INTRODUCTION

Agricultural and social scientists have devoted considerable effort to the study of Malaysia's rice farmers. The research and development activities of the Malaysian Agricultural Research and Development Institute (MARDI) and the Department of Agriculture have led to rapid adoption of fertilizer—responsive rice varieties by many of Malaysia's rice farmers, most of whom operate small farms of less than four acres. Economists such as T.B. Wilson (1958), J.T. Purcal (1971) and S. Selvadurai (1972), among others, have contributed greatly to our understanding of the economic parameters of rice production in Malaysia. Anthropologists and other social scientists have increased our awareness of the social organization of production (Barnard, 1970; Fujimoto, 1974; Huang, 1975; Tamin and Mustapha, 1975; Bailey, 1980) and refined our understanding of the diversity of rice farming systems in Malaysia (Ouchi et al., 1977; Kuchiba et al., 1979; Lambert, 1981).

For the most part, the work of agricultural and social scientists has focused on the rice farmers qua rice farmers and given relatively little emphasis to the fact that the overwhelming majority of Malaysia's rural producers (including rice farmers, fishermen, and rubber tappers) are involved in a diversity of economic pursuits.

Economic diversity serves to spread risks and increase incomes, and for many rural families is absolutely essential for survival due to limited resources of land and working capital. Engaging in secondary economic activities also serves to maximize the productive use of available labour during seasons of relative inactivity, for example between transplanting and harvest seasons.2

The fact of diversified rural economy has clear implications for the design and implementation of development strategies in Malaysia. Agricultural research and development efforts designed to maximize yields of rice assume that farm families do in fact engage in full-time rice cultivation. By focusing on a single activity, extension specialists and other agents of change frequently overlook the importance of secondary economic activities in the rural economy. Farmers who fail to take full advantage of new agricultural technologies may have very good reasons for their reluctance, but government officers responsible for agricultural development are

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1 This paper is based on eighteen months of field research (1977-78) supported by a Fulbright-Hays Doctoral Dissertation Fellowship and by a grant from the Center for International Agriculture, Cornell University. A revised version of the author's doctoral dissertation is forthcoming from Oxford University Press as The Sociology of Production in Rural Malay Society.

2 The author recently studied secondary economic activities of small-scale fishermen in the Philippines. The results of this study will be published by the International Center for Living Aquatic Resources Management in late 1982.
likely to view such behavior as irrational and evidence of a so-called "subsistence orientation" unsuited to the needs of the country or the opportunity of the times.\(^3\) Closer analysis of existing farming systems, however, indicates that, far from being irrational, farming families consciously seek to diversify both their sources of risk and income rather than invest heavily in time, energy, land and working capital to maximize income from any single pursuit.

In common with many over-simplifications, there is a grain of truth in the alleged "subsistence orientation" of many rice farmers. Assuring a harvest sufficient to meet household consumption needs indeed is the first priority of rice farming families. Before the introduction of modern high-yielding varieties, traditional rice varieties and cultivation practices provided for basic subsistence needs. No chemical fertilizers were applied. Typically dependent upon rainfall, only one crop of rice was cultivated. Land preparation was accomplished either by teams of oxen or by water buffalo and as many as twenty different rice varieties, each with different rates of maturity and resistance to potential threats, would be planted by farm families in a given community. The pace of land preparation and planting was unhurried, with the longest-standing varieties planted first and the more rapidly maturing varieties planted later.

The traditional system of rice production provided most farm families little or no surplus for sale. New fertilizer-responsive rice varieties offer the hope of producing a substantial surplus beyond subsistence needs. However, a number of serious risks are associated with these new varieties: they tend to be more susceptible to drought, flooding, disease and insect damage than their traditional counterparts. Widespread planting of only a limited number of approved varieties greatly increases the threat of widespread loss. This danger is increased by the regime of double-cropping, which provides a continuous medium in which thrive both diseases and various species of insects that transmit diseases or directly damage the crop. Because these new varieties demand heavy inputs of chemical fertilizer to achieve optimum yields, and because double-cropping dictates increased reliance upon costly tractor services for land preparation, damage or loss of the crop not only threatens the subsistence needs of farming family, but risks precious working capital invested in the crop itself.

