

## - Project Update Seaweed Culture; January 17, 2002 -

### SEAWEED CULTURE AS AN ALTERNATIVE LIVELIHOOD FOR LOCAL COASTAL VILLAGES AROUND KOMODO NATIONAL PARK

*Hirmen, Mirza Pedju, Peter J. Mous & Jos S. Pet*  
*The Nature Conservancy Coastal and Marine Program Indonesia*  
*Komodo Field Office, tel. +62-(0)385-41214, fax +62-(0)385-41225*  
*Bali Office, phone +62-(0)361-287272, fax +62-(0)361-270737*

Although seaweed culture is a well-known activity for many fishers in Indonesia, there is still an untapped potential of seaweed production in Nusa Tenggara Timur (NTT) province. In Bali, Lombok, and Seribu islands, for instance, the locals have succeeded to produce important commercial species such as *Kappahycus alvarezii*. Furthermore, market surveys in the year 2000 indicated that there is still a high demand for seaweed products. Thus, it has been anticipated that around Komodo National Park (KNP) area there is a prospect for seaweed culture to be developed. The production of seaweed will generate alternative income for local residents and thereby abate the threats of destructive fishing within the park. In December 2000, field visits were conducted to obtain information directly from the seaweed processor, buyers, and Indonesian Seaweed Association (ARLI). The result proves that there is an increasing world demand for seaweed as substitutes and additives as required by many industries involved in the processing of carragenan, alginate, and agar agar.

In October 2000 preliminary tests were conducted to measure the feasibility of seaweed culture in and around KNP. Based on the positive result of these tests, it was discovered that *Kappaphycus* is the most appropriate species to be grown. Following the test result, a training program was organized in November 2000. The training modules covered application technology, basic knowledge of planting, breeding, harvesting, post harvesting, maintenance and marketing. A total of 34 participants from 12 villages took part in the training. Additional support was also provided for each participant, such as rope, bamboo, anchor, plastic, seed, buoys, and dried materials. Each participant started cultivating 100 square meters plantation area, in front of the villages surrounding KNP.

Growing of seaweed started in April 2001 in targeted villages: Pulau Seraya Besar, Pasir Panjang, Pulau Kukusan, Manjaga, Pulau Papagaran, Pulau Mesa and Bajo Pulau. At the present time there are 100 families, divided in 10 groups, involved in the project. Each family developed successfully their planting areas to 300-400 sq m. The main buyers in Sape purchased dry seaweed products at an average price of Rp 3,500.- per kg (US \$ 0,30-0,40 / kg). The harvest time (45 days) is relatively short. Within this period one family can produce on average dry seaweed products of about 75 kg per 100 sq m, which is worth on average Rp 250,000,-. Capital costs for each harvest of 75 kg amount to some Rp 75,000.-. Each family currently cultivates 300-400 sq m and produces about 250 kg dry seaweed per planting cycle with a value of Rp 875,000.-, and at a cost of about Rp 275,000.-. This is currently resulting in a net income of about Rp 600.000.- (US\$ 60.-) per cycle per family. Each family is expected to complete about 8 cycles per year and

will produce around 2 tons per year. Total production of dry cultured seaweed by the total of 100 families in the development project is expected to be around 200 tons per year. In comparison, the production in Indonesia in recent years was about 300,000 tons per year.

Everybody in the family partakes in the seaweed culture enterprise. The men usually put the anchors and buoys that hold the ropes on which the seaweeds are grown. They also do the daily maintenance (mainly cleaning) and harvesting. Women mostly fix the seaweed seed on the rope, they take care of the drying process, and they help cleaning the growing seaweed. Sometimes they also process the dried seaweed into a local candy (*manisan rumput laut*) for the local market or for home consumption. Children sometimes also help fixing the seaweed on the rope. It is estimated that of the total labor units required for seaweed culture, men contribute 75%, women 20% and children 5%.