

## Integration of Traditional Wisdom and Practices in the Development and Implementation of a Coral Reef Management Plan and Legislation

### Project Summary

Selat Nasik Sub-District of Belitung District was selected as a demonstration site within the coral reef component of the UNEP/GEF South China Sea project. The objective of this demonstration site was to develop a community based management system that would ensure sustainability of the coral reef ecosystem in order to increase community welfare and to reduce poverty.

Activities at the demonstration site of Selat Nasik involved numerous stakeholders from local government and communities. A Management Board was established at the district level with members drawn from local institutions such as the Department of Marine Affairs and Fisheries, *Bappedada*, Education Services, Tourism Services and NGOs. The management board conducted regular meetings to discuss the implementation of activities with the site manager.



Using the guide books "The Coast and Our Sea" in primary schools

Activities at the Sub-District and Village levels involved: promoting community awareness and education; consideration of local regulations; development of a resource management plan; information and public awareness activities; and evaluation of alternative livelihoods. Public awareness activities included several community meetings, production and distribution of T-shirts and calendars to the Selat Nasik community.

Education activities took place in cooperation with the Education Service of Belitung District, and a syllabus was prepared and 1,400 guide books "*Pesisir dan laut kita*" (The Coast and Our Sea) were produced and distributed to all elementary school children in the Sub-District. Local teachers were also trained in using the guide book.

Control of activities on the coral reefs was undertaken through regular patrols by 20 volunteer reef watchers. The reef watchers received training on: map reading; how to undertake patrols; the preparation of reports; and basic training on how to evaluate the state of coral reefs in a simple way. The reef watcher programme was managed at the village level with each village responsible for the selection of reef watchers and the programme was provided with two boats each equipped with binoculars and life jackets.



Reef watcher patrol

The Research Center for Oceanography LIPI conducted an initial survey of coral reef condition and determined that the coral reefs in this area were still in good condition. The percentage of living coral cover varied from 46.9% to 91.5%, and economically valuable benthic species such as the giant clams *Tridacna* spp. were still abundant.

Activities to increase the volume and availability of information involved socio-economic and ecological surveys, which showed that community understanding of the importance of coral reefs developed during the project. The socio-economic surveys also provided information on activities that could be undertaken to develop alternative sources of income, and the results of the ecological surveys showed that coral reef condition in Selat Nasik was still good. The results of these surveys together with the outcome of previous studies were posted on the project website: [www.selatnasik.org](http://www.selatnasik.org).



Product development for enhanced community income

Two ways of enhancing community income were identified. The first involved enhancing production and quality of locally produced fish crackers, and the second the preparation of new products including jerked fish (*dendeng ikan*) and durian toffee (*dodol durian*). One hundred and thirty five trainees took part in training on these alternative livelihoods.

### Issues and Challenges

Current actions resulting in degradation of reef state in Selat Nasik waters include the "mining" of live coral for house foundations. Reef watchers report however, that the intensity of mining has decreased significantly following the public awareness campaigns.

The use of cyanide to catch ornamental fish by fishermen from outside Selat Nasik Sub-District is ongoing. Unregulated mangrove cutting to obtain fuel wood is still common in Selat Nasik Sub-District, and is mainly done by individuals engaged in collecting and processing *beche-de-mer*. The use of trawl nets (*Pukat Kongs*) by fishermen from outside Selat Nasik Sub-District is still common in the areas where this fishing practice is potentially destructive to coral reefs.

### Incorporating Traditional Knowledge and Practices into Local Management Regulations

The development of the resource management plan and local regulations, proceeded quite slowly initially due to the need to compile all relevant information and to consult with the legal section of the local government of Belitung,

the head of the sub-district, village chiefs and prominent figures in the community, including fishermen.



Artisanal fisherman from Selat Nasik Sub-District

These discussions took place against a background of previous actions by the community of Gersik village that had agreed internally in 1970 on preventing the use of certain fishing gear. The community agreement outlines a number of “rules” including the fact that anyone fishing in Gersik waters must use the same gear as local fishermen; and banning the use of light fishing. The community of Gersik village, specialise in line-fishing for mackerel, snapper and other pelagic species. In addition they also own “weir” or fish fences in the water near their houses. They believe that if all fishermen follow their rules, the catch will be sustainable and believe that the use of lift nets and light fishing will adversely affect their catch.

Up to the present time 6 quarrels have occurred with outside fishermen, resulting initially in warnings to the fishermen to cease, followed by more drastic actions including stoning and impounding fishing boats and gear. In the 1990s an agreement was reached between the Local Government of Belitung District and the Local Government of South Bangka according to which fishermen from South Bangka catching fish in the waters of Gersik village, must follow the regulations that have been developed by the Gersik fishermen.

Some years later, a disagreement between the fishermen of Gersik, Belitung District and Pongok, Bangka District arose in which the latter were accused of violating this agreement. A meeting was convened on April 30, 2003 in Belitung to resolve the dispute and agreed to adopt the following principles:

- All disputes be settled in an amicable manner through discussion and not by force;

- Weir (*rumpon*) located close to the operational area of purse seine (*payang*) must be marked with a 2m pole;
- Fish traps (*bagan*) may not be operated in the area of the weir;
- Fishermen using fish traps are to report to the Village Head or community chief before fishing;
- In the wet season the waters surrounding Bakau Island, Karang Gading, Karang Air, Karang Delapan and Karang Berekam are open for both *payang* and *bagan* fishermen; and,
- In cases of violation the offender will be prosecuted according to the existing laws.



Small scale fish traps, *bubu*

### Integration of Local Wisdom in the Management Plan and Regulations

To integrate the existing agreements initiated by the fishing community of Gersik village into the Resource Management Plan for the entire Selat Nasik Sub-District required a series of activities including widespread consultations followed by preparation of a draft Resource Management Plan incorporating zones of use throughout the Selat Nasik Sub-District. “Red” zones were designated as areas that are completely protected; “yellow” zones are areas of defined and limited use; while “green” zones represent areas that are open for all kinds of activities. The community’s aspirations and desires were taken fully into account in defining these zones. Once the draft plan had been prepared public consultations were organised with the communities of the Selat Nasik Sub-District, after which the draft was revised and presented to the local government for comment and discussion. At the same time drafts of local regulations on coral reef management and fishing activities and the use of gear based on the

Gersik agreements were considered by the Local Government of Belitung District.

### Potential for Replication

Development of local regulations (*Perda*) on the management of coral reefs has been done by several other districts in Indonesia. Therefore the potency of replication would be quite high. Nonetheless the phasing and the necessary timing for replication for each locality is quite different.

The principles adopted at the site for dispute resolution between fishermen have potential for replication in other areas of Indonesia's South China Sea coast. Particularly in the Riau Islands area and coastal waters of West Kalimantan province where similar fishing methods are used and conflicts exist.

The experiences at the Belitung site have been used to plan a future fisheries initiative in Indonesia aimed at improving the management of important fisheries habitats. The success in integrating local wisdom in local management plan development has potential for up-scaling to the sub-region level as part of this initiative.

The community awareness and education materials have potential for direct use in adjacent sub-districts and districts and efforts are being made to make these accessible via the Selat Nasik website. Translated versions of the training materials developed for the site could also be used in other South China Sea countries in the design of awareness building activities.

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