MGNREGA POLICIES AND DETERRENCE OF DEVELOPMENT IN RURAL INDIA: AN ANALYTICAL APPROACH

PARTHA PRATIM DUBE*
Garalgacha Surabala,
Vidyamandir,
West Bengal, India

PARTHA GANGOPADHYAY,**
University of Western Sydney,
NSW, Australia

The paper offers two new insights in the context of the Mahatma Gandhi national rural employment guarantee act (MGNREGA) in India: first, we establish that migration of the skilled workers can occur under the MGNREGA scheme due to the low wage rate while the quality of work degrades as skilled workers migrate. As a result, we argue, only subsidies can offer a helpline in this regard. Secondly, this paper also argues that the political economy assumes critical importance for any welfare intervention like MGNREGA. We hence model the political economy of rural sector to explain why MGNREGA policies can fail. We show that, in situations where political parties and politicians can sequentially commit first to *de facto* (local) tax rates, and then levels and distribution of local public goods such as institutions and infrastructure, the political equilibrium is an *under-provision- equilibrium*. In the under-provision-equilibrium, the local government at the grass-root level of democracy chooses low tax rates (*de facto*) and offers inadequate local public goods, which can thus be an equilibrium outcome, which will in turn deter rural development through MGNREGA policies to eradicate rural poverty.

Keywords: Migration equilibrium; Srinivasan-Bhagwati subsidy; Under-provision equilibrium; Electoral games; Local public goods.

JEL Classification: C78, J31, O21, Q10, R13

1. Introduction

The national rural employment guarantee act (NREGA) of 2005 is now renamed Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), which is

---

*Corresponding author, Email: ppdube1@gmail.com
** Email: p.gangopadhyay@uws.edu.au.

widely considered a revolutionary step to stamp out rural poverty and unemployment in India. This Act is also a critical measure in empowering the marginalised people from rural India. The Act has led to the formalisation of the National Rural Employment Guarantee Scheme – the first of its kind in the world – to create decentralisation and deepening of the democratic system by giving primacy to the Panchayati Raj institution of India. From Dreze (2007) we learned that the scheme has mixed successes. The goal of this paper is to develop a set of analytical models to explain why the employment guarantee scheme has moderate successes since it can often fail. The plan of the paper is as follows: in Section 2 we provide a summary of the background literature. In sections 3 and 4 we offer a detailed analysis for explaining a sub-optimal allocation of labour in the rural sector caused by a low wage, migration of skilled workers and poor quality of work under the employment guarantee scheme. In section 5, we develop a model of political economy to explain the political failure to explain why the employment guarantee scheme can fail to create quality projects. In other words, the political failure to create the appropriate infrastructure - under the employment guarantee scheme – in the rural economy can propel and perpetuate underdevelopment in rural India. We conclude in section 6.

2. Background

Recently The Government of India has started a new scheme to eradicate the rural poverty in India. The name of this scheme is Mahatma Gandhi National Rural Employment Guarantee Act. It guarantees one hundred days job to all rural workers in a year. Job cards were distributed among the workers for this very purpose. One of the objectives of this scheme is also to create fixed (local) assets in a village. According to the Government of India, since its inception in 2006, around ₹1, 10,000 crore has gone directly as wage payment to rural households and 1,200 crore person-days of employment has been generated. On an average, 5 crore households have been provided employment every year since 2008. Note that one crore is equal to 100 million. Many interesting research insights have evolved in this arena. Various interesting aspects are still emerging from these investigations. Munro *et al* (2013) have found through a field experiment in Uttar Pradesh that working with spouses is associated with significantly higher team productivity. But it does not point out about the quality of the work when both spouses are unskilled workers. Niehaus and Sukhtankar (2013) have stressed the importance of corruption in India but have not considered the degradation of quality of workmanship in MGNREGA. Datta and Singh (2014) have offered an analysis to explain the participation and the performance under the MGNREGA in West Bengal. But none has offered a solution to the problems of rural underdevelopment. We are to show analytically that the quality of the work under the MGNREGA is not at all satisfactory due to the clustering of unskilled workers. The wage rate is very low and for that reason skilled workers are not participating in MGNREGA. In order to retain the skilled workers under the MGNREGA scheme and to maintain the quality of the work, we show that subsidies are needed to raise the wage rate of MGNREGA workers.

