

EVOLUTION OF RICE FARMING UNDER THE NEW ECONOMIC POLICY

AKIMI FUJIMOTO

INTRODUCTION

THE objective of the present paper is to assess the impact of New Economic Policy (NEP) on rice farming in Malaysia, through the examination of policy, institutional and technological changes that have taken place in the past two decades. It is true that the rice sector represents a rather minor segment of the national economy in Malaysia. However, it has always been regarded as a most important target area by government development policy up to the present because of the predominance of Malay farmers and the production of staple food [14]. In fact, it is one of the poorest sectors in which development efforts have been concentrated under the NEP.

The evolution of Malaysian rice policy may be divided into the following three stages: (1) after independence up to the introduction of the NEP in 1971, (2) rice policy under the NEP up to the introduction of National Agricultural Policy (NAP) in 1984, and (3) rice policy under the NAP up to the present. In this paper, special focus is given to the evolution of rice policy and the actual transformation of rice farming from 1971 to the present.

The structure of the paper is as follows. In the following section, the nature of policy measures pursued from 1971 to 1983 and the actual state of rice agricultural development will be clarified. It will be shown that rice policy under the NEP basically aimed at the increase in farm income through technological innovation and the provision of support programs, which may therefore be termed "protective policy stage." In Section II, general aims and policy measures advocated in National Agricultural Policy will be theoretically examined, and the nature of the new policy will be shown to be "structural policy." This will be followed, in Section III, by case studies of the actual economic and technological changes that have taken place at the village level during the 1970s and 1980s, based on two ten-year follow-up surveys conducted in Seberang Prai and Kelantan. The final section presents a summary of conclusions and policy implications.

I. RICE UNDER THE NEW ECONOMIC POLICY

A. *Rice Policy up to 1983*

After independence as the Federation of Malaya in 1957, rice policies in the country were pursued with the following three general objectives [18]: (1) to

support and increase farm income; (2) to promote rice production to the level of self-sufficiency; and (3) to ensure consumers of quality rice at reasonable prices and at minimum cost to the government. To achieve these goals, the government implemented various measures during the 1960s, including the promotion of rice double-cropping, provision of high-yielding varieties and modern rice technology, subsidies on fertilizer and irrigation, guaranteed minimum price for paddy purchased by the government, and improvement of support systems by establishing and reforming various government agencies. Among these measures, priority was placed upon irrigation development and technological innovation.

New Economic Policy was formulated with two fundamental objectives of poverty eradication and social restructuring, first introduced from the Second Malaysia Plan (1971–75) and presented the basic framework for the following five-year development plans up to 1990. Rice policy was also incorporated into the massive drive for achieving the national objectives. Rice policy had been carried out with the basic aim of increasing food production and protecting Malay farmers since the time of the colonial administration to the 1960s.¹ There was in fact no contradiction between the on-going rice policy and the newly implemented NEP, and the three goals of rice policy were therefore to be continued under the NEP. However, based on the existing problems resulting from the actual development pattern of the rice sector in previous decades, the top priority was shifted from increasing rice production to increasing farm income. This shift was in line with the NEP objective of poverty eradication. In other words, the target of achieving rice self-sufficiency was to receive a smaller emphasis than before, while more and more protective and supporting measures were to be introduced.

More specifically, the following new policy directions in the rice sector were adopted under the NEP. First, with respect to the rice production target, the earlier policy aimed at 100 per cent self-sufficiency in rice, but the target was now lowered to 80 to 90 per cent. This lowering of the production target was made in consideration of various factors, including the hitherto successful rise in rice production, high production cost, and the resulting weak competitive power of Malaysian rice in the world market. The government of Malaysia probably foresaw no serious future problems in importing some amount of rice from neighboring countries.

Second, with respect to future irrigation planning, it was decided to implement no new large-scale irrigation projects.² It was considered that the completion of two large-scale irrigation projects, Muda Irrigation Scheme (about 250,000 acres) and Kemubu Irrigation Scheme (about 50,000 acres), which were constructed during the period of 1965–70, would easily enable the achievement of the newly set production target. No necessity was conceived by policy planners for reclaiming additional rice land in the country. Fortunately, however, there was a recogni-

¹ There is a relatively large accumulation of studies on agricultural policy in Malaysia. For rice policy during the British colonial period, see, for instance, [2] [12] [13].

² In irrigation planning in Malaysia, the investment efficiency had always been taken into account, and only those projects with high investment efficiency were implemented. As a result, most of the projects with high efficiency had actually been completed by 1970 [21, pp. 38–53].

tion that the establishment of water management technology would be a crucial factor in raising the average yield. Various improvement measures were thus considered for the existing irrigation projects and those projects under construction, which eventually led to the introduction of Integrated Agricultural Development Projects in order to promote the establishment of high-productivity rice farming through enhancing land improvement and technological innovation in the rice bowl areas. In other words, rice farming was to be concentrated in a total of eight granary areas: Muda, Kemubu, Besut, North-West Selangor, Krian-Sungai Manik, Trans-Perak, Kemasin-Semerak, and Seberang Prai.

Third, with regard to rice farming outside the rice bowl areas, NEP showed a very passive attitude. It was made clear that the government had no intention of implementing a new irrigation project and encouraged the diversification of farming by introducing forage crops and animal husbandry in these areas. As much as possible, farmers were encouraged even to stop farming and move to nonagricultural sectors, for which a number of promotion measures were also considered.

Fourth, the guaranteed minimum price system, operative for paddy since 1949 in Malaysia, was decided to be maintained by the government under the NEP. The guaranteed level of price was however to be reviewed each year, and it actually remained at sixteen ringgit per pikul up to 1974 but was lifted to twenty-eight to thirty ringgit after the first oil shock. It must be emphasized that prior to the introduction of the NEP, the guaranteed minimum price system was rather an indirect support system for producers. Under this system, whenever the government wished to acquire some rice for its stockpiling, rice millers were required to show that they had acquired paddy from farmers at or above the guaranteed minimum price. The government enforcement of the system was thus carried out through transacting with only those millers who could meet the above requirement. In reality, however, the system did not operate as expected in that farmers usually received a lower price than the minimum level [1]. Therefore, under the NEP the government decided to introduce a direct guarantee system. In 1971, National Padi and Rice Board (LPN) was newly established in order to operate the guaranteed minimum price system as well as to improve rice marketing in the country. Under the new system, farmers could now obtain the guaranteed price directly from the government by selling paddy to LPN or its licensed agents, Farmers Associations.

