agriculiu.al land and villages in North Bihar area every year;

(b) whether it is also a fact that shifting of sand due to silting in both the places have not been cleared for over many years resulting in raising the level of the beds at both these places; and

(c) if so, what measures Government propose to take to save the agricultural land and villages in this area?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI SOMPAL): (a) No storage dam exists on Kosi at Bhuminagar. The Kosi barrage at Bhuminagar is only a diversion structure and does not have any significant storage to cause flood due to the opening of its gtes. During the rainy season the gates of the barrage are kept open to allow the floods in Kosi to pass down without any damage to the works.

(b) River Kosi carries heavy sediment load which is deposited in the down-stream reaches, including the barrage site. Removal and flushing of silt are carried out through controlled gate operation which is down every year by the Barrage authorities.

(e) Both banks of Kosi below the Barrage are embanked and provide protection to villages and agricultural land in the area. Necessary protection measures are carried out by Government of Bihar to safeguard these embankments as per recommendations of Kosi High Level Committee headed by Chairman, Ganga Flood Control Commission which inspects the embankment every year after monsoon.

Check on Ecological Degradation

*169. SHRI VIJAY J. DARDA: Will the PRIME MINISTER be pleased to state:

(a) whether the Expert Committee of ICAR on Crop productivity trends in green revolution in Punjab and Haryana have made some startling, revelation on ecological degradation with weeds, pests and disease causing pathogens, defying efforts to keep them under check;

(b) if so, the details of important findingsfobservations of the Committee alongwith the recommendations;

(c) the details of action plan finalised to check ecological degradation; and

(d) the details of remedial measures proposed during the current year and the Ninth Plan period?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI SOMPAL): (a) Yes, Sir. The Committee has made some obervations on ecological aspects.

(b) The Committee made valuable observations and recommendations on change in land use and cropping patterns, over exploitation of under-ground water, lowering of water table, decreasing of soil organic carbon, depletion and imbalance of nutrients, emergence of new weed, diseased and pest problems, narrowing down of biodiversity etc., as detailed in statement *(See* below)

(c) The concerned departmentsinstitutions, including the Department of Agriculture and cooperation, Ministry of Agriculture, Government of India; State Governments of Punjab and Haryana, Institutes of Indian Council of Agricultural Research and State Agricultural Universities of Punjab and Haryana have been provided with the reports for consideration and follows up action in their respective area domain of development and research.

The Department of Agriculture and Cooperation, Ministry of Agriculture has constituted a Steering Committee for monitoring the implementation of recommendations. This Committee has experts from the Department of Agriculture and Cooperation of the Government of India, Punjab and Haryana State Departments of Agriculture, Indian Council of Agricultural Research and Punjab and Haryana State Agricultural Universities, the Members have been asked for the comments on the conclusions and recommendations

of the report. The Steering Committee is likely to meet soon to discuss the recommendations and the comments thereon for further follow up action.

(d) The detials plan of action by respective departments would emerge after the Department of Agriculture and Cooperation, Ministry of Agriculture, which is the nodal department for agricultural development, completes the examination of report.

Meanwhile, the efforts have been intensified to popularize the package of improved technologies that promotes sustainable agriculture. The package includes integrated soil, water, nutrients, disease, insect-pest and weed management, and improved varieties possessing rcsistance/tolerance to diseases, insect-pests and abiotic stresses.

The Indian Council of Agricultural Research has discussed the researchable issues with various research institutions and the follow-up action in various projects, such as those on wheat, rice, maize, pulses etc. are contemplated during the ninth plan.

Statement

Observations, Comments and Recommendations

The States of Punjab and Haryana are considered agriculturally advanced and have brought prosperity to a large section of the society. It is important to know whether they would maintain the same status in future—say 20—25 years from now. It is also important to know if they would still be primarily agricultural and depending on production of primary commodities such as wheat, rice and cotton, or would they change to agro-industry and industry for value additions besides diversification to alternative crops. For any realistic future planning, it is important to consider the expected population by 2020 AD, the rate of economic growth, energy demand, status of natural and other production resources and government priorities and a lot of other information. It appeared from the discussions that long-term perspectives for the development of these states, particularly in the context of agriculture have not been made. There is a very urgent need to address many such questions involving poloiticians, bureacrats, academics, industry, farmers and other sections of the society to develop 'Haryana and Punjab Vision 2020'. This will help long term planning and investment of resources.

A question which has assumed great importance is, whether agricultural productivity and production of Haryana and Punjab has reached the upper limit. This is important not only for the states concerned but for the whole country. The average total yield of rice and wheat in Punjab and Haryana is more than 7 to 8 tonneslia. year. If it is taken as paddy and wheat it would be around 9 to 10 tonneyha. There are very few countries in any other part of the world where such high productivity is obtained in more than 4 million ha. land.

