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จุฬาลงกรณ์มหาวิทยาลัย  
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## บทนำ

วารสารวิจัยสังคมฉบับนี้ เป็นเล่มที่นำผลงานวิจัยน่าสนใจ 4 เรื่องมาสรุปโดยยังคงหาเนื้อหาสาระที่ละเอียดและเป็นประโยชน์สำหรับนักวิชาการที่ไม่ต้องการอ่านงานวิจัยทั้งฉบับ เรื่องแรกเป็นงานวิจัยของ จาริต ติงศภักดิ์ เรื่อง A case study of community forestry in an agricultural land reform area in Eastern Thailand เรื่องที่สองและสามเป็นงานวิจัยของ Jean-Yves Weigel นักเศรษฐศาสตร์ที่สนใจการประมง งานวิจัยทั้ง 2 เรื่องคือ Conflict, traditional regulations and management of Sudano-Saharan Fisheries (West Africa) และเรื่อง Non-institutional financing systems for artisanal fishing in Sub-Saharan West Africa : features, proposals and methodology difficulties. สำหรับเรื่องที่สี่เป็นงานวิจัยของ ศิริบุญ สุวรรณคีรี นักวิชาการจากมหาวิทยาลัยสงขลานครินทร์ ศึกษาเรื่อง An evaluation research on vocational skills training for students in "Private Islamic Religious Schools" in Southern Thailand.

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# A Case Study of Community Forestry In An Agricultural Land Reform Area in Eastern Thailand

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## **Abstract**

This paper reports the findings of a study of farmers' land and tree use practices in a land reform area in the eastern region of Thailand. A sample survey of households was conducted in two villages, one where land reform has been implemented, and one where it has not, on the use of trees, farming practices, and activities and attitudes regarding tree planting. The study found that land security is an important factor in tree planting, particularly in relation to income generation from alternative land uses. The choice of tree species depends on factors of market, credit and extension support available to the farmer. A tree-planting programme focused on the individual farmer is more likely to be successful than a community-oriented programme.

## **1. Introduction**

The problems of deforestation and land tenure have received a lot of attention from the public. Various approaches to the solution of these problems have been proposed. There appears to be a consensus that, given the diversity of physical, economic and social conditions prevailing in specific locations, the solution cannot be a general one, but must take these differences into account.

Land Reform and reforestation have been proposed as one approach to the combined problem. The Agricultural Land Reform Act was enacted in 1975, since when there has been gradual implementation of land reform throughout the country. As regard reforestation, the Royal Forestry Department has been engaged in reforestation programmes since its creation more than 90 years ago. Currently, the government also follows a policy of encouraging greater private sector role in reforestation.

The case of reforestation in agricultural land reform area is an interesting one. A large extent of land reform areas were formerly forest land which has been converted to cultivation. The legal status of the land has been changed from that of "forest reserve" to "agricultural land reform" land. Nevertheless, there is a stipulation that at least 20 percent of the land should be kept as "community forest".

This report is part of the Regional study on farm and village land and forest use practices undertaken by Winrock F/FRED. The study is carried out in Chachoengsao province in eastern Thailand. The field research was done during 1989, using the overall conceptual framework and questionnaire design provided by F/FRED.

The specific aim of the case study is to examine the role of local institutions in the formulation and implementation of social forestry programs. The site selected is of special interest

in that it is located in an agricultural land reform area, in the central region of Thailand which is experiencing rapid economic change due to industrialisation of the adjacent seaboard area.

The rationale for the study arises from the need to address the deforestation problem in Thailand by planting more trees. The main concern of this study is to look at how tree planting is encouraged and what results are achieved in an agricultural land reform area.

The issue that requires consideration relates to the competition for land use between various options. To what extent is the 20% forest area requirement feasible or appropriate? What form it should take? What kind of management is required to maintain the forest? What would be the benefit and who would benefit from the forest? These questions need to be considered, because in a situation where land is a scarce resource, it should be put to optimal use from the society's point of view.

**The specific objectives of the study are :**

1. To obtain data on farm and village land and forest use practices in a land reform area ;
2. To examine the role of local institutions in planning and implement forestry programs.

## **2. Issues and Methodology**

### **Agricultural Land Reform in Thailand**

Land reform in Thailand began with the passage of the Agricultural Land Reform Act in 1975. This legislation established the Agricultural Land Reform Office (ALRO) within the Ministry of Agriculture. By this law, ALRO is empowered to acquire land, by transfer or by purchase, from owners for the purpose of allocation to farmers. The farmer in the land reform area will receive a plot of land, on average 50 rai per household, (6.25 rai = 1 ha) for cultivation. However, the farmer holds only usufruct rights, which can be passed on to his heirs, but not full title. If the farmer's family ceases to make use of the land for cultivation, the land reverts to ALRO for a new allocation. ALRO will provide infrastructure and supporting services.

### **Forestry Development in Land Reform Area**

While ALRO was intended for implementation of land reform mostly in areas which have been cultivated for a long time and have high incidence of land renting or landlessness, difficulties in buying land, and the growing concern with deforestation by encroachment of farmers into the forest, prompted the government to grant ALRO responsibility for implementing land reform in degraded forest land. Developing forest land for agricultural and other uses has a long tradition in Thailand, with the establishment of government-sponsored settlement schemes. In such a project, the responsibility for managing the land passed from the Royal Forestry Department (RFD) to the new agency concerned. ALRO was simply consolidating the practice of such projects.

In the projects involving turning forest land to other uses, one of the conditions attached to the new responsible agency was to keep 20% of the area as forest. This condition is better known for the breach than for the observance. In the case of land reform in degraded forest reserves, there has been no formal procedure for establishing such a forest area. Thus, when the study began, the question was how the required forestry development was viewed by ALRO and how it could be developed in the study area.

In the context of the study a number of possibilities for forestry development exists.

**1. Farm Forestry :** farmers may be encouraged to plant trees on the land they receive from ALRO, either for their own use or for sale.

**2. Industrial Plantation :** the land reform area can be leased out en bloc to a firm for establishing a forest plantation. The farmers would be growing the trees under a subcontracting arrangement with the firm, as land leaseholder, as plantation worker, or as suppliers of tree products to the firm under contract.

**3. Community Forest :** an area in the ALRO area may be designated forest land, so that a forest plantation can be established in some form for the use of the communities in the ALRO area.

The outcome would depend on the specific local conditions, such as whether the land has alternative uses, the market for wood and wood products, availability of finance etc.

### **The Farmer's Choice**

Since tree planting can be regarded as another form of land use, the question is how the farmer considers trees in the context of his farming system, and how planting trees compares with other crops in terms of benefits to the farmer. This question is complicated, in our case, by the status of land holding as a land reform area. This means that the farmer does not own the land, but can use it for his living as long as he remains a farmer. The advantage of full ownership has been shown to be in the use of land as collateral for obtaining loans from the formal sources of funds, while those without legal titles have to depend on informal sources with higher costs. The effect of the land reform has been to provide an alternative form of security for obtaining loans, but the application to longterm investment such as tree planting has not so far been studied.

### **Research Methodology**

The study employed a combination of quantitative survey approach with qualitative approach using direct observation and interview methods.

The selection of the research site was done with the cooperation of the Agricultural Land Reform Office. The selection criteria are based on:

(1) The site should be one that was formerly a forest reserve, so that it is subject to the 20% community forest rule.

(2) The level of land reform. A part of the site should have complete the process of land reform, while the rest should still be "un-reformed", to allow a comparison of the effect of land reform on the farmer's practice and attitudes.

(3) The presence of tree planting as feasible land use option for the farmers.

On these criteria, the site in the Kwae rabom-Siyat Agricultural Land Reform Area in Chachoengsao Province was chosen for the study. Responsibility for the area was transferred to the Agricultural land Reform Office from the Royal Forestry Department in 1975 and the land reform process was started in 1977.

## **3. Description of Research Sites**

### **Location**

The chosen research site is the Agricultural Land Reform Area of Sanamchaikhet District, Chachoengsao Province (Map 1). The area is part of the Kwae Rabom-Siyat Forest Reserve extending over an area of 1.6 million rai. The forest was declared a reserve forest in 1978, while the land reform area was demarcated and declared in 1977, when the area was degazetted from the forest reserve area. The Land Reform area itself comprises 231,507 rais. Annex 1 summarises the changes in the status of the forest since 1950s. In the original land reform area plan, 150,000 rai was to be allocated to farmers for agriculture, while a further



75,000 rai approximately was earmarked for establishment of community forest (See Map 2). The land use in 1978 (shown in Map 3) consisted mainly of sugar cane and cassava, with only a small area of mixed deciduous forest left. The area demarcated for community forest development was totally devoted to sugar cane. In this area, land reform was implemented in stages, as the ALRO established its presence and worked to obtain the cooperation of the resident farmers in the initial survey of land holdings and then in the allocation of land to the farmers (Annex 2).

The soils in the land reform can be described as generally poor in nutrients, moderately suitable for field crops, pasture development and tree crops.

### Village Selection

In line with the aim of the study to examine the effect of land reform on forestry development, it was decided to select one village where land reform had not been implemented, to contrast with one where land reform has been completed.

At the time of study, the land reallocation process was partially completed in the land reform area. Due to lack of cooperation from the land occupiers, the land reform processes did not progress well in the area designated for community forest. A village from this area was chosen, Village A, to represent the un-reformed village.

In contrast, in the southwest of the land reform area, the land was less densely settled and the population was more cooperative. The land allocation was completed with the issue of land certificated SPK 4-01. The study selected one village in the allocated area, Village B, (Ban K.M. 7), to represent a reformed village. The villages are described below.

### Village Description

#### *Village A: Ban Nong Yang*

##### *Socioeconomic Structures and Community Characteristics*

Village A is located in the northeast of the land reform area, close to the district center to the west. It is a settlement of 650 households comprising just under 4,000 persons. The agricultural area of the village covers an area of about 17,000 rai. The topography of the area is flat and rolling plain. Agriculture is entirely rainfed. Rice is grown on 7,000 rai, and cassava on 8,000 rai. The rest of the land is used for residential purpose and for roads. The village is further divided into 15 clusters, located at some distance apart from each other along the roads. (Map 5)

The land holding pattern is uneven. While the average holding is 10 rai, there are landless households and absentee land owners who live in the town and hire labor to cultivate the land for them. Further complicating the issue of land tenure is the fact that the whole village is located in the area marked out as community forest at the time of the transfer of the degazetted forest land to ALRO. At the time of writing, the ALRO has completed the cadastral survey of existing land claims, but the land allocation process has not yet been completed. Considerable resistance to land reform was evident in the area at the time of the field research.

#### *Land Use*

The land in Village A is used for annual cropping of rice and cassava. At present there is no planting of trees except in the home garden area.

#### *Village B: Ban Ko. Mo. 7*

##### *Socioeconomic Structures and Community Characteristics*

The second study village is *Ban Ko. Mo. 7*, located in the Lat Krating subdistrict to the southwest of the land reform area. It is a scattered village of 6 clusters (Map 6). Altogether, there are 278 households, occupying an area of 19,357 rai. Total population is 1,200 persons.

The topography of the area is rolling plain on loamy clay soil. The village is accessible by laterite road.

The village has been well-endowed with government support. There is a small reservoir covering an area of 130 rai located close to the village center. A Rubber Research Station was established on an area of 2,000 rai in 1981. In the Land Reform area as a whole there are other government agencies which have been located: school, health station, agricultural extension officers and cooperative officers.

In the beginning, there was considerable resistance to the land reform measures, due to lack of understanding about the land reform procedures. Given the limit on individual land holdings, a land holder has to find people to occupy the land. Usually, the declaration of land claims would be in the name of family members. But this was not always the case, and the holder was reluctant to let the land reform officers proceed with the land allocation. The result has been that land claims was transferred to family members and sometimes to others, while the original management appears to be implicitly retained.

#### *Land Use*

In the Village A, the main form of land use is cultivation of cassava as an annual crop. Other annual crops include sugar cane. The importance of cassava has declined from 90% of total cultivated area 4-5 years ago to 56% at present. Both yields and prices for cassava have declined. In its place, the farmers have turned to cultivation of tree crops, notably rubber and cashew nuts. Each of these crops has been supported by extension advice.

In the case of rubber, the Rubber Research Station has been helping the farmers with seedlings and technical advice. For cashew nuts, a private company has worked with ALRO to involve the farmers in planting contracts with the company.

### **4. Alternatives in Forestry Development in a Land Reform Area**

#### **Experiences of Forest Resource Development**

As shown in Map 3, by 1978 there was no forest left in the area allocated for land reform. The original forest was cleared for cultivation of sugar cane and cassava. Only a small area of mixed deciduous forest was identified around Village B. Around Village A, the area was given over to sugar cane. In this section, we trace the development of forestry activities in these two villages.

#### *Establishment of Community Forest in Village A*

The original plan of the land reform was to set aside an area of 20% of the total land reform area for use as community forestry. At the transfer of the land from the Royal Forestry Department to ALRO, 54,000 rais of the forest, including the area where village A was located was earmarked as "community forest". Prior to the transfer, the RFD Regional Forestry Office had begun to establish a forest plantation, but the attempt encountered resistance from the occupying farmers, as well as being limited by budgetary restrictions. At the time of the transfer, only a small area, 2500 rai, was established as a forest plantation.

#### *Coordination Problems between RFD and ALRO at Local Level*

In 1986, villagers lodged a complaint with the Provincial Land Reform Office that RFD officials had started surveying the land amounting to 1,949 rai for use as new reforestation area. Subsequent investigation revealed that the RFD had earmarked an area out of the forest plantation area to be allocated by the Tambol Council to farmers, but to date no action had been taken. Furthermore, the Provincial Land Reform Office did not have possession of papers on the matter.

However, inquiry through ALRO revealed that the RFD had been establishing a reforestation project on 1,280 rai during 1978-1980. For 1986, the Prachinburi Regional Forestry Office was implementing a program to establish a center for Private Reforestation Promotion, in the perviously resorested area, to produce seedlings for distribution to the people, temples, schools and other government agencies and to provide knowledge on reforestation to the public.

In late 1986, the Prachinburi Regional Forestry Office informed the Provincial Land Reform Office of its forestry project on the area.

The incidence indicated that there was a lack of communication between the agencies concerned. In particular, the Provincial Land Reform Office, as the responsible agency for the area, was not informed of activities of the other agencies in its area of responsibility.

### *Why Community Forest?*

In its view, the Provincial Land Reform Office recognized that the purpose of having a community forest for ecological protection, for holding soil moisture and for supplying fuelwood need of the local population, are the main aims of the community forest. However, it considered that the cost of moving people out, establishing the forest plantation and then allowing people to come in to harvest the trees for fuelwood, would be an investment which is not worth undertaking. The cost of controlling the forest plantation and of controlling cutting by villagers would also be high and may lead to conflicts among the villagers.

