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## **Change in Social Capital – a Case Study of Collective Rice Farming Practice in the Mekong Delta, Vietnam**

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*ABSTRACT:* This paper describes how the social capital of rice farmers of the Mekong delta of Vietnam - manifested in the tradition of collective farming practice, changed from the 1940s to 1990s. The reason this collective rice farming had existed for decades, irrespective of critical events that challenged its continuation, was the co-existence of two key factors – high need for collective farming to ensure subsistence, and the availability of a closely knit social network that facilitated the exchange of labor. Despite its longevity, the practice of a cohesive and spontaneous collective farming, particularly in terms of labor exchange and labor participation in farming activities, was not maintained under the influence of agrarian reforms which aimed to improve rural livelihood. Land reform resulted in individual rice farming, making mobilization for spontaneous collective action, at the community level quite challenging. The assessment arose in the context of the need to mobilize collective action for implementation of a Community Trap Barrier System (CTBS), an ecologically-based rodent pest management system. It is concluded that successful restoration of social capital in the form of collective farming practices at the field level may depend on government intervention strategies at both local and national policy levels.

*Keywords:* social capital, rice, Mekong, farming practice, agrarian reform.

## Introduction

In Vietnam, the farmers in the Mekong delta have a long history of collective farming through organization of mutual aid groups (cf. Kerkvliet and Porter 1995; Kirsch 1997; Pingali and Vo-Tong Xuan 1992; Wiegersma 1988). Collective rice cultivation was a traditional farming practice for the majority of farmers. This group-based farming practice, a manifestation of social capital, dates back to the time of French colonization (1860s to 1954) when most farmers were landless and worked as tenants. Despite, or perhaps because of, the difficulties in rural life, ravaged by poverty and war, collective rice cultivation practices grew over a long period. These practices were established and became popular during French colonization; they were consolidated throughout the American war (1954 -1975), and were developed and maintained following the reunification of Vietnam in 1975. However, its practice began declining in the late 1990s, until to almost ceasing at the present time. Despite a long history, there is little evidence of analysis of changes in collective farming practices in the published literature, except for some short descriptions about trends associated with broader social events (see, for example, Hendry 1964, Hickey 1964, Pingali and Vo-Tong Xuan 1992, Rambo 1973, Wiegersma 1988).

The current study aims to understand how social capital, as manifested in mutual aid groups among rice farmers, has changed since its establishment during French colonization to its decline in the late 1990s. Two data sources were drawn upon to explain the change in social capital and to ensure the trustworthiness and reliability of the analysis. Firstly, an analysis of the period when mutual aid developed during French colonization until its decline in the early 1990s was based on data collected from the literature (see above). To establish a causal and descriptive inference for this growth (cf. Mahoney 2004), a comparative-historical method was used to explain the sequence of change. The focus was only on important social, economic, and political junctures that were identified in the literature to have affected the stock of social capital in relation to rice farming. Second, to examine the period when the practice of mutual aid started to decline towards the late 1990s, qualitative data from field trips to the region were obtained and analyzed. Finally, examination of the current stock of social capital among farmers' traditional rice farming networks was undertaken using qualitative and quantitative data. This examination enabled a comparison of the social capital of farmers before and after its peak of development.

This paper is part of a broader study that examines the pathways for adoption of an ecologically based rodent pest management (EBRM) technology in An Giang province, Vietnam. This is non-chemical agricultural technology called the Community Trap Barriers System (CTBS) designed to help farmers control rodents in their rice fields (see Singleton et al. 1999 for details). The study was done in connection with a 3.5 year project that promotes the adoption of EBRM through CTBS and community action, using integrated physical and cultural practices in the Mekong delta of Vietnam. Previous studies (Morin et al. 2003; Sang et al. 2003) have examined the social and anthropological dimensions of the attitudes of farmers to CTBS in the Mekong delta.

## Methods and results

The two districts of Tri Ton and Tinh Bien in An Giang province (10° 22' 0" N, 104° 58' 0" E and 10° 36' 0" N, 104° 57' 0" E, respectively) in the Mekong delta, were included in a multi-site design to allow in-depth qualitative study (See Figure 1). These districts were chosen for three reasons. Firstly, they are typical of intensive rice-growing areas in the Mekong Delta. Secondly, they experienced the same historical events relating to agrarian reform as in other part of the Mekong. Thirdly, we benefited from the quantitative data collected under a project that promotes the use of collective based environmental friendly rodent control management, administered by the Plant Protection Department of Vietnam (PPD) with technical support from the Commonwealth Scientific and Industrial Research Organization (CSIRO) and the International Rice Research Institute (IRRI).

This study used a combination of qualitative and quantitative methods. The qualitative methods included focus group discussions, key informant interviews, informal interviews, participant observations, field observation techniques, and comparative-historical analysis. Research participants for the qualitative data included rice farmers, representatives from communal government agencies, district departments of agriculture and rural development, district plant protection departments, and local opinion leaders. Ten groups of farmers, five from each selected commune of the two districts, were recruited for group discussions, comprising seventy three farmers in total. Thirty three individuals were interviewed during two field trips (one in August 2007 and the other in April 2008) using guide questions to direct the discussions and interviews. The same guides were used for all interviews. However, the focus of content varied in discussions and interviews, depending on the knowledge, roles, and responsibilities of the respondents.

The quantitative data set was collected from a household survey of 240 participants who were randomly selected (120 from each district)<sup>1</sup>. Qualitative data were recorded using note taking to allow open discussion. Notes were taken by two persons and were cross-checked before being transcribed on to a computer at the end of each day. To strengthen validity and reliability, we applied methodological and data source triangulations, as well as solicited feedback on the data from research participants during the second trip.