RICE FARMING IN BESUT, TRENGGANU

Gong Guncil, the rice farming community studied by this author, had in early 1978 a population of 694 (134 households). Gong Guncil is located approximately five miles from the town of Jerteh and is within the Stage I area of the Besut Agricultural Development Project.\(^4\) This community is also within the area served by the Sungai Angga Irrigation Scheme, which began operation in 1962 and was absorbed and expanded upon by the Besut Agricultural Development Project in the mid-1970’s. Despite the fact that there is a history of almost twenty

\(^3\) A sustained goal of the governing authorities from colonial times to the present has been national self-sufficiency in rice production. Heavy expenditures for irrigation and other facilities are justified both by this goal and a sincere desire to increase incomes and improve standards of living among Malaysia’s rice farmers.

\(^4\) A total of 12,600 acres are served by irrigation and extension services of the Project.
years of double cropping in the study area, Gong Guncil’s farming families have adopted an eclectic mix of traditional and “modern” varieties and techniques. Traditional rice varieties may be grown due to specific field conditions (e.g., where inadequate drainage makes the taller traditional varieties more suitable) or due to personal preference for the superior grain of these varieties (a quality confirmed by a premium in market price).

In general, however, a majority of farming families in Gong Guncil plant fertilizer-responsive varieties on most of their land. Yet almost without exception they do not follow recommended levels of fertilization or crop management techniques associated with these varieties. As a consequence, their yields are below what agronomic field trials indicate could be achieved. Extension agents of the Besut Agricultural Development Project are frustrated by the unwillingness of farmers to adopt their suggestions. They correctly point out that the new package of seeds, fertilizers, and management techniques must be taken as a whole to achieve optimum results due to the interactive effect of each component part. However, they are not correct in assuming that failure to follow their recommendations means that farmers are economically complacent and satisfied with living at subsistence levels.

In their devotion to increasing rice yields, Project officers have mistakenly assumed that rice cultivation is more important to the local economy than in fact is the case. Almost without exception, the rice farmers of Gong Guncil (and of Besut generally) are engaged in a wide range of economic activities, some of which may conflict with the demands of rice cultivation. When asked, men and women may well identify themselves as rice farmers, but if we study what they do and what they earn, we find that a majority are engaged in diversified farming plus a mix of other economic pursuits. Indeed, the label “part time farmers” could appropriately be applied in more than a few cases. We need to explore why this is the case.

LIMITED RICE FARM SIZE

Among rice farmers, limited farm size often makes diversification of income sources a matter of necessity. As shown in Table 1, of the 93 households in Gong Guncil who own rice land, 52 own less than three acres. Twenty seven farming families own no rice land at all. Of the 120 households thus involved in the rice economy, 19 own land but are not active cultivators (in the majority of cases due to age or infirmity). Of the 101 active farming families in Gong Guncil, 52 are owner-operators, 24 are owner-tenants, and 25 are purely tenant farmers. Their average farm sizes are indicated in Table II. The distribution of farm size by tenure category is given in Table III.

5Traditional varieties are more prevalent during the main season because seedling and plant height of these varieties make them more resistant to flooding common during the Northeast monsson (mid-November into January).
6Only fourteen of 134 households in Gong Guncil are not involved in the rice economy.
**TABLE I**

OWNERSHIP OF RICE LAND BY FARMING HOUSEHOLDS  
(n = 120)

<table>
<thead>
<tr>
<th>Acres</th>
<th>Households</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>27</td>
<td>22.5</td>
</tr>
<tr>
<td>Under 1</td>
<td>6</td>
<td>27.5</td>
</tr>
<tr>
<td>1-1.99</td>
<td>22</td>
<td>45.8</td>
</tr>
<tr>
<td>2-2.99</td>
<td>24</td>
<td>65.8</td>
</tr>
<tr>
<td>3-3.99</td>
<td>14</td>
<td>77.5</td>
</tr>
<tr>
<td>4-4.99</td>
<td>9</td>
<td>85.0</td>
</tr>
<tr>
<td>5-5.99</td>
<td>6</td>
<td>90.0</td>
</tr>
<tr>
<td>6-6.99</td>
<td>2</td>
<td>91.7</td>
</tr>
<tr>
<td>7-7.99</td>
<td>3</td>
<td>94.2</td>
</tr>
<tr>
<td>8-8.99</td>
<td>nil</td>
<td>94.2</td>
</tr>
<tr>
<td>9-9.99</td>
<td>2</td>
<td>95.8</td>
</tr>
<tr>
<td>Over 10</td>
<td>nil</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**TABLE II**