### *An Alternative Approach to Forestry Development*

In stead, the Provincial Land Reform Office proposed that :

a. The community forest requirement be changed into a requirement to have a commercial forest.

b. The RFD should legalize its reforestation activity in the Land reform Area by applying for permission to use the land for establishing the Reforestation center. This would be in line with the practice of Land reform requesting permission from the RFD when it operated in the RFD controlled area.

c. The idea of the community forest be canceled. Instead, the promotion of private commercial tree planting should be encouraged for the whole of the 230,000 rai area, in order to obtain the 20% forested area requirement (46,000 rai).

d. In the canceled community forest land, the land Reform Office will undertake land allocation according to land reform practice. But there will be an extra condition imposed. This is that the occupation permit with the farmers contain the clause requiring the farmer to plant trees together with doing agriculture.

The Provincial land Reform Committee approved these proposals in January 1987.

Thus, the situation as of now is that the designated community forest will no longer be used as such. Instead, the approach to encourage tree planting will be directed to commercial forestry activity rather than having a community focus. The scope of tree planting will be broadened to include not only forest trees but fruit trees and other trees such as rubber.

### *Tree Planting in Reformed Area*

In contrast to Village A, where there is a reluctance to engage in forestry development, the farmers in the reformed area in Village B are now taking part in rubber planting and cashew nut planting programs. As of 1989, 43 households in Village B were reported to having planted fruit trees, particularly mangoes, covering an area of 182 rai. This is still a small area in comparison to the planting of cassava, taking up 7,230 rai. But it represents a departure in terms of farmers taking a long term view over their land use decisions.

In addition to planting mangoes, some farmers have also planted cashew nuts and rubber trees.

### *Cashew Nuts*

The cashew nuts have been introduced into the area as a program organized by the ALRO in conjunction with a private firm, MBK Cashew Nuts Co. Ltd. The company and the farmer enter into a contract in which the farmer agrees to plant cashew trees from seedlings purchased from the company, and to sell the entire output back to the company. In turn, the company agrees to provide the specified stock material and technical advice on the growing of the trees, and to buy from the farmer at a minimum agreed price. (Annex 2).

The arrangement had resulted in the planting of a number of cashew trees, covering an area of 30 rai in 1989. (For the whole of the subdistrict, the area planted to cashew was 60 rai).

However, complaints were voiced from both sides of the contract. The farmers complained that planting materials were not those specified and yields were lower. The company complained that farmers did not stick to the agreement by selling their output to other buyers instead of selling to the company, because these buyers offered cash payment to the farmer, while the company paid the farmer through the Bank, who deducted the amount owed to it for the farmer's loan, before giving the rest of the payment to the farmer.

### *Rubber Planting*

With regard to the planting of rubber, 1250 rai were reported to be planted. The farmers were introduced to rubber as a crop by the promotion of the Rubber Research station located in the area. The ALRO provincial office assisted farmers who wanted to plant rubber by helping them to obtain loan from the government agricultural bank.

As of now, the rubber has not yet been tapped, though yields from the trees planted at the government research station show satisfactory results.

### *Eucalyptus Planting*

The ALRO provincial office also introduced eucalyptus to the farmers at the same time as rubber, but interest from the farmers was much less. According to 1989 statistics, Eucalyptus is planted on 420 rai. In the land reform area, it is not a popular choice, despite the fact that Chachoengsao is the location of many large scale eucalyptus plantations, often planted by nonlocal landowners, and the presence of major outlets for eucalyptus timber. One is a wood chip factory which buys eucalyptus trees for chipping then export, to Japan and other Asian countries. The other is a factory which buys the eucalyptus trees for mixing with cement to produce wood-cement board for use as construction panels. The firm also exports its products and is enjoying a growing domestic market. However, farmers in the village are not enthusiastic about planting eucalyptus. They feel that the market is less assured than in the case of fruits like mango, or the rubber, where the government is seen to be supporting the growing of the tree, or the contract with the cashew nut company. Thus, it seems that knowing that there is a market is not enough to induce the farmer to plant trees. The market has to be visible in some institutional form to inspire a level of confidence in the farmer's decision.

## **5. Discussion**

### *Establishment of Community Forest*

The history of the area designated community forest is fraught with conflict between the the government (RFD) in the role the forest protector and the people as the land occupier. Encroachment of the forest area which led to the whole area being under cultivation shows that the RFD has been ineffective in preventing deforestation of the area. By turning the area over to

the Land Reform Office, the government is doing the right thing in acknowledging the fact of the fact of the situation that it cannot maintain the forest by means of the traditional protective measures.

The stipulation of keeping 20% of the area as community forest may be seen as a rearguard action by the RFD to maintain some forest. While the intention may be clear enough, the rationale and the methods are not so clear.

In going along with the 20% forest condition, the ALRO is merely following bureaucratic procedure. However, reality flies in the face of such intentions. The main stumbling blocks are the fact that farm land is the desired resource in the area, so farmers are not willing to part with whatever they claim easily. The need for immediate income means that short-term planting will be preferred to longer term investment. This is complicated by the uncertainty of tenure before the land allocation is implemented.

In this situation, short term approaches are the only option for farmers since they cannot be certain that they will be able to reap the benefit from any long term investment.

These reasons argue against farmers planting trees on their own land. But what of the community forest? The difficulty here, apart from the land issue, is that the need for forest products is met by other means. Buying of charcoal and other cooking fuels substitute for the use of wood from the forest. The cash economy prevails also in the area of construction materials, where the farmers can buy building materials from his income from cash crops. In addition, the social tradition of the area is a factor. That this is a newly settled area, and therefore does not have the time to build up a common tradition, means that communal projects are unlikely to succeed. Instead, the villagers look to the government as the provider of whatever they require. For these reasons, the idea of community forest appears to be the result of a top-down approach to development which does not suit the local conditions.

### *Private Tree Planting*

The prospects for private tree planting appears better for commercial purposes, once the question of security of land tenure has been resolved. This does not mean that full ownership need to be given, as long as the land rights status can be maintained within the family.

More importantly, perhaps, the land rights can be used for obtaining credit from financial institutions through the support of the Land Reform Office. The planting of rubber and cashew nuts shows that farmers need support for these investments. This is in contrast to growing of fruit trees in the home garden, which is being done without any financial support. It may be concluded that farmers look at tree planting as a risky investment, and probably unaffordable because of the opportunity cost of capital tied up in the investment. To tackle this constraint, some form of credit system appears to be necessary to provide for the maintenance of the farmer's income while the trees are not yet yielding a return. Alternatively, if some form of agroforestry may be worked out which will give the farmer a steady stream of income while the trees are still immature, he will be interested in the option.

For this reason, we show the returns for various types of land uses (Annex 3). The comparison is between pure cassava cultivation, cassava and groundnuts, and these annual in combination with tree crops. The tree crops chosen are: eucalyptus camaldulensis, rubber and cashew nuts. The analysis is carried out for a period of 25 years. The results show that planting cassava and peanuts provides the highest net present value for the land. For tree crops, however, eucalyptus planted with cassava and peanuts provide higher net present values than either rubber or cashew nuts. Eucalyptus on its own gives the lowest return to the farmer. But because of the wide spacing and the regular harvesting every 5 years followed by coppicing or replanting,

eucalyptus allows for planting of annual crops more frequently than either rubber or cashew, which have thick crowns and therefore not compatible with annual crops between the rows when the trees are mature.

The question is, if the analysis is correct, then why are the farmers not planting eucalyptus in combination with their traditional ash crops. The answer is that in the land reform area, the farmers have been exposed to the work of the rubber research station. ALRO's connection with the MBK Cashew Nut Co. may also have an influence on attracting the farmers to plant cashew on their land. In both cases, the market for the product seem to assured. Rubber is a well known crop in the Eastern region, while cashew nuts are planted with a contract to the company for supplying seedlings or seeds, and the commitment to buy the cashew output at a guaranteed price by the company. In contrast, the marketing of eucalyptus wood is left to the market, and hence the farmer is faced with uncertainty whether he can sell his output and the price he will, get for it. Though there is a strong demand for the timber, leading many investors to establish plantations in the area around the ALRO area, ALRO farmers were not attracted to it.

#### *Conditions for Tree Planting*

On the basis of data from Village A and B, we may conclude that the conditions for tree planting to be of interest to farmers are :

1. security of land tenure, so that the planter can be assured of the getting the benefit from the tree he plants.
2. some mechanism to maintain a sufficient income stream to enable the farmer to live and wait or the tree to mature.
3. availability of technical, financial and marketing support is essential to encourage tree planting by small farmers.

#### *Role of trees in the study area*

##### *Uses of Trees*

Tree products are obtained from the remnant forest and trees on farm rather than from planted trees. Otherwise, tree products are obtained from fruit trees planted around the houses. In addition, there is a strong trend to substitute other products for trees, such as brick and cement for house construction, electricity and gas for cooking instead of charcoal.

As for tree planting, the farmers appear to take a two-step approach.

##### *Planting Trees*

In the first instance, the question of whether to plant trees depends on the how is held. Land tenure has a major bearing on the decision on land use. Where tenure is uncertain, as is the case in Village A, the farmers are using only short-rotation crops, annuals such as cassava and rice being the main crops grown. In the reformed area in Village B, in contrast, farmers are now adopting a longer term view and are willing to invest in tree crops such as rubber and cashew nuts, which require a longer period for obtaining a return.

##### *Choosing Tree Species*

There appears to be no explicit preference for particular tree species. For the purpose of the study, we looked at *Eucalyptus camaldulensis*, which is being grown by some farmers for sale to a chipping factory located in Chachoengsao province. Compared with farmers outside the Land Reform area, farmers in the study area showed little interest in planting *Eucalyptus* on their land. The reason for this may be that the farmers in the land reform area only hold relative small plots, and therefore cannot afford to lock up much of their land for a long-maturing crop like *Eucalyptus*. The attitude to planting of fast-growing trees may also be conditioned to some extent by the practice of monocropping of *E. camaldulensis* in the province in large plots.

### *The Desire for Cash Return for Land Use*

The attitudes of the farmers are to a large extent defined by the desire for cash income. In this regard, the role of trees will depend on how it can provide cash income to the grower. As of now, there is a range of few tree species being accepted by the farmers, These are: cashew nuts, rubber, fruit trees especially mango, and to a limited extent, Eubalyptus. The choice to grow which species depends on, among other things, the availability of technical support and services, price guarantee arrangements, and also concern about possible ecological effects.

### **Role of Institutions in Forestry Development**

We now turn to the role of institutions in forestry development. While we have looked at the experience of forestry development in only a limited area, this should provide indications of how institutions are and can be involved in promoting forestry development. The roles of the institutions, and not its formal characteristics, are the important factors in determining the success of the forestry development effort.

The question regarding institutional roles in our context may be considered in terms of the farmer's rights to benefits and the role of supporting agencies.

#### *Farmer's Rights*

These rights can be further divided into land rights and rights to tree products.

#### *Land Rights*

Land reform has given the farmers a sense of security over their land. Contrast the attitude of the farmers in village A, with land reform, and village B, without land reform, and the difference in cropping behavior is clear. In village A, people are now taking a long term view of their holding, and have started planting trees such as rubber and cashew nuts, which will provide them with a stream of income over a long term. In contrast, village B residents are still involved in short term cropping of cassava and sugar cane. So, in terms of productivity, secure land rights provide an incentive to raise the land productivity.

#### *Tree Rights*

The issue regarding tree rights has not been prominent in our discussion, since there is not a restriction on the use of the trees that the farmers have planted. But this may be the point, that farmers have chosen the trees which do not involve complex tree rights for planting, such as the reserved species as defined by the Forestry Department and for which permission has to be sought and given before the farmer can cut or harvest it even if he planted it himself.

At another level, tree rights may be important in the decision between private tree planting or community forestry. In our study, we did not find much support for the designated community forest, which would have instead deprives people of their land holding in village B. Furthermore, there was no clear indication of how the community would benefit from the trees planted in the community forest. Hence the virtual opposition to the idea of community forest compared with the farm forestry which was shown to be acceptable within the study villages.

### **Support for Tree Planting**

#### *Support at Community Level*

In the case study, the focus has been on the possibility of having a community forest in the Land reform Area. On the basis of the data from the two villages studied, the conclusion must be that it is a condition that is difficult to fulfill. The difficulty lies in the structural situation, rather than in the lack of commitment on the part of the institutions concerned.

Within this overall assessment, we consider that the government institutions have a very important role. In particular, the Land Reform Office is attempting to create communities out of spontaneous settlements. The creation of a sense of community, and the evolution of local institutions to manage community affairs, normally takes a long time, over decades and centuries. In this sense, it is useful to have the Land Reform office playing the care-taker role in the manner that it takes the interest of the community members a top priority. In particular, by taking the initiative to change the status of the land earmarked for community forest to that of land for reform, it is being responsive to the regality of local conditions and felt needs. The option of using the method of persuasion to encourage tree planting by people is also to be commended, since it is assisting the farmers to make their decision to benefit themselves in a way that would also benefit the rest of society in the long term.

What should be reconsidered in this situation is the 20% forest land condition and the way that the RFD had gone about determining that a certain area within the Land reform Area shall be so used. The way that it was done presented many problems :

Firstly, it deprived the Land reform Office of the authority to decide on the best option for land use in the land under its control. This is a bad management practice.

Secondly, the demarcation of the community forest area was done without going through the processes of consultation with either the resident population or the new responsible agency.

Thirdly, the objective of the 20% forest area rule is not locality-specific. It does not take into account the most appropriate land use options, given the resource available and the needs felt by the population in the locality. For this reason, it is inappropriate.

#### *Support at Individual Level*

At the individual level, the most important institution is the local land reform officer, who is responsible for the land reform area and wis the person working most closely with the farmers. With regard to the Agricultural Land Reform office, it has to be acknowledged that the tasks assigned to it are formidable. It is not easy to persuade to let go of land they lay a claim on, though such claim may have no legal basis as in the case of forest encroachers. To this extent, the success of the Village A is proof that the Land reform office has been very effective in dealing with the people.

