Changes of Communal Ties among Rice Farmers in Group Farming

- A case of *kelompok tani* in the Muda Area, Malaysia -

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Abstract

This study shed some light on various aspects related to group farming (*kelompok tani* in Malay) in the Muda Area by examining how the degree of communal ties among rice farmers changed through the group organization. For evaluating the present situation and changes of communal ties before and after the formation of the groups, we conducted a socio-economic survey including a guess-who test for the member farmers. The degree of communal ties in each group was examined with special reference to the in-flow and out-flow of technical information among rice farmers. Various sociograms derived from the test clearly showed that the communal ties tended to become stronger after the group was formed, but that the farmers' attitude to the group activities was still ambivalent, reflecting a low degree of concern for organization at the supra-family level.

Additional key words : guess-who test, double-cropping, sociogram, direct seeding.

Introduction

The social structure underlying rice-producing villages in Malaysia, especially in the Muda area, reflects a historically different character compared with that of other countries [4]. In the citation of Afifuddin's work, Ho re-emphasizes that Muda farmers are basically

residing in a 'Canal-based society' and not a 'Village-based society [2, 3]. Almost invariably the traditional irrigation systems are seldom conterminous with village boundaries. In addition, the 'Canal-based society' involves social conditions generated by three different settlement patterns, namely the clustered, the scattered and the linear patterns [1].

Basically, the difficulties in establishing well-organised farming in the Muda Area are closely related to the problem on how the village (or residential) neighbourhood concept can be harmoniously combined with the field neighbourhood concept within the framework of the 'Canal-based society'. As an on-going effort to organize farming institutions at the village level, much attention has been paid to the recent progress of *kelompok tani* (group farming) as a conspicuous example where both concepts are well harmonized. The group is organized by farmers comprising owner cultivators and/or tenants who cultivate rice on a unit area of 20-30 ha of paddy field under similar water supply conditions. Since 1979, MADA has promoted various support programmes with the purpose of encouraging and strengthening *kelompok tani* in collaboration with the local extension offices and Farmers Associations located in 27 localities in 4 districts in the Muda Area. As of 1990, the area where *kelompok tani* was adopted by 327 groups reached approximately 10,000 ha or 10% of the total area.

This study attempts to: 1) clarify the present situation of group farming; and 2) assess the effects of the group organization on communal ties among member farmers.

Approach to the group farming study

Following a general survey on group farming, firstly, we interviewed leaders of the 10 groups selected from a locality called D in District II. Secondly, following the leaders' survey, two groups labelled "M" and "K" in this paper were selected based on the length of the period of the establishment for further in-depth study. It is considered that the length of the period of the establishment may affect the group activities. "M" is a newly organized group while "K" had been established for a long period of time. A face-to-face interview survey with the member farmers was undertaken in March 1990. The questionnaire involved various items on family composition, production situation, together with a guess-who test.

The guess-who test was prepared for evaluating how agro-technical and managerial information relating to rice farming was exchanged among the members of the group [5, 8]. Each farmer was asked to identify as many agents as possible from a prepared list in response to the question, "whom did he consult more than three times during the period 1985 - 1989 in relation to the agro-technical and managerial aspects indicated ?". A list comprising members of the group, friends and relatives residing inside and outside the core residential village, and agents of the District office of MADA and the office of the Farmers Association in the locality was handed over to the respondents for their selection.

The guess-who test was applied for this study with the purpose of drawing sociograms based on the survey results. This figure provides insights from various aspects : e.g. 1) linkage relationship of member farmers in the group; 2) strength and scope of communal ties; and 3) role of leader of the group.

Group farming and direct seeding culture

1) Group farming

Group farming in the Muda Area was established with the purpose of encouraging member farmers to realize the importance of pooling their efforts and resources into an integrated group [7]. Through the organization, it was expected that the farmers would also be more disciplined and willing to abide by the consensus of opinion in water management and various aspects of farming operations, e.g., selection of

varieties, adherence to schedule, group action in crop protection programmes, etc. As the bargaining power of farmers is strengthened through group effort, there are indications that the cost of land preparation and mechanical harvesting in the group projects has been significantly reduced.

