

Abstract

Cropping System Intensification for Increasing Crop Productivity in Salt-Affected Coastal Zones of Bangladesh [†]

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Abstract: In Global Climate Risk Index 2019, Bangladesh has been ranked seventh among the countries most affected by extreme weather events. The salinity intrusion has increased by 27% from 1973 to 2009 in coastal areas of Bangladesh due to impacts of climate change. The cropping intensities of the coastal zones are below than the country's average intensity (195%), which causes severe food insecurity. In southern coastal zone, soil and water (river/canal) salinity remain the minimum (<4 dS/m) during in July/August but attain the maximum (upto 11 and 25 dS/m, respectively) in March/April. Farmers grow single T.aman rice a year. Therefore, five cropping patterns were tested under ACIAR funded project in Amtali (Barguna district) and Dacope (Khulna) upazilas during 2016–2017 and 2017–2018 irrigating with low salinity surface water (canal/pond) to increase crop productivity. In Amtali, T.aman-Potato-Mungbean-T. aus cropping pattern gave the highest (20.18 t/ha) rice equivalent yield (REY), which increased 360% REY over the farmers' practice (T.aman-fallow-fallow). However, in Dacope, T.aman-spinach-fallow showed the highest REY (13.99 t/ha) that increased 211% REY compared to farmers' practice. The improved cropping patterns can be practiced within the polder (embankment for water control) for increasing crop productivity and profitability in salt-affected coastal zones of Bangladesh.

Keywords: cropping system intensification; crop productivity; salt-affected coastal zone; Bangladesh



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