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ORGANIZATIONAL ISSUES IN GROUP FARMING  
IN SOUTH KOREA\*

by

Edward Reed\*\*

\*Paper prepared for panel on "Comparative Perspectives on the Productivity of Group Farming," sponsored by the Association of Comparative Economic Issues, held at Chicago, August 30, 1978.

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I. A TYPOLOGY OF GROUP FARMING

In recent years governments in many countries of the developing world, nonsocialist as well as socialist, have turned to some form of cooperative agricultural production as a means of coming to grips with the complex problems of rural and agricultural development. The various types that have been attempted range from the highly collectivized asentamientos under the Frei and Allende regimes in Chile to joint rice farming schemes in Taiwan. The term "group farming" has been widely used to cover this broad range of activities. A recent conference defined group farming as "formal systems of organizing the group conduct of farming operations," ranging from cooperative approaches to water distribution and machine use to fully integrated communal farming systems.<sup>1</sup>

In spite of the significant differences among activities in terms of degree of integration, scale, and scope, the issues that arise in almost all of these arrangements seem sufficiently similar to justify considering them as an analytical category distinct from family farms, corporate farms, or other types of farm management. These issues relate not only to the question of economic rationality, but also to problems of internal organization and member commitment.

In Table 1, I present a very generalized typology of the major types of group farming in order to depict a continuum from less to more integrated and to standardize the use of terms--at least for the purposes of this paper.<sup>2</sup>

Many examples of group farming do not fit neatly into this typology, and it must be assumed that there are subcategories within each type. State farms are omitted since they bear closer resemblance to corporate farms or large

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Table 1.

GENERAL TYPOLOGY OF GROUP FARMING

Type	Extent of Group Operation	Land & Capital Ownership	Income Accounting	Examples
1. Joint Operations	single operation or task	private: pooled for single operation	payments to provided labor & capital	Water Mgt. Assoc. (Indonesia) Joint Machine Use (Japan, Taiwan) Cooper. Work Teams (S. Korea)
2. Joint Farming	at least one farm enterprise	private: pooled for enterprise	harvest from pvt. holdings; payments to provided labor & capital	Joint Rice Farming (East Asia) Compact Farming (Philippines) Ujamaa Farming (Tanzania) Pre-Commune Mutual Aid Teams (China)
3. Cooperative Farming	most enterprises	cooperative: usually with reversion rights	pooled harvest; payments to labor shares & dividend to land & capital	Cooper. Farming Societies (India) Type 1 Cooperative (Poland) GAEC (France)
4. Collective Farming	all enterprises	collective: usually without reversion rights	payments to labor shares only	Kolkhoz (Soviet Union) Hyopdong Nongjang (N. Korea) Production Team (China) Asentamiento (Chile) Agrarian Production Cooperative (Peru)
5. Commune	all enterprises	collective settlement	according to need with high level of collective consumption	Kibbutz (Israel) Hutterian Colony (N. America)

private farms in terms of the organizational issues involved. Special note must be made of the Chinese case, with its unique commune-brigade-team structure. It is not actually a "commune" in the sense of this typology, which assumes a high degree of collectivized consumption and social life found chiefly in ideologically or religiously motivated communities. Since the present structure of the operational farm unit in the Chinese system--the village-based production team--most closely resembles that of a collective, it has been classified as such.

The types of group farming found in the nonsocialist countries of East Asia (Japan, Taiwan, South Korea) are mainly joint operations (type 1) and joint farming (type 2), though some examples of cooperative farming (type 3) can be found on an experimental basis in Japan.<sup>3</sup> Joint operations are most often organized by farmers themselves in response to a changing rural economic structure (e.g., diminishing agricultural labor supply, increasing off-farm part-time employment opportunities). Joint farming has usually been introduced at government initiative to facilitate the dissemination of "green revolution" technology and the necessary farmer technical skills and knowledge it requires.

This paper will consider an example of each of these two types of group farming in South Korea: (1) a farmer-initiated village-wide cooperative work team for rice transplanting (type 1); and (2) a government-sponsored joint rice farming program (type 2). While these two types are sharply distinguished from the more integrated forms of group farming in terms of scope of activities and mode of ownership, I contend that at the farm level the major organizational issues are quite similar.

## II. THE KOREAN VILLAGE SETTING

Only about 25 percent of Korea's land area is suitable for cultivation and the temperate climate limits rice, the staple food, to one crop per year. Korean farmers live in villages of closely clustered houses on the lower slopes of hillsides. A farmer's house is not on his farmland, which usually consists of a number of small, scattered paddy and dry fields located at varying distances from his home. A strong government push is underway to consolidate and rearrange paddy land in suitably flat regions to provide farmers with a smaller number of even-sized plots.

The natural village (maul) is the basic social and, to some extent, farming unit. The village head is usually chosen by a consensus of the village "natural leaders," though he is officially appointed by the township chief. There is an enduring pattern of close cooperation and interaction in all social and economic activities at the maul level.

Underlying this pattern is a patrilineal, hierarchical kinship system which may bind family subgroups of the village together in a network of ritual and social obligations. Aside from formal kinship relationships, there also seems to exist an informal, more egalitarian ideology which forms the basis for village-wide cooperative activities found in all villages of whatever kinship structure. There is a distinct loyalty to the village site (kohyang) and to its inhabitants which may compete with the more formally sanctioned kinship loyalties.<sup>4</sup>

As in most other wet-rice agricultural regions of Asia, there have long been informal, reciprocal patterns of cooperation among Korean farm households in carrying out farming tasks. Examples are the widespread system of labor exchange (p'umasi) and cooperative water management societies (po kye). This pattern of traditional cooperation springs from needs created by the transplanting system of rice culture and small farm scale:<sup>5</sup> (1) the need for extra-family labor at peak activity periods; (2) the need to share use of lumpy capital items (for plowing, lifting water, threshing, milling); and (3) the need to build, maintain, and manage a common irrigation source.