In organizing group farming under the Muda scheme, special emphasis has been placed on how a solid bridge can be built between farmers who belong to the Small Agricultural Units (SAUs) under the Farmers Association and those who cultivate rice in Irrigation Service Units (ISUs) or Irrigation Service Areas (ISAs). On the average, an ISA consists of 6 ISUs covering a total area of about 80-200 ha.

In this connection, boundaries for a certain ISU under the Muda II tertiary development are principally used to demarcate the group. Therefore, group farming organized by the Muda farmers can be characterized as a "field-based group" consisting of farmers who cultivate rice on the same irrigation unit.

2) Direct seeding culture

The decade of the 1980s, when group farming was initiated in the Muda Area, coincided with a period of drastic changes occurring in the practice of rice double cropping. The switch from transplanting to direct seeding was one of the visual changes widely observed in the whole area [6]. This change of cultural techniques in rice farming was mainly caused by the labor shortage and spiraling transplanting costs due partly to the exodus of rural youth to the urban centers, reflecting the rapid economic growth in Malaysia. From 1979 onwards, the area directly seeded in the Muda Area increased exponentially, reaching 80,700 ha or 87% in the first season and 70,100 ha or 72% in the second season, based on the three-year average during the 1988-90 period. However, this rapid diffusion of direct seeding practices led to the stagnation of rice production in the Muda Area from the mid-1980s. The tendency towards unstable rice production was attributed to the lack of experience of farmers regarding crop care, different requirements of water management particularly at the early stage of rice growth and the infestation with various kinds of weeds throughout the season. Mechanization under the prevailing contract system and the general socio-economic conditions are also closely related to the dynamic changes in the rice farming conditions.

MADA and other related agencies are taking active steps to promote the development of the most appropriate production system for stabilizing double cropping under direct seeding culture in collaboration with the farmers themselves. Under the aforementioned circumstances, it is also expected that farmer-oriented co-operatives at the farm level will play a more important role in the near future. In the following section, we examined the general characteristics of group farming in the Muda Area using two cases which were selected from the survey sites.

Two groups and rice farming

The results of the analysis of the two groups involved in *kelompok tani* are summarized in Table 1. Group "K" was established in 1987, followed by the group "M".

Group "K" differs from group "M" in the following aspects; 1) the number of member farmers is much larger, and 20% of the total members consists of part-time farmers; 2) tenants account for about 30%; 3) there is a wider age range among the householders; and 4) the family composition is similar, but family labor is smaller. It is generally considered that most tenants may hesitate to follow the decisions made by the group without prior authorization from landowners. In addition, it is difficult, especially for part-time farmers, to participate in the meetings regularly. The generation gap among member farmers requires much time to reconcile different opinions. As a result, group activities in the case of "K" are more limited than those of "M".

Table 2 indicates that the total area cultivated by the member farmers of group "K" is about 69 ha, a value two times larger than that of group "M".

Table 1 Profile of sample farmeres in two groups involved in *kelompok tani* (D locality, District II, Muda Area, Kedah, Malaysia, 1990)

	Kelompok tani	
	Group M	Group K
No. of farm households	13	32
Full-time vs. part-time[1]		
Full-time (%)	13 (100)	26 (81)
Part-time (%)	0 (0)	6 (19)
Tenure status		
Owner cultivators (%)	5 (38)	8 (25)
Tenants (%)	1 (8)	9 (28)
Owner cum tenants (%)	7 (54)	15 (47)
Average age (range)	51 (31-79)	47 (25-75)
Average number of family members	4.6	4.4
Average number of family labor	2.6	2.0
No. of residential villages	5	9
Proportion of members residing in the core village(%)[2]	69	69

1): Part-time farmers are those who are engaged in a certain side-job on a permanent basis: e.g. operators of stall, taxi drivers, officers, rubber estate workers, etc.
2): Core village indicates a *kampung* where the majority of the members reside.

However, more than half or 55% of the total area is "rented-in". Both plots and farm sizes were larger in group "M". Incidentally, the area operated by groups "K" and "M" amounts to 24 ha and 16 ha, respectively. Even in the *kelompok tani* area, both plots and farm sizes are larger in group "M", which implies that farm operations undertaken with large-scale machines under the prevailing contract system are likely to be carried out more efficiently for group "M" than group "K".