Therefore, one must ask what is the maximum productivity that could be expected from this region and at what environmental cost. There are several ways to assess this:

— The maximum productivity of wheat and rice obtained in a coordinated trial of crop improvement. Though the Advanced Varietal Trial (AVT) are not necessarily in the form of a cropping system, yet they may serve as initial indicators.

— Yields obtained in the front-line demonstrations.

— Simulated potential productivity, using crop growth models.

In both rice and wheat, the realized and realizable yield gaps in Punjab and Haryana as compared to other parts of the country are rather small. Simulated potential yield analysis, however, indicates that the potential yield of wheat and rice (paddy) in the region is between 15 and 20 tonneslia. Generally, attain-

able yields are 70-80% only of the potential. Therefore as a national objective, it would be desirable to identify regins where such gaps are large, so that their potential could effectively be harnessed with appropriate development strategies, policies and parogrammes. Since yield gaps in many parts of Haryana and Punjab are small, there is also a need to increase the research efforts to develop new varieties with greater yield potential in relation to resources for meeting the existing and emerging agriculture production systems in the region.

In future, there is going to be an increasing .demand of dairy products, eggs and poultry. This would increase the demand of soybean, groundnut, mustard, maize and other grain crops. There have been studies for the diversification of cropping system in Haryana and Punjab. It is suggested that animal husbandry, vegetables and fruits cultivation could bring greater diversification and economic advantage possibily to both the farmers as well as the state. Most of the diversification aspects require investment in processing and marketing industry. Therefore, any diversification strategy has to be' complemented with food processing, packaging and storage infrastructure, marketing and market. At the same time, diversifying from the current rice- wheat system in Haryana and Punjab to other crops without simultaneously raising their production in other states may threaten our food security.

The policy makers of Haryana and Punjab are keen to ensure further increase in productivity of agriculture. The problems of farmers, particularly of mismatch or nomatch between the quality inputs available or used and scientific advice is recognized as an important factor limiting further growth. The Chief Minister of Punjab would like a 'Single Window' concept to be implemented for all the required inputs at the Block or panchayat level. The Committee greatly appreciated his approach. However, it would require a detailed micro- pianning at level of districts and blocks .to identify the most suitable land-use panern on the basis of two or three cycles, availability of inputs such as seed, fertilizers, pesticides, energy and others.' The Committee suggested that such and operational model be immediately prepared for different regions of the state, preferably for each district. The rrio'dern techniques of computerization, modelling, remote sensing and GIS can greatly facilities this. This would require collaboration between biophysical and socio-economic scientists and policy makers. The scientists and staff of the Department of Agriculture may also " require training for operationalizing such an integrated model to identify constraints and strengths of each region.

There are signs of stagnation or decline in productivity of rice at some places in these states, while the situation for wheat is reasonably good. There are however, new problems which require immediate attention. Vigorous efforts should be made for the control of *Phalaris minor,* emerging disease and for restoring soil health. Pest situation is likely to be further compounded and deteriorated in the persuit of enhanced productivity and production in the region.

Research to develop new varieties of rice and wheat with higher yield potential should be strengthened for the areas where attainable yield gaps have become small. Intensified efforts be made for effective use of appropriate germplasm or parent materials, so that good varieties with higher yield and disease resistance are available to meet the local needs. Further hybrid research and 'development programme on wheat and rice needs to be strengthened or initiated for breaking yield barriers. Also these states need to develop testing programmes in relation to soil and water resources.

Replacement of pulse crops by other crops has been a major shift in the region. Apart from the grain produced, pulses do have an effect on improving

soil characteristics. There is already a shortage of pulses in the country and hence they are being imported. It would be desirable to grow summer moong (60— 65 days crop) in place of summer rice. For this, the farmers could be given an incentive for improving soil and water resources under the Environment Protection Programme. At the same time to sustain the production on a long-term basis rice cultivation during summer season needs to be discouraged through appropriate government policy initiatives.

The change in cropping pattern is the underlying cause for the degradation of soil as well as water resources in these states. This problem is largely due to a lack of drainage from these states. The saline water needs to be disposed off from the states of Haryana, Punjab and Rajasthan. A preliminary feasibility study was done by a team of the Ministry of Water Resoruces, Government of India and the Government of the Netherlands. The draft Project Document was submitted in February 1997 to the Government of India. There is an urgent need to explore the possibility of desalinization of the salt-affected regions taking this Project Document into consideration.

