The writer wishes to express his profound gratitude to his Supervisor, Dr. M. S. Salvaratnam, and the members of the Faculty of Economics and Administration for their supervision and patience. Without their kind assistance, this study would not have been possible.

ECONOMIC, SOCIAL AND POLITICAL CHANGES IN KAMPONG PASIR GAJAH
PARIT PERAK

Thanks are due to Mr. J. M. Mills, Insek Muhammad bin Mohamad Haji Navah, Ustaz Ahmad bin Saidin, Insek Kudi bin Mohamed Taib, Insek Kudi bin Abdul Hamid and Insek Khiew Chuan Yng of the Trans-Perak River Irrigation Scheme's Colonisation Office, Parit, who offered many helpful suggestions. This study owes a great deal to them.

Particular thanks go to Insek Moharok Ali bin Raja Muhammad, whose criticism contributed greatly to the preparation and writing of this report.

Much credit is due to the residents of Kampung Pasir Gajah for their very keen co-operation and hospitality. The writer will long cherish the memory of their friendliness and interest.

A Graduation Exercise presented to the University of Malaya in part fulfilment towards the Degree of Bachelor of Economics with Honours in Rural Development.
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Introduction

It is worth noting that due to the very short time available for the fieldwork, the writer is unable to make a thorough study on the history of the village. The oldest living person in the village is an 87 year old lady and it is through her that a rough history of the village was reconstructed. Further, the absence of documents and data on the production of paddy, tobacco or other crops presents another difficulty in analysing the production pattern so as to make a comparison between the pre and post irrigation periods more representative and illustrative. However, from the study, crude data were given by the farmers themselves and a rough list of prices of fruits and fish was constructed in this study.

It is generally known that the creation and the introduction of an irrigation project on a conscious scale involves problems which could be viewed from organizational, technical, economic, social and political dimensions. However, in this study, as has been pointed earlier, social, economic and political dimensions are given a special treatment since the absent of this study is made in the light of these three dimensions. Little is
known of social, economic and political situations existing in the village since the introduction of irrigation as no study had been made on its impacts upon these institutions in the area. Thus, this study is made with the hope of seeing a clearer picture of these institutions as they exist today.

CHAPTER I

INTRODUCTION

This study is an attempt to trace the pattern of economic, social and political changes in Kampung Pasir Gajah, brought about by the Trans-Perak Irrigation Scheme1 which was introduced in 1954.

Economic change is taken to mean the change in economic activities of the villagers in general and economic conduct in particular, that is the change in economic roles and relations. The increase in the present day of farm value and output in relation to the input, the change from a subsistence to a cash economy and the greater involvement in more diversified off-farm works are the changes taken to mean in this context. While social change is taken to mean a change in social relations, principles of social organisation and familial institutions, political change can be seen in the context of changes in political roles and relations of the villagers.

It is worth-noting that due to the very short time available for the fieldwork, the writer is unable to make a thorough study on the history of the village. The oldest living person in the village is an 87 year old lady and it is through her that a rough history of the village was reconstructed. Further, the absence of documents and data on the production of per acre bendang or dusun land presents another difficulty in analysing the production pattern so as to make a comparison between the pre and post irrigation periods more representative and illustrative. However, from the study, crude data were given by the farmers themselves and a rough list of price of fruits and fish was constructed in this study.

It is generally known that the creation and the introduction of an irrigation project on a massive scale involves problems which could be viewed from organizational, technical, economic, social and political dimensions. However, in this study, as has been pointed earlier, social, economic and political dimensions are given a special treatment since the object of this study is made in the light of these three dimensions. Little is

---

1 See Appendix I.

The Trans-Perak Irrigation Scheme is actually a part from the Village Alienation Scheme of Charakat Kenjar. The FAI was opened by the state solely for rubber.
known of social, economic and political situations existing in the village since the introduction of irrigation as no study had been made on its impacts upon these institutions in the area. Thus, this study is made with the hope of seeing a clearer picture of these institutions as they exist today.

This particular village is chosen as it lies outside the Community Development Project^2.

The Drainage and Irrigation Department provided irrigation canals; the Public Work Department constructed the road; the Health Department established a health centre; while the Agricultural Department undertook the task of teaching and educating proper, new and efficient farming methods to the villagers. Thus, while the state government makes a conscious efforts to improve the lot of the villagers, for the purpose of the present study the external administrative structure is taken as it is and no discussion of its workings in detail is made.

---

^2 The Trans-Perak Irrigation Scheme is situated ½ mile from the Fringe Alienation Scheme of Changkat Banjar. The FAS was opened up in 1963 and caters solely for rubber.
The Study Area

Kampung Pasir Gajah was chosen for this case study because of two main factors; firstly, its area was comparatively small; hence the scope of the fieldwork could be determined within the short time period that was available. Secondly, it comprised only 82 households; this fact would ensure as complete a coverage as possible. Another interesting point to observe about this village was that it served as a centre for the neighbouring villages. The important buildings like the local Malay School, the Health sub-centre and Community Centre were located in it. The mosque, in which the villagers congregate for Friday prayer as well as other religious ceremonies and gatherings was also situated in the village.

The location of the study area is shown in map 4. It is situated between the 4½ and 5½ milestones on the Trans-Perak Highway, on the west bank of Perak River in the Mukim of Blanja, sub-district of Parit. It is bordered by Kampung Tanjong Dedalu and Kampung Sungai Korok on the North; Kampung Padang Kangar and Kampung Paloh in the South; the Perak River on the East and the Trans-Perak Irrigation Scheme on the West. Further South, 10 miles downstream is Bota Kiri, a small riverine town. The study area covers approximately 1½ square miles.

Parit, the main town of the Kuala Kangsar sub-district lies 7 miles North-east on the Western bank of the study area and it serves as a shopping and marketing centre for the village in particular and the neighbouring villages in general. The administrative machinery including Land Office, District Office, Post Office, Agricultural Office, Trans-Perak Irrigation and Colonisation Office and a Government Dispensary are located in the town.

The concrete bridge which was built in 1956 was also built.

The typical pattern of villages in the Mukim of Blanja in particular and along the Perak River in general is that they lie in close proximity to the river bank. The study area for instance lies in an elongated position, very close to the river. This pattern can be best explained from the historical point of view. From a historical study of riverine settlement patterns, one is aware that man had made full use of rivers for both communication and domestic purposes and as such, settlement was established on the river banks. The village adjacent to the river like the study area for instance is locally known as kampong baroh while the term kampong darat is used to denote the inland villages.

Some low lying areas along the Perak River were covered

3The Trans-Perak Highway was constructed following the irrigation canal in 1954. In 1959, it was made into an all weathered road when asphalt was laid.
Following the construction of irrigation canals in early 1954, a road, the Trans Perak Highway, was constructed which ran through the village connecting the Ipoh-Brudas highway at Tanjong Belanja in the north and the Ipoh-Lumut highway at Bota Kiri in the south. As a result of these developments, the study area comes into close contact with other villages and towns of the region. It is linked directly with Parit town via the collapsible Nordin Bridge at the 27th milestone of Tanjong Belanja in the north-east; Simpang Tiga and Erus in the north-west; Ayer Tawar, Sitiawan, Telok Batak (a famed holiday resort), Lumut and Segari in the southwest; Bota Kiri and Telok Sena in the south and Bota Kanan and Ronoh in the southeast.

Topographically, the village is built on a levee 800 feet above sea level and it was scarcely affected by the late December 1966 and early January 1967 floods. The cross-section of the study area is shown in diagram I.

Lying in the equatorial belt, the region in which the study area is located receives an average of 11.5 hours of sunshine with an average temperature of 85°F and an average rainfall of 66.7 inches per year.

The Ipoh-Lumut Highway was impassable at the time when the study was made. The late December 1966 and the early January 1967 flood demolished the one million dollar Iskandar Shah II Bridge which crossed the river at 27 1/4 milestones of Bota Kanan. Thus, the journey from Ipoh to Lumut and vice versa had been en-routed through Parit and Bota Kiri respectively.

The concrete bridge which was built in 1956 was also washed away by the December 1966/January 1967 flood. The collapsible bridge was built in its place and was opened to traffic in mid 1967.

A 10 horsepower motor boat provides daily service from Bota Kiri to Bota Kanan since the Iskandar Shah II Bridge was washed away. A 10 cent fare is charged per passenger and a 10 cents and 40 cents' fare are charged on bicycle and motor scooters respectively.

Some low lying areas along the Perak River were covered with 5 to 7 feet of water during these floods.
### TABLE I

**Rainfall Distribution for the Sub District of Parit, 1965 - 1969**

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<tbody>
<tr>
<td>January</td>
<td>2.15</td>
<td>4.56</td>
<td>5.90</td>
<td>4.32</td>
<td>5.09</td>
</tr>
<tr>
<td>February</td>
<td>3.07</td>
<td>4.53</td>
<td>5.92</td>
<td>4.31</td>
<td>5.09</td>
</tr>
<tr>
<td>March</td>
<td>7.35</td>
<td>8.59</td>
<td>9.19</td>
<td>5.66</td>
<td>5.66</td>
</tr>
<tr>
<td>April</td>
<td>7.15</td>
<td>8.66</td>
<td>9.99</td>
<td>5.99</td>
<td>5.99</td>
</tr>
<tr>
<td>May</td>
<td>7.15</td>
<td>8.66</td>
<td>9.99</td>
<td>5.99</td>
<td>5.99</td>
</tr>
<tr>
<td>August</td>
<td>7.15</td>
<td>8.66</td>
<td>9.99</td>
<td>5.99</td>
<td>5.99</td>
</tr>
<tr>
<td>October</td>
<td>7.15</td>
<td>8.66</td>
<td>9.99</td>
<td>5.99</td>
<td>5.99</td>
</tr>
</tbody>
</table>

#### Diagram 1: Cross-section of the study area.
(not drawn to scale)

**Source:** DID Survey Report, 1957.

The study area receives a fairly uniform distribution of rainfall throughout the year. Thus, the pre-irrigation farming activities had to be adjusted to the rainy periods of the year. This point shall be dealt with in greater detail in a later chapter. The distribution of rainfall is shown in Table I.

---

a) The 1969 rainfall figure is only available up to March.

There are 82 households in the village with a population of approximately 330 persons, predominantly Malay. (Map 5)
### TABLE I


<table>
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</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2.15</td>
<td>3.26</td>
<td>4.09</td>
<td>3.75</td>
<td>7.54</td>
</tr>
<tr>
<td>February</td>
<td>3.40</td>
<td>8.54</td>
<td>1.41</td>
<td>1.61</td>
<td>4.31</td>
</tr>
<tr>
<td>March</td>
<td>3.08</td>
<td>3.80</td>
<td>5.01</td>
<td>3.75</td>
<td>3.90</td>
</tr>
<tr>
<td>April</td>
<td>15.83</td>
<td>9.47</td>
<td>10.73</td>
<td>11.17</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>5.20</td>
<td>2.05</td>
<td>10.60</td>
<td>11.28</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>5.56</td>
<td>9.47</td>
<td>7.05</td>
<td>5.47</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>4.89</td>
<td>7.29</td>
<td>1.44</td>
<td>3.36</td>
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<tr>
<td>August</td>
<td>4.90</td>
<td>8.78</td>
<td>4.62</td>
<td>5.09</td>
<td></td>
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<td>September</td>
<td>5.22</td>
<td>7.66</td>
<td>6.32</td>
<td>5.83</td>
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<tr>
<td>October</td>
<td>7.87</td>
<td>13.05</td>
<td>11.73</td>
<td>13.33</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>10.85</td>
<td>9.59</td>
<td>11.19</td>
<td>5.66</td>
<td></td>
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<tr>
<td>December</td>
<td>7.15</td>
<td>7.06</td>
<td>1.98</td>
<td>9.99</td>
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</table>

| Total      | 75.03| 92.07| 74.17| 80.29|      |

*The 1969 rainfall figure is only available up to March.*

There are 82 households in the village with a population of approximately 328 persons, exclusively Malays. (Map 5)
Method of Study

The study was carried out through actual fieldwork from 1st February to 4th May 1969, covering a period of 93 days. For a start, the number of houses in the village were counted. The number of houses was considered to be important for the data to be accurate. An identification card on which a serial number was written was pasted on to each house counted. The idea was to avoid double counting and to serve as a guide for future reference, should the need arise.

Not all the farmers in the village were given land in the Trans-Perek Irrigation scheme, since only landless farmers were qualified to apply for the land. Out of 50 farmers who had applied, only 35 were fortunate enough to get the bendang land in the scheme. Those farmers who failed to get the new bendang land in the scheme, however, received the direct effect of irrigation since their bendang land lie closely just outside the scheme. On the whole, this did not present a problem at all in the selection of farmers to be interviewed since all of them were under the direct influence of irrigation.

However, in order to obtain a real picture of the situation prevailing as a result of irrigation it was found necessary to approach both these 2 types of farmers. The farmers were categorised into 2 groups; each comprised the 'new bendang' operators and the 'old bendang' operators respectively. Of the 2 categories of bendang operators in the village, the writer approached more than half of the farmers in each group. Altogether 40 farmers were selected, 20 from the 'new bendang' operators' group while another 20 from the 'old bendang' land operators.

Since 80% of the farmers interviewed were illiterates, an interview by questionnaires was impossible and impracticable. As such, the personal interview technique was employed since there was a need for a direct oral explanation and interpretation of questions asked. Hence, schedules were used. The questions asked were of open end types and the answers given were recorded on the schedule itself.

Landless farmers refer to those farmers who have no land at all or who have land but too small to support their families. It has been observed that the "landless farmers" are vaguely defined by the government authorities.

---

There is only one private practitioner practicing in Perit.

Najilin Anak Rakyat
The data on birth and death rates were obtained from the respondents. In the course of the interview, wherever possible, the respondents were contacted in their own homes. This was because direct observation on the conditions of living of the villagers, the possessions they displayed and the kind of houses they built, was an important rule borne in mind. This was necessary since the conditions in which the farmers lived reflected their conditions in actual life. The observation was conducted on an uncontrolled, non-participant basis which consisted of the simple forms of looking and listening at specific situations, but not taking part in them. When the research workers could not be contacted in their homes, interviews had to be done on the spot. In this case, the writer had to take numerous walks into the muddy fields to encounter them. Observations were made later on by visiting their homes either in the late evenings or during the early hours of the night when they returned home from work.

Apart from the elderly farmers, young men and young ladies in the village were also interviewed. Five of each sex of the village were selected randomly and interviewed on the spot. In the critical case of the young ladies, the interviews had to be carried out only in the presence of an adult education class teacher or their parents as well, so as to avoid any misunderstandings that could have resulted on the part of the villagers. The writer would like to suggest that in future the Faculty of Economics and Administration should be consulted also.

Besides the farmers, various government officials were also interviewed and consulted. The Colonisation Officer of the Trans-Perak Irrigation Scheme, under whose responsibility the management of the scheme directly fell, and his assistants were questioned so as to obtain their own opinions on the effects of the irrigation scheme upon the farmers. Their points of view were recorded and used as a guide in the study. The Assistant to the District Officer and his Deputy Assistant were also consulted regarding the ownership and titles to the lands owned by the work farmers in the village. The Agricultural Assistant was asked for his views on the effects of the introduction of the new padi varieties and the use of fertilizers upon the farmers. The Health Assistant and a Private Practitioner in Parit were also approached for their views regarding the response of the villagers towards modern medical and health facilities provided by the government. A MARA officer was also approached for information on the number of people in the village who had asked for financial aid from that institution. The Rubber Replanting Officer at Parit was also asked for data on the replanted acreage of rubber in the village.

---

9 There is only one private practitioner practicing in Parit.

10 Majlis Amanah Raayat
The data on birth and death rates were obtained from the records kept by the Parit Police Station, while the figures on marriage, divorce and revocations were secured from the records at the Kadhi's Office in Parit.

Limitations to the Study

A number of difficulties were encountered in the study. Since most of the respondents were illiterate, all the questions asked have to be fully explained before they could be answered appropriately. Besides, the respondents tended to be bias with respects to the answers given. For instance, a respondent may own 1 or 2 acres of land and he was given land in the scheme. When the writer asked him as to whether he has any land beside that in the scheme, he denied that he owned any. Later, the writer learned that he refused to tell the truth for he was afraid that the land given to him in the scheme would be confiscated.

The greatest limitation involved was on the part of the writer himself. Since he did not receive an adequate practical training with respect to carrying out fieldwork, he was greatly handicapped. Despite this, however, he managed to proceed and complete the fieldwork smoothly under the patient guidance of Mr. V. Selvaratnam, who was his supervisor. The writer would like to suggest that in future, the Faculty of Economics and Administration should introduce the students to the real problems and procedures of carrying out fieldworks rather than feed them with numerous theories and procedures. This could be done by sending out groups of students into the selected samples of the study areas under the supervision of lecturers and train them how to carry out the survey. Any problems encountered by the students could be immediately referred to the supervisors-cum-lecturers who would clear out all the doubts. Until such measures are taken, the students, especially those who are required to do fieldwork for their graduation exercises would find that they are at a loss when they first walk into the selected areas to conduct their fieldwork.

"Then British protection began, the Malay in many Malay states had hardly yet discarded his native instinct, still to the coast and estuary, still a fisherman and pirate, an agriculturist of necessity rather than liking, who fell the forest hill rice, took a crop of tea and passed on." 1

The villages along the Perak River at the end of the last decade were more or less self-contained, meaning that the inhabitants did not depend much on the outside world for their foodstuffs and other necessities. They planted yam for their own consumption; they attended vegetable gardens which comprised small plots of land adjacent to their houses in which tapioca was planted; chilli bananas, crespe and other edible plants and vegetables were cultivated alongside.

CHAPTER II

ECONOMIC ORGANISATION AND CHANGE.

Although the Malays grew some padi and other crops, they were accustomed to growing only enough to meet their needs at any surplus was incidental rather than intentional.

PART I: THE TRADITIONAL ECONOMY

The traditional economic pattern of the village was not substantially different from other Malay villages along the Perak River in particular and in the Malay peninsula as a whole. Most of the villagers were cultivators and gatherers relying upon wet padi cultivation for their chief subsistence. Cultivation systems differed in detail but most depended on bush clearing and fire to provide an ash bed for planting.

The economic activities of the people in Kampung Pasir Gajah prior to the irrigation could be reconstructed partly from two kinds of sources - the writer's observations and studies, and interviews arranged with the Colonisation Officer of the Trans-Perak Irrigation Scheme. The observations were centered on a material culture that had undergone far reaching changes. This is of significant value where interviews can ascertain whether a practice is traditional or is only a recent innovation; and where a discussion may elicit a discription of the past material culture. However, the writer is very much aware of the human tendency to colour the past as a golden period. This tendency is especially strong in places where little or no study has ever been made.

Not much is known about the village prior to British Intervention in 1874. However, from the information gathered, it was learned that the villagers depended entirely on subsistence agriculture for their livelihood.


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The villages along the Perak River at the end of the last decade were more or less self-contained, meaning that the inhabitants did not depend much on the outside world for their foodstuffs and other necessities. They planted padi for their own consumption; they attended vegetable gardens which comprised of small plots of land adjoining their houses in which tapioca was planted; chili bushes, creepers and other edible plants and vegetables were cultivated alongside.

"Although the Malays grew some padi and other crops, they were accustomed to growing only enough to meet their own needs so that any surplus was incidental rather than intentional."

They caught fish from the river and inland swamps. Since a farmer was in a world of his own, little or no attention at all had been directed towards a market economy.

The cultivation of wet rice had to be adjusted in relation to the rainy seasons which usually fall in mid-April to mid-June. This adjustment was very essential and needed to be correct for the lack of water in the field during the growing season and the planting period would mean disaster to the young seedlings; on the contrary excessive water during the ripening period would mean damage to the crop. For many years, these adjustments seemed to be successful and credit should be given to the villagers for having had such a high degree of precision in adjusting their padi growing seasons.

Before the rainy season commenced, the swampy padi fields were cleared by using a heavy sharp sheath locally known as tajak. Each plot was worked over by cutting the grass and weeds at the root level. In some cases when the field was quite dry during the preparatory period, the grass was burnt down, while in other cases, the grass was left to rot in the water.

Seeds were first planted in the nurseries and were transplanted into the fields when they were 27 days old. Two varieties were grown; one variety known as padi musim comparable to the famous Siamese rice of commerce which is hard and short grained; another was padi pulut, glutinous rice which was used for making cakes and other household dishes especially so during the festive Hari Raya seasons.

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2 Wilson, Peter J - A Malay Village and Malaya
HRAF Press, New Haven 1967, p. 8
The seeds for the coming season were carefully chosen from the field before the actual harvest took place. A bomoh or a Malay medicine man was engaged to do the selection since he was reputed to know how to please the semangat padi or the spirit of the padi. It was necessary to please the semangat padi as a failure of which would mean a bad crop for the coming season.

Hunting was also practiced by the villagers. Weapons included spears, traps, bamboo sticks and even shot-guns. This was only a part time and occasional activity.

Deers were trapped by using traps or jerat erected along their path. These traps were made of rattan string tied to a bent bamboo pole. The end of the string was made into a noose and was made to rest on a piece of wood which acted as a lever that held the whole weight of the bent pole. A slight touch on the lever would send the animal upwards with its legs gripped in the noose. The hunter came later to collect the catch. If he delayed his visit, the animal would be dead. A Muslim is not allowed to take the meat of an unslaughtered dead animal and as such early arrival to take the live catch was necessary.

Wildbeasts posed a menace to the ricefields. To catch the animals a pit of between 6 to 7 feet deep, known as ranjau was dug on the game path. Sharp bamboo spikes were placed at the bottom of the pit to pierce the falling animal. It was then carefully covered with grass and dead leaves so as to be invisible. The villagers would come later to cover up the hole with dead animal in it. Muslims are forbidden to touch and eat this animal or even sell it to others for an income.

Smaller animals like the mousedeer or pelandok or napoh were caught by means of sling and flat stone traps, an exercise particularly carried out by the boys. Saplings were bent down to serve as springs for noose traps. Birds were taken with bird lime, traps or boomerangs. There were cone-shaped traps that mice and rats could enter but could not leave. A most simple device was made from a cluster or pointed sticks erected behind a thorn fence around the field. This would keep away wild boars and deer from jumping over into the padi fields.

Any tiger caught was taken alive in a special trap. An enclosure of heavy posts with a strong roof of pole and netting was constructed. This kind of trap was commonly known as pagar susok. One log was suspended vertically and a goat would be tethered as bait inside the enclosure. After the tiger entered the enclosure a triggering device would drop the last post thus barring the exit. The animal was hunted down only when it mura dex the goats' pen or disturbed the security of the villagers.
Fishing was and still is another important economic activity of the villagers. Besides the Perak river, the ponds and swamps inland provide the best fishing grounds. Fish were trapped in bubu or fish baskets, speared or taken by bare hands. Tuba, that is the sap of tuba root was used to poison the fish both in the river and ponds. Angling, using a rattan line and bone was popular. Another method involved the cutting off a shallow arm of the stream by an earth dam or net and driving the fish into the enclosure.