The land reforms carried out in 1948 and 1950, while not resulting in an equal distribution of land resources in the South Korean countryside, greatly reduced the rate of tenancy and, for the most part, ended the domination of village affairs by large, aristocratic (yangban) landowners and severed village-level patron-client relationships. However, the small size of landholdings (the national average is less than 1 hectare) has persisted in spite of the rapid rate of migration to urban centers.

The sustained high rate of economic expansion in South Korea over the past fifteen years has had an uneven impact on farming communities. In the early period concentration of investments in urban-based export-oriented industries led to deteriorating terms of trade for farmers, falling real incomes, and a flood of outmigration from rural areas. By the early 1970s the resulting

serious economic imbalance, as well as potential social and political unrest, led to government attention to the agricultural sector. With increased rice production as the keystone policy, new high-yield varieties were rapidly introduced, supported by a purchase price subsidy. Under the broad banner of the Saemaul (New Village) Movement, an all-encompassing rural development program was pushed to improve the rural living environment and raise incomes. These efforts have resulted in significantly higher rice yields, some improvements in rural living conditions and income, and a discernible new enthusiasm among local government officials. Nevertheless, the problem of relatively low farm household income persists, especially among the large number of farms holding less than 1 hectare. A major difficulty has been the continued almost total dependence on agriculture, chiefly rice farming, for farm household income. (See Table 2 for relevant data.)

For the individual farmer, no matter how high his yields, the holding size places a strict limit on agricultural income and also makes it impossible to mechanize some operations in response to the growing labor shortage at peak activity periods. National planners also view small scale as an obstacle to attaining production goals through more effective extension.

One possible response to this problem (one which is being strongly advocated by some elements within the government<sup>6</sup>) is to promote consolidation of farmland into larger private holdings by allowing a return of legal tenancy and removal of the present 3-hectare ceiling on holding size (a ceiling already largely ignored). An alternative response is to use group farming to enlarge the scale of management and resource use without changing the scale of ownership. Group farming activities have intensified recently in South Korea, both at the initiative of the government through joint farming projects, and through the spontaneous efforts of farmers themselves to cope with small farm scale and seasonal labor shortages. This study seeks to assess the viability and potential for the group farming alternative in South Korea by an analysis of these activities.

Material for this study comes from a case study carried out in 1977 of two villages in Pyongtek County, Kyonggi Province, in northwestern South Korea.<sup>7</sup> Pyongtek County is made up of fifty natural villages about half of which are located on a well-irrigated plain and half in an area of low hills. I will

Table 2. STATISTICS ON SOUTH KOREAN AGRICULTURAL SECTOR,  
FOR BENCHMARK YEARS

ITEM	1965	1970	1975
1. Per capita GNP (1970 \$)*	169	261	377
Agricultural sector	118	159	213
Other sectors	231	347	478
2. Farm population (000's)	15,812	14,422	13,244
3. Farm population as percent of total population (%)	55.1	45.9	38.2
4. Average farm size (in chongbo = 0.992 ha.)	0.90	0.93	0.94
5. Average farm household income (000 1970 Won)	216 (100.0)	256 (118.5)	367 (170.0)
6. On-farm income as percent of farm household income (%)	79.2	75.9	81.9
7. Estimated Gini Ratio for rural households	0.2386**	0.2385	0.3888
8. Farm labor wage (1970 Won per day, males)	423 (100.0)	579 (136.9)	548 (129.6)
9. Average rice yield (kg. hulled rice per 0.1 ha.)	289 (100.0)	330 (114.2)	386 (133.6)
10. Disease/pest control chemicals applied (kg. per ha.)	5.2	10.9	36.2

Sources: Item 1: Bank of Korea, Korea Statistical Yearbook; Item 6: Choo, Hakchung, "Probable Size Distribution of Income in Korea: Over Time and by Sectors," Korea Development Institute, 1977; other items: Year book of Agriculture and Forestry Statistics.

\* Calculated: 1970 Won ÷ 1970 official exchange rate (\$1 = 316 Won).

\*\* Data for 1964



Table 3. RELEVANT DATA ON PLAIN VILLAGE AND HILL VILLAGE,  
PYONGTEK COUNTY, KYONGGI PROVINCE, 1977

Item	Plain Village	Hill Village	Average for Villages in Township or Province
1. Population	348	249	249 (Case Township)
2. Number of households	62	53	50 "
3. Percent of households in largest kin group	13	38	---
4. Percent of households with no land or less than 0.5 ha.	12.9	34.6	29.3 (Kyonggi Province)
5. Percent of households with more than 2.0 ha.	24.2	9.6	11.0 "
6. Land area per farm household (ha.)	1.63	1.40	1.18 "
7. Percent of village paddy rearranged	70	22	21 "
8. Number of farm households per power tiller	10	43	15 "

Sources: Plain and Hill villages, survey; case township, township records; Kyonggi Province, Yearbook of Agricultural and Forestry Statistics, 1977.

refer to the two villages as Plain village and Hill village in accordance with their locations.

As we can see in Table 3, the two villages are quite different in several ways. Plain village is larger in population, land base, and average holding, and there are no large kinship networks. Hill village is an old community dominated by a former yangban kinship group with an economic base significantly smaller than that of Plain village.