In general, except a few areas, the soil organic carbon in Punjab and Haryana is low. Such a low level of carbon is not conducive for soil biological activity as well as it adversely affects soil physical properties such as the water holding capacity and nutrient retention. Policies need to be quickly evolved that would encourage farmers to enrich organic matter in the soil and thus maintain soil health. .This can be done throgh incentive package such as on green manuring and pulse crop cultivation.

The decline in biological productivity and the loss of carbon from the soil are the factors which may impact on green house gas emissions. Agriculture is an important sector for sequestering atmospheric carbon-dioxide. A 0.1% increse in soil carbon (an achievable objective) will sequester 15 tonnes/ha. of atmospheric carbon. If these states could have 2 million ha. of green-manuring, it would sequester 30 million tonnes of carbon from the atmosphere. Similarly, increased drainage facilities would result in decreased salinity in at least 3 to 4 million ha area. The increase in agricultural production as a consequence will sequester additional carbondioxide from the atmosphere. Therefore, the Government of India and the states of Punjab and Haryana may prepare megaprojects for funding through United Nation's Global Environmental Facility. The states may like to undertake feasibility study for such a project.

Pricing policies for fertilizers, water and energy should have a long-term sustainability dimension and should not be based on immediate socio economic, technological or political concerns. For example eventhough in short term, potash application may not show good response, pricing policy should be such that the farmers are encouraged to apply this to ensure continued good soil health. Simi'ariy, water pricing policy should be change to ensure that water in excess of recharge capacity is not pumped out. In canal irrigated areas, ways and means be thought so that scientific use of wate is promoted and ensured.

Since there is a great emphasis now on sustainbility of natural resources, incentives for checking environmental degradation (soil, water, biodiversity etc.) should be encouraged through incentive packages. In this endeavour raising soil organic carbon, by 0.1%, stabilizing water table, maintaining or enhancing biodiversity and reducing energy use should be encouraged. A team of multidisciplinary experts (scientiests) including economists and environmental scientists be constituted to work on exact means, mechanism and modalities before the package is contemplated for implementations.

Discussions with farmers, scientists and development official brought out that it is becoming more and more difficult to obtain various inputs with assured quali-

ty. This applies to inputs including the seeds, fertilizers, pesticides and weedicides. The poosibility of a single window availability
of good quality seeds and chemicals at the Block or Panchayat level should be explored.

To harness enhanced agricultural productivity, state governments may develop awareness campaigns on a regular basis for redrassal of farmers' grievances including those through consumer courts on account of spurious supply of pesticides, weedieids, seeds, chemical fertilizers etc. The quality control measures must be effectively rainforced by respective government agencies to raise confidence of farmers for using inputs.

Greater time be allotted for telecast of effective and efficient agricultural technological capsules for effective dissemination of agro-production and protection technologies. Such capsules in the systems perspective would require a far more scientific and technological input in its preparation and its translation. On policy issues higher officials and decision makers may also interact with the farmers to bring greater understanding of policies, programmes and their implications. This is considered essential for the long-term welfare of agriculture in these states.

There is a need to review the various research programmes of the Punjab Agricultural University and CCS Haryana Agricultural University by a team of experts from outside the State. Such a team should comprise scientists, economists, bureaucrats, policy planners and farmers and should address the emerging problems. Since in future agriculture will have to be diversified these expert need not necessarily be experts in wheat and rice.

Safety of Indian Nuclear Installations

*170. SHRI DIPANKAR MUKHERJEE:
SHRI MD. SALIM:

Will the PRIME MINISTER be pleased to state:

(a) whether Government's attention has been drawn to the news-item cap tioned "Body to oversee nuclear safety sought" which appeared in the Business Standard dated the 11th July, 1998 re garding safety of Indian nuclear installa tions; and

(b) if so, Government's reaction thereto?

THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SHRIMATI VASUNDHARA RAJE): (a) Yes, Sir.

(b) Under the Atomic Energy Act, 1962, the Government has designated the Atomic Energy Regulatory Board (AERB) as the Competent Authority to oversee all aspects of nuclear safety in the country.

Efforts to Preserve/Publicise North-Eastern Heritage

*171. SHRI PARAG CHALIHA: Will the Minister of INFORMATION AND BROADCASTING be pleased to state:

(a) the details of the efforts, if any, made during the last five years by Government to preserve and publicise North-Eastern regional heritage in the country through electronic media; and

(b) what has been the impact of each of these efforts?

THE MINISTER OF INFORMATION AND BROADCASTING (SHRI PRAMOD MAHAJAN): (a) Preserving and publishing the North-Eastern Regional heritage in the country through electronic media has been a continuous process. Programmes in different formats are telecast over 11 Doordarshan Kendras of North-Eastern Region highlighting various developmental activities of the Government, important sports and cultural events of the region, programmes on national integration and communal