

**Perspective of the Contract Hire Systems
in View of the Effective Machine Use Mode
—In the Case of *Mooban Ton Maka*, Rachaburi—**

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Abstract

A distinctive feature of the contract hire systems has been the attempt to understand the process of technology acceptance under accelerated change of mobility at a frontier in western part of Thailand. But it has to be noted that the people's mentality varies from one place to another. And this mentality-related components keep strong bonds with the mode of technology acceptance. Based on such recognition, this paper argues that how do local dwellers manage the farming practices utilizing the uniquely-operated contracting systems. In the study site, *Mooban Ton Maka*, *King-Amphur* Bankha, *Chanwat* Rachaburi, migration took place steadily about 30 years ago. As a destiny of the frontier, this mobility evidently reflected the Government's development policy. And obviously, each migrant has poor level of agricultural technology, and hence they tried to absorb indispensable knowledge from the dwellers already settled a long time ago or his/her relatives' network. Local dwellers felt that the contracting service is one of reliable partners to implement site-specific farming practices with reasonable expenses. Dynamic activities for both sides, i.e. farmers and contractors, were investigated and proposed the ways and means for further development. Faced with the difficulty of securing abundant cheaper workforce and enough operating capital, the local contractors can operate more flexible than the big-scale contractors, whose fixed cost are so high.

Keywords: contract hire systems, Thailand, settlement community, rain-fed

1. INTRODUCTION

The Lam Phachi watershed, which flows into the Greater Mae Klong river basin, has so far been developed enjoying the auspices of the government's financial support for the period of 90 years or more. However, its progressional speed associated with physical and social development was envisaged slower and unaccountable progress due to detrimental traits caused partly by specific topographical conditions, and hence this area deemed as a frontier. It must be noted that this area has long been practiced the rain-fed farming in growing rice, pineapple, cassava, corn and others. But in accordance with the presence of modern technology, local people has likely started to adopt machines in order to secure higher productivity. This area is also categorized as a settlement community where migrants from a certain limited neighboring areas have settled with some hopes roughly 25 years ago.

When it comes to the machine furnishing for individual farmer, the contract hire systems might obviously gain a comparatively-superior substituting status for farming management. For such a behavioral characteristics, social consciousness involved in the technology acceptance may play considerably essential role to describe the causes and countermeasures for the sake of establishment of desirable machine management mode in future.

This paper argues that the framework in relation to technology acceptance affects to the agricultural mechanization modes including contract hire systems. The case material is from

local dwellers, who are migrant farmers undertaking their living activities in and around their home. They are a good example of an agrarian society that does not need machine's ownership for the advancement of livelihood. The question is how do they do their farming operation on schedule? What, if any, are the ways and means of the existing contracting systems. Selected findings will be highlighted for this preliminary study which might lead to further detailed field survey in the not-too-distant future.

2. DESCRIPTION OF THE STUDY SITE AND METHODOLOGY

2.1 Study site

The resilience and persistence of the settlement community in view of agricultural mechanization has not, until recently, been an orthodox topic of discussion. Under the influence of globalization approach, as a whole, the general trend in scholarship was to look at how efficient and economic mechanization would identify the conditions of exploitation and exacerbate impoverishment, dependence, and ethnic degradation. This field study attempts to describe the current situations which happened at the remote place where local dwellers are mainly engaged to the farming practices totally depending on the contract hire systems.

The upper-stream area of the Lam Phachi river in Rachaburi, western part of Thailand, is embracing several tributaries. One of tributaries composes of watershed of the Huai Tha Khoei river, and the study site located at the community of *Mooban* Ton Maka, *King-amphur* Bankha, *Changwat* Rachaburi. Figure 1 indicates its geographical information. In other viewpoint, its location can be described referring as a nearby K25A observatory point designated officially by the Royal Irrigation Department.

Major crops cultivated at the gentle slope field include sugarcane and cassava, whereas pineapple at the steep slope field and vegetable at the flat field are predominantly grown. Several years ago, the conversion from forest to farm land has drastically been progressed. Accordingly, the pineapple field which has newly developed faced severe damages in the form of soil erosion. What is more, paddy fields were scarcely existing even at the space of low-lying depression with gentle gradient from the elevated periphery to the bottom. In particular, it is of interest to note that no farmers have been recognized in engaging rice-growing cultivation practices in this study site.

2.2 Methodology

This field survey has been made twice in July, 2001 and March, 2002 respectively. The questionnaire sheet has been prepared to gather basic information through interview mode approaches, or direct access to local respondents.

