a special Nano Science and Technology Initiative (NSTI) in October 2001. The NSTI has been focusing on research and development in nanoscience and technology in a comprehensive manner so that India can bcome a significant player in the area and contribute to the development of new technologies besides carrying out basic research at the frontiers of knowledge. The programme supports R&D projects, strengthening of characterization and infrastructural facilities, creation of centres of excellence, generation of trained manpower, joint projects between educational institutions and industry for application development etc. The Government is embarking on plans for launching a Nano Science and Technology Mission (Nano Mission) with estimated public investment of Rs. 1000 crore over the next 5 years to further intensify its promotional efforts in this area. As part of the Nano Mission it is planned to launch a variety of educational and HRD programmes, R&D programmes, establish Centres of excellence, promote institution-industry linked projects through increased public private partnerships, promoting entrepreneurship through establishment of business incubators, etc. The Nano Mission also plans to make special efforts for development and commercialization of nano technology, not only through public private partnerships but also by encouraging and enabling the private sector to invest in, and leverage, this sunrise technology.

Realizing the immense potential of nanotechnology, countries across the world have been making substantial public investments for promoting this area. For example, with the launch of National Nanotechnology Initiative (NNI) in 2000, the governemnt expenditure of USA increased from $270 million in 2000 to about $1 billion in 2005. Public investments in the European Union, China and South Korea were of the order of $ 650 million, $ 100 million and $ 200 million respectively.

R&D Institutions and scientific community for welfare of rural areas

2833. SHRI BALAVANT ALIAS BAL APTE:
SHRI SHREEGOPAL VYAS:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the public funded R&D institutions and the scientific community are not adequately responding to the needs of rural areas;

(b) if so, the details thereof; and

(c) the steps taken/proposed to be taken to improve the response of R&D institutions and scientific community towards welfare of rural areas?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) to (c) No, Sir. The government has several schemes related to societal development to catelyze and support research, development and adaptation of relevant and appropriate technologies for empowering and improving the quality of life in rural areas. Technology institutions/R&D laboratories function as a source of relevant technologies and models which are implemented in rural areas through voluntary agencies and other institutions. Sometimes there is a time lag in new technology to reach the rural areas. The impact of the programmes has been felt in local areas. However due to inadequacy of funds and other resources for such programmes, large scale dissemination has suffered. Inspite of constraints many models and local level technologies have been developed and are being practiced. Some of the proven technologies/packages are–

* Fruit/vegetable processing and preservation for value addition at village level with quality control. Model is working at 23 locations in the country,
* Agro technologies for cultivation/semi processing of high value medicinal plants by women,
* Drier for coconut gratings; paper and biomass based drier for horticulture produce,
* Techniques of Dehydration of flowers,
* Biofertilizers eg. Azolla, BGA,
* Development of wool carding machine,
* Ergonomically suitable tools/equipments for use by women in sericulture,
* Fish Aggregation Devices (FAD) for coastal fisher folk,
* Technology package for low-temperature glazing for making red clay pottery and many units are in operation especially in Kanyakumari area,

* Low-cost diagnostic medical kits for urinary tract infections,
* Setting up of bio villages,
* Setting up of 16 women Technology Parks and 5 Rural Technology Parks as an integrated model for technology dissemination,
* Biogas plants using spoilt grains, fruits, etc. for small restuarants/ dhabas. 500 units have been installed in Maharashtra,
* Water filter ultrafine membrane capable of removing bacteria and virus without use of electricity,
* Non pressurized sarai cooker using charcoal which takes 40 minutes for complete cooking. This is under commercial production,
* Standardization of tissue culture techniques for producing disease free banana in Sundarban delta. 4 lakhs plantlets have been sold by trained women group,
* Lac extraction and processing machines is being popularized in lac producing area of Jharkhand,
* Technology for low-cost sanitary napkins has been developed and disseminated,
* Upgradation of watermills with multipurpose use for generating electricity in remote mountain regions of Uttaranchal, Jammu & Kashmir, Himachal Pradesh and North-East. About 2000 watermills have been upgraded,
* Centres established in Underserved and underdeveloped areas to investigate and find solutions to health problems of local populations,
* Extramural projects for studying the health conditions and diseases of tribals,
* Research directed towards poverty driven diseases such as tuberculosis, leprosy, malaria, filariasis and visceral leishmaniasis,
* 670 water filters capable of removing virus have been installed in many rural areas. The technology was developed by CSIR.