

SHRI SURESH KALMADI: One minute is already over.

SHRI VISHVAJIT PRITHVIJIT SINGH: Mr. Chairman, the hon. Parliamentary Secretary has referred in his various replies to the fact that very minute quantities of the active ingredients of the drug or any particular formulation were available for experiment in India, and that, therefore, proper experiments could not be carried out till we had produced enough of the active ingredients to be able to use them. I would like to know from the hon. Parliamentary Secretary whether this drug is still in the experimental stage in China or whether it has been already introduced commercially. If it has been introduced commercially, what is stopping us from getting the proper amount of the active ingredient from China so that we may be able to experiment ourselves with that ingredient before finally growing our own and making our own?

SHRI ARUN SINGH: Regarding the first part of the question, I do not know whether there is any such thing as commercial introduction in China. What we know is that the Chinese are using the product and they do claim it to be effective.

Regarding the second part, Sir, the Member's suggestion is noted and we will follow it.

DR. LOKESH CHANDRA: Has the Government tried to find out the species of *Artemisia* within our country because in the tribal areas they are using leaves of herbs for the eradication of malaria? We have several species of *Artemisia* in our country and we should be able to utilise our own species, and we need not import the raw material from China.

SHRI ARUN SINGH: The Member's suggestion is noted. It will be followed.

Survey on employment of scientists and engineers

*427. **SHRI VITHALRAO MADHAV-RAO JADHAV:**†

PROF. B. RAMACHANDRA RAO:

Will the PRIME MINISTER be pleased to state:

(a) whether Government conducted a survey in 1982 as to how the scientists and engineers are to be employed;

(b) if so, what are the findings of the survey;

(c) whether this has revealed any defects, imbalances and lacuna in the training employment and research;

(d) if so, what are the details thereof; and

(e) what remedial steps Government propose to take in this regard?

THE PARLIAMENTARY SECRETARY (SHRI ARUN SINGH): (a) to (e) Information is laid on the Table of the House in the enclosed Statement.

Statement

(a) No survey regarding employment of all categories of scientists and engineers was conducted in 1982. However, a sample study of the science and technology Doctorates employed in the R&D establishments in the country and the public and private sector industries, whose in-house R&D Units were registered with the Department of Science and Technology, was carried out during the period 1982—84.

(b) Some of the findings of the study are:—

(i) About 48 per cent of the total employed Doctorates were working in the educational institutions like Universities, Institutes of Technology etc.,

†The question was actually asked on the floor of the House by Shri Vithalrao Madhavrao Jadhav.

and 37 per cent in the major scientific agencies under the Central Government. About 9 per cent of the total Doctoral scientists and engineers were employed in the Industrial Sector.

(ii) Out of the 22,055 Doctoral Scientists and Engineers covered under the survey about 78 per cent were having Indian Degrees, 13 per cent were having foreign Degrees while no information was available for about 9 per cent of the Doctorates.

(iii) About one-third of the total employed Doctorates in institutional sectors were from the field of Biological Sciences. In the productive sector, Doctorates in Chemistry and Engineering had the maximum share.

(iv) Doctorates in Chemistry, Biology Physics accounted for more than 80 per cent of the total Doctorates in Pure Science during 1980-81.

(c) to (e) General conditions of employment, training and research of scientists and technologists are constantly reviewed by the Government. This report which was published in February, 1985 is under study. However, Government is aware of the fact that there are mismatches between the product of the educational system and job opportunities for which many steps are being taken. A number of programmes of industrialisation, modernisation of industry, on S&T entrepreneurship development, encouragement of small scale industry etc. have been taken up. In addition, the Government is giving serious consideration to bring about changes in the educational policy and a new policy in this regard is under formulation.

SHRI VITHALRAO MADHAVRAO JADHAV: Sir, in the question it was asked:

"Whether Government conducted a survey in 1982 as to how the scientists and engineers are to be employed;"

And here in this answer it is given that no survey has been done, but that a sample study has been done in this regard. In part (b) it has been given that some 48 per cent of the Doctorates are working in educational institutions and so on. That means, the total employment of the Doctorates is about 94 per cent. Does the Government have information about 6 per cent of the remaining Doctorates, in which field they are working?

Another thing is that in this most of the Doctorates are in basic sciences, that is, Physics, Chemistry and Biological Sciences, and most of the contribution of the scientists is for the development in the field of science and technology.

MR. CHAIRMAN: Time up.

SHRI VITHALRAO MADHAVRAO JADHAV: Whether the mis-matches between the educational system and the job opportunities is due to the lack of modern curriculum in engineering or whether it is due to lack of industrial training during the period of education? What is the reason?