### III. COOPERATIVE WORK TEAM: A JOINT OPERATION

#### Organization and Rationale

Rice transplanting in Korea has long been done in fairly large groups. There seem to be several reasons for this:

(1) The planting season is short and there are advantages to planting each parcel quickly: (a) seedlings should be transplanted at a certain stage of growth; (b) rapid transplanting means even growth of the crop in each parcel, allowing coordinated application of fertilizer, pesticides, and fungicides, maintenance of proper water levels, and even maturation; (c) in some cases rotation of irrigation water between plots may require rapid transplanting.

(2) Group planting allows a rudimentary division of labor.

(3) A lively group spirit is generated in team planting which lightens the back-breaking labor and perhaps increases performance efficiency.

Today in the Korean countryside extra-family labor for transplanting is acquired in a number of ways: (1) hiring for a daily wage landless or land poor within the village or from neighboring villages, or hiring under- or unemployed workers from nearby towns on an individual basis; (2) hiring a team made up of village and/or nonvillage poor farmers and laborers to plant the land for a flat fee based on area (togup system); (3) exchanging labor with fellow villagers (p'umasi system); (4) forming a village-wide cooperative work team (CWT) to which all households contribute labor and which plants all village paddy in rotation.

In the case township, as well as in another surveyed township in a southern province, the number of villages organizing cooperative work teams for transplanting has increased dramatically in the last several years. In the

case township, almost half of the fifty villages formed teams in the spring of 1977. The great majority reported that the system had been initiated by villagers themselves within the past one to five years.

Though government campaigns (especially the Saemaul Movement) have emphasized cooperation in general, the CWT is essentially a spontaneous development. The decision to organize the team is almost always made at a village meeting in which all households participate. The group chooses a team leader, and makes decisions concerning labor accounting, water management, and order of planting. The team operates as a unit for the duration of the planting season, which usually lasts from three to four weeks, after which labor accounts are settled. (The manner in which these organizational issues are handled is discussed in detail in section V.)

Though village work teams, called ture, existed widely in pre-land reform days (and were often marked by exploitation of tenants and small holders by the landlord class), most died out during the 1950s and 1960s as farmers turned to hiring the large supply of cheap rural labor that accumulated with rapid population growth. The recent reappearance of this system on a more egalitarian and integrated basis can be seen as a village-wide collective response to changing economic circumstances in the context of new technological developments which are favorable to large-scale cooperative planting.

Farmers give three major reasons for a turn to cooperative planting:

(1) More village labor is mobilized: Under labor exchange or hiring arrangements only more skilled farm labor is usually employed, since farmers are more careful about the value of the labor they are employing or exchanging. With the CWT--since it is not a person-to-person exchange of values--all available village labor (including young and old, male and female) can be mobilized.

(2) Time-saving and convenience: Cooperation eliminates the need for each individual farmer to make arrangements to exchange or hire labor. (Hiring may entail travel to a market town to find available workers.) Instead, usually one village meeting is held to decide arrangements and a team leader works out details and keeps records. The farmer is free to spend time preparing his fields for planting.

(3) Reduces cash outlays: The CWT allows the farmer to pay for labor with his own labor to the fullest extent possible, thus avoiding large cash

outlays at a time of year when he has little cash on hand. Also, the cash that changes hands remains within the village community itself.

In addition, there seem to be at least two technical requisites for the emergence of large-scale cooperative planting:

(1) The water supply must be dependable and flexible. Rainfed or only partially irrigated fields may require large areas to be planted almost simultaneously when water is available, whereas an irrigation system which supplies water continually to all fields or which permits controlling the flow of water from field to field will allow group planting in rotation.

(2) Various rice varieties with different planting dates and maturing times must be available. This allows the planting season to be stretched over a time period sufficient for the team to plant the whole area.

#### The Transplanting Operation

The transplanting operation itself involves only a few specific tasks: pulling up and bunching the rice seedlings, transporting seedlings to the paddy, and planting the seedlings. Except in the case of joint farms, seedbeds are prepared separately, so that seedlings must be taken from each farmer's bed before planting his paddy plots. The whole team works on pulling and bunching seedlings and then moves to the paddy to plant them. Planting is done in a single line stretching across one or more paddies along a marker-string and the pace is set by the two persons moving the string down the paddy from row to row. Several persons are behind the line keeping a constant supply of seedlings within reach of the planters. Meanwhile, a group of women are preparing the two common meals and the two snacks with rice wine served each day in the fields.

The division of labor appears fairly efficient: older members man the moving string; less skilled persons pull and supply seedlings to planters; stronger men transport the seedlings; a few women prepare food for the entire team; the leader is constantly engaged in assigning tasks and keeping records. Spirits are generally very high with much banter and singing. As the planting season goes on this group euphoria seems to be a major factor in making the work bearable.

In Plain and Hill villages farmers seemed quite satisfied that the CWT served its purpose and all agreed that it would be desirable to form a CWT for rice transplanting the next year.

#### IV. JOINT RICE FARMING

##### Organization and Rationale

Joint rice farming is a program initiated by the Korean government in the late 1960s simultaneously with the introduction of new high-yield rice varieties.<sup>8</sup> The major purpose was to overcome problems inhibiting higher rice yields by enlarging the scale of operation and increasing the degree of control over farmer behavior by extension agents. Under the program 5 to 10 hectares of rice paddy are farmed as a single unit by the 10 to 15 cultivators of the included land. Ideally, there is cooperative decision-making and the major operations--seedbed preparation, transplanting, water management, disease/pest control, and harvest--are carried out jointly, while private ownership of the land is maintained and each farmer receives the harvest from his own particular plot.

