STUDY ON ECONOMICS AND LAND TENURE ASPECTSIN COASTAL SALT FARMING AREAS
Kep Municipality and Kompot Province
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I. SALT PRODUCTION IN THE COSTAL ZONE

1. Background

Salt is the important basic need for daily cooking as other ingredient products etc. Up to now, there have yet clear argument of how salt product was first introduced into Cambodia. However, one argued that, during colonial time, most of salt producers/farmers were Chinese immigrants from Hai Nam, brought into Cambodia by French to be workers for agricultural and commercial purposes such as farming, food processing and trade. It was recognized that Chinese immigrant were more skilful than local people.

Kompot province where was used to be a harbor of Cambodia has substantial geographical layout for salt production. Most of areas along the beach lay on low-graded slop ground into where are easily accessible for irrigating seawater. These areas are good for salt farming.

Before Pol Pot regime, only a few businessmen owned some 3,000 hectares of salt farming land. They hired workers to work in their farms and then they established salt cooperative in order to market their product all over the country.

During Khmer Rouge time, salt farming was established in the form of socialist cooperative. Most of workers were women. Boeung Rong, where geographical condition is best for salt farming, was extended for this purpose. The salt product from this field was reported moderate quality. Kompong Trach, Ses Sor and Kep were empty land during that time.

During the State of Cambodia most of salt fam1ing land such as Boeung Roting, Boeting Touk and some part of Ses Sor were occupied by the State through public entrepreneurs. The provincial authority occupied Treoy Koh center. Kampong Trach, Kep and one part of Ses Sor were controlled by private corporative sectors.

Due to mismanagement and low production yield, the State changed its policy by leasing land to fam1er worth of 4,000 Riels per hectare of farmland per annum. They have right to transfer from one to another but have no right to sale the land. In 1989, economic reform toward free market mechanism was introduced. Due to lack of land regulatory and the increasing demand of salt product, empty land was cleared for salt fam1ing purpose. Some rice fields were converted into salt farmland since the price of salt was higher than that of rice. On the other hand, Salty land yields low rice product. Therefore, most of rice fields that closed to salt farmland were substituted for salt product.

At present, the over supply within the country creates problem as the farmers cannot export their product due to comparatively substandard quality of product, small scale of product for export and unstable production quantity. Other difficulties also take place in the production management, market distribution as well as regulating the price.

2. Essential geographical conditions and the evolution of salt farms

The salt production in Koh Kong is very limited as comparing to Kompot and Kep where productions are almost 100 per cent of the total salt product in the Kingdom of Cambodia. There are 6 production locations where lands are sandy and easily accessible irrigating. Those are Boeung Roung I and II, Ses Sor, Boeung Touk, Treoy Koh, Kompong Trach and Kep. Boeung Roung I is the biggest one with high quality of salt.

Figure 1 shows the 6 locations and the encroachment of the salt farming into the adjacent areas after PHEAPIMEX Cooperative Company provided repayment loans to each of the farm owners. The loans disbursement was given based on the size of product. In the last two years, land was extended up to 1471 hectares include:

- 181 hectares in Boeung Rong
- 262 hectares in Ses Sor
- 56 hectares in Kep

There was no change of size of salt farm areas in Boeung Tuk and Troey Koh. It was noted that there was decreased about 125 hectares of farmland in Kompong Trach due to deficiency of infrastructure, high cost of transport, and no clear market quota.

This expansion of salt fam1s took over the rice field, forest and mangroves. Land became salty, as a result the yield of adjacent rice fields were declining.

3. Salt production technique

Traditionally, seawater was pumped into three types of fields by an irrigation system, then, it was kept naturally evaporating until salt crystallizing. There is no iodine in natural salt. World Health Organization (WHO), therefore, recommended that iodine should be put into natural salt before selling.

Salt can be produced only in dry season from October to May. Its yield basically is dependence upon climatic condition. It was reported that high yield of salt product is from January to April. In average, for Cambodia, salt can be produced 80,000 tones per annum. In 1998, salt product increased up to 150,000 tones due to draught and El Nino wind. Unfortunately, one third of this product was milted by flood in 1999.

3.1. Types of fields and evaporating methods

By the early of October every, salt farmers are ready for production financially and technologically. They have to have equipments in hand such as pump, hoe, wire basket, spade, rake, soil compactor etc. They, then, start to repaired bridges, building dikes for the three fields where it was called reservoir field or Sre Ou, evaporating field, and salt crystallized field.

a. Reservoir Field

This filed is used to reserve seawater pumped from the sea or irrigated from canal. The dikes are from 0.60 to 1.00 meter high. The bottom of this field is raised higher than the other two fields in order to make sure that seawater from this field easily flows to others. In some cases, reservoir field is not necessarily needed.

b. Evaporating filed

This field is separated into 5 blocks. The sizes of the blocks range from bigger to smaller starting from the reservoir field. There is no standard size of the block. It varies depending on the size of the field. Seawater becomes saltier as it flows along from one block to another. The salty grade range from 1 to 3 to 7 to 12 to 18 to 21 to 25 to 30. It takes about 40 days to flow through the 5 blocks in order to saltilize seawater up to 25 or 26 degree of salty grade then it is flown into the third field, crystallized field, of 10 cm depth.

c. Salt crystallized field

After 5 to 6 days under the sunshine the seawater starts crystallizing. When the salt crystallization reaches maturity it is collected into small hill and then take it into the warehouse made of wood and steel corrugated sheets. Finally, the wastewater is discharged, and then the same process is start again.