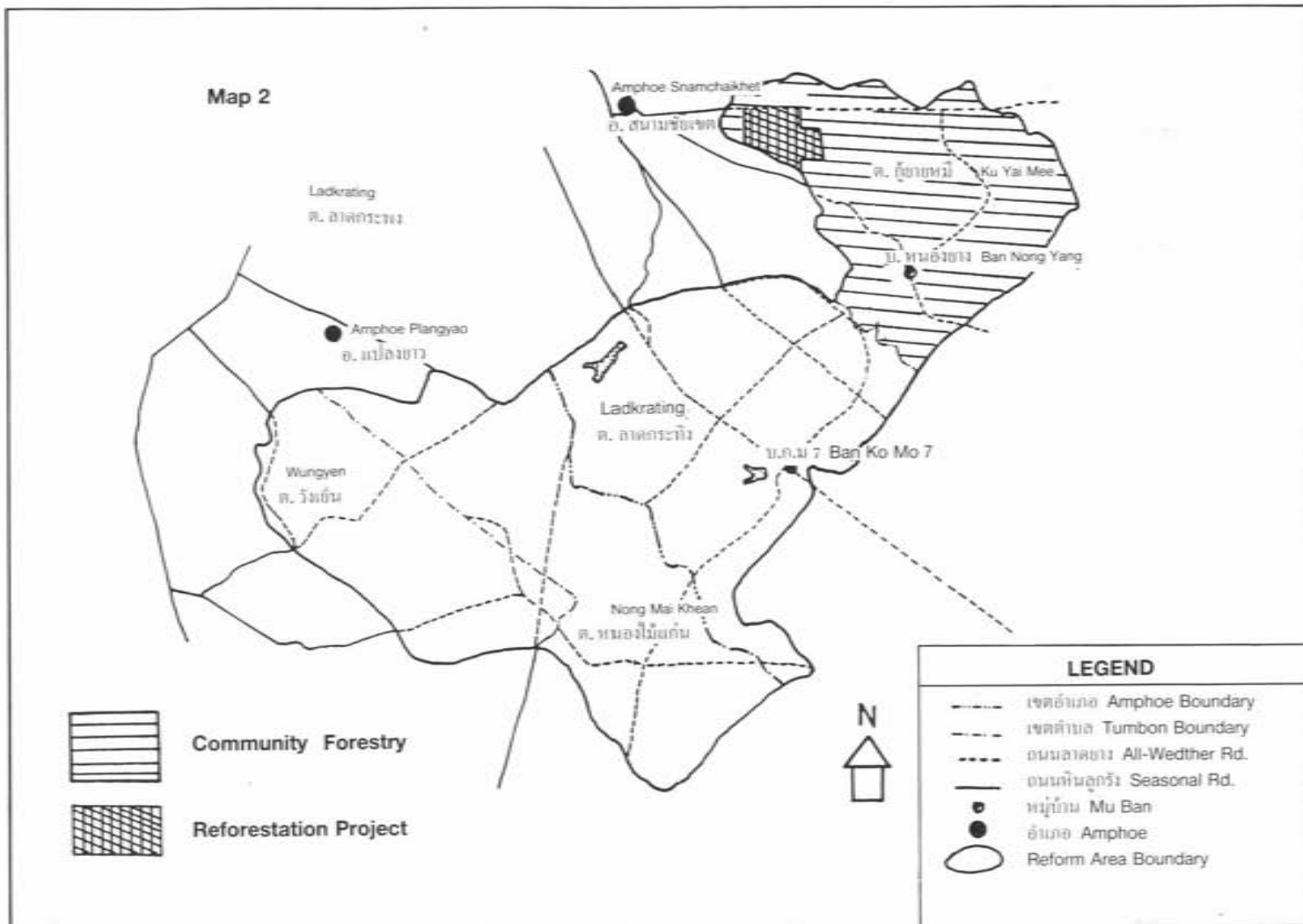
On the question of tree planting, the proposal to emphasis private tree farming shows that the land reform Office is as sensitive to environmental concerns as to questions of equity and economics. In trying to introduce farmers to major tree product businesses, it is helping to enlarge the options available to the farmers while at the same time it is playing a supporting role in helping to make sure that the farmers are not being taken advantage of by the big business. In this respect, the Land reform Office should be given full credit for its handling of the transformation of the farmers from annual cash croppers to farmers with a long term planning horizon. The only reservation is that the effort has to be supported on a continuing basis. And extension services are expensive. The role of the Land reform Office has to be assessed in the context of the relationship between the farmer and the large agribusiness in the long term.

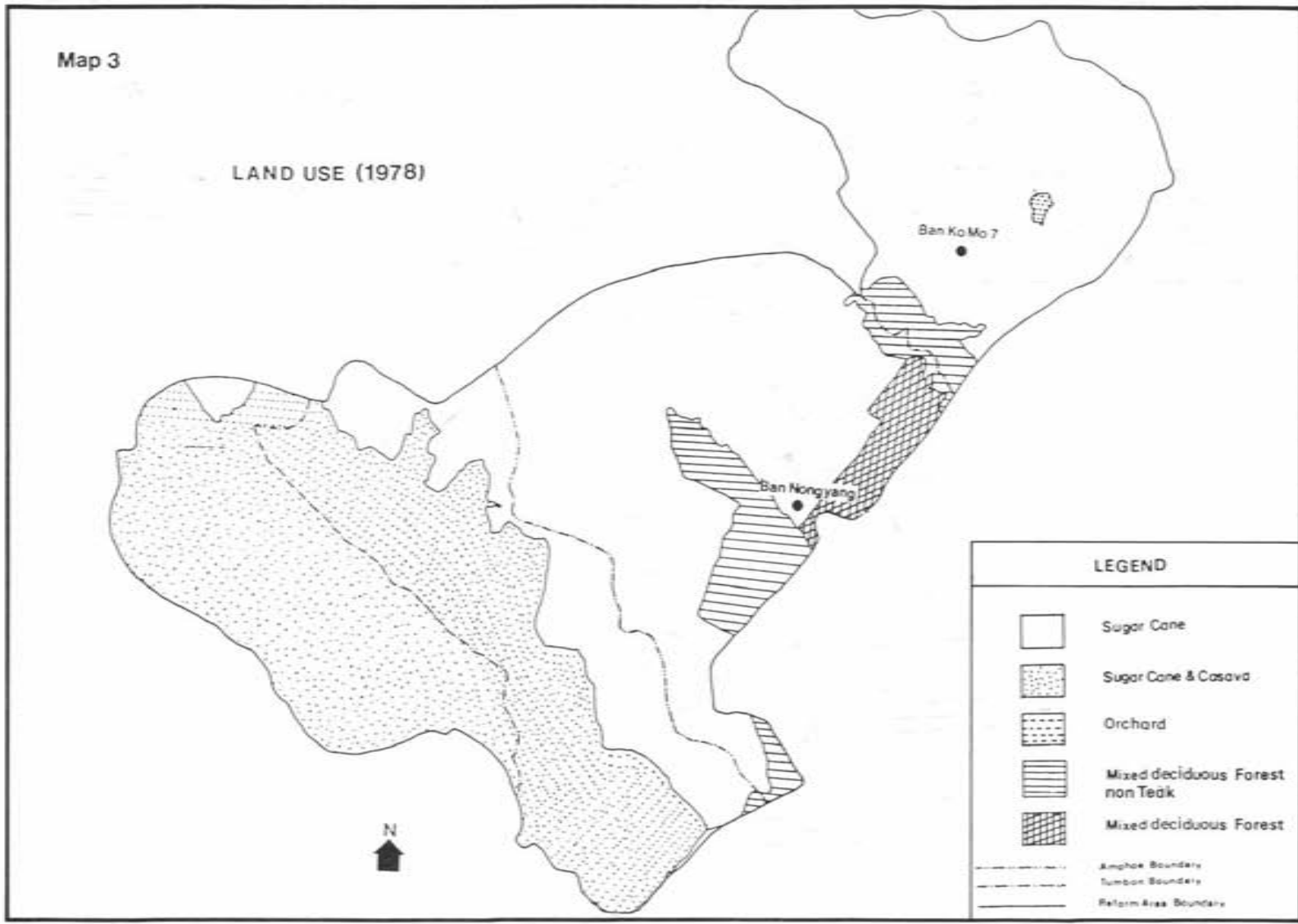
In addition, the long term role of the Land Reform Office should be considered. By holding the ownership of the land to itself, it is a major land owner. The land it owns is the nation's land held in trust to make the best of, so that the country should benefit from the use of the land resources. In this sense, it may have to define its future role with the farmers to obtain the best land use possible. Otherwise, investment in land reform would be uneconomic.

