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Socio Economic Development of Coastal People Through *Kappaphycus alvarezii* Farming Using Different Cultivation Methods in Tamil Nadu, Southeast Coast of India**Periyasamy C.^{1*}, Subba Rao P.V.² and Anantharaman P.¹**¹Centre of Advanced Study in Marine Biology, Annamalai University, India²Aquaculture Foundation of India

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Abstract

Kappaphycus (a kappa carrageenan yielding red seaweed) cultivation was initiated in 1960 and by 1969 a farm was established by Marine colloids and MS Doty in Tawii Tawii province of Philippine waters. Following the success of its cultivation in Philippines, the same had been expanded worldwide. *Kappaphycus alvarezii* along with *Kappaphycus striatum* has been introduced in more than 20 tropical countries. *Kappaphycus* alone had been introduced in 26 countries. Its commercial cultivation is successfully going on in China, Indonesia, Madagascar, Malaysia, Philippines and Tanzania. In India, a scientist from Central Salt and Marine Chemical Research Institute (CSMCRI-CSIR), Bhavnagar, Gujarat was brought this alga from Japan though its original origin is from Philippines during 1984 for research and cultivation after following the necessary quarantine and introduction procedures. *K. alvarezii* was introduced in September 1995 at Thonithurai (Mandapam near Pamban Bridge), in the Gulf of Mannar waters, Tamilnadu, India. After repeated domestication and experimentation at Mandapam cultivation technology was transferred to PepsiCo India Holdings Pvt. Ltd., Gurgaon in 2001 and expanded the same on the Palk Bay side of the Bay of Bengal. This cultivation was taken up by self-help groups (SHGs) for their livelihood. The present study deals with comparison of different cultivation methods of this alga and its economics in Ramanathapuram district, Tamil Nadu, southeast coast of India. The income with the respective mean annual crop yield was calculated (US\$=Rs. 66.00). It would be Rs 18257/- (US\$ 277), Rs.16063/- (US\$ 243) , Rs. 18217/- (US\$ 276) and 20900/- (US\$ 317) per month/ person in net enclosed open culture, raft culture, tubular culture and net bag culture respectively during the loan period and with the respective income of Rs. 19257/- (US\$ 292) , Rs.18063/- (US\$ 274), Rs. 19217/- (US\$ 291) and Rs. 22400/- (US\$ 339) per month/ person once the loan period (of three years) is over. In view of the commercial cultivation, we recommend net enclosed open culture in the shallow water, raft culture in the moderate wave motion areas and tubular culture & net bag culture in the open sea after analyzing the infra cost, replacement of the infra, cultivation operation, carrageenan yield and net income. The income might increase if the farmers maintain the farm well coupled with per kg cost increase by the buyer.

Keywords: *Kappaphycus alvarezii*, Crop yield, Income, Coastal people, Seaweed, Cultivation