## History, Rice Farming, and Social Capital

- *Mutual Aid Groups – 1880s to 1990*

In the Mekong Delta, rice cultivation is presently undertaken individually. In the past rice farming was a collective activity, typically by groups of people who were linked by kin, neighbor, and friend relationships. These self-help groups, set up to support each other in rice farming activities, were known as a *dân công* group, which means “labor exchange group” or “mutual aid group”. This collective rice farming practice dates back to the period of French

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<sup>1</sup> The quantitative data were collected, entered and checked by the team at PPD, IRRI and CSIRO. Analysis of this dataset to support this paper was done using SPSS<sup>®</sup>, version 11.5. Graphs were prepared using Microsoft Excel XP<sup>®</sup>

colonization when most farmers were landless and worked as tenants for large landholding families. The following section briefly reviews the history of rice farming in the Mekong delta - from the time of French colonization to the present. It focuses on critical social events associated with the ebb and flow of mutual aid.

- *Rice farming and mutual aid groups – 1880s to 1990*

For rice farmers in the Mekong in Vietnam, mutual aid groups were organized to enable farmers from different households to help each other in carrying out heavy farm work such as land preparation, transplanting, irrigation, and harvesting (Hickey 1964). Mutual aid groups were considered a “village institution of loose organization but great importance”, in which “each farmer tends to establish a network of relatives, neighbors, and friends within which he exchanges labor in the course of the rice cycle” (Resource for the Future 1971:64). Mutual aid in farming was very common among poor households in the Mekong delta. People who worked in mutual teams were normally kin and neighbors who assisted one another in the heavy tasks, and normally, this assistance went beyond the farm to such non-farm works as house repair or the construction of thatched houses, which were very common among poor farmers. In poor families, it was a common expectation that all members “make some direct contribution to the sustenance of the group.” (Hickey 1964:245).

- *Colonial period - 1880s to 1954*

During the colonial period, farmers in the Mekong had been accustomed to collective life among relatives. Kinship was very important. In this collective society in old Vietnamese villages, it was “repugnant” for farmers to work on their own (Pham 1985:78). Irrigation, for example, was an important task, but the work was too heavy for an individual, so teamwork was essential. To raise water to an appropriate level, and then to irrigate successive fields at different levels, teams of scoopers needed to work together (Gourou 1936, cited in Pham 1985). Mutual aid like this was an important way of enabling rural people to manage their affairs (Kirsch 1997).

- *Post-colonial period - 1954 to 1975)*

In Southern Vietnam, most land was privately owned and agricultural activities were developed for commercial purposes (Rambo 1973). By 1955 - the end of French colonization in Vietnam, around 40% of the riceland areas in South Vietnam were held by only 0.25% of the rural population. Large landholdings belonged to French and Vietnamese owners (Pingali and Vo-Tong Xuan 1995). The social stratification of peasants in Southern Vietnam was acute because of land concentration (Rambo 1973). Large concentrations of land resulted in a high level of landless laborers and smallholders renting out their labor to middle level and well-to-do landowners. During the 1960s, because of the differential impacts of colonialism, large differences with regard to wealth, income, and power distribution, became common in Southern Vietnam. However, for villagers, reciprocal assistance remained important as a major source of labor. During the post-colonial period, 75% of villagers in Southern Vietnam were involved in such types of mutual assistance (Wiegersma 1988).

Labor exchange continued during the post-colonial stage and it was so common that people who worked on labor exchange teams did not get paid. They took turns to work in each

other's fields on a reciprocal basis. One of the activities that required high cooperation was the distribution of water. Well coordinated irrigation enables sufficient water to be supplied to the paddy fields, to ensuring optimum crop output (Hendry 1964). In the Mekong delta, working in a collaborative manner with farm neighbors to control water levels, through manual irrigation, had become indispensable. Despite the necessity for cooperation, cooperation did not always go smoothly and there were disputes over irrigation (Hendry 1964). These disputes became more common after land reform in 1955<sup>2</sup>, particularly as a result of the establishment of private property rights following the land reform (Wiegersma 1988).

By 1970, only a few owners with large land holdings remained, while there was a concomitant increase in owners of small landholdings (Salter 1970). Operations of mutual aid groups remained active during this stage. In 1970, the second land reform, known as "Land-To-The-Tiller" land law, was implemented in Southern Vietnam. This reform aimed to further reduce land concentration among the remaining landlords<sup>3</sup>. Despite reform, mutual aid persisted at this time (Wiegersma 1988). There were two main factors that supported the continued exchange of labor in mutual aid groups. First, the land reforms in 1970 specified that the maximum area of land distributed to farmers was 3 hectares. This meant that the farm size was adequate for a typical household. Second, tenant farmers who cultivated the land belonging to other persons were given priority in the land redistribution order. This meant that the reform basically helped the people who worked the land secure tenure status. This encouraged them to increase investment on the land, and to remain in their already established mutual aid groups. These factors explain why labor exchange continued to grow without suffering from the two land reforms. Wiegersma (1988) noted that there was some loss of social cohesion in villages following the first land reform in 1955. However, the operation of mutual aid, in aggregate, remained dominant.

- *Post-reunification (from 1975 – 1990)*

Mutual aid continued to grow after the country's reunification in 1975. According to Vo-Tong Xuan (1995), during collectivization in the South from 1976 to 1988, mutual aid groups were even more common. Farmers in mutual aid groups continued to support each other in labor-intensive activities because the means of production such as tractors, threshers, water pumping machines, and draft animals (which were originally owned individually) were pooled and collectively managed through cooperatives, as a result of collectivization policy. Kirsch (1997) noted that during collectivization in the Mekong delta, members of collective agricultural cooperatives still organized their individual land use through the support of mutual help groups. By 1980, 80% of agricultural households in the Mekong continued farming through organized mutual help groups.

