

Research in Agriculture Livestock and Fisheries

*110. SHRI RAMPAL SINGH :
SHRI MAHESH KANODIA :

Will the PRIME MINISTER be pleased to state :

(a) whether the Government have agreed to carry out joint research in the field of agriculture, livestock and fisheries with Brazil ;

(b) if so, the details thereof ;

(c) the time by which the joint research is likely to start in these fields ; and

(d) the details of the projects likely to be undertaken under the said programme?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI SOMPAL) : (a) and (b) The Ministry of Agriculture has not signed any Agreement with the Govt. of Brazil to carry out joint research in the field of agriculture, livestock and fisheries. However, the Indian Council of Agriculture Research has signed a Memorandum of Understanding with the Brazilian Agricultural Research Corporation (EMBRAPA) on 30.8.95 with the objective to strengthen cooperation and to stimulate interest in the broad areas of plant science, soil science, agriculture biotechnology and other related areas of interest.

(c) For implementation of the activities under the MOU, ICAR prepared a Workplan for the biennium 1996-97 under which the training of the Brazilian scientists in India was undertaken. Further activities from both sides are expected to be undertaken during 1998-99.

(d) Under the Workplan, the activities include exchange of scientists between ICAR and EMBRAPA for study visit and training in the areas of interest identified for cooperation. In addition, one joint research project has also been proposed on "Production of disease free nursery plants and search for resistance in citrus against *Phytophthora* diseases". The Workplan also includes exchange of scientific information and germplasm between ICAR and EMBRAPA.

[Translation]

NCES Potentials

*111. SHRI NARENDRA BUDANIA : Will the PRIME MINISTER be pleased to state :

(a) whether the Government have made any survey of the potential of Non-Conventional Energy Sources in the country particularly in the State of Rajasthan ;

(b) if so, the details thereof, State -wise ;

(c) if not, the reasons therefor; and

(d) the time by which the full potential of NCES in the country is likely to be exploited?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS, MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS AND MINISTER OF STATE IN THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION (SHRI RAM NAIK) : (a) to (d) Various Studies have been sponsored/undertaken by the Government which have indicated broad potentials of various Non-Conventional Energy Sources on country-wise basis. The broad potentials of Non-Conventional Energy Sources estimated on country-wise basis including in the State of Rajasthan, are given in enclosed Statement-I.

State-wise potentials have been estimated in respect of biogas, improved chulha, small hydro power (upto 3 MW) and bagasse based co-generation in sugar mills, which are given in enclosed Statement -II.

The full exploitation of the potential of Non-Conventional Energy Sources will depend on the availability of financial resources, both public and private and technical feasibility and economic viability of available technologies.

Statement - I**Board Potential of Non-Conventional Energy Sources in the Country**

Source/System	Approximate Potential
1. Biogas Plants (No.)	120 lakh
2. Improved Chulha (No.)	12 crores
3. Biomass	17,000 MW
4. Bagasse based Cogeneration	3500 MW
5. Solar Photovoltaic	20 MW/sq. km
6. Solar Thermal	35 MW/sq. km.
7. Wind Power	20,000 MW
8. Small Hydro Power (upto 15 MW)	10,000 MW

MW = Mega -Watt.

Sq.Km.= Square Kilometre.