Joint rice farms are organized completely at the initiative of government extension agents or local government officials. Each year the township office receives instructions to organize a specific number of joint farms in its area according to a specified organizational structure and size, which are basically the same for the whole country.<sup>9</sup> This includes a large number of "regular" joint farms and several "demonstration" joint farms. Because of severe personnel limitations, most official attention is devoted to the demonstration farms. Most of the regular farms exist in name only, but there is a tendency for the lower echelon government officials to report 100 percent fulfillment of assigned quotas.<sup>10</sup>

Joint farm sites within the township are selected by township and extension officials in consultation with village heads. All farmers cultivating paddy in a selected block of land are automatically joint farm members. The area is only a small percentage of total village paddy land and, in almost all cases, the member farmers have additional paddy outside the joint farming area which they continue to farm individually.

The authoritarian nature of the relationship between villagers and local government officials makes it possible for the participation (or, at least, acquiescence) of farmers to be obtained in this manner. However, actual cooperative functioning was observed to be directly related to the amount of continuing supervision and pressure maintained by government agents.

Government extension agents give the following specific objectives for the joint rice farming program:

(1) Increase the average level of skill and technical knowledge of farmers by having those with lower yields adopt the cultivation practices of farmers attaining higher yields. As demonstration plots they could serve to educate nonparticipants as well.

(2) Reduce production costs by more efficient allocation of labor and other resources through a rational division of labor, joint input purchase and product marketing, and joint machine use.

(3) Create a network of larger farm units allowing easier and more rapid dissemination of new techniques and new seed varieties under more closely controlled conditions.

(4) Create an economic unit for large-scale mechanization (transplanters, harvesters) as it becomes feasible. (At present there is significant mechanization only in tilling and chemical application operations.)

#### Joint Farming Operations

The two demonstration joint farms in the case township were located in Plain and Hill villages, which had been selected by officials based on the availability of suitable land blocks, location along main roads, and what they perceived to be a more cooperative spirit among villagers. Hill village joint farm consisted of 12 households, while the Plain village farm had 9 households, and both were about 5 hectares in size.

In both cases, an organizational meeting was held in the spring with township officials and extension agents in attendance. A joint farm leader had been selected in advance of the meeting. A written agreement (provided by the officials) was signed by members specifying what variety was to be planted, that all operations would be carried out jointly, that extension office technical instructions would be followed, and that the harvest would be marketed jointly.

Actual operations in the two demonstration joint farms were carried out as follows:

(1) Plowing and harrowing of the paddy were done individually.

(2) Seedbed: In Hill village demonstration farm the entire operation was carried out collectively with a single seedbed being planted for the entire 5 hectares. In Plain village, however, most members thought it unnecessary since all were familiar with the techniques to be followed, and a single large bed the year before had caused difficulties at transplanting time when seedlings had to be transferred to distant plots. However, under strong pressure from township officials the farmers relented to the extent of planting their seedbeds side-by-side while managing them more or less individually.

(3) Transplanting: In both villages joint farm members joined the village CWT and joint farm fields were planted by the village team. This created a problem in Hill village where extension agents, in an effort to more closely control planting technique, insisted that joint farm members alone plant the joint farm area as a team. Members and the village as a whole resisted this. Finally, the officials relented, but extension agents closely supervised the transplanting of the joint farming area.

(4) Disease and Pest Control: Instructions for disease/pest control were issued by the extension office (date, amounts and technique of chemical applications). Of the several applications, some were done jointly and others individually.

(5) Harvest and Marketing: The extension agent decided when harvesting was to be done, but the operation was carried out individually with farmers relying on traditional networks to augment family labor. Marketing is also done on an individual basis (though many villagers may transport the grain jointly), since almost all post-harvest marketing is done with the government at established prices.

Farmer reception of the joint farming project has been somewhat ambivalent. On the one hand, most admit its theoretical advantages, but at the same time they are reluctant to participate. In both case villages joint farm members talked of discontinuing the project the next year unless special marketing prices and quotas were assured for the joint farm crop. The attitude was

clearly that the joint farm was an outside government project--not their own-- and that they were being imposed on to participate.

V. ORGANIZATIONAL ISSUES: JOINT FARMING AND THE CWT COMPARED

When agricultural operations are carried out cooperatively a set of organizational issues arises which must be successfully dealt with if the group is to attain its objectives.<sup>11</sup> Even a fairly clear potential gain for the members is not usually sufficient to guarantee success in organization, just as enthusiasm alone cannot compensate for either economic or organizational weaknesses. There are clear differences in how these issues were handled in the CWT and the joint farming groups. (Table 4 summarizes these differences.)

Table 4. ORGANIZATIONAL ISSUES IN JOINT FARM AND CWT

ISSUES	COOPERATIVE WORK TEAM	JOINT FARM
Scope of Activities	single operation, single season	several operations, single season
Source of Initiative	internal: village community ("indigenous")	external: gov't agency ("institutional")
Level of Integration	whole village (40-60 households)	village subgroup (10-15 households)
Participant Mobilization	social pressure	social pressure + institutional pressure + economic incentives
Leadership and Decision-Making	cooperative, consensus	hierarchical, directive
Compensation	by labor time or area	by labor time or area
Performance Incentives	moral incentives	moral incentives + institutional pressure

(1) Source of Initiative:

The CWT was initiated by villagers themselves in response to a perceived problem which it was felt could be most effectively dealt with through cooperative action. Such internally initiated activities can be termed indigenous and are generally organized by natural village leaders (who may or may not have official status), and they are carried out based on group consensus.