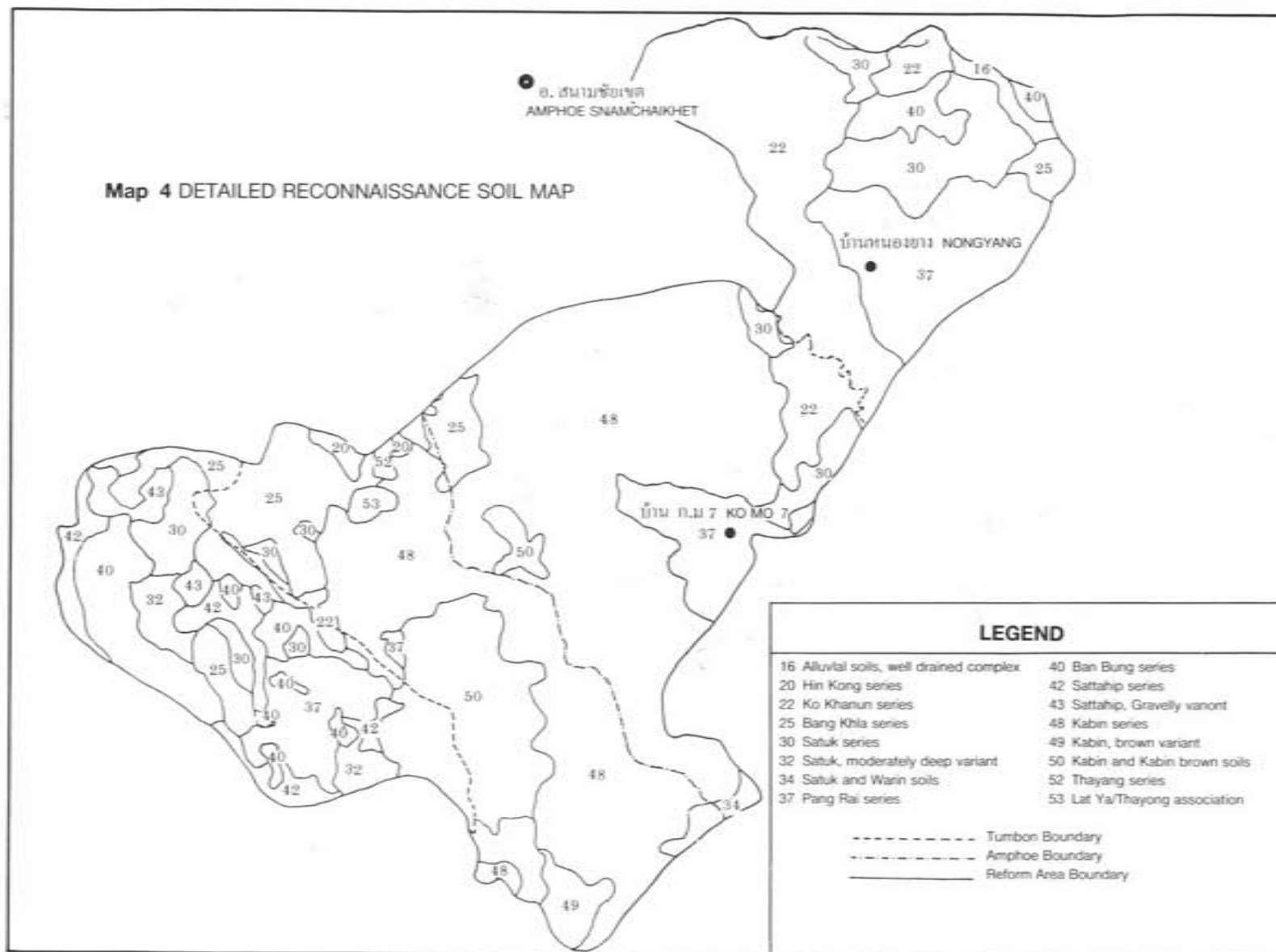


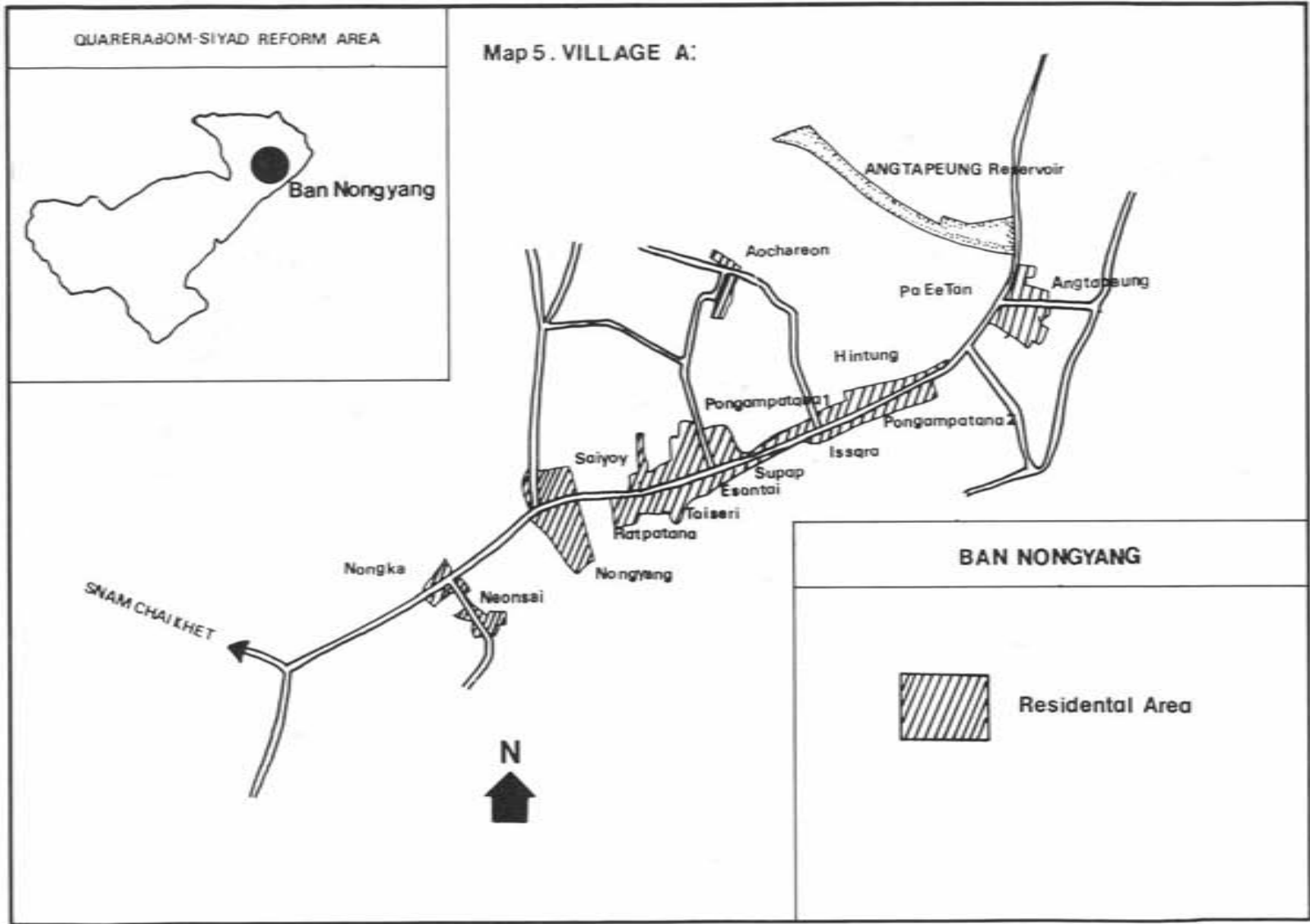


Map 2

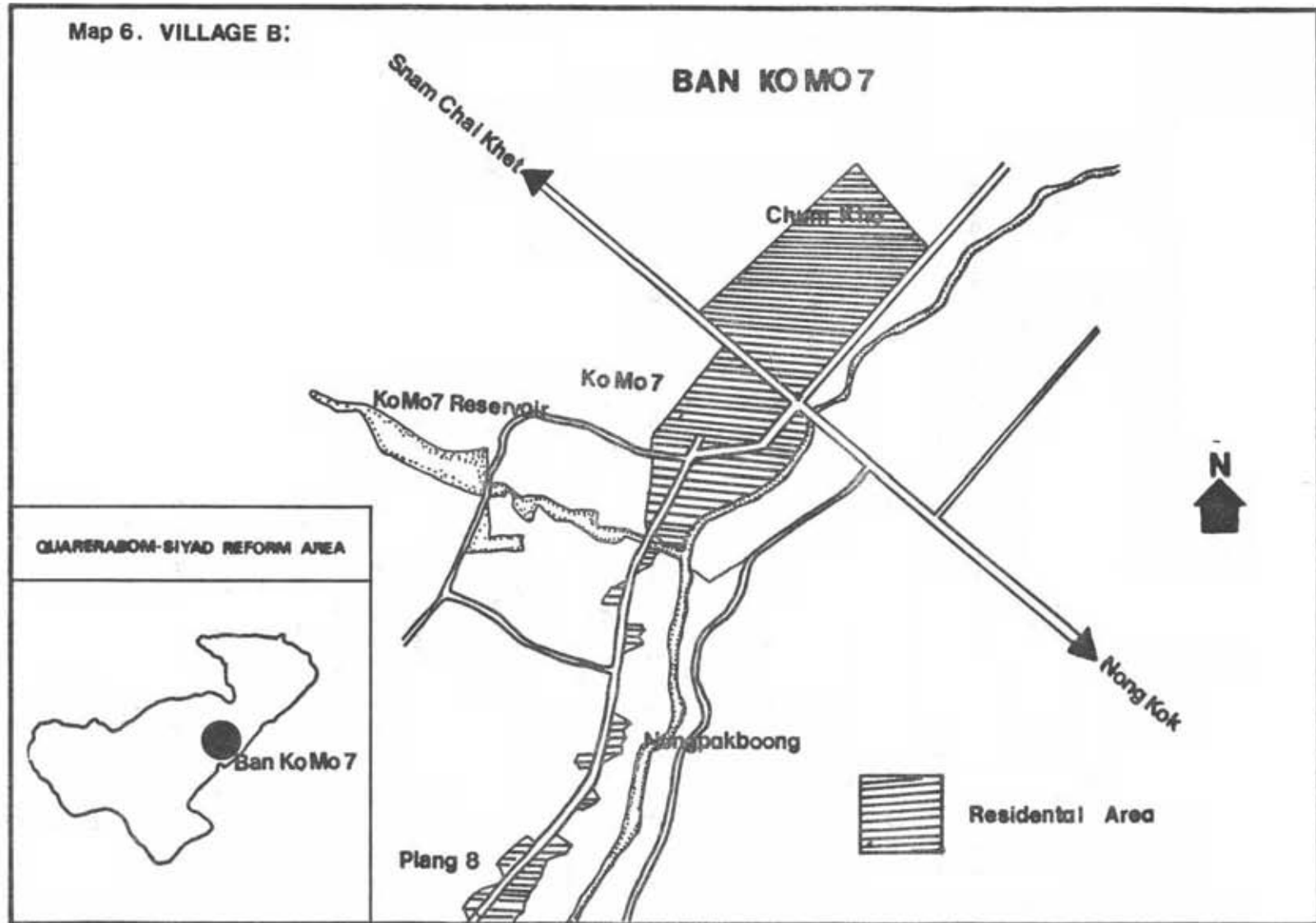








Map 6. VILLAGE B:



## ANNEX 1

### Chronology of Events in Kwae Rabom-Siyat Reserve Forest

1951 The area of the Kwae Rabom-Siyat Forest was declared as permanent forest by the cabinet resolution, dated 14 November.

1975 The cabinet resolved to transfer the encroach area from the forestry department to the Agricultural land Reform office.

1976 The Agricultural land reform Office was authorized to implement land reform in the encroached area of the Kwae Rabom-Siyat-forest, covering an area of 150,000 rai, under the forest reserve act, art. 16, to allow temporary use of the reserve forest (dated 22, November).

1977 The encroached area in the forest was declared a land reform area, by announcement in the royal gazette, dated 25 March and 16 May.

The Cabinet resolved to withdraw the national reserve status of the area allocated to the land reform, 2 August.

1977-1979 The ALRO began land reform procedures. Surveys were started, with cooperation from Land Development Department. Encountered strong resistance from the land occupants.

1978-1979 The Rubber Research center, Ministry of Agriculture, requested permission to establish a field station in the ALRO area. Permission was granted in 1980.

1978 The remaining forest was declared a national reserve forest in accordance with the Ministerial order, No. 409, dated 13th February.

1982 The Ministry of agriculture removed the forest reserve status from the area allocated to the agricultural land Reform Office, covering an area of 236,018.75 rai (dated 14 October).

1986 Residents of the area allocated for community forest in the ALRO area submitted a petition protesting reforestation in the land they were occupying. Investigation revealed that the Forestry department was replanting trees on the land formerly used as Forest plantation, which was now being used as the Center for promotion of private reforestation, now that the land was under the responsibility of the ALRO.

1987 The Provincial Land Reform Committee approved the ALRO proposal to:

- 1) legalize the establishment of the reforestation center with ALRO approval.
- 2) Annul the decision to establish the community forest, and replace it with the promotion of economic reforestation with any kind of tree for an area not less than 20% of the total land reform area.
- 3) Proceed with the allocation of the area the community forest, now annulled, to farmers in the land reform program with the undertaking to plant trees.

1989 The Provincial Land Reform Committee approved the ALRO proposal to allow farmers to apply for occupation and utilization of land in the former community forest area under the land reform project.

## ANNEX 2

Contractual Terms for Planting Cashew Nuts between farmer and MBK Cashew Nut Co.

1. MBK agrees to sell the seedlings of a guaranteed stock of cashew to the farmer at a fixed price. Payment for the seedlings is made through the bank of Agriculture and Cooperatives.
2. MBK agrees to buy the whole crop of cashew nuts from farmers participating in the program for a period of 10 years at a price to be determined by the project management committee, but not less than 12 baht per kg ex factory.
3. The cashew to be sold by the farmer is guaranteed to be from the tree planted in the project, at a fixed standard size of 180 nuts per kg. Transportation cost will be born by the seller (farmer).
4. Payment for the nuts will be made through the BAAC.

## ANNEX 3

### Comparative Return to Land Use

Net Present Value at various years, baht per rai at 1989 prices

Crop	Year				
	1	5	10	20	25
Cassava	5013	9396	9623	10596	10794
Cassava, Peanut + Rubber	7923	5192	6538	12048	15179
Eucalyptus	-1022	3533	5726	7934	8459
Cassava, Peanut + Eucalyptus spacing 4 × 2 m.	9403	15589	21650	27751	29202
Cashew	-1070	4336	9496	12992	16176
Cashew + Cassava	4041	9446	14607	18102	21287

Source: Working Papers for Shell Reforestation Project Study, private communication.



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# Conflict, Traditional Regulations and Management of Sudano-Sahelian Fisheries (West Africa)\*

*Jean-Yves Weigel*

## 1. Introduction

Fishing disputes and over-fishing have focused renewed attention on traditional regulations as potential instruments for new management plans for Sudanese-Sahelian fisheries. This is not solely of interest to the fisheries we are concerned with here; in fact, it extends beyond both the Sahel and inland fisheries.

Rational management appropriate to Sudano-Sahelian waters would have important consequences: income for fishermen, traders and intermediaries; a stable workforce, cutting back the exodus from the countryside; protein self-sufficiency for the river-folk; fish supplies for the surrounding towns and countryside; and creation of the pre-conditions necessary for the development of extensive and intensive aquaculture,

Fishery disputes are the outcome of a specifically regional crisis: water shortages, the population explosion, and more highly-powered, intensified fishing effort have led to general over-exploitation and lower catches.

In view of the rationale of current fishery legislation, the rehabilitation of traditional regulations, often put forward as a means of limiting disputes over fisheries, should be considered.

It seems there has been some confusion over traditional regulations. Firstly, between past and present regulations, secondly, among their different functions in accordance with the bio-ecological and socio-economic environment to which they apply. Specifically, these regulations may or may not form part of a fishery system. This system may exist, and the role of the regulations be explained in terms of the system's coherence; but it may equally well no longer exist, in which case the regulations no longer relate to a coherent system.

We can gain an understanding of the effective function of traditional regulations and practice by analysing disputes. A review of past and present regulation mechanisms can reveal a pattern of change. The taxes collected as a symbolic assertion of the "water owner's" power have, in most cases, become an authentic rent that is liable in itself to be one of the main causes of over-fishing. The apparent uniformity of the traditional regulatory mechanisms, therefore contrasts with the relative diversity of their functions in relation to the specific system of fisheries exploitation (present versus past, or in different places).

The current confusion over regulations, stemming from the contradictions between official and traditional regulations makes it hard to work out the prospects for traditional regulations, all the more so since the least-known fishery systems in West Africa are the inland ones. Nevertheless, the principle of the assumption of responsibility by the fishermen themselves would suggest that governments might well recognize demonstrably sound traditional regulations and examine their potential contribution to coherent management plans.

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\* Committee for Inland Fisheries of Africa Sub-Committee for the Protection and Development of the Fisheries in the Sahelian Zone *Fourth Session Conakry, Guinea, 7-10 May, 1990.*

## 2. Fishing Disputes : Symptoms of a Crisis

The multiplication of fishing disputes in the region is a sign of worsening fisheries management due to several factors. These are mostly climatic or socio-economic, such as the water shortage, the population explosion, intensified fishing capacity or even the emergence of new sources of power.

Changing traditional regulations are one feature of this situation of latent or manifest conflict. By studying the disputes, and, more specifically, by analysing conflicting claims over fishing rights, we may better understand the changes in traditional claims. But such analysis must move beyond the normal way of presenting conflicts, which is generally limited to describing and classifying them, and address the set of principles which the protagonists themselves see as the fruit of an evolution in fishing systems.

The lack of knowledge about Sudano-Sahelian fisheries as a whole is reflected in the rarity of descriptions or analyses of conflicts. They tend to be episodic and to centre on a well-defined geographical entity, such as Lansar's (1989) description of de Djenné circle and Agyemin-Boateng's (1989) work on Lake Volta. These authors distinguish between two types of dispute: territorial and tax-related. The protagonists are either different villages, indigenous members of the same village, or non-indigenous members of the same village.

A further distinction, based on activity, may also be introduced. The examples that follow illustrate these distinctions. Their interaction reduces, the analytical weight of such a typology.

Conflicts among different types of activity generally involve farmers and fishermen or livestock owners and fishermen. Lansar's main example of the first case is the 1983 dispute (in the Djenné circle) between the fishing village of Kossouma and the farming village of Mougna. He then cites the 1976 dispute between the villagers of Kemela-Daga (near Djenné on the Niger) and the villagers of Fokolore, Senossa and Alamante, who, because of falling income, wanted to deny the fishermen access to their ponds. As apparent reasons for disputes between livestock owners and fishermen, Lansar cites the destruction, by herds, of dams built by fishermen during the flood recession period, and, more generally, the nostalgic claim to owner's rights by Peuhl livestock owners.

Disputes among different fisheries may bring professional fishermen into conflict with subsistence fishermen. Again, Lansar draws his examples from the Djenné circle: the disputes between the villages of Diabolo and Djenné or of Bonfongo and Kemela-Daga, on one side, and Tadie-Niala, on the other, over the use of seine-nets.

Conflicts between indigenous and non-indigenous fishermen may themselves bring to light territorial disputes or dispute over the amount of taxes that the former levy on the latter. Agyemin-Boateng accordingly cites the dispute on Lake Volta between Ewe fishermen using fixed gear and Adangbe and Adan fishermen using seine-nets. The Adan were accused of over-fishing in the lake's main channel and of destroying the Ewe's fixed gear, for the Adangbe and Adan canoes are very fast and their night-lights too weak. A further dispute set the Ewe against the Fanti, who, in this case, were accused of using nets with too fine a mesh.

On Lake Volta, these inter-ethnic conflicts take place on top of an intra-ethnic conflict among Ewe fishermen who use adanyi nets and those who do not. These inter-ethnic and intra-ethnic conflicts can themselves come on top of territorial disputes regarding ownership of shallows, inlets or ponds, like those which set certain Ewe lineages against each other over command of the flood plains as fishing grounds. In further instance of territorial disputes non-indigenous people refuse to acknowledge indigenous control of bays, as happened at Lomkotor, Boafri, Agbafu and Sabonjira.

Lansar gives examples of such conflicts in the Djenné circle. The villages of Gangan and Koina dispute control of the Pomba pool, and those of Nouh Peuhl and Houh Bozo contended a fishery known as the "Noudje Reserve".

Tax disputes usually centre on the amount to be paid rather than on the principle. Fishermen and traders alike may be charged. The latter case was observed on the Brong Ahafo bank of Lake Volta, where it gave rise to sporadic quarrels. Disputes over the amount of the taxes levied by the Gonja in the Kafaba region in 1981 were much more violent, and led to the destruction of several villages of non-indigenous fishermen.

Ethnic, village and lineage conflicts are so interwoven and superimposed as to seem hopelessly entangled, with each protagonist putting forward one or more contradictory principles to counter those put forward by the others.

This disorder is basically nourished by changes in traditional regulations under the pressure of increasing state intervention in the exploitation of fishery resources. A fisherman will deliberately argue his right to act or circulate freely as recognized by fishing permits or licences based on state ownership of the waters, or, again, claim rights based on traditional management principles which have lost their coherence and are therefore put forward in random, contradictory order. Let us quote as an example Lansar's case of the Konekeou family who worked the Bana fishery in the village of N'dourobougou (a district within Taga in the central delta) in which traditional Law was called into question from 1984 onward. The fishermen, who had long been satisfied with traditional regulations, provided they were to their advantage, came to base their case on state regulations (Djenné circle), a new line of argument with respect to their pre-dispute stance.