Items asked at the time of interview include the personal history of both farmer and his/her ancestor, biodata of family members, cropping plants and cultivating acreage, any agricultural machinery owned and their operating hour in the field, history of cropping patterns for the past 20 years, status which depends on the contract hire service, available infrastructure levels, currently-functioning group farming systems and so on. The overall population, the number of farm households, total area of this community were amounted as 270, 53 and 3500 rai, or approximately 560 ha, respectively. The number of respondents was approximately 30 or so, and hence a certain level of reliability can obviously be secured in performing further analysis.

3. MECHANIZED TECHNOLOGY AND AGRICULTURAL MANAGEMENT

The mechanization in agriculture is believed to contribute saliently for the economic advancement of rural community. But some difficulties are inevitably accompanied in telling the worthy components and unworthy ones to farmers in the process of the dissemination of mechanization-related technology. In some cases, farmers tends to furnish fully-mechanized systems, but others may satisfy with humble level of mechanization. Various mechanization levels perhaps seem reflect the necessity to analyze the inherent components regarding human mentality which remains unsolved in academic circles. How can we succeed to explain such an important human behaviors logically? One realistic approach is to pay some efforts in

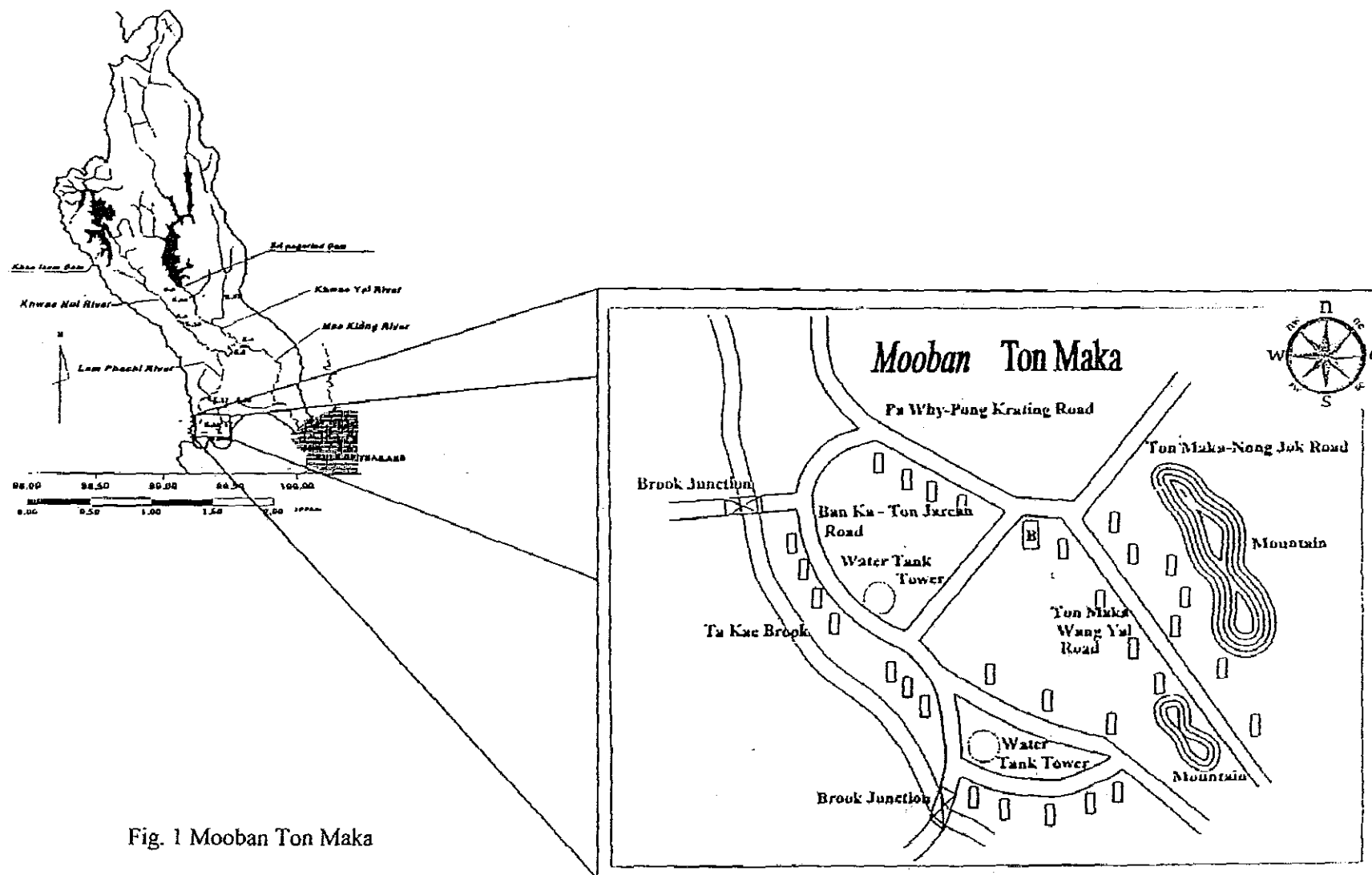


Fig. 1 Mooban Ton Maka

gathering specific data and extracts any significant tendency from them, and then propose some models which are beneficial to the self-sustaining household economy.

Before substantial discussion, current economic situations in Thailand are reviewed as shown in Tables 1, 2 and 3. Table 1 suggests that the rain-fed farming is still practiced in all regions with comparatively higher percentage. As for farm land utilization, all regions fall within the range of higher percentage. This implies that farmers are forced to cultivate lands for the sake of more income.

The unemployment is seemingly taken into account as indispensable indicator to assess the mobility (Table 2). After economic recession in 1997, an unemployment ratio increased once as high as 5.1% in 1998, then decreased suggesting robust recovery. This social factor might keep neutral connection with mobility which affects to the requirements of mechanized power in place of man- or animal-power.