The joint farming project, on the other hand, was carried out at the initiative of external agents, namely government extension workers and township officials. The structure of the cooperating group was based on a model developed by experts in the central government and did not grow out of the village community's pattern of interaction. In the case of such projects, which can be called institutional, the participation and commitment of farmers must be achieved by use of levers available to the external agents--rhetoric, economic incentives, penalties, or whatever.<sup>12</sup>

(2) Level of Interaction:

Farmer cooperative activities can take place on two levels of interaction: the whole village level, or a village subgroup level. The CWT represents a whole village activity. Though larger villages may divide into two or more planting teams (because of smaller paddy size or bookkeeping considerations), in most cases nearly all village households participate.

Unlike the CWT, the size and composition of the joint farm is predetermined. The number of members is decided by the number farming within the selected 5-hectare area. The result is that those included are not necessarily those who work best together or who even support the idea, while some farmers outside are actually jealous of the attention and supposed benefits accorded to their fellow villagers. In Hill village many farmers outside the group expressed the opinion that the joint farm created divisions within the village and that those who already had the advantage of fertile, well-irrigated land were receiving assistance, while those who really needed it were not. In addition, the joint farm group may cut across kinship or friendship lines which are usually followed when exchanging labor in village subgroups.

(3) Participant Mobilization:

Formation of a CWT is initiated by villagers themselves, and participation for each particular household is voluntary. However, once the village leaders and a majority of farmers are committed to cooperative planting, considerable social pressure is brought to bear on reluctant villagers to participate, since success depends on maximum mobilization of village labor. In both villages all households provided at least some labor to the teams, though several large farmers planted their land privately with hired laborers to avoid late planting.

There was a tendency (in at least two teams) for participation to drop off once a farmer's land had been planted. Either the farmer preferred to pay for labor received, or he had contributed enough to reciprocate for labor received. In such cases intense pressures were applied--the team leader and the village head visited farmers and urged them to send laborers; there were also sharp comments about these families among the other members. In most cases these households agreed to continue participating.

The mobilization approach for joint farms mixes institutional and social pressures with limited economic incentives. Once the area for joint farming is selected, village leaders are won over to the idea by township officials. The village head is in no position to decline the proposal unless he can convince the officials that the project will not succeed. After a leader is agreed upon between village head and the township officials, together they work to convince other farmers to participate. In the case villages some were less than enthusiastic but none felt he was in any position to refuse. Several specifically stated that "there is nothing you can do once higher officials have decided on a project."

Some limited material incentives (aside from the possibility of higher yields) are also involved. A demonstration farm usually receives its seed and perhaps some chemicals free. Also a joint farm which meets yield goals receives a monetary award of up to about \$100 per member; though some farmers denied this was a factor because individual awards for high yields are also given. The strongest incentive appears to be a government guarantee that the total harvest will be purchased at the set price (or even at a 10 percent premium), since disposal of the high yield varieties on the open market means lower prices relative to traditional varieties.

#### (4) Leadership and Decision-Making:

In the case of the CWT, just before the planting season an organizational meeting of all villagers is held to decide whether or not to form the team, to select a leader, and to decide the compensation rate and order of planting. In both case villages, team leaders were proposed and agreed to by consensus. The functions of the leader are to work out the order of planting through consultation with the farmers, keep careful daily records of labor provided and received by each household, and inform team members each day when and where to

report for planting. The leader is also important in maintaining enthusiasm, encouraging households to provide their share of labor, and resolving disputes.

In Plain village one team was led by the village head, but the other team leader was a young person (about 30) just beginning farming on his own. Likewise, in Hill village the single team leader was a youth (23) with two years of college education. The age and status of these two persons indicates that the leader does not have so much a decision-making function as one of coordinating and implementing the consensus of the group. Several farmers indicated they would be much more reluctant to take directions from one their own age. In addition, the young people have the free time and skills to devote to record-keeping and other tasks.

The leader of the joint farm has official status. He deals with extension and government officials, passes on their directives or recommendations to members, and manages joint operations. In the case joint farms both leaders were young but established and respected farmers. Their selection seemed to depend more on a consensus between influential villagers and township officials rather than team members. Both attended a special training course for model farm leaders at the Provincial Rural Guidance Center. This training, as well as their close association with township and county officials gives them additional official status, but it is difficult to say if this enhances or complicates their leadership role.

A more serious problem is the constant supervision by supra-village officials. They set themselves above the farmers by dress and demeanor and convey an attitude that the joint farm is their project and the farmers must conform themselves to their purposes. Farmers show proper deference on the surface, but disparaging comments were heard to the effect that their knowledge of farming comes from books and not experience. An important function of the leader, then, becomes bridging this gap between outside supervisors and farmer-members --i.e., adapting the directive approach of the officials to the consensus approach of the villagers.

(5) Compensation:

There were no significant differences between the CWTs and the joint farms in accounting systems, since government authorities consider this an internal matter to be worked out by the joint farm members on their own.

Actually, this issue created greater tensions within the CWT since the group included landless laborers as well as farmers with a broad range of holding sizes.

The CWT uses a type of point system for labor accounting. The group decides how much a labor unit will be worth, records are kept of labor units contributed and used by each household, and at the end of the season net labor-using households pay into the group and net labor-contributing households receive payment from the group.

Plain village used a time-based point system: each hour of labor was worth a certain amount. In spite of objections by some that this approach undermines incentive for skilled and rapid work, it was felt by the majority that an area-based system creates unacceptable tensions between slower planters and more skillful planters. In Hill village, on the other hand, an area-based system was chosen, with each unit of land (p'yong) planted worth the decided amount.

