Publications:
Policy briefs and working papers will be published and distributed to the various stakeholders and also uploaded to the website of the institution.

Paper/working papers based on the study will be presented in various national/international conferences/seminars/workshops/policy forums. The modified draft, based on feedbacks, will be submitted to the funding agency. With the approval of funding agency, a summary of the report will be distributed to various stakeholders.

Academic research papers based on the study will be submitted for publication to reputed international journals. After incorporating suggestions and comments from the funding agency, researchers and other stakeholders, the final report will be published in a book form.

Website: is an important communication medium for dissemination. A dedicated dynamic, interactive micro site/ webpage with regular updation for sustaining visibility would be hosted on the Institute’s website. It would be developed to showcase results and research outputs. This would achieve dissemination at National, Local and International levels.
Audio Visual Documentation: is a tool to exhibit spread and record opinions and bring it to common knowledge to effectively convey a message in a very dynamic and persuasive manner. Various activities of the project would be audio visually documented. Short video and audio clips would be uploaded on the micro site from time to time. A short documentary based on the project findings would be prepared and presented along with the project report.

Media Engagement:
The engagement strategy shall involve proactive approach and outreach to all media by efficiently managing and facilitating the media for best coverage of the activities of the project. Press briefs, feature stories based on case studies op eds for knowledge sharing etc. would be prepared and circulated.

A blog will also be created to generate discussion on the study and to get feedback.

6. List of team members
Indicating their age sex, as well as relevant/prior training and experience in the issues and research techniques involved (start with team/project leader).

Note that PEP favors gender-balanced teams, composed of one senior (or experienced) researcher supervising a group of junior researchers, including at least 50% female researchers, all contributing substantively to the research project. PEP also seeks gender balance in team leaders and thus positively encourages female-led research teams. (Each listed member must post an up-to-date CV in their profile on the PEP website - refer to “How to submit a proposal”)

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex (M,F)</th>
<th>Training and experience</th>
</tr>
</thead>
</table>
| Prof. Atul Sarma      | 74  | M         | Extensive teaching and research experience  
Member of different committees and of governing bodies of different institutions |
| Dr. Akhilesh K. Sharma| 33  | M         | Two years’ post-doctoral experience  
Seven years’ doctoral research experience  
One year’s teaching experience  
Training on application of econometrics system modeling  
SAM construction and CGE modeling  
Adept in working in primary and secondary data  
Efficient in using statistical packages like STATA, SPSS, MICROFIT, STELLA and GAMS |
| Ms. Charanjit Kaur    | 28  | F         | Three-and-a-half years’ research experience  
Adept in working on secondary data  
Efficient in using statistical packages like STATA, SPSS, R and in computer programming |
7. **Expected capacity building**

Description of the research capacities that team members (and potentially their affiliated institutions) are expected to build through their participation in this project.

This is an important aspect in the evaluation of proposals and should be presented in some detail. What techniques, literature, theories, tools, etc. will the team and their institutions learn (acquire in practice) or deepen their knowledge of? How will these skills help team members in their career development? Also indicate which specific tasks each team member would carry out in executing the project.

The construction of a SAM and CGE model requires sound theoretical knowledge of economics and practical knowledge of the GAMS software package. The team will learn to use different secondary data sources in a consistent way for constructing a SAM. Further, the team will learn to apply general equilibrium theory in operational form and work on CGE modelling. The interpretation of the result and coming forward with policy recommendations will be the most challenging task for the team, given the multi-dimensional constraints in the real world.

Except the resource person (Prof. Atul Sarma), all the team members are at the initial stage of their career. The proposed study will definitely add to their knowledge and research capabilities which will be useful in their future research and successful career. The resource person has been part of the our recent study on social protection programmes (Sharma et al. 2014) and conducted many study on public expenditure applying economic modeling. His extensive experience will be very much useful for the proposed study.

Three members in the team (namely Prof. Atul Sarma, Dr. Akhilesh K. Sharma and Ms. Deeksha Tayal) are associated with the Institute for Human Development. Among others, employment, poverty and social protection are the main research areas of the institute. The knowledge and research capabilities learned by the team will be useful for the institute in its future research. Ms. Charanjit Kaur is a doctoral student and working on demographic issues. Her participation in the research will be useful in terms of enhancing her understanding economic modeling and its application for policy analysis.

<table>
<thead>
<tr>
<th>Name</th>
<th>Task/contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Atul Sarma</td>
<td>CGE modeling, analysis and report writing</td>
</tr>
<tr>
<td>Dr. Akhilesh K. Sharma</td>
<td>Construction of SAM, CGE modeling, analysis and report writing</td>
</tr>
<tr>
<td>Ms. Charanjit Kaur</td>
<td>Literature review, data collection and construction of SAM, report writing</td>
</tr>
</tbody>
</table>
### 8. List of past, current or pending projects in related areas involving team members

Name of funding institution, title of project, list of team members involved

<table>
<thead>
<tr>
<th>Name of funding institution</th>
<th>Title of project</th>
<th>Team members involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Development Research Centre, Canada</td>
<td>Economic Impacts of Social Protection Programmes in India: An Illustrative Exercise in Social Accounting Matrix Framework</td>
<td>Prof. Atul Sarma, Dr. Akhilesh K. Sharma</td>
</tr>
<tr>
<td>Planning Commission of India and the Norwegian Government through Chr. Michelsen Institute, Bergen, Norway</td>
<td>Construction of a Social Accounting Matrix for India 2007-08</td>
<td>Dr. Akhilesh K. Sharma</td>
</tr>
<tr>
<td>International Development Research Centre, Canada</td>
<td>Price Subsidies and Irrigation Investment in India: Macro implications</td>
<td>Prof. Atul Sarma</td>
</tr>
<tr>
<td>Indian Council of Social Science Research, India</td>
<td>Economic Impact of Government Expenditure - A Study in an Input-Output Framework</td>
<td>Prof. Atul Sarma</td>
</tr>
<tr>
<td>UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS)</td>
<td>Gender and State Climate Change Action Plans in India: Research and policies to enable poor women and rural communities adapt to climate change</td>
<td>Ms. Deeksha Tayal</td>
</tr>
<tr>
<td>Pradan</td>
<td>Facilitating Women in Endemic Poverty Regions of India to Access, Actualize and Sustain Provisions on Women Empowerment</td>
<td>Ms. Deeksha Tayal</td>
</tr>
</tbody>
</table>

### 9. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project

No ethical, social, gender or environmental issues or risks are involved in the proposed study.
10. References and plagiarism:

Applicants should also be very careful to avoid any appearance of plagiarism. Any text that is borrowed from another source should be carefully contained between quotation marks with a reference to the source (including page number) immediately following the quotation. It is essential that we be able to distinguish what you have written yourself from what you have borrowed from elsewhere.

Note also that copying large extracts (such as several paragraphs) from other texts is not a good practice, and is usually unacceptable. For a fuller description of plagiarism, please refer, for example, to the following website:

- [http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism](http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism)

PEP will be using a software program to detect cases of plagiarism.