The gathering of jungle produce formed another activity of the villagers. The vast virgin jungle of the state land bordering the village provided the supply of such produce. Damar, mengkuang or pandanus leaves and rattan were the typical produce gathered. These products were exchanged with barter traders who travelled upstream by sampans and tongkangs from Telok Anson, forthnightly.

Ingredients for the meals sometimes were collected from the jungle. These did not serve as staples but merely to add to the variety of food eaten. The search for honey and beeswax was pursued in two ways. One was with the help of a honey guide that is a kind of bird that could lead men and even some animals to bee hives that contained honey. The other method included placing hollow sections of tree trunks or clay pots where they would attract a swarm of bees. These were exploited but the bees was not domesticated. Collecting honey usually took place once in a month.

3 The gear was made of bamboo reeds woven into a circular or rectangular shape with barbed thorns to prevent the escape of the catch.

4 This method is known as menimba. The water in the pond is emptied by means of pails and buckets. When the water level is ankle deep, the farmer than jumps into the pond to catch the fish.

5 The products came from the saps of hardwood trees like Chengal, Damar Laut and Merbau. The accumulated sap hardened into solid clear crystals. When pounded it turned into fine light brown powder which becomes sticky dark brown coloured paste on mixing with kerosene which is usually used to smear over the sampans to make it water tight. In its raw form, it could also be used to light lamps.
The writer has not come across a complete list of the vegetables collected by the villagers. The wild ketiau seed were perhaps the most important seeds collected. Edible leafy plants that were collected for vegetables to go with porridge are generally referred as puchok paku and puchok chemperai. A variety of mushrooms and bamboo shoots were also collected.

The coming of the British in 1876 had brought a change in the traditional economic pattern. Following the introduction of rubber in Perak in 1891, the villagers began to show interest in the new crop. Higher lands, locally known as changkat were opened up and planted with rubber. The momentum in cultivating rubber was accelerated with the increase in the price of rubber to as high as 12 shillings a pound as a result of the growth of the automobile industry in Britain. The Japanese Occupation in the early 1940s slowed down the tempo of rubber cultivation in the village, since rubber could not fetch a good price and since food production was an immediate need then. However, in the early 1950s when the price of rubber shot up to $3.00 per kati, most of the villagers abandoned their padi fields and concentrated solely on rubber cultivation. In order to obtain maximum return from rubber, many trees suffered overtopping. Some elderly informants reported that their income from the sale of scrap rubber was already sufficient to maintain daily household expenditure. The average acreage owned by the villagers was between 1½ to 2 acres with haphazardly planted trees. In most cases the trees were left to themselves without any proper care.

In the late 1950s, however, padi planting was still carried out side by side with rubber cultivation. The villagers went out to tap in the mornings and attending to their fields in the evenings. Rice was planted mainly for home consumption while the income earned from the sale of rubber would be used for other purchases. This was what the economic situation was before the Trans-Perak Irrigation Scheme was introduced into the area.

Land Tenure

The land in the village was held by the individual who was entitled to the full use of his field without any interference from others.

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6The seeds which are oval shaped and dark red in colour about 0.5 cm of an inch in length and 1 centimeter in diameter. When pressed, the seeds give out a yellowish oily liquid and is locally known as minyak ketiau. The oil is taken in its raw form with sambal tembok or sallade mixed with fermented durian and eaten with rice. It can also be used as fuel for lighting purposes.
When the village was first opened, the headman allocated the fields to his followers, most of whom were his descendants and close relatives. Once a family was allocated land in this manner, it could not be deprived of this land. Rather, the family had the right to extend its fields and progressively shift its cultivation over adjacent empty land. It retained the right to use the abandoned land.

Under the British Administration, the village land was made a state matter. Hence it was entered and registered into the Mukim register. This restricted as well as prevented the occupation of empty land prior consulting the state government.

The Domestic Scene

In the life of the villagers, there was no rigid division of labour between the sexes. Both men and women tapped rubber together in the morning and laboured in the fields and often were at the same task in the afternoons during the padi planting season. The heavier work of ploughing the field was left to men while the women did most of the sowing, weeding and reaping. The homes were usually managed by young women.

Most of the seasonal tasks such as clearing fields, transplanting the seedlings and harvesting the crop were undertaken communally in the getong royong or communal free-labour method. The host who initiated this work would provide refreshments and light cakes to the participants who did the work for him. The host was expected to reciprocate the favour when others organized a work party. The economic value of getong royong as a pooling of resources is undeniably for time and labour could be saved tremendously.

When the padi grain reached the maturity stage, a little of the fully developed green grain was plucked and pounded into empung - a kind of flake mixed with sugar and grated coconut - in a lesong or mortar. This was called menambok empung a ceremony which usually held on a moonlit night. Young ladies were engaged to pound the empung. With the antan (pestle) in their hands they pounded merrily and enjoyed over their own jokes. The young men

7 The green padi is first heated in a frying pan. After sometime, the padi is transferred directly from the pan into the lesong and it is pounded while it is still hot. If the padi is not heated well, it would be difficult to separate the husks. If it is heated too much, the padi would turn into bertas or popcorn. The reason why the padi is pounded is simply to separate the grain from the husk.

The lesong or mortar used is a specially made for the purpose. It is usually made from light wood. When in use, the mortar is places on a banana stump in order to get a particular 'clong-clong sound, so as to let all the villagers know that emping was being prepared.
on the other hand, engaged themselves in games like bersilat - the Malay art of self-defence or entertained themselves with hadrah (singing accompanied by drumming or even citing religious verses) while waiting for the emping be pounded. The older men stood by as a silent audience. This was a main form of social gathering in the village.

The houses were built to face the river, forming a ribbon-like settlement pattern. Apart from facilitating the movement of the villagers, the river too was a source for drinking and bathing. Besides, a 5-feet wide footpath was constructed which ran parallel and close to the river serving as a link with other neighbouring villages.

Crafts

Four kinds of handicrafts were practised in the village: basket and mat making, carpentry, canoe building and metalwork. The study showed that basketry was the best known craft in the area. Mats were made from split reeds of pandanus leaves or mengkuang and these mats were used to cover dining and living room floors and for sleeping purposes. A simple hand made rake or jangkat was used to split the pandanus leaves into reeds. Baskets, locally known as bakul and sumpit were made in many shapes and sizes and for many purposes. These were also made from mengkuang. From bamboo sticks, raga (basket) and ayiru (winnowing tray) were made. Leke, a round shaped object on which cooking pots were placed was made from coconut leaves or lidi kelapa.

The skill of carpenters in building houses was to be seen in the intricated designs which were carved out of the wood. These designs were frequently seen on the railings, arches, walls and even on the stairs of the village houses. The carpenters were engaged to build houses in the village itself or in the neighbouring villages. Apart from building houses, they also made cupboards, beds, tables and chairs.

The villagers depended upon the river as a highway since there was no road on. Canoes and sampans were the needs of every household. They were made from large tree trunks usually 10 feet in length and 3 feet in diameter. Sharp tools were used to dig out the trunk and shaped into a canoe. Bamboo poles were used for paddling along and across the river.

Trade

The jungle-produce like rattan, dammar, and mengkuang products were exchanged with the barter traders who paddled labouriously upstream in a sampan from Tekek Anson, for items like clothing, salt and other domestic utensils.
Padi was not traded or bartered as its production was intended for home consumption only. A surplus was hardly produced and even if it was produced it could not be disposed through any market since none existed.

Rubber, in the 1950s was sold to traders in Parit. The villagers had to carry it all the way with the help of canoes across the Perak River and carried on shoulders along the footpath 1½ miles upstream to Parit town.

With the fruit season, fruits like durian (durio zibethinus) were carried over and sold in Parit. The fruits were loaded into dug out canoes and transported across the river. There were occasions when canoes capsized as a result of over loading while on its way across the river and all the durian floated downstream. Other fruits like mangosteen, rambai and langsat (lansium domesticum) were often left to rot away under the trees. Since almost all the villager had a small dusun orchard of his own, the surplus of fruits was often wasted.

It is important to note that the irrigation enables the farmers to pursue their farming operations independent of a natural water supply, that is rainfall, and swampy lands for padi cultivation. This means that padi cultivation could be pursued during any period of the year without meeting with any water shortage problem.

Irrigation was introduced into the area for a number of reasons. Firstly, it was intended to solve land shortage problem which is often encountered by the farmers in the rural areas. Irrigation directly solves this problem by enlarging the existing cultivable areas and by making the once time uncultivable lands cultivable. As such the banded land opened up by the irrigation scheme was distributed to the farmers in the village in particular and other neighbouring villages as well.

Also, with the opening of this irrigation scheme, it was intended that each padi farmer could be able to obtain and operate a larger individual padi acreage than before. An economic farm unit could thus be caused by the 21 area.

PART II: THE PRESENT PATTERN

The introduction of irrigation into the area in 1953, brought considerable changes upon the traditional economic pattern of the village. The changes occurred in a unilinear manner, in the sense that new opportunities were in line with the farmer mode of economic organisation, though some variations could be observed. The interest of the villagers is still vested in agriculture but it is observed that emphasis has been laid upon padi cultivation. The economic changes brought by irrigation tend to bring about chain reaction upon the social and political life of the villagers. It has been noticed that social and political changes have taken place in the light of economic change.

Padi and rubber form the dual economic activities of the villagers, being the chief means of their livelihood. Almost all the farmers go out to tap rubber in the morning either in their own holdings or as share tappers in other villagers' holdings during the non-rainy days and attending the padi fields in the afternoon. This is usually done after lunch hour and a short nap, especially during the growing season. Basically padi is grown for home consumption, though measures have been taken to promote it to a cash crop level, while rubber provides cash for purchases of essential household goods and clothing.

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Apart from increased yields there were other less tangible benefits. Thirdly, it was intended to assist in elevating the farmers' standard of living substantially. This was to be achieved by the introduction of double cropping to increase the overall productivity of the farmers. It was hoped to increase consumption and production.

The government's target for farmer-family income is $300/- per month and we all know that this figure cannot be achieved on any land by single cropping rice. More intensive use must be made of the land and the area of the family unit must be increased. The significant change in the traditional padi cultivation was the introduction of double cropping with the new variety of padi Malinje, Maheuri and Ria as practised by Formosan padi farmers. This led to the extinction of single cropping padi; all the farmers in the village had abandoned single cropping with the padi musim variety because it took a longer time (6 months) before it could be ready for harvesting. Now, the controlled water supply allowed them to pursue double cropping with relative ease.

In encouraging double cropping of padi, the farm machinery in poor minimum aims at greater rice production and money to buy these but also at increasing the income of the farmers and the productivity of small padi farms which are usually cropped once and then the land and produce left fallow for as long as five to six months. The basic of each income, which at one time was dominated by rubber has now been widened to include rice. Fourthly, irrigation was aimed at increasing padi production as part of a nation-wide programme for self-sufficiency in rice.

"It is the policy of the government to attain self-sufficiency in all foodstuffs including rice against the background of the development of an economic farm unit." 11

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9 A speech delivered by the Minister of Agriculture and Cooperatives on the opening of the Stage IV Intake, Trans-Perak Irrigation Scheme at Telok Sena, on July 6th, 1963. See Sari Berita, Vol. IV No. 24, 13th June 1963.


Apart from increased yields there were other less tangible benefits to be enjoyed by the farmers as a result of irrigation, such as better access to the padi fields, flood control, fish breeding and round the year employment. This increase in yields will go a long way towards closing the gap between home consumption and production.

The disparity in the emphasis given to padi and rubber in the post-irrigation time is clearly seen. Though most of the villagers secure their cash income from rubber, it has been observed that there is little increase in the rubber land owned by the farmer villagers. Besides, though more than 70% of the trees in the holdings are between 30 to 40 years, no encouragement has been given to the villagers to replant the older trees. Further, any replanted holdings are very seldom maintained. There is hardly any increase in the rubber land owned for the past 15 years after irrigation has been introduced.

It is important to note that irrigation did not modify or eliminate the use of traditional farming tools. However, there are indications that machines would be used in coming years to assist the farmers in the ploughing and preparing the land for cultivation. Nevertheless, at present the response to the use of modern farm machinery is poor mainly because most of the farmers lack sufficient money to buy these implements.

Irrigation, not only increase the area of cultivable land and productivity of the soil but also offered a greater and wider scope for diversified economic activities. The basis of cash income, which at one time was dominated by rubber has now been widened to include fruits cultivation, poultry and livestock rearing. The availability of good roads facilitates the movement of outside traders into the village, especially Chinese traders.

The increase in the productivity of the bendang land and the income received by the farmers as a result of irrigation could be seen in the light of physical inputs and processes involved in the padi cultivation. Chart 1 illustrates the relationship between the physical inputs and the increase in productivity of the padi lands.

In the first place, adequate water supply which is conveyed to the fields by a network of canals, ensures water regulations in accordance with the needs of the crop. The security of tenancy, which will be discussed later, initiates the farmers to improve their fields. The improvements are made in several ways: they use of better seedlings; the application of fertilizers; the use of pesticides or even the use of powered implements to plough the fields. These inputs would result in increased output with a better and high quality crops. The existence of transportation facilities, coupled with the widely disseminated market information enable the farmer to obtain higher returns from their produce.
Chart I

Physical Inputs and Processes for Irrigation Agriculture (Padi)

Adequate Water Supply

(Surface Water)

Water shed Management

Storage Dams

Diversions

Canals and Laterals

Distributaries

Irrigation in Accordance with Crop Needs

Purchaseable Inputs

Improved Seeds

Fertilizers

Pesticides

Power

Other Inputs

Readily Available Credit

Agricultural Information

Farmer Inputs

Land Grading

Irrigation Systems

Water Control Devices

Cultural and Harvest Operations

Farm Fields

Increased Crop Production

Transport

Storage and Processing

Increased Local Food Supply

Marketing of High Quality Crops

Percolating Water

(May provide for Leading Requirement)

Drainage

Surface and Subsurface

Field Outlet

Collector Drains

Main Drains

Maintenance of Favorable Water of Salt Balances

Source: Mosher, A.T. - Getting Agriculture Moving

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The road which was constructed following the irrigation canals changed the picture of the village's settlement pattern. Previously the settlement was concentrated along the post-irrigation period, 10 out of 45 houses built on the river bank were shifted nearer to the road side. Those houses on the river banks were modified by their occupants so as to make the verandahs face the road, though it was not visible from their houses. The villagers who moved out to stay near the road reported that they would like to have tapped water supply and electricity. Tapped water supply reached the village in 1960 while electricity would be installed after the 1969 General Elections. At the time of the study, twenty households on the roadside enjoyed pipe water while those near the river and the irrigation canal received the water supply from the river and the canals respectively. The households on the river bank indicated that it was difficult for them to obtain the water supply from the pipe line because their houses were further away from the road and it would be too expensive for them to lay down the pipeline themselves. Furthermore, they had to obtain permission from the land owners through whose land the pipe lines would pass since they were separated from the road by the land of neighbouring farmers; permission however, was difficult to obtain from these farmers.

Many handicrafts practiced in the village declined as a result of irrigation due to the increased agricultural activities and the decrease in raw materials. The opening up of the state land for the irrigation scheme resulted in a loss of the most important supply-source of raw materials like pandanus leaves or mengkuang and rattan. Besides, baskets and mats could be purchased at a relatively cheap price without affecting a large portion of the farmers' income. The mats preferred in most homes are made of straws, called tikar sambau. Despite the availability of a market for the sale of handicrafts, the villagers do not pursue these activities as they are time-consuming.

Boat making has gone out of the village's picture completely following the construction of the road. At present, a bus service operates regularly in the area. This facilitates the movement of the villagers. The informants asserted that those who were, at one time engaged in boat making, had discarded the craft and resorted to rubber tapping and padi farming as the chief means of livelihood.
Carpenters still find work in the village proper as well as in the neighbouring villages. They are paid either on a day-to-day or on a contract basis. If a carpenter is paid on a day-to-day basis, he would usually receive $5.00 per day which includes a free meal and tea, or he would receive usually $7.00 without free meals and tea. If he works on a contract basis, then, he would be paid in full usually on the completion of his work.

Because of the availability of better farming implements in the market at a relatively low cost, the village’s blacksmiths gave up their craft. Farming tools such as tajak, long bladed parangs and tapping knives used by the villagers are purchased from the shops in Parit.

The farming pattern

The farming pattern as it exists today is a synthesis of traditional methods and the introduction of new ideas. The villagers have been creative in their adoption of technological improvements which was brought about with the advice of government officers. Within the limits of their incomes the farmers have become beneficiaries of the influences of culture contracts brought by the dissemination of information by the government officers.

As a result of irrigation, farmings are controlled and are carried out under the auspicious of the Drainage and Irrigation Department which works in collaboration with the Agricultural Department. Directions regarding the date of when water could be pumped into the canals and the date when all the farmers should commence on their fieldwork are sent out by these departments. These directions are nailed up on the wall of the shop in front of the government midwives quarters in the village and every farmer is expected to look at it. Since most of them are illiterate, they always rely on school boys or other literate persons who frequent the shop in the evenings to read for them. Similarly, the letter of instructions would be pinned up in the village mosque. Usually, the village’s headman, as a representative of the bendang’s block head stands out amidst the crowd in the mosque and reads out the letter in a clear, loud tone after the Friday prayers are over. Farmers. A farmer, for example, is always on the alert for any new information.

During the writer’s period of stay in the village, the bendang block-leader received a letter from the Agricultural Department in Parit informing the farmers that water would be pumped into the irrigation canal on 14th March 1969. All farmers were instructed to begin their work on their respective fields simultaneously on 23rd March. Transplanting was to take place on 20th April 1969.
There are four reasons as to why the farmers should work simultaneously on their respective fields.

Firstly, water could be easily regulated and adjusted according to the needs of all the farmers. A lot of water is required to facilitate the working at the initial stage of preparing the fields for padi planting; otherwise the work would be much more difficult. During the transplanting stage, however, only 3 to 4 inches of water is required in the bendang or padi field to enable the seedlings to grow. Excessive water would submerge the seedlings; as a result they would rot. On the other hand if the water is too little, the seedlings would be unable to grow. As such, if a farmer delayed his work he would find that he did not have enough water in the field during the ploughing time and he would have excess water or insufficient at all, at the transplanting stage since he would be left behind schedules, especially when other farmers do not require any more water in their fields.

Secondly, technical advice with respect to the application of fertilizers for instance, could be sought on a wider basis. Officers from the Agricultural Department could be consulted readily since they made themselves available weekly when they toured the fields to check the progress of each farmer.

Furthermore, pest control measures could be taken on a wider and more effective basis. All the farmers could check their fields simultaneously, since each and every farmer would face the same and common enemy in their fields. If, for instance, a farmer started to work on his field later than others, his field would be the target of all the pests especially at the transplanting stage because other farmers would have already completed their work. Also, when the crop ripened, his field would be the attraction to birds and mice alike since other farmers would have already harvested their crop. Besides, his uncleared sawah or padi field, would harbour the pests which would endanger his neighbours’ crop.

Thirdly, the spirit of competing against one another for better harvests is indirectly inculcated in the minds of the farmers. A farmer for example is always on the alert for any new methods of farming practised by his neighbours. He would also find that to stop working while others toiled labouriously in their fields would show his weakness and incompatibility in the eyes of his neighbours.

Since all the bendang or padi fields outside the scheme receive water supply from the irrigation canals, the farmers involved here are requested to comply to the instructions of the agricultural officers with regard to the planting season.
Nevertheless, they are not obliged to do so. In fact, they are often at liberty to pursue work on their fields at any time even though these farmers run the risk of falling behind schedule, as far as water supply from the irrigation canals affects them. Rain water collected in the field is drained away by the canal. The farmers working in the scheme, on the other hand, are obliged to follow all the directions and instructions given to them by the government authorities; failure of doing so would meet with government warnings and penalties. If the farmers failed to comply to the directions and if they failed to cultivate their fields for three successive seasons, they would be deprived of their rights to the land. So far no such action has yet been taken.

Of all the farmers interviewed, few complained that it was very unfair on the part of the authorities to control and regulate the farming period. They have insisted that the Agricultural Officers lay down what kind of padi to plant and when to plant. They seemed to regard themselves almost as employees of a plantation working for a boss and are afraid of being thrown off their land if they do not follow the orders. Regulations of planting times and water rotation is in the native of irrigation which demands cooperation so that everyone receives a fair share of water in turn. The Irrigation Officer insisted that beyond these necessary rules, every one was free to follow the advice of demonstrators and to plant whatever type of padi he pleased. The farmers also complained that the time lapse between the ploughing and transplanting period was scarcely sufficient to cope with their work. However, the Agricultural Officer explained that the time given was very well-phased; the schedule was made after consulting various Agricultural and Irrigation Officers as well as some experienced farmers. The officer concluded that the complaint was made as the farmers felt that they should do so.

As has been pointed out, irrigation had changed the farming pattern of the farmers. Previously, they were left to their own discretion to select the most suitable time for cultivation, which usually fell during the rainy season. Under present conditions however, the authorities decides the farming season and all the farmers are obliged to commence work on their fields at the stipulated time. Since the farmers outside the scheme rely on the irrigation canal for their water supply in the fields, in a way they are also indirectly bound by the regulations and instructions imposed on the farmers working in the scheme proper. It would not be wrong to say that, as a result of irrigation, all the farmers in the village have to adjust their padi planting activities according to the directions and instructions they received from the government authorities.
Cultivating the land

Irrigation plays a vital role in regulating, adjusting and controlling water supply for the sawah land. It makes double-cropping possible since farming operations need not rely on the availability of rainfall. One can see that the most distinct change brought by irrigation is the introduction of double-cropping and its acceptance by the farmers, on the whole, to replace single season cropping.

The traditional method of ploughing the soil by means of tajak or weed-cutter is still widely practised by the farmers in the village. Buffaloes are rarely used as none of the farmers can afford to keep them. The use of machinery in ploughing the field has been introduced to the farmers by the Agricultural Department. Such implements like Kobeta ploughing machines as known to the villagers. However, most of the farmers showed little interest in these machinery since the use of modern implements to plough the field are expensive. Six dollars are charged per hour for the use of machines to plough the land. An acre of land would at least cost the farmers between $40/- to $50/- before it is ready for cultivation. All the farmers in the village prefer to plough their fields in their own way by using the traditional farming implements like tajak. Most of the tajak used are the tajak kedah weighing about 4 to 5 katis each. The blade’s length ranges between 2½ to 3½ feet.

Padi grains are first planted in nurseries which are built on a raised ground at one corner or in the middle of the padi fields. Since no effective measures had been taken to protect them in the past years, the seedlings were often destroyed by rats and mice. Even crows devoured the young seedlings.

Various measures had been taken by the farmers to protect the nurseries from these pests. Scare crows and dummies were erected around and even on the bed itself, which was only able to scare the birds away but not the rats and mice. The prescriptions given by the pawang or an expert in spells, talismans and drugs, were no longer effective. The farmers themselves have lost faith in the ability of the pawang to scare and keep away mice and rats from their fields with incensation or jampi. As a result, the farmers took to new and better methods of eliminating these pests; in part, they succeeded in checking these pests.