3. A Basic Economic Model

Let us suppose that there are two sectors, Firm (F) and MGNREGA (N), in an economy. They produce units of output X_F and X_N, and employ L_F and L_N units of labor. The output in each sector is supposed to be a function of labor,

$$X_i = f_i(L_i), f'_i > 0, f''_i < 0, I = F, N \tag{1}$$

The total labor unit available in this economy is fixed at L. Hence

$$L_F + L_N \leq L, L_F, L_N \geq 0. \tag{2}$$

The MGNREGA sector can be subdivided into two sub-sectors also; one is comprised of skilled labor (L_S) and another is unskilled labor or deceased labor (L_D). Hence

$$L_S + L_D = L_N, L_S, L_D \geq 0 . \tag{3}$$

i.e.,
$$L_F + L_S + L_D \leq L, \tag{4}$$

and
$$X_S = f_S(L_S), f'_S > 0, f''_S < 0 \tag{5}$$

$$X_D = f_D(L_D), f'_D > 0, f''_D < 0 \tag{6}$$

i.e.,
$$X_N = f_N(L_N) = X_S + X_D = f_S(L_S) + f_D(L_D) \tag{7}$$

Let w_F and w_N be the firm market wage and MGNREGA wage respectively.

Firm owner's objective is to maximize profit.

Then,
$$f'_F(L_F) = w_F \tag{8}$$

Firm wage has a lower bound, say $\bar{w}$,

Then,
$$w_F \geq \bar{w} \tag{9}$$

Firm owner's profit maximizing policy leads to

$$f'_F(L_F) = \bar{w} \tag{10}$$

The wage rate of MGNREGA policy is low. The total labor force in the firm sector is equal to $L - L_N$ and the probability of a migrant finding firm employment is assumed to be $\dfrac{L_F}{L - L_N}$. Since workers maximize expected earnings.

$$f'_N(L_N) < \bar{w} \frac{L_F}{L - L_N} \tag{11}$$

Hence if (11) holds workers would migrate from the MGNREGA sector to firm sector.

The migration equilibrium is attained when,

$$f'_N(L_N) = \bar{w} \frac{L_F}{L - L_N} = \bar{w} \frac{L_F}{L - L_S - L_D} \tag{12}$$

But firms need skilled workers, so L_D would be minimum, say negligible and L_S would be maximum. So MGNREGA is a migration starting policy. Practically skilled labor, the

creator of a fixed assets in a finer mood and these assets have a definite productive as well as social values migrates from MGNREGA to firm. So (12) becomes,

$$\bar{w}\frac{L_F}{L - L_S} \tag{13}$$

4. Extension of the Economic Problem of MGNREGA

Let us suppose that there are n workers in MGNREGA in a certain area. We denotea worker's skill by q, $0 \leq q \leq 1$. Let q_i be the skill of a i-th worker. Let B be the quality output of a worker to perform a work. Then when a work is completed, the expected quality output (L) is:

$$L = q_1\, q_2\, ...q_n\, n\, B = \prod_{i=1}^{n} q_i\, n\, B \tag{14}$$

In this situation any farm would try to get the maximum skill from his workers. Now if the authority of MGNREGA try to maximize the quality $S(q)$, its maximization problem would be

$$\underset{i}{\text{Max}} \prod_{i=1}^{n} q_i \text{n B-}\sum_{i=1}^{n} S(q_i) \tag{15}$$

with a first order condition

$$S'(q_i) = \prod_{j \neq i} q_j\, n\, B \tag{16a}$$

Now set $q_H = \max \{q_1, q_2,..,q_n\}$ and $q_L = \min \{q_1, q_2,..,q_n\}$ and obviously

$$q_H > q_L \tag{16b}$$

Define A_{HL} as a quality of work employing (q_1, q_2, …,q_n) vector bundle of workers.

