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December 2009

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Abstract

Launched by the then Prime Minister in February 2006, the Backward Region Grant Fund (BRGF) programme primarily intends to "redress the regional imbalance" in the country. The programme guidelines categorically mandates that each identified BRGF district should prepare a "diagnostic study" of its backwardness specifying the relatively backward pockets within the district based on which the district plan would be prepared. This paper tries to look at the approach of the programme along with a few operational issues in some detail. An attempt has been made to develop a conceptual framework for addressing the two foundational issues – identification of regions and measurement of level of development therein through a programmable index along with a possible prioritisation scheme that would help district level planning.

**This paper is an outcome of a diagnostic study conducted for six BRGF districts of Assam, for the State Institute of Rural Development (SIRD) Assam at the behest of Ministry of Panchayati Raj, Government of India. The help, cooperation and financial support received from the SIRD, Assam is gratefully acknowledged.*

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Joydeep Baruah

Planning for regional development has been primarily founded on two theoretical grounds-first, regional disparity in resource endowments; and second, wide disparity of economic growth and levels of living across regions (Sarma, 1966). Academic discussions over regional planning have been long focused on fundamental issues of fixing clear criteria for identifying regions and obtaining an effective scheme and mechanism for evaluating levels of development. In India, attempts have been made to address the issues of regional imbalances through many area specific programmes at different points of time. Such programmes tried to categorise areas by some "homogeneous characters" such as wetland area, drought prone area etc and then justifying special attentions to them. The BRGF is a recent addition to such attempts, which tries to homogenise specific areas in terms of (relative) backwardness. This paper tries to look at the approach of the programme along with a few operational issues in some detail. Subsequently, an attempt has been made to develop a conceptual framework for addressing the two foundational issues – identification of regions and measurement of level of development therein, through a *programmable index* along with a possible prioritisation scheme that would help district level planning.

Approach of BRGF

Launched by the then Prime Minister in February 2006, the Backward Region Grant Fund (BRGF) programme primarily intends to "redress the regional imbalance" in the country (GoI, 2007). Specifically speaking, the BRGF programme aims at firstly, "bridging critical gaps in local infrastructure and other development requirements" that are not

adequately met through the existing inflows of fund under the various Centrally Sponsored Schemes (CSS); and secondly, "strengthening the grassroots level institutions" to facilitate the participatory planning, decision making, implementation and monitoring to reflect local felt needs; and thirdly, providing the professional support to local bodies for planning, implementation and monitoring of their plans at different stages and times.

The programme identifies two specific "deficiencies" i.e. "structural" and "institutional" in the identified "backward districts" marked by "lack of absorptive capacity, and hence, lack of desired outcomes". The CSS, as the programme mentions, have specific sectoral objectives and targets. BRGF can be used to supplement them through a comprehensive macro approach cutting across the sectors and meeting the inter-sectoral requirements. Besides, creation of capacity for effective planning at district and lower levels, within the rubric of National Capacity Building Framework (GoI, 2007), was seen as a key-prerequisite to participative planning. Therefore, there is a specific component in the BRGF programme for the grassroots level planning institutions.

The programme also places special emphasis on Scheduled Castes (SC) and Scheduled Tribe (ST) as well as other vulnerable and marginalised groups of people including the people living below the poverty line (BPL). The programme is supposed to be planned, implemented and managed by local grassroots level bodies and institutions with the overall coordination of the District Planning Committee (DPC) constituted as per the provisions of the part IX and IX–A of the Constitution. In areas that are not covered under the part IX and IX–A of the Constitution, special provisions has been made, following the recommendations of the Expert Committee on Decentralised Planning in Autonomous Areas, under which traditional village level bodies and institutions in these areas will plan and implement the programme in their respective localities.

