Proceedings

9th National Symposium of

Indian Society of Coastal Agricultural Research (ISCAR)

Venue: Palmarinha Resorts and Suites, Calangute, Goa

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9th National Symposium on ***"Recent Outlook on Sustainable Agriculture, Livelihood Security and Ecology of Coastal Region"*** was held at Palmarinha Resort and Suites, Calangute, Goa during 27-30th October, 2010. Plenary session of the Symposium was held on 29th October, 2010 under the Chairmanship of Dr S Kadrekar, Former Vice Chancellor, Dr BSKVV, Dapoli (Maharashtra). Dr Vijay Mehta, Vice Chanellor, Dr BSKVV and Dr A K Bandyopadhyay, President, ISCAR were present during this plenary session. Based on the deliberation and discussions on various research papers following recommendations emerged-

1. Management of saline/brackish water should have emphasis on (i) shallow depth high frequency irrigation, (ii) Conjunctive use of fresh and poor quality water (iii) Pre-sowing irrigation, (iv) Switch over to improved irrigation techniques, (v) Use of saline/sodic water by blending mode, cyclic and switching mode, (vi) Amendment application (Gypsum/ Lime, etc.) and (vii) Pitcher irrigation wherever is possible
2. Construction of embankment, tide ridges for *in-situ* moisture conservation.
3. Raised and sunken bed for crop diversification, raised bed planting and improving productivity by drip and sprinkler irrigation.
4. Use of advanced tools such as remote sensing and GIS for water resource planning
5. Construction of lined ponds in the up stream and storing water in water harvesting structures to use water during lean, dry period
6. The advantages of aerobic rice over traditional rice should be harnessed as it consumes 1/3rd of the water. Although there is problems of aerobic rice such as weed problem, high percolation rate, etc.
7. There is a need for further exploration of ground water to bring more area under irrigation during rabi and summer season.
8. The surplus water during monsoon may be conserved for in the scarcity period during post monsoon in suitable location specific water harvesting structures.
9. More applications of genetic engineering, tissue culture and breeding for higher rice production in coastal agriculture.
10. Assessment of genetic and phenotypes diversity in rice, vegetables, cole crops and fruit crops
11. Suitable crop variety development for the situation of stress due to salt tolerance and submergence in the coastal saline areas.
12. There is a need to see the feasibility of cultivating spices, aromatic plants, fruit crops that have good adoptability to coastal saline soils.
13. For Khar lands-
    a. Adequate soil conservation measures are needed to reduce runoff, promote underground water recharge and reduce washing of soil. Mechanical

barriers are also suggested to reduce velocity of water and check soil erosion.

b. Water harvesting structures should also be developed.
c. The mining with adequate protective measures to reduce runoff and siltation, conservation of water bodies and agriculture need to be taken up.
d. Establishment of erosion preventing species like Casuarina (on bunds) and mangroves and conversion of land for shrimp and oyster/mussel production is suggested in suitable areas.

14. Stabilization of dumps with agro forestry species like casuarina, cashew and medicinal plants like kokum, aonla, jamun, etc.
15. Integrated farming system in coastal area should have the combination of agriculture, horticulture and animal husbandry which has been proved to be economically viable, technically feasible, environmentally suitable and technically acceptable.
16. The farming system model should have rice and coconut as major crops in integration with livestock and fish species. Dairy, poultry, piggery, rabbit and goat has great potential in integrated farming system for sustainable agriculture.
17. Silpaulin lined farm ponds are recommended for rain water harvesting in Konkan region.
18. Pro-poor aquaculture research and policies should be emphasized i.e. low input low cost farming system and integrated farming system especially for small land holders of the coastal region.
19. Keeping the world wide trend of organic agriculture movement, organic aquaculture should be promoted with the guideline formulated by NPOP, Govt. of India.
20. Location specific potential feed resources for fish and livestock can be evaluated for lowering the feed cost
21. Suitable breed from local flock and their management practices should be studied
22. Diversified species culture techniques like mussel culture and crab fattening in coastal areas can be promoted.
23. Economic modeling of crafts and gears used for capture fisheries along with the maximum sustainable yield is important to evaluate.
24. Generation of credible database on distribution and extent of different lines of soils and the degradation status using latest technology of Remote sensing and GIS.
25. Rain water conservation and sustainable agricultural production through watershed management programme as well as efficient fertilizer use, crop selection and alternate farming.
26. Conjunctive use of poor quality water.
27. Management of acid sulphate soils through chemical and organic amendment, integrated water management.
28. Viable and location specific integrated nutrient management, recycling of organic wastes and biofertilizers improved cropping system through broad band furrow techniques.
29. Strategy for arresting land degradation through integrated plant nutrient management, mulching with organic residue, efficient water management practices and amelioration of problem soil.
30. Land shaping and rain water harvesting as per the need of different types of land.

31. Adoption of location specific composting process and enrichment compost for restoration of soil health
32. Agro-centers for providing custom hiring of tillage and equipments seem to be a viable option for resource poor farmers in coastal eco-regions.
33. Producers participatory approach in marketing their produce could help the farmers to earn more and allow them to stand against their exploitation. It may help the consumers as well with lower pricing of vegetables.
34. Documentation of ITKs should receive priority but at the same time it should be an interdisciplinary approach wherein the merits of ITKs should be established scientifically.
35. The session recommends that drip irrigation could be an approach alternative irrigation technique to save water as well as utilize relatively more saline water in coastal eco-regions.
36. Value addition of products must be taken up on war footing particularly for products of perishable nature. For this purpose small-scale industries could be set up under cooperative mode in the villages.
37. Establishment of rice crop by wet direct seeding with pre-germinated seeds is more economic and serve as alternate method of establishment for sustaining the productivity of flood prone low lands.
38. Raised bed and furrow land configuration may be adopted for increase in crop yield.
39. Adoption of integrated paddy fish system may be promoted widely to enhance the farm income.
40. For assessing soil quality index both crop and soil factors should be taken into consideration.
41. Landshaping techniques increased the cropping intensity, reduced soil salinity and created irrigation resources for multiple cropping coastal region.
42. Coastal and island ecosystems are highly threatened by climate change. To assess the threat and to develop adaptive policies a consortium of ICAR institutes and SAUs of coastal states should be formed. This consortium will be responsible to suggest comprehensive technology package for mitigation and adaptation methods for coastal and island ecosystem.
43. Rubber dams have potential of being eco-friendly water harvesting structures. These might be quite useful for Konkan region for water harvesting in view of high peak flows. Dr BSKKV, Dapoli may initiate studies to evaluate feasibility of such structures for creating water bodies in stream beds.
44. Mangroves are unique ecosystem in coastal areas which needs highest priority. Studies should be initiated in SAUs and ICAR institutes of coastal region to develop policies and technologies for protecting and restoring mangroves.
45. Agroforestry systems especially horticulture based system including fruits trees + vegetables + fish can be practiced in the low lying coastal region with suitable land

shaping to enhance the livelihood security of the poor farming communities which will in turn be helpful to mitigate adverse impact of climate change also.

46. Organic certification for cashew production should be done to increase the export value of these important cash crops in coastal region.

47. Cashew seedlings should be grown with application of chemical fertiliser + bio-inoculants consortium for better growth.