Hence, $\qquad\qquad A_{HL} = q_H\, q_L\, D - S(q_H) - S(q_L) - \beta \tag{17a}$

where $\qquad\qquad D = \dfrac{q_1 q_2 ... q_n}{q_H q_L} nB \tag{17b}$

$$\beta = \sum_{i=1}^{n} S(q_i) - S(q_H) - S(q_L) \tag{17c}$$

Now due to migration, a new situation arises and we will deal with this problem.

Define A_{HH} as a quality of the definite MGNREGA work replaced q_L worker with a q_H worker and likewise for A_{LL} . Hence

$$A_{HH} = q^2{}_H D - 2S(q_H) - \beta \tag{18}$$

$$A_{LL} = q^2{}_L\, D - 2S(q_L) - \beta \tag{19}$$

And that gives

$$A_{HL} \geq A_{LL} \tag{20}$$

It gives a total gathering of unskilled worker while the quality of the work under the MGNREGA is also poor.

4.1 Discussion

Now to retain the skilled workers in MGNREGA, start for the subsidy. Let subsidy (S) be given to MGNREGA workers only both to skilled and unskilled workers. That will lead to the conclusion that social welfare function (U)will increase according to the subsidy given.

$$f'_N(L_N) + S = \overline{w}\frac{L_F}{L - L_S - L_D} \tag{21}$$

Note that $S < \overline{w}$ and also $S < S^*$, where S^* is Srinivasan-Bhagwati subsidy (see Srinivasan-Bhagwati, 1975).

If S is increased then social welfare function U increases. This may be proved as follows.

Since, $$U = f_F(L_F) + f_N(L_N) \tag{22}$$

L_N depends on subsidy S.

$$\frac{dU}{dS} = f'_N\frac{dL_N}{dS} \tag{23}$$

From (14), we have

$$f'_N L + SL - f'_N L_S - SL_S - f'_N L_D - SL_D - \overline{w}L_F = 0 \tag{24}$$

By differentiating with respect to S, we have

$$L f''_N \frac{dL_N}{dS} + L - L_S f''_N\frac{dL_N}{dS} - L_S - L_D f''_N \frac{dL_N}{dS} - L_D - \overline{w} \frac{dL_F}{dS} = 0 \tag{25}$$

Here, $\frac{dL_F}{dS} = 0,$ since it does not depend on S.

Regrouping leads it,

$$\frac{dL_N}{dS} = \frac{L_D + L_S - L}{\left(L - L_S - L_D\right)f''_N} = -\frac{1}{f''_N} \tag{26}$$

$$\frac{dU}{dS} = -\frac{f'_N}{f''_N} \tag{27}$$

Since, $$L_F + L_N \leq L, \; L_F, L_N \geq 0 \,, f'_N > 0, f''_N < 0 \,.$$

So, $\frac{dU}{dS} > 0$

This completes the proof.

5. Political Economy and Under-provision-equilibrium: Basic Set-up of the Rural Economy under the MGNREGA Scheme

The political economy of development revolves around the question of how to structure democratic institutions to ensure a fair and efficient allocation of public goods in the rural economy. The new governance literature has unequivocally emphasized citizen empowerment as a tool for improving the workings of democratic institutions in order to improve allocation of public goods (World Bank, 2000). There is no denial of the fact that one of main goals of the MGNREGA scheme is to empower the marginalised people at the lowest level of democratic self-governance. The lowest level of democratic self-governance in rural India is the elected local government called *Gram Panchayat* responsible for allocation of public goods at the village level. The 73rd Constitutional Amendment Act of India in 1993 made it mandatory for Indian states to hold elections for *Gram Panchayats* and to give them policy-making powers, however it is still unclear if the political decision-making has reached the grass-root level of a Gram Panchayat (hereafter GP) since participation in the political process at the local level has been hampered by the dominance of GP by elite and politically powerful players (see Bardhan and Mookherjee, 2000; Platteau and Abraham, 2002).

In order to create more effective participation at the GP level, the Government of India enacted a new legislation to make the meeting of GP compulsory with local residents in what is known as *Gram Sabha Meetings* (GSM). The GSM is meant to better aggregate citizens' preferences into collective decisions by allowing a better flow of information and also by providing a means for monitoring the actions of elected representatives. The bite of the GSM is somewhat weakened since the elected representatives can choose both the frequency and agenda of such meetings. It is also important to realise that rural folks do not have enough political muscle to control elected members of GP who usually have strong political connections with regional and national political parties. The goal of the modelling of the political process of a GP is to explain the equilibrium choice of a GP to provide inadequate institutions and infrastructure to their electorates.