The BRGF programme guideline (GoI, 2007) mandates that the "integrated development will commence", in these districts, with each district undertaking a "diagnostic study of its backwardness". This will include the preparation of a baseline survey which can be used for undertaking evaluation at a later date. This will be followed by preparing a well-conceived participatory district development perspective plan to address this backwardness during the period of the Eleventh Five-Year Plan.

Conceptual Framework

In development debates and discussions, the terms "underdevelopment" and "backward" are generally used almost interchangeably by applying them to aggregate geographical concepts such as "countries", "areas" and "regions"; or equating them with certain broad indices such as low incomes or capital investments per capita. Long back, Myint (1954) tried to distinguish these two terms in terms of "underdeveloped resources" and "backward people". The central argument of this distinction was that underdevelopment should be understood in terms of utilisation of resources, including human resources whereas backwardness should be viewed more in terms of failure of people in their economic struggles and pursuits.

Failure of people living in an area or a region may be attributed to a number of reasons and factors including un-utilisation and/or under-utilisation of resources. Critical role of local or regional infrastructure can be contextualised within this understanding of backwardness. Economic performance and achievement of people of an area may be significantly constrained by deficient infrastructure even when there is same degree of resource utilisation. There exists, in fact, a surfeit of literature favouring strong as well as weak linkages between infrastructure and development (Majumder, 2008; Bhatia, 1999; Wanmali & Islam, 1995). The "structural deficiencies" as identified by the BRGF programme, which it envisages to bridge, subsume all critical infrastructure elements so that people can succeed in their "economic endeavours and pursuits", and thus, backwardness may be overcome.

Conceptualising the notion of a region insists on specifying definitive criterion/criteria of identification. Sarma (1966) discerned three approaches in this regard. First, regions are being identified as per their homogeneity with respect to physical, economic, social and other characteristics. Major practical problem in following this approach has been that since the relevant data/statistics are collected with reference to administrative units (such as state or district wise) region formed on the basis of homogeneity might overlap in administrative boundary. The second type i.e. on the basis of "nodal feature" of areas concerned with "polarisation". The nodal regions are formed on the basis of "functionality" around a node or central place. The third type of region formation is driven by policy orientation. It is mainly concerned with "identity between the area

studied and available political institutions for implementing policy decisions". In practice, formation of region is conditioned by availability of data and there may be mixture and compromise of these "pure types" (Sarma, 1966).

The BRGF identifies 250 backward districts in the country, which subsumes 147 districts covered under the Rastriys Sam Vikas Yojna (RSVY). Equating districts with regions under the BRGF rests on the principles of homogeneity as well as programmability. In the decentralised planning process envisaged by the 73rd and 74rt Amendments, districts are conceived as primary planning unit (and therefore, has mandated constitution of District Planning Committee). Also, identified districts are assumed as homogeneous with regard to selected development parameters.

In India, identification of backward areas and regions has been tried, fundamentally, in pursuance of the principles of balanced economic development. Often, more particularly in developing countries, spatial policies might be the result of a formally articulated national commitment to rural-urban equity or regional balance or they may be the result of the bargaining interplay of regional political forces wielded by state and local jurisdictions. The approach paper to the Eleventh Five Year Plan of India categorically mentions about a definite and distinct "rural-urban divide", which the Planning Commission envisages to bridge through "growth in agriculture" combined with "infrastructural support for non-agricultural activity in rural areas".

Myriad strategies have been followed, especially by the developing countries for the purpose of developing the backward areas. The macro strategies followed are balanced growth through policies like industrial dispersal, growth centre theory, import substitution industrialisation, export led growth policies etc. (Bandyopadhyay & Datta, 1989). The founding hypothesis of these sets of policies and approaches has been that the development benefits, ultimately, would trickle down hierarchically to the lower level centres from some "induced" and/or "spontaneous" growth centres. These are mostly termed as out-ward looking and industrial strategies. Contrary to this, more recently, alternative approaches to development based on the propositions of "basic needs" and "redistribution with growth" are suggested.

