

**EXTENSION AND COMMUNICATION IN THE INTEGRATED
MANAGEMENT STRATEGY FOR THE SUSTAINABLE DEVELOPMENT
OF KONAWE COASTAL AREA SOUTHEAST SULAWESI, INDONESIA**
*(Penyuluhan dan Komunikasi dalam Strategi Pengelolaan Terpadu
Mewujudkan Pembangunan Berkelanjutan Wilayah Pesisir
Kabupaten Konawe Sulawesi Tenggara Indonesia)*

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Abstract

A project entitled the Extension and Communication in Integrated Management Strategy for the Sustainable Development of Konawe District has been implemented at western part of Konawe coastal area. It was started as a pilot project from March 2002 to March 2004. The goal of the project are to improve ecological and economic function of land, coral reef and mangrove forest at Konawe coastal zone, so that the productivity of agriculture, fish and other marine biota as well as community income are increased. The out put achieved are (1) A preperation of Document of Sustainable Development of Western Coastal of Konawe District, (2) rehabilitation of 200 ha of degraded mangrove forest. (3) establishment of Local Economic Institution (called ELKAM) to provide capital for local community. The membership had been growing fast, from 50 members in 2002 and increased to about 750 members in 2004. The initial results are that by practicing a good extension with appropriate communication tools is the best approach for integrated coastal management strategy of Konawe District.

Key words: extension, communication, integrated, coastal

Abstrak

Sebuah proyek berjudul Peranan penyuluhan dan komunikasi dalam strategi pengelolaan terpadu mewujudkan Pembangunan Berkelanjutan di Wilayah Pesisir Kabupaten Konawe telah dilaksanakan dari Maret 2002 sampai Maret 2004. Tujuan proyek adalah memperbaiki fungsi ekologi dan ekonomi terhadap lahan, hutan bakau, terumbu karang, sehingga produktivitas pertanian, ikan dan biota laut lainnya serta pendapatan masyarakat meningkat. Hasil yang diperoleh adalah (1) telah disusun dokumen Pembangunan Berkelanjutan Wilayah Pesisir bagian Barat Kabupaten Konawe, (2) Seluas 200 kawasan hutan bakau telah direhabilitasi, (3) telah dibentuk Lembaga Keuangan Masyarakat (ELKAM), anggotanya berkembang pesat yaitu dari 50 anggota tahun 2002 menjadi 750 anggota tahun 2004. Kesimpulan awal menunjukkan bahwa penyuluhan yang baik dengan komunikasi yang sesuai merupakan pendekatan yang tepat dalam pengelolaan wilayah pesisir terpadu di Kabupaten Konawe.

Kata kunci: penyuluhan, komunikasi, terpadu, pesisir.

I. INTRODUCTION

Coastal resources are important resources which, if managed properly can contribute significantly to sustainable development of regional and national economics. They provide significant productive potential for fish, wood, mining, tourism, transportation, etc.

About 20 % of the people along the Konawe coastal have relied on subsistent agriculture and 75 % relied on traditional fishing from the coastal water surrounding and about 5 % are public servant, small enterprises, carpenter and others.

Due to coastal exploitation e.g. mangroves in these areas, so the level of coastal degradation is considerably high, it is about 70%-90%. With decreasing of mangrove forest population, fish and other marine biota are also decrease, and therefore, most of the local fishermen have to fishing far a way from their villages. In addition, the soil erosion during rainy season was high due to lack agricultural management. Furthermore, practicing of blasting fish by the fishermen causing coral reef degradation and resulting low marine productivity.

The main activities causing coastal degradation at Konawe coastal were: conversion to settlement, material for house construction, fishpond, firewood and timber production, fish blasting practices, coral mining, using of potassium cyanide, over exploitation, inappropriate policy. etc.

Because of those condition, so there are several problems found in these villages including: most of community have low income, there are lack of sustainable livelihood alternative available, mangrove habitat degradation, coral reef degradation, soil erosion, lack of source of capital, lack of community participation and high coastal erosion.

Therefore, in order to achieve a sustainable coastal management at Konawe coastal, integration of economic and coastal rehabilitation as well as agricultural conservation development into community's welfare improvement would be the main approach use.

Communication and extension are the main tool used in order to increase the community participation in coastal management. Without good communication and extension it is difficult to achieve the project objective.

II. PROBLEM STATEMENT

The project location have a serious mangrove degradation, it is about 25-20 % of the mangrove forest left, so the ecological and economic of mangrove have decreased over time. In addition, the coral reef around these areas have high degradation. Furthermore, due to traditional agricultural practices, so there are high erosion and sedimentation at coastal areas during rainy season. Based on the previous study conducted by INSANI in 2002, found that the community propose to solve the problem which occur in their villages such as: how to improve community income per capita, how to develop the sustainable livelihood alternative, they need assistance to restore their habitat degradation (coastal and land), and they propose to develop local economic institution as capital source instead of capital from middlemen with high interest (>20%) as well as lack of community participation in resources management.