AVERAGE RICE FARM SIZE BY TENURE CATEGORY

- Owner-operators: 2.28 acres
- Owner-tenants: 3.18 acres
- Tenants: 1.99 acres

**TABLE III**

DISTRIBUTION OF RICE FARM SIZE BY TENURE CATEGORY

<table>
<thead>
<tr>
<th>Acres</th>
<th>Owner-operator (n = 52)</th>
<th>Owner-tenant (n = 24)</th>
<th>Tenant (n = 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=5</td>
<td>2</td>
<td>nil</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>nil</td>
<td>8</td>
</tr>
<tr>
<td>1.5</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>2.5</td>
<td>5</td>
<td>2</td>
<td>nil</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>3.5</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4.5</td>
<td>nil</td>
<td>1</td>
<td>nil</td>
</tr>
<tr>
<td>5</td>
<td>nil</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.5</td>
<td>nil</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>1</td>
<td>nil</td>
</tr>
<tr>
<td>&gt;=6</td>
<td>nil</td>
<td>nil</td>
<td>nil</td>
</tr>
</tbody>
</table>
INCOME POTENTIAL OF RICE PRODUCTION

It is apparent from Tables I, II, and III that farm families of Gong Guncil operate small farms. Owner-tenants, those farm families which supplement their own holdings with land they either rent or sharecrop from others, have by far the largest farms. Their effective farm size, however, is reduced since they pay either cash rent or a portion of their crop on the land they do not own. The most common form of tenure relationship is known as bagi dua, whereby owner and tenant equally share production costs and yields; thus for each acre sharecropped, the effective farm size in terms of yield and income is one-half acre. This manner of calculation brings the effective farm size of owner-tenants more closely in line with that of owner-operators, and underscores the difficulties facing tenant farm families, whose effective farm sizes are dropped to an average of one acre. The implications of tenure category and farm size on household economic strategies will be discussed after examining yield and income data from rice production.

For ease of calculation and comparability, let us assume the figures which follow refer to owner-operators farming two acres. Cultivation of traditional varieties under optimum weather conditions may produce yields of 400 gantang of paddy per acre, while under adverse conditions the yield may be half or less.\(^7\) Personal observation over four seasons supports a consensus among Gong Guncil’s farmers that a yield of 300 gantang (1900 kg/ha) can safely be counted upon, especially since irrigation facilities reduce the threat of drought. As traditional varieties are only grown once a year, a two acre farm would give an annual yield of 600 gantang. This yield would be undiminished by the need to sell grain to meet production costs since chemical fertilizers are not used with traditional varieties and land preparation is typically accomplished by means of animal traction.

The introduction of irrigation facilities has allowed farm families of Gong Guncil to increase rice production, but this increase has been due to double-cropping rather than an increase in productivity per season. Even with the current widespread use of fertilizer-responsive varieties, average yields per acre remain at the level of 300 gantang per acre per season. Thus farm families have doubled their production to 1,200 gantang.

But as production rose so did the costs and risks of production. To sustain yields in a regime of double-cropping it became necessary to use chemical fertilizers and pesticides. Farm families also became increasingly dependent upon contract plowing by tractor. Production costs for chemical inputs, land preparation, water and land taxes, but excluding any return to labour, averaged approximately M$80 per acre per season, or M$320 per year for a two acre farm.\(^8\) During 1977–78 the

\(^7\) A gantang is a measurement of volume equal to one imperial gallon. One gantang of paddy weighs approximately 2.55 kilograms, though this will vary somewhat depending on the variety.