MR. CHAIRMAN: You have put all the supplementaries together.

SHRI VITHALRAO MADHAVRAO JADHAV: No, Sir, I am splitting them into two parts.

SHRI SHIVRAJ PATIL: A sample survey was done. The survey of all the science graduates and Doctorates was not touched. At this point of time it is difficult for me to say as to what the 6 per cent of Doctorates are doing.

As far as the second question is concerned, there are some factors which are responsible for the mis-match. New areas are being opened and we need Scientists and Technologists for working in the new areas. For instance, in Electronics and Genetics we need more hands. But the education has to be imparted to the students in these two subjects in our universities and institutions. Then, there will not be any mis-match. The Government is making efforts to find out the areas in

which the particular kind of Scientists and Technologists would be required. In accordance with the requirements, the educational system will be shaped. The new policy is going to take into account this fact also.

MR. CHAIRMAN: Second supplementary. It must be short.

SHRI VITHALRAO MADHAVRAO JADHAV: I am putting only two questions in the second supplementary. (1) What is the time limit for the survey of the Scientists which has not been given in the answer? (2) The Honourable Minister has stated just now that the Government is going to give serious consideration to bring about changes in the educational policies and a new policy in this regard is under consideration. I would like to know what is the new line of the policy in this regard?

SHRI SHIVRAJ PATIL: Sir, I am unable to give the correct time limit. And it is also difficult for me to answer his second question also, because that pertains to the Ministry of Education. As far as my understanding goes, we are going to take into account the requirements in the new areas and the requirement in the technical areas also. Then, we will modify our educational system to meet those demands.

MR. CHAIRMAN: Prof. B. Ramachandra Rao.

PROF. B. RAMACHANDRA RAO: Mr. Chairman, Sir, it is stated that our courses particularly in engineering are partly obsolete and mostly theoretical. It is also said that most of our engineering teachers are not aware of what is happening in our scientific national laboratories and science students are totally ignorant. It is also said that our Doctorate research studies have no relevance whatsoever with the national needs. I, therefore, put the following question:

Whether following the pattern of the Department of Scientific and Industrial Research in United Kingdom—they have a programme like this to identify the problems of the various industries there

are thousands of them—the CSIR, DST and other organisations will identify these projects and give it specifically to Scientists working in these laboratories so that these can be immediately transferred and translated into realities in our industries—and also a rapport can be established between the Scientists working in the laboratories and in the industries.

SHRI SHIVRAJ PATIL: Sir, it has to be understood that the education in scientific subjects is important in the universities. The national laboratories are responsible for research and development and not for education. Of course, the national laboratories take into account the requirement of society, the requirement of the industry and requirements of the other sectors also. They carry on research and development in those areas. In the process if the Scientists develop; if the technologists develop and they come out and they become available to industries. It is a very welcome thing, but as far as the education is concerned, that has to be considered by the Education Department and the education has to be modified accordingly.

श्री चतुरानन मिश्र : अध्यक्ष महोदय, अखबारों में यह बात बराबर आई है कि हमारे जो वैज्ञानिक और इंजीनियर्स हैं उनको जाव-सैटिसफैक्शन नहीं होता है और इसीलिए उम में से लोग विदेश में चले जाते हैं। तो क्या यह जो सर्वे कराया गया है उसमें यह भी कोई मुद्दा था या नहीं? अगर यह नहीं था, तो क्या उनके जाव-सैटिसफैक्शन के बारे में सरकार कोई सर्वे करवायेगी?

श्री शिवराज पाटिल : श्रीमन् किसी एक रिपोर्ट के आधार पर हमारे देश के सारे वैज्ञानिकों का क्या ख्याल है इसके बारे में अनुमान लगाना गलत होगा। हमारे यहां पर जो विज्ञान के क्षेत्र में प्रगति और प्रसार हो रहा है उसको देखकर यह कहा जा सकता है कि काम के समाधान के संबंध में, जाव-सैटिसफैक्शन के संबंध में यहां पर बहुत स्कोप है, कई नए-नए क्षेत्र इसमें खुल रहे हैं। जैसे कि स्पेस साइंस टेक्नोलॉजी, इलेक्ट्रॉनिक्स है, जैने-