III. THE PROJECT GOALS AND MAJOR COMPONENTS

The project is the integration of economic and rehabilitation of coastal areas so the approach was holistic. The goal of project is to improve ecological and economic function of land, coral reef and mangrove forest at Konawe coastal zone, so that the productivity of agriculture, fish and other marine biota as well as community income are increase. In order to achieve the project goal so, the project objective considered are:

1. To develop capacity building of local community at target areas to conserve and protect their mangrove forest and coral reef as well as to develop their agriculture,
2. To rehabilitate the coastal of target areas with sustainable interventions and direct community involvement in the design and implementation of the project,
3. To create a strong community steering committee (CSC) in coastal rehabilitation and site maintenance, with skill and experience that can be extended to other similar coastal communities,
4. To increase the community's income,
5. To establish local economic institutions (Credit Union) to support economic sustainability development to avoid from middlemen practices with very high interest.

6. To provide a nucleus for development of coastal rehabilitation approaches and public awareness materials for general application in Konawe District; to use coastal of Konawe coastal as a model for implementation of coastal rehabilitation initiatives and agricultural practices elsewhere in Southeast Sulawesi.

Achieving these objectives would require the following major project components, including:

1. Resource management planning
2. Research and monitoring
3. Community organizing
4. Community education to provide information and raise community awareness about key topics
5. Support activities, such as facilitation of construction of physical structures and development of alternative livelihood; and
6. Linkages with and support of outside agencies and groups to encourage active participation in the project activities and to build responsible roles for concerned the institution (NGOs and government).

IV. MODEL OF THE COMMUNICATION PROCESS USED

Communication means making oneself understand. Communication is the exchange of ideas, thoughts, feelings or objects between two or more persons. The person who wants to communicate something is the transmitter. The person to whom this communication is directed is the receiver.

In the simplest form, communication use in this project strategy consists of the following steps:

1. the transmitter has a message (idea, thought, feeling, opinion, etc) that he wants to communicate.
2. the transmitter must now send the message in such a way that it can be received by his communication partner.
3. The transmitter must code this message. He must put his thoughts or feelings into sounds, words, or written characters (verbal communication) or into gestures, body position, etc (non-verbal communication) which are understandable to the receiver.
4. the receiver receives the message over one or more of his perception channels. If this takes place without any omissions or distortions, the

receiver then has an exact duplicate of the transmitted message.

5. the receiver must decode and interpret, classify, and adopt the message in order to understand it correctly.
6. the receiver must now acknowledge receipt of the message, i.e. he must let the transmitter know that he has received, duplicated and understood the message.

In order for people to communicate well with each other, they must be able to confront their communication partner and the topic of discussion; direct their full attention to their communication partner; connect a specific intention to the communication; duplicate and understand the transmitted message; and acknowledge receipt and understanding of the message.

By practicing these stages, all the project planning and implementation and management can be carried out well, so the project output achieved. In this project the communication tool use was visualization technique. The material use for visualization technique such as: portable boards (pinboards, pegboards), cardboard cards, felt-tip pens, adhesive dots, auxiliary material (pins, glue, sticks, rolls of tape, scissors etc), flipchart stands and flipchart paper.

V. IMPLEMENTATION PROCESSES AND RESULT

Seven stages of implementation are presented to clarify the order of events. There was overlap in the actual process, however, because each stage is not separate or exclusive. The summary of the stages and activities are described belows:

1. Social preparation and socialization.

Social preparation is conducted to consult and to discuss as well as to socialize the implementation plan of the projects with the community, informal leader and local government. In addition, it will be developed also an agreement amongst the communities to get the same perception and better understanding of the project. All the administration process, legitimate, and community support also are discussed in this step. In order to meet the aim of these activities so the seminar and workshop should be carried.

2. Training.

The training was conducted to educate and to increase the skill, awareness and capability of community in coastal rehabilitation and management as well as community economic development, so that they could manage the process of the project sustainability. The training activities focused on the following topics:

1. Credit union management, administration and financial, analysis of credit feasibility, the technical method of management and controlling of the budget,
2. Group dynamic management and leadership,
3. Technique of seedling establishment of mangrove, replanting, and site maintenance,
4. The construction technique for the wave attenuation devices and artificial reef, and
5. Training on agricultural conservation to the farmer

3. Planting of Mangrove Seedling.

The ideal mangrove planting scheme would include planting *Rhizophora* close to the beach and *Avicennia* and *Sonneratia* in the more exposed areas to seaward of the beach. A mangrove nursery should be established at each village. Approximately 120 ha of degraded mangrove habitats were planted with mangrove seedling. Other degraded area will be used for local harbor, silvofishery, and navigation for local boat. The successful of planting and manage of mangrove tress will provide opportunity for them to access credit from Credit Union.

