



Delineation of Rice-wheat Cropped Area using Geo-spatial Techniques

Ranu Rani Sethi, A. Sarangi¹, Amiya Sagar Sahu, K.G. Mandal, R. Aggarwal²,
K.K. Bandyopadhyay¹ and S.K. Ambast

ICAR-Indian Institute of Water Management, Bhubaneswar-751 023, India

¹*ICAR-Indian Agricultural Research Institute, New Delhi-110 014, India*

²*Punjab Agricultural University, Ludhiana-141 004, India*

E mail: ranurani@yahoo.com

Abstract: Rice and wheat are the most important food crops of India in term of area, production and consumer preference. India is world's second largest producer of rice and wheat crop and Punjab, Haryana are the most productive states of rice wheat cropping system. But due to over exploitation of groundwater resources to irrigate both the crops in these areas, sustainability of rice-wheat cropping is under high threat. In this paper, rice-wheat cropped area was delineated for Agro Climatic Region (ACR-VI) comprising Punjab, Haryana by using remote sensing and GIS analysis. Landsat ETM+ and IRS LISS III images were analyzed to delineate area under rice-wheat cropping system during *kharif* and *Rabi* season. Spatial analysis on effective rainfall varied within 230-466 mm during monsoon period in ACR-VI. Based on the rainfall distribution, groundwater table depth and soil type, potential areas under rice and wheat crops were identified so that most of the crop water requirement could be met through rainfall and there will be check in use of groundwater to maintain sustainable use of natural resources.

Keywords: Agro Climatic Region-VI, Rice-wheat cropped area, GIS, Remote sensing, Landsat ETM+