Fifth, in order to increase farm income, the increased yield and reduced costs were considered vitally important. For that purpose, the Malaysian Agricultural Research and Development Institute (MARDI) was established in 1969 to strengthen the existing research and experimental system for technological innovation. Direct protection and subsidy measures were not only continued but also strengthened. Hitherto dual system of farmers organization, Agricultural Cooperatives and Farmers Associations, were amalgamated and reformed under the Farmers Organization Authority in 1973. This was to improve modernization measures in rice farming by providing from a single source such direct assistance as low interest loans and credit, a package of necessary production inputs, and technical advice.

TABLE I
RICE PRODUCTION TREND IN PENINSULAR MALAYSIA, 1971-81

(Acres; gantang/acre)

	Rainy Season Rice		Dry Season Rice		Upland Rice		Total Production (Milled Rice) (1,000 Tons)
	Planted Area	Average Yield	Planted Area	Average Yield	Planted Area	Average Yield	
1971	921,840	433	393,760	506	49,510	202	989.5
1972	892,660	412	487,850	495	33,640	209	1,001.9
1973	912,620	446	524,420	510	24,520	220	1,105.7
1974	917,070	468	536,300	525	22,510	219	1,163.9
1975	919,710	444	526,900	511	23,980	219	1,098.6
1976	858,960	442	549,340	549	24,720	190	1,117.7
1977	852,510	417	524,660	537	23,410	161	1,043.3
1978	827,980	435	254,830	468	18,060	185	786.7
1979	818,470	498	551,310	538	18,370	239	1,151.7
1980	788,630	514	504,490	565	15,880	212	1,127.2
1981	780,580	521	491,200	566	19,830	215	1,119.5

Source: [16].

As regards subsidy, the existing urea price subsidy was maintained, and from the 1979/80 rainy season cropping the more direct Padi Subsidy Scheme was introduced and has been operative up to the present. This consists of two sets of direct subsidy to rice farmers: input subsidy and output subsidy. The input subsidy was to provide fertilizer, free of charge, to all rice farmers registered with the government. The maximum area was set at six acres per household, but the amount provided was equivalent to the level specified by the recommended farming practice of the Department of Agriculture. This subsidy was valued at 94.02 ringgit per acre at the prevailing market price. The output subsidy was to provide additionally 10 ringgit per pikul, regardless of the grade of paddy, over and above the guaranteed minimum price, which in effect resulted in the government purchase price being 38 to 40 ringgit per pikul. The output subsidy was raised to 15 ringgit per pikul in 1990.

Likewise, rice policy under the NEP was pursued with the priority aim of increasing income among rice farmers, while maintaining a certain level of rice self-sufficiency. Now, a question arises as to what was the actual development of the rice sector and to what extent had the farmers income been improved under the implementation of these policy measures from the 1970s?

B. *Rice Production and Farm Income*

Rice production statistics in the 1970s are presented in Table I. It is clearly seen that rice double-cropping had progressed rapidly during this period. The total area planted to dry season rice was about 390,000 acres in 1971 but increased to 550,000 acres by the mid-1970s. Assuming the total area of rice land to be 900,000 acres, this meant that 61.1 per cent of the total was under double-cropping. This increase did not mean the implementation of new irrigation projects but simply reflected the fact that in the two large-scale irrigation projects completed

in 1970, Muda and Kemubu irrigation schemes, extensive double-cropping became possible after 1972. The establishment of rice double-cropping in the existing irrigation areas was considered to be the foundation for producing the required amount of rice at 80 to 90 per cent self-sufficiency.

However, the improvement in the average yield stagnated in the 1970s. Even though the increased paddy price in 1975 must have provided incentives for higher yield, higher price of material inputs and charge for tractor ploughing appeared to result in a negligible increase in the level of the average yield. Rather, it seemed that the increase in production costs put a heavier pressure on the household economy. This eventually led the government to carry out fundamental reforms of the existing subsidy system and to introduce the Padi Subsidy Scheme from the 1979/80 rainy season crop. It is clearly seen that the average yield began to increase after the introduction of this scheme.³

The most important trend to note under the NEP is the obvious decline of rice farming in the country. In spite of continued public spending on the rice sector through the provision of irrigation, technological innovation, direct subsidy, and other support measures, rice farming in Malaysia clearly turned to the downward trend in the late 1970s. This is apparent from the declining area planted to rice. The decline in the rainy season rice area may have resulted from crop diversification and/or conversion to the nonagricultural sectors in a number of rain-fed rice growing areas, as envisaged under the NEP. However, importantly the area planted to dry season rice also began to decrease from 1980. This phenomenon presented a serious challenge to the on-going rice policy which had so vigorously aimed at the promotion of rice double-cropping through massive public investment. The decline in the dry season cropping implied the abandonment of rice planting not only in the rain-fed areas but also in the main rice bowl areas where the past development efforts had been concentrated.

At least two factors should be mentioned in the decline of rice planting in Malaysia. One was the technical shortcoming of irrigation projects. In most irrigation projects, the initial construction was mainly concerned with the provision of irrigation water and lesser significance was attached to the drainage system, which inevitably caused constant flooding or poor drainage in low-lying parts in a project area. With the rapid and extensive tractorization of land preparation process, the use of large tractors led to deepening of these fields with the consequence that some fields became too deep for rice cultivation. Rice fields abandoned once in this way were covered by weeds and turned into a breeding ground for rats and other pests, which gave serious damage to the surrounding fields and eventually forced them to be abandoned.

The other factor was the rapid economic growth in Malaysia and Singapore. Especially the development and a relatively high wage rate in the manufacturing and construction sectors absorbed a large labor force from the rural sector. This meant the provision of a higher opportunity income for rural youth and active farmers in many rice growing areas, in which some of them decided to seek employment in the non-farm sectors by abandoning their rice fields. This phe-

³ For instance, the amount of fertilizer applied in the 1980s was more than twofold the amount applied in the 1970s in a Kelantan village [5].