4. Construction of wave attenuation devices and artificial reef.

Wave attenuation devices is constructed in order to protect young mangrove seedling planted from damage due to wave attack. In addition, wave attenuation devices could also act as media for marine organisms growth such as algae and barnacles as fish feeding. The material used to construct wave attenuation will be bamboo and Rotan or coconut fiber rope. These devices can have function within 4-5 years, and at that time the mangrove seedling have been strong, so they could survive. Artificial reefs are generally considered to be any solid material (which is not already a part of the natural aquatic environment) placed at the bottom of the aquatic environment, aimed at

improving the fish habitat and stock and enhancing colonization by marine organisms such as algae, barnacles and shellfish. The artificial reefs are made of old tires and bamboo. So, the use artificial reefs will have function as conservation strategy, habitat enhancement strategy, rehabilitation strategy, recreational fishing areas and as commercial fishing areas.

5. Sustainable livelihood development (Income Generating Activity).

The Income generating activity should be facilitated by either NGOs or higher education institution to the community in groups to discuss and formulate the feasible and sustainable local business or economic activities based on resources base available in target villages both farmers and fishermen. Based on the research reported by INSANI (2002), that there several feasible small business have high potential to develop in these villages, including, Income generating development plan at coastal and marine waters, could be developed such activities as: silvofishery, floating cages (for crab and fish culture), beach recreation, and mariculture. Secondly, at coastal land it can be develop agriculture with such commodities as coconut trees and horticulture for both at their house yards and at their garden. The agricultural conservation technique will applied including: strip cropping, alley cropping and agroforestry. To run the communities' small business, they could apply credit to the local economic institution or Credit Union institution if they become a member.

6. Establishment and Empowerment of the local economic institution

The objective of local economic institution development is to provide local capital to support economic development within the villages. In addition, this institution could also help the community to provide alternative source of credit with low interest compare to the credit practices by middlemen with high interest. As side from that it could easy to get credit compare to the bank operational with difficult procedure. The system of this credit union institution based on the agreement of the members. The Credit Union system is similar to grameen bank in Bangladesh. The budget propose to the committee will be used as stimulation fund as the initial capital of the credit union, added with

community saving as a members.

The credit will be given to the member if they fulfill the requirement needed by the Credit Union according to their agreement. The process of credit lending will be managed by the selected organizers during the member meeting. The NGO or higher education will act only as facilitator.

The requirements or the procedure are needed to get credit to the Credit Union, as follows:

1. They should become member of the Credit Union Institution by paying saving or member saving to the Credit Institution.
2. They propose credit application to the Credit Union Institution through the organizers,
3. The Credit Union Institution will analyze the feasibility of the credit application by comparing the credit propose and the type of activities they are going to implement,
4. The controlling of given credit facility to the members are conducted until the credit repay back,
5. The members who still have credit don't have opportunity to borrow money, unless they finish to pay back.

The members meeting is the main decision making body and they elect people to conduct the tasks. Because the organization handles money there is a strong temptation for corruption in any culture. Experience from many areas has shown that transparency and a supervisory committee (or independent auditors in large organizations) to oversee activities is vital (e.g. Purden, 1980: 75-76). The supervisory committee is selected by the members in these villages and include the local leaders, religious leaders with the task of encouraging progress and most importantly provide supervision and guidance. The mechanism for credit applications is also consistent with self-help organizational theory.

7. Agricultural Conservation Development.

Because of most coastal land have steep slope (> 25%), so traditional agricultural practices is not properly suitable. But due to lack of livelihood alternative, and therefore, the farmer planted crops on that land. During rainy season, this land contribute a lot of sedimentation due to eroded material flows to the coastal waters and cover some of the coral reef areas. To reduce erosion and sedimentation,

hereby to increase soil fertility and soil structure, so, the agricultural conservation practices should be taken into account, e.g. alley cropping, strip cropping, and terracing using coconut fiber. Using coconut fiber will be a opportunity for alternative source of income.

8. Extension and Facilitation activity

The extension work and facilitation activities are routine activities of NGOs or higher education field officer during the project period in target villages. Through these activities the community will have better understanding, skill and knowledge, so that they could plant mangrove seedlings, the could maintain the site well, they conduct their business or activities properly and therefore, they could improve their coastal areas (including land, mangroves and coral reef), economic and social of the community. Through these activities the NGOs field officer could identify problems in the villages, so the NGOs could facilitate them to provide alternative solution.