\(^8\) Production costs varied from family to family. Contract plowing by private operators costs M$50 per acre. Some families applied (per acre) two 20 kg bags of urea (46%N) at a cost of M$11 each while others applied one or two 20 kg bags of mixed or compounded fertilizers at prices ranging from M$13 to M$22 with or without the addition of urea.
price per gantang of paddy was approximately M$1.00.\textsuperscript{9} Thus, if a two acre farm gave a yield of 1,200 gantang, the gross income would be M$1,200. Subtracting production cost of M$320 would leave a net income of M$880 (or 880 gantang of paddy) as a return to the family’s effort.

Of this total, a large portion is likely to be devoted to the family’s consumption needs. A family comprised of two working adults, two adolescent and two pre-adolescent children is likely to consume 900 gantang of paddy in a year,\textsuperscript{10} not counting various social and religious obligations.\textsuperscript{11}

According to agronomic field trials, farmers in Besut should be able to obtain yields of as much as 550 gantang per acre per season or an annual gross yield for a two acre farm of 2,200 gantang (M$2,200). To obtain such yields, however, an investment of over M$450 per year in chemical fertilizers and other purchased inputs would be required. Assuming such yields are obtainable, the net return would be close to M$1,750 per year; half of this may end up in the family rice pot.

(During June 1982 the author returned to Gong Guncil and found that as a result of free fertilizer being provided to farmers under a government subsidy scheme, yields have increased to nearly 550 gantang per acre. Production costs (assuming the use of family labor in planting and harvesting) are thus limited to M$200 for plowing two acres twice a year, leaving a net income of M$2,000 per year. This is at variance with the figures in Table IV and the discussion which follows, but not significantly so. Moreover, the diversified nature of Gong Guncil’s economy persists despite recent developments, and the relevance of the main points of this paper are unchanged.)

\textsuperscript{9}This price varied according to length of grain of the particular variety being sold, amount of chaff, moisture content, and time of the year.

\textsuperscript{10}Such a family will consume one gantang of milled rice (beras) per day. In volumetric terms, ten gantang of paddy yields four gantang of beras. Thus, 360 gantang of beras will require 900 gantang of paddy.

\textsuperscript{11}Social obligations include gifts of grain to families holding wedding or other feasts, and to relatives living in areas where rice is not grown. Religious obligations include a 10\% tithe (zakat) on yields in excess of 475 gantang per season, delivered to the Imam of the local mosque. Another tithe of three-quarters gantang of milled rice per capita is collected as fitrah for distribution to the poor and needy during the fasting month of Ramadan. The grain collected under zakat is sold and the proceeds divided into eight parts, five of which are turned over to the State Department of Religious Affairs. Of the remainder, one part is payment to the Imam and two parts are distributed locally to the poor and needy. Well under half of the expected zakat is actually collected by the Imam, who says that many families prefer to distribute their tithe personally.
Table IV summarizes data on yields, production costs, consumption requirements, and surplus (deficit) available for sale by a farm family owning two acres of farm land under three different conditions.

**TABLE IV**
COMPARISON OF THREE RICE PRODUCTION REGIMENS FOR A TWO ACRE OWNER-OPERATED FARM PER YEAR
(in Malaysian dollars)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross yield</td>
<td>600</td>
<td>2,200</td>
<td>1,200</td>
</tr>
<tr>
<td>Production costs (excluding labor)</td>
<td>0</td>
<td>450</td>
<td>320</td>
</tr>
<tr>
<td>Net Yield</td>
<td>600</td>
<td>1,750</td>
<td>880</td>
</tr>
<tr>
<td>Consumption</td>
<td>900</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Surplus (deficit)</td>
<td>(300)</td>
<td>850</td>
<td>(20)</td>
</tr>
</tbody>
</table>

It is clear from Table IV that using current practices, many farm families are producing barely enough to cover their subsistence needs and that if they adopted recommended practices they would produce a surplus worth M$850 per year. The additional cash investment would not be great (M$130).