TABLE II
CHANGES IN RICE SELF-SUFFICIENCY IN PENINSULAR MALAYSIA, 1971-81

(1,000 tons)						
	Domestic Production	Net Import	Total Consumption (A)	Rate of Self- sufficiency	Population (1,000) (B)	Per Capita Consumption (kg) (A/B)
1971	990	143	1,133	87	9,018	126
1972	1,002	98	1,100	91	9,261	119
1973	1,106	157	1,263	88	9,521	133
1974	1,164	205	1,368	85	9,769	140
1975	1,099	61	1,160	95	10,033	116
1976	1,118	114	1,232	91	10,242	120
1977	1,043	160	1,203	87	10,510	114
1978	787	282	1,069	74	10,762	99
1979	1,152	99	1,251	92	11,042	113
1980	1,127	25	1,152	98	11,138	103
1981	1,120	123	1,243	90	11,394	109

Source: [16].

nomenon was particularly obvious in rice areas on the East Coast where farm size was generally small and yield level stagnated.⁴

In short, rice agriculture in the 1970s had been evolved along the line of double-cropping based on the provision of irrigation facilities. Despite relatively negligible increase in the level of productivity, the increase in the planted area resulted in increased production to maintain the self-sufficiency rate at 80-90 per cent, as intended by the government during this period (see Table II). However, from the end of the 1970s, rice farming began to decline not only in disadvantaged rain-fed areas but also in some of the rice bowl areas where farm size was particularly small and yield was unstable and very low. This decline was considered to stem from the low level of income in the rice sector, which was further highlighted by rapid development of nonagricultural sectors brought about by the implementation of the NEP.

One of the main policy objectives of the NEP was the eradication of poverty, and the rice sector certainly represented a major area for this political endeavor. In 1970, immediately before the introduction of the NEP, the poverty rate was as high as 88.1 per cent in the rice sector, which was at least partly responsible for the shift in policy priority from the rise in self-sufficiency to the increase in farm income. To what extent, then, had the serious problem of poverty been improved in the rice sector during the 1970s?

Table III presents the extent of poverty incidence in Peninsular Malaysia for 1970, 1976, and 1984. It is clearly seen that in these years the poverty rate was much higher in the rural sector compared to the urban sector. Within the rural sector, there existed significant differences in the level of income among various

⁴ It is my observation in a Kelantan village that not a single youth had newly entered into the production of rice after 1973. Since all farm children obtained employment outside rice farming, the aging of rice farmers presented a constraint for technological development in rice production.

TABLE III
INCIDENCE OF POVERTY BY SECTOR IN PENINSULAR MALAYSIA, 1970-84

	(%)		
Sector	1970	1976	1984
Rural:	58.7	47.8	24.7
Rubber smallholders	64.7	58.2	43.4
Rice farmers	88.1	80.3	57.7
Estate workers	40.0	—	19.7
Fishermen	73.2	62.7	27.7
Coconut smallholders	52.8	64.0	46.9
Other agriculture	89.0	52.1	34.2
Other industries	35.2	27.3	10.0
Urban:	21.3	17.9	8.2
Agriculture	—	40.2	23.8
Mining	33.3	10.1	3.4
Manufacturing	23.5	17.1	8.5
Construction	30.2	17.7	6.1
Transport and utilities	30.9	17.1	3.6
Trade and services	18.1	13.9	4.6
Activities not adequately defined	—	22.4	17.1
Total	49.3	39.6	18.4

Source: [15].

subsectors: the poverty rate was relatively low among estate workers but remarkably high among rice farmers. It is significant to note that as a result of development efforts under the NEP, the overall poverty rate certainly declined from 49.3 per cent in 1970 to 18.4 per cent in 1984, indicating the increase in the average level of income in the country.

In the rice sector, the high poverty rate was lowered to 57.7 per cent by 1984, a reduction of 30 percentage points in the fourteen years. This indicates a significant increase in the average level of income among rice farmers, but more than half of them still remained in poverty. This high rate inevitably implied that many rice farmers in the rice bowl areas, where massive investment had been made, were also in poverty. There was even an indication of increased income differentials among rice farmers. For instance, a detailed study conducted in the Muda area revealed the following serious facts [9]. Even though the poverty rate among rice farmers declined by 22 percentage points from 66 per cent in 1972 to 46 per cent in 1982, the reduction in the absolute number of poor households was a mere 15 percentage points. Furthermore, among the remaining poor households, as many as half were very poor households in which the actual income was less than two-thirds of the poverty line income of 300 ringgit per month. A similar conclusion of increased income gap among rice farmers was also reported by the World Bank [22], based on studies conducted in Muda as well as Kemubu Irrigation Areas.

In other words, rice policies during the 1970s maintained a certain level of rice production and somewhat resulted in a reduction of poverty rate in the rice

TABLE IV
ESTIMATED AREA OF IDLE RICE LAND BY STATE, 1981

State	Total Rice Land Area	Idle Rice Land Area		
		More Than 3 Years	During the Dry Season Only	Total
Major rice areas:				
Kedah	124,588	4,358	288	4,646 (2.9)
Penang	18,198	5,633	840	6,473 (4.0)
Perak	50,547	9,026	2,744	11,770 (7.3)
Selangor	20,662	1,427	293	1,720 (1.1)
Kelantan	84,426	20,009	62,037	82,046 (51.0)
Terengganu	29,136	7,028	10,101	17,129 (10.6)
Subtotal	327,557	47,481	76,303	123,784 (76.9)
Other rice areas:				
Perlis	25,750	0	1,880	1,880 (1.2)
N. Sembilan	14,753	9,386	5,040	14,426 (9.0)
Melaka	11,497	3,334	3,334	6,668 (4.1)
Johor	4,239	1,681	881	2,562 (1.6)
Pahang	17,990	9,989	1,632	11,621 (7.2)
Subtotal	74,229	24,390	12,767	37,157 (23.1)
Total	401,786	71,871	89,070	160,941 (100.0)

Source: [25].

Note: Figures in parentheses are the percentages.

sector. However, the improvement in the level of income among rice farmers was not as significant as probably anticipated by policymakers and administrators. As mentioned earlier, this led to the introduction of the large subsidy scheme for rice farmers in 1980, which however did not curb the declining trend in rice farming, presenting the limit to the conventional development approach based on technological innovation, infrastructural improvement, and the provision of support systems including direct subsidies.

C. Decline of Rice Farming

Perhaps the most serious rice problem in contemporary Malaysia is the continued existence of a large area of idle land and the consequent decline in rice production. The extent of the problem can be seen from Table IV. More than 160,000 hectares or 40 per cent of the total rice land area was idle at the time of the estimate in 1981, including nearly 72,000 hectares (18 per cent of the total rice land area) which had been idle for more than three years.⁵ Although about 89,000 hectares

⁵ In order to tackle the decline of rice farming in the country, together with the introduction of Padi Subsidy Scheme, the government established a Task Force on Idle Land in the Ministry of Agriculture in 1980. The task force estimated the area of idle rice land and released the unpublished "Task Force Report on Idle Land" in 1982.

had also been abandoned during the dry season, it is considered that this does not necessarily mean the cessation of rice double-cropping in rice granary areas. For instance, in 1976 when rice double-cropping was at its peak a total of about 220,000 hectares were planted to the dry season rice, and the figure remained as large as about 200,000 hectares in 1981. Probably the statistics on idle land included those abandoned fields outside the irrigated areas, and if this is so, the real problem may simply relate to 72,000 hectares of rice land which had been left idle for some years.

