

S&T for Governance and Coordination

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Introduction

A summary statement on Indian practice of as well as learning from employing S&T for governance and coordination of the structures of development, administration and governance could be phrased as we little if any has been done. Long overview suggests that S&T has been considered as an input to the governmental process. Despite such shortcomings signals from within the structures and from the expanse of social aspirations have grown into occasional voices on S&T for governance.

One recent and clever formulation implies that innovation and not S&T could act as the agent of restructuring and therefore could act as the agency of (re)distributive acts of governance. Much of this notion appears to be borrowed from the experiences of capitalistic growth in a few western countries. We might argue S&T includes change and more importantly, S&T could act as a central driver of governance and coordination.

This research would explore this perspective on S&T for governance. In order to explore this three wings of governance would be examined: (1) funding of public S&T/R&D, (2) S&T/innovation in tiny/MSME sector, and (3) S&T for rural development administration. The pre-conclusion part will explore roles that S&T could play in administration and governance, and as the conclusion we would propose a new perspective on both S&T and governance.

Funding of public S&T/R&D

Most of funding of R&D/ S&T happens through planning and budgeting mode of the executive ministry or departments; there is relatively little change with variations in the ownership of executing fund-recipient. Recalling that funding serves multiple purposes, such as for maintenance, asset creation, coordination, and monitoring – the departmental/ ministerial planning/ budgeting mode seeks to serve these purposes through line departmental arms and activities. Planning/ budgeting undertaken at periodic intervals have set up several mechanisms of executive based coordination and monitoring through both hard budget constraints and project/ program monitoring at the central level with the Planning Commission and a few inter-ministerial bodies and with the Prime Minister's or cabinet office. At lower tiers such allocation functions are undertaken within the department/ ministry through very similar processes, however, the lower the tier in hierarchy the stricter is the constraints on flexibility in budgeting. Most often at about the middle tiers of hierarchy execution remains as the task and coordination through management of allocations across budget heads or cash flows become difficult.

Demands for grants rise up the hierarchy where at the higher tiers the bundling of demands is undertaken. The current Plan, for example, has set the broad principles of bundling and one major norm is 'Supra' projects at supra-organizational level, or 'Mega' projects at multi-institutional level or at cross-disciplinary level. Budget sets the goals and therefore monitoring standards and modes. Inter-period monitoring of goals achieved and especially the capacity to spend within the pre-fixed parameters of budgetary heads provide the cues to future release of funds. Several documents of the government suggest that the systemic incapacity to spend is a major bottleneck to the growth of S&T budget allocation. The two way process depends crucially upon the interactive mechanisms of bottom-up and head-down flows of information that get bundled at multiple tiers preventing, perhaps often the systemic capacity build up on its own and through this budgetary processes.

Generation of projects, major programs and in short the creation of demand then is another goal of the entire executive process of planning/ budgeting. Relative weakness of the systems of S&T to voice demands reflects upon and influences the slow buildup of the systemic capacity.

Major projects or mega programs therefore appear to be important. The XI Plan has emphasized amply this dimension. Another related dimension is the capacity of the systems of the stakeholders especially of the society who would voice and which in turn would boot up demands for capacity.

Along with this executive based approaches to using planning/ budgeting a few other approaches have in recent periods been considered as well as initiated by the government. One important landmark of XI Plan regarding S&T is its underlying theme of innovation. Creation of demand pulls through innovations to generate the subsequent flow of allocations that in turn would create from within as well from without the public system of S&T the dynamism to create additional capacity to absorb funds and build up executive capacity is one of the principal pillars of the current Plan.

This approach has therefore created instruments for funding the 'bridging' or linkage functions. The emphasis has been on executive controlled departmental or line ministerial linkages. Other modes of market based or social based linkages too are important. For example, generation of standards or extensive modularization creates the pull for systemic build up through market processes. Another mode less deliberated upon is the advanced standards-based public procurement or utilization of part of public development fund or part of restructuring fund or of the infrastructure fund to advance induction of new technology. The climate fund is such a strategic restructuring fund. In other words planning/ budgeting exercise along with the creation of incentives system for the advanced knowledge/ products create massive restructuring of the system of S&T while simultaneously building up new capacities. In the current Plan such indications have been provided in relation to the district-based system of S&T management or in relation to incubation of new innovations or in inspiring youth into the folds of new sciences.