This field is required very careful work. It is divided into blocks of 13x20 m, 10x30 m, and 1Sx30 m in order to make it easy to flatten the bottom of field and compact sand of 3 to 5 cm thickness as well as to ensure high yield of product. Firstly, they pump seawater into the field for cleaning then discharge it out.

3.2. Qualities of salt

The quality of salt produced in Kompot and Kep does not reach the international standard (see Annex Salt analysis). Salt is locally divided into three types:

- First quality salt- white and fine salt contents less moisture. It is a result from boiling low quality black salt and then crystallizes it by naturally evaporating. The production is about 215 tones per annum only.

- Second quality salt- white salt contents 5.77 per cent of moisture (international standard required 4 per cent of moisture content). This salt is used mainly for food ingredient.

- Third quality salt- gray and coarse salt contents some suspended matters.
- This salt is used mainly for salting fish.

4. Major problems confronted by salt farmers

4.1 Lack of capital investment

Only very few fam1ers who are able to financially run their business without external support since the start of the season. Most of fam1ers need loan to prepared some basic facilities and infrastructure such as building road, dike and deepen canal and so forth prior to production. Previously, there were establishment of Cooperatives that aimed to solve problems confronted by its members such as seeking fund or loan to support those members who financially needed. There was a Salt Farmer Federation established by joint Corporative. At present, after chaotic situation, some members of the Corporative jointed venture with businessmen from Phnom Penh took over management of the Federation whose members have share less than 50 per cent. The Federation gave loan to the members proportionate to the size of product by considering 5050 Riels per bag of salt for the production cost, selling price was 10,000 Riels per bag. Therefore, deduction of miscellaneous expenditure, the profit is 4,000 Riels per bag that was shared equally. Hence, the interest rate calculated from this description was about 40 per cent of the total loan given. Where interest rate from private loaner is about 36 per cent and from the bank is only 20 per cent. However, getting loan from the bank is difficult although there is deposited real estate.

4.2. Climatic change

Draught and flood caused serious problems to the farmers especially draught in 1998 gave rise to high production of salt that lower the price and could not be all sold out. This surplus was kept in stores adding up with 1999 products increased more surplus that could not be disbursed to market. More seriously, this surplus could not be exported due to low quality product. Food packaging products required more salt, however, there are very limited numbers of packaging manufacturers in Cambodia. On the contrary to 1998, in 1999 there was flooded caused by El Nino weather. About one fourth of total product was milt during this flooded period. Farmers had to spend more money to prevent from flooding and prepared damaged infrastructure and other facilities.

4.3. Lose milting

Final product contents about or more than 5.77 per cent of moisture. It was estimated that lose milting is approximately 20 per cent during Stocking and transporting from warehouse to end-users.

4.4 Unstable market price

Price is dependence upon season and market demand; especially during fish salting the demand of salt is very high. The fluctuation of price exceeded 50 per cent. At present, the average price is 10,000 Riels per bag. Price fluctuation was caused by middlemen and smuggling activities across Vietnamese- Cambodian border. It was estimated that, only during fish salting, ten thousands tones of salt was imported from Vietnam by boats. There was also imported salt from Thailand to some bordered provinces where accessibility from Thailand is easier. Profit making from these imported goods was not the main purpose of importers. It was only used to hide other smuggled goods such as liquors and other valuable goods. Thai salt, therefore, was sold with no profit. This caused local product faced difficulty to compete with.

Today, the Federation is gaining more experience to control over price fluctuation. Meanwhile, there was deficiency in disbursement .of salt to markets. Competition amongst the farn1ers causing declining in price due to surplus could not be sold out. During 1997 the price was sharply declined up to 3,000 Riels per bag, however, the price was remained stable, 10,000 Riels per bag, during 1998 and 1999. It was projected that the price may be decreased for year 2000 as thousands of surplus still could not be disbursed out of the warehouse.

4.5 Technical and managerial deficiencies

As mention previously the salt has high moisture contents and most of this product is the third quality that contents suspended matter. Production technique was based on traditional way that has never updated from time to time in order to improve the quality and quantity of products. From management point of view, there was a lack of skills in the form of production system supervision and marketing products especially over sea markets. There was also no remarkable action taken by the concerned government institutions attempting to cater technical, managerial and marketing skills.

II. SOCIO-ECONOMY OF THE SALT FARMS

1. Economic analysis

1.1. Private sector investment

From 1993 to 1996, marketing and disbursement of salt was under the control of Corporative that was occupied by few big farmers and their shareholders. When the mandate was ended the responsibility was hand over to private companies called Salt Farmer Federation in which only very few big farmers took part. Although there was recognition of new investors by the government the farmers reacted to this reform because they afraid of losing their benefit. The situation got better after there was consensus by allowing the farmers to put 49 per cent of capital shares. However, there was hostility among the shareholders due to mismanagement and ineffective intervention by the government as a result of no clear policy for controlling market price. There was no clear registered account for tax payment. Although the income from taxation was quite high the corruption was inevitable. Lack of managerial experiences and irruptive activities resulted chaotic situation effecting to market price of the salt. In Phnom Penh, the price was fluctuated between 4,000 Riels to 19,000 Riels per bag. Sometime, ten thousand tones of salt were smuggled from Thailand and Vietnam to local markets.