It is also seen that the problem of idle land had occurred in almost every state in the country, including the main rice-growing states where large-scale irrigation schemes were constructed. Of the total of more than 320,000 hectares in six major rice-growing states, some 47,000 hectares (14.5 per cent of the total) had been idle for more than three years while some 76,000 hectares (23.3 per cent) was idle during the dry season. Especially obvious is the concentration of idle land on unstable and less productive rice areas such as Kelantan and Terengganu, while in Kedah and Selangor where rice productivity was high and farm size relatively large, the problem of idle land was rarely found. This suggests that the incidence of idle land was closely related to the level of profitability of rice farming. Notwithstanding, it is clear that the abandonment of rice farming is not a regional but a national problem in that only in three states, Kedah, Selangor, and Perlis, did the proportion of idle land remain less than 10 per cent of the total rice land area whereas in a total of six states more than 50 per cent had been abandoned.

Since the causes of idle land have already been discussed, let me now look into the rehabilitation program. Basically there are two strategies adopted by the government in the rehabilitation of idle rice land. One is to rehabilitate idle land and promote agricultural production on the basis of economic and technical feasibility in each area. In other words, the idle land was to be rehabilitated and rice cultivation promoted in some areas, while in other areas the planting of non-rice crops was encouraged on currently abandoned rice land. Needless to say, the former was adopted in the idle land rehabilitation program in the eight rice bowl areas, while the latter was implemented in other rice areas. In the case of crop diversification in the minor rice areas, particular emphasis was placed upon the production of the following seven commodities based on the national interest in reducing food imports: coffee, maize, groundnuts, citrus, chilli, beef cattle, and sheep. This strategy of crop diversification was in fact envisaged in the NEP in 1971 and, as will be shortly discussed, carried over to the National Agricultural Policy released in 1984. Since the diversification of the small farm sector was not necessarily successful in the 1970s, it may be said that the extensive incidence of idle land had ironically presented a long-awaited opportunity for promoting the original development plan.

The other important strategy adopted in the rehabilitation program was the promotion of a new type of farm management such as group farming and mini-estate. On the understanding that the idle land problem was fundamentally caused by poor infrastructure and small farming scale, a strategy was formulated to improve infrastructure and expand the size of a production unit by establishing a

TABLE V
REDEVELOPMENT OF IDLE LAND BY TASK FORCE IN THE
MINISTRY OF AGRICULTURE, 1981-84

	Number of Redevelopment Projects	Total Area Redeveloped (ha)	Total Amount of Direct Subsidy (Ringgit)
1981	10 (3)	3,290.59	2,817,940
1982	12 (10)	1,246.00	1,128,313
1983	12 (7)	2,090.27	1,537,716
1984	8 (7)	684.97	857,944
Total	42 (27)	7,311.83	6,341,913

Source: Personal interview conducted at Agro-Economic Division, Ministry of Agriculture in Kuala Lumpur in October 1986.

Note: Figures in parentheses refer to rice projects.

farming group or a mini-estate on currently abandoned land. Farmers owning idle land were encouraged to form a group or establish a mini-estate and propose a redevelopment plan, for which the government readily provided direct subsidy and loan: a direct subsidy of approximately 1,000 ringgit per hectare for the cost of infrastructural improvement, and a low interest loan of another 1,000 ringgit per hectare for tractor ploughing and other necessary inputs for crop production.

Table V shows the number and area of redevelopment projects of idle rice land which were directly supported by the government during the four years from 1981 to 1984. Three points should be mentioned in relation to this table. First, of the forty-two projects sponsored by the government, only twenty-seven were rice projects. The remaining fifteen projects were planned to promote crop diversification and actually involved the planting of such crops as sugarcane, corn, groundnuts, and oil palm. The rice projects were concentrated in Seberang Prai and Kelantan, whereas the others were mostly located in Negeri Sembilan.

Second, the total amount of direct subsidy exceeded 6 million ringgit in the four years, with an average of about 150,000 ringgit per project. Since the average area of idle rice land was 174 hectares per project, the subsidy provided by the government amounted to 867 ringgit per hectare. During the Fourth Malaysia Plan (1981-85), the government had continued to allocate about 2 million ringgit each year for the purpose of rehabilitation of idle land. Furthermore, in 1986, the first year of the Fifth Malaysia Plan (1986-90), the budgetary allocation jumped to 10 million ringgit for direct subsidy and 10.3 million ringgit for loans for production inputs, indicating a more vigorous attempt to tackle this serious national problem.

Third, among the forty-two projects, two were mini-estates and forty were group farming projects. It is very important to note that except for one mini-estate project, all these projects were formulated and implemented by an Area Farmers Organization (PPK) or Department of Agriculture.⁶ One might be led to assume

⁶ Information obtained from the Agro-Economic Division, Ministry of Agriculture, Kuala Lumpur, in October 1986. For an example of such group farming and mini-estate, see [6].

TABLE VI
AREA OF IDLE RICE LAND AND REHABILITATION BY STATE, 1981-85

State	Idle Rice Land Area	Area Rehabilitated (Hectare; %)
Perlis	1,880	299.70 (15.9)
Kedah	4,646	236.44 (5.1)
Penang	6,473	5,833.11 (90.1)
Perak	11,771	1,936.29 (16.4)
Selangor	1,720	336.00 (19.5)
N. Sembilan	14,426	2,486.00 (17.2)
Melaka	6,584	1,114.22 (16.9)
Johor	2,563	22.27 (0.1)
Pahang	11,621	806.96 (6.9)
Terengganu	17,130	690.06 (4.0)
Kelantan	82,049	6,902.70 (8.4)
Total	160,863	20,663.75 (12.8)

Source: See Table V.