In accordance the project implementation, the result achieved so far are:

1. Increasing of local communities' capacity (institution, knowledge, skill and awareness) on the mangrove forest and coral reef rehabilitation and protection, as well as on agricultural conservation,
2. About 200 Ha of degraded mangrove habitat and 120 Ha of degraded coral reef were rehabilitated and protected by local community,
3. Wave attenuation installed and incipient sedimentation between these and the shore,
4. Public awareness materials on coastal rehabilitation and agricultural conservation have been distributed for extension throughout Southeast Sulawesi.
5. 3 local economic institution (Credit Union) were established and it plays important role to support the economic development amongst the 8 villages

VI. ACCOMPLISHMENT AND LESSON LEARNED

In 2003, due to intensif facilitation and extension with good communication practice so most of the community planted mangroves, artificail reef,

protect the coastal resources and participate in the Credit Union development. The members of Credit Union used their loans to support the following activities including: fishing, sea weeds culture, small enterprises, as well as agriculture.

These activities are helping to raise the standard of living in the community and as the funds are paid back they are used for more loans in the community. There is a transparency to the lending and villagers know that the money needs to be repaid and it is available for more loans. The money economy is being stimulated in a different way than clearing mangroves for fish ponds and the effect on the environment is very different.

The activities in this project followed good participative development theory. The developers started a learning process by the socialization of the project to local government and local community to design planning and management of the mangrove forest. This involved training and extension to empower local community to develop knowledge, skills and awareness of coastal management. By obtaining the seedlings and do the planting villagers learned by doing. This created an attachment to the seedlings and a desire to protect them from boats and see them mature. The credit given for this involvement has enabled the establishment of livelihood alternatives to provide feasible income generating activity. The very important development of the rehabilitation mangrove forest will have a long-term benefit of reducing the shoreline erosion and providing a fish habitat. It is unfortunate that development was set back by the destruction of the mangroves in the name of development. But the project shows that this can be reversed by replanting and protecting the forest for long-term benefits and at the same time establishing of a Credit Union and empowering existing local economic institution for more immediate benefits in the community.

After only two years there is a noticeable improvement of mangrove habitats in front of the villages as the productivity of marine life has increased. The fishermen report that they could catch fish and other economic marine biota again near to their villages. But, the total catch is not sufficient yet to increase living standards. The villagers expect that as soon as mangrove trees get bigger the fish habitat will improve and, fish and other marine biota production will also increase. Besides tangible

economic benefits from the credit perhaps most importantly hope for the future is increasing.

In addition, agricultural conservation could increase the agricultural production and reducing the erosion rate meanwhile improve the soil quality. The project implementation process and result are match and fit with the local problem, and by practicing good communication the goal and the objective project be achieved.

In order to obtain good communication, they must be able to: confront their communication partner and the topic of discussion; direct their full attention to their communication partner; connect a specific intention to the communication; duplicate and understand the transmitted message; and acknowledge receipt and understanding of the message.

REFERENCES

- Bornstein, David. 1996. *The price of a dream: the story of the Grameen Bank, the banking program that is changing the lives of the poor.* New York : Simon & Schuster.
- Craig, J.G. & H. Poerbo, 1988. "Food Security and rural development the case of Ciamis Indonesia". *Journal of Rural Co-operation*, Vol XVI, No 1-2. Pp. 111-124.
- Craig, J.G. 1993 *The Nature of Co-operation.* Montreal: Black Rose Books.
- Yayasan Bina Insani Indonesia, 2002. *Report on Credit, Income and Coastal Rehabilitation Program at Lasolo Bay.* INSANI Konawe.
- FAO, 1982. *Management and utilization of mangroves in Asia and the Pacific.* – Publication info: Rome : Food and Agriculture Organization of the United Nations, 1982.
- Government of Indonesia, Ministry of Forestry, 1997. *Mangrove Resources Development Plan in 1997 Volume one.* Jakarta: Government of Indonesia.
- Khandker, Shahidur R. 1998 *Fighting poverty with microcredit: experience in Bangladesh.* New York : Oxford University Press.
- Manan A, & Craig J, 2003 (in publish) *Credit, Income Generation Activity and Coastal Rehabilitation at Southeast Sulawesi Indonesia (case study: Sambuli and Tondonggeu villages)*

- Post, J.C. and C.G. Lundin (eds). 1996. Guidelines for Integrated Coastal Zone Management. Environmentally Sustainable Development Studies and Monograph Series #9. The World Bank: Washington D.C. USA.
- Purden, Christine. Agents for Change: Credit Unions in Saskatchewan. Regina: Credit Union Central. 1980.
- Rahman, Aminur. 1999. Women and microcredit in rural Bangladesh : anthropological study of the rhetoric and realities of Grameen Bank lending. Boulder, Colo. : Westview Press.
- Whitten, A.J.;M. Mustafa and G. Henderson. 1987. The Ecology of Sulawesi. Gadjah Mada University Press: Yogyakarta, Indonesia.
- Yunus, Muhammad with Alan Jolis. 1999. Banker to the poor: micro-lending and the battle against world poverty. New York: PublicAffairs, 1999.