In the early 1997, after the chaotic situation got better, the Federation was lack of capital turned to joint venture with PHEAPIMIX Company. In this case, new contract and regulation were drafted providing PHEAPIMIX Company 51 percent of capital share and privilege to sell the product. After corruption was prevailed 49 percent of shareholders decided to withdraw their capital left over 30 percent of shares for the new company. This new company has invested 1.5 million US dollars since 1997 that has yet recovered so far.

The management was more effective than ever resulting stability of market price. The fluctuation of price was only 2,000 Riels per bag. The fanners were better of. 1,471 hectares of land were extended mainly in Boeung Roung, Ses Sor and Kep. The extension did not covered Boeung Tuk and Troeuy Koh. On the contrary, salt farmlands in Kompong Trach were decreased of about 125 hectares. It was due to low quality of salt, lack of infrastructure and far away from Kompot provincial town.

Table 1. Shows land coverage and capacity of product

N	**Location**	**Coverage**		**Production**		**Numbers of farmer group**		**Distance to Kompot town**
		1995-96	1997-98	1995-96	1997-98	1995-96	1997-98	
1	Boeung Roung I + II	1,271	1,452	20,000	54,795	26	51	3
2	Ses Sor	300	562	7,070	18,349	13	23	6
3	Boeung Tuk	320	320	5,000	9,532	5	5	8
4	Troeuy Koh	990	990	24,000	34,551	30	60	7
5	Kompong Trach	540	415	14,000	11,589	13	6	45
6	Kep	677	830	6,000	22,953	10	17	25
Total		3,098	4,569	76,774	151,769	97	162	

Loan was given proportionate to size of product. Repayment was based on instalment when salt was sold. Loan disbursement was provided by phases:

30% during preparation prior to production
20% during preparation
50% during salt collection

Some farmers have sufficient capital, some got loan from banks or private loaners. Although they do not needs financial support from the Company they have to pay tax the Company worth of 1, 000 riels per bag. The Company, then, pay tax to the government worth of 950 riel per bag.

1.2 investment on farmland infrastructure

a. **Selection criteria for new farmland by farmers are as follow:**

- low cost of land and easy to clear
- close to the sea or canal that lower the cost of irrigation of pumping

- low graded slop with sandy
- easily accessible with good infrastructure

b. Forest cleance on state-owned land

Forest was freely cleared under ignorance of local authorities at village, commune and district level. Farmlands in Kompong Trach, Kep, Ses Sor were issue land ownership titles by the authorities to the farmers 25 percent of farmlands were issued titles at district level and land survey was done by district office of geography. At present, there ins on detail law on coastal environmental management and is lack of enforcement and dissemination of existing law resulting land clearance extended downward to the beach especially in Troeuy Koh, Angkor Kep and Ses Sor. Selling and buying of land in these areas were considered legal.

c. Land price and clearance cost:

- it cost one to two million Riel per hectars of land for new area.
- price is much more higher for existing farmlands. It varies from four to twenty million Riels dependence on location, production capacity, and quality of salt. The most expensive land is located in Boeung Roung I.
- The cost of clearance varies from one to the million Riels per hectare of land depending on how thickness of weeds/vegetation are. The cost is increased up to 5 million Riels for thick forest areas.

d. Production yields

- It varies from 10 to 20 tones of salt per hectare of new farmlands in the first two years.
- It varies from 20 to 35 tones of salt per hectare of old farmlands.

e. Labor fees and profit making from production

At present, there are approximately 4,000 people (3,200 people in 1995) involved in salt production. Labor wage are as follow:

- Skilled workers receive 200,000 Riels per month
- Security guards and soil compacted workers receive 4,000 to 5,000 Riels per day
- Salt carried workers receive 3000 Riels per day
- Salt packaged workers receive 100 Riels per bag
- Salt porters from warehouse to truck receive 150 to 200 Riels per bag.

Per hectare of good farmland can make net profit of about 4,000,000 Riels that is 3 to 4 times higher than that of rice product.

There are .... farmers divided into 162 groups including

- those own faffi1land less than or equal to 5 hectare are...11...1. %
- those own faffi1land more than 5 ha but less than or equal to 20 ha are 47... %
- those own farrnland more than 20 ha but less than or equal to 50 ha are. .29... %
- those own farrnland more than 50 ha but less than or equal to lOO ha are...9.2. %
- those own faffi1land more than 100 ha but less than or equal to 200 ha are 3.1 %
- those own faffi1land more than 200 ha are 0.6 %

1.3. Marketing aspects

1.3.1. Local and external market demands

Base on existing data shows that Cambodian people consumed of about 10 grams of salt daily. Hence:

- For 12 million people it requires 43,800 tones annually
- For fish salting and other manufacturing it required 30,000 tones (in 1995)

- For animal raising it requires 10,065 tones (in 1995)

Therefore, salt consumption annually in Cambodia is approximately 83,865 tones. In 1998, Cambodia produced about 100,000 tones of salt; therefore, there was surplus of about 20,000 tones. In 1999, the production was increased up to 150,000 tones of which it loses milting of about 40,000 tones. Thus, for 1999, the total salt product was 130,000 tones. There are 50,000 tones of salt available for this fish season.

There was a big concerned over product that over market demand by the Company. In addition, salt that was produced locally could not be exported abroad due to lack of iodine contents and the quality did not meet international standards for exporting goods. Paint factory also requires salt for mixing. There is possibility to export animal, salted fish, fish source and soybean source that is, in turn, required salt. However, the government has not yet taken any action to promote cross-bordered trade among other countries.