- Notes: 1. Although the idle land area slightly differs from the statistics shown in Table IV, data are presented here as provided by the ministry.
2. Figures in parentheses refer to the rehabilitation rate.

the existence of positive and constructive initiatives of the farmers in group farming, but in reality it was the government department and agency which took the initiative and the responsibility in the rehabilitation of idle land. Owners of idle land were called upon and formed into a group by government officials who then proposed a redevelopment plan and obtained a direct subsidy for the improvement of the irrigation and drainage system as well as a loan for ploughing and necessary inputs, while fertilizer was provided under the Padi Subsidy Scheme if the project involved the cultivation of rice. Because most works were conducted by contractors, the member farmers were simply to inspect their fields and not required to take any risks. No more direct subsidy and loan could be provided from the second season after rehabilitation, and all risks were to be borne by the group. It is believed that many projects ceased to farm as soon as the crop was damaged by rats or flooding in the following seasons.

Of course, these were not the only rehabilitation projects implemented in the country. Other government agencies also attempted to rehabilitate idle rice land. Table VI shows the total area of idle rice land by state which were rehabilitated between 1981 and 1985. Although the rehabilitation rate exceeds 90 per cent in Seberang Prai, it is still very low in most states including Kelantan and Terengganu, the two main rice-growing states on the East Coast. It is clear that after all these efforts by the government only 12.8 per cent of the total idle land area had been rehabilitated and the idle land problem has remained a very serious challenge in the country.⁷

With the persistence of the idle land problem, it is quite understandable that

⁷ For instance, the total area of idle land is understood to be 500,000 hectares in Peninsular Malaysia in 1990, including not only rice land but also rubber smallholdings [17].

TABLE VII
RICE PRODUCTION AND CONSUMPTION IN MALAYSIA, 1981-87

	Planted Area (ha)	Total Production (Milled Rice) (1,000 Tons)	Average Paddy Yield (Tons/ha)	Net Import (1,000 Tons)	Total Consumption (1,000 Tons)	Rate of Self-sufficiency (%)	Per Capita Consumption (kg)
1981	710,789 (767,640)	1,303	2.84	317	1,620	80	115
1982	682,070 (758,400)	1,057	2.40	393	1,450	73	100
1983	665,997 (764,200)	1,048	2.45	358	1,406	75	94
1984	624,310 (769,750)	940	2.35	426	1,366	69	89
1985	661,721 (775,220)	1,175	2.79	426	1,601	73	102
1986	627,565	1,122	2.78	190	1,312	86	81
1987	640,828	1,092	2.65	195	1,287	85	78

Source: [16].

Note: Figures in parentheses are those statistics obtained from the *Fifth Malaysia Plan, 1986-1990* [15, p. 302].

TABLE VIII
ESTIMATES OF RICE SMUGGLING, 1981-85

	Total Production Subsidized (1,000 Tons)	Official Import (1,000 Tons)	Estimated Rice Smuggling (1,000 Tons)	Rate of Smuggled Rice to Total Consumption (%)
1981	694.7	262.3	582.9	38
1982	694.1	391.0	496.1	31
1983	688.8	385.1	548.9	34
1984	641.3	423.9	598.3	36
1985	789.6	415.3	516.3	30

Source: [20, p. 49].

rice production has declined and the problem of rice smuggling has become more and more serious in the country. Table VII presents official statistics on rice production and consumption for Malaysia in the 1980s. Relatively high rates of self-sufficiency may be noted, but how can per capita consumption vary to that extent from year to year? It seems that these statistics are not very reliable because of the lack of precise information on rice stocks as well as the accepted practice of rice smuggling from Thailand.⁸

Fortunately there is an interesting study [20] on the recent conditions of the

⁸ The World Bank [22, p. 25] also expresses the unreliability of Malaysian rice statistics because of rice smuggling.

rice industry, which estimates the amount of rice smuggled into the country. As presented in Table VIII, it seems that some 500,000 tons of rice had been smuggled from Thailand each year. This accounted for more than 30 per cent of the total domestic rice requirement. In other words, it may be assumed that the official production figures had been inflated at least by this amount of smuggling, and therefore the actual rate of self-sufficiency should have been 45.1 per cent in 1981, 43.9 per cent in 1982, 42.4 per cent in 1983, 38.6 per cent in 1984, and 45.9 per cent in 1985. Whatever the true figures may be, it seems quite reasonable to assume that the actual production of rice has been much lower than the official statistics do suggest.

II. NATIONAL AGRICULTURAL POLICY

A. *General Aims*

National Agricultural Policy (NAP) was officially released by the government on January 12, 1984 in order to provide the basis for agricultural development measures for the coming years in Malaysia. The published version (in English) of NAP consists of a total of fourteen pages, divided into the following nine chapters: Introduction, Background, Constraints, The National Agricultural Policy, Strategy Formulation, Guidelines for the Development of Specific Commodities, Forestry, Agro-based Industries, and Public-Private Sector Coordination.

In the introduction, the document states that "[NAP] has been formulated to ensure a balanced and sustained rate of growth in the agricultural sector vis-à-vis the other sectors of the economy. It sets out the guidelines for agricultural development up to the year 2000. . . ." In chapters 2 and 3, the document presents the government's perception of past achievements and constraints in agricultural development and explains the necessity of new agricultural policy. There seem to be five major viewpoints that are important in the course of analysis in this section.

- (1) The role of the agricultural sector in the national economy has been declining, mainly because the growth of other sectors was faster. However, the agricultural sector is still important in the Malaysian economy.
- (2) According to the current estimate, the expansion of the industrial sector will be smaller than the original plan under the NEP (1971-90). There is an urgent need for the agricultural sector to make a more active contribution to future economic development of the country.
- (3) Hitherto agricultural policies have been commodity-oriented and implemented independently from one another. As a result, there occurred conflicts and competition for land and labor resources as well as regarding the role of each commodity.
- (4) The agricultural sector consists of an efficient and well-organized estate subsector and an inefficient and poorly organized small farm subsector. There are various constraints, including structural problems, which have caused a low level of productivity and income, leading to the high incidence of poverty in the small farm subsector.

- (5) Due to the rapid migration of rural youths to urban sectors, there is a shortage of labor in the agricultural sector. This has led to the underutilization and abandonment of farm land and the decline in agricultural production.

Among the above viewpoints, the most important perception seems to be that related to poverty. NAP's stance is that poverty is caused by low productivity, which is in turn due to complex factors such as uneconomic farm size, low profitability, traditional cultivation techniques, constraints on cropping patterns, inadequate use of farm service systems, etc. Fluctuation of output prices, increasing input prices, and marketing systems are not conceived as immediate causes of poverty. Probably because of the rapidly worsening idle land problem since 1980, it seems that the NAP placed a heavier focus on problems related to production structure. It may be possible to argue that the NAP's perception that poverty is caused by low productivity is oversimplified, and there are problems in the analysis of causes of the low productivity, but the most important fact is that the government actually realized the existence of structural problems in the small farm sector.