Following reunification in 1975, government efforts were made to improve agricultural production in the Mekong delta. In addition to expanding the irrigation system, new cultivation techniques were introduced to farmers, including new high-yielding varieties of rice. To speed up production to fit the improved farming system, broadcasting of seed for

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<sup>2</sup> These land reforms brought land to 148,400 families by 1961 (Salter 1970).

<sup>3</sup> It is noted that by 1970, about 60% of the riceland was still farmed by tenant farmers with each tenant farmer averaging 2 hectares. The rent that they had to pay in secure areas was around 25%, or more, of their crop.

crop establishment, for instance, was used *in lieu* of transplanting which was time and labor intensive. According to Pingali et al. (1997), herbicides were increasingly used and the need for labor at peak times escalated. Also, from 1983, mechanization in the Mekong delta started to increase. The number of large tractors increased by 60% and small tractors by 50% as compared to 1975 (Dao The Tuan et al. n.d.). In 1988, when decollectivization was initiated, labor exchange was still common, however, an increasing need for labor at peak times started to make it difficult for farmers to fully commit to labor rotation. This difficulty in fully committing to labor rotation was a result of the dramatic changes in the labor market associated with collectivization (Pingali et al. 1997). Luttrell (2001) noted that since labor became increasingly scarce, renting out of labor “has once again become a major component of the rural economy and social structure” (Luttrell 2001:533). In the 1990s, under these pressures, primarily from shortened cropping seasons, synchronized irrigation, labor shortages, increased mechanization, and new land laws<sup>4</sup>, mutual aid in rice farming started to decline.

### ***Social Capital among farmers (present time - 2008)***

Social capital is defined in a number of ways. The lack of a single definition is derived from diversified application of the social capital concept in different types of social research. Grootaert (1998:iii) referred to social capital as “the internal social and cultural coherence of society, the norms and values that govern interactions among people and the institutions in which they are embedded. It is the glue that holds societies together and without which there can be no economic growth or human well-being.” It is useful to describe the circumstances in which individuals can use membership in groups and networks to secure benefits (Sobel 2002), and to explain how problems of selfish incentives can be overcome, to achieve a mutually beneficial cooperative way of getting things done (Ostrom and Ahn 2003).

According to Krishna and Uphoff (2002), social capital could be categorized in two forms. The first is a structural form, which facilitates collective action for mutual benefits based on roles and social networks that already exist, enhanced by rules, procedures, and precedents. The second is a cognitive form, which is manifested by norms, values, attitudes, and beliefs, or the sense of obligation and reciprocity by which people move towards collective action for mutual benefits. These two forms of social capital complement each other. Structural social capital exists in the way people are connected through their social networks (to support a particular purpose). Therefore, it is observable and modifiable in some way. Cognitive social capital is not easily visible because it is indicated through people’s attitudes and beliefs, and is difficult to change. It is important to note that social capital is an intangible construct (Uphoff 1999). Empirical manifestations of social capital vary between cultures resulting in considerable implications for the ways in which social capital is measured (Krishna 2002). The difficulties in measurement of social capital are furthered by the lack of consensus on how social capital can be measured (Fukuyama 2001).

In this study, assessment of social capital focused on aspects that could clearly demonstrate the changes in norms, trust, and networks among traditional collective rice farming networks

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<sup>4</sup> Under the 1993 law, farmland was transferable, exchangeable, inherited, leased, and used as collateral. This freed up the land market, allowed trading of land, which eventually led to land concentration.

in the Mekong delta. To do this, we assessed the degree to which a farmer produced rice on his own. We aimed to discover how much independent activity a farmer typically has in their current rice production. Then, we considered the relationships individual farmers had with people beyond their family to understand associational life and activities in their community. In particular, there was a focus on the connection with former networks such as kin, neighbors and friends. To this end, assessment was conducted at two levels – the household level and the group level. Before considering this assessment, it is necessary to review the profile of the farmers at the study site.

### **Farmers' Profile**

Approximately 70% of the farmers were less than 50 years of age. The majority had completed primary school education (69.7%) and secondary education (19.8%). The remainder had completed high school (4.7%), or college (0.3%), and 5.5% did not have a history of school attendance. The farmers had an average of 19 years' rice cultivation experience. Within a family, the husband typically had a higher level of education compared with their wives (See Table 1).

Most farmers owned land cultivated for rice (96.5%). The remainder (3.5%) rented fields and worked as tenants. The farm size was primarily small, but variations are notable (See Table 2). Ninety nine percent of farmers grew rice as their main crop. Only a small proportion of them grew cucumber as cash crop. Four modern rice cultivars were used including IR50404, AG24, OM2514, and IR64 (in descending order).

Farmers are busiest during the rice cropping seasons. The majority of them devote, on average, 4 to 9 months a year to their farm work (See Table 3). External laborers are hired for rice farming, for most stages of a crop, to overcome family labor shortages. Hired labor typically comes from their immediate commune, or from neighboring communes. They are expected to do heavy tasks such as dike repair, sowing, replanting of young rice to replace plants which failed to survive after sowing, pest control, harvesting, threshing, and transporting of produce. Most of the hired laborers needed during a cropping season are male, except at the harvesting stage where more females are employed. A farmer with large landholding may hire up to 70 female laborers for quick harvesting of the rice crop.

Ownership of farm machinery and tools is common, especially the two main items of water pumping machines (62 units) and pesticide sprayers (183 units). Motorcycles are also becoming common (140 units). Boats are also common in this flood-prone area (37 units). Fish ponds and rice drying courts are available only for well-to-do households.