Cambodia has not been able to manufacture canned foods and drinks that require salt. Obstacle in exporting and no intervention from the authority could regenerate unstable market price that effects on income of the farmers. Farmlands will be abandoned as experience in Kompong Trach. Again, how can we make use of our coastal zone?

1.3.2. Distribution

Salt Federation (PHEAPIMIX) is loaner, price regulator with agreement from big farmers, salt collector, and salt disburser to wholesalers and retailers. From one seller to another they can make profit of about 2,000 Riels except sometime price is fluctuated casing profit much higher or less. Some businessmen kept salt waiting for good price to come and then sell it.

It is very common that selling salt to middlemen based on credit. Payment was based on instalment and it could be paid only when salt was sold out. Sometime debtor disappear, however, it was rarely happen. Most of clients are fishermen, ice factories, ice-cream factories, and animal raising farms.

1.3.3. Pricing

There was a significant market demand for second quality salt. It was sold 10,000 Riels per bag in Kompot province. The price is increased to 13,000 Riles in Phnom Penh, 15,000 Riels in Posat and 17,000 Riels and 18,000 Riels in Battambang and Bantey Meanchey respectively. The following shows price variation according to locations and from production cost to end-users:

- Production cost is 5050 Riels per 70 kg bag (real cost is 3,000 to 3,500 Riels. when exchange rate was 3,400 Riels equal to one US dollar)
- Tax, administrative and other miscellaneous expenses 950 Riels
- Profit for the Company 2,000 Riels
- Profit for the farmers 2,000 Riels

Therefore, selling price from the company is 10,000 Riels per bag. Transportation and condition of road strongly effects on market price. For instance
From Kompot to Phnom Penh cost of transport is up to 1, l00 to 1 ,500 Riels per bag (for big truck with trailer that can load 560 bags)

Cost for packaging is l00 Riels per bag
Cost of bag is 200 Riels per bag (imported from Vietnam)
Cost of loading 150 to 200 Riels per bag
Warehouse renting

1.3.4. Incomes

84,000 tones of salt equal to 1,201,200 bags of 70 kg.

Total cost (sell to market)	3,600,000 USD/year
Profit to company	600,000 USD/year
Profit from transport	400,000 USD/year
Profit for biggest farmers	35,000 USD/month
Profit for smallest farmers	250 USD/month
Profit for wholesaler	450 USD/month
Income to the government	300,000 USD/year

1.4. The Main Problems in the National Salt Market

I. An inequitable share out of the Cooperative societies salt purchases among the producers

The way cooperative societies have purchased salt from producers has always been unfair and unbalanced. Actually the purchases have always been to the advantage of the big salt producers being themselves cooperative members.

A situation which has obliged small and middle salt producers either to look for commercial outlets by themselves or to create their own channel of distribution. Being Left apart, are those who live in producing areas remote from the capital of the Province (Kep, Kopong Trach), as transport cost makes the selling price higher. Many times, the salt cooperative has not kept its promises to develop the access infrastructures, producing thus, both discontentment and animosity from part of the producers who decided to sue about the cooperative society Monopoly and its repressive and unfair practices.

2. The Salt overproduction and the export difficulties

An annual overproduction of about 200,00 tons added to an inequitable collection of the salt production at the expense of the small and middle salt faffi1ers, are factors which may generate both upheavals and a commercial instability along with the fall of the salt price. In that case, the first victims would be the producers themselves and the cooperative society.

Attempts to export are not new, but so far, they have failed. This is due first to the product quality. Indeed; the Cambodian salt quality has a humidity rate of 5.8% which is relatively high compared to the international standard rate of 4%. And this is a non iodised salt.

Second, salt export means high quotas and a capacity to supply regularly the ordered quantities, which is not the case in Cambodia.

3. The negative consequences of the cooperative society Monopoly

The Cooperative has regulated the use of an appropriate credit system and stabilized the price of the salt in the local market. But, in response to the overproduction problem and to that of the inequitable collection of the salt production, it has failed to bring down a current high credit rate of 39,6% and maintain stable prices over a long period of time,

Therefore the small and middle salt producers have been trying to sell the salt production on their own and find also another alternative for a cheaper credit rate. Despite their efforts, they have come up against the local authorities who act in complicity with the cooperative society by ensuring and controlling the distribution monopoly.

Although monopoly is unconstitutional, it is authorized by the Cambodian government under certain conditions:

An equitable salt collection among producers, and stable and competitive prices should be applied to this strategic production.

A series of conditions which obviously have not been respected**.**

Probably Less exposed are the big producers who, as cooperative shareholders, have an important share capital, and make consequently a double profit. The big producers are great experienced professionals regarding the salt trade market. They have their own channel of distribution, their own means of transport and for some of them, they are oil station owners,

15. Conflicts of interests at the commercial level.

- **Between the cooperative society members**

In 1997-98, the atmosphere was tensed, after the murdering of one of the cooperative general managers killed for his discovery of an internal corruption network. Today the cooperative running has gone back to a more noffi1al situation. with the coming of highly experienced big producers. Nevertheless the cooperative society is currently facing other difficulties with the overproduction problem.

- **Between the cooperative society and the small and middle producers**

The latter, living in remote producing areas, have been complaining about the monopoly practices and an inequitable collection of their production. However, The conflict has disappeared since they have been allowed by the cooperative society to a direct selling of their production as long as they would comply with the cooperative formalities and pay, for each salt bag, 1000 riels of which the sum of 950 riels is expected to be paid back to the State. Anyhow, there are producers who have felt unsatisfied and have expressed some doubts about the validity of the payment, fearing the money might loose its way before being collected by the Government.

