# Proceedings

## 11th National Symposium of ISCAR

***Innovations in coastal agriculture-current status and potential under changing environment***

**Venue : ICAR-Indian Institute of Water Management, Bhubaneswar**

**Date: 14-17th January 2016**

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11th National Symposium on ***'Innovations in coastal agriculture-current status and potential under changing environment'*** was held ICAR-Indian Institute of Water Management, Bhubaneswar during 14-17th January 2016. Plenary session of the Symposium was held on 16th January 2016. Based on the deliberation and discussions on various research papers following recommendations emerged-

1. The nature, extent and distribution of salt affected soils for coastal states of India were assessed based on GIS and remote sensing techniques and reported that 2.56 m ha area is under salt affected coastal soils in India. . There is a need of continuous monitoring of coastal salt affected soils for appropriate planning and management decision.
2. Trend analysis of long term weather data (1966-2014) in Sundarbans region, indicated that bright sunshine hours declined significantly at an annual rate of 0.05 hours/year. The long term tide gauge data revealed that the rate of sea level rise in the region was 3-8 mm/yr. Similar trend analysis of long-term weather and tide gauge data may be carried out in entire climatically vulnerable coastal region of India.
3. Climate change will affect the coastal and islands ecosystem more than mainland, therefore, vulnerability mapping of these regions needs to be carried out and natural methods like bioshield models may be given top priority involving the local communities to address the emerging concern of cyclone and sea water intrusion of the regions. Contingent planning is essential to tackle any natural disaster. Emphasis should be given to timely supply for seeds, fodder and agricultural inputs to deal with climate induced natural disasters.
4. Technological intervention for enhancing the productivity of coastal ecosystem includes integrated water harvesting and management at different scale, crop planning including suitable crop and time of planting, suitable farm pond and rainwater harvesting to increase the area under irrigation, mixing good quality water with saline water to provide life saving irrigation.
5. Integrated farming system through land shaping models needs to be out-scaled in different coastal regions of the country for sustainable use of natural resources for higher crop diversification, improving livelihoods of farmers and to accelerate the agricultural production and growth. Size of the farm pond should be modified based on soil type, rain-water availability as well as appropriate cropping system.
6. In island ecosystem, lined pond, land shaping and integrated farming system will go long way in solving the developmental needs and may be promoted.
7. There is a scope of recharging groundwater through check dams and dugout ponds in South Saurashtra region for enhancing area under irrigation.

8. Controlled irrigation system through participatory irrigation management, introduction of solar power micro irrigation need to be emphasized for higher impact on farm economy under coastal environment. Emphasize may be given to on irrigation through drip to increase the productivity of high value crop like Alphansho mango in Konkan region.
9. Development of salt and submergence tolerant rice varieties or suitable germplasm in collaboration with national/international research institutions and making them available to the farmers in time might be given priorities. Promotion of special quality rice like aroma rice, high iron rice, high Zn rice etc. can fetch better return to farmers in coastal region and needs to be promoted.
10. Makhana, a potential crop for enhancing productivity in waterlogged areas. Sweet potato in Andamans & Nicobar Islands has a potential for additional income generation and foliage can be used as a feed for livestock.
11. Sisal, a fibre-yielding crop has a scope of area expansion under rainfed conditions of Odisha in poor fertile soils and rocky terrains region.
12. Cashew is one of the horticultural crops grown in coastal areas that contribute significantly to national economy. The technological advances in Cashew cultivation like quality planting material, recommended doses of fertilizer use, foliar application of nutrient and plant growth promoters and integrated pest and disease management may be emphasized. Mechanization of cashew processing may help in rural employment as well as to maintain quality of cashew karnel, which has great demand in national & international market and can fetch substantial foreign exchange.
13. Coconut cultivation under micro catchments water harvesting in coastal Kerala is a promising technology produced 32% higher yield in comparison to rainfed situation and generated high positive net return. Micro sprinkler irrigation system with fertigation in banana can save up to 80% of recommended dose of fertilizer in Kerala, needs to be promoted.
14. There is a scope for preparation and formulation of bio-pesticide from cassava crop for the management of sucking insect pests like mealy bug and borers.
15. The major environmental concern of coastal Tamil-Nadu emanates from urban waste disposal, oil exploration and fishing activities. Feasibility for safe use of urban waste-water in agriculture and allied sector with appropriate crop selection and soil amelioration.
16. Brackish water polyculture is a viable option for coastal brakish water aquaculture (BWA). Water depth in the pond and feeding schedule is the main interventions for improving the productivity of BWA. Low cost feed like biofloc and periphyton for shrimp farming, optimizing feeding schedule and introduction of ornamental fishes, diversification fish species as polyculture for improving livelihoods of resource poor farmers.
17. In coastal district of Kerala and similar areas of other states, different livelihood options like aqua tourism, fish drying units, preparation of value added fish products, fish/ prawn feed manufacture and fish/ prawn seed collection may be promoted particularly for women in coastal eco-system.