

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO.806
TO BE ANSWERED ON 03.03.2016

PROJECTS IMPLEMENTED BY BARC IN GUJARAT

806. SHRI MANSUKH L. MANDAVIYA:

Will the PRIME MINISTER be pleased to refer to answer Unstarred Question no. 776 given in the Rajya Sabha on 3rd March, 2011 and state:

- (a) the number of projects being implemented by Bhabha Atomic Research Centre (BARC) in Gujarat in agriculture and other sector, sector-wise details thereof;
- (b) the amount of funds spent on these projects, so far, project-wise and year-wise, since their inception;
- (c) the outcome and benefits accrued due to implementation of these projects in Gujarat; and
- (d) whether BARC is working in Gujarat for converting sea water for use of industrial or for irrigation purpose, the details thereof?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH) :

- (a) The Bhabha Atomic Research Centre (BARC), a constituent unit of Department of Atomic Energy (DAE) has implemented following projects in agriculture and other sectors in the state of Gujarat:-

- i) Agriculture :

Radiation based induced mutagenesis for crop improvement along with conventional breeding has been underway at BARC, Mumbai since late fifties. Using both mutation and cross breeding, BARC has developed 42 crop varieties and are released and notified for commercial cultivation across the country. These include 15 varieties in groundnut, 3 in mustard, 2 in soybean, 1 in sunflower (21 in oilseeds), 8 in mungbean, 5 in urdbean, 5 in pigeonpea, 1 in cowpea (19 in pulse crops), 1 each in rice and jute. For Gujarat state, 5 groundnut (TAG 24, Somnath, TG 26, TG 37A, TPG 41), 3 pigeonpea (TT 6, TT 401, TJT 501) and 1 mungbean (TARM 1) varieties have been released through active collaboration with Indian Council of Agricultural Research (ICAR) and Junagadh Agricultural University, Junagadh. Besides these, recently released groundnut varieties like TG 38, TG 39, TLG 45 and

TG 51 (released elsewhere) are also popular among the Gujarat farmers. TAG 24 and TG 37A are high yielding varieties with moisture stress tolerance; TG 51 with early maturity and TG 39, TPG 41 and TLG 45 being large seeded varieties are suitable for export and confectionary purposes.

Recently, new groundnut breeding lines like TG 72, TG 73, TG 74, TG 76, TG 78, TG 79 and TG 80 having high yield, large seed and early maturity developed at the BARC are being evaluated at Junagadh Agricultural University for their superiority.

ii) BARC has provided technical support for implementation of NISARGRUNA biogas plant at Gajarawadi, Vadodara for processing of carcass of dead animals in the premises of Vadodara Municipal Corporation. The plant is functioning satisfactorily over last 26 months.

iii) A sewage sludge hygienisation research irradiator (SHRI) is operating in Vadodara since 1994. The plant was set up in collaboration with Vadodara Municipal Corporation to treat 110 meter cube of sewage sludge. Sludge carrying heavy microbiological load and pathogens is hygienised by high energy gamma radiation coming from Cobalt-60 source. The plant is regularly hygienising sludge which is converted into manure and used by local farmers for agricultural use.

iv) Recently, BARC has entered into MoU with Ahmedabad Municipal Corporation to set up a 100 ton per day dry sludge hygienisation facility. This facility can hygienise 100 tons of dry sludge every day and in addition to this the hygienised sludge will be inoculated with useful bacteria to convert it into manure rich in Carbon, Nitrogen, Phosphorous for use of agriculture. The facility will be useful to treat most of the city sewage dry sludge generated at various sewage treatment plants of Ahmedabad.

(b) Funds for the NISARGRUNA project were provided by Vadodara Municipal Corporation. BARC provided technical guidance.

Funds for setting up of dry sludge hygienisation project at Ahmedabad will be provided by Ahmedabad Municipal Corporation. BARC will provide scientific and technical support.

Earlier, BARC through Board of Research in Nuclear Science (BRNS) has also funded about 17.30 lakh to Directorate of Groundnut Research, Junagadh for groundnut research project.

- (c) The disposal of municipal sewage sludge especially in large metropolitan cities is emerging as a serious problem for urban authorities as sludge contains a high load of potentially infectious microorganisms that can pose a serious threat to public health. Currently, the sludge is land filled or given to farmers in unregulated manner. This practice results in spread of diseases and also ground water contamination affecting environment and human health.

Treatment of sludge with high energy ionizing radiation kills the pathogens and unwanted constituents. Subsequently, addition of useful bacteria to the hygienized sludge results in manure which can be used by farmers for agricultural purpose.

The various benefits which are available to farmers who use the hygienised sludge are:

- Increased crop yield-direct benefits to the farmers.
- Improved soil conditions-soil conservation & restoration.

The benefits to people are mainly in the form of reduced diseases and reduced ground water contamination and improved overall quality of life.

The project on agriculture has benefited Gujarat in the following manner. Gujarat State has been indenting breeder seed of BARC groundnut varieties. BARC has supplied 170 quintals breeder seed (basic seed) of these varieties in the last five years to Directorate of Groundnut Research, Junagadh Agricultural University, Gujarat State Seed Corporation, seed companies, NGOs and farmers. These agencies after seed multiplication, are distributing thousands of quintals of seeds of BARC varieties to Gujarat farmers. Feedback about performance of BARC groundnut varieties from farmers from various places in Gujarat is highly encouraging. Some of the companies are also exporting seeds of these varieties to various countries.

- (d) No, Sir.
