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SOIL RESOURCE DEVELOPMENT INSTITUTE

MINISTRY OF AGRICULTURE

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Executive Summary

Soil Resource Development Institute (SRDI) has engaged cutting-edge science to generate soil management technologies to boost farmers' income and achieve sustainable development goals (SDGs). In the fiscal year 2019-20, Updating "Upazila Nirdeshika" survey was carried out at 50 Upazilas where significant changes in land cover/land use, land type, water recession, drainage and irrigation classes were detected in most of the Upazilas and It is also observed that high value crops along with vegetable have been incorporated in the cropping patterns as well. Fifty Upazila Nirdeshika was published according to updated soil and land information. Changes in soil fertility due to land use and management practices were observed in 40 monitoring sites. Generally, soils are deficient in organic matter and nitrogen. Changes in Phosphorus, Potassium, Calcium, Magnesium, Manganese, Sulfur, Boron and zinc erratic. It is also evident that soil pH value is declining gradually in many Upazilas. SRDI started online fertilizer recommendation from 2009 and during 2019-20, it distributed 55,000 fertilizer recommendation card through OFRS software. The institute has prepared soil and land degradation database-2000 in the current fiscal year considering soil and land use data from 1985 to 2000. The document depicts that 74.2% land of the country suffers from nutrient deficiency, 78.9% area is affected by low organic matter and 56.7% land is affected by soil acidity. In coastal region soil salinity in shrimp cultivated area gradually increased from 1990s. This salinization may be due to the effect of saline water flooding for long period, slow permeability, presence of highly saline ground water at shallower depth almost throughout the year and lack of flushing facility after shrimp harvest etc. River water salinity of Noakhali and Bhola district is less than that of Khulna, Bagerhat and Satkhira districts. In Satkhira, river water salinity was found highest in May/June whereas in Noakhali and Barishal it was highest in April/May. River water remains saline during April-June as rainfall is low during this period. During the dry season most of the DTW and STW water remains saline. Generally Barisal experiences lower rainfall during November to March. In Patuakhali, both soil and water salinity starts to increase in January/February attains its peak in March and starts to decrease in June/July at the onset of monsoon. In Chittagong and Cox'sbazar soil salinity starts to increase in December attains its peak in March and then gradually decrease at the start of monsoon. Water salinity starts to increase in January attains its peak in April/May. The highest water salinity was observed in Kakshiali river, Kaligonj, Satkhira over time followed by Morichap river, Ashashuni, Satkhira. Some was generated by Soil Conservation and Watershed Management Centre (SCWMC), Meghla, Bandarban has developed some advanced technologies for slopping hill soil management of which staggered trenching, half moon trenching, slash and mulch instead of slash and burn for shifting cultivation, Hedge Row Technology for controlling soil erosion in Hill slopes, Natural Vegetative Strips (NVS) are most significant. On the contrary, Some innovative technology for saline soil management was generated by Salinity Management and Research Centre (SMRC), Batiaghata, Khulna of which top soil carpeting technology for vegetable production on shrimp gher bund, pitcher irrigation, double layer mulching, Maize transplanting & Dibbling cultivation under zero tillage, Flying bed agriculture for vegetable cultivation, selection of different suitable varieties cultivation in saline soil were proved very effective. These technologies can be disseminated to other coastal saline areas. During 2019-20 Static Laboratories conducted soil analyses for both physical and chemical parameters, plant and water analyses for chemical parameters and fertilizer samples analyses under different programs. In Static Laboratories (Central and Regional Laboratories) 29,510 (25,400 soil samples, 60 water samples, 50 plant samples and 4,000 fertilizer) samples were analyzed. In addition, 10 Mobile soil testing laboratories distributed 5600 fertilizer recommendation card among the farmers. Imparted training to the officers and scientists of SRDI, BARI, BRRI and BINA on Chemical Analyses of Soil and Fertilizers, Identification of Adulterated Fertilizers at Field Level and Soil Sample Collection and Balanced Fertilizer Applications. Training was imparted to 1,200 Officers of SRDI/DAE/CDB/NGO's on various aspects of soil management/capacity building & skill development; 10,690 farmers/fertilizer dealers/SAAO's/Entrepreneurs of Union Information Center on the use of Upazila Nirdeshika/soil sample collection technique/identification of adulterated fertilizer etc.