In chapter 4, policy objectives of the NAP are stated, followed by the presentation of policy measures in chapter 5 and development directions for major commodities in chapter 6. As can be anticipated from the above description of the government's perception, the NAP's objective is "to maximize income from agriculture through efficient utilization of the country's resources and the revitalization of the sector's contribution to the overall economic development of the country." The maximization of income is to be pursued through the increased production of traditional export crops, the exploitation and promotion of potential export crops, and the development of food and industrial crops.

Policy measures and development directions discussed in chapters 5 and 6 are not dramatically new but mainly follow up the hitherto implemented measures: to strengthen land development and *in situ* development, to provide support services and incentives through the improvement in research, extension, marketing, and taxation system, and to motivate self-help and group efforts among farmers through social and institutional development. Agriculture is also categorized into two components, food production and industrial crop production, and development strategies and programs are set for the production of major commodities. In food production, six commodities of rice, meat and dairy, poultry, fish, vegetables, and fruits are dealt with, while seven commodities of rubber, palm oil, cocoa, coconut, pepper, tobacco, and floriculture are discussed in the industrial crop production. One important viewpoint in relation to the development program of these commodities, except for rice, is the adoption of technical and economic returns as the basis for consideration. As a result, for instance, it is clearly stated that the expansion of pepper production is not to be encouraged in the future. For rice production, the national food security is taken into consideration.

Although arbitrary and vague, the NAP mentions the intention of various programs for an increase in productivity through the expansion of farm size and the promotion of organized farming with centralized management. It is considered that these are the most important new directions of the NAP which will probably

have far-reaching and significant impact on the small farm sector. Particularly because of the persistence of widespread poverty and idle land problems in the rice sector, it is almost certain that the NAP has been formulated with the main purpose of redressing the rice sector. In other words, it may be said that a large part of the NAP aims to promote the establishment of high productivity rice farming through reorganizing production structure on one hand, and the introduction of non-rice crops outside the rice bowl areas on the other hand. It is therefore necessary to look further into rice policy under the NAP.

B. *New Rice Policy*

Rice farming has been traditionally conducted by the Malays since the colonial time and characterized by small farm size, low level of cultivation techniques, and low productivity. Poverty was especially serious and widespread, for which the government had continued to inject a series of protective measures. Rice was even called a "political crop" [10]. Although these protective measures had been carried over to new rice policies in the 1980s, it is true that there were some important alternations under the NAP.

First, the production target of rice was reexamined. When the New Economic Policy was implemented in 1971, the hitherto full self-sufficiency target was revised to the aim of 80 to 90 per cent self-sufficiency. This rate was further lowered to 80 to 85 per cent under the NAP. It is believed that this rate was an outcome of compromise between two thoughts [19]: (1) a view following the World Bank recommendation to abandon the self-sufficiency policy, and (2) a view placing importance on national food security. As mentioned before, in spite of economic and technical considerations in the development of all agricultural commodities under the NAP, rice was regarded as an exception. On page 4 of the NAP, it is clearly stated that "in respect to rice, the country's staple food, its production will be based on national food security considerations."

The target of 80 to 85 per cent self-sufficiency appeared to be based on the actual level of production in the late 1970s, which can be taken to imply that policymakers probably foresaw no serious problems in maintaining this level of rice production in the country.⁹ However, rice production continued to decline in the 1980s to a level much lower than this target, and the government began using a strange terminology, "floating target" for rice production, which was set at 60 to 65 per cent soon after the release of the NAP in 1984 [24]. In fact, as mentioned earlier, there was an emerging problem of rice smuggling and one estimate even suggested that the rate of self-sufficiency in the early 1980s was actually as low as some 40 per cent [20].

Second, the altered production target was accompanied by the conception of intensified rice farming in the following three ways: (1) the provision and improvement of irrigation and drainage facilities in existing areas for double-cropping,

⁹ The Cabinet Committee on National Agricultural Policy, headed by then Deputy Prime Minister Mahathir, was initially appointed on August 30, 1978. The draft report, presented in June 1979, envisaged the maintenance of the current rice production level (80 to 85 per cent of the requirement) through the increase in yield and the opening of new areas.

(2) use of high-yielding varieties, and (3) adoption of modern farming practices. No mention was made of the development of new rice land in the country in the published version of the NAP. In the Fifth Malaysia Plan [15, p. 320], it was clearly stated that the intensification of rice production would be concentrated on a total of eight granary areas, which were currently producing 55 to 60 per cent of the domestic requirements, and the cultivation of rice in other areas would be gradually converted to other crops. It follows that to attain the production target only from the rice bowl areas, there is an urgent need to raise the level of productivity in these areas at least by 50 per cent.

Third, the increase in productivity had hitherto been pursued by infrastructural improvements and technological innovation. These endeavors were to be continued under the NAP. As against the more recent phenomenon of rural labor shortage, the development and application of direct-seeding method was to be promoted in addition to further mechanization of rice operations. For that purpose, the strengthening and expansion of such farm services as extension, training, and credit, were considered essential.

Fourth, the most serious attention was paid to the poverty problem of rice farmers. As pointed out earlier, the NAP considered the direct and immediate cause of poverty to be the low level of productivity, which in turn was rooted in various structural problems including the smallness of farm size, the low level of profitability of crop production, and the low standard of production technology. Therefore, the NAP put forward the plan of farm size expansion in addition to improved cultivation technology and the adoption of profitable crops. More specifically, the NAP would implement various programs in land consolidation and organized farming with centralized management. In effect, this policy meant that in addition to the promotion of farm enlargement among individual farmers, new types of farm management such as group farming and mini-estates, which had been adopted in rehabilitation programs of idle land, were to be seriously promoted. In fact, the establishment of centralized management has been one of the main policy measures adopted in the 1980s.

At this stage, however, it should be pointed out that this policy of management restructuring actually poses a number of serious social and economic issues with regard to possible impact on the state of rice production and the Malay peasantry. There are many implications, including technical problems related to grouping of farmers, infrastructure, and crop production technology, but four particularly serious socioeconomic problems may be discussed here. The first issue relates to production efficiency under a different type of management. The NAP attempts to organize inefficient small-scale farmers into a group and improve production efficiency under centralized management, but there is no economic guarantee for improved production efficiency under new type of management compared to farm management of individual farmers.