### **3. Intensified Fishing Effort: Expression of a New Bio-Economic Environment**

Increasingly strong fishing pressure, due essentially to the modernization of fishing techniques, a soaring birth-rate, the lack of alternative employment, and nearly 20 years of water shortage have exacerbated conflicts among (and even within) river communities. This crisis has accelerated the processes which lie at the root of the various disputes.

#### *3.1 Modernization of Fishing Techniques*

The modernization of fishing techniques primarily concerns gear such as lines, longlines and nets rather than boats or engines. In effect, generally speaking, the hydro-dynamics of traditional craft, and at times the lack of any justification for equipping them with engines, explains why the fishing effort has focused on fishing gear. The replacement of natural fibres with synthetic fibres and the widespread use of prefabricated mesh have enabled fishermen to devote more time to fishing, increase the size of gillnets and seines, and thus boost productivity. A corollary of this modernization has been that fishermen have run into increasing debt, generally to wholesale dealers in fish, fishing gear, or the cereals that the fishermen need for their subsistence. Paradoxically (excluding a larger part of the catch that can be sold fresh thanks to the use of ice), processing and marketing conditions have barely been affected by this process of modernization.

#### *3.2 Growing Population Pressure*

The difficulty of finding alternative employment and growing population pressure, culminate in high population densities around fishing grounds. Dam-building and the colonisation of new aquatic areas in neighbouring countries may serve momentarily as stop gap measures. Population density in the central Niger delta, in Mali is currently estimated at 16 inhabitants per km<sup>2</sup>, for a total population of 450,000. Daget (1989) notes that the population of a town like Mopti rose from 11,000 in 1953 to 75,000 in 1987, a considerable increase reflecting that in the whole of Mali, whose population has more than trebled in 40 years. Niger offers a further example of this demographic pressure: the population has risen by 50% in 14 years, with the Niamey district registering the highest growth (3.5%).

### 3.3 *The Chronic Water Deficit*

In the last 20 years, the Sudano-Sahelian zone has experienced water deficits in all bodies of water and rivers, and particularly the flood zones which often serve as spawning-grounds and nurseries for fry. Thus, for example, weak flooding, the absence of flooding on flood plains furthest from rivers and short flooding in low-lying zones, all explain the reproductive problems experienced by some species and the growth problems experienced by all species.

The most outstanding example of water deficits is Lake Chad, of which the surface area shrinks in some years to less than one-fifth of what it was twenty years ago. In 1984, the flood plains of the middle Chari, the Guera, the Chari Buguirmi and the Salamat had dried out completely. The current average water level of the Niger has fallen considerably, affecting species, density and diversity. A dozen or so, according to Cohen (1987), have almost disappeared.

Daget confirms the extent of the hydric deficit for the central delta of the Niger. At one observation point, Nantaka, with the combined flow of the Niger and Bani basins, the average (deficit) flow was 3,596 m<sup>3</sup>/s, compared to a maximum flow of 3,970 m<sup>3</sup>/s in 1953/55 and a minimum 3,070 m<sup>3</sup>/s in 1947. From 1968 to 1987, however, the average flow was 2,628 m<sup>3</sup>/s (-27%), with a maximum of 3,400 m<sup>3</sup>/s in 1969 and a minimum of 4,500 m<sup>3</sup>/s in 1984. According to the author, in the last 20 years the flood peaks in the central delta of the Niger have on the whole been much lower than in the 22 previous years. Maximum deficits were 27% lower on average, with annual variation twice as high (+772 m<sup>3</sup>/s and -1,128 m<sup>3</sup>/s as against +374 m<sup>3</sup>/s and -526 m<sup>3</sup>/s).

Hydric deficit has gone hand-in-hand with diversification (irrigation, agro-industries) and increasing water demand which have, in turn, aggravated the deficit. Vast stretches along the Niger are now allocated for irrigation projects covering 25% of the flood plain (Coenen, 1987). This is equally true for the River Senegal Valley, where irrigated crops have been encouraged along the riverbank or on plains low enough to be flooded.

These phenomena have combined to reduce catches throughout the Sudano-Sahelian river and lake network. Neither the construction of small dams (Burkina Faso, northern Côte d'Ivoire, southern Mali) nor the development of ponds in Niger and Mali has made up for this reduction, for the gains obtained through such measures in no way match the losses suffered by the traditional network. It is a different matter for the big dams (Sélingué, Manatali, Kossou and Buyo), where yields are highly significant. A reading of catch forecasts for the whole Sudano-Sahelian network reveals the crisis: they range from half to one-tenth (in certain cases) of what they were over the last 20 years. Although production data have to be treated with care in the absence of reliable statistics networks, it seems that catches on the River Senegal, River Niger (in Niger), and the central delta of the Niger (in Mali) amount to not more than 6,000 t, 3,000 t and 55,000 t, respectively.

Exacerbated by climatic degradation and socio-economic decline, fishing disputes can only be analysed as the result of changing patterns in fishery systems at any given moment.

The main features of such evolution (namely the spread of the market economy, intensification of catch and distribution techniques, intensification of free circulation and hence migratory flows) had already appeared under colonialism. They have since been accentuated, giving the impression of a certain continuity. Strictly in terms of regulations, the proclamation of the State's sovereignty over waters at the moment of independence caused a juridical rupture and effectively sanctioned the changing pattern of traditional regulations. It also provided certain individuals or geo-political entities with juridical support for their claims. During recent disputes, States have even found themselves trying to counter the adverse effects of a system of regulations which they themselves had established by issuing less sweeping articles or decrees.

#### 4. Traditional Regulations : Changes and Outlook

The spread, and sometimes the virulence, of conflicts is a clear sign that traditional regulations have, on the whole, failed to limit access to fisheries, control the consequences of technological innovation, and ensure peaceful coexistence of the different types of fishing and the different communities of fishermen and riverfolk.

In fact, these regulations have generally failed to change in accordance with the new situation of increasing demographic pressure and increase in the fishing effort. Nor have they considered the claims of state institutions to decide how fishery resources should be exploited. This state of affairs clearly emerges from an analysis of the impact of traditional regulations on current fishing conditions.

##### 4.1 Impact of Traditional Regulations

One of the first questions to emerge is the fishery system's loss of coherence, or rather its inherent incoherence. A second question concerns the possibility of transforming these traditional regulations into modern-type management tools, given the benefits to be had from the rational management of Sudano-Sahelian waters. The forms which traditional regulations take in Sudano-Sahelian zones do not differ fundamentally from those of West African countries with lagoons. It is first of all a matter of controlling access to the fisheries, then of regulating the fishing effort and fishing techniques (gear quotas, seasonal bans, no-fishing areas) and, finally, of controlling the activities which follow in the wake of the fishing itself.

Descriptions of these regulatory mechanisms are rare, though they have been produced by Rouch for the Middle Niger (Nigeria and Niger), Daget and Jeay for the central delta and the Ségou region (Mali), Braimah for northern Ghana and Stauch for the Cameroon basin of the Benue.

All writers nevertheless agree that local geo-political claims to territorial rights justify the collection of taxes from the fishermen. Thus Rouch (1950) noted that at the end of the 1940s, the Sorkawa of the Middle Niger were required to pay a tax to the local notables: at that time a percentage of the fish caught in the Yauri canton and a toll to pass Yauri were still paid to the Emir. The river was therefore divided into strictly limited sections that belonged to the non-Sorkawa river folk (Yoruba, Nupe, Hausa and Songhay). The Sorkawa took care to seek authorization from the village chief before settling on nearby riverbanks, and to offer him in return a substantial gift, thus gaining the right to fish in his waters.

Territorial ownership claims also account for the taxes collected on their territory by the different Lamido people of the Faro basin in the late 50s (Stauch, 1960). The left bank of the northern part of the Middle Faro was under the control of the Beka Lamido. The right bank was under the Touroua Lamido, who held away as far as the confluence with the Benue and a stretch of the left bank downstream from the confluence. The Lamido generally appointed a head fisherman to levy taxes and set the dates for collective fishing activities.

The Somono also have territorial claims over the waters of the Niger between Nyamina and Dioro through their chief in Ségou (Mali). According to Jeay (1987), this control of the river carries exclusive fishing and navigation rights which are ceded to other fishermen upon payment of a tax. The *Ba Tigi* has the exclusive right to open and close the fishing season, to organize extra fishing, and to receive taxes for using the waters. He exercises this right in relation to his portion of the river: a stretch between one and ten kilometers long and confined to its two extremities.

Territorial control has always actually had an ambiguous function with regard to fisheries management. Although it may permit access to be controlled and taxes to be obtained incidentally, this latter objective may become predominant, and the drive for quick, mounting gains legitimized by territorial control can easily aggravate over-fishing. To consider territorial control as an incidental management strategy, as Scudder and Conelly (1985) do, is a way of understanding this ambiguity. As long as territorial control is in the forefront, and the growth of customary taxes mere consequence, one may at most speak of an incidental strategy, but not of coherent management of a system of fisheries exploitation.

Fishing effort and techniques may be controlled by banning or restricting a certain type of gear, and by announcing certain areas or seasons as off-limits to fishing.

Braimah gives examples of fishing gear restrictions in northern Ghana: at Wiae (in the north) and at Eremong (in the north-west), the local authorities ban seine-fishing. Writing of the Somono on the Niger (Ségou), Jeay notes that periods for seine fishing are allocated on the basis of local and seasonal abundance.

Rouch (1950) noted fishing-ban zones among the Kebbi below Sokoto. Daget (1949), Fay (1990), Kassibo (1988) and others stress the protection of areas that are particularly favourable for reproduction and growth.

Several writers mention closed seasons. Braimah, for instance, cites the case of the village of Aurigu on the White Nile (north-eastern region) where fishing is banned for four months, and of Natunga (north-eastern region), Diare, Bimbilla and Salaga (northern region), where no fishery is allowed between February and June. Finally, in Tizza (northern region), in certain ponds fishing is only allowed once a year. Jeay (1987) offers a further example: a fishing ban lasting three lunar months on the Niger in the Ségou region.

Although it is sometimes hard to identify the reason for these seasonal halts (awareness of resource fragility or impelling ritual beliefs), they are one of the most deliberate traditional management strategies, after restrictions on fishing gear. The ways in which the fishing effort and fishing techniques are regulated reveal self-management by the communities of fishermen. They are worked out in relation to specific local conditions and respond to highly localized constraints. Their highly site-specific nature is their main limitation: they do not apply to a sufficiently broad ecological and socio-economic context to have a significant influence upon fisheries management.

The literature on the subject (Rouch, Daget) stresses the solid basis of traditional practices regarding fishing, up to an including fishery lineage control by the chief of all stages of the process. The desire for emancipation on the part of dependants, encouraged by the legislative climate created by state institutions, the segmentation of lineages and the general relative loss of power by the elders, all help to explain the increasing mobility and atomization of fishermen and traders. Control ceases to be exercised over all stages of the process. At most, control over a single segment remains. Let us take as an example the Brong Ahafo bank of Lake Volta, where Agyemin-Boateng reports that the chief of Yeji (Omahene) intervenes to control and tax the traders, but does not exercise control over every stage of the fishery process.

#### *4.2 Coordination and Change in Traditional Management Systems*

Fay (1989) attempts to chart the coherence of traditional regulations and their changing ways in relation to fishing practices in the Niger delta. This coherence derives from the correspondences, between the specifics of inland waters, the types of production unit (lineage, village, inter-village or individual), how the resource is caught (pursuit, attraction, gathering or damming), the relationships between the fishing areas and the groups of fishermen, types of access to the fisheries (free, exclusive or privileged) and how the powers (water gods or genies) are invoked by the specialists.

The study of these correspondences helps define the traditional fisheries system by relating the local territory (lineages and administrative districts) to a broader area and to fish movements. Each type of fishery is a link in this process. Fay points out that, within the old system, the links among the production of the different groups, the reconstitution of the stock and the various ordinances were harmonious in relation to a global territory, common body of knowledge and a hierarchical relationship among ethnic and legal entities and resource use patterns. Reference to those powers was the basis of the whole system. Today, there are no longer two territorial hierarchies which fit neatly together, but rather a power that governs the existence of a collection of individuals (fishing permits, free circulation) and that seeks to regulate disputes among them on the basis of heterogeneous principles external to the fishermen's way of life.

Taking the example of the Bozo of the central Niger delta, Fay offers us a complete panorama of the coherence of traditional regulations. He also shows how they changed, as a result first of colonization and then of national state institutions. New fishing techniques were first introduced by colonial settlers, based on a specific, state-oriented rationale. It stressed the notion of the riverside village by indirectly giving the village authorities the power to abruptly alter the fisheries system by insisting on the principle of unrestricted movement. For this author, the state has followed the lead of the colonial authorities, from this point of view, by championing fishermen's right to circulate freely.

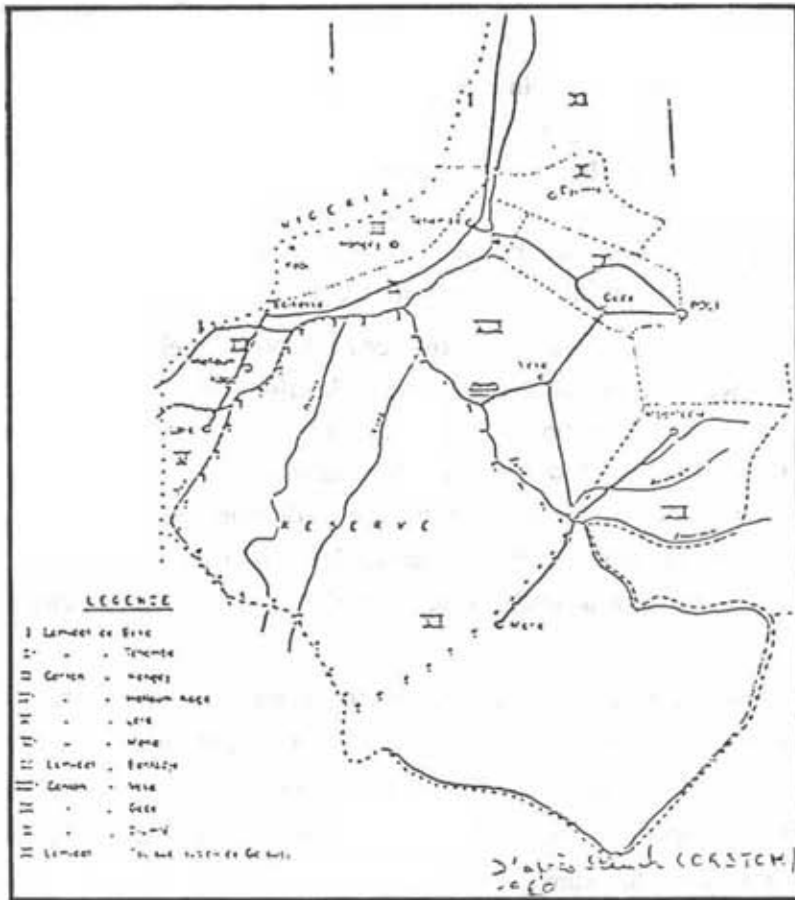
The claim over "natural waters", first by the colonial settlers, then by the State, has altered the fisheries system and helped to denature the traditional regulations, whose objective has sometimes been completely distorted. Thus, tolls whose original function was essentially symbolic recognition of the often divinatory powers of the water overlords, have become authentic rents. Perpetuating them and raising the sums involved has often led to increased fishing effort by fishermen gaining access to the resource, since they have to catch enough to be able to afford the toll. The destructive effect of state recognition of freedom of movement and freedom to fish helps explain the numerous disputes arising, *inter alia*, between indigenous and non indigenous fishermen. On Lake Volta, for example, the non-indigenous cite the Volta River Act (which recognizes the Volta River Authority as the owner of the lake bed and its periphery to a distance of 280 feet) in claiming the right to fish, or to curtail the sometimes exorbitant demands for tolls by traditional chiefs.