- **Between the salt distributors**

As they sometimes don't hesitate to break prices to win the market over their competitors.

1.6. Suggestion to improve the salt trade system

Normally, It should come to the Chamber of Commerce, along with an efficient State intervention, to improve and introduce a codification of the salt market, which is not case now.
However, the situation could get improved by the following points:

- The establishment of an appropriate credit system allowing the small and middle producers to have a sufficient amount of working capital, with a maximum credit rate of 15%.

- The creation of a local chamber of commerce with a capacity of control over the cooperative society management, thus reducing the production costs and ensuring a more equitable collection of the salt production.

Commercial and professional institution laws should be developed and enacted by the State to cover the operating aspect of the institutions. In addition, the State should directly or indirectly stimulate the conducting of researches to improve the salt quality and meet the export quality standards.

Regarding the overproduction problem, both the State and of the Chamber of Commerce could help to make it decrease by developing export markets such as the foodstuffs preservation or cattle rearing activities which are high salt consumers.

The coming development of the road and railway network will reduce the salt transport cost of the remote province of Kompot, thus making its salt production more competitive than the salt produced in the countries bordering the province as Vietnam or Thailand.

1.7 Commercial advantages and disadvantages of the Cambodian salt production in regional market

The Competitors from the bordering countries:

Vietnam

The Vietnamese salt production has more impurities and a lower density than the Cambodian production but its price is cheaper. Moreover, at certain periods of time the Vietnamese production can take market shares in Cambodia, as for instance during the fishing season in the Mekong river. As they have a direct access by the sea, the Vietnamese ships are able to supply Cambodian floating villages which are big salt consumers (fish preservation, .condiment use).

Thailand

The salt Thai quality is a priori considered to be better.
The Thai prices are nearly the same as those prevailing in the Northern Cambodian provinces which are far from Kompot. But, the bad quality of the RN5, being in a state of disrepair, makes the transport cost higher.

In the bordering provinces of Battambang and Bantay Meachey, the Thai salt price is sometimes very competitive because of the Thai smuggling transport of alcohol and luxury goods into Cambodia which are hidden into salt bags to avoid the customs taxes. Once the goods have been sold, the remaining salt is sold, in these provinces, at a very competitive price (nearly its cost price) by the carriers.

Other countries: salt imports from other countries have no real chance to take substantial local market shares in Cambodia. Today Cambodia is able to produce salt of an equivalent quality which once put in a nice packaging, could be sold at a 50% lower price on the home market. Comparison with other Cambodian produces.

Salt is 3 to 4 times more productive than rice cultivation and nearly twice than the fruits trees production. Nevertheless salt remains less profitable than palm oil, rubber or manioc production.

4. Environmental Impact

4.1 Mangrove forests and salt farms

As said before, since the restructuring of the cooperative society, the small and middle producers have got now enough funds to develop a 1,471 hectares land extension for salt production.

Those new potential producing areas are mainly:

- the expansion of the salt farms over adjacent paddy fields.
- the small inundated mangrove forests.

Here, there is no over exploitation of the mangrove forests for charcoal production, which is in high demand in other south east Asian countries, as the mangrove forest is not viewed by the producers as suitable to be converted to producing areas, because of the bad quality of the soil (dirty and muddy). Actually, Producers are more likely to seek for lands with natural and clean sand. Moreover, the costs for land deforestation are quiet substantial, generally higher than the land price itself.
Generally, The exploitation of the mangrove forest areas for salt production is reportedly more the consequence of an extension of the salt farmland located close to the mangrove forest. There is also a speculative purpose, as these seaside lands are expected to yield a substantial increase of value in the future. Nevertheless, this is not a general trend.

Framer salt farmland

Globally, they have preferably developed paddy fields converted to salt faffi1land or exploited the foffi1er salt faffi1land which had been left for a long time.

4.2 Producers' awareness about environment issues

The salt producers are not even conscious of the significance of the mangrove forest protection and that of the biodiversity conservation, necessary for the survival of fish species. Indeed, the mangrove forest and the wetlands are more perceived as spawning grounds for mosquitoes and the harvesting of fish and shrimps in the inundated forests, is considered as an activity. of low profit.

They are further more concerned about the climate variations; more specifically about the sunshine duration which is important in the crystallization process, as the consequences have a direct economic impact on the salt production.

Whereas a rainy weather affects badly the salt production, on the contrary drought has a considerable increase impact on the salt yield.

As many other socio-economic groups in Cambodia, the salt producers are nearly not informed about the environment protection impacts on the middle and long term community development, and therefore feel more concerned for speculative short term profits.

While in 1998, following a big period of dryness there was a miraculous 50% increase of the production, on the contrary, in 1999 there was a 40% lost of the salt kept in stock, consequent upon torrential rains and flooding, For some producers, the flooding consequences resulted to be catastrophic as part of the infrastructures were spoiled.

Nevertheless, the climate variations and its consequences have made the producer become a bit more sensitive to environment issues. Therefore now, in the prospect of some impact on the climate regulation, some of them say they are ready to participate to any action related to environment protection.