The second issue is concerned with farm size. The establishment of group farming among a number of small farmers does not necessarily accompany the expanded size of farming for the individual participants. Group farming therefore may merely point to collective work of some rice operations. The collective

operation of ploughing, for instance, can certainly be expected to improve economic efficiency of tractor use among the tractor owners, but it does not necessarily imply improved efficiency or profitability of individual farm management under the prevailing situation of the use of tractor on the custom-hiring basis.

The third issue relates to the status of farmers. Should centralized management be promoted by government officials, the establishment of group farming and mini-estates is likely to be accompanied by "laborerization of farmers," or farmers being converted to laborers under centralized management. While idle land may be rehabilitated and agricultural production sustained by establishing group farming and mini-estates, it is possible that farmers as a decision-making body and socio-economic and cultural unit may eventually disappear from rural Malaysia. In some of the FELDA (Federal Land Development Authority) schemes where the block system has been introduced, this seems to be already happening, and therefore a serious question is raised as to the future status of the Malay peasantry in the country [11].

The fourth issue is concerned with the access to economic returns and income distribution. The establishment of mini-estates implies the loss of management right and thus access to economic returns among many farmers, which may be contradictory to the policy objective of income maximization through expansion in agricultural production. Farmers may be able to obtain some income through landownership in the form of rental or dividend, but this is limited to landowners with a larger return going to larger landowners. Many landowners can also expect income without engaging in productive work themselves, while landless villagers may lose their access to land for cultivation and certainly require special attention for the provision of alternative opportunities.

So far, rice policy in the 1980s under the NAP has been briefly described and the nature of the new policy appeared to be structural. It is certainly premature to make conclusive judgments on the effects of these policy measures, but in the following section, let me discuss what happened at the village level from the 1970s to 80s.

III. CHANGES AT THE VILLAGE LEVEL

In the preceding sections, the evolution of rice policy and rice agriculture has been discussed from the macro point of view. This section attempts to analyze the actual changes in rice farming at the village level by focusing on two different types of farmers' responses observed in Kampung Guar Tok Said in Seberang Prai and Kampung Hutan Cengal in Kelantan. In both areas, I conducted detailed village studies in the 1970s, and resurveys of the same villages in the 1980s clearly indicated the direction of change.¹⁰

¹⁰ The main results of surveys conducted in the 1970s can be seen in [3] and [4], while two other papers, [5] and [8], focused on socioeconomic and technological changes that have taken place from the 1970s to 1980s in Kelantan and Seberang Prai respectively.

TABLE IX
 NUMBER OF HOUSEHOLDS ACCORDING TO MAIN OCCUPATIONS OF
 THE HEAD IN KAMPUNG GUAR TOK SAID, 1978-87

Occupation	1978	1987
Rice farming only	43 (70.5)	35 (53.0)
Rice+other farming	1 (1.6)	0
Rice farming+wage labor	6 (9.8)	14 (21.2)
Rice farming+trading	2 (3.3)	3 (4.5)
Agricultural labor	3 (4.9)	3 (4.5)
Nonagricultural labor	1 (1.6)	7 (10.6)
Retired	4 (6.6)	3 (4.5)
Others	1 (1.6)	1 (1.5)
Total	61 (100%)	66 (100%)

A. Case of Seberang Prai

The Northern District in Seberang Prai is one of the most advanced rice-growing areas, where rice double-cropping was first established in the country during the Japanese occupation. In spite of the progressive nature of rice farming, the area has suffered from an increasing problem of idle land since the 1970s (see Table IV) because of the industrial development under the NEP in such nearby areas as Prai and Sungai Petani. Many farmers abandoned rice farming and became employed in the off-farm sectors in the area; however, farmers in Kampung Guar Tok Said not only continued to farm but also took advantage of various changes in order to establish viable rice farming. This village presents the case of a success story for the government rice policy which basically aimed at the increased level of rice productivity and farm income.

Table IX shows the nature of occupational changes during the period 1978-87 among the heads of all households in the village. Two points are important regarding ten-year changes in the occupational structure of the villagers. First, rice farming was the main occupation and the number of farmers accounted for fifty-two in 1978, which has remained the same throughout the decade. This is a rather unique phenomenon in the face of the general trend of declining rice agriculture in the country as well as in the district. Second, the number of full-time rice farmers declined from forty-three to thirty-five, and part-time farmers increased from nine to seventeen. Particularly obvious is the increased number of part-time farmers who were engaged in wage labor in the nonagricultural sectors. Together with the increase in the number of households which were engaged in nonagricultural labor, it is clearly seen that more and more farmers came to depend on wage opportunities outside farming.

In the decade under study, the standard of living among the villagers certainly rose, and in 1987, 6 per cent, 77 per cent, 67 per cent, and 15 per cent of the households owned a motorcar, motorbike, television set, and refrigerator respectively. The improvement was due not only to off-farm employment but also the increased profitability of rice farming in the area. There were some remarkable

TABLE X
NUMBER OF FARMERS AND AVERAGE FARM SIZE BY TENURIAL STATUS
IN KAMPUNG GUAR TOK SAID, 1978-87

	1978		1987	
	No. of Farmers	Average Farm Size (Acres)	No. of Farmers	Average Farm Size (Acres)
Landlord-farmers	10	2.70	10	2.89
Owner farmers	12	3.33	14	2.80
Owner-tenants	11	4.19	14	5.20
Tenant farmers	19	1.82	14	2.02
Total	52	2.84	52	3.26

technological and institutional changes, which many farmers adopted and took up to their advantage in this village.

The most important technological change was the introduction of labor-saving technology in the form of direct-seeding and mechanical harvesting. In 1978, the use of tractor in land preparation was already an established practice, but two major operations of transplanting and harvesting were conducted manually, for which farmers largely depended upon hired labor. By the time of study in 1987, however, not only had more productive new high-yielding varieties been planted but 75 per cent and 94 per cent of the farmers had adopted direct-seeding and mechanical harvesting respectively. These new practices not only removed a constraint on farm enlargement but also reduced the cost involved in the operations.

The remarkable institutional changes included the establishment of the Padi Subsidy Scheme by the government in the 1979/80 rainy season and seasonal credit scheme by Agricultural Bank of Malaysia in the 1982 dry season. As mentioned earlier, the former included fertilizer subsidy, which provided necessary fertilizer to all rice farmers registered with the government. Actually a reasonably large amount of chemical fertilizer was applied by all farmers at the time of study in 1978, but the introduction of the subsidy meant abolishment of the fertilizer cost. The seasonal credit was to provide a low interest loan of 180 ringgit per acre as capital needed for operations of land preparation (tractor charge), transplanting (hired labor), and pest control (pesticide). If direct-seeding is adopted, the total amount would be 120 ringgit, because tractor ploughing was allowed up to three times even though the cost for transplanting labor is not granted. The maximum amount of loan was set at 3,000 ringgit, which therefore could be used to finance the operation of 16.7 acres under transplanting and 21 acres under direct-seeding.