Various Committees and Study Groups have been constituted by government of India, particularly by the Planning Commission for regional planning in the country. Approach of such committees has been to identify backward regions with the help of certain indicators related to socio-economic conditions of the people of the area. For instance, the study group constituted in the context of formulation of the fourth Five Year Plan (1966-71) tried to identify the areas with high density of population, low level of income, employment and living conditions etc. Other such initiatives include Pande Committee for suggesting strategies for removal of regional disparities, Wanchoo Committee in 1986, Committee on Backward Areas under the Chairmanship of Sukhamoy Chakravorty in 1972, National Committee on Development of Backward Areas headed by Sivaraman in 1978, Planning Commissions" committee for identification of 100 most backward districts with E A S Sarma as its head in 1997. Besides, instances of academic interests to identify backward region have been plenty (Paranjape, 1988; Kulkarni et al, 1982; Rao, 1973). During the post reform period, many have tried to examine the impact of reforms on regional backwardness (Desarda, 1996; Nair, 1993). Even the Ninth Finance Commission adopted a Composite Index of Backwardness to decide state allocations though some important flaws were pointed out in academic debates (Sreedevi, 1992).

Fundamentally, all these efforts, both at the levels of various Committees constituted by the government and academics, seek to look at the issue of backwardness in many dimensions using different indicators, though some of them remain common, and then try to develop a composite index to qualify a region as backward. While use of composite indices has been a contested issue, such identification has been held as useful in formulations of development plans and policies. Such identification, however, is particularly awkward for a country or a state where some of the indicators remain at the bottom in general.

In sections that follow, keeping in view the specific objectives of the BRGF programme, and the specific requirements that the diagnostic study is to fulfil, identification of sub-district level backward regions has been attempted. The attempt has however, been conditioned by certain operational principles. It may be recalled that the objective of the BRGF is to provide additional financial support to districts which are assumed already suffering from certain structural deficiencies. The additional financial resources are supposed to be routed through various existing centrally sponsored schemes (CSS), more

particularly through so-called Flagship Programmes. Hence, fundamental principle in this regard should be *programmability* i.e. the exercise should help in providing guidance and direction to appropriate allocation of funds to sectors and areas that would contribute most to the overall development scenario of the district. The purpose of this paper is to attempt at constructing a sub-district level programmable index of backwardness.

Towards a Programmable Index

The report of the Expert Group on Diversity Index constituted by Ministry of Minority Affairs, Government of India states "simply devising a theoretically appealing index is not sufficient. It will lose all its meaning and relevance for the want of sufficient and clear data". The most important part of constructing a programmable index, which can be effectively used for policy targeting, is to look for the set of data based on which the index can be calculated. In a way, the primary difference between an "index" and a "programmable index" lies in its approach of construction. Unlike an *index*, availability of reliable data in the public domain is *a priori* in formulation of a *programmable* index. Rationale of this consideration can be found in extreme significance of transparency in such an exercise as it would influence the actual implementation of programmes involving flow of substantive amounts of public funds.

To identify backward regions within a district, community development blocks were identified as appropriate sub-district level units. This was because, in principle, blocks are programme units unlike of circles or tehsils that are revenue units. Also, blocks are co-terminus with *Intermediate Panchayats* in the districts where Part IX of the Constitution is relevant. This would help consolidate district planning through grassroots level participation and would fulfil the Constitutional requirements as per the provisions of 73rd Amendment.

Much care has been taken while choosing the relevant indicators for the construction of the block level backwardness index for the identified districts. First, consideration has been again, the programmability. India Infrastructure Report (2007) identifies roads, electrification, telecommunications, irrigation, drinking water and sanitation, housing, health, education and environment as most important elements of infrastructure, particularly for rural areas. In the first place, all sectors currently having major centrally

CSS and flagship schemes are identified. Next relevant data for these sectors are examined which could be consolidated up to block level.