The debt status for individual household is another concerns which are in relation with personal motivation for selecting mechanized power. Generally speaking, farmers tend to adopt mechanized power willingly when they are able to anticipate any profit. On the contrary, Table 3 suggests that most of the farmers keep surprisingly small amount of surplus in producing any profit. Although they are engaging, more or less, the agrarian business, their business scale is so small that they manage to their livelihood by from-hand-to-mouth basis relying heavily on the debt.

About 20 to 30 years ago, one rural community in the vicinity of Nakhon Pathom once embraced many young farmers who possess firm intention in engaging farming practices. Some farmers tried to shift their growing plants from rice to fruit or vegetables due to unattractive income level. Also, in the early morning, a number of day-laborers were

Table 1 Farm land ownership

Acreage (rai/household)	Region (%)			
	Northeast	North	Central	South
Less than 10	20.9	34.5	28.0	31.9
10~20	31.4	26.5	21.9	29.2
20~30	21.0	14.0	17.1	17.6
30~40	10.4	9.1	11.2	9.4
40~50	6.8	5.3	7.5	5.8
Greater than 50	9.4	10.5	15.2	8.5
Mean	25.7	22.4	31.8	23.5
Ratio of rain-fed land	0.84	0.74	0.67	0.92
Ratio of land utilization	0.92	1.20	1.19	1.03

Source: Office of Agricultural Economics, 1999

Table 2 Unemployment status after economic crisis

	1997		1998		1999	
	A*	B*	A*	B*	A*	B*
Bangkok	123,200	3.0	219,500	5.1	151,300	3.6
Central	226,900	3.1	236,200	3.1	157,200	2.0
North	233,500	3.9	252,500	4.0	243,700	3.9
Northeast	80,900	2.0	99,800	2.3	94,700	2.3
South	814,500	7.8	916,400	8.7	770,800	7.2
Total or mean	1,479,000		1,715,400	5.2	1,417,700	4.3

Source: National Statistics Office, 2001

Note: A* and B* indicate the number of overall unemployment and the unemployment ratio (%) respectively.

Table 3 Debt status of farm household economy

Item	Region			
	Northeast	North	Central	South
Debt: D	28,794	29,773	77,464	49,344
Repayment per year: R	14,872	20,531	40,218	16,476
Living expenditure: C	46,503	46,454	90,349	87,597
Overall cash income: T	71,859	68,202	135,926	111,094
Repayment ratio	0.21	0.30	0.30	0.15
Living expenditure ratio	0.65	0.68	0.67	0.79
(R+C)/T	0.85	0.98	0.96	0.94

Source: Office of Agricultural Economics, 2001

recognized waiting factory's coach at the stopping place. One of their destinations was the sugarcane fields at Kamphaengsaen to do harvesting jobs hired by sugarcane factory. Later on, most of the young workers moved lately from their home to the suburbs of Bangkok, and those who remained at the rural community including women and middle- or aged-persons have engaged in miscellaneous small-scale businesses. Currently, rice-growing promoters are seemingly played by the large-scale farmers, or more than about 26rai holders.