In both cases the value of the labor unit (per hour, or per p'yong) was decided at a group meeting. After a discussion of several alternatives, in both villages it was decided to assign the same value to the labor unit for all age groups and both sexes. Again, it was felt undesirable to create divisions among villagers. Conflict between the interests of larger holders and smaller or landless households came to the surface in deciding the value of the labor unit. Here the bargaining power of the labor surplus households was apparent (given the tight labor market at transplanting time) and a mutually acceptable rate was finally decided.

Record-keeping for the time-based approach required the leader to time the planting of each field and credit the time to each worker present and debit the field owner. In Hill village the team leader checked five times a day on worker attendance and recorded the area planted during each of the five periods. Workers would then be credited according to area planted and owners billed according to their total land area. At the end of the transplanting season a meeting was held to collect from net users of labor and distribute to net supplier households.

In the joint farms accounting was done after each operation, not on a yearly or seasonal basis. So actually the system was an extension of the techniques used in the CWT to other operations.

(6) Performance Incentives:

In neither the CWT nor the joint farms was there a direct link between work quality and compensation. Performance quality was controlled almost entirely by social pressure (i.e., "moral incentives") in the case of the CWT and by social pressure plus "institutional pressure" in the form of supervision by extension agents in the case of the joint farms.

In the CWT skillful planters would actually plant more than their share of seedlings per row--helping out the slower planters beside them--though receiving no extra compensation. Likewise in the joint farm, as long as an individual put in his time and worked hard no one complained. However, if someone slacked off or obviously shirked work, unkind (and not so quiet) comments by fellow villagers were usually enough to bring them into line. Team leaders or natural village leaders would speak directly to a person if the situation warranted it. In general, farmers agreed that, in both groups, most worked without distinguishing between his own fields and those of others.

In the joint farms, however, there is the added dimension of direct supervision by outside agents who often gave direct commands or criticism. In one case a portion of the seedbed had to be uprooted and replanted at the insistence of the county-level extension office.

VI. ASSESSMENT OF GROUP FARMING ACTIVITIES

CWTs have emerged widely in rural Korea and it appears that they will persist for some time to come. The joint farming program has met with only very limited success: most joint farms remain paper groups and actual functioning almost always depends on continual outside attention and pressure. Explaining why farmers find it possible (or desirable) to cooperate in the context of one arrangement and not in the other is important for assessing the potential for group farming in South Korea.

Two factors are central to successful group farming: subjective economic rationality and compatibility with the social setting. Economic rationality provides the incentive for overcoming the organizational difficulties of group farming, while the probability that these organizational problems will be successfully dealt with increases to the extent that the arrangement is compatible with the existing pattern of social interaction and cooperation. Subjective

economic rationality means that, for the large majority of the participants, the perceived benefits outweigh a broad concept of perceived costs--i.e., additional outlays as well as the inconvenience and personal restrictions involved in joint management and joint labor.

The CWT successfully integrates the economic interests of net employers of labor and net suppliers of labor in a way that both perceive benefits. Likewise, as an indigenous activity, it fits into the community pattern of organization and interaction.

The joint farm seems to have problems on both counts. Though there is statistical and observational evidence that participants receive significant economic benefits in terms of preferred access to technology, higher yields and higher net income,<sup>13</sup> farmer calculation of costs and benefits apparently differs in some respects. They clearly perceive greater labor inputs and cash outlays, and they also count the interference of outside agents as a cost. But even when farmers report receiving economic benefits, many say that it is not worth the effort. This strongly indicates that the major problem is an organizational one.

A great majority of farmers who have participated in both joint farms and CWTs report that cooperation is easier in the context of the CWT even though the size of the group is much larger. Farmers do not find it easy to cooperate in the joint farm because it does not fit the village pattern of cooperation. A matrix using two of the organizational issues discussed earlier--source of initiative and level of integration--makes this clear.

Figure 1. Cooperative Activities by Source of Initiative and Level of Integration

		Source of Initiative		
		Internal	External	
Level of Integration	Whole Village	I. internal-whole village	III. external-whole village	(whole village ideology potentially effective)
	Village Subgroup	II. internal-subgroup	IV. external-subgroup	(kin group ideology potentially effective)

In Sector I (internal-whole village) of this matrix fall the CWT as well as village-wide mutual aid societies (kye). In Sector II (internal-subgroup) there are labor exchange, labor-capital exchange, and small group kye. In Sector III (external-whole village) is a set of activities initiated under the Saemaul Movement (mothers club, village bank, village store). Joint rice farming is the only cooperative activity observed which fits into Sector IV (external-subgroup).

Internally initiated activities (Sectors I and II) automatically conform to existing community patterns of leadership, decision-making, and conflict resolution. In addition, internal-whole village activities (Sector I), including the CWT, are usually underpinned by whole village cooperative ideology (discussed earlier in the paper),<sup>14</sup> while internal-subgroup activities (Sector II) usually follow kin group lines or friendship networks, where kin affiliations are few.

Externally initiated projects (Sectors III and IV) may or may not conform to village organizational patterns, depending on the organizational structure of the introduced institution and on how flexibly or inflexibly the structure is imposed. The village bank program, for example, has been fairly successful because, in most cases, villages have been left free to organize it along the same lines as existing village kye. In the same way, accounting in the joint farms is not a serious problem because it is left up to the participants to work out. However, the role of the joint farm leader and the direct involvement of external agents in day-to-day operations are elements of the joint farm which seriously conflict with existing patterns and so create problems.