In order to model a GP we consider a single jurisdiction in isolation[1]. We postulate that there are N residents in a rural jurisdiction and these residents belong to two distinct groups of voters– namely, the rich and the poor. Out of these *N* voters, N^R voters are rich and N^P voters are poor. What is important for us is that voters' preferences and voting behaviours are influenced by their group identities being rich and poor[2]. To keep the analysis tractable we also assume that the budget is to be allocated between two local goods – market institutions (W) and rural infrastructure (M). We develop a two-stage game to determine the equilibrium provision at the GP level.

---

[1]A typical GP normally covers 1–5 villages. The GSM expects participation from all registered voters of a GP on the electoral roll. It is also important to note that electoral rolls are subject to manipulation. The GSM has the de jure power to undertake supervisory roles over the budgetary matters of a GP. The GSM has also the de jure power to influence upon local expenditures.

[2] Alternatively, if one may like, one can dichotomise voters into dominant ethnic groups as undertaken by Banerjee and Pande (2007) in their influential paper on parochial politics in which voters' preferences are shaped by their group identities, which is shown to lead to the worsening of the quality of political representation. However, the model of Banerjee and Pande (2007) cannot be strained to explain an under-provision-equilibrium, which is the precise goal of the current model.

At stage I, the incumbent local government announces local agricultural imposts/tax rates. Most often than not, a local government has little leeway to choose the *de jure* tax rates since the tax rate is decided by higher levels of governments in India. However, the local government can choose the effective tax rate by monitoring tax evasion and public input theft, which are quite rife in the agricultural sector of India. Given the grants and aid, and these tax revenues will determine the size of the budget of the local government. At Stage II the incumbent allocates the budget between local goods *W* and *M*. An election takes place at the local level at the end of Stage II. The goal of the incumbent is to get re-elected in the election. It is also important to note that local elections are rather infrequent, yet there is a probability that local elections will be held mainly due to pressure from higher levels of government, which creates the electoral motive.

We assume that voters have *ideal points* in terms of the allocation of budget[3]. Voters from the same group have the same ideal point. As the actual allocation diverges from the ideal point of a group, more and more voters from this group will withdraw electoral support for the incumbent government. On the other hand, we assume, both groups dislike to pay taxes; hence the higher (lower) the tax rate on a group the lower (higher) is the political support of this group to the incumbent. An electoral outcome is formed at the end of Stage II - given these effective tax rates at Stage I and the allocation of budget at Stage II. The incumbent maximizes votes in the election by choosing these taxes at Stage I and the budgetary allocation at Stage II, given the expected electoral outcome at the end of Stage II. If information is complete, in the relevant rational expectations equilibrium all players of the game correctly predict the electoral outcome and the incumbent adopts optimal taxes at Stage I and optimal budgetary allocation at Stage II wherefrom the overall equilibrium of the game evolves. In order to solve this game we apply the logic of backward induction: we start off with Stage II and characterize the electoral outcome. Rationality and complete information ensure that all players will form expectations by looking ahead and foreseeing the electoral outcome. At the overall Nash equilibrium of the game the incumbent chooses local agricultural taxes and a budgetary allocation to achieve an electoral outcome that maximizes the votes and, thereby, the probability of its re-election.

5.1 The precise sequence of moves by relevant players

The game has two stages when specific decisions and events take place. We highlight these stages as Stage I and Stage II of the game. Before the game unfolds, important determinants of the game are exogenously given and we call them the history. We now describe the sequence:

History
- Local government receives grant, aids and project-tied funds that we label as Ĕ. Ĕ is given exogenously.
- There are two distinct groups of residents/voters, namely the rich (R) and the Poor (P) who have *ideal points* in the allocation of the local government budget.
- Voters' characteristics are a part of history.

---

[3] It is important to note that a simple concave utility function will provide similar results.

