(c)   In order to ensure that GM crops are safe for human health and environment release in the country, biosafety assessment is done for each crop as per applicable guidelines, manuals and protocols prescribed from time to time by relevant rules under Rules, 1989 under Environmental (Protection) Act, 1986.

Drought affected regions in the country

3835. SHRI SANJAY SINGH: Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a)   the regions affected by drought during last three years; and

(b)   the steps taken by Government for drought management and the outcome thereof?

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE (SHRI NARENDRA SINGH TOMAR): (a) The States for which financial assistance from National Disaster Response Fund has been approved, on account of their being affected by drought, during the last three years *i.e.* 2016-17 to 2018-19, is as under:–

During 2016-17:

Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Rajasthan and Puducherry (5 States and 1 UT).

During 2017-18:

Chhattisgarh, Madhya Pradesh, Rajasthan, Andhra Pradesh and Uttar Pradesh (5 States).

During 2018-19:

Andhra Pradesh, Karnataka, Maharashtra, Rajasthan, Gujarat and Jharkhand (6 States).

(b)   The 'Manual for Drought Management, 2016' highlights the various drought mitigation programmes and measures in vogue, such as construction of water harvesting and conservation structures, use of water saving technology, afforestation etc. A Drought Management Plan, 2017, has been prepared for the benefit of all stakeholders for drought management and mitigation. These documents are available at Ministry's website.

District Agriculture Contingency Plans for 648 districts have been prepared by Central Research Institute for Dryland Agriculture (CRIDA) to mitigate the situation in

drought affected areas. There is a provision of distribution of seeds of contingency crops such as pulses, millets, oilseeds, which are drought hardy and survive with minimal available water in rain fed/ drought affected areas under National Food Security Mission (NFSM).

In the eventuality of natural calamities, the State Governments are empowered to initiate necessary relief measures from State Disaster Response Fund (SDRF), which is readily available with them. Additional financial assistance, over and above SDRF, is considered from National Disaster Response Fund (NDRF), on the receipt of Memorandum from State Governments and in accordance with extant norms and procedures.

Use of artificial intelligence in agriculture

3836. SHRI SANJAY SINGH: Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a)   whether artificial intelligence could be used in agriculture;

(b)   if so, the details thereof and in what manner it would transform agricultural sector;

(c)   whether Government is planning to include artificial intelligence in agriculture;

(d)   if so, the details thereof; and

(e)   if not, the reasons therefor?

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE (SHRI NARENDRA SINGH TOMAR): (a) and (b) Artificial Intelligence (AI) can be used in multiple domains of agriculture such as weather, crop and price forecasting, yield estimation, etc. AI can leverage in providing information and advisory services to farmers for increasing production and productivity and taking preventive measures against pests. Further, it may reduce the cost of production through precise application of agricultural inputs like fertilizer, chemicals, irrigation, etc.

(c) to (e) The Department of Agriculture, Cooperation and Farmers Welfare, under Pradhan Mantri Fasal Bima Yojana, through various agencies has carried out many pilot studies for optimization of Crop Cutting Experiments, in which AI was used to optimization and yield estimation.