### *Rodent management practices – EBRM through CTBS*

#### *CTBS introduction*

The Community Trap Barrier System (CTBS) is an environmentally friendly rodent management practice. It uses rice which is planted about 15 days earlier than the rice in the surrounding area, as a lure crop to attract rodents to come and get caught in live traps placed underneath the plastic fence. CTBS is costly and labor intensive for one farmer. Therefore, it



requires cooperation by individuals to benefit from CTBS through shared labor and costs. During the early 'experimental' phase of the CTBS project material costs were met by the ACIAR funded project. Once farmers needed to meet their own costs and labor requirements, farmers' interest in the CTBS declined, as indicated by the abandonment of routine maintenance and weekly meetings. This decline in interest left the CTBS management responsibility to the trap manager who owns the field on which the CTBS was established. In addition to the high costs and labor intensiveness as perceived by farmers participating the experiments, consensus building was difficult because farmers' relationships at field level (in this case, farmers who share CTBS benefits) are not cohesive and demand driven. The following sections will examine factors which influence these relationships at the household level and group level.

## **Household level**

To assess the degree to which a farmer household produces rice on their own, we examined current rodent control practices, confidence in daily decision making, labor hiring, means of production, and access to credit.

### *Labor availability*

Most farmers hired local laborers to support their rice cultivation. Hired laborers may number from a few, for small farms while for some large landholders a hundred laborers may be hired for a whole cropping season. There were no cases where farmers reported that they exchanged labor with other farmers (See Figure 2). The availability and use of hired laborers, when needed, reflects the fact that farmers are no longer dependent on the sources of labor which they traditionally relied upon such as house neighbor, kin and friends. Farmers now also have the financial capacity to pay the wages required for hired labor.

### *Means of production*

Most farmers reported that they have the basic production implements required for rice cultivation. Motorcycles and boats are available in many households. Heavy work such as ploughing, threshing, and produce transport, can be contracted through local services. Reliance on manual work for heavy tasks or activities is significantly reduced.

### *Capital for agricultural inputs*

Farmers mainly used their savings to finance rice production (See Table 4). Agricultural inputs such as seeds, fertilizers, and pesticides were normally not purchased by cash, but on credit. These services are competitive and are very common in An Giang, as well as in other parts of the Mekong delta. Credit was preferred by farmers because payment did not need to be made until after the harvest. Although interest is charged for such services (typically ranging from 0, for some products, to 10 percent per month<sup>5</sup>), the rates are, by and large, acceptable to farmers. This service is so convenient that borrowing money from family members has become rare. It is noted that, in addition to credit-in-kind, other sources of funding for rice production are also available from local banks. However, although loan

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<sup>5</sup> Interest rates charged to farmers by local suppliers varies from 0-10% per month (mean=2.3, mode=3, SD=1.184).

applications are increasingly easier, farmers typically only negotiate with a bank for long term investment of one year or more, or when the up-front payment is large. There were no cases where farmers reported borrowing money from neighbors, or relatives, for their rice farming, suggesting that farmers are more financially stable, in their rice production, than they were in the past. Indeed, given the fast growing credit market, financial services are easily accessible at the community level, which releases farmers from reliance on traditional sources of support (kinship, friends or house neighbors).

### *Rodent management practice*

Farmers managed rodents by themselves unless they were encouraged to take collective action upon the appeal of local government officials. Farmers consulted a number of sources for advice on rodent management, but a decision is mainly based on their past experience. Farmers also consulted other sources for advice. Despite the utility of this advice, these sources normally had no influence on decisions about how and when rodents should be controlled<sup>6</sup>.

### *Farmers' confidence – Individual Farming*

As a result of land reform in 1993, farmers are more independent in their rice production as compared to the past. They also have improved household economic status which was the primary goal of land reform. There are now more farmers with more farm assets, such as motorcycles, boats, farm machinery, and savings, to support their rice farming. These changes suggest that farmers rely substantially less on their traditional support networks, such as kin, neighbors, and friends.

To understand the importance of social capital among farmers' traditional rice support networks, we considered networks (associational life) associated with their current house neighbors, farm neighbors, kin, and friends; and at the group level.

### **Group level**

We examined the participation and adoption of CTBS, the communication channels of rice farmers and the relationships between these channels, associational membership, norms of reciprocity, and social trust between them and their farm neighbors, house neighbors, kinship and friends, and the issue of consensus building.

### *Communication channels and their effect on farmers' ability to make daily decisions*

Farmers reported that the major groups they make daily contacts with are their friends, neighbors, and relatives. Farmers frequently meet with these people to discuss different issues related to agricultural production. The three most commonly discussed issues are crop production, the purchase of agricultural inputs, and marketing of farm produce. Interestingly,

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<sup>6</sup> p values are insignificant for other reported sources of advice (including farmers' partners, extension staff, mass media, training knowledge, agri-input suppliers).

siblings tend not to be in the groups that farmers have daily contact with, which suggests that siblings may not reside in the neighborhood, or close to the farmers' farmland (See Figure 3).

Despite farmers having daily contact with their friends, house neighbors, and relatives (in descending priority order), to update their agricultural knowledge, when it comes to daily decision making, farmers tend to consult their relatives and friends in whom they may have more trust, and feel more comfortable making a request.

In summary, relatives, but not siblings, and friends contribute to farmers' daily life decisions. House neighbors and farm neighbors contribute more to farmers' daily agricultural updates.

#### *Associational involvement/membership*

According to De Ulzurrun (2002), social trust, norms of reciprocity, and social networks, are promoted when people interact within associational activities. These are achieved through face to face interactions that help people develop trust in people beyond their usual acquaintances, thanks to positive cooperation outcomes.<sup>7</sup>

In terms of associational activities, farmers participated in various local meetings (Figure 4). However, they tended to participate in neighborhood and hamlet meetings more than governmental meetings. Although one-third of farmers claimed membership in communal Farmers' Associations, none of them reported involvement in meetings conducted by these associations, except some meetings with farmers' clubs which are typically managed by communal Farmers' Associations.