It may be mentioned that village level information is available in two Census data sets i.e. Village Directory where mostly village amenities are recorded and Primary Census Abstract which contain mostly the demographic information of the villages. Data in the Village Directory have been identified both at the level of circle and clock, whereas data of Primary Census Abstract are only identified at the circle level. This is because the later also contains information relating to urban areas which are beyond the jurisdiction of the blocks by default. In order that both these two data set become compatible, using census village codes as unique identification key, information on blocks were pooled into the Primary Census Abstract and then both were merged into one database for obtaining the values of the selected indicators. Considering the required programmability and the availability of data eight simple indicators - percentage of villages having paved approach road, percentage of land irrigated, percentage of villages with safe source of drinking water, percentage of villages with electricity, percentage of literate people, percentage of villages with education facility, percentage of village with healthcare facility, percentage of main workers to total workers - were chosen (see Appendix 1 for data sources). Problems consequent upon this kind of "simplification", however, will be discussed later with empirical evidences.

The value of an individual indicator thus obtained may be "located" in terms of development objectives which puts the value at its maximum. Since, all the values of the indicators are in percentages, therefore, maximum value would be simply 100, while the minimum being the lowest value observed in the distribution. This simply, if D_i be the value of the i^{th} indicator than its "location" in terms of the minimum and maximum is

$$L_i = \frac{D_i - D_{\min}}{100 - D_{\min}}$$

The theoretical assumption underlying this "relative positioning" of individual values lies in the principle of *horizontal balancing* of regional development. The development objectives (programme targets herein) are no different for different regional units; i.e.

irrespective of the resource endowments in different districts and blocks, programmes specify same targets for each district and block. Critical role of this principle in defining location of individual values of indicators can be seen from the figure 1.

