Report of the Working Group

On

Effective Rural Technology Delivery (including partnership with Voluntary Organisations)

Office of the Principal Scientific Adviser to the Government of India

November, 2006

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1. Introduction

The Planning Commission constituted a Steering Committee on Science and Technology for the formulation of Eleventh Five Year Plan (2007-12) under the Chairmanship of Dr. R. Chidambaram, Principal Scientific Adviser to the Government of India (PSA to GOI). To assist the Steering Committee, various Working Groups were constituted. A Working Group on " Effective Rural Technology Delivery (including partnership with Voluntary Organisations)" was set up vide O.M. dated 8th May, 2006, also under the Chairmanship of Dr. R. Chidambaram, PSA to GOI. The composition and terms of reference of the Working Group are given in the said O.M. (copy enclosed).

The first meeting of the Working Group was held on 24th May, 2006 in the office of the PSA to GOI and was attended by Dr. R. Chidambaram, Dr. T. Ramasami, Dr. Panjab Singh, Dr. Anil Joshi, Shri M.R. Rajagopalan, Shri D. Raghunandan, Shri P.M. Tripathi, Prof. Dayanand Dongaonkar and Shri S. Chatterjee. Some key issues were discussed and members were requested to submit brief notes on some of these issues.

The second meeting of the Working Group was held on 23rd August, 2006 and was attended by Dr. R. Chidambaram, Dr. S.K. Sikka, Dr. T. Ramasami, Shri M.R. Rajagopalan, Shri D. Raghunandan, Shri P.M. Tripathi, Dr. V. Prakash, Prof. Dayanand Dongaonkar and Shri S. Chatterjee. The suggestions/ comments/ notes submitted by the members were discussed and outlines of possible recommendations to be made were agreed upon. It was also agreed that the first draft of the report of the Working Group would be prepared and circulated for comments and observations and the report will be finalized in the final meeting to be held thereafter.

The draft report was circulated to the members and some comments were received. The suggestions were incorporated in the report and the final draft was discussed in the third and final meeting held on 25th October, 2006.

2. Background

The issue of effective rural technology delivery has been widely discussed over the years and at various levels in Government, Research Institutions, Universities, and also among voluntary organizations. Other important issues that closely relate to the problems of technology transfer in rural areas, such as lack of field-tested and validated models; inadequate institutional support both for technology development and transfer; lack of flexibility in Governmental mechanism; etc., have also been discussed and documented.

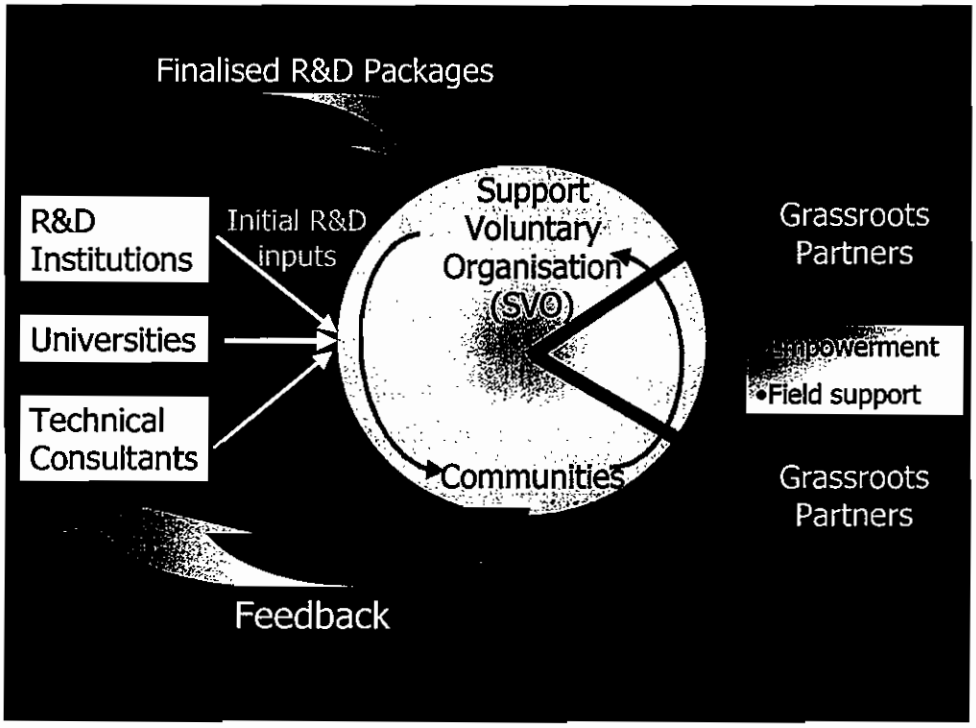
Experience with much of past technology transfer has shown that often technologies developed in laboratories but not tested and proven under field conditions were disseminated on a large scale with naturally poor results, non-acceptance by intended beneficiaries, under-performance and unsuitability for rural conditions. Experiences of successes, and more importantly of failure, have been poorly documented and inadequately shared among stakeholders leading to unnecessary repetition, infructuous expenditure and considerable de-motivation among both technology providers and users. On the other hand, rich and valuable experience has also been gained of systematic and participatory need-based technology generation, pilot field projects to examine performance and viability, demonstration projects to assess suitability for different field conditions, and finally effective technology dissemination with appropriate institutional linkages for technology development and transfer, training, technical back-up, managerial support and other hand-holding services. There are also a few, albeit rare, examples of inter-agency collaboration in technology transfer that have effectively synergised the agencies' respective strengths and demonstrated the enormous impact possible from such effective co-ordinated exercises. The Working Group drew upon all these experiences, both positive and negative, in formulating its recommendations.