III. LEGAL AND INSTITUTIONAL ASPECTS

1. Legal and Institutional Framework

Since the salt production has been categorized as a mining resource from the sea, it is then, under the supervision of the Ministry of Industry Mines and Energy. To obtain a Salt trading license, the cooperative society should comply with formalities at different administrative levels. The approval process commences with the district authorities, goes to the Ministry of Industry Mines and Energy and then onto the Ministry of Commerce, the Council of Ministers and the Prime Minister. Sometimes the process happens to be in reverse order, commencing with the Prime Minister's approval, as for "Pheapimex Cambodia Salt Cooperative". Once the license has been granted, the cooperative society is required to comply with principles developed by the Ministry of Industry, Mines and Energy and the Ministry of Commerce:

- Developing and improving the infrastructure of the salt fields.
- Teaching of techniques for the quality improvement of the production (as for instance the iodine process).
- Granting loans on a voluntary acceptance basis
- Ensuring the salt purchase among producers and find commercial outlets within the country.
- Arbitrating disputes among salt producers.
- Ensuring competitive market price and contributing to develop the producers' purchasing power.
- In case of no compliance with those principles, the license validity should be suspended.
- The license validity is 99 years.

The implementation of the above principles is reportedly weak.
There is no watchdog assessment from the local institution to improve gradually the cooperative societies management capacity. The motivation for surveillance and enforcement and morale are reportedly low. as local Institutions staffs are more concerned by the bribes they received from the cooperative societies. Weak institutional capacity to manage and monitor compliance with the license agreements have generated protestations from producers against an economic monopoly which is only trade profit oriented and corrupt.

The World Food Program agency has implemented a program in the Kompot provinces to develop the salt production quality, by .providing a technical assistance for the iodine process. Yet, so far there has been no regulation for regular controls and follow up of the process by the local authorities.

Chambers of commerce have been created in Cambodian provinces to enhance the local trade, develop the production, find out markets, provide technical and management information. As such, there is not yet a chamber of commerce in Kompot Province.

The Chinese community association from the province of Kompot has been playing a significant role in the business and trade relation development and Chinese tradition preservation but its development capacity has not been extended beyond a friends and family network.

2. The common property resource concept

The common property concept is something very specific to salt farmers as it does not occur in the other agricultural communities. The volume and quality of the salt production will depend on the sunshine duration and intensity. Actually the seawater evaporates in the sunshine and progressively develops a higher salt concentration rate in the paddy fields water until complete crystallization.

The salt fanners generally consider the sun, seawater, and the irrigation system (either natural or artificial) as common property resources. Presently, salt fanners have little awareness concerning the role played by the mangrove forest ecosystem and the significance of its conservation and therefore are unaware of the environmental adverse impact of the farmland extension on the mangrove forest area. Therefore it would be useful to initiate campaigns of information on the environment improvement and preservation. Because if they have a better understanding of why actions should be implemented to preserve the mangrove forest biodiversity richness, they would participate more effectively to protect these common natural resources. In addition, A sustainable fishing development would impact on salt consumption.

Moreover the inundated forests are not an appropriate for salt faffi1ing as the soil is very muddy and the nearby seawater impurities impact adversely on the salt production quality. Therefore, south to Sis Sor, Many hectares of former salt farms close to mangrove forests do not produce salt anymore.

3. Land tenures in the salt farms areas

Today only 50,000 land titles of an estimate 5,000,000 developed parcels have been issued by the Land Titles Department. In Kep and Kompot provinces as in most parts of Cambodia, only temporary certificates of land use and possession have been issued to farmers by the commune and district land titling offices.

Land transactions have been made in different ways:

- By land transactions made by tacit agreement between sellers and buyers.
- By concessions of land awarded either by Khum or Distric chiefs to a maximum surface of 5 hectares, or by provincial governors mainly for concession of urban land and to an extent of 2,000 m2.
- By public land occupations once cleared and land boundaries clearly demarcated.

The price paid to officials for the land registration of small number of agricultural lands resulted to be much more costly than official fees. Nevertheless, the land titles granted to these lands are not definitive.

Actually, there have been different ways of proceeding to legitimate the land possession.

- The land possession recognition from the neigh boring property owners by an oral mutual agreement. This is the case for most of the lands, which have not yet been officially registered.

- The land transfer recognition has also been established under a private agreements between sellers and land purchasers and witnessed by two people.

- The recognition by a document attesting of the land possession which has been issued and signed both by the Village and Khum chiefs and sometimes by other administrative authorities according to the land category.

- The recognition of land possession by a land title which legitimates it at a upper level, as land measures have been taken and the registration approved by the District Land Title Department Chief and signed by the local Cadastre Department (Phumbal Srok).

- The issuing of certificate of ownership card has been successfully experimented with 3 pilot communes (Kandal Stung, Bati and Prey Nup districts). Therefore the National Cadastre Department has planned to implement gradually and with pragmatism this land titling system.

The recognition of most of the salt lands has been unofficial and only legitimated by a document issued by the khum chief as evidence of the farmer's rights. As this was a fast and cheap land titling process. Recently the local Authorities along with the local Cadastre Department have allocated land record books to fanners from Kompong Trach, Kep and Ses Sor, as recognition and legitimacy of their land rights.

Comparatively, the salt farming activity has generated a relative less substantial number of land disputes problems than for other land categories. The farmland expansions seems to have decreased mainly as a result of the salt overproduction problem. Thus making temporarily the threat of the mangrove forests degradation less significant.
Strategies for an efficient and sustainable preservation management of the mangrove forests ecosystem, are:

1. Developing and launching awareness campaigns to provide the communities with a better understanding of why conservation actions for mangrove forests have to be implemented.

