

THEMES OF AICRP ON IWM

- Assessment of surface and ground water availability and quality at regional level and to evolve management strategies using Decision Support Systems (DDS) for matching water supply and demand in agricultural production systems.
- Design, development and refinement of surface and pressurized irrigation systems including small holders' systems for enhancing water use efficiency and water productivity for different agro-eco systems
- Management of rain water for judicious use and to develop and evaluate groundwater recharge technologies for augmenting groundwater availability under different hydro-geological conditions.
- Basic studies on soil-water-plant-environment relationship under changing scenarios of irrigation water management.
- To evolve management strategies for conjunctive use of surface and ground water resources for sustainable crop production.

SIGNIFICANT ACHIEVEMENTS (2015-16)

- Demonstrated crop and cropping sequence for mitigation of arsenic impacts under shallow tubewell command in West Bengal
- Demonstrations of crops and cropping sequence, multiple use of water for higher water productivity, economic use of waterlogged area for improving production and productivity were carried out in different parts of the country under canal irrigated system. Awareness creation for optimal use of canal water through training and demonstrations were carried out at different locations. The demonstrations and technology adoption resulted in yield enhancement and water saving to the tune of 30 to 35% and 20 to 25% respectively across different locations.
- Economic layout of pressurized irrigation system for different crop and cropping sequence was found out in different agro ecological regions of the country. Drip irrigation system was evaluated for different high valued fruit and vegetable crops across the country. Use of poor quality tubewell water along with fresh canal water through drip in vegetable cultivation,

vegetable cultivation under drip in low tunnel protected agriculture system in arid environment, estimation of drip efficiency in paddy cultivation was found out at different locations in the country. The use of pressurized irrigation system enhanced yields in different crops to the tune of 30% to 40% across the locations with saving of irrigation water to the extent of 40% to 50% in different crops in different soil types.

- Demonstrated the drip fertigation technologies under different crops and cropping sequence across the country. The technology adoption resulted in yield enhancement to the extent of 25-30% and nutrient and water saving to the extent of 20-25% and 30 to 40% respectively across different locations in different soil types under different agro ecological situations.
- Recommended canal delivery schedules to the state line departments for improving water supply scenario matching crop water demand. The adoption of the recommendations and change in supply schedule in some systems resulted in reducing the gap between system supply and crop water demand. The different state Govts. adopted recommended technologies through line departments under different schemes which resulted in increase in farmers' on farm income.
- Conjunctive use of good quality canal water with poor quality tubewell water for different crops has been demonstrated in different canal command areas in Punjab and Haryana. The conjunctive use resulted in increase in yield of wheat and cotton yields by more than 25%.
- Groundwater recharge technologies have been found out for different geo hydrological strata and demonstrations have been taken up for recharging groundwater at different locations.
- Rainwater conservation and its economic use, use of poly lined tanks for rainwater conservation in hilly slopes, crop planning for use of harvested rainwater in high vale fruits and vegetables in high rainfall area resulted in increase in farmers income by more than 50% in Uttarkhand, Meghalaya and Himanchal Pradesh.

BEST TECHNOLOGIES/PRODUCTS

- Drip irrigation layout with lateral spacing of 1.5m and drippers at 60cm spacing can be continuously used for the cultivation of major commercial crops of turmeric, banana, sugarcane, tapioca and tomato without changing the drip layout system for years together resulted in increased yield by 16% and cost reduction to the extent of Rs 3000/ha compared to other existing different drip lateral spacing of checks (Sugarcane: 1.60 m; Banana:1.80 m; Tomato/ Turmeric: 1.0 m & Tapioca :1.50 m)
- High density planting of banana with 3 plants / pit at a spacing of 3 x3 m between pits and 1m between plants with in the pit, accommodating 3330 plants/ha is a viable practice for banana cultivation in Kerala. Installing drip irrigation @4 emitters/pit, with one emitter each at the base of each plant and the fourth emitter at the centre of the pit and providing irrigation at 75% pan evaporation compensation (30 litres/plant) on alternate days could save water to an extent of 25% over basin irrigation.
- Raised and sunken bed technique for improving water productivity in lowlands has been proved to be very effective than conventional system of rice cultivation. The initial investment for the land configuration (Rs. 50,000 – 60,000/- per hectare) can be recovered within 2 to 3 years. This system would not only increase farm production and income but also generate more rural employment, livelihood options, provide food and nutritional security for poor rural masses.
- Laser leveling improved the leveling index, application efficiency by 7.8%, distribution efficiency by 18.8%, and storage efficiency of irrigation water by 14.75% over farmers practice at Jammu with improvement of Basumati yield by 20.4% and wheat yiled by 21%.
- Development and demonstrations of micro-level water harvesting (Jalkund) for inter-terrace water harvesting and its reuse for establishment of high value crops in Parghar and raigad district improved farmers income by more than 100%.

QRT

- Period: 2007 to 2012
- Chairman: Dr. G.B. Singh,Ex-DDG(NRM)

- Next QRT due for: 01.04.2012 to 31.03.2017

NEW INITIATIVES

Multiple use of water and for improving water productivity and water budgeting, collaborative research with AICRP on FSR has been initiated in 7 common centres of AICRP on IWM and FSR centres.

THRUST AREAS FOR XII PLAN

- Micro-level water resource management through utilization of surface and sub surface flow of rain water.
- Enhancing conveyance and application efficiency in irrigated eco system
- Multiple use of irrigation water for higher water productivity
- Standardization of location specific groundwater recharge techniques.
- Development of contingent plan for water management for areas affected by extreme events (drought, flood, cyclones).
- Utilization of marginal water including waste waters as irrigation source as well as ground water pollution issues.
- Exploring alternate cropping and engineering options for management of waterlogged areas.

STAFF STRENGTH

	Sanctio ned	Filled	Vacant	% vacant
Scientific	143	116	27	18.88%
Technical	171	125	46	26.90%
Administrative	40	26	14	35.00%
Supporting	55	46	09	16.33%
Total	409	313	96	23.47%

PUBLICATIONS (previous year)

No. of papers in NAAS rated journals:

- (a)No. of papers in score < 6: 87
- (b)No. of papers in scores > 6: 14

Total: 101

FINANCIAL OUTLAY

For AICRP ON IWM (Rs. in lakh)

	XI Plan actual utilizatio n	XII Plan proposed	Last year budget (2015-16)		
			RE	Actual Expendit ure	% Utilizati on
Plan	5772.25	12355.00	2265.00	2265.00	100%
Non Plan	151.53		51.00	50.95	99.90%
Total	5772.25		2316.00	2315.95	99.99%

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