3. Some Key Issues and Observations

3.1 The existing governmental mechanism may be summed up as follows:

- development of rural technologies (i.e. R&D) is done by different Council of Scientific and Industrial Research (CSIR) or other National Laboratories or, mostly, by S&T-Non Government Organisations (NGOs), S&T Institutions or Academic Institutions through Projects supported by Science and Society Division (SSD) of Department of Science and Technology (DST), Department of Biotechnology (DBT) or occasionally by other national/international agencies;
- dissemination of rural technologies as such is not the mandate of either S&T Departments or CSIR Laboratories who are also not provided funds for the same;
- the only governmental Institution explicitly mandated to disseminate rural technologies is Council for Advancement of People's Action and Rural Technology (CAPART) but its record of taking up technologies developed through DST Projects or by CSIR Labs has been extremely poor. (However, the potential and possible impact of such synergy between Technology Development Agencies and CAPART has been clearly demonstrated by the DST-CAPART Collaborative Programme in 1997-2000 under which 10 Projects in each of 10 proven Technologies were to be implemented through CAPART-funded Projects leading to absorption of these Technologies in CAPART's basket. Regrettably, this initiative was not followed through by CAPART as a result of which only 26 Projects were implemented and the absorption of new Technologies by CAPART did not materialise, leaving the issue of further expansion of the basket of technologies still-born.)
- the recent *Report of the Technical Committee on Watershed Programmes in India* (MoRD, 2006) describes the potential contribution that can be made to effective rural technology delivery by another initiative of CAPART -- the Support Voluntary Organisation (SVO) programme.. The role of SVOs is to search out and link up the thousands of disparate, small but sincere groups, working in far-flung corners of the country and provide them the necessary

wherewithal to both implement watershed programmes in their areas and mobilise rural communities for this purpose. The SVOs would be linked to S&T institutions and would help deliver their packages to grass-roots NGO/Community Based Organisations (CBO) partners. In turn, these would provide feedback on these packages that would help technology developers better adapt the packages to different conditions.



However, CAPART has failed to upscale the SVO model at the requisite scale. This model could provide a powerful mechanism for effective rural technology delivery to rural stakeholders.