External-whole village activities (Sector III), even though not initiated by villagers, can benefit from the whole-village cooperative ideology simply because they involve all village households. As in the case of some Saemaul projects, cooperation in this situation may actually be for the purpose of distributing what is seen as an unwelcome burden. External-subgroup activities (Sector IV), however, can only benefit from kin or friendship networks if the composition of the group is decided by the villagers themselves. In the case of the joint farms we have seen that membership is arbitrarily determined by paddy location and it is highly unlikely that the group will be composed of farmers who normally cooperate in subgroups.

External-subgroup activities, then, are the most unlikely to fit into the existing social context. In the case of the joint farm, one interpretation is that the incompatibility of the organizational structure with the social setting raises the cost of cooperation for members above the level of real perceived benefits, making the undertaking subjectively unrewarding.

## VII. THE POTENTIAL FOR GROUP FARMING IN SOUTH KOREA

We come to the basic question: what is the potential contribution of group farming to future South Korean agricultural development and in what form might it have the best chance of success? The results of this study indicate that (1) group farming can play an important role in South Korea in smoothing farmer adjustment to a changing economic structure while maintaining fairly equal access to opportunities, and (2) a strong and resilient organizational structure exists for group farming in many village communities.

In the immediate future at least three bases for group farming seem to exist in South Korea:

(1) The fact that CWTs have spontaneously emerged is an indication that a strong basis for cooperative action exists in labor pooling for peak season operations, such as transplanting and harvesting.

(2) There is also evidence that grouping of farmers for the introduction of new technology can assure a more even distribution of benefits as well as more rapid dissemination. This is especially true for the seedbed and disease-pest control operations, which are the keystones of the high-yield program. A cooperative approach can also assure safe and proper application of chemicals, as environmental pollution is becoming a critical problem in rural Korea.

(3) In the near future, a further step in mechanization is likely to take place if the rural labor force continues to decline and powered transplanters and harvesters are made available. There are several reasons why group acquisition and use of these machines may be preferable. One reason is that the unit cost makes the machine an uneconomic investment for all but the very largest farmers; and, unlike in Japan, off-farm opportunities are not sufficient to compensate for high cost. Equally important is the fact that premature introduction of transplanters or harvesters will threaten an important income source for the large number of landless and small farmers. When a group



composed of all farm-size households controls decision-making concerning mechanization it is more likely that the process will be gradual and in accordance with the actual availability of agricultural labor.

As this discussion implies, the bases for group farming in South Korea are best considered from the viewpoint of single operations. This is the case since we must assume a continuing commitment to private ownership of farmland and a reluctance to move to a higher stage of cooperative integration. Another factor is that Korean farmers themselves tend to approach the issues on an operation-by-operation basis. It is this approach which best fits the traditional patterns of reciprocity and accounting, and it is also flexible enough to adjust to rapidly changing rural conditions. The organizational unit for coordinating and integrating these various group operations is obviously the maul, or natural village. At this level the basis and experience exists for group decision-making, labor accounting, and interaction with the authorities.

The model that emerges, then, is one in which the maul more and more becomes the farming unit in terms of acquisition of inputs, coordination of labor and capital resources, dissemination of new technology and information, and promotion of sideline income activities. In some cases (such as transplanting and chemical application) labor and capital will be pooled on a village-wide basis, while for other operations (e.g., seedbed preparation, winter cropping) subgroups of interested farmers may form. The maul unit itself will serve as the official linkage between these activities and governmental extension and National Agricultural Cooperative units.<sup>14</sup>

There are at least three requisites to be fulfilled if this model is to have any functional relevance:

(1) There must be important changes in the administration of rural and agricultural development. The highly centralized formulation and administration of programs has led to a glaring gap between perception of problems and assessment of program impact at the center on the one hand, and the reality at the village level on the other. Pressure is placed on local officials to fulfill technical as well as organizational quotas (e.g., number of joint farms or mothers clubs organized), which inevitably leads to both coercive action against villagers and exaggerated reports of success. An administrative approach that would encourage and build on village networks and initiative demands

a significant degree of autonomy and flexibility at the local level, and respect for the fact that new institutions take time to become established.

(2) Closely related is the need for official encouragement for group activities through economic incentives and legalized status. Though Korean government authorities have the power to require at least pro forma participation in programs by farmers, the long-term results of this approach are doubtful. Steps could be taken to strengthen the official status of the maul and to use specific economic incentives to promote its integration as a farming unit.

(3) Finally, there is the important issue of internal village socioeconomic structure. Survey results from forty Korean villages indicate a strong relationship between successful cooperation and equality of land distribution in the village. Kinship structure is also important, but apparently much less so. Because of the impact of the land reforms and the Korean War, until recently most Korean villages could be characterized as relatively classless communities. However, as so-called progressive farmers with large holdings emerge in some areas, there is a tendency for a new capitalist class system of large holders and farm laborers to develop. Cooperation in such communities becomes almost impossible.

Therefore, so long as a large population remains in agriculture and off-farm opportunities are limited, in any particular village cooperation and private large-scale land consolidation can only be viewed as alternative solutions to the problem of small scale. If policy-makers seek to influence institutional adjustment in the direction of cooperative units, consolidation into large private farms which leads to sharp polarization of asset ownership should be discouraged. Of course, farm size will increase gradually as more families move out of farming. If a cooperatively functioning maul unit is given some jurisdiction over land use and transactions, it may be possible to make a transition to larger scale in a way that all villagers benefit.