A specific measure taken (which is apparent in the post-irrigation period) is the application of pesticide to reduce the growth of the rats’ population in the padi fields. This has been done on a wider scale, since, as has been said earlier, farming

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12 This is a long bladed weed cutter which is widely used by Kedah farmers.
A guaranteed protection against rats attacking the operations are undertaken simultaneously. This method gives rise to two advantages: in the first place, it will kill the rats the moment the creatures swallow it and secondly, it does no harm to human beings and the crop alike. Thus, it can be applied indiscriminately in the field. However, during the pre-irrigation period, a pesticide was also used for the same purpose but in a different form. It was prepared from the ingredients obtained from wild fruits and herbs which turned out to be very ineffective. The pesticide used in the post-irrigation period is zinc phosphate, which is recommended by the Agricultural Department.

A protective measure taken now by the farmers in the village is something new and different from what has been practised before the introduction of irrigation. The device involves the use of plastic paper sheets. Seventy percent of the farmers use such devices to protect their nurseries during the first crop season for the year 1969. This device protects the seedlings from being attacked by rats and mice and does no harm to the seedlings.

Diagram 2: A protected nursery bed.

Diagram 2 shows how the protected nursery bed looks like. Wooden pegs are embedded around the bed which is built on a raised ground in the middle of the flooded field. A sheet of plastic paper of 2 feet wide is fenced around the bed and is secured to the pegs by means of wires. The smooth surface of the sheet would prevent mice and rats from climbing up into the bed to attack the young seedlings. The only expenses incurred in this is the purchase of the plastic sheets. Three dollars worth of plastic paper is able to fence up a 7 feet long and 3 feet wide nursery bed. The sheet is removed when the seedlings are transplanted into the field. Most of the farmers indicated that it pays them to make use of this plastic sheets.
A guaranteed protection against rats attacking the nursery bed is the building of the bed high above the ground. The farmers mentioned that this method is common in the post-irrigation period.

Diagram 3: A raised nursery bed

Diagram 3 shows the elevated nursery bed. A platform of about 4 to 5 feet high with a length of 6 feet and width of 3 feet is erected in the middle of the flooded field. Planks are used in making the floor of the platform. Gunny sacks are laid to cover up the floor. A quantity of muddy soil is piled up on the top of the gunny sacks covering the floor, forming a bed of about 5 inches thick. The gunny sacks serve to retain the moisture needed by the seedlings. Pieces of tin plate sheets are wrapped around each supporting pole to prevent the rats and mice from climbing into the bed. Only 4 farmers used this method at the time the writer made this study.

The third method practised by the farmers for protecting the seedlings is by raising the seedlings in their own homes. Bakul ikan kembong, that is, the basket in which steamed ikan kembong, a kind of salt water fish is transported is the popular kind used by the farmers to raise the seedlings. Gunny sacks are laid down to cover the floor of the basket and muddy soil is placed on top of it. These baskets are kept on a platform under the shade usually behind the house. The seedlings are frequently watered. Diagram 4, illustrates the device.

The introduction of fertilizers is intended to increase the productivity of the mهاً. However, for various reasons as has been pointed out, it is difficult to assess the effect of fertilizers upon the productivity. Not all the farmers use any fertilizers; those who use fertilizers do not apply them in sufficient qualities.
In about half the cases where farmers, especially those working in the villages, reported the use of fertilizers, its application is associated with higher yields. The farmers that do not use the fertilizers often result in poor yields. The writer was told that some farmers who did not use fertilizers at all succeeded in obtaining higher yields than those farmers who used fertilizers. Thus, it is difficult to see a direct relationship between the application of fertilizers and increased yields in padi production in the villages.

In most cases, harvests reflected the yields of padi, uniform in quality and variety. Many farmers reported a higher harvest yield; but this increase was only for 1 season. In other cases, each of the farmers who applied fertilizers obtained comparatively higher yields; farmers reported a comparatively lower yield utilizing seasons with the use of fertilizers.

The ineffectiveness in the application of fertilizers in increasing the productivity of the soil made the farmers think that it does not pay them to spend much time or effort on fertilizers while the yield from the lands is very meager, affording the assured income of purchasing fertilizers. The farmers indicated that the 1960 basic fertilization rate has not been reached, and directly to the availability of funds for purchasing fertilizers. The farmers indicated that the basic fertilization rate has not been reached, and directly to the availability of funds for purchasing fertilizers.

When the seedlings are 27 days old, they are removed from the nursery and transplanted into the field. Kuku kambing, a forked and farming implement, which had been known to the farmers for centuries is still used for this purpose.

The use of fertilizers especially the Cock Head brand and an ICI product has been introduced to both the farmers who work inside and outside the scheme in the post-irrigation period. The Agricultural Department sent down its officials to supervise the farmers in the use of this fertilizer. The ignorance of the farmers, coupled with the insufficient information and guidance given by the Agricultural Officers, placed the farmers in difficulties. In most cases, these discrepancies led to a decline in the productivity of the sawah land.

Most of the farmers revealed that they were willing to accept fertilizers given to them at the subsidized government rate but they could not see any immediate difference in the productivity of their crop as a result of their application. Though fertilizers are intended to increase the productivity of the sawah land, they are not yet popular among the farmers in the village simply because the farmers fail to see any significant results in their application. Irrigation introduced the use of fertilizers, but at present, the farmers are not prepared to apply them liberally and methodically.

The introduction of fertilizers is intended to increase the productivity of the sawah. However, for various reasons as has been pointed out, it is difficult to assess the effect of fertilizers upon the productivity. Not all the farmers use any fertilizers; those who use fertilizers do not apply them in sufficient qualities.
In about half the cases where farmers, especially those working in the scheme, reported the use of fertilizer, its application is associated with higher yields. The sawah that do not use the fertilizer often result in poor yields. The writer was told that some farmers who did not use fertilizers at all succeeded in obtaining higher yields than those farmers who used fertilizers. Thus, it is difficult to see a direct relationship between the application of fertilizers and increased yields in padi production in the village.

Harvesting with the sabit facilitates the work tremendously. In one case, 3 farmers reported the same yields of padi, unfertilized for 4 seasons respectively. Four farmers reported a higher yield without resorting to fertilizers but this increased yield was only for 1 seasonal crop. In another case each of the 3 farmers who applied fertilizers received comparatively higher yields; 4 farmers reported a comparatively lower yield within 2 seasons even though fertilizer was applied. The ineffectiveness in the application of fertilizers in increasing the productivity of the soil made the farmers think that it does not pay them to spend their money and effort on fertilizers while the yield from their fields was insufficient to cover the costs of purchasing fertilizers. The farmers indicated that for the 1968 season, the average yield per acre was between 400-500 gantang for both fertilized and unfertilized fields.

In general, the success of the farmers in attaining higher yields does not seem to relate solely and directly to the availability of controlled water supply, to the institutional or physical environments or to the application of fertilizers. Nor does it seem to be related to a combination of these factors. Possibly, the success of the individual farmer is related more to his innate abilities in overall management of his crop cultivation. School education is free at the primary level and Relay Medan classes are also available at both secondary and upper secondary levels. Harvesting, at present, is done with the use of a sabit a shoddled semi-circular, bladed implement. The use of the sabit is only a recent innovation to the farmers since in the pre-irrigation period, the only tool used for harvesting the crop was tuali or a sickle which was more time consuming. Form III of the English Medium School 2 boy and 1 girl in Form II Relay Medium and

The use of the sabit is made possible since the padi grown under double cropping are the malinka, mahauri and ria types. These types are short bushed and bear heavy grains. Generally, the diameter of a plant's stem measures between 0.4 and 0.5 centimeters. Further, the stem does not grow to a great height. On an average, each plant grows to a height of between $2\frac{1}{2}$ and 3 feet only. The small but crisp stem of the padi plant allows the use of the sabit. The kind of padi grown in the pre-irrigation period, that was padi musim variety had tough built stems and reached a height of between 4 to 5 feet. The use of the sabit was not practicable, then.
Another reason that made the use of the sabit possible is that the grains of the Malinjia, Mahsuri and Ria varieties ripened simultaneously and the grains could be harvested at the same time. Prior to irrigation, however, padi musim, which was the only kind planted, did not ripen simultaneously. So the tuai was used to harvest the ripened grain first leaving behind the unripened ones to be collected for a later date.

Harvesting with the sabit facilitates the work tremendously. A farmer reported that an acre of padi could be harvested within half-a-day only with the use of the sabit.

Farm labour

The sexual division of labour in the village is not very marked and many tasks are being performed interchangeably by men and women. In the cultivation of rice, the sexual division of labour is mainly based on the strength required to carry out the various tasks. The heavy tasks like ploughing or menajak, carrying the seedlings to the fields for transplanting and carrying harvested padi back to the village fall to the men while the rest like sowing, transplanting and threshing are commonly done by either females or both sexes. The decorticating and polishing of the rice are supposedly feminine tasks. Harvesting or menai is regularly done by men, women and girls.

Young boys and girls do not take part in the farming operation because many of the farmers in the village send their children to school. The farmers realise that they have a hard time to earn a living because they do not have sufficient education to seek remunerative employment outside agriculture. Since Malay School education is free at the primary level and Malay Medium classes are also available at both secondary and upper secondary level, the farmers, despite their financial difficulties, are able to send their children to school. During the writer's study period, almost 65% of young boys and girls between the ages of 6-12 attended the Malay School in the village; 5 boys and 2 girls are in Form I of the Malay Medium stream; 3 boys in Form III of the English Medium School; 1 boy and 1 girl in Form V Malay Medium and 2 boys in Form V English Medium. Here one can notice that the farmers are looking forward to educate their children to a high level as possible.

The boys and the girls help their parents only occasionally to collect firewood from the nearby jungle clad holdings or to fetch water from the river or wells. They do not learn farming because they have often thought that the job is too tough and heavy for them. The writer asked a 12 year old school boy what his ambition was and the reply he received was that the boy wished to make gaji that is to find a white-collar job. It is significant to note that young boys and girls do not look towards working in the fields at all, as they believe their education would be able to ensure them jobs outside the village's agricultural sphere.
The raising of ducks and poultry is mainly done by women at home in the village. Very few men show interest in this. Chicken and ducks provide a small but independent income for the women and is used mainly to pay the cloth traders who came down from Parit to the village weekly on their Honda motor cycles. Very few women save any income secured by the sale of fowls and ducks. Chickens are fed twice daily, once in the morning and once in the evening when the women folk return from the bendang or the kebun or vegetable plots.

The most important labour unit in the village is the family labou. The men in the village regard as prestigious if their womenfolk do not work on the bendang. But very few of the elder women in the village keep away from the bendang. Thus, they go out to tap rubber with their husbands in the mornings and later accompanied them to the padi fields in the afternoons. However, during the ploughing period, only the husband works in the field because he feels that the job is too tough to be handled by his wife. Their brothers go out into the field. Girls, however do help their fathers to tap rubber whenever their hand is needed.

The organisation of female labour has hardly been affected by changes that has taken place in the village. Most women, as has been said, still participate with their menfolk in the daily routine of work. During the off season, usually in the evenings, the women clear out the land on the scattered islands in the Perak River which locally known as pulau and plant maize and other crops like tapioca and vegetables. The cultivation of maize and vegetable gardening are strictly women’s jobs. Very few men in the village have shown interest in the work of their womenfolk. On the whole, it was observed that female labour in the village falls into the unpaid labour group.

Following irrigation where large-scale padi production was introduced into the scheme, padi production increased tremendously. This made it possible for the establishment of a cooperative rice mill, an institution which was set up jointly by the villagers in the region. This could be seen as a direct change as a result of the irrigation scheme. The presence of the rice mill has a considerable impact upon the women in the village. For one thing, the burden of their tasks have been lightened. They now could have their rice milled in a few minutes compared with the many hours spent on performing the same operation by hand pounding which involved the use of lesong tan can (hand operated pounding device) or lesong kaki (leg operated pounding device). The remaining task now is to dry the padi in the sun by spreading it on tikar mengkuang (pandanus mat) in the house compounds. The children are usually given the job to keep the wondering fowls and ducks away from the drying place. On sunny days, a maximum of 4 hours is required to dry the padi. The padi is then winnowed by using an oval shaped tray known as nyiru. The good and clean padi is then packed into a gunny sack and the husband will carry it either on his Honda motor cycle or bicycles to the mill house which is situated about 1 mile away from the village. The mill house charges 4 cents per kati of padi to be milled.
In most cases, this labour saving has resulted in increased leisure hours for the women. At present, it is observed that the increased leisure time is spent by the women at the adult education class, where they are taught to read and write. However, in the process of padi cultivation the women still perform the many tasks they undertook before, like transplanting, weeding, harvesting and winnowing since, the same crop is still being grown with the same techniques and procedures.

The most important labour unit in the village is the family labour. This comprises of the father, mother, sons of between the ages of 16 and above and daughters between the ages of 16 and above and daughters between the ages of 16 and 18 of each household. However, because the bendang land in the scheme is far away from the farmers' home, girls usually do not go to the fields to help their parents. Instead, they would stay at home to look for the younger members of the family or their siblings. Only their parents and their brothers go out into the field. Girls, however do help their fathers to tap rubber whenever their mothers fall ill or are expecting. On the other hand, some of the girls in the village help their parents to tap rubber because they need money to pay for clothing and cosmetics which most of them look for. The father would not be reluctant to give her some money as she would have helped him at his work. Boys help their parents for the same motive too. They need money to buy clothing and to travel to Parit when there is a Malay or a Hindustani film being screened in the Kwong Wah Theatre - Parit's only theatre. Girls seldom come down to Parit unless on festive days. This tendency in many ways reflects the growing influence of the town life upon the young people in the village.

The communal labour, that is, the traditional cultural labour or gotong royong or bolong menolong is fast dying out and is used very infrequently with regard to rice cultivation in the village. One obvious reason is that increasing emphasis is laid upon money income on the part of the farmers. This form of labour was once a common source of free labour in the village especially during the preparation of sawah lands and also during harvesting. Footpaths leading to the bendang were built communally since every farmer felt that the path was being used by all. The bunds and canals to control and regulate water in the field were prepared, dug out and maintained by all the farmers involved in the cultivation of the crop. As a result of irrigation, however, such work is no longer undertaken by the farmers because the Drainage and Irrigation Departments had their own men to clear the paths made by the department leading to the bendangs. Incidentally since these paths run on the bunds (locally known as batas ban) along the canal, the paths are cleared by the same men who clear the weeds in the main canals and the canals leading to the bendang land during every cropping season. The Drainage and Irrigation
Departments has also its own men to repair and maintain these canals. The only responsibility left to the individual farmer is to keep the water inlet to his bendang land free from weeds and other dirt. Otherwise he would not be able to get water because the inlet would be blocked by floating debris and weeds. The department even constructed bridges, both wooden and concrete, across the canals in place where individual farmer's land is separated by the canals. This kind of work was at one time undertaken on a gotong royong basis since all the farmers who were affected needed this facility. Besides providing easy accessibility to the farmers, the bridges facilitate the transportation of harvested padi from the bendang to the farmers' homes. At present the central part of the bendang land in the scheme could be reached even by a motor cycle.

Tolong menolong or a system of mutual help, as has been said, is fast disappearing in the context of the village labour system. Though it is undeniable that under the system that labour resources were pooled and directed towards a specific goal in order to save time, for example, in harvesting, the absence of a good leadership coupled with the lack of unity among the villagers in this sphere made the system impossible to survive at present. An elderly farmer revealed to the writer that the increase of the "self-interest" of each farmer made the system unworkable.

The need for labour in the harvesting season is met by hiring workers either from inside the village or from the neighbouring villages. In the village, women, who have no land of their own, usually seek this short term employment. They are paid either in cash or in kind and they work together with the owners of the bendang lands. If each woman is paid in kind, she usually gets about one-fifth of what she reaps from the unthreshed padi. If, for example, she reaps 5 gemsals or handfuls of padi stalk, her share would be 1 gemal. On the other hand if she seeks cash, she would be paid at the rate of $5.00 for each 100 gemsals or handfuls of padi stalks harvested. Incidentally, the padi earned from harvesting another farmers crops constitutes an important source of income for some women in the village who have little or limited source of income.

The pattern of land tenure, as it exists today, has a considerable influence upon the padi cultivation. As has been said, 35 farmers or 42.6 per cent of the farmers in the village own bendang land in the scheme. Land revenue tax is paid yearly at the rate of $2.00 and water charges of $3.00 per acre respectively. Forty-seven or 57.4 per cent of the farmers still engage themselves on the bendang lands which lie outside the scheme. Out of this total of 47 farmers, 7 farm-owners or 14 per cent are widows, 33 farm-owners or 82.5 per cent are men while the remaining 7 farmers or 17.5 per cent have no land at all, residing on their
relatives' lands and working as share renters in the padi fields or rubber holdings belonging to the villagers and the villagers in the neighbourhood. Some of them even work as share-renters on the padi fields in the irrigation scheme proper and also in the old bendang lands.

The most important types of tenure existing in the village at the moment are the fixed rental type or sawa tetap and crop sharing type. In the fixed rental system, the rent is fixed and is paid in cash after the harvesting period, based on the unofficially made agreements without recourse to the government authorities. However, it was found that a few cases occurred whereby the rent was paid prior to the cultivation of land. At present, the rate is $35.00 per acre. On the rare occasions only the rent is paid in kind. Sharecropping on the other hand is usually dealt with at the harvest time. The bagi tiga system, that is, a division into 3 parts is commonly practised: 2 shares for the landlord and 1 share for the farmer. This proportion is justified since, a farmer said that, the landlord provided all the necessary capital such as seedlings and fertilizers; the share renters only manage the cultivation of the crop. The farmers (landlords) rent out their lands as long as there is demand for it.

As a result of the irrigation and the allocation (colonization) of land in the scheme, the number of 'petty' landlords has increased. There are evidences to show this. As the writer mentioned earlier, each farmer in the project was allocated a 5-acre sawah land which is considered by the Agricultural Department to be an economic unit of production. There are farmers in the project who feel that the sawah land is too large for them and their womenfolk to manage effectively and satisfactorily. So they usually rent out a portion of this 5-acre plot to their friends especially those who are operating in the old uneconomic bendang land outside the scheme. Their friends may be residing in the village or in the neighbouring villages. Arrangements are verbally made between the landowner and the tenant based on the mutual trust and understanding.

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14 'Petty' landlord is loosely used here to denote the farmer who rents out a portion his land to his friends or relatives. Compared to the 'actual' landlord, the petty landlord is in no way, exploits the tenants.
In some cases, only 2 acres are rented out; in other cases, however, the whole 5 acre plot is rented out while the farmer himself does not undertake any farming operation. Instead, he would move out of the village to work perhaps as a jago or watchman in a tin mine in Tronoh. The rented 5-acre plot is cultivated usually by Banjaranese families who moved out from Parit Buntar and erect permanent homes on fellow villagers land in the area. At present there 2 Banjaranese families residing in the village. When interviewed, the head of a Banjaranese household reported that he moved out from Parit Buntar because housing could not obtain land for cultivation. The existence of a permanent Banjaranese settlement at Titi Gantong is a good example of this small scale movement of labour from the outlying areas, for example from Kedah and Parit Buntar, to work in the scheme.

Land in the new village economy

Land is the basis of the village economy. Most of the villagers derive the major part of their income from the cultivation of land; in fact, landholding is regarded as the key to the economic, political and social status in the village which would be indicated later.

Land in the village could be categorised into 3 types depending upon the kind of crops cultivated. These are the bendang, the rubber and the dusun or orchard lands. Padi occupies the lowland of the interior; rubber is grown in the holdings on the isolated highlands further inland which is locally known as changkat and the dusuns are located commonly near the villagers’ homes.

About 65 per cent of the farmers in the village possess and work on their own holdings. The average acreage per holding is between 1½ to 2 acres. About 25 per cent of the farmers who do not have their own holdings to work on, work as share- renters in the holdings belonging to the people in the nearby village of Sungai Korok. The remaining 10 per cent, either engaged themselves in other works such as maintaining somebody’s rubber or holdings outside the village but do not tapping at all. Prior to irrigation, about 45 percent of the farmers owned bendang lands and almost 75 percent of the farmers in the village had dusun lands before they would be ready for tapping.

15 Titi Gantong is situated on the 26th mile stone, Ipoh Lumut Highway. It was opened up in 1959 when a group of Banjaranese from Kedah and Parit Buntar emigrated into the area in search for land. Today they formed a settlement of their own. Malay dialect (Loghat Kedah) which is very different from the dialect spoken by the people residing in the area. At present, Titi Gantong had 40 households with a population of approximately 160 persons.
As a result of the irrigation scheme, the bendang lands increased both in the number of plots and the total acreage compared with the number of rubber lands. The number of dusun lands remained unchanged. In fact, there is very little and insignificant increase in the acreage of rubber land owned by the farmers. A number of reasons have accounted for this.

In the first place, the availability of land which is suitable for rubber is limited to the high terrain land or changkat on the outskirts of the padi fields. As such, room for increasing the rubber land is very limited. Secondly, rubber operations fluctuate greatly in the village depending very much upon the price of rubber itself. This could be seen clearly when the price of rubber shot up as during the Korean War boom (which lifted the price of rubber to $3.00 per kati) greater attention was paid to rubber cultivation. On the other hand, when the price of rubber was less or not attractive at all as during the Japanese occupation or in the mid 1960s, the farmers shifted their interest over to the padi cultivation. Thus, over the years, no villager has made any buying or selling of rubber land either in the village or outside, especially in the mid 1960s when the price of rubber was fairly low. Thirdly, though rubber is an important source of cash income, its importance is declining due to the diminishing productivity of the trees. This is so because of the fact that more than 60 per cent of the trees in the holdings are already very old. Further the trees are indiscriminately tapped in order to obtain as much latex as possible. Almost all the farmers do not want to do any replanting since none can afford to forgo the trees in their holdings at present; they prefer to get a small income from the present trees rather than to wait for 7 years before the trees can be tapped. Thus, the farmers reported that it was better to continue to tap and earn income, though small, rather than to replant and get no income at all from the trees for at least 7 years. The replanting subsidy by the government, they said, could barely cover the expenses involved in the replanting operations. It is because of this that 85 per cent of the replanted holdings (with a total acreage of 15 acres) are left unattended with laolang (a kind of weed), growing heavily on them. Unattended holding give rise to 2 drastic effects upon the farmers. In the first place, uncleared holdings are not given any payment from the replanting subsidies. Secondly, the trees cannot grow well in the laolang clad holdings; this would mean that the trees would take at least 15 instead of 7 years before they would be ready for tapping.

The main reason as to why there is an increased in the padi lands, either in terms of acreage or in terms of plots, is the declining role of part-owners as well as share-renters, and the increasing role of full-owners. This trend results from the allocation of 5 acre land plots under the irrigation scheme to each qualified applicant and the conversion of partly-owned farms to fully-owned farms due to the purchasing of rented lands by the farmers.
Irrigation has also brought changes even in the bendang land itself; this can be viewed in terms of acreage per family. Prior to irrigation most of the bendang land in the village varied from 1 to 2 acres. This was too small to be an economic productive unit. The main reason being that as padi cultivation was carried out on a subsistence level, and as the fertility of the soil could not be replenished due to the ignorance of the farmers in the use of fertilizers; expansion in acreage was at no time thought of.