A more significant difference between the two groups is the area of paddy fields where *kelompok tani* is implemented: 48% of the land cultivated by the farmers in group "M" is located inside the *kelompok tani* area, while in group "K", 66% of the paddy fields are located outside the *kelompok tani* area. As a result, most of the member farmers in group "K" find it difficult to coordinate their co-operative farming activities in the *kelompok tani* area. This is one of the most difficult problems for many of the groups to overcome in managing their land jointly.

In both cases, rice is still transplanted in a few plots where drainage after sowing cannot be implemented readily. Although the yields are not significantly different between transplanting and direct seeding culture, yields are slightly higher in group "M" because a tertiary irrigation canal is presently being constructed within the *kelompok tani* area.

Communal ties evaluated by sociogram

1) Standard types of sociogram

A standard sociogram which describes the relationship between persons by circles and arrows, consists of four types: 1) Isolated type; 2) Chain Type; 3) Spokewise (or Star) type; and 4) Multi-linkage type. For example, in the case where the members are isolated from each other

Table 2 Area cultivated and yield in two groups involved in *kelompok tani* (D locality, District II, Kedah, Malaysia, 1990)

	Matang Pinang Group M	Ketul Group K
Irrigation condition, Tertiary canal	+	−
Area cultivated (ha)		
Total area operated		
Owned[1)]	20.7	31.1
Rented-in	12.1	38.1
Sub-total	32.8	69.2
Plot size	1.2	0.8
Farm size	2.5	2.2
Area under *kelompok tani* (ha)		
Owned	12.2	12.8
Rented-in	3.7	10.7
Sub-total	15.9	23.5
Plot size	1.1	0.6
Farm size	1.2	0.7
Share of area under *kelompok tani* (%)	48	34
Share of area transplanted (%)		
1st	4	8
2nd	4	6
Yield of rough rice (t/ha)		
1st	4.4	3.9
2ns	4.8	4.2

1): Exclusive land rented-out

or where the relationship can be represented as a chain, the communication among members is not active because the feeling of solidarity is seldom apparent among members. In both cases, the contact of member farmers by extension workers for the promotion of cooperative activities is difficult.

In the case of a spokewise figure where all the arrows are directed to the center, only the core person can coordinate every matter, while the others find it difficult to contact each other. In general, as the core person exerts a strong influence on the members, the community tends to be organized mainly through his managerial ability. In the case of the multi-linkage type, all the members can communicate with others and/or through a mediator, and therefore, cooperation is better achieved than in other types. It is commonly recognized that the connections are closer here than in other types and most of the members can obtain detailed information promptly. However, when the number of members increases, the mediator tends to be overloaded with responsibilities as coordinator.

2) Comparison between groups "M" and "K"

Table 3 shows the results of the guess-who test applied for two selected groups involved in *kelompok tani*, groups "M" and "K". According to this table, information on both agro-technology and farm management is conveyed to member farmers by their leader in group "M". In group "K", the farmers always contacted the Farmers Association before their group was formed, while they preferred to obtain information from the

Table 3 Summary of the guess-who test for farmers in two groups (D locality, District II, Muda Area, Kedah, Malaysia, 1990)[1]

	Kelompok tani		
	Group M	Group K	
	1990	Around 1985	1990
Agro-technology and management for direct seeding			
1.Selection of varieties	Leader/Others[2]/..	--[3]/FA[4]	FA
2.Use of inputs (fertilizers, pesticides)	FA/Leader	FA	FA
3.Weed control	FA/Leader	FA	FA
4.Machine operations	Leader	FA/..	Leader/ Others/..
5.All techniques related	Leader	Others/FA	FA/Leader/ Others
6.Selection of TP or DS	Leader/Others	--	Leader/..
7.Replanting	--	--	--/..
8.Water management	Leader/Others	--/FA	FA/--
9.Operational funds	--/FA/..	FA	--
10.Consultation about land rent	--	--	--
11.Negotiations with operators	--	--	Members/ --/..