More is involved that simply increased investment in purchased inputs, however. The critical issue here relates to competing obligations for time and energy stemming from secondary economic activities. In the absence of careful crop management (timely transplanting, weeding, water, pest and disease control, bund maintenance, etc.), increased use of purchased production inputs such as fertilizer offers little or no advantage. The simple fact of the matter is that due to competing obligations, Gong Guncil’s farm families rarely weed their fields after transplanting or spend more than a minimal amount of their time in other crop management activities. Were they to do so it is quite likely that optimum yields could be achieved. But there are opportunity costs involved in more intensive rice farming. It is clear that even with a surplus valued at M$850 a year (M$71 per month), even owner-operators with two acres are dependent upon alternative sources of income to make ends meet.

An examination of Tables II and III shows that this dependence upon alternative income sources is most extreme for tenant farmers. For the most part tenant farm families tend to be younger, have fewer dependents, and have small consumption requirements. Nonetheless, tenant farmers are likely to produce rice primarily
for home consumption. They are unlikely to view rice cultivation in commercial terms. Tenant farmers operate the smallest farms and their effective farm size is actually half of the figures presented. To obtain the same total crop yield as an owner-operator of a two acre farm, a tenant would have to cultivate four acres of rice land. Tenant families tend to establish an effective farm size capable of producing grain for household consumption alone, and look elsewhere to earn a cash income. As their needs grow they will increase the acreage sharecropped, and as the years pass they may inherit land.12

Owner-tenants tend to be more commercially oriented in their rice production than the other two groups. As a category, owner-tenants would include farm families who own half an acre of rice land and who supplement this holding by sharecropping additional acreage. More commonly, however, owner-tenants own farms similar in size to owner-operators (approximately two acres), and choose to expand their acreage in order to increase their surplus for sale. The hardest working and most conscientious farmers of Gong Guncil are owner-tenants. They tend to pay more attention to crop management and invest more heavily in chemical fertilizers than their neighbors. As a consequence, their yields are above average, reaching 400 gantang or more per acre. An owner-tenant family owning two acres and sharecropping one additional acre (assuming yields of 400 gantang) would earn a total of 2,000 gantang (M$2,000) minus production costs of approximately M$450. After domestic consumption needs are met, even such conscientious farmers still need supplementary income sources.

OPPORTUNITIES FOR ALTERNATIVE EMPLOYMENT

Even if the more commercially-oriented rice farmers were content to limit their income to rice production, the regime of rice production allows ample time for other pursuits. From the completion of transplanting to the beginning of harvest, there is a period of at least three months. Some of this time will be occupied by repairs or extensions to the family's house or grainery, gardening for household consumption, visiting relatives in other villages, and in domestic chores delayed during the preceding harvest and transplanting seasons. This still leaves considerable time available for other economic activities. The importance of alternative sources of income will vary between families, and as suggested previously, tenant families and other families with limited rice farm size earn most of their cash income outside of the rice economy. Even for families less dependent on non-rice earnings, the ability to diversify their income sources has important consequences, both on their standard of living, and for their attitudes and behavior regarding rice production itself. Rather than maximize rice production, farm families often decide to utilize their time and resources in other pursuits.

12 Rice land is rarely offered for sale and inheritance is by far the most common means of access to land ownership. Although Muslim inheritance laws stipulate a larger share of an inheritance should pass to male heirs, common practice in Besut and in many other parts of Malaysia is to divide equally the inheritance between male and female heirs. What land has been sold over the past decade in the Gong Guncil area has brought such high prices (over M$3,000 per acre) that only wealthy farmers or non-farmers (most notably government teachers) have been able to buy rice land.
RUBBER

In Gong Guncil the single most important alternate economic activity is rubber tapping. Rubber trees are found dotted across the landscape where slight elevation in the land precludes the planting of irrigated rice. Such high and relatively dry land is also used for house sites and for fruit orchards; often these are mixed in with or border on rubber stands. Because most of the trees in the area are unimproved varieties, many planted prior to World War II, the productivity is quite low; five *katî* (three kg) of dried unsmoked sheet per acre per day would be a generous estimate.

Forty two families in Gong Guncil own rubber land, and as indicated by Table V, rubber holdings tend to be small. The four families owning in excess of ten acres own land further into the hilly interior of Besut District, and in each of these cases the land is given over to production by sharecroppers. Of the 42 families owning rubber land, sixteen families rely on sharecroppers to work their holdings. Within Gong Guncil 24 families own no rubber land but tap the land of others, with whom they divide the production on the basis of *bagi dua*. Thus, out of a total of 134 households, a total of 66 are involved in the rubber economy.