In such a manner, the conventional concept of "rice-growing society" *per se* is apparently forced to transform its contents in adapting to the real social changes. This changes took place not only in Thailand, but also in the rest of Southeast Asian countries.

4. RESULTS AND DISCUSSION

4.1 General aspects in particular reference to the contract hire systems

The study site was the area where tropical forests have densely thrived until about 30 years ago. However, after formulation of the settlement policy implemented by the Thai Government, the agricultural development as well as consolidation scheme has progressed accompanying the shift of growing plants in drastic pace.

The original inhabitants were believed to be the Karen tribe. They have traditionally been engaged in slash-and-burn method to produce upland-rice, corn, chili, sorghum and vegetables. With the advancement of settlement policy, they may be started to engage upland cropping system. To perform such an agricultural works, the manual- or animal-power was selectively used in assimilating the technology being popular in the Central Plain. Also, the period of the Karen's settlement coincided all in all with the one of local dwellers of study site. Only few simple farming tools are still used including a sickle for harvesting and a beating flail for threshing operations. The Karen obviously manages their livelihood undertaking free trade with outsiders. The existence of the Karen seems to provide preferable influences to the periphery of community because the Karen believes in their own faith piously.

Selected results of interviews shall be reported in the following section for more detailed discussion.

Almost all of our interviews with farmers brought about similar accounts. We gradually came to pay attention to their specific comments about their current farming practices. Very often they unconsciously expressed a feeling of the contract hire systems. Our feeling is that farmers do not mind the contract hire systems as a technology, but a package of processing unit available upon request. Because of less knowledge of machines, what farmers can do is to place the request directly to a contractor and prepare for the payment. Only business-like relations can be seen among this practices. Therefore, interrelationships between farmers and this particular systems are extremely remote. In due course, during farming operation, there exists less chance in getting familiar with machines and getting down to contrivance.

4.2 Selected findings through interviews

Case-1

Husband 44-year-old, Wife 37-year-old, 3 children

Father ----- Chinese, Mother ----- Thai
Migrated here 20 years ago from Nakhon Pathom

Planting area

100rai (Rented) ----- rental fee: 500 baht/year, Timber culture
5rai ----- vegetable growing (Lettuce, cucumber and Chinese radish)

Cropping history

20 years ago ----- pine tree and corn
5 years ago ----- pineapple

Contract hire systems

Primary tillage ----- 250 baht/rai
Secondary tillage -- 250 baht/rai
Furrowing ----- 300 baht/rai

Prior to migration, they used to grow coconut and chili. They bartered them with local dwellers for rice. Their motive of migration was due to available information delivered from their relatives who have already migrated here. A special emphasis is likely placed to their kinship from the viewpoint of their consequences of behaviors. After settlement, they learnt necessary knowledge regarding farming systems from the neighboring people.

According to farmers, the quality of tillage operation is so-so, just as they expected. They are aware of the soil erosion triggered by the tillage and succeeding soil-engaging operations.

To our surprise, this family began new business which possibly led to the village industry. Since they live at the subsistence level, they need to secure a rice supply as well as cash income. And hence, they determined the division of labor in the household: the husband farms vegetables and the wife makes red-rattan handicrafts. Their primary goal in making rattan handicraft is to meet the basic needs of the household and provide education for their children. Although they did not show any sign in establishing development project, it has been able to sustain such a small business with appropriate improvement.

Case-2

Husband ----- 67-year-old, Wife ----- Deceased, 3 children

Father ----- Chinese, Mother ----- Chinese

Migrated here 32 years ago from Nakhon Pathom

Planting area

23rai ----- Chinese radish, eggplant
50rai ----- pineapple

Cropping history

32 years ago ----- rice, watermelon and pineapple

Contract hire systems

Primary tillage ----- 250 to 300 baht/rai
Secondary tillage ----- 250 to 300 baht/rai
Clearing and renovating-- 300 baht/rai

A farmer was at 32-year-old when he migrated here from Nakhon Pathom. His parents have grown rice and vegetables, and bartered them with local dwellers for rice and pork. He thought this place probably provided more fertile soils.

For field works, first tillage is done for the processing of previous crop's residues and second one corresponds to the conventional primary tillage, and then third one is for ridging operation. Chemical spraying operation is also another one to ask contracting service. This farmer uses sprinklers to meet the marketing competition. His farms locate in flat area, and hence less problems exist in terms of soil erosion.