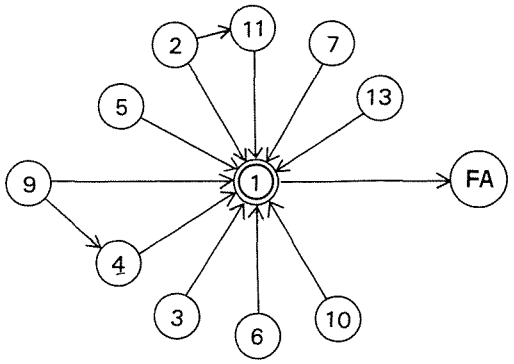
1): Cases below 30% are disregarded.
2): Others indicate non-members.
3): Dashes (--) indicate cases where farmer acted without consultation.
4): FA is the abbreviation for Farmers' Association.

leader after their group activities were started.

Figure 1 is a sociogram drawn on the groups of farmers' answers to the question, "Whom did you consult on direct seeding techniques more than three times last year ?". The number in each circle represents a constituent and their leader (no.1) in this group. Incidentally, 2 farmers (no. 8 and 12) were omitted because they transplanted rice on their farms. The consensus on management decisions in this group can be formed through meetings, which almost all the members attend. The leader endeavors to understand the farming conditions among members as well as their opinion in relation to their group activities. At the same time, he is in contact with the Farmers Association to obtain useful information for group management.

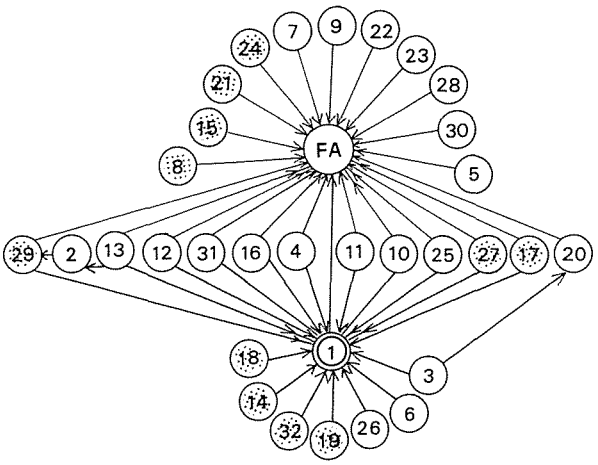
Figure 2 shows another sociogram based on the same inquiry to farmers in group "K". In this group, two information sources, Farmers Association and leader, were available to the farmers. Thirteen farmers consulted both officers of the Farmers Association and their leader, while 11 farmers were in contact only with officers and 7 farmers, with the leader. Only 3 out of 32 farmers consulted other member farmers. Farmers in group "K" seldom consulted each other and they could not make management decisions at the group meetings because of the large membership.

The same members were also asked about



① Core farmer
②—⑬ Mmber farmers
Ⓕ Farmers Association

Fig. 1. Sociogram of group "M" related to information on cultural techniques for direct seeding of rice in 1989



① Core farmer
②—㉛ Member farmers
Ⓕ Farmers Association
Farmers with advisers before the group was established

Fig. 2. Sociogram of group "K" related to information on cultural techniques for direct seeding of rice in 1989

their advisers before the group was established. Only 11 out of the 32 present members replied that they used to ask someone for advice when they faced farming problems. (They are identified with shaded circles in Fig. 2). The remaining 20 farmers answered that they carried out farming operations based solely on their own judgement. Out of the 11 farmers, two (no. 32 and 19) were in close contact with the present group leader (no. 1) at that time, while the others (9 farmers) preferred to consult extension workers or officers of the Farmers' Association when they needed advice. Fig. 2 points out that : 1) before group "K" was established, only 12 or 38% of the present member farmers had exchanged technical information on direct seeding culture; 2) after the establishment of group farming, all the members (32 farmers) started to communicate with each other on this matter; 3) before the group was formed, 9 out of the 12 farmers directly consulted extension workers; and 4) after their group activities were initiated, most of the member farmers started to consult both their leader and the extension workers, while some farmers relied only on the leader.