Official membership in local organizations related to farming was limited. This situation is also common in other part of the Mekong region. The demand by farmers for networking to support rice farming, both formally and informally, was not strong. Farmers' clubs, for example, which are mainly based on the interests of farmers, are not common in An Giang. On the contrary, it is noted that farmers have a strong orientation to doing charitable work, especially for their local community. In the previous year, 83% of respondents (n=174) reported having worked with other people in their village, or neighbors, to do something for the benefit of their community (See Figure 5). These data on cooperation suggest some persistence of traditional close community networks.

#### *Norms of reciprocity- exchange labor*

Social norms are principles that guide individual behaviors, based on shared beliefs about how individuals should behave in a particular situation (Fehr and Fischbacher 2004). Social norms are typically *unconditional*. But even when they are conditional, they are not "future-oriented", and more importantly, they are shared by people whose approval, or disapproval, of them, to a certain extent, sustains them (Elster 1989:99). The concept of norms is based on three dimensions - expectations, values, and behavior (Axelrod 1986). Elster (1989:100) explained, people are predisposed to adhere to norms because of their tendency to avoid the

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<sup>7</sup> See also Fukuyama (2001) for his description of the concept of overlapping radii of trust, and Grootaert (1999) for the spillover effects of local social interactions on household welfare in Indonesia.

“feelings of embarrassment, anxiety, guilt, and shame” that they may suffer when going against the norms, or they are prone to conforming the norms, out of their positive emotions. According to Coleman (1994), the need for a social norm arises in situations where the actions of one individual affects other people around them. Fehr and Fischbacher (2004:185) similarly remarked that social norms are needed when “actions cause positive or negative side-effects for other people”.

In An Giang, labor exchange, to help each other in rice farming, had been common since French colonization and was considered a social norm. The norm was so highly observed that seldom were there cases where a group member broke the rule. Breaching the rules, or norm, would mean that rule breakers would exclude themselves from their group. They were very likely to impair their own prestige, and risk their own rice cultivation as a result of labor sanctions imposed by other group members.

In our study, farmers indicated that when Lua Mua - a traditional rice variety that takes approximately 6 months to ripen - was still used, labor exchange was vital in rice farming. Cow and buffalo were then the main production means and because they were few, farmers borrowed draft-animals from other farmers to prepare their soil and worked for the animal's owner in return. In addition, because the irrigation system was not good at that time, water could not be provided in a synchronized manner. As a result, all farmers could not grow their rice at the same time. This provided flexibility for the exchange of labor. In early 1990, when the government introduced the new rice variety - locally called “Than Nong” (Farm God) to replace “Lua Mua”, together with improved irrigation and increased mechanization, there was a bottleneck for labor for rice farming, and reciprocity in labor exchange could not be maintained. Then in the late 1990s, farm lands were transferred under the new law, and led to increasing land sales by poor farmers which disrupted farm neighborhoods. Our field study showed that at the farm level, a remnant of this reciprocity among farm neighbors is their help to observe neighboring farms for pests or anything unusual happening to the crops. This suggests that under agrarian reform, the social norms for labor exchange remain but at a diminished level in terms of rice farming practice.

### *Social Trust*

Social trust plays an important role in developing a civic culture (Putnam 2000). It reduces transaction costs in economic activities (Torsvik 2000), is considered an indicator of the level of social relations in a country, and potentially affects the way social capital is formed in that country (Dalton et al. 2002). It is sometimes used as “the best or only single indicator” to measure social capital (Delhey and Newton 2003:94).

### *Aspects of trust between farmers and their house neighbors, kin, and friends*

Interaction within the house neighborhood is a good indicator of social cohesiveness at the community level. Generally, the neighbor relationships were very good. The neighborhood continues to be the place where farmers come to exchange information, and where young children can be sent to be cared for when adults go to the field. Indeed, the neighborhood is important in the sense that, apart from the spatial relations that affect daily interaction patterns, it is the source of support that one can rely on, especially in cases where relatives are far away. The neighborhood is also the place where farmers enjoy their leisure time – having a chat, or sharing a meal made from food collected from their fields. In cases where the neighborhood trust was high, money could also be borrowed.

However, when it comes to making daily decisions, kinship and friends appear to play a more important role<sup>8</sup>. Except where house neighbors are siblings or relatives, sensitive matters such as money borrowing, disclosure, or seeking consultation about one's personal family issues, are discussed generally within the farmers' own network. Labor exchange among neighbors was rare, despite reported cases where mutual help was fostered through good neighborhoods. In the past, the practice of neighbors helping each other to repair or build a house was very common. This exchange of labor was based on the understanding that support could be returned when one needed it. Such exchanges of labor were not common in our study, as mentioned earlier. Labor for house repair, or building, is now typically obtained from hired labor. Non-paid support is only common among siblings and relatives. Nevertheless, exceptions existed where good neighbor relationships were maintained.

In short, despite cohesiveness at the neighborhood level, social trust appears to have declined when compared with the time of mutual aid. As the farmers explained, with household economic improvement, the openness in communication has reduced. However, when it comes to charitable work, farmers appear to be keen to do this type of work. The level of involvement varies among farmers; those with limited financial resources typically contribute their efforts to fundraising activities, whereas those who are better-off prefer to offer in-kind, or financial, support. Donations of rice after harvest are so common and regular that in many communes special motorboats are devoted to collecting donations of rice during the harvesting season. However, it is noted that farmers prefer their donations to go to their kin, who might be in need rather than more broadly.