- it is expected that Line Departments such as the Ministries of Rural Development (MoRD), Small & Rural Industries, Welfare, Tribal Affairs, Human Resource Development, etc., would take up proven technologies for dissemination under their respective Schemes for income/employment generation and capacity-building. However, again, this has not happened in any systematic manner despite several attempts including the constitution of an inter-departmental Standing Committee on S&T for Rural Employment involving MoRD and DST. All other initiatives have been ad hoc, individualised and scattered, although several highly successful examples

(such as the Central Leather Research Institute (CLRI)-Centre for Technology Development, (CTD) initiatives on Carcass Utilisation through MoRD) have shown their potential

- response of re-financing Agencies such as KVIC/KVIB, NABARD, SIDBI or other Development Finance Institutions such as Rashtriya Mahila Kosh, SC/ST Finance Corporations, etc., have been even weaker, partly due to the apparent mismatch between the field models developed and the relevant Schemes of these Agencies which are to some extent pre-conceived

3.2 Worthwhile S&T interventions may indeed be made in almost all areas of rural life such as agriculture, habitat, physical and social infrastructure, but best and most cost-effective results would be obtained through rural technologies for non-farm rural enterprises for several major reasons e.g.:

- all the other sectors are at present covered by different Line Departments, related Research Institutions and Extension mechanisms implementing numerous Schemes and with huge funds at their disposal. Further efforts in these areas through the S&T Departments or other endeavours for effective delivery of rural technologies would therefore only yield marginal benefits.
- by contrast, the task of development and application of appropriate technologies for non-farm rural enterprises lacks a definitive institutional framework in the government set-up and, therefore, significant value would be added to existing developmental goals by such an endeavour which would thus make a major new contribution to the governmental system
- major thrust has been given by government to generation of rural employment but, whereas the National Rural Employment Guarantee (NREG) Act essentially provides for seasonal wage-labour largely through civil works in rural areas, systematic attention has not been paid to generation of sustainable employment in non-farm rural enterprises

- non-farm rural employment is of increasing importance due to low employment elasticity in the farm sector and the phenomenon of "jobless growth" in the organised industrial sector

3.3 The issue of directories/listings/data-bases of proven technologies in these areas frequently comes up and was also discussed in the Working Group. There are two inter-related issues here. First, most compendia are mere listing of possibilities with little or no reference to field-testing, sustainability or other ground-truths rendering their direct utilisation by end-users highly problematic. Second, most "rural technologies" can not be reduced to pieces of hardware or process descriptions: in order to be viable and sustainable, successful rural technologies are need-based holistic "packages" and field models with a "system design" comprising processes, equipment/machinery, organisational structures, product-market linkages etc. While generic field models are undoubtedly required and can be effectively described, actual field projects are necessarily context-sensitive and location-specific with variations that are difficult to capture in compendia/directories. Nevertheless, meaningful compilations of generic Project Profiles detailing the technologies can be prepared based on field-tested and proven field models embodying appropriate technologies, clearly delineating applicable boundary conditions, major context-related variations, economics etc, with periodic updating being done both electronically (on website) and in print form. It must be emphasised that such compilations require field-based validation and inquiry by the compiling party.

3.3.1 For many of the Technology sectors, field-tested and proven technologies and, more importantly, field models are available with different NGOs and S&T Institutions, mostly the former given their emphasis on field-based work and income-generation through rural enterprises.

3.3.2 In some cases, field-testing may only have been done at Pilot scale in one or two locations. In such cases, field-level assessment/validation of the

technology would need to be done and, if found viable and replicable, a generic "package" and "field model" would require to be evolved at least through paper-based system design exercises based on the available hard field data. Any location-specific modifications/adaptations of the basic technology required during dissemination would have to be done along with the dissemination exercise.

3.4 As regards voluntary organizations, they are spread across the country but most of them are not S&T oriented. However, Core Groups and other VOs supported by SSD/ DST, Rural Technology Action Group (RuTAG) of the office of PSA, CAPART, KVIC, ICAR, etc., have played a vital role in technology generation/upgradation as well as delivery/transfer. There are also some lessons and insights available from modes of rural technology delivery through All India Coordinated Programmes of SSD/DST, DBT and ICAR.