Stage I:

• Local government announces effective and *de facto* tax rates T_R and T_P on the rich and the poor respectively.
• These tax rates yield the revenue, T, of the local government.
• Thus the budget of the local government B is determined as:

$$B = T + \check{E} \tag{28a}$$

Stage II:
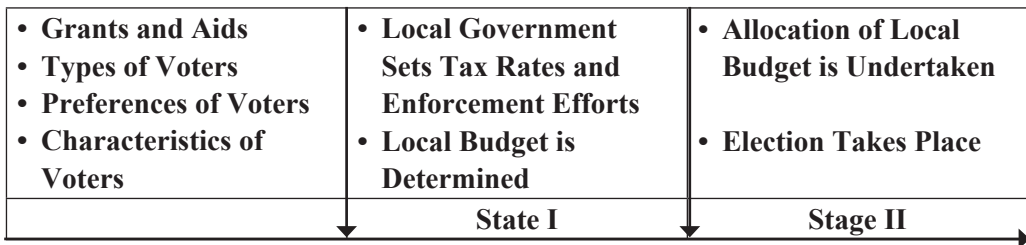• Local government allocates B between W and M. That is,

$$B = W + M = T + \check{E} \tag{28b}$$

• The election takes place after the allocation of budget B at the end of Stage II.

We provide the following diagram to summarize the time-structure of these decisions.

Diagram 1 Time - Structure of Decisions

HISTORY:

• **Grants and Aids**
 • **Types of Voters**
 • **Preferences of Voters**
 • **Characteristics of Voters**
	• **Local Government**
	    Sets Tax Rates and
	    Enforcement Efforts
	 • **Local Budget is**
	    Determined
		• **Allocation of Local**
		    Budget is Undertaken
		
		 • **Election Takes Place**

	State I	**Stage II**

Note: The arrow of time gives the sequence of decisions. The initial conditions are summarised in the history of the game and subsequent decisions are undertaken in Stage I and Stage II of the proposed game.

5.2 Budgetary allocations of stage II and payoff functions

In our simple model there are two groups of residents, R and P, and two local goods, W and M. Preferences of these two groups over these two local goods are assumed to be quasi-linear. The ideal points are presented in the following table:

Table 1 Ideal Points of Residents/Voters

	W	**M**
R	ϕ_R	$1 - \phi_R$
P	ϕ_P	$1 - \phi_P$

R: Rich, *P*: Poor, *W*: Market Institutions, *M*: Infrastructure

ϕ_R and $(1 - \phi_R)$ are respectively the split of the budget into W and M as desired by the rich. As the actual allocation deviates from ϕ_R, a typical rich resident suffers a welfare loss. We similarly define ϕ_P. Let ϕ be the actual allocation of the budget by the local government. The utility function of a rich resident, U^R, is specified as

$$U^R = -(\phi_R - \phi)^2 \tag{28c}$$

The utility function of a typical poor resident is U^P:

$$U^P = -(\phi_P - \phi)^2 \tag{28d}$$

Let us call V total votes that the incumbent receives in the local election at the end of Stage II and V^R and V^P be the votes cast in favour of the incumbent by the rich and the poor respectively. The goal of the incumbent is to maximize the probability of its re-election by maximizing votes. The payoff function of the incumbent, U^G, is simply the total votes that it receives in the election:

$$U^G = V^R + V^P \tag{29a}$$

5.3 Electoral framework of Stage II

In order to determine the provision of local public goods at the village level we now look at the electoral equilibrium of Stage II. We apply the probabilistic voting theorem to explain the electoral equilibrium. It is assumed that the government seeks political support from both of these groups. It is possible that the local government succumbs to sectarian interests and rent-seekers and, hence, adopts a tax-service package for the benefit of one group of voters only (see Craig and Inman, 1985; Renaud and van Winden, 1991). However, under certain conditions, it can be shown that the local government has an incentive to represent a coalition of both these groups (see Gangopadhyay, 2000; Gangopadhyay and Nath, 2001).