#### *Farm neighbors*

Farm neighborhoods have experienced a remarkable change following the 1993 land law and the discontinuation of mutual aid. Land reform, in particular, has caused land concentration, which is a concern in the Mekong delta region generally. At the study site, there are many cases where farmland is owned by people who live in other districts or provinces. These people own land, but do not directly farm. Instead they hire local labor to maintain their crops. In Lac Quoi commune alone, it is estimated that two thirds of riceland is owned by people who are not local residents. Given this, it is very difficult to maintain and develop farm neighborhoods. This also calls into question the building of trust and cooperation among them. If collective action related to rice farming is required, success in achieving consensus is not likely.

The issue of inter-field roads to support the transport of farm products is also sometimes problematic, and affects farm neighborhoods. Given the lack of roads, negotiation among farmers to arrange for a path to allow the transport of produce during harvest is important. Farmers are hesitant to allow the transport of produce over the fields because this typically compacts the soil, making land preparation for the new crop more difficult.. In addition, disputes can arise over the arrangements about labor for maintenance of irrigation channels

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<sup>8</sup> Though the composition of the friend network is not known, the frequent reporting of this channel (kinship and friends) indicates that farmers place a high trust on their friend network which supports them in addition to their kinship network.

between neighboring farmers both upstream and downstream. Thus, farm neighborhood relationships can be challenging to build and maintain.

Cases where farmers have both house neighbor and farm neighbor relations are becoming rare. So is the case of kin. However, in places where land fragmentation is not extensive and farmers are local residents, communication is frequently maintained among farmers with adjacent fields (usually on a daily basis). At the field level, daily communication was most common between house neighbors, followed by relatives and siblings. When communication is maintained daily, mutual help among farmers is more likely to occur<sup>9</sup>.

#### *Consensus building*

When collective action is needed, farmers reported that they required the facilitating role of communal People's Committees and Farmers' Associations, which could initiate mobilization to achieve a particular collective action. Farmers indicated that they found it hard to reach a consensus on their own, in their daily farming activities. They found that arriving at a consensus was very challenging, and that their fellow farmers did not typically have a strong and long-term commitment to an agreed set of actions. This was due to differences in opinions and preferences for individual decision making about issues that took place in their own fields.

At the field level, it is evident that farmers no longer rely on traditional sources of support such as house neighbors, farm neighbors and kinsmen, to cultivate their crops. Cooperation among rice farmers, at the field level, no longer seems to be a preferred option. Taking care of oneself appears to be the choice for most farmers. Farmers acknowledged that they are now less cooperative in farming than they were before, though the values of kinship and house neighborhood remain unchanged.

### **Discussion and Conclusion**

The foregoing analysis provided evidence of changes in social capital among rice farmers. The discontinuation of mutual aid was due to several factors which cumulatively contributed to the process. Increased use of modern rice varieties, apart from their benefits in productivity, augmented labor pressure on farmers' traditional support networks. Improved access to reliable irrigation, in addition to enhancing land use productivity, introduced an increasing labor shortage, especially at peak times during the crop season. Also, given the enactment of the land law in 1993 (which recognized farmers' right to land use), the land market was freed up and land trading increased. The consequence is an increased disparity of land size as a result of poor farmers selling off their land due to economic shocks. The changes in land ownership have disrupted the relationships that foster labor exchange practices. The decline in the exchange of labor was then furthered by the liberalized rice market, which encouraged private rice production. When the reliance on labor from mutual groups was lessened, farmers moved away from the norm of reciprocity. As traditional labor exchange networks for rice production gradually declined, there was a concomitant increase of individual rice farming practices. The consequence, at the end of this process, is the decreased practice of reciprocity among farmers of the same farm neighborhood and a

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<sup>9</sup> Chi-square = 12.533 with d.f.=1,  $p < 0.001$ ,  $n=79$ .

resultant challenge for consensus building and collective action. Although kinship relations and house neighborhoods remain important for spiritual aspects, they no longer play the role that they used to play in terms of group farming, which indicates decline in social capital with regard to rice farming.

The social factors influencing change in rice farming practices could be different in other parts of the Mekong delta from An Giang given the cascading impact that each factor had over the region, albeit with similar consequences. We conclude, from the above analysis, that the historical existence of mutual aid was fostered simultaneously by a high need for collective farming to ensure subsistence and the availability of closely knit human networks that facilitated the exchange of labor. The decline of mutual aid groups stemmed from a number of factors: mounting pressure of crop timing as a result of shortened crop duration, and synchronized irrigation; and changes in human relations at the field level as a result of land fragmentation; and an increasingly open market. Individual rice farming has become common in An Giang. This new routine results in certain difficulties for the mobilization of collective action for collective goods at the field level, especially the farm neighborhood. The degree of cooperation at the farm level at two different points in time- before 1975 and now, as reflected in the levels of trust, networks, and norms of reciprocity at farm level, is less than in the past. With the on-going land concentration due to land trading, the building of relationships among land owners remains challenging, which leaves the building of social capital for technologies which require cooperative actions at the field level open to question.