Case-3

Husband ----- 70 year-old, Wife ----- 59-year-old, 4 children

Parent ----- Nationalities are not identified.

Migrated here solely 10 years ago from Nakhon Pathom

Planting area

68rai ----- pineapple
20rai ----- pineapple (Owned by his wife)
20rai ----- pineapple (Owned by his daughter)
13rai ----- pineapple (Owned by first son)
13rai ----- pineapple (Owned by second son)
13rai ----- pineapple (Owned by third son)

Cropping history

10 years ago ----- cassava and corn

Contract hire systems

For tillage ----- 200 baht/rai

Planting for pineapple ----- 1200 baht/10000 pieces

Harvesting for pineapple ----- 2000 baht/10000 pieces

This farmer behaved so carefully that he decided his migration after confirming the soil fertility beforehand. When he initiated his farming practices, he encountered severe decline of pineapple price. Accordingly, he returned to his home town for a certain period, and came back here once again after confirmation of the price recovery. Furthermore, he owned only few hoes for harvesting. Therefore, most jobs in the field were done by hand.

Case-4 Contractor

Husband ----- 43-year-old, Wife ----- 35-year-old, 2 children

Father ----- Thai, Mother ----- Thai

Migrated here 26 years ago from Nakhon Pathom

Planting area

180rai ----- corn, pineapple

80rai ----- mango

Cropping history

26 years ago ----- corn

23 years ago ----- banana, corn

3 years ago ----- pineapple

Contract hire systems

Machinery in service ----- Ford 5500 tractor (Engine horsepower 100PS, Price 100,000 baht), a 3-way disk plow, a 7-way disk plow

A four-wheel tractor was employed to undertake heavy-duty tillage works. Actually, the contracting hire service didn't result in higher profit as anticipated. Eight workers, who came from Udon Thani by his persuasion, were fully engaging farming practices at his farm, but were ready to help for other households if any extra time exists. He always minds to keep good conditions of a tractor through regular check-up of engine at a repair shop.

He purchased farm lands at the rate of 3000 baht/rai with the external help from bank's loan. Nowadays, this land value raised as high as 70000 baht/rai.

Salient fluctuations of the market price is often dismayed by pineapple growers. For example, its buying price of factory was 5.4 baht/kg in 2001, but 3.0 baht/kg in 2000. What is worse, the middleman seduced to buy them at the rate of 4.6 baht/kg only. In response to this circumstances, this farmer never asked middleman any business matters.

Case-5 Contractor

Husband ----- 47-year-old, Wife, 3 children

Migrated here 10 years ago from Prachuap Khiri Khan

Planting area

1000rai

Contract hire systems

Machinery in service ----- Ford 6600 tractor (Price 500,000 baht),
a 3-way disk plow, a 7-way disk plow

This farmer operated comparatively bigger scale of contracting business in the presence of entrepreneur spirits. He repeatedly said this wasn't profitable because of excessive amount of expenses. Its service charge amounts 250 baht/rai for tillage operation. And the annual

coverage area in service was as much as 400 to 500rai. The service charge was usually paid in kind at the period of harvesting. The motive of this enterprise was coming from the fact that his relatives and colleagues urged him to begin this futuristic business.

Altogether 13 workers, who joined voluntarily from Ubon Ratchathani, were engaging at his workplace, and more 10 or more workers were recruited from nearby community in case business load became tight.

Since he also acts as a middleman of pineapple, his bargaining amount excluding domestic production attained as much as 2000 to 3000t annually.