2. Developing and Preparing a formal plan of land use and clearly delineating the mangrove forest areas.

3. Making the communities aware of the land and environment laws, presently in amendment process, and of the penal law involving penalties in case of non compliance should precede the awarding of certificate of owner.

4. An equitable enforcement of the Environment law.

4. CONFLICTS AND RESOLUTIONS

4.1. Dispute among small and big salt producers

As its mandate expired in 1996, the former cooperative society whose a majority of its members were big producers, failed to renew it, lacking the sma11 and middle producers voting support.

The reasons for this were:

- Unfair and unbalanced allocation of the ~anted loans, above all to the disadvantage of the producers from the remote areas (Kep, Kompong Trach). Their transport difficulties, to sell their production, due to dilapidated roads, were ignored by the former cooperative society

- Commitment to enhance and develop the roads and canals infrastructure was not implemented.

- An inequitable salt collection process which favored the big producers, as they were important cooperative shareholders, and also a small group of producers tightly linked with the Management ring.

In response to this, the other producers attempted then to create another cooperative, with their own transport network and distribution market.

Now, the current cooperative society has allocated loans satisfactorily to the majority of the producers. In 1998, 100% of the producers were granted adequate loans. However, in 1999,an estimated 18,5% of them did not renew their request for loans, protesting against the cooperative price policy and some other recurrent problems due to the cooperative mismanagement, as the unbalanced collection process and the transport difficulties.

Conflicts of interest among producers have not disappeared since the existence of the new cooperative. So far, only the requirements of the big producers and those from the nearby production areas (Boeung Roung, Boeung Tuk, Troey Koh and Ses Sar) have been satisfied by the cooperative management policy. Not being considered as production areas of concern, Kep and Kompong Trach have been left apart.

Alternative solutions have to be considered to redress the situation and create a system of governance for an efficient and sustainable management:

- Either, the authorization to create another salt cooperative related to the salt production from Kep and Kompong Trach areas. And, nevertheless the possibility to develop between both cooperatives, commercial links through a Cooperation draft status which should be developed with the assistance of an economist consultant and that of an accredited business lawyer, in the prospect of a sustainable management quality (a stable and competitive price policy, .a social balance among producers, and the export markets promotion).

- Or, the enhancement of the current cooperative society along with a watchdog assessment to provide a tool which would ensure the compliance with the license status and make the cooperative society able to address effectively the overproduction problem and develop the salt quality standard.

However, we should admit that in the short term, the second solution could not be easily implemented. As presently the producers efforts are focusing on the selling of the past year overproduction before the coming of the new season. Normally the season cycle begins on November, but it has just started at the end of December 99.

4.2. Conflicts between investors and producers

There is not yet an appropriate financial body such as a business b, the major part of the loan system is managed by investors acting simultaneously as bankers, business managers, and traders. Those investors fix their profit margin rate and in no case are held responsible for losses due to the cooperative mismanagement. They never try to settle difficult issues generated by the cooperative system, as they are only profit orientated.

The corrupt management period between 1997 and 1998, cased troubles both within and outside the cooperative society. A period during which the cooperative capital was cut along with the small producers' capital and profits while at the same time, a few managers' profits were significant, although their capital share in the cooperative society was cut by 30% before they were forced to dismiss from their post of manager.

Corrupt management practices had a killing impact, as one of the cooperative managers was gunned down in broad daylight for having discovered/surfaced evidences against cooperative managers. As part of their practices; the corrupt managers used to request a 5% commission on the sale agreement concluded with closed relationship salt producers. They also used to transport their own commodities without paying any taxes or overheads to the cooperative society. At that time the cooperative accounting system has obviously suffered from a lack of transparency.

Since the PHEAPIMEX Company association with the big producers who have a great deal of experience in the salt production management, they have recovered a relatively stable situation.

The cooperative management tends to favor mostly the big producers who make profit from the production, the trading and most of the time from the distribution and transport.
The partnership is however not so advantageous for the 51% cooperative shareholder, the PHEAPIMEX Corporation which has no salt farms and sees its profit margin going down progressively. At the end 1999, the PHEAPIMEX investor has nevertheless a 20% gross profit margin.

The threat of the small salt farn1ers expressing a strong dissent with the cooperative practices had been growing sensibly Therefore repression actions were taken against producers who ventured to sell their commodities outside Kompot without authorization and compulsory payment to the cooperative. These attempts made by producers who were tired to wait for the cooperative to buy part of their surpluses, were stopped by police intervention. The case was brought up to the senior government officials and even come up for trial.

Despite of this problem, the past 2 years balance sheet of the cooperative for the corresponding fiscal periods has been positive and the improvement of the producers' standard of living in the meantime has been noticeable. Nevertheless; the cooperative society has still failed to solve ever present conflicting issues as the inequitable salt collection in the different production areas, salt production of no standard quality, poor road infrastructure making difficult for the remote production areas to sell their commodities given the high cost transport repercussion on the selling price.

According to professional observers, the future outlook for the salt farn1ing activity would be rather gloomy, because of:

- the downward trend of the profit margin,
- the stockpiling of the surpluses from year to year (20,000 tons per year),
- the unfair trading of the illegal salt smuggling over the fishing season mainly from Vietnam.
- the dissenting movement of the penalized salt farmers from the remote production areas (mainly Kep, and Kompong Trach) which might entail the fall of the market price.

Most of the investors with no salt fam1s start being weary of the constant changes and the gloomy outlook tends to discourage part of them. Therefore some of them are ready to sell their shares.