As has been said, small farms are generally uneconomic in terms of full time farming operations. They do not yield sufficient income to uphold what is regarded as a desirable standard of living. They are too small to permit the accumulative saving of capital to effect necessary improvement and the flexibility of operations is inhibited, for example, diversification of crops that would allow readjustment of the irrigation needs of the sawah land is difficult.

Irrigation introduced 5 acre bendang lands which are considered to be economic productive units per family in the village. The old bendang lands lying outside the scheme (with an average acreage of between 1½ – 2) automatically falls under the category of 'uneconomic productive' units, while the bendang lands in the scheme comes under the economic productive units. This gives rise to 2 categories of farmers; 1 cultivates the bendang lands in the scheme while the other toils on the uneconomic sawah land outside the scheme. However, as mentioned earlier, the bendang lands outside the scheme receives irrigation water directly from the canals that run across it.

Irrigation has directly resulted in a decrease in the acreage of the dusun land. The need to have a straight main irrigation canal with the least possible bends has resulted in the divisions of the dusun lands. The canal runs through the dusun land and as such a portion of the dusun land has to be dug out. This has led to the division of land with one half lying on one side of the canal while the other half is on the opposite side. Though compensations have been paid to the affected farmers by the Drainage and Irrigation Department, the fact remains that the acreage of the dusun land is reduced.

The impact of irrigation could also be seen in the light of the price of land. Prior to irrigation, the price of an acre of bendang land was fairly uniform over all the villages in the area ranging from $200.00 to $300.00 per acre. Irrigation, however, increased the value of the land by virtue of the fact that it makes padi cultivation more productive especially with the introduction of double-cropping. The bendang land outside
the scheme (which receives water directly from the irrigation canal) increased in value from $400.00 to $500.00 or even to $600.00 per acre. The bendang land in the scheme which is given out to the successful applicants is not allowed to be re-sold. This is a deliberate measure taken by the authorities so as to prevent the farmers from selling their lands unnecessarily thereby to place themselves in landless position again. However, it was found that despite the regulations imposed, a few farmers still managed to sell their lands in the scheme, though they never admitted they did it. A farmer came to the Colonisation Office one day with the intention of transferring his name to another person whom he claimed to be his relative. But, later, it was found that the man concerned was in no way related to the farmer. The authorities in the office knew what was going on, but no action could be taken against the farmer because on no occasion did he admit that he wanted to sell his land. This reflects the discrepancy in the regulations imposed by the authorities. The flexibility of the rules governing the scheme is the major reason that made such a discrepancy possible. Hence, directly, it could be seen that irrigation has created a new type of sawah land in the village which cannot be sold.

One of the rules governing the land in the scheme follows closely to that of the MLDA with respect to the law of inheritance to land. If a farmer chooses a son to inherit the land on his death, only this son would have the title to the land, while his brother and his sister—if there are any, would receive no share of the land. This rigid law of inheritance which governs the land in the scheme exists side by side with the Muslim law of inheritance that governs the bendang lands outside the scheme. According to this law, on the farmer’s death his son and daughters and his wife would receive their respective shares of the land based on the ratio set out under the Muslim law of inheritance.

Material Wealth

The villagers on the whole keep very little livestock such as buffaloes, cows and goats. Only 3 farmers in the village raise livestock. One farmer has 3 cows and he takes the animals out in the afternoon and ties to a small rubber tree in an unattended replanted holding near the road side and leaves the animal there to graze. In the late evening, usually around 6 o’clock he would come to fetch the animals. The other 2 farmers have 7 and 5 goats respectively. They release the goats from the goat shed or bendang shed and no great complaint regarding the goats which belong to the farmer.

See Appendix III

17 See Appendix III

18 Federal Land Development Authority.
Kambing at 3 o'clock in the evening daily to graze. Both farmers reported that if they released the goats earlier, the animals would not be so hungry as to concentrate on grazing alone; instead they would go round the village and cause a lot of nuisance to the fellow villagers' vegetable gardens. Whether this argument is sensible or not is difficult to apprehend. None of the farmers in the village keep buffaloes which are supposed to represent the greatest wealth of the people. Certainly, livestock rearing is on a very modest scale. A few or other expenses which involve a nominal sum of money. Fourthly, it is raised because the farmers feel that

No special study has been made as to why the farmers show little interest in livestock rearing. However, from the theoretical point of view, the number of livestock should be increased since the security of the land tenancy enables the farmers to take up livestock keeping. Further, the availability of roads following the irrigation means that the area is directly connected with the major consuming centres and as such livestock rearing could always find market in the centres. Transportation of the livestock would not present any problem in any forms since the presence of road would facilitate this.

The numbers of livestock in the village remain relatively small. A number of reasons have accounted for this. Firstly, most of the farmers are not in the capacity to buy and raise buffaloes, for example, because it is costly. One buffalo would cost a farmer between $250/- to $350/-. Furthermore, buffaloes could not be purchased on any instalment basis. This is so because of the fact that a farmer would only sell his buffaloes when he is in a great need for immediate cash as for instance financing a wedding. Consequently, the chance for an average farmer to own buffalo is very remote. Secondly, livestock keeping is a tedious job. During the night time for instance show fires have to be lighted under the cow or goat shed so as to keep away mosquitoes as well as to provide warmth for the animals. Logs of wood have to be picked from the rubber holdings which are quite far from the farmers’ homes. This proves to be time consuming to the farmers. Again the calves have to be carefully looked after especially when they are 3 to 4 weeks old. It is during this period that the young animal is very susceptible to diseases.

Thirdly, it is difficult to control the animal from wondering in the village in search for better grass. Some villagers filed complaints regarding the goats which belong to the 2 farmers as these animals damage plants and vegetable gardens.

Poultry rearing is the single important side activity practised by almost all farmers. Each household has at least 2 or 3 hens. Because of a number of reasons, poultry raising is feasible.
Firstly, it is fairly easy to manage a poultry farm because of the comparatively little work involved. The chickens are kept at night in a chicken house built behind the farmers' houses. From dawn till twilight, the chicken are free to wander in the village, visiting neighbours' homes and the like, looking for food. Secondly, cash could be realised in a fairly short time. Chicken can be sold at any time regardless of their age or size. Thirdly, it provides a quick form of cash to meet unduly expenses such as paying school fees or other expenses which involve a nominal sum of money. Fourthly, it is raised because the farmers feel that remains or leftovers of their food in the form of rice and curry for the night could be used to feed the poultry in the mornings, otherwise the leftovers would be wasted. As such chickens are raised to take this share of leftovers. Apart from this, chickens are also fed with rice bran and dried tapioca or ubi kering.

The economic progress of the irrigation farmers can perhaps be demonstrated best on the distribution by house types; see table 2.

<table>
<thead>
<tr>
<th>Types of houses</th>
<th>No. of houses</th>
<th>% of house types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick and corrugated</td>
<td>1</td>
<td>1.2%</td>
</tr>
<tr>
<td>Brick and zinc roofed</td>
<td>1</td>
<td>1.2%</td>
</tr>
<tr>
<td>Wooden and zinc roofed</td>
<td>41</td>
<td>50.0%</td>
</tr>
<tr>
<td>Wooden and thatch</td>
<td>35</td>
<td>42.9%</td>
</tr>
<tr>
<td>Bamboo and thatch</td>
<td>4</td>
<td>4.7%</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Discrepancies occurred in the % due to the rounding of figures. Source: Actual Survey.
The table shows the distribution of the types of houses in the village. From the table, it could be seen that 50 per cent of the houses in the village are made of wooden material with zinc roofing. It is interesting to note that almost 45 per cent of the farmers working in the project have such houses. The increase in the productivity of the farm and the availability of more varied economic opportunities enable them to invest more in their own homes. More than 75 per cent of the farmers working outside the scheme possess houses built of wooden material with thatched roof which account for 42.9 per cent of house types in the village. The brick and corrugated roofed house belongs to a landlord, while the brick and zinc roofed house belongs to the Malay School teacher residing in the village. These houses were built in 1963. The bamboo and thatched houses belong to the poorest people in the village who work as share renters on rubber holdings and in paddy fields and who for unknown reasons failed to get the land in the scheme.

On the other hand, the houses are much better if they are owned by the land. Most of the houses stand in cleared yards, surrounded on the outer fringe by fruit trees such as durian (durio zibethinus), langsat (lansium domesticum), rambutan, mango, mangosteen, coconut and rambutan (nephelium lappaceum) and also by flowers chiefly hibiscus. The houses are one basic design with many variations: these are L shaped, T shaped or T shaped with raised kitchens. All houses are raised off the ground on pillars between 5 to 6 feet high, to avoid the floors from being affected by floods. The space underneath is used for odd jobs, food preparation, that is where lengong trugan or lengong tak is kept; children's games are played here; storage space especially for padi which is kept in a kebong or a storage, placed under the house; him and his wife to manage effectively and successfully. He rented 3 acres to his friend at the rate of 10/= per acre and he used the Progress in house building has taken place in several directions. Quite lasting houses have been built even with the use of only woven bamboo reeds and thatches. More permanent and larger houses have been built taking the traditional either of the L, I or T shaped pattern with several rooms, windows and doors. Combinations of materials are used for example, cement products and mosaic are used as pelapik tiang or supporting blocks on which pillars stand above the ground and for stair cases. Good sense is used in the selection of materials. Houses are built with the best approximation they can afford. The growing desire to purchase was seen in the purchase of more water tanks, and this resulted in the higheritate of the Perak River especially in the low lying areas where they are easily affected by flood. The chances for the floors to be submerged is practically small unless when big floods occur, for example in the December 1966 and January 1967.

Such a feature is common to houses along the Perak River especially in the low lying areas where they are easily affected by flood. The chances for the floors to be submerged is practically small unless when big floods occur, for example in the December 1966 and January 1967.

These are commonly used in almost all Malay homes. They are square or pyramid shaped with both ends flat. They are placed on the ground and the pillars are projected above them. They serve two purposes: they prevent the pillars from being attacked by termites and they help to beautify the houses.
wooden houses commonly have zinc roofs which are preferred because of its durability; and also that houses made from these materials may be considered as a mark of some affluence. These houses are usually painted white, but most of the houses have their walls smeared with a kind of black or yellow oil that is locally known as minyak hitam or minyak kuning in order to prevent termites from attacking the wooden material. Only 5 of the zinc-roofed houses have ceilings installed in them to reduce the heat radiating from the hot zinc roofs in the day time. To build a good average sized house would cost a farmer anything between $1,500/- to $2,500/-. Usually, the whole building material is bought piece by piece depending on the amount of money available.

A relationship exists between the amount of property a farmer has and the kind of house he lives in. Usually, those farmers who live in the bamboo thatched houses belong to the poorest class having little or no property at all, not even land. On the other hand, the houses are much better if they are owned by the landlord and the teacher, as has been indicated above. The conditions in which a person lives reflects his status in the village. To the villagers, a house is something to be proud off since intimate social relations take place in the home. As such, every farmer in the village is looking forward for a better and more spacious house. It may now be seen clearly why houses are the preferred investment by the villagers.

More opportunities are open to the farmers who work in the scheme to build or expand their houses when compared to the farmers who are attached to the old bendang lands. Once case was examined whereby a farmer felt that the 5 acre plot was too big for him and his wife to manage effectively and successfully. He rented 3 acres to his friend at the rate of $40/- per acre and he used the money which was paid in advance to him to repair and expand his house. Another case was also examined whereby a farmer rented the whole 5 acre plot to a fellow villager and used the money to extend his house. Here it is noticeable that bendang lands when rented out provide a quick means of getting money for repairing or building houses.

Within the framework of other preferences, the villagers aspire to a more modified western style houses and will obtain the best approximation they can afford. The growing desire to purchase western goods is reflected in the purchase of children's toys. Children lay out square or rectangular play-houses and build play cars from cans, thread rolls, wire and papers. Checkers or dom, played with bottle caps has become widespread and popular among the young boys in the village.
Economic progress can also be seen in the acquisition of vehicles like bicycles, motorcycles and scooters. A motorcycle of Honda make especially the 49 c.c. Honda Cub is the most popular, followed by Yamaha and scooters. The owners of the Honda motorcycles reported that the machines are preferred because of low fuel consumption and of its durability and tough make. At the time of the study, there are 7 Honda cub motorcycles of 49 c.c., 1 Yamaha and 1 scooter and almost every household has a bicycle though none owns a car.

Motorcycles are commonly purchased on the hire purchase or instalment arrangements. In some cases, the income from fruits, especially from the sale of durians, enables the farmers to make cash purchases. In most cases, however, because of insufficient cash in hand, the hire-purchase method has become popular. Each month, an agreed sum of money is paid to the Chinese motorcycle dealer living in Parit. If payments are not made for 3 successive months, the dealer would travel down to the village to claim the motorcycles from the farmers. Whatever payments the farmers have made would be forfeited. In this situation one could see clearly that irrigation has directly placed the farmers into debts. As mentioned earlier, irrigation called forth for the road construction which runs across the village and this in turn provides incentive to some of the villagers to buy motorbikes and scooters.

One of the 3 farmers who own Honda cub motorcycles acts as a vendor or chicken dealer. He travels extensively in and around the villages to buy chicken and ducks from the villagers. He then sells the fowls and ducks over to a Chinese market in Parit and earns some profit out of his business. This form of occupation is only a recent one. The other 2 farmers use their machines to transport the harvested padi from the fields to their homes or to transport rubber for sale in Parit once in a 4 or 5 days. The scooter owner uses his machine to travel to his working place in Parit while the Yamaha motorcycle owner rides his bike to his working place in the irrigation scheme where he works as a Drainage and Irrigation labourer. The main factor that motivates the villagers to acquire vehicles therefore is largely due to the presence of the good all-weather metalled road in the village.

Material wealth include radios, furniture and fridges and other tangible assets like sewing machines, cooking stoves, pressure lamps, crockery and utensils. It is interesting to note that there is a difference between the farmers working inside and outside the scheme with respect to the acquisition of these form of wealth. The number of farmers possessing radios in their homes is 3 for the scheme participants and only 1 for the non-participant. None of the non-participating farmers have sewing machine compared to the scheme participants who possess 2 of such machines. Taking the survey sample as a whole, 3 households have cooking stoves.

The chain
These households belong to the Malay school teacher, the village headman or Ketua kampong and the government's midwife or bidan keraian. Twelve households use pressure lamps to light their homes at night. In most houses, especially those belonging to the farmers participating in the scheme, emphasis on better furniture and fixtures could be seen their homes. During the writer's study period, 3 farmers bought new furniture set at the average price of $120/- on an instalment basis.

The use of modern utensils and crockery is gaining popularity in most homes in the village. This could be observed from the kind of crockery like plates, bowls, saucers, glasses and cups the villagers use to serve meals especially during the kenduri or feasting time. During the writer's 3 month stay in the village, the women folk held a "tupper-ware party" twice whereby a "tupper-ware" sales agent was invited. Samples of "tupper-ware" materials like cups, saucers, plates and bowls were displayed at the party. The women could then place their orders according to the choices with regard to which items they need. Payments were to be made on receipt of the items ordered.

Other wealth includes farming implements like tajaka (long-bladed weed cutter), changkol (hoe), kuku kambing (a forked end farming implement), sickle, keri (weeding tool), lesong tangan (mortar and pestle operated by hands), lesong kaki (mortar and pestle operated by legs), tapping knives and mangles. These forms of wealth form part of the capital involve in the padi and rubber production. Irrigation has neither abolished nor modified the use of these implements because of the fact that the present method of rice cultivation is developed in the same line as the older pattern. Furthermore, these implements still remain important in the farming operation because of the absence of mechanisation. On the average, each household has 2 tajaks, 2 kuku kambings and 1 keri. This number of implements held by each household denotes that a man and his wife form the two basic household labour units. On the whole, these farming implements cost only something between $20/- to $30/-. However, it is important to note that the number of lesong tangan and lesong kaki is decreasing compared to the pre-irrigation period. The establishment of a cooperative rice mill in the nearby village of Layang2 Kiri accounted for the decrease in the number of such implements.

The most important form of material wealth is land; either padi, rubber or dusun land. To the people in the village, land is a form of harta (property). The more harta a person has the higher his social standing in the village's society. As has been mentioned, the elevation of the farmers from a landless status to a land owning position is the direct result of the land allocation which is brought about by the irrigation. The chain
During the harvesting time, the produce is carried reaction resulted in the upward movement of the farmers, who at one time belonged to a landless class to a land owning status. This is the most significant result of the Trans Perak Irrigation Scheme.

**Income from farm products and duanu lands**

Irrigation, as can be seen, has brought about a more diversified source of income opportunities to the villagers. The post-irrigation period allows the farmers to earn their cash income from products other than rubber.

At present, agriculture in the village is economically oriented towards cash crop production. The sales of rubber and subsidiary crops and produce like bananas and fish comprise 2/3 of cash farm income. The income from the sale of padi accounts for slightly less than 1/3 of total farm income. This is because of the fact that double cropping has been introduced into the area only in the past 3 years and as such, it will take some time for the farmers to orientate themselves to its fuller cultivation.

In money terms, the income from rubber accounts for something between $50/- to $60/- per month while for bananas and fish $20/- to $30/- is earned per season. The income from padi amounted to only $40/- to $50/- per season.

Prior to irrigation, when there was no road, bananas did not play an effective role as a source of income as it is today. Two reasons accounted for this: firstly, the absence of the road made transportation of the produce difficult and secondly the limited market of the produce which resulted from the lack of communication discouraged the farmers from concentrating on its cultivation seriously.

Bananas are grown mostly in between rubber trees in the replanted holdings. However, the plants are also grown in certain parts of the bendang land which are too high to receive water from the irrigation canals. The popular types grown are pisang minyak or pisang emas, pisang abu and pisang raja. Besides, pisang embun and pisang rastali are also grown. None of the farmers interviewed reported the use of any fertilizer on banana cultivation. The plants are cultivated haphazardly and very little attention is given to them by the farmers.

A large proportion of the padi grown is retained for home consumption. It is only marketed when the farmer is in need of money to meet expenses incurred such as paying debts and the like.

21 A durian can only retain its freshness for only a few days after being harvested. It is then sold on the roadside stalls for the passing motorists. An average sized durian fruit would fetch a price of between 30 to 40 cents if sold directly to the customers. However, there is little variation in the price quoted to the traders since they often buy in bulk.
During the harvesting time, the produce is carried over to the roadside where it is weighed and loaded into a waiting lorry which transports it to Parit, Ipoh and Kuala Lumpur. Besides, the ripe bananas are also hung in huts erected along the road for sale to passing by motorists who occasionally stop their vehicles to purchase the fruit which sold at a reasonable price. *Sesikat pisang emas* or a row of *pisang emas* is sold at 15 cents only. Table 3 shows the prices of the respective kinds of bananas as it was sold by the villagers during the time when the study was made.

<table>
<thead>
<tr>
<th>Types of bananas</th>
<th>Price per kati</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pisang emas</td>
<td>11 - 14¢</td>
</tr>
<tr>
<td>Pisang awak</td>
<td>2 - 4¢</td>
</tr>
<tr>
<td>Pisang embun</td>
<td>8 - 10¢</td>
</tr>
<tr>
<td>Pisang abu</td>
<td>7 - 10¢</td>
</tr>
<tr>
<td>Pisang raja</td>
<td>9 - 11¢</td>
</tr>
</tbody>
</table>

Table 3

Types and prices of bananas in Kampong Pasir Gajah 1969

Source: fieldwork.

Fruits like *durian*, *langsai*, mangosteen and *rambai* form another source of income for the villagers even though a highly irregular and seasonal one. As has been pointed out, the availability of the road facilitates the transportation of the fruits more efficiently since most of the fruits especially the durian can only retain their freshness for only a few days after being plucked from the *dusun* or orchard. Besides selling directly to the outside traders, especially the Chinese who come to the village in their own lorries the fruits are also put on sale on the road-side stalls for the passing motorists. An average size *durian* fruit would fetch a price of between 30 to 40 cents if sold directly to the consumers. However there is little variation in the price quoted to the traders since they often buy in bulk.
Income from the sale of durian forms the largest portion of income earned from the sale of fruits. A dusun land with 10 to 15 well-laden durian trees would give an income of at least $500/- to the farmers per season.

As such it is often found that such farmers are able to make purchases on expensive things with the income they earned from the sale of the durian. For example, during the last fruit season, 2 farmers purchased Honda cub motorcycle on cash; 2 purchased new sets of sitting furnitures for their living rooms, and 1 expanded his house. Besides making unplanned purchases, the money would also be used to settle debts, if any, as well as to supplement the daily household domestic expenditure. The money is seldom saved.

Other fruits like mangosteens, langsat, rambai and mangos form another source of income too, but their importance is relatively little compared to the income derived from the sale of durians. These fruits are also sold directly to the outside traders who come to the village. Besides, these fruits are also put to sale to the passing motorists in the roadside stalls.

In his book "Malay Peasant Society in Jelebu", Swift stated that income from fruits is a source for saving. He argued that it is income from the sale of fruits that enables the farmers to finance extra ordinary expenditures and as such prevent themselves from incurring debts. Contrary to Swift’s argument with respect to saving, it has been observed that seldom the income secured from the sale of fruits is saved by the villagers. Table 4 shows the prices of respective fruits in the village during the study period.

<table>
<thead>
<tr>
<th>Fruits</th>
<th>Selling Price per Fruit</th>
<th>Selling Price per Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-orange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluted fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source: Field</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Besides selling durian in its fresh form, the durian is also sold in different form, Tempeyak22 or fermented durian flesh in one of these forms. At present, a sample of Tempeyak is made by preserving the durian flesh in a container usually made of clay known as balang or tempoyak. In order to seal a good balang, it must be prepared for at least 2 or 3 months when the sweet taste of the durian turns sour and it becomes ready to make a sample of Tempeyak as well as Tempeyak in syrup. The curiosity of the people in the village.

fetches a price as high as $16.00. The other form is lemak or durian paste which resembles the dadel (a Mauiyuke). A kati of lemak usually costs between $2.00 to $2.50 ida. The outstanding thing about the lemak is that it can be stored in a dry place for months without going bad and losing its taste.

Table 4

Prices of fruits and the average income from fruits per season, per average yield.