NOTES

1. Conference on "Experience and Potential for Group Farming in Asia," sponsored by the Agricultural Development Council, Singapore, August 1977. See A/D/C Newsletter, no. 37, October 1977, p. 8.
2. B. Galeski (5) proposes a typology based on the objectives of the organizing group and also constructs a continuum of group farming types based on degree of socialization.
3. See N. Kanazawa (7), and Yang and Huang (15).
4. Concerning the Korean kinship system, see M.G. Lee (11); on the kohyang concept, see V. Brandt (3).
5. See L.M. Hanks (6), J. Wong (14), and B. Pasternak (12).
6. See for example, S.H. Kim (9); also government policy thinking is reflected in newspaper reports: "Land Holding Ceiling to be Abolished," Dong-A Ilbo (Seoul), September 12, 1977, p. 1; "South Korean Farmers--Productive but Vanishing Breed," New York Times, June 10, 1978.
7. The case study was followed by a survey of 40 villages and over 200 households in two townships. Preliminary analysis of the survey results indicate that the experience of the case study villages is fairly generalizable.
8. Apparently the system is based on earlier Japanese joint farming programs. Joint farms were introduced on a trial basis in 1968 and then later implemented on a national basis. See M.S. Cho (4).

The following table gives official data on regular and demonstration joint rice farms:

Number of Joint Farms, Area, and Number of Member Households, by Year

Item	1968	1970	1972	1974	1976
Number of Joint Rice Farms	500	22,896	22,045	28,293	51,396
Area (000's ha.)	2.6	300	187	393	528
(Percent of total paddy)	(0.2)	(23.6)	(14.9)	(31.0)	(40.9)
Number of Member households (000's)	8.7	817	625	1,197	1,424
(Percent of Total)	(0.3)	(32.9)	(25.5)	(50.3)	(61.0)

Source: Office of Rural Development

In 1977, there were at least 2,924 demonstration joint farms in the country (two in each township). Assuming an average of 12 members on 5 hectares of paddy, there were 35,088 member households (1.5% of total households) and 14,620 hectares (1.1% of total paddy area).

9. South Korean governmental and administrative institutions are characterized by extreme centralization with authority and program initiative emanating from the center and flowing downward to the township level. Officials at every level are appointed; a brief experiment with a local elective system was suspended in 1961. See R. Aqua (1), pp. 3-7.
10. Of 83 regular joint farms officially organized in the case township in 1976, only 10 reported carrying out any joint activities. In 1977, of 70 regular joint farms reportedly established none could be found that carried out joint operations.
11. The major organizational issues involved in group farming are discussed in an earlier paper: E. Reed (13).
12. This concept and terminology are borrowed from J.W. Bennett (2).
13. See J.H. Lee (10), H.K. Kim (8), and M.S. Cho (4).
14. It is theorized that this ideology is stronger in some villages than in others (Bennett). Survey data from this study indicates that successful cooperative activity is related to the distribution of land and, to a lesser extent, to the village kinship structure.

REFERENCES

1. Aqua, Ronald. Local Institutions and Rural Development in South Korea. Cornell University, Rural Development Committee, Special Series on Rural Local Government, no. 13, November, 1974.
2. Bennett, John W. "Agricultural Cooperatives in the Development Process: Perspectives from Social Science." Paper presented at Seminar on Cooperatives, Small Farmers, and Development, held at Wingspread, Wisconsin, March 1978.
3. Brandt, Vincent S. E. A Korean Village: Between Farm and Sea. Cambridge: Harvard University Press, 1971.
4. Cho, Min-Shin. "Study on the Technological System of the Cooperative Cultivation of Paddy Rice in Korea." Journal of the Korean Society of Crop Science, vol. 8, no. 1, 1970, pp. 129-172. (Korean)
5. Galeski, Boguslaw. "The Models of Collective Farming." In Dorner (ed.), Cooperative and Commune: Group Farming in the Economic Development of Agriculture. Madison: University of Wisconsin Press, 1977.
6. Hanks, Lucien M. Rice and Man: Agricultural Ecology in Southeast Asia. Chicago: Aldine, Atherton, 1972.
7. Kanazawa, Natsuki. "Problems and Direction of Agricultural Group Activities in Japan." In Dorner (ed.), as above.
8. Kim, Hoo-Keun and others. "Comparative Study of Large Scale Cooperative and Individual Rice Farms in Five Districts in Gyeong-Nam Area." Journal of Gyeongsang National University, vol. 14 (1975), pp. 151-170. (Korean)
9. Kim, Sung-Ho. "The Changing Patterns of Farm Land Problems After Land Reform in Korea." Paper presented at seminar on Agrarian Reform, Institutional Innovation, and Rural Development: Major Issues in Perspective, University of Wisconsin, Land Tenure Center, July 1977.
10. Lee, Jil-Hyun. "The Effects of Institutionalized Integration on the Rice Productivity Growth in Korea." The Journal of Korean Agricultural Education, vol. 6, no. 1 (December 1974), pp. 31-53.
11. Lee, Man-Gap. The Social Structure of Korean Village and Its Change. Seoul: Seoul National University Press, 1973. (Korean)
12. Pasternak, Burton. "The Sociology of Irrigation: Two Taiwanese Villages." In W.E. Wilmott (ed.), Economic Organization in Chinese Society, Stanford: Stanford University Press, 1972.

13. Reed, Edward. "Introducing Group Farming in Less Developed Countries: Some Issues." In Dorner (ed.), as above.
14. Wong, John. "Peasant Economic Behavior: The Case of Traditional Agricultural Cooperation in China." The Developing Economies, 9 (September 1971).
15. Yang, Martin M.C. and Huang, Ta-Chou. "A Study of the Joint Cultivation System." Memoirs of the College of Agriculture, National Taiwan University, vol. 13, no. 1.