This undeniably destructive effect of State regulations and institutions affects fishing systems which are obviously fairly sound. Hence Rouch (1950) early contrasts the Somono and Bozo of the central delta with the Sorkawa of Middle Niger, showing that no-fishing zones and even territorial control was far more widespread among the former.

Compared to other fishing zones, the central delta contains sound fisheries systems based on homogeneous principles. This contrasts with other fisheries systems, which were characterized by empirical, partial and ambiguous regulations. It seems that the factors favouring coherence in such systems are: the existence of a strong, recognized traditional authority; the antiquity of fishing practices; weak demographic pressure; and the absence of radical technological disruption. As we have seen, in practically all the zones in question these conditions have not prevailed over the last thirty years. Overall, traditional regulations, buffeted by internal contradictions and outside attacks, have failed to effect the transition towards a system guaranteeing a more balanced exploitation.



Map of the Faro Basin Showing Customary Divisions  
 (Poli - Benue Basin Sub-Division)



## 5. Conclusion

The future of traditional regulations hinges on the need for a clarification of the role of the State and its institutions. In terms of legislation (and sometimes in the field) state institutions now have the upper hand in dictating freedom of movement and in granting fishing rights. Sometimes the negation of custom is explicitly affirmed, as in the local fishing convention in the Tenenkou circle in Mali, and it may be accompanied by the recognition of Fisheries Councils, one of whose aims is to reconcile traditional regulations with the imperatives of fisheries management or to combat certain past excesses by more carefully thought-out legislation.

It is in the nature of traditional, local, self-managed regulatory systems to try to adapt to specific constraints. In this sense, they exercise control (however imperfect) over fishing activities that fisheries services are often themselves incapable of regulating.

However, at present, they cannot claim to be part of a coherent fisheries system which would lead to balanced exploitation of the resource. In particular, their site-specific nature has, as its corollary, the inability to enlarge their frame of reference. When traditional regulations are applied to a larger area, regulation can become ambiguous.

It is consequently necessary to draw up an inventory of these regulations with the aim of expanding current knowledge of the biological and socio-economic situation in Sudano-Sahelian fisheries. This has been done in Niger: Price points out that FAO's River Niger fisheries development project carried out such a census in 1985. The aim is a more ambitious objective, namely to make use of fishermen's knowledge and traditional means of organization and thus ensure (primarily) local management of the river's resources. Fishermen's bio-ecological knowledge should be one of the things taken into account.

Regulating the fishing effort through gear quotas or total or partial bans on the more destructive gear or nets must, like everything else, be implemented first at local level, then discussed at regional level with the help of state services. Only thus can the change in scale to a more global from a less local body of regulations be effectively worked out. The rehabilitation of no-fishing zones, with the aim of establishing total or partial protection, is one step towards regulation of the fishing effort. This, too, requires an inventory, and this has been done in Niger as well.

Regulation demands controlling access to fisheries, and hence, as regards fishing activities, official recognition of territorial control by local geo-political entities. In many cases, such control would rule out unrestricted movement and settlement, but it might also be the necessary precondition for reducing fishing capacity.

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# Non-Institutional Financing Systems For Artisanal Fishing in Sub-Sahara West Africa : Features, Proposals and Methodological Difficulties\*

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## I. Introduction and Summary of Existing Studies

There are a number of socio-economic studies showing the large amount of capital held or put to use by West Africa artisan fishermen (canoe fishing) and, more generally, the importance of financing systems. However, there is no systematic analysis of the subject covering these countries. Existing studies either cover a specific aspect of financing systems or form part of broader analyses of subjects such as the exploitation of fishing units or marketing.

Some information on informal finance arrangements can be gleaned directly or indirectly from these studies. One example is C. Atti Mama's 1985 study on the savings association as a dual-purpose savings and investment unit in Benin. These associations are also mentioned by H.D. Seibel (1982) in connection with the Toffins of the Lagos lagoon, the Fanti of Ghana or the Kru of Liberia. Another study, by D.A. Linsenmeyer (1976) on alternative strategies for the development of Sierra Leone marine fisheries, gives details of the actual profitability of credit as opposed to declared interest rates. C. Chaboud's 1983 study on middleman activity in Senegal highlights the progressive and reciprocal integration of productive and commercial capital. In his 1987 study on fisheries in Togo, Weigel outlines financing methods used for artisanal fishing at the port of Lomé.

While not primarily concerned with financing systems, these studies certainly give an idea of their importance. Requirements for capital are only partially met by financial institutions (banks, savings and credit cooperatives, cooperation agencies). By far the greater part of these needs are met from informal and non-institutional sources about which very little is known, with information being very hard to come by. One can, for example, turn to banking texts for information about financial institutions, but a special methodology is needed to be able to investigate the non-institutional financing system. A great deal could be learned from such an investigation. It would enable an assessment to be made of the binding nature of the financing system as a whole and, in particular, it could help in the elaboration of a fishery finance policy (calculating total sums and settling procedures) different from past policies which have so often ended in failure.

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\* Contribution for the Seminar Socio-Economic Conditions for Development of Artisanal Fisheries in Africa (Tromsø-June 15-17, 1990)

The shortage of material on this subject in relation to artisanal fishing in West Africa is offset by the relative abundance of such material with regard to Asia<sup>1</sup> and, especially, material covering West African agricultural production which describes non-institutional financing systems set up by companies with similar structures and working methods to those used by fishermen's organizations.

## II. Description and Main Features of Non-Institutional Financing System

Informal financing of fishing activity takes the form either of surplus credit released by the fishing unit or the production unit to which the fishing unit owner belongs, or of outside capital in the form of direct investment or credit.

The scope for self-financing by artisanal fishing vessel owners from their fishing unit is generally limited. The net income of fishermen and vessel owners, including profit deriving from capital, varies greatly according to the type of gear used and their particular situation, but estimates<sup>2</sup> show that new investment can rarely contribute to anything more than the simple renewal of capital. Even if the owner's return on capital generally covers his opportunity cost, his net income is unlikely to enable him to generate savings which can be reinvested in new equipment. A partial solution to this is for the linear savings of members of the production unit to which the owner belongs to be used to invest in his fishing unit, thereby increasing the capital available. These funds therefore come from fishing activity in the broadest sense (processing or marketing) or from non-fishing activity such as agriculture (coconut plantations in Benin, marketgardening in Kayar, plantations in south-east Côte d'Ivoire or in Sao Tome), migration (Cape Verde, Benin) or trade (the Fanti traders of Takorodi).

However, the spread of capital intensive types of gear requires large amounts of capital, and the use of external financing has therefore increased. This financing may be obtained through shareholdings owned by the fishing unit or through credit, a widespread practice as shown by the few complete socio-economic studies of fishing activity. The financing may also come from savings associations, a kind of financial association which we will examine shortly.

### *Shareholdings*

Analysis of the ownership of fishing unit capital in those countries where extensive studies have been carried out shows that the owners may be very diverse. A holding of some or all off the capital usually entails the adoption of a distribution system which favours a return on invested capital. The motor, the gear, the canoe may each belong to a different owner or pool of owners, a fact which helps account for the different methods of distribution. However, there are also more sophisticated forms of shareholdings. A shareholding may be temporary, i.e. relinquished under the terms of the contract after one or more fishing seasons. It may be combined with a rolling fund and, instead of a proportion of the catch, the dividend may be a monopoly on purchasing of the payment of rebates by the fishermen to creditors. This practice has been observed at the port of Lome and at Vridi (Abidjan).

### *Prevision of credit*

Credit is directly linked to the total capital used and is much more widespread in artisanal marine fishing than in lagoon fishing and among seine fishermen (marine or lagoon) than among fishermen using smaller amounts of capital. Research carried out to date shows that there are two sub-systems. In the first, the fisherman is almost totally dependent on the creditor (e.g. Ghanaian fishermen and the agents of the port of Lome). In the second, the fishermen's credit dependence

<sup>1</sup> cf Platteau et al (1985), Willmann...

<sup>2</sup> Taken from Bellemans (1983) for fishing at M'Bour (Senegal), Durand (1986) and Weber's data for Senegal generally, FIDA for marine fishing in Sao Tome and fishing in the Aby lagoon (1988), Linsenmeyer (1976) for marine fishing in Sierra Leone and Weigel for marine and lagoon fishing in Togo (1983-1984).

passes through a series of links which vary depending on the type of credit which may be in terms of equipment provided by wealthier categories (the "Nana" of Benin and Togo, middlemen and merchants of Ghana and Senegal, officials in Abidjan or south-east Côte d'Ivoire, migrants from Cape Verde), or subsistence on operational credit provided by humbler creditors who often live near the fisherman's village or settlement.

Non-institutional credit is usually geared to the first production cycle and helps offset its uncertainties and fluctuations (seasonal activity) ensuring a more even production-consumption cycle. It is part of a socioeconomic system which, despite a growing anonymity in social and especially in financial relations, still features linear, tribal and village relations as far as indebtedness is concerned and explains the absence of any written regulations<sup>3</sup>

Informal money-lenders can arrange loans at very short notice, do not ask for substantial guarantees and do not place restrictions on how the funds are used. However, the most notorious feature of this financing system is its apparently very high interest rates, part of which may be hidden under various forms of repayment in kind. However, while the annual rate may seem high, what the donor actually gets back is a good deal less, in view of repayment delays and defaults. Rates are therefore fixed to include a premium covering the lender's risk arising from the high level of non-repayment<sup>4</sup>. These very high interest rates are often interpreted as a sign of capital shortage and the expression of a currency supply and demand relationship obeying a reduced neo-classical theory. However, on-the-spot observation has shown that factors other than strictly economic and monetary ones play a role in the fixing of rates. For example, interest rates for fishermen at Lome varies depending on their ethnic origin and, for non-indigenous tribes, incorporates a duty charged for access to the fishery.

#### *Savings associations*

Savings associations represent an original way of supplying informal credit, associating savings and credit, with the savings of some members being used as credit for others. The association is set up by individuals who agree to pay a fixed amount at certain times and the sum of the contributions is distributed to each member in turn. This association of savings and credit can be complex, since each member's position changes at every turn. Each member will be borrower and creditor at the same time but to a greater or lesser extent throughout the duration of the association<sup>5</sup>.

There are three main types of savings association<sup>6</sup>. The shared interest savings association is based on the solidarity of its members who know each other well, the commercial savings association in which funds are collected by a third party who charges a commission and seeks to balance savings collected and advances requested (the 'fixed funds association' studied by M.P. Miracle) and, finally, the financial association where the member withdrawing funds pays interest, usually in the form of a commission put to an auction, thereby enabling participants to influence the order of withdrawals in relation to needs (but those who borrow have to pay while those who save get some interest).

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<sup>3</sup> Cf Nicolas (no date)

<sup>4</sup> For example, Linsenmeyer (1976) in "Economic Analysis of Alternative Strategies for the Development of Sierra Leone Marine Fisheries" (Michigan State University) records annual rates of 170%, while the donor's profit was much less, about 40%, due to late payments and defaults.

<sup>5</sup> Cf Bouman (1979).

<sup>6</sup> Cf Lelart (1982).

These savings associations have three advantages over the banking credit system and institutional cooperatives. Firstly, personal relations due to group homogeneity and shared interests; secondly, organizational flexibility coupled with administrative simplicity;<sup>7</sup> thirdly, solidarity and imitation among members encouraging them to save thereby strengthening the role of currency as a means of saving and payment compared to its traditional role in Africa as a reserve.

The main drawback of these savings associations in West Africa, from the little we know, seems to be the very limited sums raised, as exemplified by Ati Mama (1985) and Seibel (1982). Existing associations meet the descriptions given above of shared interest and commercial associations, but not financial associations which would require much higher deposits such as those made in the Yoruba associations of Nigeria and Benin or the Bamileke associations of Cameroun. As for the importance of these associations compared to other financing system, the few systematic studies which exist show that their importance may have been exaggerated, undoubtedly because of the appeal they exert on authors because of their particular features (solidarity, cooperation, joint management).

### III. Methodological Proposals and Difficulties

Any analysis of financing systems requires the monitoring of fishing units and profiles of creditors and borrowers. The institutional financing system may have only a marginal role<sup>8</sup> on account of its characteristics<sup>9</sup> and the rapid obsolescence of artisanal fishing equipment but it should not be overlooked since there can be on occasions direct or indirect interaction between the informal and institutional systems.

#### *Monitoring fishing units and profiles of creditors and borrowers*

Starting with the fishing unit, it is possible to grasp the structure and kinds of financing of all the capital tied up in the production process for each main type of fishing unit. This requires a complete inventory of the constituent technical capital of each type of unit so as to match each element with its financing method. There must be a distinction between fixed capital (equipment) involved in a number of production cycles and gradually deteriorating through use or obsolescence, and moving capital which is used or converted in a single cycle. In order to be complete, the analysis must be static (in list form) so as to show the sum and structure of the capital, but also mobile (accounts), so as to show variations in capital surpluses and deficits, which means that it must monitor the operation of fishing units. This analysis of the capital of the fishing unit can then be used to complete an analysis of financing structure and methods. Existing studies which consider an annual cycle<sup>10</sup> have thus confirmed firstly the almost exclusive predominance of non-institutional capital and, secondly, the generally low (but variable, depending on the type of fishing) level of self-financing and the large proportion of funding sought from lenders or investors and raised by means of credit or shareholdings in capital. They also highlight the importance of personal or corporate saving (savings associations) as opposed to the importance of borrowing or credit. The interest of this approach is that it reveals the financing methods implemented through linear, village or ethnic ties: a striking feature is the diversity and complexity of

<sup>7</sup> Possibility of joining in mid-cycle and making up a number of payments, and of withdrawing one's deposit before settlement (without the deduction of any commission paid, which is kept by the association manager).

<sup>8</sup> Although in certain cases it has been decisive, as in the development of artisanal fishing in São Tomé, made possible by the opening of bank credit lines.