<table>
<thead>
<tr>
<th>Types of fruits</th>
<th>Method of selling</th>
<th>Average selling price</th>
<th>Average Income per season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durian</td>
<td>per fruit</td>
<td>30 ȼ</td>
<td>$100</td>
</tr>
<tr>
<td>Langsat</td>
<td>per kati</td>
<td>15 ȼ</td>
<td>$40</td>
</tr>
<tr>
<td>Mangosteen</td>
<td>per fruit</td>
<td>3 ȼ</td>
<td>$27</td>
</tr>
<tr>
<td>Rambai</td>
<td>per kati</td>
<td>6 ȼ</td>
<td>$25</td>
</tr>
<tr>
<td>Mango</td>
<td>per fruit</td>
<td>6 ȼ</td>
<td>$30</td>
</tr>
<tr>
<td>Gelugor 2</td>
<td>per fruit</td>
<td>3 ȼ</td>
<td>$20</td>
</tr>
<tr>
<td>Lemon</td>
<td>per fruit</td>
<td>4 ȼ</td>
<td>$15</td>
</tr>
<tr>
<td>Coconut</td>
<td>per fruit</td>
<td>15 ȼ</td>
<td>$35</td>
</tr>
</tbody>
</table>

2. Yellow-orange fluted fruit.

Source: Field work.

Beside selling durian in its fresh form, the durian is also sold in different form. Tempoyak 23 or fermented durian flesh is one of these forms. At present, a gantang of tempoyak

Source: Field work.

23Tempoyak is made by preserving the durian flesh in a container usually made of clay known as balang or tempayan. In order to get a good taste, it must be preserved for at least 2 or 3 months when the sweet taste of the durian turns sour and it becomes a smelly, jelly-like product which is yellowish in colour. It is then mixed with pounded chili to form sambal tempoyak and is taken raw with rice; or added into curry with ikan sepak (a fresh water bendang fish). The curry is known as gulai tempoyak - a delicacy of the people in the village.
fetches a price as high as $16.00. The other form is lempok or durian paste which resembles the dodol (a Malay cake). A kati of lempok usually costs between $2.00 to $2.50 cts. The outstanding thing about the lempok is that it can be stored in a dry place for months without going bad and losing its taste.

Maize and other vegetable crops form a source of income too, though not a very significant one. Maize, watermelons, cucumbers, long beans and pumpkins are among the vegetables grown. Watermelon is often used for making watermelon soup besides taking it in its raw form and young maize cobs are cooked as a dish of vegetables. Maize is usually grown in the bendang land between seasons; watermelon is planted on the high land or in the replanted rubber holdings, while cucumbers and pumpkins are grown on the batas or bunds that divide the bendang lands.

The typical fishing gear used does not differ much from the traditional one. Fish or fish trap, hook and line and jala (cast net) are widely used. Vage is also used to poison the fish out of the water. Bome made and dynamite are also used to drive the fish out of the water especially in deep waters of the Perak River where trash or debris accumulates under which the fish frequently to be found. The amount of fish caught and the price sold per kati in the village.

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Methods of selling</th>
<th>Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>per cob</td>
<td>1 - 2½ ¢</td>
</tr>
<tr>
<td>Watermelon</td>
<td>per kati</td>
<td>10 - 14 ¢</td>
</tr>
<tr>
<td>Cucumber</td>
<td>per kati</td>
<td>7 - 10 ¢</td>
</tr>
<tr>
<td>Long bean</td>
<td>per kati</td>
<td>10 - 12 ¢</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>per kati</td>
<td>5 - 7 ¢</td>
</tr>
</tbody>
</table>

Source: Field work

Only a small proportion of the vegetables (except maize) is sold since vegetable gardening is not pursued on a large scale. However, the surplus from home consumption is sold to the village’s provision shop, the owner of which serves as a marketing agent. He would then carry the produce over to Parit. In most cases, the shopkeeper would sell the vegetables to host customers from the village itself.
The average income from maize is something between $20/- to $30/- per season. Only between $10/- to $15/- is secured from the sale of vegetables per month by the farmers.

Fishing provides another source of income for the farmers in the village of Pasir Gajah especially in the post-irrigation period. In pre-irrigation times, fishing was only intended for domestic or home consumption. The best fishing ground during that time was the Perak River itself, the bendang land and the swampland of the interior. However following the construction of the irrigation canals the fishing ground was enlarged including the network of the canals. At present fishing, though casual rather than a permanent one, is carried out extensively by the farmer-villagers especially during the dry season when the water level in the canals is low.

The typical fishing gear used does not differ much from the traditional one. Buyu or fish trap, hook and line and jala (cast net) are widely used. Tubu is also used to poison the fish out of the water. Home made "bombs" and dynamite are also used to drive the fish out of the water especially in deep waters of the Perak River where kalar or debris accumulated under which the fish frequently take shelter especially during the hot days. Table 6 shows the amount of ikan sungai or river fish caught and the price sold per kati in the village.

<table>
<thead>
<tr>
<th>Type of Fish</th>
<th>Normally Caught</th>
<th>Per Kati</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ikan tapah</td>
<td>3 - 30</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: field work.

As a result of the construction of the canals network, fishing in the canals is gaining in popularity. This is done throughout the year, though the water is controlled, the canals have never been completely dry, although the level is varied depending upon the padi growing season. Ten farmers, whose lands lie outside the scheme reported that they have fish breeding ponds in their respective bendang lands. There is no pond in the bendang lands in the project. The fish in these ponds is caught mainly by the farmers in February.

A pond of 5 to 7 feet wide and a depth of 3 to 6 feet could provide a supply of fish between $25/- to $30/- a year. The fish in the pond is harvested by means of pandah. The water in the pond is aerated and the fish is caught with bone traps. The fish in the pond is sold locally.

These are made by placing a quantity of calcium carbide into a bottle. Water is added to it and reaction occurs. The bottle is then immediately thrown into the water. The explosion that occurs cause the fish to die of shock. These bombs, a very dangerous device, are used by the fishermen. A pond, apart from selling directly to fishmongers in Parit, the farmer also sells his fish and he hunts round the village on his bicycle. The popular types of ikan darat or bendang fish caught are ikan sepat, buyu, harum and sali.
### Table 7

Types of freshwater fish (bendang fish)
(fresh water fish or ikan sungai)

<table>
<thead>
<tr>
<th>Types of fish</th>
<th>Amount usually caught</th>
<th>Price Per kati</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ikan Jelawat, kelah and temoleh</td>
<td>5 - 50 katus</td>
<td>$1.20</td>
</tr>
<tr>
<td>Ikan baung, lawang, kapam and kaloi</td>
<td>5 - 15</td>
<td>80</td>
</tr>
<tr>
<td>Ikan kelang, seluang</td>
<td>2 - 6</td>
<td>40</td>
</tr>
<tr>
<td>Ikan tapah</td>
<td>5 - 30</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: Field work.

As a result of the construction of the canals network, fishing in the canals is gaining in popularity. This is done throughout the year, though, the water is controlled, the canals have never been completely dry, although the level is varied depending upon the padi growing season. Ten farmers, whose lands lie outside the scheme reported that they have fish breeding ponds in their respective bendang lands. There is no pond in the bendang lands in the project. The fish in these ponds is caught annually that is during the dry season from February to May. A pond of 5 to 7 feet wide and a depth of 5 to 6 feet could provide a harvest of between 30 to 50 katus of fish per year and an income of at least between $25/- to $30/-. The fish in the ponds is harvested by means of menimba. The water in the pond is emptied and the fish is caught with bare hands. The fish is then placed into a leak-proofed container usually made of empty kerosene tins so as to keep them alive. The fish is then brought over and sold to either Malay or Chinese fishmongers in Pari. Usually, an individual farmer earns between $20/- to $25/- per harvest from his pond. Apart from selling directly to fishmongers in Pari, the farmer also sells his fish and he hawks round the village on his bicycle. Among the popular types of ikan darat or bendang fish caught are ikan serat, puyu, haruan and keli.
Though income from the sale of chicken and ducks are not very significant, it provides a supplementary income for the farmers and it is often used to pay school fees or to meet other daily expenses. The eggs especially chicken eggs are not sold because most of the farmers prefer to hatch them. Table 6 shows the price of chicken in the village at the time of the study period.

### Types of freshwater fish (bendang fish)

<table>
<thead>
<tr>
<th>Types of fish</th>
<th>Amount usually caught</th>
<th>Price Per Kati</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepat benua</td>
<td>6 - 7 katis</td>
<td>40 ¢</td>
</tr>
<tr>
<td>Sepat ronggang</td>
<td>5 - 6 katis</td>
<td>35 ¢</td>
</tr>
<tr>
<td>Keli</td>
<td>5 - 6 katis</td>
<td>45 ¢</td>
</tr>
<tr>
<td>Puyu</td>
<td>4 - 5 katis</td>
<td>50 ¢</td>
</tr>
<tr>
<td>Haruan</td>
<td>3 - 5 katis</td>
<td>65 ¢</td>
</tr>
<tr>
<td>Limbat</td>
<td>3 - 4 katis</td>
<td>35 ¢</td>
</tr>
</tbody>
</table>

Source: field work

Some of the fish caught is sold directly to the village shops who in turn will resell the fish to other villagers. However, because of the availability of good road, fish (especially salt-water fish) from outside finds a market in the village itself. At present there is a competition between the sale of salt water fish and the fresh water fish in the village. It was observed that a large number of housewives prefer to buy salt water fish at the expense of the local fresh water fish which is put on sale by side in the village’s shop. Income from the sale of fish is usually used to supplement household expenditure.

As mentioned before, poultry and livestock form another source of income to the villagers in the post-irrigation period. The availability of the good road places the village in a better contract with the outside market for poultry and livestock. At present, a Malay peraih (chicken dealer) goes round the village daily to buy chickens and ducks from the villagers. Chickens and ducks are later brought over to Farit and are sold to Chinese traders.

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Though income from the sale of chicken and ducks are not very significant, it provides a supplementary income for the farmers and it is often used to pay school fees or to meet other unduly expenses. The eggs especially chicken eggs are not sold because most of the farmers prefer to hatch them. Table 3 shows the price of chicken in the village at the time of the study period.

Table 3

Price of chicken per kati in Kampong Pasir Gajah

<table>
<thead>
<tr>
<th>Types of chicken</th>
<th>Average Weight</th>
<th>Price Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicks</td>
<td>$\frac{1}{2}$ kati</td>
<td>$1.00 \space \text{per pair}$</td>
</tr>
<tr>
<td>Young chicken</td>
<td>1 - 1$\frac{1}{2}$ katas</td>
<td>$1.70 \space \text{p per kati}$</td>
</tr>
<tr>
<td>Hen</td>
<td>2 - 2$\frac{1}{2}$ katas</td>
<td>$1.60 \space \text{p per kati}$</td>
</tr>
<tr>
<td>Cockerel</td>
<td>2 - 3 katas</td>
<td>$1.40 \space \text{p per kati}$</td>
</tr>
</tbody>
</table>

Source: Field work

Goats and cows are sold only when there is a need to meet heavy expenses like weddings where a considerable sum of money is required.

Off-farm work and income

Incomes from off-farm sources are important to most kampong Pasir Gajah farmers during the present period. Three-fifths of the farmers reported that their family's off-farm income was greater than income derived from the sale of padi. Of the farm operators themselves, about 2/5 work away from their bendang land especially during the change in padi season. Among the farmers interviewed, 1/3 reported that they were not full-time farmers in the sense that they do padi farming only occasionally. Table 9 shows the types and the number of farmers engaged in the off farm occupations.
The farmer takes an off-farm job because his attitude towards padi cultivation changes in a sense that he feels he could earn more outside his kampung land. To him, the kampung land is no longer the sour source of income. A number of farmers interviewed held off-farm jobs since they considered these jobs as providing a sense of financial security. Even if they take to padi types of off-farm occupations of farmers and past time activity. Reinterviewed, Kg. Pasir Gajah, produces a major proportion of a family's 1969 supply. Other farmers who held off-farm jobs do not care very much about increasing the productivity in padi cultivation in the village. Some of the farmers conscious of the efficiency in padi production, but most of the farmers off-farm jobs do not believe in increasing productivity since often times they cannot really achieve this. Thus, a contradiction of attitudes among Total Interviewed s padi cultivated 40 can be seen.

Full-time farming except of the purchase of his kampung land will affect his attitudes and actions on the economics and management. Not full-time farming is buying lands, 16 as amount of time and capital and the nature of work that he will be willing to devote. No Malay School Teacher his attitude towards increasing the productivity of the kampung land. He believes that the kampung lands have a potential value to improve. He may do relatively little to improve it. If he takes an office worker, he may invest his time and leisure capital in the field. He may even use his children to help. Religious he takes farming seriously as his livelihood. He would devote most of his time to the field even at the expense of fargoDID labourer occupation.

Miscellaneous in such situations however, seem to have a mixture of motives, attitudes and hopes towards farm operation. Retirement of feelings that the farmer himself is not sure of. Even if the individual farmer does not cultivate his plot Not given away, leaving it fallow, he still considers himself as a status-conscious man by virtue of the fact that he has his own kampung land. The writer observed that there is a peculiarity in the attitude of an individual farmer-villager although Full time farmers are taken to mean those who work on rubber in the morning as well.

Outside jobs seem to have another effect on farming, they are. In the 10 year period between 1959 to 1969, the proportion of farmers with off-farm work had risen because of the fact the irrigation had opened up the area and the mobility of labour was facilitated greatly. Employment within and outside the villages could be taken up by the villagers since there is a free movement of labour in the area. Men raised on farms in the village could one day move away to search for off-farm work with its higher pay, less physical drudgery, and more regular hours of work. The full-time farmers often consider -59 - convivialize with the belief that they are their own bosses but they have to pay a price for such putative dependance.
The farmer takes an off-farm job because his attitude towards padi cultivation changes in a sense that he feels he could earn more outside his bendang land. To him, the bendang land is no longer the source of income. A number of farmers interviewed held off-farm jobs since they considered these jobs as providing a sense of financial security. Even if they take to padi cultivation, it was only done as a hobby and past time activity. Few part time farmers do not even produce a major proportion of a family’s food supply. Other farmers who held off-farm jobs do not care very much about increasing the productivity in padi cultivation in the village. Some of the farmers consider that it is important to increase the self-sufficiency in padi production; but most of them who perform off-farm jobs do not believe in increasing productivity since often times they cannot really achieve this. Thus, a contradiction of attitudes among the villagers towards padi cultivation can be seen.

The farmer’s concept of the purpose of his bendang land will affect his attitudes and actions on the economic and management problems of the bendang lands. The amount of time and capital and the nature of work that he will be willing to devote on the farm depends on his attitudes towards increasing the productivity of the bendang land. If he is holding the bendang land as an investment by waiting for the land value to appreciate, he may do relatively little to improve it. If he takes farming as a hobby he may invest his leisure time and leisure capital on the field. He may even use his children to run the field. If he takes farming seriously as his livelihood he would devote most of his time on the field even at the expense of forgoing off-farm occupation.

Many farmers in such situations, however, seem to have a mixture of motives, attitudes and hopes towards farm operation, a mixture of feelings that the farmer himself is not sure of. Even if the individual farmer does not cultivate his plot or even rent it, leaving it fallow, he still considers himself as a status-conscious man by virtue of the fact that he has his own bendang land. The writer observed that there certainly is a peculiarity in the attitude of an individual farmer-villager although it may be difficult to explain these peculiarities.

Outside jobs seem to have another effect on farming, they encourage the farm-population to leave farming altogether. A worker often receives a higher net income for his labour than the farmer who spends his labour and capital on the padi field. Such economic contrasts were pointed out by many farmers. They themselves are too old to change to new jobs but they feel that almost all of the young men raised on farms in the village would one day move away to search for off-farm work with its higher pay, less physical drudgery and more regular hours of work. The full time farmers often console themselves with the belief that they are their own bosses but they have to pay a price for such putative dependance.
Like most other villages, Kampong Pasir Gajah, as has been pointed out earlier, grew near the water side on the bank of the Perak River, the second longest river in the country. Socially, it began as a very closely-knit community of its own. Its members could always trace their genealogical ancestry and this genealogical tie was subsequently strengthened by in-community or endogamous marriages which became very common in view of the rather isolated position of the village. The community grew into bigger kinship units where social interdependence was strong and where norms and values were kinship-oriented and greatly respected. Such a pattern was also possible because of poor mobility of the household units; very few people move out of the village in search for employment in town due to either lack of education or reluctant to sacrifice his social position in the village.

The basic element that governs the closely-knit village community was the joint ownership of land whereby a piece of land was shared among the relatives. The staple crop, padi, was chiefly grown on a subsistence basis and was pursued jointly by the villagers. The preparation of the soil was carried out together and the harvested crop was shared equally among them. This pattern was able to exist because of the absence of more diversified economic opportunities outside agriculture.

Irrigation, as has been said, not only brought about improvements to the padi fields but also involved the allocation of land to the landless farmers. This would automatically elevate the landless farmers from the non-owning land class to a land owning class. In other words, in society, such as the village's society, where land is viewed as a form of harta or property, land allocation has a considerable effect upon the farmers' with regard to his social standing in the village's society; for his position is raised to a higher one than where he previously was. His relationship between the landlord with whom he previously worked is seen to be more social rather than economic. The position of those farmers who are unable to obtain land in the irrigation scheme remain more or less the same as before the irrigation period in the sense that they occupy the same social status (with respect to land) as they previously did. In fact, in terms of acreage of bendang land as an indication of social status and a form of wealth the farmer possesses, the position of the farmers who are not participating in the scheme is seen to be much lower compared to the participating farmers who at one time occupied the landless position. Thus, it has been observed that, irrigation has brought about a disparity in the development of social
status among the farmers in the village in that it elevates the social position of one sector of farmers only, that is, those farmers participating in the scheme. The direct result of the land allocation to the landless farmers, apart from the security of tenancy for the farmers is that the land shortage problem, to a certain extent, has been solved in the village. Further, land allocation has resulted in the break-up of the joint ownership system, the reason of which would be discussed later. To sum up, it could be said therefore that irrigation brought the gap between the non-landowning class and landowning class more closer than in the pre-irrigation period. The increase in the number of bendang owners from 45 per cent to 80 per cent in the post-irrigation period substantiates this.

Beside land allocation, other reasons held responsible for the break-up of the joint ownership of land are the decreasing social and economic isolation of the village and the increasing monetization of the village's economy which tend to reduce the villagers' economic and social cohesion, and the greater independence of one nuclear-based household which has been the direct result of the new economic changes and which requires a smaller unit as the unit of production and consumption.

Based on the findings in the village, a conclusion could be reached whereby all the changes that have taken place have caused the village community to be stratified economically and socially; they are no more uniform and egalitarian as they used to be in the beginning.

<table>
<thead>
<tr>
<th>Scheme</th>
<th>17</th>
<th>19.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-owning Land</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Total interviewed</td>
<td>42</td>
<td>39.6</td>
</tr>
</tbody>
</table>

*a He has no bendang land in the village

*b This refers to the bendang lands only

Source: The field work

Petty landlords refer to those farmers who rent out a portion of their bendang land in the scheme and at the same time they cultivate the rest of the field. The rent they charge is comparatively low compared to the actual landlord and their standard of living is more or less a little better than the peasants. The middle class is made up of a Malay school teacher, and government officials such as policemen, clerks and army. They derived their income from the non-agricultural sources which is usually fixed. They tend to follow the style of life of the urban dwellers as reflected in the types of house they built and household utensil used and furniture and fixtures displayed.
The peasants are those who entirely or mainly depend on land for their livelihood. The majority of the peasants in the village comprises those who own or share in the bendang land. Also, categorized here are those who work as share renters or on other people's land. As for the non-owning peasants they are completely landless or do not have enough land to operate and are better off than the above-owning farmers who are renters or non-owners. These people work as share renters on land owned by petty landlords or receive casual work in other occupations outside agriculture. On the whole the information collected on the tenancy situation shows that the peasant farmers are living together under the same roof. From the above findings it can be seen that there is a tendency toward the disappearance of the joint family household as a result of migration due to increased emphasis on higher education. It is possible that the joint family system for joint households in the bendang land is no longer important for joint households in the bendang land.

<table>
<thead>
<tr>
<th>Class</th>
<th>% total acreage of bendang land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petty landlords</td>
<td></td>
</tr>
<tr>
<td>Middle class a</td>
<td></td>
</tr>
<tr>
<td>Peasants:</td>
<td></td>
</tr>
<tr>
<td>Owning land in the scheme</td>
<td>12</td>
</tr>
<tr>
<td>Owning land outside the scheme</td>
<td>17</td>
</tr>
<tr>
<td>Non-owning land b</td>
<td>7</td>
</tr>
<tr>
<td>Total interviewed</td>
<td>42</td>
</tr>
</tbody>
</table>

Note: 

a. He has no bendang land in the village

b. This refers to the bendang lands only

Source: The field work

Petty landlord refer to those farmers who rent out a portion of their 5 acre bendang land in the scheme and at the same time they cultivate the rest of the field. The rent they charge is comparatively low compared to the actual landlord and their standard of living is more or less a little better than the peasants. The middle class is made up of a Malay school teacher, and government officials such as policemen, clerk and army. They derived their income from the non-agricultural sources which is usually fixed. They tend to follow the style of life of the urban dwellers as reflected in the types of house they built and household utensiles used and furniture and fixtures displayed.
The peasants are those who entirely or mainly depend on land for their livelihood. The majority of the peasants in the village comprise those who own and work on their bendang land. Also categorised here are those who work as share renters on other people's land. As for the non-owning peasants they are completely landless or do not have enough land to operate to give them sufficient income to maintain their family. These people work as share renters on land owned by petty landlords or do other miscellaneous jobs outside agriculture. On the whole the land-owning farmers are economically and socially better off than the non-owning farmers.

From the above discussion, it could be seen that as a result of the changes that have occurred economically, the village community have been slowly transformed from simple and somewhat egalitarian one into a more stratified society.

The changing family pattern

Most households in Kampong Pasir Gajah, are composed of conjugal or nuclear families: only 5 per cent of the total 42 households interviewed comprised of consanguineous families in which the grand parents are living together under the same roof. From this study, it was found that there was a tendency toward the disappearance of the joint family household as a result of irrigation due to increased emphasis on the conjugal families.

Irrigation as has been mentioned earlier, has made possible each landless farmer to own a 5 acre bendang land. This would mean that an individual conjugal family could have its own piece of land to work on and there is no need to work together with relatives on a piece of land or be a share renter in some fellow-villagers' land as it used to be. The trend toward the single ownership to the title of land indicates the declining importance of the joint family system for joint families can exist only on the basis of jointly owned estates or farms.

At present, the bendang land in the scheme cannot be jointly owned by the families because according to the regulations set up by the government authorities to govern the scheme, only the head of the family, usually the father, is entitled to the ownership of the land. However, it was seen that the bendang land outside the scheme was very seldom owned by joint families. This was due to the greater independence of an individual family and its desire to live in its own way.

