

लाइनों वाला स्वचल टेलिक्स एक्सचेंज मंजूर किया गया है। उपस्करों की सप्लाय के लिये भी आदेश दे दिए गए हैं।

(ख) ऐसी आशा की जाती है कि यह एक्सचेंज वर्ष 1982-83 के दौरान चालू किया जा सकेगा। उपस्करों की सीमित सप्लाय के कारण एक्सचेंज को इससे शीघ्र चालू करना संभव नहीं हो सकेगा।

Experiments in Solar Energy by Agricultural Universities

1228. SHRI P. RAJAGOPAL NAIDU: Will the Minister of AGRICULTURE be pleased to state:

(a) whether experiments are being carried on in Solar Energy by Agricultural Universities; and

(b) if so, results thereof?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND RURAL RECONSTRUCTION (SHRI R. V. SWAMINATHAN): (a) Yes, Sir. The experiments in solar energy are being carried out at the Central Institutes of the ICAR and at the Agricultural Universities, under the Coordinated Research Programme on Operational Research in Solar Energy Utilisation in Agriculture as well as under the regular research programmes of some of these institutions. The coordinated research programme functions at the Central Arid Zone Research Institute, Jodhpur (Coordinating Centre); Punjab Agricultural University, Ludhiana; Tamil Nadu Agricultural University, Coimbatore. University of Udaipur, Udaipur and the Central Rice Research Institutes, Cuttack.

(b) Some of the more important results obtained so far are as follows:—

The Central Arid Zone Research Institute, Jodhpur is maintaining a number of sunshine recording stations in Western Rajasthan. To compute more accurately the solar insolation, statistical relationships

between the total solar radiation at horizontal surface and sunshine hours have been worked out at the Institute. The C.A.Z.R.I. has also developed several models of solar water heaters which can supply water at 50-60°C—70-75°C in winter and summer months respectively. For producing clean potable water from brackish saline water, work on small family size solar stills has been undertaken. Solar crop drying systems, ranging from small to very large capacity drying plants are under development. It is observed that drying of chilies can be completed within 7 days in solar cabinet driers compared with 15-16 days in the common open-air drying method. Thus the solar cabinet drier reduces the time by less than half. The pattern of drying is similar in both the methods. Five types of solar cookers of concave mirror either spherical or paraboloidal shape have been developed and are under field trials. Solar Oven sufficient for meeting the daily cooking requirements for a family of five persons costing about Rs. 300/- has been developed. A simple type of solar steam cooker suitable for cereals, vegetables etc. has been developed. Work on the production of Process Steam for use in food and other Industries is also in progress.

The Central Institute of Agricultural Engineering at Bhopal has developed a solar water heater of 200 litres capacity. The Water Technology Centre at the Indian Agricultural Research Institute, New Delhi has tested a solar photovoltaic irrigation pump of American make and has found its capacity suitable for use on small farms. The present cost however, is on the high side compared with conventional diesel pumps.

A solar dehydrator for producing quality potato chips with a capacity of 50 kg. fresh chips per day has been developed at the Central Potato Research Institute, Simla.

The manufacturing cost of this machine is Rs. 3,300/-. Two labourers are required to operate it. Power failure or shortage of electricity does not affect the process of drying chips. This dehydrator can effectively be installed in the rural areas by the potato farmers on community or cooperative basis.

Under the All India Coordinated Post Harvest Technology Scheme of the ICAR, several centres have been working on conditioning and drying of gram with solar energy. A solar heat seed treating machine has been developed which can be used instead of the common chemical seed treatment drum.

A one-tonne capacity solar grain dryer has been developed at the Jabalpur University. At the Punjab Agricultural University, a vane type rotary engine suitable for operating solar pumps has been developed.

Construction of Bhimkund Dam in Orissa

1829. SHRI HARIHAR SOREN
Will the Minister of IRRIGATION be pleased to state:

(a) the number of villages of Keonjhar and other districts of Orissa which will remain under water by the construction of Bhimkund Dam in Keonjhar district of Orissa;

(b) the number of people living in those villages;

(c) whether Govt. have made any arrangement for their rehabilitation; and

(d) the amount government wants to pay them as compensation?

THE MINISTER OF STATE IN THE MINISTRY OF IRRIGATION (SHRI Z. R. ANSARI): (a) and (b). The Government of Orissa have reported that 117 villages (95 villages in Keonjhar district and 22 villages in Mayurbhanj district) will be submerged

by the construction of Bhimkund Reservoir and about 75,000 persons (as estimated in 1980) will be affected.

(c) As per project report, 63 villages are to be set up for settlement of 200 families in each village. Out of these, 50 per cent of the families will be settled inside Bhimkund ayacut area and 50 per cent on the periphery of the reservoir. The total amount provided for rehabilitation of the oustees is Rs. 20.1 crores.

(d) The total amount of compensation to be paid by the Government as indicated in the project report (June 1980) is Rs. 20.44 crores.

Cultural Agreements with Foreign Countries

1830. SHRI A. NEELALOHITHA DASAN: Will the Minister of EDUCATION AND SOCIAL WELFARE be pleased to state:

(a) whether Government are having cultural agreements with foreign countries;

(b) what are those foreign countries; and

(c) the details of the cultural agreements with each of those countries?

THE MINISTER OF EDUCATION AND SOCIAL WELFARE (SHRI S. B. CHAVAN): (a) Yes, Sir.

(b) A statement showing the names of the 56 countries with which India have cultural agreements is attached.

(c) The cultural agreements generally provide for cooperation between India and the other contracting countries in the fields of art and culture, education, science and technology, films, mass media, public health, sports, agriculture etc. by way of exchange of scholars, experts and academics in various fields; exchange of artistes, exhibitions and sports teams; exchange of books and publications; award; of scholarships; equivalence of degrees and diplomas etc.