3.5 S&T-capable NGOs play a crucial role as partners of beneficiary group(s) and as intermediaries between them and other collaborating institutions. These NGOs are different from typical Voluntary Organisations (VOs) in that they would have capabilities in S&T enabling key roles in technology choice/adaptation/upgradation, experience in income generation activities and necessary institutional linkages. Their roles and functions would also be quite a-typical and include:

- field surveys towards feasibility studies
- preparation of Detailed Project Report (DPR) with inputs from all other potential actors
- networking, motivating and organising rural poor producers, artisans, small farmers and other partners/"beneficiaries"
- linking with technology providers, development agencies, financial institutions
- location-specific technology adaptation and upgradation
- participation in technical/managerial supervision
- assistance in marketing

- playing entrepreneurial role on behalf of pro-poor enterprise esp. in dealing with financial institutions, traders, etc.

3.6 "Technology delivery" or dissemination is a complex process. It is not merely "delivering" of some item, say hardware, from one point to another as may be conveyed by terms such as "technology delivery" or "lab to land". As already mentioned, "rural technology" is itself a complex set of entities and systems requiring a process of adaptation, absorption and, most important, hand-holding. It is not often appreciated that such "technology transfer" is a specialised task with its own requirements of expertise and experience, and cannot simply be left either to the technology developer or the user, at least in the initial period before the technology itself becomes much better known. It bears reiteration that technology delivery presumes that various elements of the technology "package" or "model" have been worked out and have been thought through. Briefly, technology delivery may be seen, not as a "one-off" task but as a complex set of activities comprising the following major steps or elements:

- feasibility study
- networking and motivation of "beneficiaries" or grassroots partners
- preparation of DPR
- location-specific technology adaptation
- erection and commissioning of plant & machinery, process optimisation etc
- training-cum-production, enterprise management and other HRD
- trial marketing
- hand-holding incl. managerial assistance, trouble-shooting
- towards full-scale production and sustainability

3.7 S&T NGOs, government agencies, district-level administration, and initiatives from the industry have been successful in disseminating rural development technologies up to a point. The challenge is to establish synergy among all these efforts, which are often fragmented and needlessly duplicated, in order to nucleate new initiatives and to strengthen existing ones.

3.7.1 The technology institutions and research laboratories have expertise in technology development but have almost no grass-root level outreach/contacts. The VOs on the other hand has limited technological expertise but have excellent field presence. In many instances, VOs with S&T capability have worked on improvements/up-gradation of some demand driven technologies upto a point but are not competent to take it beyond this level to a possible state of art. It is here that the specialized institutions can help and use their expertise to improve the technology further and also assist the VOs to then transfer the improved version in rural areas. Limited examples of such interface and networking do exist but the challenge is large scale replication of such endeavors all over the country.

3.7.2 S&T institutions are extremely keen to help in technology intervention in rural areas but are not sure how to organize such a programme. Also, the institutions in general have no interaction with VOs. The VOs are looking for support and do not know which is the best institution they should approach for technology support. They are also not very confident of approaching such institutions because of an inherent feeling that they will not be received well. Things are, however, changing, though slowly. What is necessary is a systemic support in a catalytic manner from some government agencies, which will ensure that the confidence level between the two partners are built and maintained for a constant dialogue.

3.7.3 In the above context, the Working Group felt that an intermediate institution/centre located in semi or peri urban area with a specific mandate for rural technology delivery could provide just the right linkage and interface amongst all the stakeholders. A very successful model of such a collaborative technology delivery programme has just been concluded in which BARC provided support on Isotope Hydrology

Techniques to Himalayan Environmental Studies and Conservation Organisation HESCO), a VO in Uttaranchal. It is therefore necessary to institutionalize such interactions between R&D institutions and S&T field groups having basic competence in technology adoption and delivery. These institutions could be called "Rural Technology Delivery Centres" and operated by VOs. They can be encouraged to have MOU with proximate and other National Institutions/ Laboratories for access to technologies developed and subsequent field validation. They would provide training to grass root level organizations, modify and fine tune the technologies if required, develop business models and provide complete technical support for effective transfer of the entire technology systems for setting up viable rural enterprises. Based on such successful models, the Centre will then also embark on large scale replication at National Level in partnership with other S&T VOs.

