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The incorporation of technology into planning - new institutional arrangements for

The political process determines, on an ongoing basis, socio-economic priorities. This process also sets-out the planned investments that are designed to achieve the politically-legitimised socio-economic goals. The planning itself takes place at many different levels - Centre, State, District, Enterprise, etc. The planned investments are, in turn, made effective - in the main-through projects and programmes that are executed by enterprises (both public and private); a variety of government agencies; by panchayati-raj institutions and by voluntary bodies.

Technology (both domestically generated and imported) has to be 'organically' incorporated into the planned investments in the different socio-economic sectors of the Plan. It is this imperative of 'organic incorporation' that largely determines the institutional arrangements that will be necessary to do this. Thus:

First: While recasting the Eighth Plan, in each sector Plan, the technological choices, and investments in S&T necessary for that sector, should be made explicit in the corresponding sector-plan. Thus, for example, the technological choices and S&T investments relating to the Power Sector should be an integral, explicit and transparent part of the Plan for the Power Sector.

Second: Since the aggregate of the above approach will be somewhat broad and indicative in nature, it will be necessary to: further refine the plan; programme public investments in detail; guide the public financial institutions in their lending policies towards the private sector. To so plan, programme and provide administrative guidance each Ministry will have to prepare investment, asset-maintenance, productivity-improvement, energy-saving and environment protection plans with the relevant technological choices and S&T programmes imbedded in those plans. To do this will require new institutional arrangements of the following type:

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In each Ministry, there should be created a 'Science & Technology Applications Council' (STAC) with a clear mandate to provide the minister concerned with advice and alternatives with regard to the technological choices, applications of S&T and environmental protection in the plan of the Ministry concerned. These STACs should be chaired by a technologist/engineer.

Third: Each sector will need to earmark a percentage of the Plan investments for R&D/S&T to be performed on contract for the Ministry concerned in such areas and for such purposes as may be advised by the STACs, and approved by the Minister concerned. [The methodology of the performance of contract R&D by such institutions as CSIR laboratories etc. can follow the excellent precedent set in this regard by ISRO/Department of Space].

Fourth: The chairman of the STACs plus the Heads of Scientific Agencies plus the Members of Planning Commission should form the National Council for the Application of Science & Technology (NCAST). This should be chaired by the Dy Chairman, Planning Commission, but serviced by the Cabinet Secretariat. Such a body will be somewhat unwieldy but there appears to be no other means to secure legitimation of the work of the STACs, and ensure co-operation of the 'powerful' agencies; viz: Atomic Energy, Space, Defence R&D, Ocean Development.

Fifth: Once the above is done (and only then), for Basic/Fundamental Research alone (to be conducted mainly in the Universities/IITs/IISc) a small, compact National Science Council as envisaged by Prof. C.N.R. Rao can be constituted and serviced by the Department of Science & Technology.

Sixth: Retain the present structure for Superconductivity Research for another year. Review thereafter.

[The present SAC to PM will need to be wound-up. It has been largely ineffective for a variety of reasons, not the least being that it was conceptually faulty, being derivative from a Presidential (US Model) rather than a Cabinet form of Govt. It also has had no institutional linkages with the Ministries and/or with the Planning Commission.]