The income to be earned tapping rubber tends to be irregular and varies depending on the prevailing market price. During peak labour periods in rice cultivation, tapping practically ceases. There is also the Northeast Monsoon season to contend with; when it rains heavily in the late afternoon or evening, tappers are unable to work the following morning as the water dripping off the leaves and down the trunk will cause the latex to spill out of the grooves tapped into the bark of the tree. During the two months of monsoonal rains little tapping takes place. Add to this a total of three months per year devoted to transplanting and harvest and there is little time left for tapping.

### TABLE V

**DISTRIBUTION OF RUBBER LAND OWNED BY RESIDENTS OF GONG GUNCIL**

*(n = 42)*

<table>
<thead>
<tr>
<th>Acres</th>
<th>No of Households</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>5</td>
<td>11.9</td>
</tr>
<tr>
<td>1-1.99</td>
<td>14</td>
<td>45.2</td>
</tr>
<tr>
<td>2-2.99</td>
<td>10</td>
<td>69.0</td>
</tr>
<tr>
<td>3-3.99</td>
<td>2</td>
<td>73.8</td>
</tr>
<tr>
<td>4-9.99</td>
<td>7</td>
<td>90.5</td>
</tr>
<tr>
<td>Over 10</td>
<td>4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Obtaining information on the actual income from rubber tapping is difficult for a number of reasons: the varying quality of trees tapped; the variable number of days that may be tapped per month; the fluctuations in the market price; dif-
ferences in price for different grades of sheet produced; and because tappers sell
their product at irregular intervals and at different places. Nonetheless, a very rough
estimate of M$940 per year can be offered, based on an annual production of
seven pikul (60.5 kg) and a price of M$70 per pikul (1 pikul = 60.5 kg).13

**Livestock**

Another common source of income for farm families is the raising of livestock. Data is available for 54 farm families in Gong Guncil. Among these families a total of 41 water buffalo and 107 head of cattle are owned. In addition, virtually every household raises a few chickens for eggs and meat, or for sale.

Farmers report that before the introduction of double-cropping in 1963, the number of large livestock in Gong Guncil was greater than the current population. There are two main reasons for this. With double-cropping, tractors have come into increasing use for land preparation, reducing the need for water buffalo. Double-cropping has also had the effect of substantially reducing land available for grazing. In the past, even families who owned no rice land were free to let their animals graze in the fields after the completion of harvest, and these families have been especially hard hit by the introduction of double cropping. With a crop in the field for all but a few weeks of the year, water buffalo and cattle must be tethered, and additional fodder cut and brought to them. This may mean from one to two hours of work each day for someone in the family (usually the man), depending on the season and the availability of fodder.

Water buffalo may be used in land preparation, or for more limited plowing of seedbeds. Cattle are raised primarily for sale to villages holding large feasts or to regular buyers who sell the animals to urban abattoirs. A healthy four or five year old cow may bring M$500 in such a sale, and a large water buffalo of seven years age may bring over M$1000. In strictly economic terms it would appear that raising water buffalo is more rewarding. However, due to the size and strength of water buffalo, and the uncertain disposition of some of them, the men of the household are usually the ones to care for these animals. Because this is a daily task, raising a water buffalo may limit alternative employment for the men, especially outside of the village economy. Cattle, on the other hand, are much more tractable (and much smaller) and children as young as ten years often are delegated responsibility for their care.

The income obtained from animal husbandry tends to come irregularly and in large sums. Such sums of money are useful for building or extending the family home, the purchase of land, a pilgrimage to Mecca, or other large expenses. Averaged over the years, it would appear that a majority of farming families increased the value of their ‘capital on the hoof’ by between M$100 and M$300 per year.

13 See Bailey (1980) pp. 126–131, and Table 5.4 on p. 266.
Tobacco

Rubber tapping and livestock production do not seriously conflict with the cycle of rice production, but other alternative economic activities do compete directly with the allocation of time, energy, land and working capital devoted to rice.