<sup>9</sup> Short-term operations, limited scope for intervention, very high rate of defaulters.

<sup>10</sup> Cf Linsenmeyer (1978), Weigel (1984)

the credit terms granted for both equipment and unit operations. Outlining these financing methods and the credit terms in particular, it is possible to assess the suitability of the financial measures for the actions proposed.

The point of having profiles of creditors and borrowers is to corroborate and complement information obtained from fishing units and, above all, to reconstruct and identify financing channels. The most frequently encountered observations are the predominance of linear or tribal channels and the regular interplay between trade capital and productive capital, demonstrating the importance of fish traders.

The financing terms granted by the Ewe "nanas" of the port of Lome to Ewe fishermen give an example of linear or tribal channels. Real interest rates are lower, the equipment is not pledged and the catch is not ceded exclusively to the creditor. These terms contrast with those offered by the same "nanas" to Ghanaian fishermen who are foreigners in a tribal sense. The officials of Abidjan who finance seine nets in the Ebrie or Aby lagoons are another example. This kind of channel generally entails more generous and flexible contractual terms since the lender has a surer guarantee of repayment than he or she would have with a migrant fisherman, for example. In cases we have studied in Togo and Côte d'Ivoire (Vridi) the fishing boss's interests are better protected than in the case of a straightforward client relationship. On the other hand, straightforward client relationships do not necessarily entail a hold by traders on the fisherman. Chaboud (1983) points out that relations between middlemen and fishermen at Guet-N'Dar (Senegal) may be exclusively in the supply of financial services in the form of credits or reciprocal advances without entailing the domination and exploitation which characterize relations between the "nanas" and Ghanaian fishermen at Lome.

These profiles also reveal tribal affinities which can manifest themselves in agreements between members occupying different posts in the chain (major traders, middlemen or women, traders, processing workers, fishermen) and between members with the same professional activity. At Lome, for example, a number of factors affecting the fluidity of capital supply, limiting access to the provision of credit services. This results in limits being placed in member competitiveness terms on the capital available for artisanal fishery development.

#### *The main methodological difficulties*

The first of these concerns the monitoring of fishing units and is not relevant to the study of the non-institutional financing system since it entails the definition of an observation unit. The second does relate to the financing system because the question is to calculate the total and the rate of interest charged.

There are a number of difficulties in defining an observation unit for artisanal fishing. A definition in terms of types of fishing is unsatisfactory because of mixed fishing types or types of fishing which are more complex than an over-generalized nomenclature such as gill net, drift net or encircling net would suggest. These terms conceal a great variety of gear used which depends on the target species which may itself change in the course of the season. A definition in terms of capital is also unsatisfactory, since the same capital may be used in turn by several fishing units while, conversely, two different sources of capital held by two different owners may contribute to the operations of a single fishing unit. Furthermore, the equipment used may be hired and used for only part of the year: in other words, a unit without any fixed capital. One can conclude that the most homogeneous and stable element of a fishing unit is the production group setting it up (usually based on family ties) and that, accordingly, this criterion should be used for defining a



canoe fishing unit<sup>11</sup>. The seasonal nature of fishing obviously requires that monitoring should be on an annual basis and, given that it applies to the fishing effort and type, it may entail varying mobilisation of the capital required.

The second methodological problem involved in understanding non-institutional financing conditions is the calculation of the total and the rate of interest charged. First of all, transactions in kind still persist and need to be taken into account. Otherwise, an incorrect calculation will be made of a whole set of parameters such as real interest rates. However, the main obstacle to calculating directly the cost of credit, thereby making continuous monitoring necessary, is the frequent rescheduling and certain credit terms (such as the payment of rebates) granted by the creditors. It is therefore necessary to retabulate and describe credit in operation several times in the course of one annual cycle (total, date of credit provision, original time frame, repayments made, total and rate of interest, identification of lenders and borrowers).

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<sup>11</sup> Observation of Senegalese fishing units (Durand, 1984, taken from Weber) and Ghanian units (Weigel 1984) shows that the fishing master and often some other members remain the same while the rest of the crew may be changed at any time in the course of the production cycle.

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# **An Evaluation Research on Vocational Skills Training for Students in “Private Islamic Religious Schools” in Southern Thailand**

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## **1. Background**

Many of the brightest Muslim teenage students from the most conservative families in the Thai South presently are sent by their parents to attend one of the four hundred private Islamic religious schools. The Private Islamic Religious School (PIRS), however, offers very little or no education in technical subjects although vocational training would open new economic opportunities for the Muslim youth.

For future continuation and its expansion to other PIRS's, the Asia Foundation, therefore, worked with a project sub-grantee, the Panya-saratham Foundation, a local private voluntary organization in Nakorn Sri Thammaraj Province, to set up a series of pilot vocational skills training programs in 5 PIRS's so as to demonstrate to the Muslim community that supplementary technical education programs could be built into the curriculum of the PIRS while maintaining a Muslim educational context.

Five PIRS's in the southern provinces of Nakorn Sri Thammaraj, Pattani, and Songkhla were selected. Three of selected schools were located in Nakorn Sri Thammaraj: Santitham and Pratheepsasna in Amphur Muang, and Panyasaratham in Amphur Tha-sala. These were the most liberal in the South and the best integrated into Thailand. The other was in Pattani, a Muslim majority, quite conservative, and predominantly Yawi (Malay)-speaking: Bamrung Islam School in Amphur Muang Pattani. It was selected as representative of the larger PIRS's. The rest was in Songkhla: Songserm sasna School in Amphur Had Yai, representing the typical smaller PIRS.

## **2. Evaluation Research Methodology**

### **Population**

This evaluation research study was designed to evaluate the Vocational Skills Training for Students in PIRS in Southern Thailand Project, and to analyze the various vocational skills training models in the Project's 5 PIRS's. The population were divided into 3 groups; namely,

- 1) The school administrators: school principal or manager,
- 2) The vocational skills trainers or instructors, and
- 3) The vocational skills trainees/students: graduates and students, and in-school students and out-of-school youth.

The total number of the whole population was 5 school administrators, 16 vocational skills trainers/instructors, and 1,215 vocational skills trainees/students, totalling 1,236; shown in detail as follow :

SCHOOL	ADMIN.	TRAINER	STUDENT	TOTAL
Panya-saratham	1	4	251	256
Muslim Santitham	1	5	361	367
Pratheepsasna	1	4	402	407
Songsermsasna	1	1	115	117
Bamrung Islam	<u>1</u>	<u>2</u>	<u>86</u>	<u>89</u>
<b>TOTAL</b>	<b><u>5</u></b>	<b><u>16</u></b>	<b><u>1,215</u></b>	<b><u>1,236</u></b>

### Source of Information

It was necessary to gather the baseline information about the 5 schools; e.g. size, type, style of management, etc. as well as the characteristics of the communities where the schools situated. Other data concerning PIRS and vocational skills promotion from various agencies to the schools and communities were all studied. The sources of information thus were both primary and secondary as follow :

1) Data concerning the Vocational Skills Training for Students in PIRS Project, from the Project Director and the Asia Foundation;

2) Data concerning the Project's 5 PIRS, from the 5 schools themselves;

3) Data concerning PIRS, from Professor Saroj Jorjitt, Coordinator of Office of Private Education Committee at Prince of Songkhla University, Pattani;

4) Data concerning vocational skills promotion from :

- Non-formal Education Centers, Southern Region, Songkhla Province, and Pattani Province;
- Professor Saroj Jorjitt;
- Southern Border Province Administration Center;
- Luang Pratanradnikorn Vocational Training Center, Had Yai;
- Labor Development Institution, Southern Region;

5) Data concerning labor force from Labor Office of Songkhla, Pattani and Nakorn Sri Thammaraj Provinces;

6) Data from documents and researches concerned;

7) Data concerning the project achievements, from the three groups of population understudied.

The questionnaire and the interviewing schedule were used for the following groups of population :

1) Interviewing schedule on school data, opinions and suggestions for the school administrators

2) Interviewing schedule as above for the vocational skills trainers

3) Questionnaire for the vocational skills trainees/graduates :

- Type I for out-of-school youth: both trainees and graduates;
- Type II for in-school students: both trainees and graduates.

Type I questionnaires were directly distributed to the trainees to fill up in school but for those graduates the following methods were employed :

a) For those lived nearby the school, the vocational skills trainers were asked to deliver by hand to them for completion of the questionnaires;

b) Asked the school to tell the students who knew and/or lived close to those graduates to deliver by hand to them;

c) Asked the postman to specially deliver the questionnaires and bring the filled up questionnaires back

d) Sent 263 questionnaires by mail with definite returning date on July 20, 1989 and received only 66 questionnaires (25%) in return.

Type II questionnaires were used with in-school students by asking them to gather in class to listening to the explanation of how to answer the questionnaires while the researchers and the research assistants helped to facilitate them.

There were 825 answered questionnaires returned as follow :

SCHOOL	TYPE I	TYPE II	TOTAL
Panya-Saratham	50	131	181
Muslim Santitham	15	260	275
Pratheepsasna	17	217	234
Songsermsasna	52	14	66
Bamrung Islam	<u>20</u>	<u>48</u>	<u>68</u>
<b>Total</b>	<b><u>154</u></b>	<b><u>670</u></b>	<b><u>824*</u></b>

\* One returned questionnaire did not mention the school name.

Some problems encountered in collecting data from the graduates were no complete school record of each batch of graduates, no complete graduate addresses, limited time in mailing and answering questionnaires, some graduates moved out of the former addresses.

The data analysis for this evaluation research was divided into :

1) Qualitative analysis was for data gathered from interviewing, conversation and observation. The content analysis was used in search of information from various related documents.

2) Quantitative analysis was for data from both types of questionnaires after examination and coding for computerized analysis.

The SPSS program was used to calculate the fundamental statistics such as frequencies, percentage, average, etc.

The important problems in conducting this evaluation research were :

1. The study duration was constraint because, in the beginning of the study, the school was close for 2 months' vacation (April-May). The actual study then started in June 1989;

2. The variety of schools, models used, and trainee types made it difficult to design the questionnaires applicable for all of the 5 schools;

3. The school record of the name, address, and chosen vocation of the trainees and the graduates was not complete. Besides, some graduates moved from the former addresses;

4. The difference in the school's record system of the trainees' number, vocational skills taken, number of graduates in each vocation, number of drops-out and project cost, etc. made it difficult to evaluate the cost-effectiveness of each vocational course offered.

5. The skepticism of some school administrators towards the project evaluation was the basis for lack of full cooperation in collecting information.

### 3. General Information and Attitudes Towards Project

#### General Information

Out of the 825 returned questionnaires (one without school name), the majority (33.3%) was from Muslim Santitham. The majority of the in-school students (38.7%) was also from Muslim Santitham. And the majority of the out-of-school youth (33.8%) was from Songsermsasna. There were 423 females and 401 males answered the questionnaires. Among them, there were 581 residents of the provinces where the schools situated: Nakorn Sri Thammaraj, Songkhla, and Pattani. The rest (235) was from other provinces. Pratheepsasna was the school with the greatest number of non-residents (105 or 44.68%).

The respondents' family size was 6.0 on the average. And their average age was 17.3, with 16.8 years for in-school students and 19.6 years for out-of-school youth. The highest average age was 18.13 years which belonged to those taking construction-masonry course. And the lowest average age was 16.7 years among those taking metalwork course.

The occupation of most respondents' parents: father and mother, was agriculture 63.8% and 40.8% respectively. Next was merchant; 30.7% was the mothers and 14.3% was the fathers.

Before entering PIRS, the students must complete the compulsory formal education. It was found out that most respondents (14.7%) took only religious course. For those taking formal education, most of them (30.9%) was in secondary education. And for those taking the religious course, 70.3% were in the first level (ib-ti-da-eya), 17.8% in the second level (mud-ta-va-sidh), and 7.5% in the third level (Sa-na-ve).

Among the current vocational skills trainees, the respondents were 419 in total, of which 377 were in-school students and 42 were out-of-school youth. Among the graduates, there were 111 out-of-school youth and 294 in-school students.

Among all the vocational skills training courses, the most popular was dressmaking because of its continuation in offering. The most popular courses for out-of school youth were furniture-carpentry and construction-masonry since they were comparatively the first courses offering and while most students were just graduated from their formal education.

For those currently enrolled, 190 and 102 enrolled in dressmaking and electronics respectively. For those graduates, 114 and 86 took dress-making and food-nutrition respectively. Among the 7 courses offered, dressmaking was the most popular, and the rest were electronics and food-nutrition, respectively.

Among 154 out-of-school respondents, the majority (63.2%) received information on vocational skills training courses from the school announcement and 17.8% knew from their neighbors. And most of them (23.4%) was self-employed by using the vocational skills learned; while 20.1% were in agriculture. As for their interest in higher education, 36.7% preferred to further the learned vocational skills, 24.7% religious course, and only 16.4% formal education.

Among 671 in-school respondents, the reasons for choice of school were the school's religious teaching fame (33.4%), the parents' and relatives' advice (25.8%) and the vocational skills training courses offered (12.9%). After their graduation from the current schools, 33% preferred to further higher education, 12.2% self-employment.

#### Attitudes Towards the Project

The reasons for choice of vocational skills training among the out-of-school respondents were its use and application for self-employment (52.5%) and the personal interest in the learned vocational skills (36.5%). When classified according to school, most respondents of all schools cited reason concerning its application, except Panya-saratham (11.6%) indicated personal interest. When

classified according to vocational skills offered, most respondents of all vocational skills training courses gave reason on its application for self-employment while those taking electronics (9.9%) chose it because of personal interest.

The respondents' satisfaction in the vocational skills learned was very high: 801 from 825. And 789 believed it to be useful.

#### 4. Employment Analysis

##### Project objectives

The secular education of PIRS offered very small background in vocation especially among those taking only religious course. The lack of vocational skills would lessen the chance in employment.

The Vocational Skills Training for Students in PIRS in Southern Thailand Project expected to achieve the followings:

##### *Direct Benefits*

The direct benefits were the followings:

1. Future supplementary income;
2. Vocational skills for employment; and
3. Vocational skills training opportunity for students in other PIRS's if the Project expanded.

In short, the direct benefits of vocational skills training were for, self-employment and family's supplementary income.

##### *Indirect benefit*

The direct benefits of self-employment and family's supplementary income would make both the students and their Muslim families realized the value of education and vocational skills training and supported the expansion of vocational skills training to other PIRS's.

##### *Impact*

Of the youth having the chance to develop their vocational skills for self and family-employment without any effect on the religious education as perceived by the Thai Muslim families, the Thai Muslim would accept change to the new socio-economic condition with no effect on the Islamic culture.