The introduction of irrigation have a long term implications upon the family pattern in the village. These implications could be viewed as the direct result of the law of inheritance to land which governs the scheme at present. The end result of the operation of such

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1 EPSTEIN T.S., Economic Development and Social Change in South India, Oxford University Press: 1962, page 177

2 This, page 177
law would be the breaking up of the ideal family units. This would be seen shortly in some detail.

Assume that a farmer has 2 sons and 1 daughter. According to the Muslim law of inheritance, on his death, his sons, his daughter and his wife would get a share out of the land depending on the ratio spelt out by the law, in which, the son usually get more share than the daughter and the wife would get the least. But according to the law of inheritance that govern the lands in the irrigation scheme, only a nominated son or daughter is allowed to inherit the land on the death of the father. The sons or daughters who are deprived of the share to the father's land tend to move out of the land and seek employment as share-renters in padi cultivation or tapping rubber in the nearby villages. Whether or not they could stay and share the productivity of the land would very much depend on the selected owner of the land. In most cases, if the eldest brother inherited the land for instance, he would usually allow his siblings to work and earn a living from the land. This perpetuates so long as there is no misunderstanding between each other. The study reveals that irrigation tends to encourage the breaking up of the ideal family pattern which has been in existence for years by the virtue of the special regulations that govern the land with respect to the inheritance; it also gives rise to intra-family rivalries — especially between the successor to the land and his or her siblings due to the lack of understanding, which even ends up in bloodshed.

The cause of the break up of the joint family system among the villagers can also be viewed in the light of the economic changes that has taken place in the village during the past 15 years; the new economic opportunities brought by irrigation and the more remunerative cultivation of padi and other crops have given rise to the display of the individual abilities; at the same time, the existence of better marketing systems bring better income to the farmers in the village. These 2 factors have stimulated individual initiative and competitive attitude, the development of which is impeded by the egalitarian principle operating within the joint family. In a subsistence economy where little specialisation and trade exist, there is not much room for competition for the individual family.

Decline of patriarchal authority

As has been pointed out, most of the families in the village comprised of nuclear family. The husband and the father had traditionally been accepted as the head of the Malay household and the wielder of authority. The rights of the wife and the children were, in law and in practice, clearly subordinated to his rights. He was in control of his antenuptial property as well as all property acquired subsequent to the marriage. His was the guardianship of the children and the earning of his wife, if any, went into his pocket as well. Both wife and children must live in the domicile he chose for them and depended upon him for his support.

The superiority of the husband and the father as the head of a household was reflected clearly in the control he exercised over his children and wife. His was one way communication, meaning that he was

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2 Ibid, page 177
the only one who issued orders and regulations without first consulting his wife or sons. However, there were exceptions to this. For instance, in matters such as marriages, his wife's and his mother's authorities were greater than his; in other words, the husband and the father could not handle such matters all by himself. For example, if his wife and his mother refused to accept the prospective son-in-law, though he liked the boy very much, he could not do anything about it. His superiority could be seen further especially at meal times. During meal times, he usually ate first together with his bigger sons while his younger children would eat later with his wife. Such was the superiority a man had as the head of the household in the village.

As a result of irrigation, the patriarchal authority is seen to be declining. The cause of the change can be traced from the changing economic pattern. Firstly, the bendang land in the scheme lies at a considerable distance, which ranges from 2 to 3 miles, from the farmers' homes. As such, to give proper attention to the farming operation, most of the farmers working in the scheme erect pondok or temporary sheds in their respective plots, in which they live for 2 or 3 days, after which they will return to the village for 1 or 2 days. This is particularly so during the transplanting and harvesting periods. At harvest time, the farmer and his wife would come to live in their field for at least 3 or 4 days or as long as harvesting last. During the parent's absence, the household is placed under the responsibility of their children. The elder son usually assumes the role of a father in the sense that he has the authority over his younger sisters and brothers, while the elder daughter acts as a mother who prepares food, runs the household, manages the young ones and undertakes washing and cleaning. Prior to irrigation, there was no indication of such change since all the bendang lands were situated close to the farmers' houses. However, it has been observed that no such thing occur in the household set up belonging to the farmers who are not participating or working in the scheme, since as it was before the coming of the irrigation scheme, their bendang lands are in close proximity to their houses. As such, there is no need for the farmer and his wife to leave their homes and put up in their fields during the padi cultivating seasons. Secondly, the new economic opportunities to earn cash induce the villagers, especially the young men to seek independent employment from the parental or family production unit. They want to be independent from their parents because they want to work and save money for purchasing of new clothings, motorcycles, portable radios, shoes and wrist-watches for themselves, and if they are married, items like clothing and jewellery for their wives. It is interesting to note that, most young men especially bachelors, are looking forward for better materials and new cut for their dresses. They emphasise greatly on good dresses and they like to dress themselves smartly especially in the evenings when they gather in the village's shop to play games like checkers or chatting away their time after a hard day's work. It is during such congregation that those who do not have such a dress, after observing what his friends have will be longing to have one for himself. This indirectly encourages him to seek independent employment, that is, independent of the household production unit, for this will allow him to earn an income of his own. It is natural for a man to raise his social esteem in his own community. He will be very
glad if his dressing material attracts his friends' attention or he will feel very proud when the villagers admire his wife wearing costly dresses and the jewellery she displays. Thus the desire to raise one's social status enhances the individual member of the family to work outside the household farms whenever opportunities are available. The implication is that the authority a father has upon his sons or daughters with regard to the purchases his sons or daughters are going to make tends to decline for the fact that he can no longer decide what they should, or should not buy. In some cases however, the father would advise his sons or daughters not to spend the money unnecessarily. In most cases, the father does not interfere at all since he feels that his sons or daughters has the right to spend the money in whatever manner they like since they earn it themselves.

The decline of the patriarchal authority could be observed in terms of the relationships that prevail among the household members. While the legal status of the husband the wife does not reflect accurately, the actual situation in a single family at present tends to stress more on the relationship between members of household, the husband and the wife especially, do fairly indicate the trend of change in the family relations. This was seen clearly when on an occasion a farmer was encountered while discussing with his wife over the farming operations which they were due to undertake. The relationship between a father and a son or daughter was seen to be less formal in the sense that they could converse freely with their father. All household matters is no longer a secret which is to be kept and discussed by parents alone. At meal time, it was seen that the household would dine together in a more harmonious atmosphere. At present, the wife expects and usually obtains a greater voice in matters concerning the family especially with respect to marriage and religious ceremonies.

Change in family stability

Prior to irrigation, when the household unit was both the unit of production and the unit of consumption the family was almost certain to persist as a social unit as long as the father and the mother survived. Even after their death, the household would continue to function as the eldest son and his wife took over the household responsibility. Such stability of family pattern is found much less often today in the village. This can be viewed in terms of the following reasons.

Firstly, when the household unit was both consumption and production unit, the family labour force was directed and concentrated solely on the piece of land owned by the household, in which case, underemployment and under-utilisation of labour often resulted. This fostered the relationship among the members of the household because the contribution from each and every individual was greatly needed in managing the household affairs. It was possible for such a thing to take place because of the lack of opportunities whereby the individual member of the household could leave the family and utilise their labour gainfully in other works outside it. Irrigation, as had been said earlier, brought greater economic opportunities which made it possible for the members of the household to seek employment outside the farm.
The movement of an individual member of a household has a considerable effect on the stability of the family itself. This movement would mean that the individual had severed his relationship as a household production unit and thereby decreased the number of the family labour. The family could no longer be said to be stable when frequent petty quarrels occurred among the family. This is especially so when the son, for instance working outside the household farm, refuses to contribute to the household maintenance and is protected by his brothers or sisters.

Secondly, as has been mentioned, each landless married man with 2 or 3 children is entitled to apply for the land in the scheme. It was interesting to note that, most of the young couple in the village prefer to live with either boys' or girls' parents, but in most cases, they prefer the boys' parents. As a result of irrigation, whereby new arable lands were opened up for cultivation, these young farmers were able to have their own land to work on; they tended to move away from their parents and establish their own homes. Five per cent of the household interviewed reported that the family breakage in the village happened in that manner.

Thirdly, irrigation had opened up the area and linked it directly with other towns in the country by means of a road which was constructed soon after the canal. This gave the opportunity for the members of the household to seek employment in other places in the country which was difficult to contact prior to the irrigation period. Quite a number of young men in the village managed to get employment in towns like Ipoh, Perak and even Sarawak. The movement from the village to the town would certainly cause the breaking up of the ideal family set up.

Education plays a vital role too, in influencing the family instability beside irrigation. Education, which was introduced in the area in 1953 following the construction of the irrigation canal, made it possible for the young men in the village to receive a basic elementary vernacular education. This enabled them to seek employment which required minimum academic qualifications, such as soldiers, policemen and Malay school teacher. Table 11 shows the number of persons working outside the village during the study period.

Thus, in the post-irrigation period the ideal of a family master persisting through generations as a law for a son and then for one of his sons, as a symbol of family ties and loyalties, scarcely exists at present. The most important factor accounting for this is that irrigation enhances the mobility of labour due to the availability of more varied economic opportunities in the village as well as outside it.

The instability of the family can be measured in terms of divorce rates.
TABLE 11

Number of persons working outside the village and its locations

<table>
<thead>
<tr>
<th>Jobs</th>
<th>No.</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policemen (P.C.)</td>
<td>2</td>
<td>Ipoh</td>
</tr>
<tr>
<td>Teacher</td>
<td>1</td>
<td>Parit</td>
</tr>
<tr>
<td>Royal Malay Regiment</td>
<td>1</td>
<td>Sabah</td>
</tr>
<tr>
<td>Clerk</td>
<td>1</td>
<td>Parit</td>
</tr>
</tbody>
</table>

Source: Data compiled from records kept by Pejabat

The jobs as shown in the table were taken up by young men between 20 to 25 years of age. Besides, the policemen and the teacher, the army and the clerk do not marry yet. In the case of the Malay school teacher, though he worked in Parit, he stayed with his parents in the village until he got married and moved into the girl's house in Parit. Except for the soldier who is working in Sabah and who will be married in August, the others frequently visit their parents and relatives during the school holidays. The conclusion derived from the study was that the movement of the villagers to take up employment outside the village had a significant effect upon the family set-up in the sense that it tended to break up the household unit. Thus, in the post-irrigation period the ideal of a family mansion persisting through generations as a home for a son and then for one of his sons, as a symbol of family ties and loyalties, scarcely exists at present. The most important factor accounting for this is that irrigation enhances the mobility of labour due to the availability of more varied economic opportunities in the village as well as outside it.

The instability of the family can be measured in terms of divorce rates.

The table indicates the number of marriages, divorces and separations that had taken place during the year 1965 in the State of Jayang' Kiri and Belanja Kiri. The village under study falls into the Makin of Belanja Kiri.

If the divorce rate for the village is taken individually, it is found that the rate had increased by 6.3 per cent in 1965 over that of the 1965 figure. Among the 7 divorces that took place in the Makin...
of Belanja Kiri in 1968, 5 were from the village. Out of the 3 cases,
2 involved a divorce between a couple of thirties and the other
involved an elderly couple.

No special study of the causes of divorce was made, but judging
from the general observation, it appears that the proximity of
irrigation canals may play a vital role, because education and modernisation,
and a lack of the grass roots of Kedah, the usual practice of
accepting the divorce rate. As has been pointed out earlier, irrigation
may be possible to the development of the rice industry in Kampong Pasir Gajah.
This would seem to indicate that the society would be fortified to
a higher position. This 1965 - 1968 is the opportunity to marry another
one, preferably the younger ones because he had the needs of property,
that is, to help support their parents. Most parents in the

<table>
<thead>
<tr>
<th></th>
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<td>D</td>
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<td>20</td>
<td>7</td>
<td>2</td>
<td>37</td>
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<td>–</td>
<td>20</td>
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<tr>
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<td>–</td>
<td>46</td>
<td>4</td>
<td>1</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Data compiled from records kept by Pejabat
Kadhim, Parit.

The instances of broken marriages not only indicate
the family instability in the village, but also result in a number of
"broken" children among the younger generation and at the same time,
increases the scattering of householders. As a result,
encourages criminal tendencies and tends to the breaking up of
family properties.

1 Mukim Layang2 Kiri comprise 17 kampongs: Kg. Baru,
Kg. Tg. Medan, Kg. Paloh, Kg. Telok Manis, Kg. Selat,
Kg. Dusun Hulu, Kg. Dusun Hilir, Kg. Tg. Aur, Kg. Pulau
Padang, Kg. Kepala Pasir.

2 Mukim Belanja Kiri comprise 24 kampongs: Kg. Tengah, Kg.
Gajah Mati, Kg. Telok Perang, Kg. Jilung, Chopin Kiri,
Kg. Jeneris, Kg. Tepus, Kg. Tasek, Kg. Tg. Belanja, Kg.
Talang, Kg. Tg. Gelugor, Kg. Serapoh, Kg. Buloh Akar,
Kg. Nyior, Kg. Tua, Kg. Chongkat Banjar, Kg. Belanja Kiri
Kg. Pauh, Kg. Sadang, Kg. Sadang Tengah, Kg. Sungai Korok
Kg. Tanjung Dedalu, Kg. Pasir Gajah and Kg. Padang Kangar
that the parents would readily give their consent
if they found that she was able to help the family. The fact

The table indicates the number of marriages, divorces and
revocations that had taken place during the past 4 years in the Mukim of
Layang2 Kiri and Belanja Kiri. The village under study falls into the
Mukim of Belanja Kiri.

If the divorce rate for the village is taken individually, it
is found that the rate had increased by 2.5 per cent in 1968 over that
of the 1965 figure. Among the 7 divorces that took place in the Mukim
of Balanja Kiri in 1968, 3 were from the village. Out of the 3 cases, 2 involved the divorce between a couple of thirties and the other involved an elderly couple.

No special study of the causes of divorce was made, but judging from the general observations and conversation with informants, irrigation does play a vital role, beside education and westernisation, in increasing the divorce rate. As has been pointed out earlier, irrigation made possible the landless farmers to become the land owning class. This would mean that the farmer's status in the society would be elevated to a higher position. This would give him the opportunity to marry another woman, preferably the younger ones because he had the harta or property, that is, his land to win the girl from her parents. Most parents in the village are looking forward to their daughter's security in marriage. During the study period, a divorce occurred whereby an elderly couple was involved. Soon after the divorce the man married another young woman of 21 from the neighbouring village.

Irrigation facilitates inter and intra-village communications. Easy communication would enhance contact between villages. The religious teacher in the village travelled down to the neighbouring villages fortnightly to disseminate the teachings of Islam. In one village, he was attracted to a young woman and he got marred without the consent of the first wife. The first wife soon came to know the matter and she filed her divorcee which she obtained.

The instability of the marital relations not only indicates the family instability in the village, but also results in a number of "broken" homes with unfortunate consequences for the children concerned and at the same time, it increases the scattering of landholdings, encourages land fragmentations, and tends to prevent the building up of family property. The search for and the acquisition of new marriage partners of course greatly widens the network of affinal alliances outside the village and promotes the interchange of people between villages.

It has been generally observed that boys and girls in the village marry young girls from about 14 to 18 and boys from about 16 to 21 and the first marriage is likely to be arranged by parents. Generally speaking, parents are led to arrange early marriages for their daughters to ensure that they marry as virgins and to foster their own social or financial relationship with particular families. In fact the parents would feel very uneasy if their daughter's age passed 20 and nobody comes forward to ask for her hand yet. As such, it is interesting to note that the parents would readily give their daughter's hand when asked if they found that she was able to fulfil her role as wife. The fact that divorce is readily obtainable makes it very much easier for them to agree. Given the lack of permanent family group and stable relationship between them, pressure from parents to arrange marriages in their own interest remains pretty much confined to first marriage. Thereafter, their children are more free to follow their own inclinations, and these are likely to change as they grow up and have some experience of marriage.

Table 13 shows the number of live-birth in the village from 1949 to 1965. The other 3 villages - Kampung Tanjong Buloh and Kampung Sebang, Kampung - are included for comparison sake.
The size of the family

Irrigation, as can be seen, has an impact upon the size of the family in the village. It brings about the new economic opportunities and more remunerative farming operations which give rise to the display of individual abilities. There is a strong tendency for the newly weds to establish their own housekeeping so as to take up these opportunities for themselves without committing to their parents. The availability of the new bendang lands which are given out under the irrigation scheme influences further the early separation from the parental home of the household members on their marriage. Besides the availability of more cultivable land opened up as a result of irrigation made it possible for those farmers who failed to get land in the scheme to work as share renters on the fellow-farmers' land.

The widening of the economic opportunities encourages the individual member of the household to pursue his own economic activity in the village. The pooling of household labour resources into one employment no longer prevail. Because of this fewer relatives and in-laws live under the same roof than there was in the pre-irrigation period. Only 4 out of 40 household interviewed have their grandparents or in-laws living with them. The general opinion in the village at present is that the young couple should live on their own, pursuing their own livelihood and not with either of their parents. Also, wherever possible, the couple should avoid taking in aged parents, aunts or cousins and would confine the household to themselves and their children. The parents, on the other hand, prefer to live and run their own homes rather than to stay with their newly wed sons or daughters because they feel that privacy in married life should be respected. Further, the girl's mother especially, have the opinion that her absence would enable her daughter to take up the household chores competently and independently. She would however, drop in to stay with the couple when her daughter is expecting a baby. In most cases, though living in the same village, the husband would send the expecting wife to her mother's home to await childbirth.

Therefore, it could be seen that economic changes had played a considerable role in changing the size of the family in the village. The villagers, especially the younger couples, no longer like the idea of having relatives staying with them, though previously it was "a duty to be cheerfully performed". At present, they regard that to have relative staying with them is "a danger to be avoided". Thus, while gaining certain values in the marital relation, the families in the village have lost other values of the old time household where grand-father often-times had a personality which held the group together in a rich beautiful social life.

The decrease in the birth rate as a result of the family planning campaign in the village has an important implication upon the family size. The influence of irrigation in this aspect is more indirectly seen. As has been pointed out earlier, irrigation brought road to the area which in turn exposed it to the entire region. The availability of road facilitates the dissemination of knowledge, either agricultural or health. Prior to irrigation, road was not available and as such communication between the villages and the entire region had scarcely existed. Table 13 shows the number of live-birth in the village from 1965 to 1969. The other 2 villages - Kampong Tanjung Dedalu and Kampong Padang Kangar - are included for comparison sake.
<table>
<thead>
<tr>
<th></th>
<th>1965</th>
<th>1966</th>
<th>1967</th>
<th>1968</th>
<th>1969*</th>
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<tr>
<td>Tanjong Dedalu</td>
<td>20</td>
<td>15</td>
<td>11</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Pasir Gajah</td>
<td>24</td>
<td>17</td>
<td>10</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Padang Kangar</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

*1969 figure is available up to the end of May 1969.

Source: Registration of Births and Deaths, Balai Pulis Di-Raja, Parit, Perak, Malaysia Barat.

The table shows there is a declining trend in the number of live-births in the village from 1965 to 1969. In 1965, the number of live-birth was reported to be 24, however, in 1968, the recorded number decreased to 7, that is, a decrease by 41% from the 1965 figure. The decrease in the birth rate indicates that the villagers have realised the importance of family planning in order to enjoy a better life within the amount of income earned. Further, the frequent or monthly visits of the expecting young mothers to the village government midwife's quarter reflect the general acceptance of the women-villagers to the new and modern medical services. The government's midwife stationed in the village reported that more than 70 per cent of young mothers resorted to her for medical advice and delivery.

The impact of modern treatment received by the mothers is reflected in the lowering of still-births which resulted from the unchecked pregnancies. Table 14 shows the decreasing trend of still-births in the village from 1965-1969. The other 2 villages, Tanjong Dedalu and Padang Kangar are included for comparison sake.

At the local or regional level, the village has associations with the outside areas through a network of family, economic, social, political and religious. Since independence sought about modernisation in crop production, the villagers are better off in this respect, crop for the supply of other essential goods and services like daily oil, flour and a great variety of manufactured products ranging from household line
canned fish, fruits and milk to cosmetics like face powder, haircream, lipstick, shampoo, lotions and perfumes. These products are supplied by the Chinese merchants and retailers in Parit. The shopkeeper occasionally travel down to Parit to purchase these goods. The merchants and the retailers usually deliver the goods to the village with their own vans. Here it can be seen that there exists an indirect relationship between the Malays in the village and the Chinese traders in Parit. Such relationship also exists between the Malay in the village and the Indian bakery in the village every day to deliver bread to the village's shop.

|-------|------|------|------|------|------
| Tanjong Dedalu | 1    | 1    | -    | 1    | 1    |
| Pasir Gajah   | 2    | 1    | 1    | -    | 1    |
| Padang Kangar | -    | 2    | 1    | -    | 1    |

For 1969 figure is available up to the end of May, 1969.

Source: Registration of Births and Deaths, Balai Polis
Di-Raja, Parit, Perak, Malaysia, Barat.

Inter village relationship

A basic condition of the inter village relationship is the existence of adequate communication. As mentioned earlier, the village is connected by the all-weather road which was built after the construction of irrigation, with all the important centres in the state as well as in the country. The existence of frequent bus and Taxi services, bicycles and motor cycles put these centres within fairly easy and quick reach of its inhabitants. Other forms of communication are fairly lacking. At the time of the study there was no public telephone booth in the village since there was no telephone line running along the Trans-Perak Highway as yet. There were only 7 radios in the whole village. Newspapers were rarely available and were read only occasionally by a few villagers who called over to the shop to read them. The shopkeeper buys the paper every morning when he goes over to Parit to get vegetables and fish from the market.

At the local or regional level, the villagers have connections with the outside areas through a number of fronts - economic, social, political and religious. Since irrigation brought about specialisation in crop production the villagers had to depend on the outside areas for the supply of other essential goods and services like cooking oil, flour and a great variety of manufactured products ranging from foodstuffs like
canned fish, fruits and milk to cosmetics like face powder, haircream, lipstick, shampoo, lotions and perfumes. These products are supplied by the Chinese merchants and retailers in Parit. The shopkeeper occasionally travel down to Parit to purchase these goods. The merchants and the retailers usually deliver the goods to the village with their own vans. Here it can be seen that there exists an indirect relationship between the Malays in the village and the Chinese traders in Parit. Such relationship also exists between the Malays in the village and the Indian bakery - the French Bakery who comes down to the village every day to deliver bread to the village's shop.

The village's shop is the important intervillage social contact. Since the shop is one of the largest in the area which caters for more than 300 households with about 70 customers who patronise the shop regularly, it therefore acts as a shopping as well as a meeting place for the villagers and their neighbours. As such it is not surprising that most of the people in the village know each other in their neighbourhood and they can easily pick out any strangers present in the village.

As mentioned earlier, the state government had issued a licence to the village's shop to sell fertilizers and seedlings in the village. The farmers could purchase them at a relatively cheaper cost and at their own convenience. This indirectly brought together most of the farmers in the village as well as the farmers in the neighbouring villages when they came down to purchase the fertilizer and the seedlings for their own use. Discussions with respect to the use of fertilizers always come up which usually ended up in a debate.

The participants in the scheme are not only limited to the farmers in the village alone but also open to the landless farmers in the neighbouring villages. Table 15 shows the number of participants who come from the villages in neighbourhood of Kampung Pasir Gajah.

The mosque which is situated in the village serves as a point of social contact between the villagers. The mosque maintains both a purely religious in nature whereas people from all over the state come here for Friday prayers usually, before the prayer, the mosque was usually very quiet but during the prayer period it is very quiet and peaceful.
The establishment of a Malay School in the village following the construction of a road after the introduction of irrigation in 1933 serves as a point of social contact for the young boys and girls who come from all over the area. This is of a great significance in the process of maintaining inter-village relationship. The free mingling of boys and girls during the school hours helps to establish a more close and natural relationship between the students of different villages.