One example of such competition is the cultivation of tobacco. Tobacco is an attractive cash crop because of high price and assured marketing outlets. A farm family growing other cash crops in quantity --fruits, groundnuts, or vegetables -- will have difficulty in disposing of their produce in the absence of a nearby urban center. The marketing of tobacco is guaranteed by processing barns which dictate the timing of planting (and even sowing the seed in central nurseries), supervise the transferring of seedlings into plastic cobs and the transplanting of the seedlings into the field, and provide credit for fertilizer and pesticides. Forty days after transplanting the first leaves are harvested, and harvesting continues on a regular schedule at three or four day intervals determined by the tobacco processing barn. The prices received are fixed in advance for the various qualities of leaf, but judging this quality is a subjective matter and there are frequent accusations by farmers of cheating. In fact, only two farming families within Gong Guncil itself were actively cultivating tobacco at the time of my research because of alleged cheating in grading practices and failure to pay for the tobacco delivered to the buyers.14 Farmers in the surrounding area were growing tobacco and the observations that follow are based on experience with them.

Tobacco is a labour-intensive crop, especially after the plants are transplanted into the fields. As this is usually done during a period of little rainfall, the young plants must be watered daily. Farmers spend many nights in the fields manually picking caterpillars off the plants, though pesticides also are used. Weeding and cultivating around the plants also is a constant chore. Harvest is a time consuming process. The leaves are picked and carefully stacked during the afternoon preceding the sale, and often much of the day of the sale itself is occupied by transporting the leaves to the purchase site and waiting for the buyers to arrive.

As can be seen from Figure I, the periods of peak labour demand for rice and tobacco cultivation overlap. The amount of time devoted to land preparation for tobacco will vary depending upon whether the work is done by hired tractor service or entirely by hand. If a tractor is used, there will still be considerable labour invested in forming the raised beds on which the seedlings are transplanted. The time spent in land preparation will conflict with management of the rice crop as it nears maturity, a period of danger from certain insect pests, and from birds and rats.

14 A similar situation was reported in rubber tapping communities studied by this writer in Kedah (Bailey, 1980, pp. 274–76).
Tobacco is particularly attractive to farm families who own little or no land because the acreage involved generally is small, from one-third to one-half acre. In the Gong Guncil area, tobacco generally is grown on non-irrigated rice land. A family not owning such land may easily obtain access without the payment of rent because owners believe the heavy use of fertilizer in tobacco cultivation will benefit the succeeding rice crop of the main season.

A family with 1,000 tobacco plants (as many as 7,000 plants are grown per acre) will earn M$200—300 after paying producing costs of approximately M$50. In the area surrounding Gong Guncil, families typically plant between 2,000 and 4,000 plants. If we assume an earning of M$200 per 1,000 plants, the income from one-half acre (3,500 plants) would be M$700. Compared to the figures presented above for rice production, the income earned from tobacco is quite attractive (especially to landless farm families), and worth the more intensive effort and greater investment in purchased inputs.

Fruit

The months of June and July coincide not only with peak labour demands of rice and tobacco, but with fruit season as well. Over a period of perhaps six to eight weeks the gathering and sale of durian, rambutan, and duku is almost a full-time occupation for half a dozen families. Most families within the village either own or have access to these fruits, which are sold to traders who transport and sell them in the more urban markets of Kuala Trengganu and Kuantan. The sale of fruit is an important source of cash income, and at least one family earns over

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15 In other parts of Besut District and in the neighboring State of Kelantan, many farmers prefer planting tobacco to rice, and in some areas there has been opposition to the construction of irrigation facilities designed to flood fields for rice cultivation. In other areas, farmers have requested that water be withheld so that they can grow tobacco during the off-season.
M$1,000 a year on these seasonal fruits. A more typical level of income would be in the neighborhood of M$300, though less than two-thirds of the households of Gong Guncil have seasonal fruits for sale.