3.8 The Working Group felt that the emphasis should be on rural industries as it is extremely important in the context of the current rural development scenario and socio-economic development of the country as a whole, particularly as regards unemployment/under-employment and poverty. It has been widely noted that employment in the rural non-farm sector, i.e. in rural industries and a variety of related and other services, is vital for the creation of employment in rural areas at a juncture when agricultural employment has little scope for expansion and employment in urban areas is also not likely to expand so greatly as to absorb people from rural areas, more so when newer more modern industries tend not to be employment-intensive. Around 70% of the rural population is engaged in agriculture (or allied-sector activities), which however contributes only around 28% of GDP. Rural industrialization offers a means by which to add value to rural produce within rural areas themselves, not only to generate rural employment and incomes, but also to redress the adverse terms of trade between (rural) agriculture and (mostly urban) industry and increase the contribution of rural areas to the GDP by increasing their share within the industrial sector. The

Sub-Group therefore commended the focus on rural industrialisation within the broader ambit of technology transfer to rural areas, and decided to give it special emphasis in its recommendations.

3.9 Technologies relevant for rural industries in particular and rural development in general require to be competitive, have high productivity, produce quality products, reduce or eliminate drudgery, and yet generate maximum possible employment. These goals are not mutually incompatible at all, as several successful models have demonstrated, but represent the real challenge of R&D for rural application.

3.10 The Working Group also felt that most contemporary science and technology should be brought to bear while developing Technologies for rural industrialisation. It is also important that Technologies introduced should be such as could be scaled up or down, upgraded without much difficulty, and should take into account technology-market scenarios 10-20 years later. Rural industries cannot be subject to obsolescence within a few years, leaving the target population to face the same situation they faced prior to the introduction of the technology, and cannot afford expensive refitment every few years. An understanding of the contemporary and future foreseeable scenarios in terms of the market and technologies should be an integral part of the process of R&D and generation of technologies which would then have in-built features enabling it to withstand market changes which are only going to get increasingly rapid in years to come.

3.11 Technologies offered for replication should be accompanied by all necessary support services such as assistance in sourcing and procurement of equipment and machinery, installation/commissioning and after-sales service and maintenance of the same, training of project personnel, transfer of know-how, trouble-shooting and hand-holding services. Many a technology transfer effort has floundered because all these aspects have not been tied-up with the technology and the local

beneficiary group has been left to its own devices after some initial assistance. This is one reason why it is best not to speak simply of a technology to be transferred but a Technology Package, which should come bundled with all aspects and services necessary for its transfer.

3.12 The essential foundation for rural industrialization must be the natural resources available locally whether these are cultivated/husbanded or gathered from nature. These constitute the basic produce and raw material in the hands of the rural population, especially weaker sections, to which value is sought to be added. Such a strategy of local value-addition at/near the source of raw materials would also have enormous additional advantages to the national economy in reducing wastage, energy savings and obviating of unnecessary non-productive expenditures along the value chain, especially given the perishable nature of most of these commodities. It is well known that over 15% of cereals and other food grain as well as around 25% of horticultural produce are lost each year, resulting to losses running into thousands of crores, due to spoilage at different stages between harvest and retail sale. Lack of or poor storage facilities in rural areas, spoilage during prolonged and multiple stages of transportation and warehousing are major contributors to these losses. Much of this national loss could be mitigated, with enormous benefits to both rural producers, the national economy and consumers, if proper preservation and processing or semi-processing are undertaken in producing areas themselves. Rural industrialization based largely on value-addition to rural natural resources are clearly the way forward.