### Table 15

<table>
<thead>
<tr>
<th>Kampong</th>
<th>Mukim</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasir Gajah</td>
<td>Belanja</td>
<td>35</td>
</tr>
<tr>
<td>Tanjong Dedalu</td>
<td>Belanja</td>
<td>18</td>
</tr>
<tr>
<td>Padong Kangar</td>
<td>Belanja</td>
<td>9</td>
</tr>
<tr>
<td>Sungei Korok</td>
<td>Belanja</td>
<td>36</td>
</tr>
<tr>
<td>Kampung Paloh</td>
<td>Layang2</td>
<td>39</td>
</tr>
</tbody>
</table>

Source: Fieldwork

In the table, it can be seen that the participants from the village mixed and worked together with the farmers from the neighbouring villages in the scheme. Since Kampong Pasir Gajah, serves as a centre for the area, a Reading Room or Bilek Bacaan was built in it. The reading room served as a community centre as well. All the participants from the village as well as from the neighbouring villages were invited to attend the meeting at the centre when any problem arose with regard to the management and administration of the land in the project. Here the inter-village relationship could be seen in a very formal basis. This relationship however is restricted to the farmers in the scheme only. No such inter-village relationship existed before irrigation came into the area.

The mosque which is situated in the village serves as a point of social contact between the villages. The contact maintained here is purely religious in nature whereby menfolk from all over the area congregate for Friday prayers. Usually, before the prayer was performed, it was observed that discussions which usually centred on the farming operation did take place. On the other hand, the womenfolk especially the expecting mothers are brought together fortnightly at the village’s government midwife’s quarters for medical check up and to seek advice.
The establishment of a Malay School in the village following
the construction of road after the introduction of irrigation in 1953
serves as a point of social contact for the young boys and girls who
come from all over the area. This is of a great significance in the
process of maintaining inter-village relationship. The free mixing of
boys and girls during the school hours helps to establish a more close
and mutual friendship ties among them.

A cooperative rice mill was set up in Kampong Layang-Layang,
which was 2 miles away from the village in 1963. The increase in the
total acreage of the bendang land and the increase in the productivity
of the bendang land enabled the mill to operate efficiently and at full
capacity. A Japanese made milling machine was installed at a cost of
$4,000 which was partially met by the Ministry of Agriculture and Co-
operatives and the Cooperative Milling Union. The mill extended its
service to all the farmers in the area. What is interesting to note is
that this institution which comes in directly as a result of irrigation
serves as a meeting point for all the villagers who make use of its
services.

It has been observed that the relationship between an individ-
ual in the village and other villagers within the close proximity is
mostly on a very informal basis. If, for instance, Ahmad from Kampong
Tanjong Dedalu wished to invite Musa of Kampong Pasir Gajah to his
daughter's wedding, he needed not invite Musa by means of an invitation
card. To Musa, Ahmad's invitation would be more meaningful if Ahmad
himself approached and invited him personally. He would be very grate-
ful for Ahmad's concern over him and as such, it would be unfair on his
part to decline the invitation. On the other hand, if Ahmad invites him
in a formal manner by means of invitation card, he feels that Ahmad's
invitation is only "ajak2 ayam" and as such he feels that his presence
does not bother Ahmad at all. Such a formality tends to implant
unhealthy feelings among the villagers. As such invitation cards are
strictly meant for distant friends, teachers and clerks. The relation-
ship with these people, especially the teacher is more formal.

The villagers also have social relations with the outside
region, primarily through kinship ties. These ties, which are maintained
with varying degrees depending on the proximity of the relative in
question, their mutual affection and the state of their finances, may
be activated not only on festive occasions but also in times of need,
financial or otherwise. The individual is not limited to his own village
in his interest or means of support.

Inter-marriages between the villages is common at present.
Most of the young couples especially the men chose their partners from
the neighbouring villages. At the same time, 'outsiders' too often find
their partners in the village. Among the 3 marriages that took place
during the first term school holiday; 1 was between a young male Malay
school teacher in Parit; 1 was between a young policeman from the village
and young woman from Batang Berjuntai, Selangor.
A youth organisation, known as Persatuan Belia Kubang Haji was set up in the village on 26th September, 1966. It was registered soon after its establishment. Its memberships come from the neighbouring Kampung Fadang Kangar, Kampung Tanjong Dedalu and Kampung Sungai Korok. At the time of the study, the organisation has a total of 55 members. The age limit set as qualification is between 18 and 27 years.

Basically, the organisation itself tends to foster friendship ties between the villages since its members come from the various villages. When there is a petty quarrel cropping up between the villages, the issue is viewed in a most democratic manner and is always successful. At the same time, each member tries to safeguard the name of his village in which he lives by respecting each other's interest.

The main aim of setting up the organisation is to consolidate the youth in the area into a strong body which could work in the interest of the villagers by undertaking welfare projects. The youths play an important role in helping wedding celebrations and other ceremonies a success by extending their help to the host. Secondly, it is intended to establish a more harmonious atmosphere and the spirit of cooperation among the villagers. This has been indicated when, during the writer's stay in the village, the members pooled their labour to build a 4 foot wide footpath from the road to the new bilik bacaan or reading room.

Thirdly, its aim is to establish a more cordial relationship between the elderly group and the younger ones. This can be seen by the fact that the organisation's principle has not on any occasion ultra vires to the interest and the liking of the elderly villagers. As such the elderly villagers are always willing to support and cooperate with the youths in the organisation.

A Hari Raya Haji gathering or Perjumpaan Hari Raya Haji was held at 2.30 p.m. on the 27th February, 1969 - that was on the hari raya day itself. All the members of the household were invited to the gathering. Each household head was requested to bring along a plateful of hari raya cakes and other delicacies. A nominal sum of 20 cents was collected from each household for the preparation of drinks. The respond given by the villagers was very warm and the gathering was a successful one. During the night, a variety show was held. The organisation's pop-group was in attendance throughout the show. It is interesting to note that such a gathering gave an opportunity for the villagers at all levels to mix and converse freely with each other.

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Hari Raya Haji or Hari Raya Aidil Adha falls on 10th Zulhijjah of Muslim Calendar month, the 12th month of the year. On this day, the Muslims in Mecca mengambil haji or perform the haj and berkorban, meaning the sacrifice of animals. Hence the day is also known as Hari Raya Kurban.
The organisation of games like sepak raga, a popular traditional Malay game, and football on the inter kampung or village basis provide the opportunity for the people of one village to visit other villages. Recently, the sepak raga team from the village went to play against the nearby village of Padang Kangar. Though the village's team won the game, the host gave them a warm reception. A return match was soon followed and was played on the Malay school sepak raga court in the village.

Kampung Pasir Gajah is one of the villages in a large mukim under the administrative responsibility of a penghulu, a professional civil servant appointed by the government and resident in Parit. At the village level, the village is managed by a Kebun Kampung or a headman, whose administrative responsibility is more social than political. The mukim is incorporated into the sub-district of Parit under the administrative control of the Assistant District Officer whose office is in Parit. This aspect of the political hierarchy which of course extends upward to the state and federal level claims no loyalty from the villagers, whose relationship with the government is more formal than otherwise. In other words, there has been no change in the relationship of the village with the state since there exists no association between the social system and the political system. The villagers have remained passive in the administration and politics of the community; much of the initiative comes from the government which remains the active participant throughout. In other words, there is little or no political action initiated from the village and the villagers' involvement in the state's politics is entirely as a result of the action from above.

In his study of the indigenous political systems of Selangor, Perak, Negri Sembilan and Pahang, Gullick notes that in the 4 states just prior to the establishment of British control in 1874, "the lack of any predominant social system prevented the possibility of a political system based on social system." The basic unit on which the political system was built was "the village, whose population has no basis of association in groups larger than the villages." Villages were sited along the river banks, but the settlement "was transitory and impermanent, deriving in large part from the unstable political conditions of the times." A village had its headman "who may or may not have been a member of the aristocracy class and the major part of the population comprise the

3 Gullick, J. M. - op. cit. page 95.
rakyat or the subject class." 4 The original focus of each village settlement had been a founding family led by a headman... The founder and the first headman brought with him some of its kindred by blood and affinity... but the strongest tie of all was the common cultural origin. 5 Gullick also said that "the need of economic and other cooperation in living... obliged those villagers to involve their own leadership in the form of a headman. Here was the basis group formation upon which the political system was built up." 6 He further said, "responsibility was for keeping peace - more by conciliation than by coercion; for arresting criminals and delivering them to the district chief for trial; for providing channels of communication; and for the irrigation but because of the external political and social forces - education and westernisation which had influenced the villages were sited along the river banks, but the settlement "was transitory and impermanent, deriving in large part from the unstable political conditions of the time." 7 A village had its headman "who may or may not have been a member of the aristocracy class and the major part of the population comprise the

6Gullick, J. M.-op. cit. page 43.
rakyat or the subject class."4 "The original focus of each village settlement had been a founding family led by a headman... The founder and the first headman brought with him some of its kindred by blood and affinity...but the strongest tie of all was the common cultural origin."5 Gullick also said that "the need of economic and other cooperation in living together obliged these villagers to involve their own leadership in the form of a headman. Here was the basic group formation upon which the political system was built up."6 He further said that the headman's responsibility was for keeping peace - more by conciliation than by coercion; for arresting criminals and delivering them to the district chief for trial; for providing labour from the village under the corvyee or kerah system, for raising a defence levy when required; and for executing the various other requirements of the district chief."7 But he himself indicates that the village elders shared authority in the village's affairs and there is no evidence to show that the office of penghulu whose incumbent was appointed by the throne or its representative, was actually created by the villagers themselves rather than by the government whose interest was served.9

The scope of functions performed by the ketua and penghulu are more limited. With the replacement of the produce tax and corvyee by a single land tax paid directly to the District Land Office and the abolition of military service, the penghulu was left with few significant functions to perform; and the abolition of the personal authority of the nobility and chiefly classes removed the source of his own authority in the village. As a result, the villagers must have resorted increasingly to informal means of regulating their affairs both internally and with other villages in so far as possible, independent of the central administration. All these changes occurred not because of the irrigation but because of the external political and social forces - education and westernisation which had influenced the area for the past 20 years. This is so because, as it has been observed, such change has also occurred in the neighbouring villages which are not affected by irrigation. The impact of education has made the people realised that they have every right to participate in their state as well as their country's politics.

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4 Wilson, P. J. - op. cit. page 109.
5 Gullick, J. N. - op. cit. page 32.
6 ibid page 43.
7 ibid page 36.
8 ibid page 37.
Administrators - cultivators Relationship

The colonisation officers guiding the project are both extension overseers and administrators, giving advice on land management and at the same time enforcing conservation laws. The Agricultural Officers working directly with the farmers carried out detailed directives of the Colonisation Officers. The isolation of the administration by the village's intermediaries and the dual role of the Colonisation Officers make farmers feel that they are under the control and the direction of remote administration rather than masters in their own fields.

The farmers who were involved in the scheme and who came under the direct responsibility of the colonisation officers complained that their problems regarding the farming operation was rarely understood by the authorities. This was because of the fact that the authorities rarely visited the scheme, especially during the growing and the cultivating season. Since the bendang land in the scheme comprised not only of flat but also undulating lands, as such, some of the bendang land was too high to get water while the other was too low with too much water in them. In both cases, the bendang land could not be cultivated. When this matter was referred to the officers, they simply accused the farmers for being lazy and did not take the initiative to improve their own land and to make it cultivable. The writer has visited the area and found that the bendang lands were really uncultivable. However, recently, the matter was brought before the 57th Advisory Committee, Trans-Perak Irrigation Scheme meeting on 30th January 1969 at the State Rural Development Operation Room, Ipoh, Perak. So far, nothing has been done to the bendang land yet and the affected farmers kept on cursing the colonisation officers for their incompetency.

The farmers in the village who participate in the irrigation scheme are subject to 2 forms of leadership at the village level, whereas, those farmers working outside the scheme but under the direct influence of the irrigation water are however subjected only to one form of leadership.

Chart 2 shows the administrative structure in the Kampung Pasir Gajah with respect to the farmers working in the scheme. At the village level, they are subjected to 2 forms of leadership. When a farmer is in the village, he is subjected to the Ketua Kampung or the headman's leadership. He meets the headman frequently when the needs arise such as to obtain recommendations in applying for scholarships for his sons in schools. Headman's recommendation is also needed when applying for land in the scheme. Since, the Ketua of the village is a man with an average education who can read, write

10 Bil.(150) dlm TPRIA.(P) 66/64, Jilid 2.

When the farmer grows out of the village to work on his land in the scheme, his leadership. Since the land opened up in the scheme covers more than 6,500 acres, therefore it has to be parcelled into blocks to facilitate administration. A block leader is appointed among the participants in each block to
and speak a little broken English, he is always looked for by the villagers especially when they wish to meet the penghulu or the Assistant District Officer to get the scholarship forms signed or to transfer the ownership of lands. The Ketua is always needed by the villagers when they wish to meet important men like the Assistant District Officer or the Wakil Raayat or states Excoss. Since he is able to speak properly and in a good language and style, they themselves feel that they could not speak well with such important people. The relationship that exists between a Ketua and his anak buah or subject is more social. Here, it can be seen that the headman plays an important role in the village.

When the farmer moves out of the village to work on his land in the scheme, he is subjected to another form of leadership. Since the land opened up in the scheme covers more than 6,500 acres, therefore it has to be parcelled into blocks to facilitate administration. A block leader is appointed among the participants in each block to
take charge of the farmers in it. The farmers working in the scheme are thus subjected to the block leader when they move out of the village to work in the scheme. All matters arising with respect to the water and soil problems are reported to the block leader who in turn brings the matter up to the colonisation officer in Parit. The relationship that exists here is a very formal one and also on economic basis. This form of leadership (the block leader) appears only after irrigation has been introduced into the area.

At present the Ketua Kampung is formally elected by the villagers and he is recognised as the official head of the village. Previously, he was not formally elected, but simply accepted by the majority of the villagers as their leader on the basis of certain personal characteristics and qualifications. He must be a man of age and experience and have a thorough knowledge of the custom of the village’s society and most important of all, he must be willing to help his anak buah or subjects in any way they need him. He should be the most influential person especially when it comes to dealing with complicated events such as in settling quarrels, dissatisfactions, and misunderstandings among the villagers. The most significant aspect of his leadership was that he did not receive any allowance for the service he rendered.

As has been said, at present, the Ketua Kampung is formally elected according to his popularity among his anak buah or his subjects. He is usually elected in the mosque after the Friday prayer. Those who are in favour of him to be their leader would put up their hands. If he is popular among his anak buah, it is not uncommon to find that he will be re-elected to office for 2 or 3 times.

The appointment of the Ketua Kampung which is made by the anak buah is subjected to the considerations of the Sub-District Committee in Parit, which is chaired by the Assistant District Officer; the committee members comprise the Orang Besar Jajahan, all the penghulu and their assistants and the wakil rakyat or the State Councillors.

There was an occasion whereby 2 candidates were contesting for the Ketua's office. One of the candidates was the anak kampung (a resident of the village, meaning that he was born there) and the penghulu was in favour of him. The other was orang luar or an outsider (meaning that he was born outside the village) but he had settled in the village for more than 30 years and the wakil rakyat was in his favour. The sub-district committee could not settle the matter as to who should be the headman and passed the matter over to the State Committee. The State Committee comprised the Menteri Besar or Chief Minister who was also the Chairman, all the 9 District Officers and their Assistants, Wakil Rakyats and the Orang Besar Jajahan in all the 9 districts in the state. It is not uncommon to find that the candidates proposed by the wakil rakyat would usually be selected. The Menteri Besar has the final
say in this matter. Since the wakil rakyat for the district was from the Alliance Party, it therefore follows that the candidate he chose would definitely be the member of the same party. As such, at present, the newly elected Ketua Kampong is a strong UMNO member.

The Village Elections

On his appointment, the Ketua Kampong is subjected to 3 months probationary period after which his appointment will be confirmed if there is no objections from the villagers during that period. His service would be reviewed from time to time and an allowance would be paid depending on his efficiency. The efficiency is divided arbitrarily into 3 classes:

Class A: (excellent); the allowance per year is $250.00.

Class B: (good); the allowance per year is $200.

Class C: (satisfactory); the allowance per year is $150.

Each Ketua is required to serve for 4 years. Sagu hati or bonus would be paid to him at the end of his service.

Despite of being elected by popular votes to his office, the majority of the villagers, especially the younger group, dislike the Ketua because of his partiality to a definite political party, that is UMNO in the course of his administration. Many informants expressed their regret for giving the support to him to win over the office from his opponents since he was too partial and too involved in politics.

The headman, at the mukim level is subjected to the penghulu or the chief of the mukim. It is through the Ketua that the villagers must go if they wish to see the penghulu. The penghulu, at the district level is responsible to the Assistant District Officer who is stationed in Parit, 7 miles from the village.

The block leader, on the other hand, is elected by all participants working in the particular block. A man who can speak well is usually selected because it is in him the farmers entrusted their faith to fight for them what they feel right with respect to the lands they work on. The Colonisation Officer, to whom the block leader's responsibility falls, agrees to the leader chosen by the participants. It is through him all the instructions and informations regarding the farming operation are conveyed from time to time. The responsibility of the block leader to the participants is only limited to the scheme. Once out of the scheme, the Leader no longer holds any responsibility upon the farmers.

The Colonisation Officer is responsible to the Assistant District Officer in the course of carrying out his duty. However, he can even resume the A.D.O.'s duty as far as the collection of land revenue and water taxes are concerned, on the absence of the latter. The approval to the application for land in the scheme is,
to his party, whereas on the other hand he is not prepared to solely the duty of the Colonisation Officer. At the state level, both the Colonisation Officer and the Assistant District Officer are subjected to the State Secretary. found that more than 50.

The Village Factions

Besides, he is disliked by the opposing group because whatever building improvements have been made, it has been observed that the people in Kampong Pasir Gajah is divided into 2 groups: firstly, those who follow and support the Alliance; the other, the followers and the supporters of the PMIP (Pan Malayan Islamic Party). These 2 factions resulted from the inequality in the distribution of land in the scheme as well as the partiality exhibited by the village's headman in his administration. This would be discussed soon.

As has been said earlier, under the irrigation scheme, a 5 acre plot of land was given out to the successful applicants under the recommendations of the Ketua Kampong, the penghulu and wakil rakyat. It follows that since these important people, that whose recommendations are required by the farmers to support their applications, belong to the Alliance Party, therefore, the farmers must also be members of the Party. As such, if a farmer is not an Alliance or UMNO (United Malays National Organisation) Party Member, definitely he will not obtain the support and recommendations from these important men because in the village, PMIP is the strong rival of the UMNO. It is therefore not surprising to find that some farmers whose lands are far from being economic in size are unable to get the land in the scheme simply because they are the followers of the bintang bulan (that is the PMIP as what the villagers refer to). The Ketua, the penghulu and the wakil rakyat simply refuse to recommend his application. As such the disparity in the land distribution results. All the 35 farmers interviewed working in the scheme expressed themselves freely that they supported the Alliance government whole-heartedly since the government had done good to them by giving the bendang land. Thus the situation whereby each side party dislikes each other results merely from the fact that those farmers, very important persons in the village are too partial toward a them party at the expense of the other. The PMIP supporter who failed to get the land in the scheme protested to the writer that it was unfair on the part of the village's Ketua to treat them in that way because being the rakyat of the country and being under sovereignty of the Sultan they were subjected to share equally whatever economic developments that took place in their village. The UMNO followers argued that since the land was opened up by the Alliance government. Therefore only Alliance members could get the benefit out of it. The inequality in the treatment of the villagers clearly indicated that the "important men's" intention to make the PMIP followers suffer and hence would switch over to UMNO whereby their suffering would be locked into and dealt with. ever party they supported. He argued, however, that since the black house was built by the Alliance, the Ketua in the village, as has been pointed out, is a staunch Alliance supporter. He is the President of the UMNO in the village. He is prepared to work with his anak bush who belong headman granted the PMIP followers the right to use the building.
to his party, whereas on the other hand he is not prepared to co-operate with his anak buah who oppose his party. The result is that 2 factions are created: one is pro-Ketua; the other is anti-Ketua. Through the study, it is found that more than 50% per cent of the villagers dislike the Ketua because of the inequity of the treatment which he gives to his anak buah. Besides, he is disliked by the opposing group because whatever improvements he makes to the villages, he must at least get some benefit out of it. Recently, the villagers felt that there was an urgent need for a new bilek bachaan or a reading room since the old one was too small and the wooden structure has been eaten up by termites. Their application for the reading room which was made through the headman was approved and the state government asked the villagers to select a suitable spot on which they wanted it to be built. All the villagers agreed that the room should be built behind the Malay School. They selected the spot because there was no need to build any road since there was already a good one which connected the School to the trunk road. The headman, however, wanted the room to be built behind his house. His argument was that it would be too noisy to have the building near the School. Finally, despite a storm of protests from the villagers, the room was erected on the spot chosen by the headman. Since there was no road to the new building, a path had to be constructed which ran directly in front of the Ketua's house. Here it can be seen clearly that as a reward for him in getting the building for the villagers, he has now a good path leading to his house as well. This was what he had in his mind when he suggested that the reading room should be built behind his house.

The opposing factions - that is those who support the PMIP Party showed their dislike to the UMNO supporters openly. During the study period, a member of the state executive council was invited to officiate the opening of the new bilek bachaan in the village. The ceremony was attended only by about 20 UMNO followers in the village. The large audience of about 150 people comprised the UMNO members from the neighbouring villages. The PMIP followers, instead, purposely carried on their daily routine and some of them simply sat down in the village's shop to pass away their time.

The village's headman dislikes the PMIP followers because they are always alert to whatever move he makes. Further, since he is an UMNO follower, he wishes to see that all his anak buah follow suit. The PMIP followers accused that the UMNO benefited a section of the villagers only. It could be seen that the headman tried to suppress the PMIP followers by giving excuses whenever they came forward to ask for his help. He even prevented them to use the new bilek bachaan for a religious talk to be held by the PMIP supporters. The writer explained to him that the bilek bachaan was meant for all the villagers regardless of whatever party they supported. He argued, however, that since the bilek bachaan was built by the Alliance government only UMNO followers have the sole right to use it. One of the PMIP strong man brought this matter directly to the Assisstant District Officer in Parit, who in his reply to the headman granted the PMIP follower the right to use the building.
The presence of the irrigation scheme in the area served as a tool which was used openly in the course of political campaign in order to win the vote from the villagers. One of the UMNO speakers reminded the villagers during a rally in the night of 29 April 1969 that if they wished to see a greater improvement on the bendang land in the scheme, they must once again vote the kampal layar (sailing boat - the Alliance Party symbol). He reiterated that if the Alliance lost the battle, the villagers would not be able to obtain any more aid from the Alliance Government, like what they had been enjoying. Surprisingly despite of such intensive campaign, the Alliance lost the area's seat to PASIP in the 1969 General Election which took place on May 10th. Whether or not the farmers in the scheme continue to receive aid from the Alliance Government is yet to be seen.

