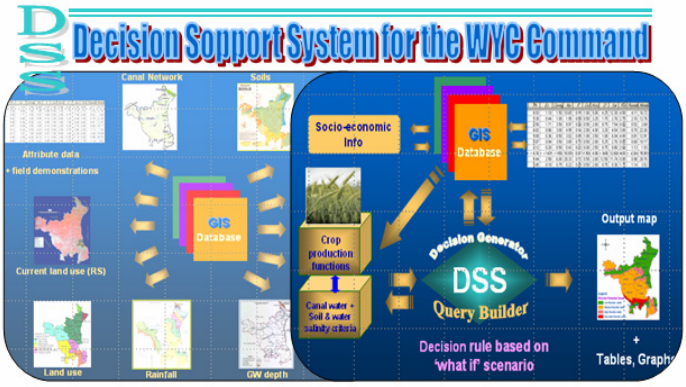
World Bank Funded NAIP Project Awarded to CSSRI

ICAR has awarded a World Bank funded NAIP project to CSSRI entitled "*Decision Support System for Enhancing Productivity in Irrigated Saline Environment using Remote Sensing, Modelling and GIS*" under the Information, Communication and Dissemination System (ICDS) of Component-I of the National Agricultural Innovation Project (NAIP). The institute is the consortium lead centre of the project. Water Technology Centre (WTC) under IARI, New Delhi and National Institute of Hydrology (NIH), Roorkee are the consortium cooperating centres. The budget sanctioned for the project is Rs. 306 lakhs for a three year period. The memorandum of understanding (MOU) agreement among the consortium partners and between the consortium partners and NAIP, New Delhi has been made and the project will be completed by March 2012.

In the project, a GIS based decision support system (DSS) for the Western Yamuna Canal (WYC) command in Haryana will be developed by integrating bio-physical resources and socio-economic data within the DSS framework for generating best management practices (BMPs) to enhance productivity in deficit canal water supply, saline/sodic land/water and waterlogging environments under various hydro-climatological uncertainties, resource and socio-economic constraints in the command. The developed DSS will be validated, fine-tuned and implemented in the canal command for generating feasible plans for various scenarios of canal water distribution at head, mid and tail reaches. The state-of-the-art-technology including remote sensing, GPS based field survey, PRA (participatory rural appraisal), GIS, modelling and advanced computer programming will be employed for generation of command database and development of DSS. The new knowledge on DSS would be transferred effectively to stakeholders (state line departments, canal water users' associations, farmers and researchers) through customized training, field demonstration and interactive workshops so as to equip them to arrive at right decision on best feasible plans under given scenarios. The project is multidisciplinary in nature and is in the consortium mode for utilising expertise of each participating institution with unique built-in component of stakeholder servicing to infuse confidence for growing more food with less water and with poor quality soil and water resources.

Views of the Western Yamuna Canal at Karnal



DSS framework in GIS environment

The project will be implemented in the study command area to achieve four main objectives: (i) to characterize bio-physical and socio-economic resources of the command using remote sensing, GPS based field survey, participatory rural appraisal (PRA) and GIS; (ii) to predict and upscale crop yield and land and water productivity from field to command scale under various resource constraints and management scenarios using crop production functions and GIS; (iii) to develop, validate and implement spatial decision support system in the canal command and to generate BMPs to enhance productivity in saline environment; and (iv) to build stakeholders' capacity on DSS generated scenarios through field demonstrations, customized trainings, workshops and field days and to disseminate knowledge to various stakeholders.

The expected deliverables from the project are irri-agro informatics spatial database of the WYC command, list of BMPs and adaptation measures for enhancing productivity, GIS based DSS for generating BMPs to enhance productivity, customized DSS versions for various stakeholders, enhanced capacity and skills of stakeholders in operating DSS - 30 officers of CADA, irrigation and agriculture departments, 500 members from 400 canal water users' associations, 500 farmers from the WYC command and 30 NARS scientists trained in use of GIS based DSS.

Dr. Gurbachan Singh, Director, CSSRI is the consortium leader and Dr. D.S. Bundela, Senior Scientist (Soil & Water Conservation Engineering/Geoinformatics) is the consortium principal investigator (CPI) of the project. The other consortium members at the lead centre are Dr. S.K. Gupta, Project Coordinator (AICRP on SAS & SW), Dr. Madhurama Sethi, Principal Scientist (Geography), Dr. N.P.S. Yaduvanshi, Principal Scientist (Soil Fertility/ Microbiology), Dr. R.L. Meena, Scientist-SG (Agronomy) and Dr. R.S. Tripathi, Principal Scientist (Agricultural Economics). At WTC, New Delhi, Dr. A. Sarangi, Senior Scientist (Soil & Water Conservation Engineering) is the consortium centre principal investigator (CCPI) and the other cconsortium members are Dr. D.K. Singh, Senior Scientist (SWCE) and Dr. B.S. Kalra, Senior Scientist (Agricultural Economics). At NIH, Roorkee, Dr. A.K. Lohani, Scientist-E1 (Water Resources Development & Management) and Dr. N. Panigrahy, Scientist-C (Hydrological Modelling) are CCPI and a consortium member, respectively.