3.13 Many a well-meaning effort at rural technology transfer has become infructuous because it had been assumed that training and some occasional visits by the technology provider would suffice to ensure sustainability. Experience has clearly brought out, however, that most types of rural industries must have some in-house technical supervisory and managerial capabilities, such functions being an integral part of the production process itself. External technical back-up may still be required for trouble-shooting and specialist inputs, but on-line technical and

managerial inputs are essential to ensure proper application of the new/improved technology, quality control, accord with legal/regulatory norms as well as management of marketing operations. In most rural industries, the requisite capabilities can be built from among the prime beneficiary group itself or from local educated youth. In many successful examples, personnel of the promoting NGO themselves perform such functions and become part of the Enterprise's supervisory/managerial staff earning their livelihoods from the increased productivity generated and thus acquiring a stake in the enterprise. Whatever the methodology of building and sustaining such capabilities, there is little question about their necessity for rural industries, not just for their regular operation but importantly also to oversee their future upgradation to keep up with changing market scenarios and to link up with S&T Institutions. Such linkages, in turn, should be utilized not only for specialist or R&D inputs into the enterprise in question but also for absorbing expertise so as to maximize in-house capabilities in the relevant technology sector and build capacities to act as Resource Centres during downstream dissemination endeavours.

3.14 It is often argued that small rural industries, especially if they are based on appropriate, that is specially-evolved technology packages, are swimming against the current in which the contemporary large industries with economies of scale will always score over their poor rural counterparts. To the contrary, experience with many successful models of rural enterprises, not only in India but also in other countries, has shown that economies of scale *can* be achieved in small rural industries by adoption of appropriate technologies and production strategies. One of the ways this is achieved is through decentralised and networked production systems with division of production functions and inter-linkages between different levels. Such systems enable application of technologies and economies of scale appropriate to different levels/functions thus generating employment as close to source of raw materials as possible and generation of substantial production volumes while obviating large capital investments in centralised units.

This also underlines the importance of *technology systems* rather than stand-alone machines or processes.

4. Recommendations

4.1 Government has declared a target of generating 10 lakh employment opportunities in rural areas so as to achieve the goals of the CMP. The National Rural Employment Guarantee Scheme now assures 100 person-days of wage-employment per year mainly through works requiring unskilled labour. Every effort needs to be made to facilitate grass-roots voluntary organisations to play a crucial support role for PRIs in the effective planning, implementation and social audit of works under the NREGS. This is a vital requirement for the success of the scheme.

4.2 Whereas this provides some relief and poverty alleviation, in the long-term **sustainable job-creation in the rural non-farm sector** would be essential, especially in view of low employment elasticity in agriculture and lack of adequate job growth in the organized sector.

4.3 The Working Group has concluded that its mandate is best fulfilled precisely through meaningful contributions in this direction. Rural industries or enterprises that add value to raw materials produced in rural areas will not only create sustainable jobs and additional incomes, but also create productive assets, upgrade skills and reduce the adverse terms of trade between rural and urban areas. The regular functioning of lakhs of Self-Help Groups (SHGs) who are looking for gainful productive activities apart from mere inter-loaning, as well as the on-going SGSY Scheme which targets precisely cluster-based enterprises, provide ideal platforms for the same. The National Commission on Farmers headed by Dr. M.S. Swaminathan has also stressed the need for an integrated rural non-farm employment initiative, bringing together KVIC, Ministry of Rural Development, CSIR, ICAR, SFAC and the various technology missions.

4.4 The Office of the PSA to GoI, working closely with DST, can bring to bear requisite technical and managerial expertise, along with an outreach mechanism comprising S&T-capable Voluntary Organisations with proven track records, towards achievement of these goals in the XIth Plan period. Besides concrete deliverables as outlined below, the effort would also develop a new institutional framework for rural technology delivery involving both governmental and non-governmental agencies.

5. PROPOSED PROGRAMME In the above context, it is proposed to take up a programme **" S&T for Rural Industrialisation, Development & Employment (STRIDE)** bringing together DST and the Ministry of Rural Development (MoRD) for generating 1 lakh jobs through S&T-based Rural Enterprises **covering 100 Districts** during the XIth Plan period, thus meeting **10% of MoRD's target.** Based on mid-course reviews, this target can be further expanded and the work replicated more widely.