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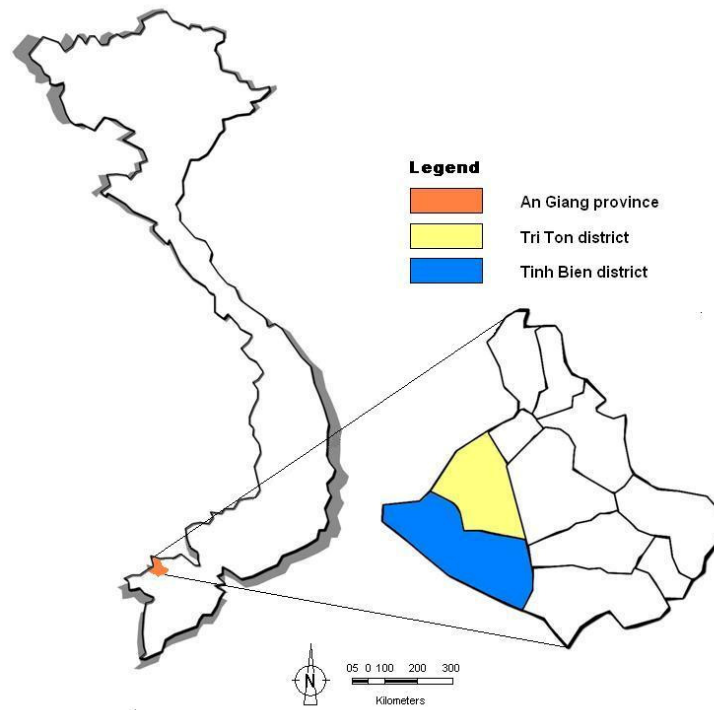
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**Figure 1 – Map of An Giang province of Vietnam**

**Table 1 –Profile of farmers in the study sites (combined from two districts)**

Characteristics	Mean	Mode	Range	SD
			n=223	
Age (years)	46.0	43	70	12.2
Household size	4.7	4	13	1.7
Number of children	2.8	2	9	1.6
Farming experience (years)	18.9	20	58	10.8
Time allocated to farming (m/ year)	6.9	6	11	2.0
Membership in local organizations	2.2	1	5	1.7
Education level (*)	2.3	2	3	0.6

\* Coding is as follows: 0: Illiterate, 1: Preschool education, 2: Primary school, 3: Secondary school, 4: High school, 5: Vocational school, 6: University

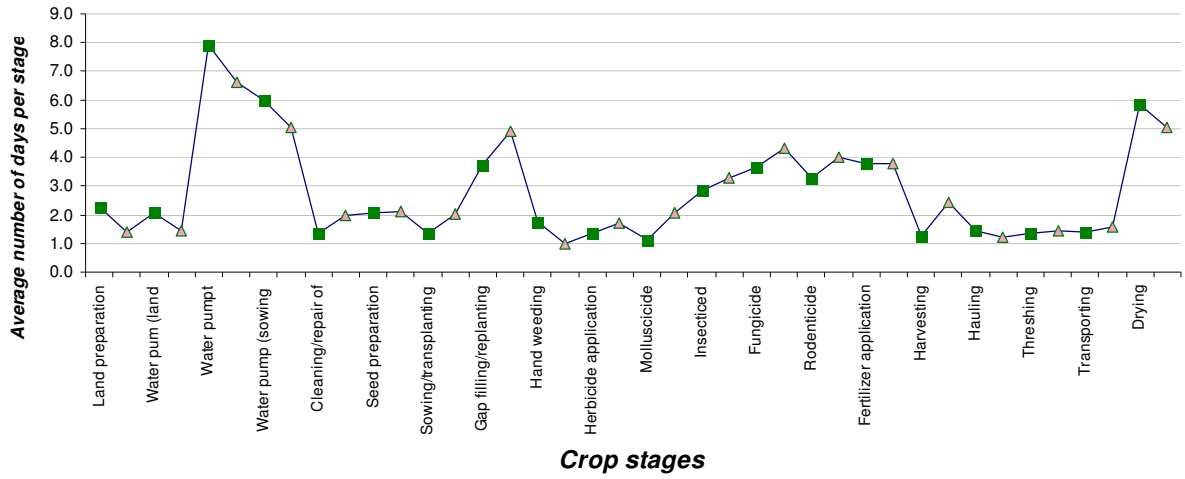
**Table 2 – Landholding distribution (n=226)**

Area group	Frequency	Percentage
<0.5	22	10%
0.6-1	44	19%
1.1-2ha	62	27%
2.1-3ha	38	17%
3.1-4ha	21	9%
4.1-5ha	7	3%
5.1-6ha	15	7%
6.1-10ha	9	4%
>10ha	8	4%

Mean: 2.97, Median: 1.90, Mode: 1.00, SD: 3.93, Variance: 15.50, Range: 26.82, Min: 0.18, Max: 27.00

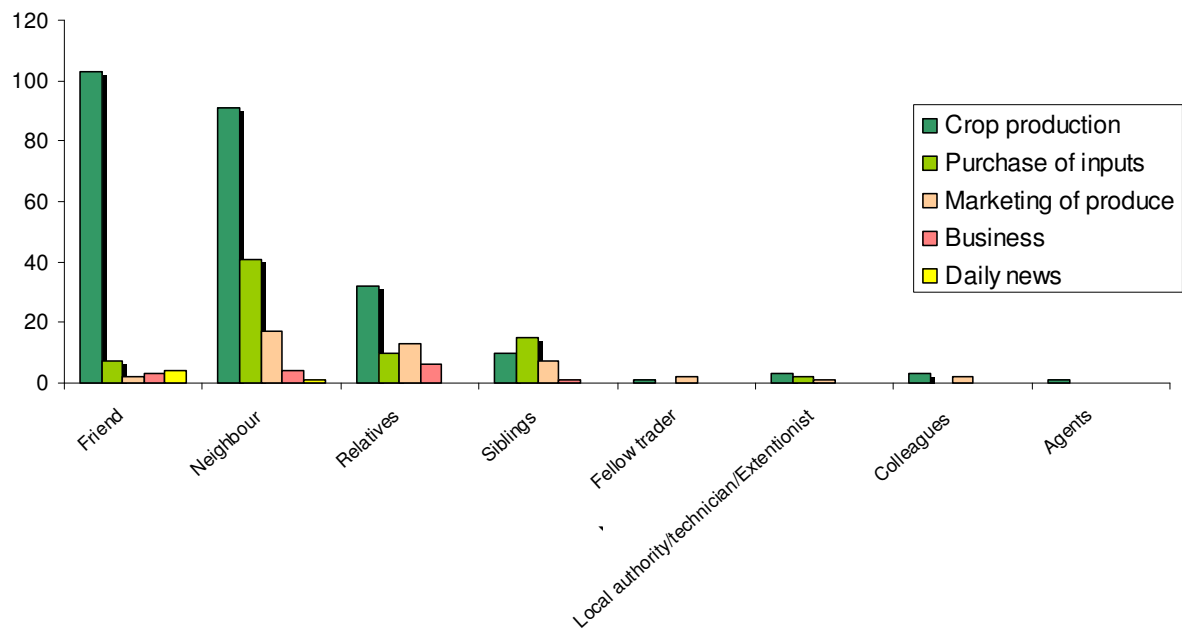
**Table 3 – Typical time allocation for agricultural activities (n=268)**