Innovation & technological change agency: Governance and monitoring in MSME

We may now look at the scenario of innovation and technological changes of this very large segment of the economy. Based upon our learning from the past on who could be the driver of innovation and technological changes and who could monitor, support and govern such changes - a summary of the above learning informs us that:

1. Large corporate or large factory sector has insignificant role in governance including monitoring of technological changes, innovation including best practices and quality; large sector cannot perhaps be the driver of change;
2. Both input driven and output demanded routes of changes are important, however, current arms length relations between large factories and MSME segments render the factor prices of changed inputs or outputs prohibitively expensive which in turn disallow governance and change-agency to the large segment;
3. Institutional/ bank based governance including monitoring has been close to non-starter and such monitoring has remained very costly; as a result and unless current modes of monitoring or disbursements are completely changed governance through this mode would appear in fruituous;
4. Traditional circuits/ network of input and output who have retained notwithstanding de-recognition and de-legitimizing policies - very pervasive yet no longer strong ties with large part of the MSME, have limited financial wherewithal and rather old knowledge on products, technological inputs, innovation and growth possibilities, and management skills; however, this traditional network have most intimate and low-cost access to information and can monitor most intensively at the least cost, and most importantly they appear to be very entrepreneurial - all this would suggest that policy based input/

output provisioning through this circuit along with the modernization of this circuit could be very promising; for example, no stock exchange for the MSME would function without the monitoring and rating function being undertaken by them;

5. Bridge R&D and especially development organizations of several social sector ministries under both the central and state governments and whose numbers are in thousands, have often been relegated to philanthropic suppliers of advanced inputs without being empowered to govern and monitor and without fund allocation jurisdiction; in fact, often bridge R&D organizations have been bypassed and funds are channeled through non-governmental organizations (NGO); most important inputs for innovation and technological changes could flow from such bridge organizations and perhaps from them and through the traditional networks more effectively than currently prevailing – a model of innovation-governance that is only germinal now informs us that – a mixed executive & market mode of governance could be that involving bridge R&D organizations as advanced inputs/ standards provider and along with the bank and traditional network as the monitor and/or input/ output providers;
6. Local executives at both line ministry levels, especially the District Industry Centres, and the district magistrate/ commissioners levels often have only partial/ truncated jurisdiction over one or a few dimensions of MSME governance; the MSMEs cater to both local and supra-local or global markets – a model of local-government based governance of MSME could be another alternative (its germinal is present) but with competition between local governments encouraged through empowering those governments by way of funds transfer say through the Finance Commission and through empowering them to issue bonds or charge taxes (lessons from China could be important here- the JNNURM has limited scope in this regard);
7. Cluster based approach has been adopted by several ministries and the UNIDO, and there are multiple definitions and counting of clusters, however, clusters approach negate the local diversity, the channel of network, the random entrepreneurial distribution, the lack of skill pools and pools of other knowledge and resources among others; more importantly – cluster does not appear to be the unit of governance; learning from cluster developments suggest that only a handful of cluster-inhabitants succeed and perhaps such successful entrepreneurs cannot provide leadership to others in the same product category and within the same cluster; moreover cluster approaches have often not looked into governance and monitoring especially of innovation and technological changes;
8. Several other modes of quasi-governance often in public-private modes, such as through Commodity Boards, Commissioners, trade associations or a group of regional MSME units along with public R&D agencies have been providing important knowledge inputs, sometimes even standards or best practices, to the MSME, however, rather often there has been delink between transactions in knowhow in one hand and fund or other inputs provisioning or even of provisioning of market/ aggregation on the other hand – resulting in voluntary transactions of discrete kind; governance and monitoring provides teeth to leverage and thus technological changes happen (including improvements in quality/productivity), innovation (including prototyping, etc.) are hastened under governance constraints;
9. Finally, and given the vastness of the MSME segment – large demands of novel inputs of innovation and new technologies that governance and monitoring of the MSME could generate would inter alia pull the bridge R&D organizations of the public sector and also the ASI-sector of input providers or output aggregators.