5.1 The **STRIDE Programme** would focus on those sectors where proven innovative technology packages are available, and would only require minor upgradation or location-specific adaptation, for value-addition through processing/semi-processing of rural produce. Need-based, demand-driven, locale-specific and beneficiary owned enterprises would be set up and taken through to sustainability in the following indicative though not exhaustive sectors:

- Leather
  - Tanning
  - Carcass Utilisation
  - Products
- Pottery (glazed table ware, tiles, sanitary ware etc)
- Non-Edible Oil Extraction
- Processed Fruits/Vegetables
- Processed Spices/Condiments

- Processed Non-Timber Forest Produce (edible/non-edible)
- Processed Medicinal Plants
- Aromatic Oil Extraction
- Herbal Cosmetics/Toiletries and Nutraceuticals
- Organic Dyes
- Soaps/Detergents
- Fibre-based Products
- Building/Construction Products
- Blacksmithy & Metal-work products
- Cane & Bamboo Products
- Recycled/Hand-made Paper
- Carpentry for Furniture, household items etc
- Electrical/Electronic Repair
- Sheet Metal Products (containers, drums, trunks etc)
- Iron/Steel Works (grills, gates, welding, etc)
- Handicrafts
- Wild Bee Honey (also domestic bee Honey)
- Meat/Poultry/Fish Products
- Fish Seed Hatchery
- Marketing and other Services in all the above areas

5.2 The above indicative list brings out clearly the enormous potential that exists for Rural Enterprises. It may also be pointed out that, whereas, some of these may appear trivial in terms of S&T content or function, fact remains that a very small proportion of such value-addition actually takes place in rural areas today. For instance, only 2-3% of Horticultural Produce is processed in India as a whole, and a negligible fraction in rural areas, even when an estimated 25-30% of raw produce is wasted constituting an enormous drain of national wealth/income. Similarly, only 10% of even *neem* seeds, the most well-known and commercially used non-edible oilseed, is collected and utilised in India.

5.3 Rural Enterprises may produce finished products for retail sale or semi-processed products for end-users in the organized sector. For instance, manufacturers of Lubricants or Paints or Bio-Diesel could procure Non-Edible Oils extracted by Rural Enterprises from locally available Tree-Borne Oil (TBO) seeds instead of simply paying labour costs to villagers for collection of seeds. Rural Fruit Processing Units could make processed juices, pickles for retail sale as well as fruit pulp for bulk buyers.

5.4 Actual size, scale of operation, and product range of each Rural Enterprise would again be decided on case-by-case basis after detailed Field Investigation, feasibility study and preparation of Detailed Project Report (DPR). Preparation of such DPRs would be one of the major tasks under this Programme and would cover all aspects such as technology, equipment/machinery, training, marketable quality assurance etc.

5.5 It is also proposed to set up five Rural Technology Delivery Centres to be operated by S&T Voluntary Organisations with technology back up and support from technology institutions and R&D laboratories. These centres would provide facilities of training, carry out modification and refinement of technologies and play a major role in replicating successful models of technologies.

6. **METHODOLOGY.** A Special Project Vehicle (SPV) is proposed to be set up and be monitored by PSA Office and DST. The SPV would in turn identify and network partner S&T-capable NGOs, all with impeccable credentials and track record in different States/Districts, as well as collaborating S&T Institutions in different sectors. These would provide the necessary technology transfer, technical back-up and hand-holding services for the need-based pro-poor enterprises of SHGs. Through this delivery mechanism of networked partners, the SPV would take full responsibility for all the different aspects of sustainable employment/income generation through enterprise creation namely:

- ☞ SHG or other group formation of beneficiaries: motivation, orientation
- ☞ participatory identification of needs/potential and project formulation

- technology choice and field model delineation
- discussions with Govt Agencies (national, state, PRI) and Financial Institutions
- assistance in procurement and installation of equipment/machinery
- assistance in other infrastructure setting-up
- training, skill-upgradation and entrepreneurship development
- hand-holding and trouble-shooting during production/other regular operations
- assistance in marketing

6.1 The exercise would necessarily be multi-disciplinary and involve multiple actors and stakeholders such as artisans, small farmers, agricultural labour, local traders etc besides NGOs, DRDAs, S&T Institutions including local Polytechnics etc.

7. <u>DELIVERABLES</u> It is proposed to set up about **500 Enterprises** covering around **100 Districts** and 5 Rural Technology Delivery Centres at 5 locations.

