

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

RAJYA SABHA
UNSTARRED QUESTION NO. 1956
TO BE ANSWERED ON THE 17/03/2023

SOIL HEALTH MANAGEMENT STUDIES IN GOA

1956. SHRI LUIZINHO JOAQUIM FALEIRO:

Will the Minister of AGRICULTURE & FARMERS WELFARE be pleased to state:

- a) whether any soil health management studies are conducted in Goa with respect to major crops of rice, coconut, caju, arecanuts, mango, spices, etc;
- b) the findings of soil degradation in Goa; and
- c) whether there are any recommended technologies to remedy the invasion of saline water, soil erosion, physical degradation, chemical degradation, biological degradation, etc.?

ANSWER

MINISTER OF AGRICULTURE AND FARMERS WELFARE

(SHRI NARENDRA SINGH TOMAR)

(a) & (b): Indian Council of Agricultural Research (ICAR)- Central Coastal Agricultural Research Institute, Goa has studied soil health degradation and management from important horticultural crops like Cashew, Mango and Coconut. On an average, soil loss from Cashew, Mango and Coconut cropping systems were 24, 12.6 and 10.5 tonnes/hectare/year, respectively. The runoff loss as percentage of rainfall in Cashew, Mango and Coconut cropping systems were 23%, 32.1% and 23.8%. The nutrient loss from Cashew, Mango and Coconut cropping systems were 35.8, 76.4 and 62.1 kg nitrogen (N)/hectare, 1.9, 13.8 and 10.9 kg phosphorus (P)/hectare (P) and 52, 33.6 and 19.3 kg potassium (K)/hectare, respectively.

ICAR- National Bureau of Soil Survey & Land Use Planning has prepared land resource inventory (LRI) of Goa at 1:10,000 scale and assessed soil fertility and brought out soil fertility maps and Land Resources Information System (LRIS) Goa mobile App to indicate soil and soil fertility information. As per the assessment made by ICAR- National Bureau of Soil Survey & Land Use Planning, parts of Satari, Salcete, Sanguem, Quepem and Canacona talukas, have moderate soil erosion(10-15 t ha⁻¹ yr⁻¹) and moderately severe (15-20 t ha⁻¹ yr⁻¹) potential soil losses accounting for 8.8 and 8.9% area respectively in the state; Pernem, Bardez, Bicholim, Satari, Tiswadi, ponda, Quepem and Sanguem talukas have severe (20-40 t ha⁻¹ yr⁻¹) and very severe (40-80 t ha⁻¹ yr⁻¹) potential soil losses accounting for an area of 26.9 and 22.0% on the state,

respectively; and Pernem and Bicholim talukas have extremely severe ($>80 \text{ t ha}^{-1} \text{ yr}^{-1}$) potential soil losses, accounting for 4.1% area of the state.

(c): Government of Goa is implementing a scheme for protection of notified khazan lands by taking up repairs & strengthening of khazan bunds so as to protect khazan lands from damages and destruction due to salinity ingress. Government provides financial assistance for such works as per laid down procedure.

ICAR- Central Coastal Agricultural Research Institute, Goa has developed salt-tolerant rice varieties, namely, Goa Dhan 1, Goa Dhan 2, Goa Dhan 3 and Goa Dhan 4 for salt-affected soils of Goa: ICAR- Central Coastal Agricultural Research Institute (CCARI) has developed Goa Bio 1, Goa Bio 2, CCARI Bio 3, CCARI Bio 4 for improving the biological activity of different types of soils to promote the plant growth and improve the plant health. A package of practices of integrated nutrient management involving Goa Bio-1, a talc-based bio-formulation, and crop establishment methods to improve paddy productivity on the salt-affected soils has been standardized and disseminated. It has also standardized different soil and water conservation measures, namely, continuous contour trenches with *Stylosanthes Scabra* and *Vetiveria Zizanioidesis* for cashew crop; continuous contour trenching with vegetative barriers (*Vetiveria Zizanioides*) in mango; and circular trenching in coconut to reduce erosion losses and degradation.

Further, Government of India is implementing a National Project on Management of Soil Health & Fertility (Soil Health Card/Soil Health Management), now, merged as Soil Health & Fertility component of Rashtriya Krishi Vikas Yojana (RKVY) scheme through the State Government. The main objective of the scheme is to assist states in promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures & bio- fertilizers for improving soil health and its productivity. Under this scheme, testing of soil samples is done to issue Soil Health Cards. Soil Health Card provides information to farmers on soil nutrient status of their soil and recommendation on appropriate dosage of nutrients to be applied for improving soil health and its fertility.