The current cooperative management capacity will not succeed in overcoming the future big challenges. The cooperative needs to be back up and supported by both the Government and Institutions such as a local Chamber of Commerce which so far are non-existent.

The difficulties to overcome by salt producers as for other economic agents are the reflection of the general problems of the current Cambodian economy which as a survival economy needs to be re-structured regulated and become institutionalised so that the private sector may become progressively an efficient and responsible partner in the implementation of a State of law.

4.3. Conflicts between salt distributors

The salt distribution has no regulated framework. Each salt dealer tries to obtain a distribution monopoly in the provinces, and therefore, in order to eliminate competitors do not hesitate to make illegal pressures or to undercut prices up to 50% .

In 1977, the salt dealers were allocated a sole right against a 60,000 US$ deposit payment to the cooperative to sell in the big provinces and big towns as Kompong Cham, Phnom Penh, Siem Reap. A 50,000 US$ deposit was to be paid for the rest of provinces around the Tonle Sap region. And relating to the other provinces, an average amount between 30,000 and 40,000US$ was requested. This system of exclusive rights entailed the price explosion, and gave opportunities to small dealers in close relationship with salt producers, to sell illegally at a more competitive price. Some of them took the opportunity to sell Vietnamese salt illegally imported via the Mekong river with big vessels. The situation was out of control and therefore the cooperative had to suppress unilaterally the implementation of the exclusive right of selling by paying back the deposit payments.

Salt dealers have tried to undercut the strong competitors by selling with broken prices or offering credit payment facilities to their clients. But extension of the periods for part repayments are more and more common meanwhile the indebtedness level becomes significant. A situation which consequently has cut down the margin profit of the dealers. In order to remain competitive, dealers have been trying on one side to strengthen the loyalty of good clients and create a channel of retail outlets while on the other side they have been negotiating buying price directly to the salt producers. And for some of them, they ha\'e been obliged to buy salt farms as producer-distributor.

Some of them have their own transportation means and their own gas stations.

The current distribution system along with a wild competition and a lack of regulatory framework could bring the elimination of a big proportion of independent retailers and small producers from remote areas as showed in the table No. 1 (the Kompong Trach producers' number is decreasing meanwhile the number of other producers is increasing or remaining steady) .

It is up to the regional or local Chamber of Commerce and to the Government to establish a regulatory framework to improve the distribution management and regulate unfair competition so that the small producers and retailers employment could be maintained.
Improvement of the management capacity could occur within either formal or informal associations acting as syndicate so that the *systems* and networks could be properly and progressively organized and developed.

Anyway, big salt producers and dealers have a significant role to play to challenge and overcome difficulties linked to salt trade and distribution. Therefore they need to be backed up and be more aware of their responsibilities. Management improvement is needed to maintain a steady market, put a curb to the overproduction tendency and also develop the economic opportunities connected to the salt production as salt fish, food processing and animals raising destinated for the exportations.

IV. DEVELOPMENT AND IMPLEMENTATION OF NEW INSTRUMENTS

Recommendations and procedures for a **sustainable development** of the **salt economy:**

1. Launching of a public information campaign to make the communities aware of their responsibilities on the environmental protection issues.

2. A precise land use mapping process according to the cadastral map with the input of the salt farmers communities. The local land development office and the cadastre department would be entitled to authorize any change of the land use map.

3. Provide land tenure security with certificates of ownership allocated gradually to communities, starting with the salt farms which are adjacent to the mangrove forest area.

4. Set up A regional (coastal zone area) or provincial Chamber of Commerce with an adequate status and a clear and well defined role to address the following issues:

   - Improvement of the salt standard quality by reducing its humidity rate to less than 4% and adding systematically iodine to the salt production.

   - Bringing the overproduction down by developing salt export opportunities and promoting export trade for breeding and food preservation business.

   - Creation of a financial body with professional capacity.

   - Development and enactment of sub-decrees and regulation to cover the operational aspect of salt collections. .

5. Restructuring of the salt producer federation

The salt economy development is precluded by an inadequate financial system, the limited management capacity of the cooperative societies and a lack of regulations.

Presently, a bunch of salt investors are playing a triple role, acting as bankers, managers, and finally fulfilling a federative role as they fix the management rules. This triple responsibility has significant consequences on results. Their formerly expected profit margin has been gradually decreasing as the annual credit rates of 18% is now equivalent to credit rates in the private banking sector. Actually investors should have only one role to play, that of banker.

From a 2,200,000 US$ invested money only 35% has been repaid two years later. Currently, there is a remaining stock of more than 50,000 tons from the last two years production in addition to the 20,000 tons of surpluses from the new season salt production occurring next may. A surplus which could supply the salt consumption in 2001.

Currently, there are significant risks of crisis in the salt economy activity in which small producers are expected to disappear after a turmoil period, meanwhile the salt selling price will be reduced to its minimum (cost price level). Therefore it time yet to develop and implement the restructuring of the salt economy activity which will require a greater involvement and more responsibilities from the big producers who has become major players in the salt economy. The community development of small and middle producers could be promoted by gathering them according to their production areas. Salt farmers would belong to a real federation of salt producers established with a regulated status and approved by the majority. A restructuring policy which should be backed up altogether by the Government, the Chamber of Commerce and a private or semi public financial body.

The improvement of the salt economy activity would benefit not only the salt producer community but would also be part of the economic recovery process in Cambodia.