Within a group, voters have identical preference. Their preferences are represented by utility functions (1c) and (1d). Following the basic tenet of the probabilistic voting theorem, we write S^R and S^P as the sensitivity variables of these groups of voters. S^R represents the extent to which rich voters decrease their support/vote for the political party in response to a unit divergence between actual allocation and these voters' preferred allocation. S^P is defined in a similar fashion for poor voters[4]. We specify the votes-to-offer function of the rich as the following:

$$V^R = N^R (1 + S^R U^R)\lambda^R \tag{29b}$$

where V^R labels the votes that the incumbent receives from the rich, N^R denotes the total number of rich residents, λ^R is the proportion of rich residents who vote for the incumbent if the allocation equals the ideal point of the rich. We write the votes-to-offer function of the poor as the following:

$$V^P = N^P (1 + S^P U^P)\lambda^P \tag{29c}$$

where V^P labels the votes that the incumbent receives from the poor, N^P and λ^P respectively denote the number of poor residents and the proportion of poor residents who vote for the

---

[4] It is imperative to note that voters are partly influenced by their group identities in our model, as opposed to the assumed complete influence in Banerjee and Pande (2007), which leads to the formation of a coalition of different types of voters that supports the local government. As a result, there is nothing sacrosanct in our model that supports the intuitions of Banerjee and Pande (2007) that parochial politics increases the probability of re-election of the winner representing the dominant ethnic group and also reduces the quality threshold of the winner at which the re-election takes place. Ethnicization in politics therefore increases the gap between the quality of winner and that of loser in an election, which leads to increased political corruption at the village level. However, their model does not explain why the system fails completely to provide basic institutions and infrastructure.

incumbent if the allocation equals the ideal point of the poor resident. Given the tax rate T_R on the rich, we express the sensitivity variable of the rich, S^R, as the following:

$$S^R = 1 - [(\phi_R - \phi)^2/T_R] < 1 \tag{30a}$$

Similarly, we write S^P as:

$$S^P = 1 - [(\phi_P - \phi)^2/T_P] < 1 \tag{30b}$$

It is important to note that the votes from a group for the incumbent are negatively related to the tax burden of these voters and also to the divergence between the ideal point and the actual allocation, which we ensure from the second-order condition. It is assumed that $0 < (\phi_R - \phi) < (1/3)$ and $0 < (\phi_P - \phi) < (1/3)$. If one does not want to impose the non-negativity restriction on $(\phi_R - \phi)$ and $< (\phi_P - \phi)$ – one will need to express the sensitivity function in terms of $(1 - \phi_R)$ and $(1 - \phi_P)$. Based on the above we offer the main theoretical result of this paper in the following proposition.

Proposition 1: An *under-provision-equilibrium* characterizes the proposed game in which the incumbent maximizes its probability of re-election by simply choosing low taxes and inadequate provision of local goods.

Proof: The goal of the incumbent is to maximize (29a) by optimally choosing φ at Stage II and setting T_R and T_P at Stage I. Substituting (29b) and (29c) into (29a) yields the following optimization scheme for the incumbent at Stage II:

$$\text{Maximize } \{N^R (1 + S^R U^R)\lambda^R + N^P(1 + S^P U^P)\lambda^P\} \tag{30c}$$
$$\{\phi\}$$

Subject to (30a) and (30b)

The first order condition for the above optimization at Stage II is reduced to the following:

$$(\phi_R - \phi)NR\ \lambda^R(1 - (\phi_R - \phi)^2/T_R) + (\phi_P - \phi)N^P$$
$$\lambda^P(1 - (\phi_P - \phi)^2/T_P) = 0 \tag{30d}$$

In the overall equilibrium, the incumbent chooses T_R and T_P at Stage I to maximize its probability of re-election in Stage II. One set of values of T_R and T_P at Stage I that will maximize votes cast in favour of the incumbent in the election is the following:

$$(1 - (\phi_R - \phi)^2/T_R)) = 0 \tag{31a}$$

That is,
$$T_R{}^* = (\phi_R - \phi)^2 \tag{31b}$$

$$T_P{}^* = (\phi_P - \phi)^2 \tag{31c}$$

What is interesting is that the incumbent has the leeway to choose ϕ. One possibility to get re-elected is to set $\phi = \phi_P$, $T_P = 0$ and $T_R{}^* = (\phi_R - \phi_P)^2$. At this equilibrium, the poor villagers pay no taxes for local goods while the rich villagers also pay a little. The result is an under-provision-equilibrium in which the local government raises very little resources locally and supplies inadequate local goods. QED.