These effects could be categorised as primary, secondary, direct and indirect effects.

The immediate utilisation of the opportunities created by capital investment can be visualised as a primary, direct and indirect effect. As a result of this utilisation, new production came into being which was followed by a number of consequences. These consequences which emerged might be called the secondary effects of the original investments.

Secondary effects could be seen from 2 viewpoints: firstly, increased production by the villagers as a result of the introduction of double cropping with the now padi varieties of Malinim, Mahsuri and Nira, means additional produce to be processed, marketed and traded, and this necessitated the employment of further capital and labour resources; the setting up of a cooperative rice mill - a social as well as an economic institution - in the neighbourhood of the study area is a good example of such effect; secondly, increased production would also mean an increase in the incomes of the farmer-producer which might be spent in a variety of ways. The outlays by receivers of income would lead to the creation of a new demand for goods and services which in turn lead to the employment of other capital and labour resources. This process is known as the concept of multiplier in the economic theory.

The main direct effects of irrigation, as has been observed in the village area, firstly, to make previously cultivated land used by the farmers to be more productive than before its introduction and, to bring new land into use for the first time. Secondly, the opening up of more bendang land involves land distributions to the landless farmers; these directly place the non-landowning farmer into the land owning class. Thirdly, it brings a plentiful, regulated and secure water supply to lands which previously depend on an uncertain rainfall. It also makes possible a change in the character of padi cultivation and the degree of its intensity. The ability-to control nature by regulating the water supply means that the whole farming operations can be controlled by man. As such, a strong tendency toward the disappearance of the traditional ceremony and rituals, which were previously carried out to accompany every farming operations, is clearly seen to take place in the village.
Irrigation creates a more diversified economic activities in the village. Rubber still forms the basic source of each income and its role in the village’s economy is seen to be important despite of the little emphasis given to it. Padi is grown under the double-cropping system. Thus, at present, only a negligible portion of the padi is marketed. Besides, maize, bananas, fish, fruits and vegetables form the other sources of cash income for the villagers. The construction of a road which was constructed soon after the irrigation canals, facilitates the flow of trade in the village.

CHAPTER V

CONCLUSION

The introduction of irrigation had far reaching effects on the economic and social life of the community living within the region. These effects could be categorised as primary, secondary, direct and indirect effects.

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Secondary effects could be seen from 2 view points: firstly, increased production by the villagers as a result of the introduction of double cropping with the new padi varieties of Malinjia, Mahsuri and Ria, means additional produce to be processed, marketed and traded, and this necessitated the employment of further capital and labour resources; the setting up of a cooperative rice mill – a social as well as an economic institution – in the neighbourhood of the study area is a good example of such effect; secondly, increased production would also mean an increase in the incomes of the farmer-producer which might be spent in a variety of ways. The outlays by receivers of income would lead to the creation of a new demand for goods and services which in turn lead to the employment of other capital and labour resources. This process is known as the concept of multiplier in the economic theory.

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Irrigation creates a more diversified economic activities in the village. Rubber still forms the basic source of cash income and its role in the village’s economy is seen to be important despite of the little emphasis given to it. Padi is grown under the double-cropping system and as it is, at present, only a negligible portion of the output is marketed. Besides, maize, bananas, fish, fruits and vegetables form the other sources of cash income for the villagers. The presence of a road which was constructed soon after the irrigation canals, facilitates the flow of trade in the village.

To increase the productivity of the soil, the farmers are encouraged to use fertilizers which are given out by the Agricultural Department at a Government subsidised rate. The response on the part of the farmers has been very encouraging but due to the lack of instructions and guidance given to them by the authorities, they find that there has been little improvement on their bendang land as a result of the application of fertilizers. As such they feel that their money and effort would be wasted. Such an attitude can easily be corrected if the Agricultural Department takes enough trouble to send out its officials to supervise the farmers correctly with regard to the use of fertilizers.

The farming activity in the village at present is controlled by the Colonisation Officers stationed in Parit. They send out instructions to the farmers telling them when they should begin their farming operations. This is necessary because all the farmers should begin their work at the same time so that water level in the bendang land could be regulated according to the need of the crop. Besides, the elimination of pests such as rats and mice could easily be undertaken on a large and wider scale.

Family labour still forms an important labour unit in the village. However, because of the availability of wider economic opportunities as a result of irrigation, the number of family labour unit tends to comprise the husband and the wife only since most of their sons work independently. The sons who are able to work on their own tend to leave and work outside the family production unit. The need for money to buy clothings, watches and other manufactured goods and the respect they win from the villagers for their ability to buy and display such materials tend to influence the breaking up of the family labour force. The traditional cultural labour of gotong-rotyong and tolong-menolong is disappearing in the village. Its place is substituted by hired labour. The monetization of the village economy is held responsible for such change.

The role of the landlords has disappeared because most of the landless farmers, as a result of irrigation, are raised to the land-owning class. However, in its place petty landlords (who are made up of the farmers who feel that the 5-acre plots are too big for them to manage efficiently and thus rent out 1 or 2 acres to their friends) appear. These petty landlords are completely different from the professional landlord because their main aim is not to exploit the renters by charging exorbitant profits but to help their fellow villagers who have no land to work on.
The present pattern of irrigation development has facilitated the flow of western knowledge to the cultivators. The presence of the Colonisation Officer or Pegawai Perkampungan serves as a source of agricultural information by a formal structure of extension services. The growth of the business centre in the village provides a new channel through which western goods and ideas enter the village communities. The presence of a Malay School in the village provides most of the children with academic and practical instruction.

The development of irrigation has enabled the farmers to overcome the problem of slope, soil, floods and water supplies to the extent of enabling them to acquire modest wealth exceeding that of the 'non-irrigated' cultivators in the neighbouring villages. This achievement would not have been reached without the continued provision of seedlings, fertilizers and insecticides at a government subsidised rate to the farmers.

Investment in the livestock has a low priority among the items included in the wealth index of the villagers. Excess incomes are used further to acquire modest capital equipment for more intensive farming and to fulfill the aspirations for better houses rather than to invest in livestock.

Social change is recorded as the adoption of new goods and economic activities. The sources from which the villagers obtain their technical knowledge are considered and the pace of change is evaluated. Irrigation development, in the first instance, resulted from informal learning of new techniques coupled by the villagers' initiatives. The widespread adoption of new materials and crafts which have been observed, indicates the willingness of the villagers to accept new innovation.

The change from the traditional farming to irrigation provides higher incomes which permit further changes in the material endowment. Within the irrigation setting, the villagers make ample use of the opportunities for change and most of their material culture undergoes modifications. These changes are chiefly in the direction of adopting the western style of life.

Political change is taken to mean a change in political roles and relations in the village. Since the impact of education and westernisation is greatly felt in influencing the change in political structure, only little discussion could be made in this study as to how far irrigation has been held responsible for the change. However, it is undeniable that irrigation indirectly creates the village's faction which resulted from the unequal and unfair practices in allocating and distributing the land in the scheme to the farmers. The change in the village's political structure has been considerably influenced by the nation-wide change in political realignment from the UMNO to PKR.
APPENDIX I

TRANS-PERAK IRRIGATION SCHEME

Introduction

The Trans-Perak Irrigation Scheme is a scheme to open up for cultivation up to 20,000 acres of land situated on the west bank of the Perak River in the area between Parit, Bruas, Pengkalan Baru, Sitiawan, Lekir, Kota Setia and Teluk Anson. In the beginning it was considered possible to irrigate the whole of the area by constructing a barrage across the Perak River near Parit with a main intake for stages I, II and III, but owing to the present day costs of construction of long irrigation canals and the barrage and the varied nature of the soil, the State Government has decided that only stages I & IV should be irrigation areas for padi, while stages II & III should be drainage areas for the cultivation of crops other than rice.

Stage I

The Stage I of the scheme as shown in Map 5 is situated on the Western bank of the Perak River from Kubang Haji up to Sungai Bakong comprising an area of approximately 7,000 acres of which 6,400 acres are bendang land. It is an irrigation area for rice and is supplied with water from a pumping station situated at Kubang Haji in the Mukim of Belanja. The whole of the area is within the Malay Reservation of Belanja, Layang-Layang, Bota and Lambor Kiri. The Drainage and Irrigation Department commenced work on the construction of the scheme in 1954, and the first settlers were emplaced in 1956. The whole of Stage I was completed by 1961 and all settlers were emplaced on the land by early 1960. The cost of providing the irrigation was approximately $3,028,514.00 and the Colonisation and the administration of the area to date has cost approximately $580,000.00.

The pumping station at Kubang Haji is run by 3, 130 horse-power pumping engines. The water is pumped into the canal at the height of 14 feet above the river level at 160 cubic feet per second. The amount of money spent on the canal and the pump house in 1967 was $218,000.00 which was about $34.00 per acre.

The yields over the past 4 years have averaged about 400 gantangs per acre for single crop, but this figure can be increased by the proper use of fertiliser. The annual out-put of padi can further be increased as it is possible to provide water to double crop most of the Stage I. The land in this stage was allocated to the persons involved a total expenditure of $4,593,400.00. The work was started by the Drainage and Irrigation Department in 1964 and at the end of 1964, $257,354.00 has been spent. In the first Malaysia Plan...
residing in villages bordering the scheme and a clearing subsidy of $90.00 per acre was given to them for clearing the land which was mainly swamp jungle. The land in the scheme is allocated to the landless farmers only.

As Stage I was a pilot scheme, no provision was made for kampung or village land to supplement the bendang land as an additional source of income. Two acres of kampung lots have now been surveyed and had already been given out to bendang holders in Blocks A, A2, A1, H and G; Blocks D, E and F have appealed against the land proposed to be given to them as they consider that the portion bordering the main drain and on which people from Krian and Kedah who have T,0, L's over the land and who are residing on the land be erected on the land given to farmers in Blocks D, E and F.

There is still some irrigation difficulties in Stage I and extension. The Drainage and Irrigation Department has carried out investigation into this matter endeavouring to level all the high land, about 600 acres within the scheme, but they can only do about 80 acres per year between planting seasons. It has been suggested that if the pump at Kubang Haji is inadequate to supply water to Stage I Extension, that a proposal to establish a pump house at Bota Kiri be seriously considered.

The Stage I was gazetted as an Irrigation area vide Pk. G. 676 and No. 4, Federation of Malaya Gazette, dated 21.2.57.

The Stage I area was gazetted for Water Rate as from 1.1.61 for second class land rated at $3.00 per acre, Pk. G.N. 789, 15.9.60.

(a) One-thousand acres for cultivation of

The land in the scheme is given out exclusively to Malays.

Stage II

The Stage II of the scheme is situated on the West of Stage I and is bounded by the Bruas Forest Reserve, the Bruas - Pengkalalan Baru - Sungai Batu road in the north, the Sagomana Estate, Ayer Tawar Estate in the west and several large estates lying astraddle the Bruas Lumut Road, and the Stage III in the south. The total area of Stage II has now been revised to include 88,000 acres of land of which approximately 15,000 acres is within the Sub-District of Parit and 73,000 acres is within the District of Dindings.

The majority of the land in this stage requires drainage before it can be used for cultivation and the drainage work now in progress by the Drainage and Irrigation Department.

This vast project is intended to open up 61,380 acres of jungles and swamps to make possible for the cultivation of rubber, oil palm, tapioca and the like. It is estimated that the completion of work on this stage will take 10 years (1964 - 1974) and involve a total expenditure of $4,993,400.00. The work was started by the Drainage and Irrigation Department in 1964 and at the end of 1964, $257,354.00 has been spent. In the first Malaysia Plan
1966 - 1970, $2,993,400.00 has been allocated for the drainage constructions and 30,200 acres of land has been opened up. From 1966 to 1968, $1,084,425.00 has been spent on drainage construction alone and 18,200 acres of land has been opened up.

In the meantime various areas, which are suitable for cultivation have been given out for rubber etcetera and several schemes are in the process of being implemented.

The first area to be agreed by the Committee in February 1956 was an area of 2,244 acres for the cultivation of rubber by the Chinese resettled in the Raja Hitam Area and the land to be alienated on 30 years lease. The District Officer, Dindings was asked to recommend terms to the State Government and also to arrange excision of the whole of the Raja Hitam Resettlement Area comprising 4,675 acres from the Raja Hitam Reserve. It is ascertained from the State Forest Office that the original Forest Reserve at Raja Hitam was 13,500 acres and that small acres up to 630 acres were revoked between 1940 to 1954, but 7,340 acres was revoked under PK G.N. 840 dated 18.4.57 so that the balance now remaining as a Forest Reserve is only 5,531 acres.

A second (controlled) alienation scheme of 551 lots of 6 acres each amounting to 3,224 acres was selected for alienation to Malays and non-Malays on 50/50 basis and the area has not been surveyed.

Further schemes in this area are now in the process of being implemented and details are as follows:

(a) One-thousand acres for cultivation of tapioca on (TOL) Temporary Occupation Licence. This 1,000 acres has now been earmarked for 2 acre kampong lots to be given to the settlers of Raja Hitam I to increase their 4 acres holdings to 6 acres.

(b) Four-thousand acres for 4 acre lots of rubber for Malays and non-Malays on 50/50 basis. This has now been surveyed into 4 acre lots and only a total of 706 lots is available. Suitable applicants for the land are now being selected by the District Administration of Dindings.

(c) Kampong Bakar Bata is a proposed scheme in the Mukim of Brua where approximately 2,500 acres of land will be available to the landless for alienation. The land is within
Malay Reservation and so can only be alienated to Malays. A layout plan of the area has already been drawn up by the State Planning Officer and a report on the suitability of the soil has been prepared by the Agricultural Department. The plan prepared by the State Planning Officer, J.P.B.K. A3/78 shows 364 acres Kampung lots 364½ acres of rubber/oil palm lots and a Model Kampung which comprised 360¾ acre house lots, Central Administration area and shopping centre.

Some difficulty will be experienced in implementing this scheme due to the presence of a great number of illegal settlers now on the land. However by a firm decision on the part of the administration, it is believed that the scheme can be successfully implemented. Drainage of the area is nearly completed by the Drainage and Irrigation Department and the land is now fairly dry.

Also in Stage II there are 2 other schemes in the process of being implemented and these are as follows:-

(a) At Changkat Chermin, 379 lots of 4 acres have been surveyed of which 164 lots are in Kuala Kangsar District and 215 lots in Dinding District. The 164 lots in the Mukim of Bota-Kuala Kangsar District have already been given out to selected applicants who have nearly paid their fees for alienation of the land. The 215 lots in Dinding District have still to be allocated by the Dinding Selection Committee. The trouble in this scheme is that most of the boundary stones were missing due to the illegal cultivation of the area by the Chinese who plant tapioca.

(b) The Bota Kiri — Ayer Tawar — Gelong Pepunyu Scheme is in progress of being surveyed. This scheme will provide land for 700 applicants. Each successful applicant will be given 1x½ acre rubber lot, 1x½ acre duuan lot and 1x½ acre house lot all based on Town Planner’s plan. The duuan area is now being surveyed and should be given out to selected applicants in the first instance. If it is successfully developed, they will then be given the 1x½ acre rubber land. The eastern section is now being provided with irrigation and should therefore be ready to be given out. The western section has still to be drained and only parts of this section
cultivation, Temporary Occupation Licence are now being issued by
the Bindings District Office. So soon as the prepared layout is
received and approved the selected application will be made here of the land earmarked and given out for sugar cultivation. 5,000
acres outside the village of Parit Banjus has been reserved for the development, 5,000 acres has been reserved for alien-
ation to various companies and it is now in the process of being developed. 7,000 acres has been earmarked for alien-
ation to small holders and each small holders would be given 5 acre lot. This scheme for smallholders cannot however be
started until drainage for the whole area is completed.

Stage III

The Stage III of the scheme is in the Bindings and Lower Perak Districts from Parit sub-District boundary in the north to Lekir and Sungai Kayan in the south and comprises area of approximately 70,000 acres but very little can be done in the area as it requires extensive drainage. In the First Malaysia Plan $24,7,300.00 has been set aside for the working on drainage alone.

The work in the scheme is divided into 2 phases: Phase I and Phase II. Under Phase I it is hoped to open up 3,244 acres of jungles and swamps for the cultivation of rubber, tapioca and the like. At the end of 1968, $1,74,054.00 has been spent and 72% of Phase I is completed and is estimated that about 1,500 acres of land has the drainage facilities. Under Phase II, it is hoped to convert the 50,500 acres of swamps and jungle into cultivable land. 11,300 acres will be opened up for padi cultivation (double cropping) and will be supplied from the Stage IV Irrigation System and developed after the completion of Stage Scheme, and 25,500 acres are earmarked for rubber, pineapple, tapioca and the like. It is estimated that the whole work on the Stage III of the scheme will at least take 15 years (1968 - 1982) to complete and will involve a total expenditure of $5,997,300.00. In the First Malaysia Plan 1966 - 1970, $24,7,300.00 has been given for the initial work on the scheme. The work on the scheme commenced in 1968 and to date the expenditure incurred is $45,014.00.

The whole of the area in Stage III with the exception of approximately 10,000 acres is within Malay Reservation. The 10,000 acres excised will be given to non-Malays.

Drainage has now been provided for the area adjoining the Chinese village of Kampong Pekan Gurney, Simpang Dua and Simpang Lima and it has been proposed to open and develop about 10,000 acres for oil palms. Pending the prepared layout and to prevent further illegal
anticipated due to several factors. Among these are (a) the delay by floods, and (b) the lack of cooperation of the people. While the residents in the area are very anxious to be given land, they

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are not prepared to concentrate full time on the development of the land as they must do part time employment to maintain their families until such time as the bendang is productive enough to enable them to concentrate on the bendang fully.

It is estimated that this will at least take between 3 to 4 years.

Block B and 400 acres of Block C is now being cleared by the selected applicants and if all is going on well, it should be ready for planting the first crop of padi in September - October, 1969. The first phase of clearing the Model Kampong is now in progress. One hundred acres of the Model Kampong is now being cleared and provision is available in this year's estimates (1969) for the clearing of another 250 acres for which contracts should be made as soon as possible as at the present time too many of the cultivators are living too far away from their bendang to concentrate on their lands.

### TABLE A

**ELEVATION, SIZE AND SOURCE OF IRRIGATION WATER, STAGES I-IV**

<table>
<thead>
<tr>
<th>Projects</th>
<th>Elevation above Sea Level</th>
<th>Source of Irrigation</th>
<th>Irrigated Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>EL + 60.00 to + 40.00</td>
<td>Perak River (Kubang Raja)</td>
<td>5,860</td>
</tr>
<tr>
<td>Stage IV</td>
<td>EL + 20.00 to + 6.00</td>
<td>Perak River (Telok Sona)</td>
<td>20,320</td>
</tr>
</tbody>
</table>
APPENDIX II

APPLICATION FORM FOR THE LAND IN THE STAGE II, TRANS PERAK IRRIGATION SCHEME

Ranchangan Pertama Bagi Kawasan Bendang Seberang Perak

Keterangan 2 Bakal Peminta Tanah

1. Nama ..................................... Not: Kad Pengenalan ..............

2. Tempat Tinggal ....................... Kampong ........... Mukim ...........
dan lama tinggal dalam kampong

3. Umur ........ Tahun. 4. Kahwin atau tidak .............

5. Saya ada memilek tanah saperti berikut:—

<table>
<thead>
<tr>
<th>Not Geran</th>
<th>No: Lot</th>
<th>Mukim</th>
<th>Jajahan</th>
<th>Luas</th>
<th>Bahagian</th>
<th>Jenis Tanaman</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
</tbody>
</table>

6. Isteri/suami saya ada memileki tanah saperti berikut:—

<table>
<thead>
<tr>
<th>Not Geran</th>
<th>No: Lot</th>
<th>Mukim</th>
<th>Jajahan</th>
<th>Luas nya</th>
<th>Bahagian</th>
<th>Jenis Tanaman</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
</tbody>
</table>

7. Banyak orang dalam tanggongan saya:
Nama isteri/suami .................................. Not: Kad Pengenalan ...
anak2 kurang dari 18 tahun dan umor2 mereka ..........................

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Tanggongan yang lain2 dan tali persuadaraan

3. Adakah keluarga yang tersebut diatas meminta tanah ini?
   Jika ada sebutkan nama-nya.
   1. ........................................
   2. ........................................
   3. ........................................

9. (i) Saya mengaku yang saya dan ahli2 saya upaya membuat tanah ini jika di-luluskan dan saya mengaku perkara2 yang saya sebutkan di atas ini semua-nya benar dan sekira-nya keterangan2 ini di-dapati dusta saya bersetuju permintaan saya ini dibatalkan.

(ii) Saya mengaku akan mengusahakan tanah yang di-luluskan untuk saya itu dengan chara yang di-kehendaki oleh pehak yang berkusa dalam tempoh yang di-tetapkan.

(iii) Saya mengaku tidak akan menjual tanah itu kepada sesiapa jua dan sekira-nya saya tidak boleh mengusahakan tanah itu saya akan pulangkan tanah ini kepada Kerajaan belek dengan tidak bersharat.

(2) The land hereby alienated shall not be subdivided as provided in Section 20, or Section 101 of the Land Code.

III. Restrictions in Interest

Saya yang menanda Tangan dibawah ini mengaku in-itu keterangan2 yang di-atas ini telah disiasat dan sepanjang pengetahuan saya di-dapati benar.

Tanda Tangan

Ketua Kampung

Penghulu Nukim

Signature
Colonial Office,
Perak, Perak.
APPENDIX III

APPROVAL OF APPLICATION FOR LAND

No: (2) in Parit 376/56
Federated Malay States

Approval of application for Land
(Schedule III, Land Rule 5)

Inches: ........................................

Your application has been approved. Below are the conditions for the occupation of the Land:

I. Terms and Conditions:

Premium .................... M11 per acre (1969: $5/=)
Rent .......................... $1/= " acre (1969: $2/=)

II. Express Conditions

(1) The land hereby alienated shall be cultivated solely with wet rice and with no other crops.

(2) The land hereby alienated shall not be subdivided as provided in Section 50, or Section 101 of the Land Code.

III. Restrictions in Interest

The land hereby alienated shall not be transferred or leased unless such transfer or lease to a single individual person and relates to the whole of the land comprised in this title.

A sum of $27.50 must be paid to the office before the land is colonised. The sum is made up as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td></td>
</tr>
<tr>
<td>Rent</td>
<td>$ 5.00</td>
</tr>
<tr>
<td>Survey Fees</td>
<td>$ 12.50</td>
</tr>
<tr>
<td>Boundary Marks</td>
<td>$ 8.00</td>
</tr>
<tr>
<td>Office Fees</td>
<td>$ 2.00</td>
</tr>
</tbody>
</table>

$ 27.50

Signature
Colonisation Officer,
Parit, Perak.
BIBLIOGRAPHY


7. Wilson, T. B., Economics of Padi Production in Northern Malaya.