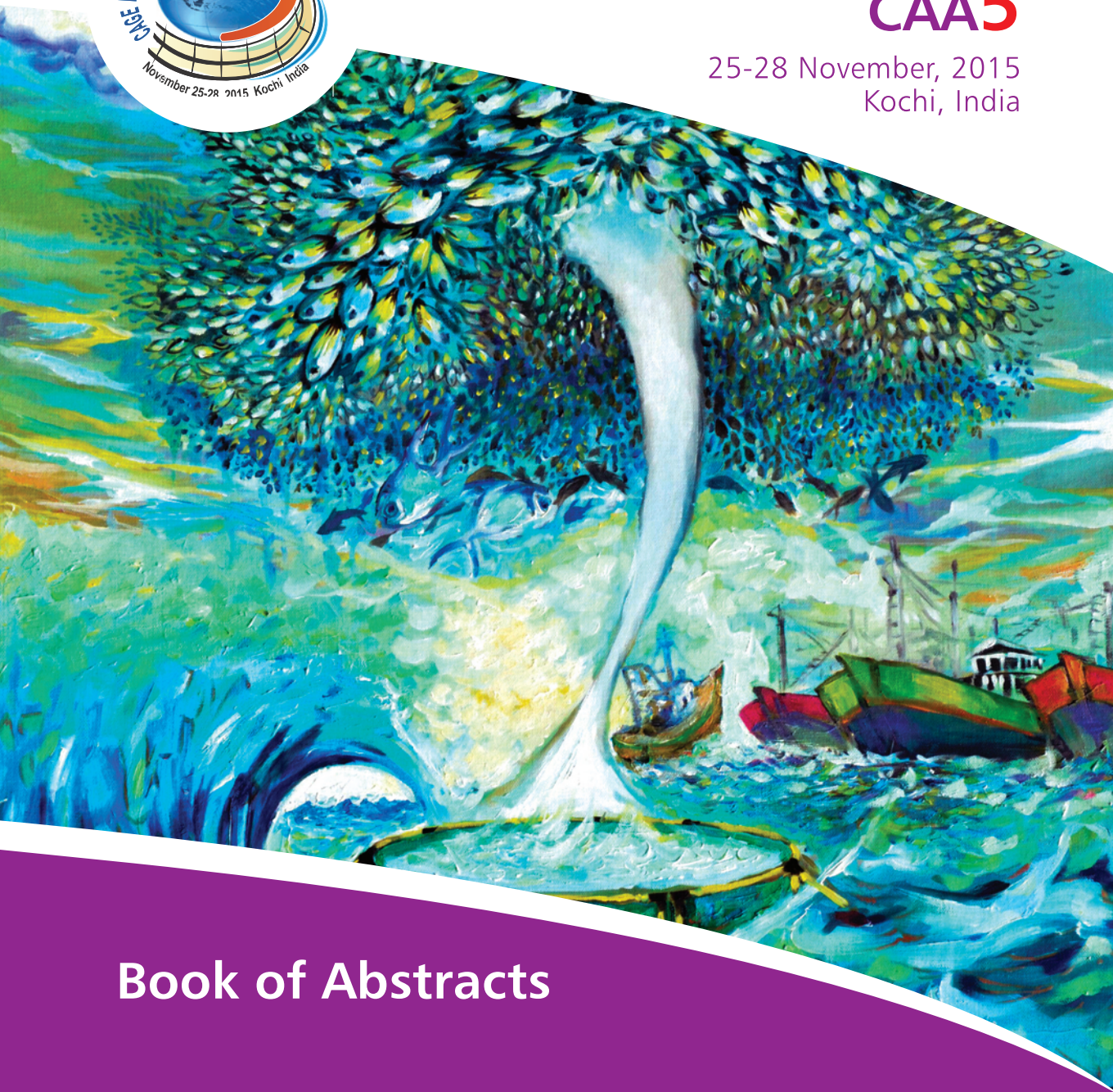




5th International Symposium on Cage Aquaculture in Asia

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Sustainable intensification of food production from pokkali farming system through cage farming

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Pokkali is a traditional farming system of Kerala, in which paddy and shrimp farming are alternatively carried out in the same field, existing in few locations along west coast of southern India. Pokkali fields have connectivity with brackishwater creeks and hence the salinity varies routinely. The salinity comes down to 0 ppt during monsoon and rises up to 25 ppt during peak summer. Lack of suitable machinery for land preparation and harvesting of paddy invite high labour costs. Widespread attack of white spot syndrome virus (WSSV) made farmers refrain from more lucrative shrimp cultivation abandoning most of the pokkali fields. Ten to fifteen percentage of all the pokkali fields are covered by long water channels and deep water logged sluice pit near the sluice gate. They lie unutilized from June till November though they are suitable for euryhaline high value finfish farming. The remaining fields with pokkali cultivation in high water table conditions (up to three to four feet) are good source for finfish farming as well. The local indigenous fishermen used to catch the fish species in the area during this period. Hence utilization of these unutilized resources for open fish farming till commencing of the license period (November 15) is practically impossible. In this context, rearing of fish in cages and hapa nets in controlled conditions till the end of the license period is proposed in the water channels and sluice pit area of pokkali fields in order to utilize them for increased food production and subsequent income generation. Pokkali farmers were trained by ICAR-Krishi Vigyan Kendra (KVK), of Central Marine Fisheries Research Institute (CMFRI) in pond preparation, catwalk construction, cage construction, nursery rearing, fish transportation, feeding and cage maintenance. Nursery reared mullet *Mugil cephalus*, pearlspot *Etropus suratensis* and Asian seabass *Lates calcarifer* were stocked in cages during the pokkali paddy farming period (July to October) and the culture was continued later on with alternative shrimp farming (November to April) till the harvest period (April).

New concept of "farm gate market" was field tested to avoid middlemen and ensure maximum profit for farmers and quality produce to the consumers. A total of 350 kg fish were sold at the rate of ₹500 from 1 ha pokkali field over and above the regular produce of paddy (600 kg) and shrimp (200 kg). The combined revenue from paddy-shrimp field was ₹50,000 per ha. Optimum utilization of underutilized farming area by integrated finfish farming could generate an additional income of ₹10,00,000 per ha. The income generated showed the viability and reproducibility of the model which received national attention. Several agricultural agencies such as Agricultural Technology Management Agency (ATMA), Fish Farmers Development Agency (FFDA) functioning in the district have now come forward to replicate the model.