This equilibrium leads to the vicious cycle of poverty for the landed poor:
• *Why are local public goods in agriculture inadequate in supply?*

The answer lies in the rural local governments having little resources.
Why do local (rural) governments have little resources?

The answer is that local taxes are low.
Why are local taxes low?

Local taxes are low since local governments supply very little local public goods.

6. Concluding comments

In conclusion, we find that the main problem of local governance in developing economies is an inability, or lack of willingness of local governments to balance the *preference* and the *cost* of providing local public goods to residents. Thus from the decentralization theorem of Oates (1972) we know that local governments will fail to achieve efficiency in satisfying the local demand. The heart of the problem is the low level of local taxes that is driven by the electoral motive of local governments. At these low taxes local governments are simply unable to provide adequate local public goods. Yet this tax-service package creates an electoral equilibrium that ensures the political survival of a local government through time. Hence, there is no incentive for these governments to improve local goods by increasing local taxes. Increases in grants and aids will have little effect on local goods as they will end up in the coffer of corrupt bureaucrats and politicians. This is akin to the problem of incorrect pricing of a product in a market that is insulated from the forces of competition. *How to improve the quality of local public goods?* There are two ways in which one expects an improvement. First of all, it is necessary to revamp local tax system so that residents pay a decent price for a decent service and also ensure minimum resources be spent on these services. Secondly, in consonance with the era of decentralization and deregulation, we suggest that it may be necessary to introduce Tiebout type of competitive forces in providing local goods in order to redress rural crises in specific pockets in developing nations. Local tax reforms and forces of competition are necessary to break the electoral equilibrium that taxes little and provides little of local goods. It is important that we spell out important differences of our model from the existing ones: ours offers a model of equilibrium under-provision of critical local public goods for a rural economy. The existing literature on rural public goods, on the other hand, highlights how and why public goods provisions can diverge from the preferences of the median voter of a dominant group. The existing literature does not explain why such divergence can create and lead to under-provision-equilibrium. The existing literature rightly highlights kleptocracies, or corrupt rulers, in developing nations for inadequate provision of local public goods, in addition to rent-seeking and other wasteful activities (see Padro i Miquel, 2007). In an important early work Posner (2005) demonstrated how ethnicity-based politics can lead to low levels of public goods in countries at various stages of economic development. In consonance with Posner's work, Banerjee and Pande (2007) documented that caste politics seems to have gained further momentum in India, with significant and mostly deleterious consequences for local public goods in rural India.

The traditional model of representative democracy is solely focussed on the median, or pivotal, voter. The majority rule posits that the preferences of the median voter are chosen and enforced by the winning political party. There are important departures from the median voter theorem in the recent literature on the citizen-candidate models in which leaders cannot commit to policies that fail to coincide with their own preferences (see Osborne and Slivinski, 1996 and Besley and Coate, 1997). The predictions of the citizen-candidate models are different from the predictions of the median voter model if the two following conditions are satisfied:

The total level of budgetary resources is endogenous to the political process as our model highlights.

Political candidates differ on two dimensions - in terms of their preferences for public goods and their ability/competence.

Under the above two assumptions, we now know that the political outcome under the citizen-candidate model will be different from that of under the median voter model. In other words, the distribution of resources will fail to match the median voter's ideal allocation of public goods. In an advanced political system, a well-oiled party apparatus usually solves this commitment problem by forcing winning candidates to commit to the party platform once they are elected to office (see Alesina and Spear 1988). In most developing nations, the political system based being on weak party apparatus, it is likely that the commitment problem cannot be easily overcome (see Besley, Pande, and Rao 2007, and Bardhan and Mookherjee 2000)[5].

References

Alesina, A. and Spear, S. E. 1988. "An Overlapping Generations Model of Electoral Competition." *Journal of Public Economics* 37: 359–379.

Banerjee, A. and Pande, R. 2007. "Parochial Politics: Ethnic Preferences and Politician Corruption." Mimeo. Harvard University, Kennedy School of Government.