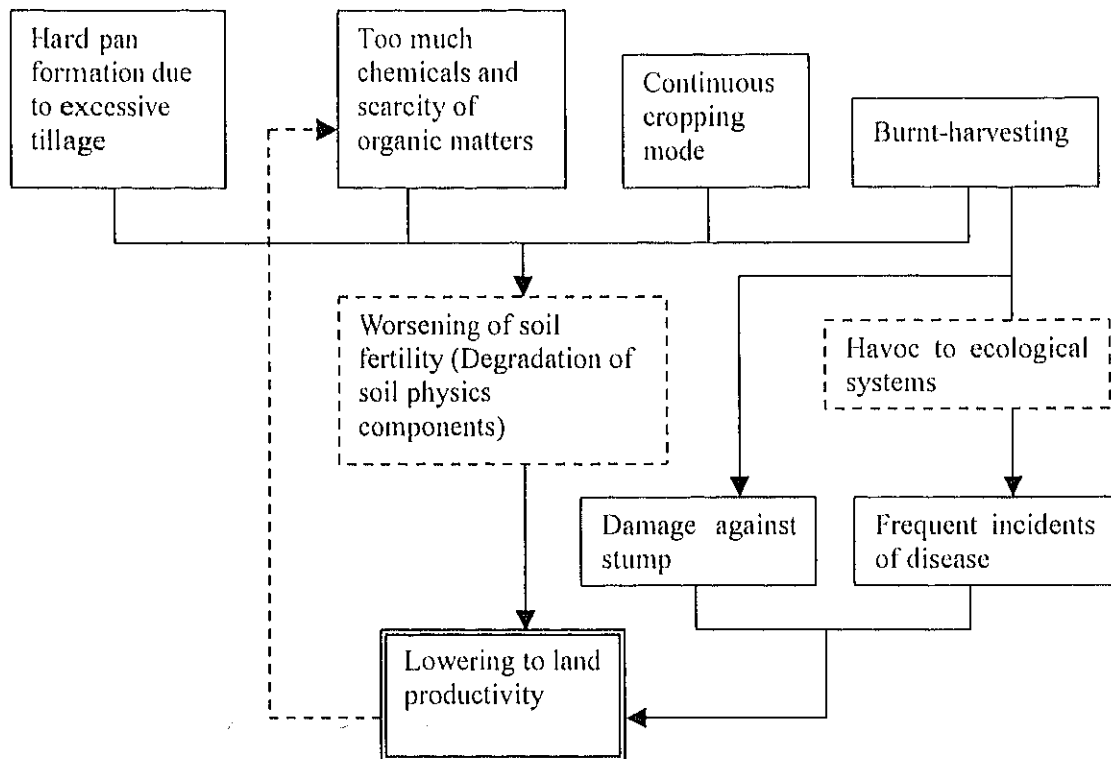


Fig. 2 Interactive factors related to the lowering of farm land productivity

Fig.2 implied the physical problems encountered in the fields. It is of importance to prepare proper countermeasures to implement alleviation of land degradation for which machines occupy significant position in the sense of practical contribution.

5. CONCLUSIONS

As our impression is that current farming systems in *Mooban* Ton Maka are diversified, factors involved in this community have to be identified to achieve further improvement. In particular, as this is a story of migrant community, people's backgrounds are naturally diversified. This suggests that there are some possibilities to establish the cropping diversification which meets to the demand derived from markets. Several essential discussions are to be itemized to streamline focusing points as described below.

1) When this migrant community initiated substantially 25 years ago, only 20 units of households or about 100 persons were found. Among of them, 6 households believed in Christian. Provided the land price is reasonable, some of them might seek new place something different like the frontier because they felt the wear and tear on urban life. In fact, land price was found to be so cheap that the cost of virgin land was 30 to 40 baht/rai. Some community members were educated even at the university and experienced to work at the leading enterprises. Such a rich variety of dwellers' backgrounds, or congregation of heterogeneous members, constituted one of pronounced characteristics of this community.

2) One hypothesis goes that such a community tends to have loose dependence to the technology which used to be unfamiliar in daily life. To furnish nil unit of farming tools at each household seems to be one evidence in explaining this hypothesis. At the same time, they provide a capability to evaluate the field works done by contractors. These farmers also did not follow conventional customs when placing request to contractors. On this occasion, they exclude the commitment of a broker, and place request directly to contractors. This request manner is different compared to other community in Thailand which have conducted field survey last few years. In the process of this decision-making, the concept of rationality putting emphasis to economics can likely be recognized.

3) At the inception of migration, most of the local dwellers were at lower level in terms of individual property. However, after 25 years or so from migration, salient discrimination between the have and the have-not could be identified like a bipolarity phenomenon.

4) The agricultural sector is expected to play more productive role, given its stability to generate outputs as a source of income for the country and to absorb unemployed workers from the industries sector, and in these ways help reduce the adverse impact on society. The rationale for this is derived from the possibility in increasing productivity through development of appropriate technology, and the potential for increasing export products and import substitutes. It is of help to undertake mixed farming as one method of addressing rural poverty and minimizing migration to urban areas.

5) Greater emphasis should be placed to use organic fertilizer in order to improve soil quality, increase productivity and conserve the environment.

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