Discussion

Judging from several sociograms derived from the guess-who test, group "M" is likely to be organized as a spokewise type. Under this type of organization, the role of the leader farmer may become more important for promoting group activities. On the other hand, group "K" shows a complicated network reflecting diverse problems of the member farmers. The respective direction of the arrows indicating their inter-relationship is still unilateral, implying that the leader faces difficulties in co-ordinating farming activities as a group.

Apart from the "M" and "K" groups discussed above, the longest standing group involved in *kelompok tani* in the Muda plain has achieved high yields of rough rice, increasing from 2.5 t/ha in 1980 to 5 t/ha in 1990. This achievement was due to the cooperation in adjusting the planting time,

adopting the same varieties and careful water management. There are other progressive cases where member farmers successfully negotiated with contractors, thereby receiving 10% of the contract fee invested in a fund to be used for their group activities. In another case, member farmers were able to reduce the cost of production and increase land productivity by proper adjustment of farm operations for synchronizing the planting time among members. These cases show that a high and stable yield can be attained through more rational management by the group.

As a whole, participation in *kelompok tani* has involved less independence and spontaneity on the farmers' part because the groups have been organized through continuous support from the Government. In encouraging *kelompok tani* for more efficient and active operations, it is important that the member farmers be convinced of the advantages accrueing from such group management, in particular skeptical farmers.

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マレイシア・ムダ稲作農村における生産組織と農家の対応

ークロンポッ・タニの事例分析ー

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摘　要

マレイシアのムダ穀倉地帯の村落共同体は，村（*kampung*）や宗教区（*mukim*）よりも潅漑水路を中心とした社会的紐帯（結びつき）がより強く，居住村を中心とした水利や普及組織が機能しにくい特徴を持つ。そのため，新しい技術や経営情報が系統的に流れず，組織的な対応も大きな制約下にある。しかし，近年の急速な経済成長を背景に，農村部の労働需給事情が変わり，主要な農作業の請負制度化や移植から直播栽培への移行が進展し，限られた労働力でより効率的な稲作を営むため，生産農家の組織化が緊要な課題となっている。本稿は，伝統的に組織化が困難な当地で徐徐に進展しているグループ・ファーミング（現地語は*kelompok tani*, 生産組織と訳す。）を事例に，伝統的な稲作農村における組織化の条件とその課題を整理し，特に直播栽培に関連する技術情報の伝達機構をソシオグラムにより分析することを課題としている。

当地の生産組織は，一つの区画（約20～30ha）で耕作する農家を１グループとし，賛同する農家の発意で編成される。組織化の条件は多様であるが，概ね作期の統一による潅漑水の節水や病害虫防除効果を高め，耕起・整地，収穫作業等の機械作業の効率的運用によるコストの低減等が期待されている。1990年現在，その組織数は300を越え，面積も10万haのほぼ１割に相当する広がりをみせている。本調査ではその組織から，構成農家数の大小や水利事情の差異を考慮しランダムに抽出された２つの事例（M，K組織）について考察する。調査では，各グループの全構成農家から11項目（種子の選択，肥料や農薬の使用法，雑草の防除法，機械作業の様子，その他の農業技術，移植・直播の選択，補植や水管理の実際，費用の調達，借地や請負業者との折衝）について技術と経営情報の入手源と経路等を聞き取り，ソシオグラムを導出した。

その結果，M組織の情報源はほとんどの項目についてリーダー農家に集中しているが，K組織の方は慣行的な外部機関への連絡が優先する傾向が依然強く，また両組織に共通し農家間の情報交換は限られている特徴が認められた。他方，組織の成立前後でみると，K組織ではリーダーと農協に分岐し，組織の紐帯は編成後でより強いことがソシオグラムに表示された。これは，例えば直播栽培に関連する情報が以前と比べ系統的に構成農家間に伝達され経営に反映されやすくなったことを示唆している。

この他，一連の分析結果から，生産農家の組織化によって新たな技術や経営情報の伝達機能を含め当初期待された効果が高いこと等が判明した。しかし，組織の活動は構成農家のなかでも一部の先導的農家に委ねられており，マレー農村における生産農家の組織化は運営を巡って多様な課題を抱えている事情も判明した。

キーワード：ゲス・フー・テスト，二期作，ソシオグラム，水稲直播栽培