टिक्स है और जितने भी फ़िटियर एरियाज हैं उसमें काम करने के लिए साधन हम उपलब्ध करते रहे हैं। पंचवर्षीय योजना में जो रकम रखी है वह पहली पंचवर्षीय योजना में सिर्फ 20 करोड़ रुपये थी और छठी पंचवर्षीय योजना में करीब-करीब साढ़े तीन हजार करोड़ ६० की रकम रखी गई है। इसको देखने के बाद यह कहा जा सकता है कि जिनके मन में ऊंचा और अच्छा काम करने की इच्छा है उनके लिए यहां काम की कोई कमी नहीं है। हां, यह हो सकता है कि सेनरी के मामले में, पर्सनल या व्यक्तिगत सुविधा देने के बारे में हम दूसरे देशों के बराबर नहीं हों। लेकिन जहां तक चुनौती का सवाल है मैं समझता हूं कि भारत में उसकी कोई कमी नहीं है, चाहे वह कोई भी क्षेत्र हो।

श्री सत्यपाल मलिक : श्रीमन् गांवों में बहुत दूर-दूर तक टैक्नोलॉजी गई है, ट्रैक्टर गया है, डीजल का इंजन गया है, लेकिन उसके जाने के बाद उसका रख-रखाव और मरम्मत का कार्य इतने अनाड़ी हाथों में जाता है कि बहुत बड़े पैमाने पर कास्ट और प्रोडक्शन को रेश्यो में किसानों को नुकसान होता है। इसी तरह गांवों में सिविल इंजीनियरिंग के मामले में आज से दो सौ साल पहले जितना बढ़िया मकान बिना सीमेंट और स्टील के बनता था वैसा आजकल नहीं बन पाता है। गांवों की सारी खूबसूरती खत्म हो गई है। तो मैं माननीय मंत्री जी से जानना चाहता हूं कि हमारे यहां जो सिविल और मैकेनिकल इंजीनियरिंग के ग्रेजुएट्स बड़ी तादाद में निकल रहे हैं, क्या यह संभव नहीं है कि रूरल इंजीनियरिंग कार्पोरेशन बना कर इन लोगों को प्रतिभा और ताकत का उपयोग ग्रामीणों की जिन्दगी बेहतर बनाने और जो खर्चा टैक्नोलॉजी पर होता है उसको बचाने में किया जा सकता है?

श्री शिवराज पाटिल : श्रीमन्, यह बात आज भी की जाती है कि जो पुराने ढंग से घर बांधे जाते थे उस ढंग से आज भी घर बांधे तो बिना सीमेंट और ईंटों के, पत्थर और लकड़ी के और मिट्टी

के साथ बनाए तो उसका क्या परिणाम होगा इसके ऊपर विचार करने के लिए हमारे पास कुछ प्रयोगशालाएं हैं, नेशनल लैबोरेटरीज हैं, उसमें यह विचार किया जाता है। लेकिन यह चीज ध्यान में रखना जरूरी है कि देहात में भी नई-नई चीजें पहुंच रही हैं जिनको दुरुस्त करने के लिए और दुरुस्त रखने के लिए वहां के लोगों को ट्रेनिंग देना आवश्यक होगा। आपने कहा कि वहां ट्रैक्टर पहुंचा है तो उसको ट्रेड करने के लिए आर्टीमोवाइल इंजीनियरिंग में जिसके पास डिप्लोमा है उसको वहां पर जाना पड़ता है, टी0वी0 पहुंचता है तो उसके लिए जाना पड़ेगा ऐसी नई-नई चीजों के लिए जाना पड़ेगा मगर यह बात हम यहां पर बताना चाहेंगे कि रूरल डिवेलपमेंट के लिए भी बहुत सारे कदम उठाए गए हैं। सबसे बड़ी बात यह है कि एग्रीकल्चर के डाक्टर डिग्री लिए हुए लोग आज बहुत निकल रहे हैं और बहुत खुशी है कि स्टेट गवर्नमेंट में एग्रीकल्चर के डाक्टर्स को ज्यादा एम्प्लायमेंट है तो वे एग्रीकल्चरल डाक्टर्स ही हैं और उनका फायदा हम लोगों को होता है।

MR. CHAIRMAN: Question No. 428 and 431 will be taken together.

Foreign secretary's visit to Sri Lanka

*428. SHRI RAJNI RANJAN SAHU: Will the PRIME MINISTER be pleased to state:

(a) whether Foreign Secretary Shri Romesh Bhandari recently visited Colombo for talks on the solution of ethnic problem there; and

(b) if so, what are the details of the talks held?

THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SHRI KHURSHID ALAM KHAN): (a) and (b) Yes Sir. The Foreign Secretary visited Colombo from August 8-10 for talks with Sri Lanka leaders in continuation of India's good offices to help Sri Lanka resolve the problem.