7.1 Rural enterprises and appropriate technologies suited to them would be selected and project plans drawn up based on the concrete ground realities of each District, availability of raw materials, prevalent clusters of artisans/other poor producers, potential markets etc. However, broadly it may be indicated that technology sectors to be covered in rural enterprises are likely to include the following tentative and suggestive sectors:

State	Districts	Enterprises
HP	5	25
UP	8	50
UA	4	25
MP	8	50
CHH.	3	25
BIH.	8	50
JH.	5	25

ORI	5	25
AP	5	25
TN	10	50
KER.	5	25
RAJ.	8	40
MAH.	5	25
W.B.	10	100
ASSAM	5	25
Other NE	6	15
Total	**100**	**580**

7.2 2 locations for the Rural Technology Delivery Centres have already been identified, one in Uttaranchal and the other in Madurai. Other locations will be finalized depending on the availability of S&T field groups.

8. <u>COSTS</u> Actual costs would be determined based on DPR on case-by-case basis. However, on broad average basis, the total costs are likely to be around **Rs. 100.00 crores** for the **STRIDE** Programme and **Rs. 50 crores** for the **Rural Technology Delivery Centres. The total budget proposed is Rs. 150.00 crores.**

Government of India
Office of the Principal Scientific Adviser to the Government of India

311, Vigyan Bhawan Annexe,
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New Delhi 110011
Dated: 8th May, 2006

OFFICE MEMORANDUM

Subject : Constitution of Working Group under the Steering Committee on Science on Technology for the Formulation of Eleventh Five Year Plan (2007-2012).

Planning Commission has constituted a Steering Committee on Science and Technology for the Formulation of Eleventh Five Year Plan (2007-2012). To assist the Steering Committee and to finalize its recommendations, a Working Group is being constituted on "Effective Rural Technology Delivery (including partnership with Voluntary Organizations)". The composition and terms of reference of the Working Group would be as follows :

I. Composition

Sr. No.	Name, Designation and Organization	
1.	Dr. R. Chidambaram, PSA	Chairman
2.	Dr. T. Ramasami, Director, CLRI, Chennai	Co-chairman
3.	Dr. Anil P. Joshi, HESCO, Dehradun	
4.	Shri M.R. Rajagopalan, Gandhigram Trust, Gandhigram	
5.	Shri D. Raghunandan, CTD, New Delhi	
6.	Shri P.M. Tripathi, President, AVARD, New Delhi	
7.	Dr. Panjab Singh, VC, BHU, Varanasi	
8.	Dr. Mihir Shah, Samaj Pragati Sahayog, Dewas,Madhya Pradesh	
9.	Prof. Dayanand Dongaonkar, Secretary-General, Association of Delhi University, New Delhi	
10.	Shri S. Chatterjee, Adviser, Office of PSA to GOI	Member Secretary

II. Terms of Reference

1. To suggest effective modes of technology delivery from R&D laboratories/ S&T institutions to rural areas.

2. To suggest a standard mechanism/ system for providing institutional support to the voluntary organizations for demand driven technology up- gradation.

3. To identify special programmes for application of S&T for improving the quality of life of the rural people, particularly of the weaker sections and women in the rural population.

4. To suggest possible methods for accelerating the process of rural industrialization involving S&T institutions as technology providers and also for providing technology back up.

5. To suggest a mechanism for mobilizing resources from various line function Government Departments/ Ministries for such large-scale replication.

6. To consider any other important and relevant item.

7. To indicate approximate financial outlay for implementation of the recommendations.

8. The Chairman may co-opt other members, if required.

9. The expenditure on TA/DA in connection with the meetings of the Working Group in respect of the official members will be borne by their respective Ministry/ Department. However, in the case of non-official members, they will be entitled for TA/DA as admissible to Grade-I Officials of the Government of India and the expenditure in this regard would be met by the Planning Commission

10. The Working Group would submit its report by 15th July, 2006.

(S. Chatterjee)
Adviser

Copy forwarded to:

1. Chairman, all members and Member Secretary of the Working Group.

2. Dr. V.L. Chopra, Member (S&T and Agriculture), Planning Commission, Yojna Bhawan, New Delhi

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