Banerjee, A. and Munshi, K. 2004. "How Efficiently is Capital Allocated? Evidence from the Knitted Garment Industry in Tirupur." *Review of Economic Studies* 71(1):19–42.

Craig, S. and Inman, R.P. 1985. "Education, Welfare and the "New" Federalism: State Budgeting in a Federalist Public Economy" in Rosen, H. (ed.), *Studies in the State and Local Public Finance*, Chicago: Chicago University Press. pp. 187–227.

Bardhan, P. and Mookherjee, D. 2000. "Capture and Governance at Local and National Levels." *American Economic Review* 90(2): 135–139.

Basu, K, 1980. "Optimal Policies in Dual Economics." *Quarterly Journal of Economics* 94: 187–96.

Besley, T. and Coate, S. 1997. "An Economic Model of Representative Democracy." *Quarterly Journal of Economics* 112 (1): 85–114.

Besley, T. Rohini, P. and Rao, V. 2007. "Just Rewards? Local Politics and Public Resource Allocation in South India". Mimeo. Harvard University, Kennedy School of Government.

Datta. S.K., Singh., K. 2014. "Participatory Job Demand and Efficiency of Performance of NREGS in Rural Asset Creation: An Analysis in the Context of West Bengal India." *Economic Analysis and Policy* 44: 74–84.

---

[5] In India some interesting attempts have been made to suggest how parochial politics based on sub-caste or *jati* can overcome the commitment problem based on the work of Banerjee and Munshi (2004), Munshi and Rosenzweig (2006). The idea is similar to the trigger strategy equilibrium of game theory and it is not at all clear whether the idea is applicable to the political context of a village.

Dreze, J. 2007. "NREGA: Dismantling the Contracting Raj." *The Hindu*, November 20, 2017.

Gangopadhyay, P. 2000. "Coase Theorem and Coalitional Stability: The Principle of Equal Relative Concession." *Theory and Decision* 49: 179–191.

Gangopadhyay, P. and Nath, S. 2001. "A Bargaining Model of the Median Voter." *Urban Studies* 38 (13): 2379–391.

MGNREGA Sameeksha. 2012. *An Anthropology of Research Studies on the Mahatma Gandhi National Rural Employment Guarantee Act 2005, 2006–2012*. Ministry of Rural Development, Government of India. Orient Blackswan.

Munro, A., Verschoor, A., and Dubey, A. 2013. "Does working with spouses make teams more productive? A field experiment in India using NREGA." *Economics Letters* 118: 506–508.

Munshi, K. and Rosenzweig, M. 2006. "Why is Mobility in India so Low? Social Insurance, Inequality and Growth." *BREAD* Working Paper No. 092.

Niehaus, P., and Sukhtankar, S. 2013. "The Marginal Rate of Corruption in Public Programs: Evidence from India." *Journal of Public Economics* 104: 52–64.

Oates, W. 1972. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.

Osborne, M. and Slivinski, A. 1996. "A Model of Political Competition with Citizen-Candidates." *Quarterly Journal of Economics* 111(1): 65–96.

Padro i Miquel, G. 2007. "The Control of Politicians in Divided Societies: The Politics of Fear." *Review of Economic Studies* 74: 1259–1274.

Pande, R. And Udry, C. 2005. "Institutions and Development: A View from Below." Working Paper, Yale University.

Platteau, J.P. and Abraham, A. 2002. "Participatory Development in the Presence of Endogenous Community Imperfections." *Journal of Development Studies* 39(2): 104–136.

Posner, D. N. 2005. *Institutions and Ethnic Politics in Africa.* Cambridge, MA: Cambridge University Press.

Renaud, P. and F. van Winden. 1991. "Behaviour and Budgetary Autonomy of Local Governments: A Multi-Level Model Applied to the Netherlands." *European Journal of Political Economy* 7: 547–577.

Srinivasan, T.N., and Bhagwati. J.N. 1975. "Alternative Policy Rankings in a Large, Open Economy with Sector-Specific, Minimum Wages," *Journal of Economic Theory* 11: 356–71.

World Bank. 2000. *World Development Report 2000/2001: Attacking Poverty.* Washington, DC.