<i>Farming duration</i>	<i>Percentage</i>
1-3 months	3%
4-6 months	46%
7-9 months	41%
10-12 months	10%
	100%



**Legend:** ■: family labor ▲: hired labor

**Figure 2 - Labor distribution (Family vs. Hired Labor) - 2006 Summer-Autumn season**



**Figure 3 - Frequency of people that farmers typically have daily contacts with (in general), and the common topic of their discussion (n = 223)**

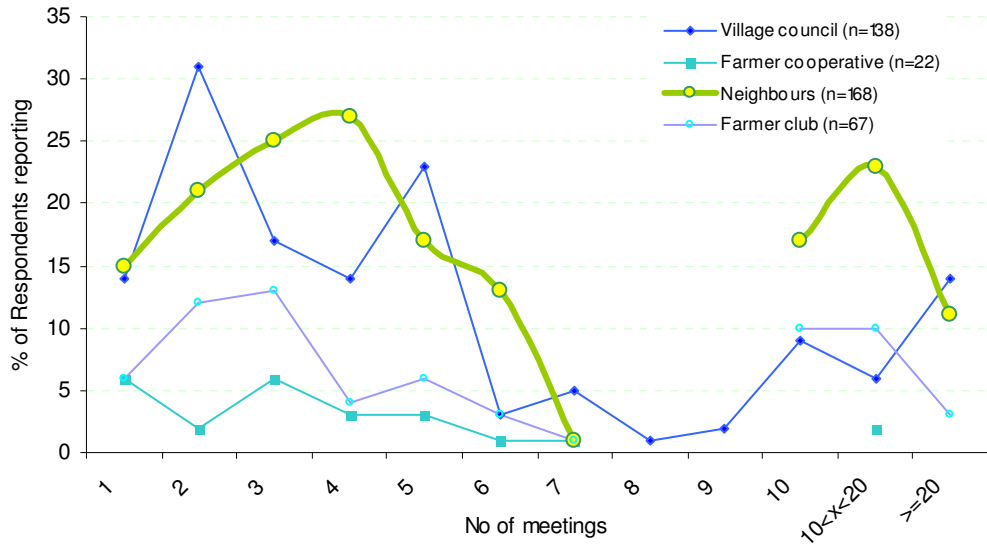


**Table 4 – Sources of capital used for agricultural inputs for rice production**

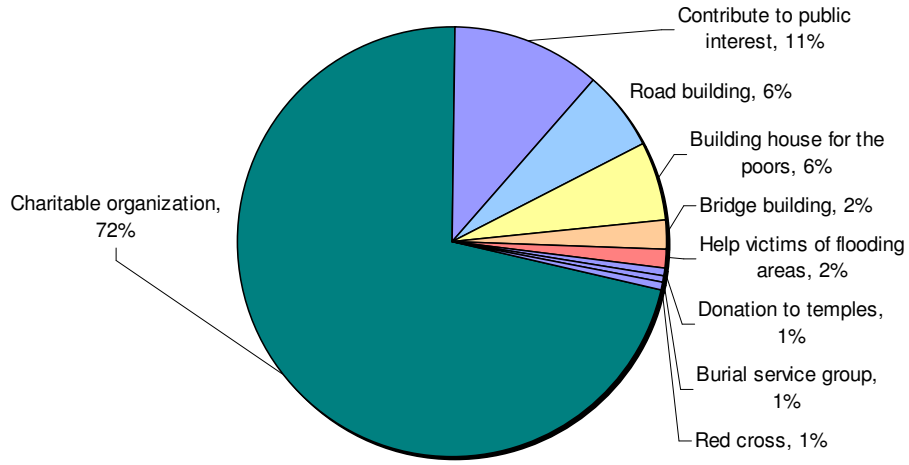
Source for Input	Number of responses	Percentage (n=223)
Saving	168	39
Input Supplier	167	39
Local Bank	74	17
Family member	11	3
Leaser	10	2
Cooperative	1	0
Other	1	0
Wholesaler	0	0

**Table 5 – Odds ratio (kin/non-kin)**

<b>Distance (in meter)</b>	<b>100</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>500- 1,000</b>	<b>&gt;1,000- 5,000</b>	<b>&gt;5,000- 10,000</b>
Odds ( <i>kin</i> )	0.452	0.077	0.037	0.043	0.004	0.476	0.244	0.011
Odds ( <i>non-kin</i> )	2.212	12.947	26.895	23.091	264.000	2.099	4.096	87.333
Odds ratio ( <i>kin/non-kin</i> )	0.204	0.006	0.001	0.002	0.000	0.227	0.060	0.000



**Figure 4 - Associational activities via Local Meetings**



**Figure 5 - Voluntary works by type of work (n=191)**