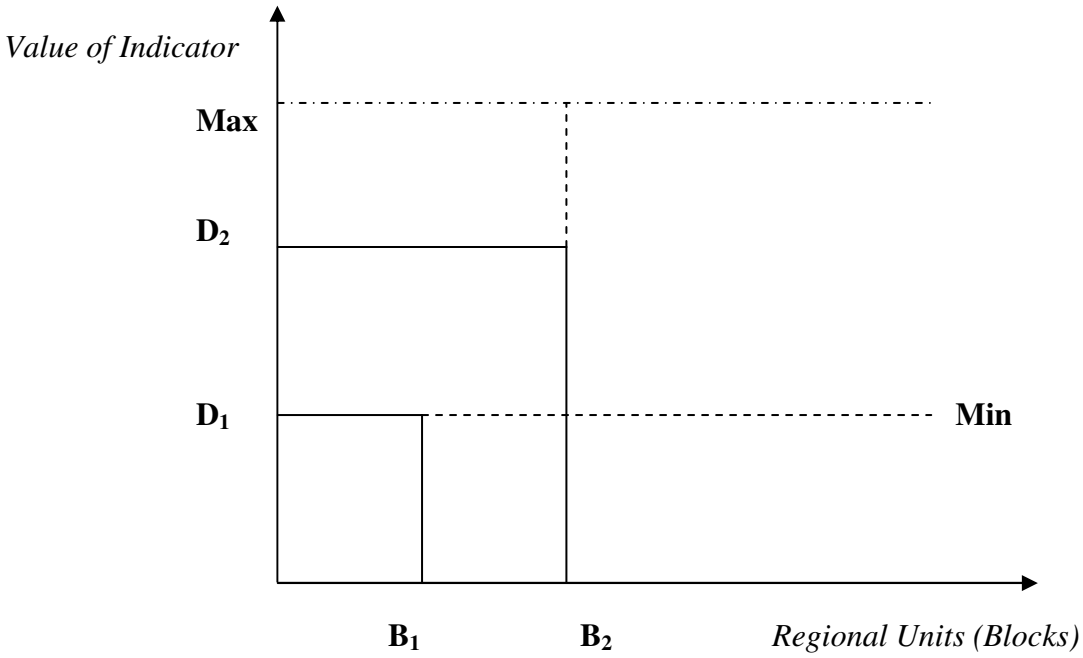

Figure 1

It may be seen from the figure 1 that value of the indicator is minimum in block 1 and the programme targets to achieve the possible maximum shown by the dashed line. How to interpret the value of block 2 in terms of the values of minimum and possible maximum? Note that value D_2 or to be more precise the point (B_2, D_2) lies in between the line joining the two points (B_2, Min) and (B_2, Max). Given the fact that *x ordinate is constant* the line obviously would be a vertical line whose formal equation is simply

$$\frac{D_2 - Min}{Max - Min} = \frac{B_2 - B_2}{B_2 - B_2}$$

Recollect that the right hand side of the equation becomes undefined makes perfect sense as the line is a vertical one. This undefined term, for the moment, may be ignored for our analyses as it refers to a single block (i.e. B_2). It is the interpretation of the left hand side

of the equation that is more important for our purpose. The term to the left of the equation reveals that the *absolute* origin for measuring value of the indicator (of the block) is now being shifted to an observed minimum value, which is nothing but an *arbitrary* origin; and division by the *range* (note that it is a measure of dispersion like standard deviation) further standardises it. Therefore, shifting of origin *transforms* the value of the indicator *relative* to an observed minimum of a block other than the block that the value of the indicator is associated with. It serves two essential purposes – first, it *locates* any individual value from the minimum value in relation to the targeted maximum; and second, standardisation converts these relative locations to pure numbers, which are particularly useful for further mathematical treatments.

The main problem with this kind of conjecture is the assumption of linearity involved in it. Note that entire formulation is based on the assumption of horizontal balancing, which is supposedly linear. It amounts to saying that each unit of money spent on development intervention would yield same (or constant) result. Clearly, such absolute constancy underlying the notion of straight lines may easily be falsified in practice. Nevertheless, it may be mentioned that approach of physical targeting in several CSS and development programmes, in fact, envisages linearity, although limited at times, in outcomes. For instance, schemes like Indira Awas Yojna (IAY) expect produce constant "output" for each "unit dose" of investment. As such, assumption of linear trajectory of achievements in programme approach cannot be dispensed with altogether.

Once values of L_i are obtained following the argument set forth above, the composite value of all L_i is then may be taken as the simple average of the all eight values so obtained, which is simply given by

$$I = \left(\frac{1}{8}\right)\sum_{i=1}^{8} L_i$$

The value of *I,* thus, reflect the relative achievement of a block in terms of eight indicators. The backwardness, is then indicated by the Backwardness Index (BI), which can be expressed as

$$BI = (1 - I)$$

Applying Weights

Considering the special provisions of the BRGF over certain disadvantageous groups such as Scheduled Caste (SC) and Scheduled Tribe (ST) a simple weight scheme is proposed.

Let X_1 and X_2 be the percentages of SC and ST population of the block so that $X = X_1 + X_2$ is the total SC and ST population. Then, weight W_i is simply can be obtained by applying relative ranks of the values of X.

In case data is available for other relevant sections of marginalised and disadvantaged sections of people like minorities and/or people living below the poverty line, then the same method can be extended to cover them as well. The weighted Backwardness Index (WBI) then will be then, B_iW_i.

Properties and Interpretation

Most important property of the proposed index is the property of *positive progressivity*. The property tells us that if there is a positive movement in any of the underrepresented value in the set of indicators, others remaining constant, the achievement index should register an increase and backwardness index should, therefore decline and vice versa. This property stems from the property of association of real numbers confirmed by addition. This property is particularly useful for evaluating and monitoring the BRGF programme at different points of time.