#### Employment Analysis

Therefore, the employment analysis of the study examines only the expected achievements of both the direct and indirect benefits of the Project. The impact analysis thus was indirectly studied. The study then was divided into 4 areas of analysis:

##### *1. Employment Condition*

Since the Project started two and a half years ago, there was only a few graduated. Of all the vocational skills trainee/graduate respondents (825), there were 671 in-school students (81.3%) and 154 out-of-school youth (18.7%), from whom 105 were graduated. From 154 out-of-school youth, 23.4% were self-employed using the vocational skills learned, and 20.1% worked on farm as their parents.

For those in-school students who constituted 81.3% planned for their future career after graduation as follow: most of them (55.7%) would like to further their education, only 12.2% would go for self-employment using the vocational skills learned and 10.9% would hunt for job

using the vocational skills learned. If combine the last 2 groups, the number (23.1%) reflected the acceptance of vocational skills in planning for their future career.

For those out-of-school youth, 65.6% were interested in advancing their vocational skills training, 38.3% would like to take some other vocational skills. It shown that they realized the value of vocational skills in adding more chance in employment. However, they expected to further their religious education, which was the good tradition of all Thai Muslim in general (44.2%). It was interesting to note that dressmaking was the most interested vocational skills chosen of further (60.4%).

## *2. Application of Vocational Skills*

Almost all vocational skills trainee/graduate respondents (95.6%) agreed that all vocational skills offered were useful. Hardly any one (0.4%) disagreed. And only 2.1% were uncertain.

It was found out that 38.9% benefited from vocational skills while learning; 49.2% benefited after graduation; and 9.0% benefited both ways. It was interesting to note that most out-of-school youth (62.3%) benefited after graduation while only 46.2% of in-school students benefited. And only 41.4% of in-school students benefited while learning. However, any vocational skills could be benefited while learning such as dressmaking (44.6%), electronics (44.5%), barber (50.0%) and metalwork (53.2%).

It was also found out that most of them (79.0% of the out-of-school youth, and 69.9% of the in-school students, totalling 71.5%) benefited in making their own living. As for family benefit, there were 62.4%, 49.4%, and 51.6% of the out-of-school youth, in-school students and both groups respectively, pointed out. The 41.1% of the in-school students thought the vocational skills learned was useless in income-generation because they were still in school. And 25.1% of the out-of-school youth had the same thought.

When considering the application of each vocational skills, those learned dressmaking (81.2%), food-nutrition (79.6%), furniture-carpentry (66.9%), construction-masonry (56.7%), and electronics (73.4%) said they could apply it firstly for self benefit and secondly for family benefit. Nevertheless, if considering the application of vocational skills learned for income-generation, all vocational skills were of little use. A great number of respondents even considered it useless.

## *3. Income Earned from the Learned Vocational Skills*

Some respondents earned from the application of their learned vocational skills. The highest income earned among the out-of-school respondents was 30,400 baht since graduation. The lowest income earned was 5 baht. Even the in-school students could make as many as 6,000 baht since completion of the vocational skills training course.

Among the out-of-school respondents, 37.7% could earn from the learned vocational skills, while, among the in-school respondents only 19.5% could earn. Of the 2 groups, only 2.9% made money from the learned vocational skills, average 2,514.66 baht among the out-of-school respondents and 445.97 baht among the in-school respondents, totalling 1,080.80 baht on the average.

Electronics, barber, and dressmaking skills were the best use for earning, constituting 28.9%, 28.6%, and 26.2% respectively of those who could earn. However, the highest incomes among those who could earn were from construction-masonry skills (average 6,368.69 baht), metal work skills (average 1,408.33 baht), furniture-carpentry (average 1,296.67 baht), and electronics (1,252.80 baht).



#### *4. Problems in Application of the Learned Vocational Skills*

Since most vocational skills respondents were still in school and only a few of those who graduated received and returned the questionnaires, it was found out that only a few graduates could apply the vocational skills for employment. Nevertheless, the problems in application of the learned vocational skills among the out-of-school youth were that 9.8% saw no problem while 92.2% encountered many problems like lack of equipment, lack of money for investment, no employment, and lack of confidence. And among the in-school respondents, only 15.0% had no problem while 85.0% faced some difficulties.

It is interesting to note that the respondents lacked confidence in the vocational skills learned. The majorities of the out-of-school respondents (43.6%) and the in-school respondents (34.5%) thought that the skills learned were not sufficient for application in work. Those learned dressmaking and furniture-carpentry mostly faced the problem of insufficient knowledge (43.8% and 43.8% respectively). And for those learned electronics, 30.6% had the lack of equipment problem.

Although most graduates could not become skilled labor as expected by the Project, some were part-time labor, some self-employed, and the rest self and family use. However, one of the Project's expectations, which was an indirect benefit was to make the learners and the Thai Muslim families realize the value of education and vocational skills training, and supported the spreading out of the Project. It was interesting to note that the out-of-school respondents expressed their interest in furthering their vocational skills and knowledge.

The attempt to increase the Muslim youth's chance into the modern socio-economic condition by vocational skills training needs time, intention from all concerned: school administrators, trainers and trainees. Other contributing factors are: employment opportunities, employment information, demand of employment market, and capital for self investment. All these must go hand in hand with the vocational skills development, which will enable the Muslim youth into the modern socio-economy.

#### **5. Vocational Skills Training Management Model**

##### **Summary**

The Project set the following criteria in selection of the 5 schools into the Project: school location, community nearby, school size, teaching management, including the school administrators. The following table summarized and compared the significant points of difference among the 5 chosen PIRS's.

### Summary and Comparison of the management of the Project's PIRS

Points of Difference	School Name				
	Panyasaratham	M. Santitham	Pratheepsasna	Songsermsasna	Bamrung Islam
1. Province	Nakorn-	Sri-	Thammaraj	Songkhla	Pattani
2. Status	Foundation	Foundation	Owner/ Manager	going to be Foundation	Owner Manager
3. Size					
- Total Students	317	736	469	184	1,187
- Religious stu	317	225	234	24	440
- Teachers	11	25	20	18	36
4. Schedule of Vocational Skills Training	Saturday and Sunday fullday	Every afternoon except on Friday morning	Monday-Fri in afternoon and fullday on Sat & Sun	Monday-Thurs in afternoon and Friday fullday	Monday-Thurs in afternoon and Sunday afternoon
5. Secular Education	None	Secondary Ed. to level 6	Secondary Ed. to level 3	Secondary Ed. to level 3	Secondary Ed. to level 6
6. Religious Ed.	Mud-	ta-	va-	sidh	Sa-na-ve
7. Vocational Batch (No. of Trainees)					
- Dressmaking	3(86)	3(108)	5(114)	3(61)	3(65)
- Food-nutrition	3(64)	2(52)	2(66)	-	-
- Furni -Carpentry	1(14)	1(24)	2(46)	-	-
- Constru-masonry	1(15)	1(22)	1(20)	1(18)	1(21)
- Electronic	2(43)	2(79)	6(156)	1(20)	-
- Barber	2(29)	-	-	-	-
- Metalwork	-	2(76)	-	1(16)	-
Total	12(251)	11(361)	16(402)	6(115)	4(86)
8. Budget (Baht)					
- Total	182,047.50	306,736.00	339,788.50	270,173.00	90,525.00
- Average / head	725.29	849.68	845.25	2,349.33	1,052.62
- Average / Batch	15,170.62	27,885.09	21,236.78	45,028.83	22,631.25

## Conclusions

From the table above, the following conclusions were drawn:

1. The Project chose 3 schools in Nakorn Sri Thammaraj, 1 in Songkhla and 1 in Pattani. The reasons for choosing 3 schools in Nakorn Sri Thammaraj were the schools' coordination in educational activities and fame in religious education.
2. In the management style, there were 2 schools established by foundation. The committee was formed to manage the school. Panya-saratham Foundation School had 5 member-committee from the Foundation to help overlook the coordination, budget, etc. of the Project.
3. The biggest school in student and teacher size was Bamrung Islam School, situated in conservative Muslim community. And the smallest school of the Project was Songserm-sasna School, situated in urban community amid the modernization of Had Yai.
4. All schools offered the vocational class in the afternoon which was the same time with the secular education class, except Panya-saratham Foundation School offered the vocational class full day on Saturday and Sunday.
5. There were 2 schools taught secular education up to higher secondary, and 2 schools taught only lower secondary. Panya-saratham Foundation was the only school offered no secular education but place for group activities of Non-formal Education Department's open curriculum.
6. Only Bamrung Islam School taught the religious education up to the highest level (sa-na-ve). All others offered only up to the middle level (mud-ta-va-sidh).
7. Bamrung Islam School, with the largest student size, had the smallest vocational trainee size and offered only 2 vocational courses.
8. Among all, the average cost per head of Panya-saratham Foundation School was the lowest, 725.29 baht/head; Songsermsasna Witaya School was the highest, 2,349.33 baht/head. And Pratheepsasna School spent the largest amount of budget in the Project.

The comparative summary outlined above provided interesting points for further study and recommendation.

## 6. Suggestions and Recommendations

### Suggestions

The following suggestions were drawn from the study:

1. School Selection. The selection of school for vocational skills training program must be considered carefully. The appropriate schools are those with good management. The school management should have the potentiality to manage the vocational skills training program, the teaching-learning process, and the sustainability or continuation of the program. Above all else, the school administrator and all the teachers and staff concerned must have a clear and deep understanding of the objectives of the program.
2. Training Efficiency. The vocational skills training program not only provide vocational skills to the learners but also consider its application for income generation. Meaning that the training must be effective enough to make the learners have self-confidence in the learned vocational skills. The training content and practice, the size of and the time allocated to the class, and the offering of the basic up to the advanced courses, all must be well-planned and effective.
3. Course Continuation. The investment in the initial stage for training materials/equipments was high but in the long run with the continuation of the course, the optimal point of benefit would be possible.

4. Trainers' Quality. The trainers must be qualified in terms of knowledge, capability and experience in the subject-matter, teaching-learning management, and student-class evaluation. And the trainers' honorarium should be reasonable, preferably, at a fixed standard rate.

#### Recommendations :

##### *Optimal Model for Vocational Skills Training Management*

There are 3 assumptions to be considered :

1. To open a vocational skills training for students in the PIRS school is to add burden to the school in many ways such as budget for training materials and equipments, classroom and workshop, and operating cost like water, electricity and maintenance. Therefore, the school administrator must be ready and well aware of it.

2. In spite of the above-mentioned burden, the school administrator should have a definite intention to create and develop vocational skills training course in the school.

3. One of the important psychological aspects of educational system is that the students should have an opportunity to free themselves for leisure and self-developed knowledge/skills, appropriate to their age, aside from full time study in the class-room.

From the assumptions mentioned above, the optimal model for vocational skills training management in PIRS is proposed in 3 aspects ;

##### *1. School Management Concerning Vocational Skills Training*

The School should open the vocational skills training course as the secular education. That is to fit the vocational skills training course into the secular course of the schools' teaching-learning system by :

a) Providing opportunity for all the school instructors to understand the vocational skills training program's objectives, method, involvement and cooperation needed, and to participate in shaping up the program.

b) Delegating the vocational course, curriculum, content, method, time, instructors, etc. to the school's academic staff.

c) Arranging the registrations system of the vocational skills trainees as part of the work of the school registrar office.

d) Delegating the secretarial and financial management of the vocational skills training to the school's secretarial office.

The advantages of building the vocational skills training course in the normal education system of the school are that :

a) Work load is equally distributed among all concerned.

b) Team work is promoted among school staff.

c) Problems are solved by brain-storming from all concerned.

##### *2. Vocational Skills Training Management*

The teaching-learning management of vocational skills training involves many related factors as follow :

1) Vocational Skills Trainees. The trainees can be categorized into 3 groups according to priority :

a) Students who have completed compulsory secular education and currently take only religious course.

b) Students who have completed secular education at the lower and/or higher secondary education and currently take only religious course.

c) Students who currently take both religious and secular courses.

d) Out-of-school youth nearby.

The vocational skills training course should be given first priority to the first two groups of students because they are available in the afternoon.

As for the third group of students, they have been provided with basic vocational course in the secular education taken. The school then just equip them more with additional vocational practice as extra-curricular.

If the school has potentiality to serve the community nearby. The fourth group should be encouraged to take the vocational skills training course provided that they have completed compulsory secular education and are over 15 years old.

2) Instructors/Trainers. The school can find qualified vocational skills trainers from many government institutions and organizations. Appropriate honorarium for trainers and appropriate size of trainees per trainer should be considered.

3) Time Management. The time allocation for vocational skills training course should be in agreement with the type and characteristic of the school and the learners. The following time table is suggested :

<b>Time</b> <b>Day</b>	<b>Morning</b> <b>Session</b>	<b>Afternoon</b> <b>Session</b>
Monday	Religion	Secular/Vocation
Tuesday	Religion	Secular/Vocation
Wednesday	Religion	Secular/Vocation
Thursday	Religion	Secular/Vocation
Friday	Holiday	Holiday
Saturday	Secular	Vocation/Practice for secular student
Sunday	Religion	Secular/Vocation

4) Vocation and Curriculum. Consider the followings :

a) Choice of vocation offered

- Possibility of finding qualified trainers ;
- Opportunity for self and family use and for self employment ;
- Interest of learners ; and
- Demand of employment market.

Choice of vocation aside from those already offered are : embroidery, handicrafts, small engine repair, commercial arts drawing ; automobile body finishing, etc.

b) Choice of curriculum

There are at least 2 curricular : Department of Non-Formal Education's curriculum and Department of Vocational Education's curriculum. However, no matter what curriculum used, student learning performance should be carefully evaluated and certificate should be given to those graduates.

5) Equipments and Workshop. The training materials/equipment as well as workshop should be appropriate and sufficient for the learners, otherwise, it will bore and slow down the learners.

6) Data Management System. Follow up of the graduates is a must in providing effective course in vocational skills. The good vocational students' registration system will be of great help to the following up of those graduates on how they apply their knowledge skills in their real lives. Other concerned information such as investment cost, operating cost and maintenance cost should also be kept for future cost-benefit evaluation of the program.

7) Tuition Fee. The rate of tuition fee depends upon the capability of the school in providing support and service to the learners. In general, the Office of the Private Education Committee will provide some financial support to any PIRS. If the PIRS has enough training materials and equipments to open the vocational skills training course, the Office will support trainers' honorarium to the school. Therefore, the school can offer the vocational skills training course for free or for a minimum charge.

8) Budget Plan. Budget is the prime resource in opening vocational skills training course in the school. Each vocation offered needs budget for training materials and equipments. The more vocations offered, the more students enrolled, the more financial cost increased. Therefore, to make the optimal use of the equipments invested, the course should be open continuingly for as long as possible. Moreover, budget should be planned for the maintenance cost of the equipments to prolong their life-long use.

## สิ่งพิมพ์ของสถาบัน

- 2531 นภัต ศิริสัมพันธ์  
ปรีดา ศิริสวัสดิ์ การประสานความร่วมมือระหว่างรัฐกับองค์กรเอกชน  
ในการให้บริการแก่สตรี
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