NON-AGRICULTURAL SOURCES OF INCOME

In addition to the buyers and sellers of seasonal fruits, there are three people (all women) who earn a substantial portion of their families’ income by buying and selling fruits, vegetables and rice at a regular weekly market. Because little capital investment is required, petty trading of rice and seasonal and non-seasonal fruits and vegetables is an occupation that is easily entered and from which quick but small profits may be earned. In addition to rice, fruits, and vegetables, other women earn small incomes from the preparation and sale of cakes and other local delicacies which are sold house to house and in the village coffee shops. Women provide at least half of the labour for rice cultivation and their involvement in petty trading activities, plus their normal household chores, limits their involvement in rice crop management.

On the East Coast of Peninsular Malaysia women tend to dominate petty trading, though larger-scale trading ventures appear to be more evenly divided between men and women. In Gong Guncil there are three families engaged both in rice farming and in almost full-time trading and manufacturing activities. During transplanting and harvesting seasons their trading activities diminish or cease altogether, but are quickly resumed once these tasks are completed.

The men of four other rice farming families are employed full-time as a labourers with various government agencies. Other men earn regular cash incomes as barbers, carpenters, or drivers of pedi-cabs. Another man rides his small motorcycle eleven miles to the fishing port of Kuala Besut and buys fish which he sells in Gong Guncil and other neighboring villages.

Even more serious from the standpoint of crop management is a long tradition of seasonal migration to other areas. Until the late 1960s many men from Kelantan and Besut travelled overland through southern Thailand to take part in Kedah’s rice harvest. Much of the cash income earned could be brought home as food and lodging were provided. (It is interesting to note that new varieties of rice also were introduced by these migrant workers, as was the practice of threshing rice instead of harvesting panicle by panicle).

In recent years a new source of employment has been found in the construction industry of Singapore. After transplanting has been completed, as many as thirty men in groups of two and three travel over 500 miles by bus to Singapore. There they are able to earn as much as M$12 or M$13 per day, six days a week for a period of eight to ten weeks at which time they return home for the harvest. Sometimes money is remitted home through postal money orders, and sometimes the men bring the accumulated savings home with them. While in Singapore, they live in rent-free barracks and cook their own meals. Estimates of their daily expenses range from M$3.00 to M$5.00, leaving from M$30 to M$40 a week as savings. This is much more than these men could earn in Besut even if such employment was available (which it is not).
In addition to money, the men bring home clothing, radios, cassette tape recorders, watches, cigarette lighters, and other more (or less) useful items obtainable in the free-port of Singapore. A few of the younger unmarried men manage to bring home next to nothing, having succumbed to various urban charms.

CONCLUSIONS

It is obvious that the rice farming families of Gong Guncil are engaged in a wide range of economic activities, and it is not at all clear that their overall economic attitudes can be accurately portrayed as subsistence-oriented. There is reason to believe that decisions concerning allocation of scarce resources of land and working capital, and especially seasonally-scarce resources of time and effort, are made on the basis of criteria that are economically rational. The argument that farm families carefully weigh the risks and profitability of each enterprise can be carried too far, however. Their rationality extends beyond an item accounting of profitability. The fact that full adoption of new fertilizer-responsive rice varieties and associated cultivation practices would lead to higher yields in this one enterprise, and that farm families have failed to adopt this new agricultural technology, must be seen in the light of the broader economic concerns of the families themselves.

Farm families may be subsistence oriented insofar as they are concerned with risk management and survival, but this is not the same as saying that they are content to live on the margin of subsistence. Rather, as the case presented in this paper indicates, farm families are integrated in and influenced by the broader cash economy and consciously diversify their sources of income to improve their standard of living and to reduce their vulnerability to economic set-backs in any single occupation. Rice farming provides a family with the basic requirement of food. In some cases, rice production may also be an important source of cash income. For the majority, however, limited farm size necessitates involvement in other agricultural and non-agricultural occupations. Far from being full-time rice farmers primarily concerned with maximizing yields of this one crop, it may be more accurate to view the farm families of Gong Guncil as diversified farmers, and even in some cases as part-time farmers. In this light we may more fully and sympathetically understand the production constraints they face. This in turn may encourage a redirection of research and development efforts away from concentration on single crops and towards efforts designed to encourage and assist farm families in various multiple cropping systems and alternative income strategies which possess potential for increasing rural incomes.

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