Evidently, the values of the Backwardness Index (BI) fall within the range of 0 to 1. The value 0 implies absence of backwardness while value 1 implies the highest possible level of backwardness. More the value is closer to 0 lesser is the level of backwardness. Similarly more the value more is the level of backwardness. Depending on the values of the BI, we may define three levels of backwardness. For Instance, with the value of BI ranging between 0 to 0.29, a block may be termed as less backward, with values 0.30 to 0.69 it may be called moderately backward and with the value being 0.70 and/or above blocks may be labelled as highly backward. WBI i.e. weighted BI, similarly will be greater for areas where backwardness is more and vice versa.

The Backwardness Index (BI) or Weighted Backwardness Index (WBI) can be used to identify backward blocks and rank them accordingly. The levels of achievement i.e. value of L_i can be used for prioritising sectors affecting overall level of backwardness. Inherent in this is the fact that average is always biased by extreme values. Therefore, lowest achievement implies highest priority. Also, the respective backwardness indices of the blocks can be used as marker for allocating funds in different sectors. Further, the index can be effectively used for monitoring various programmes and schemes as have already been mentioned.

Conclusion

In this paper we have tried to discuss the approach of BRGF in addressing the problems and issues of regional development in the country drawing upon a theoretical framework. Redressing the issue of regional disparity through provisioning of additional funds under various development schemes and programmes is while appealing faces certain obvious limitations. In the absence of some definite and appropriate directions such programme approach is unlikely to yield desired results.

Designing a scheme, which is theoretically robust, practically useful and politically transparent is an academically challenging exercise. This paper examines the possibility of such an exercise. It proposes a block level backwardness index and tries to explain the utility of this index in meeting various planning requirements that would ultimately reduce regional disparity.

The proposed index though appears to be both theoretically and practically tempting, has certain problems. These emanate from "simplistic quantification" scheme applied in constriction of the index itself. The underlying assumption of the entire exercise has been that the development process is "continuous" and, as such, the indicators, which are used to "measure" the development process, are "also continuous". In fact, an *ideal* quantification scheme requires a *bijective* mapping between the *numerica*l and *empirical* relation systems (Garonna &Triacca, 1999; Hand, 1996). In our case, except the percentages of irrigated land, other indicators are, in effect, meaningless, when seen in continuous scale. For instance, suppose in a block there are 20 villages out of which 10

villages have paved approach road. The value of the indicator is then 50 percent. For, say 3 percent improvement (note that this is supposed to measure a "continuous" development processes) we need to have 10.6 villages having paved approach road. This carries hardly any practical meaning. This mapping is, therefore, not strictly reversible and hence bijective. This problem arises because of constraints in data. Had there been data regarding actual length of paved road this problem could have been avoided.

This raises another important issue. Considering the planning requirements, particularly after the 73rd and 74th Amendments of the Constitution, the country wide comprehensive database like that of census needs vast improvement, re-orientation and re-organisation. There is virtually no data for Panchayats barring few states like West Bengal and Kerala. When a lot has been talked about decentralised and integrated planning, till date, there is no visible serious attempt to equip and adapt our national data system to support such processes. Since success of any planning process largely depends upon the quality of data and a programmable index is conditioned by available data, it is essential that a consensus and convergent data system surfaces that is consistent with and compatible to the planning processes sought to be followed in the country, especially at the grassroots. ■

Appendix 1

Selected indicators along with sectors and their source

Sectors	Indicators	Data Source
Road	Percentage of villages having paved approach road	Village Directory, Census 2001
Agriculture	Percentage of land irrigated	Village Directory, Census 2001
Drinking Water	Percentage of villages with safe source of drinking water	Village Directory, Census 2001
Power	Percentage of villages with electricity	Village Directory, Census 2001
Education	Percentage of literate People	Primary Census Abstract, Census 2001
	Percentage of villages with education facility	Village Directory, Census 2001
Health	Percentage of village with healthcare facility	Village Directory, Census 2001
Employment	Percentage of main workers to total workers	Primary Census Abstract, Census 2001

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