The combination of the two schemes provides highly favorable conditions for rice farmers. They are able to get free fertilizer and meet cash requirements of tractor ploughing, transplanting, and pesticide with seasonal credit, and the payment for a combine harvester may be made by selling the produce immediately after harvesting. In other words, the farmers were provided through these generous support institutions with the opportunity to operate a relatively large-scale farming without their own capital endowment.

TABLE XI
NUMBER OF HOUSEHOLDS ACCORDING TO MAIN OCCUPATIONS OF
THE HEAD IN KAMPUNG HUTAN CENGAL, 1978-84

Occupation	1978	1984
Rice farming only	27 (33.8)	28 (53.8)
Rice+other farming	4 (5.0)	0
Rice farming+wage labor	18 (22.5)	8 (15.4)
Rice farming+trading	10 (12.5)	2 (3.8)
Non-rice agriculture	0	1 (1.9)
Agricultural labor	1 (1.3)	0
Nonagricultural labor	5 (6.3)	9 (17.3)
Trading	1 (1.3)	1 (1.9)
Retired	14 (17.5)	3 (5.8)
Total	80 (100%)	52 (100%)

Note: The fifty-nine households engaged in rice farming in 1978 were resurveyed in 1984, but only fifty-two could be covered.

Technological and institutional changes thus provided the basis for the greatly improved profitability. The average net income per acre was 386 ringgit in 1978 but increased by 35 per cent to 520 ringgit (in 1978 prices) by 1987. Naturally the improved profitability and the increased availability of land in nearby areas provided incentives for the expansion of rice operation among the farmers in this village. Table X shows the number of farmers and the average farm size in the village. It is true that some farmers simply followed the traditional life cycle in shifting from tenant to owner-tenant, from owner-tenant to owner farmer, and from owner farmer to landlord-farmer [4], but there were many farmers who positively expanded their farm size by renting in additional lands.

B. Case of Kelantan

Kelantan has been one of the major rice-growing areas in the country, but its rice farming has been characterized by small farm size and unstable and low level of productivity. There was a dramatic decline in rice farming from the 1970s and the problem of idle land has been most serious in this state. Kampung Hutan Cengal in Pasir Mas District is considered to be a better village in the state in that some farmers still continued to farm even in the 1980s. Out of the fifty-nine farmers who were engaged in rice farming in this village in 1978, as many as thirty-eight were still cultivating rice in 1984 (see Table XI). In spite of the greatly improved profitability of rice farming, many farmers either reduced farm size or shifted to the nonagricultural sectors. This was actually accompanied by the increase in idle land, and in 1984 such idle rice land amounted to 39 per cent of the total area in the village.

Table XII presents the number of farmers and average farm size by tenurial status for 1974, 1978, and 1984. Not only the reduced number of farmers but also the declining average farm size from the 1970s to the 1980s can be clearly noted. The reduction of the number of farmers was most apparent among owner-

TABLE XII
NUMBER OF FARMERS AND AVERAGE FARM SIZE BY TENURIAL STATUS
IN KAMPUNG HUTAN CENGAL, 1973-84

	1973/74		1977/78		1983/84	
	No. of Farmers	Average Farm Size (Acres)	No. of Farmers	Average Farm Size (Acres)	No. of Farmers	Average Farm Size (Acres)
Owner farmers	25	1.70	24	1.51	29	1.24
Owner-tenants	23	2.07	23	2.04	4	2.81
Tenant farmers	6	1.71	10	1.64	5	1.00
Total	54	1.86	57	1.75	38	1.38

tenants and tenant farmers, implying that many farmers actually came to choose wage employment rather than the cultivation of rice on rented-in land in the 1980s. The remaining farmers were mostly owner farmers engaged in the cultivation of a small area mainly for obtaining rice for home consumption.

As amply demonstrated in earlier discussions, this decline of rice farming was mainly due to the low economic returns from rice farming which was in turn due to the small farm size and low level of productivity. The level of yield was certainly lower than Seberang Prai, but it is also true that generous subsidies greatly increased the level of profitability in this area as well. A question then arises as to the reasons for the persistence of small farm size, while a large area of idle land has been readily available in the tenancy market. The basic reasons seem to be the delay in technological innovation and the aging of the farmers. Compared to the West Coast area, the introduction of technological innovation, particularly of the labor-saving technology, was rather late in Kelantan. At the time of the resurvey of this village in 1984, two major operations of transplanting and harvesting were still entirely dependent upon manual labor, mostly family labor because of the shortage of youth in the agricultural sector, which presented a serious constraint for the aging farmers to expand farm size. After 1985, however, some farmers began to adopt labor-saving technology in Kelantan and a relatively young farmer in this village also adopted direct-seeding and mechanical harvesting. With the application of new technology, he expanded his farm size up to fifteen acres in 1987 by renting in some of the idle land under fixed-rent tenancy contracts.

In spite of the emergence of some progressive and large-scale farmers, Kelantan still suffers from the serious problem of idle land. Various redevelopment projects were implemented from the early 1980s, but the problem could not be curbed. Then, a new strategy was adopted in the rehabilitation of idle land in this state, which was to mobilize capital from the private sector by allowing the establishment of large-scale rice estates. A total of four such rice estates, ranging from 240 acres to 920 acres in size, were established on the idle land between 1984 and 1986 [7]. However, two of them went bankrupt after a few seasons and two others were still struggling to survive in business at the time of study in 1987.

It is however considered that the existence of rice estates has made significant contributions to the development of rice farming in the state. Needless to say, they have rehabilitated and improved the irrigation and drainage facilities on the idle land, which some farmers began to cultivate themselves following the withdrawal of the management from the area. The other important impact included demonstration effects of labor-saving technology such as direct-seeding and mechanical harvesting in Kelantan. The adoption of labor-saving technology provided the basic condition not only for farm enlargement among some progressive farmers but also for the continuation of rice farming itself among mostly aging farmers in the area.

CONCLUSION

This paper aimed at overviewing the evolution of rice policy and related changes in rice farming in Malaysia after independence. It was made clear that rice policy mainly aimed at attaining self-sufficiency in the early years of development but the priority has shifted in more recent years to the increase in farm income. This was in line with the policy goal of poverty eradication under the New Economic Policy. Through the promotion of rice double-cropping based on irrigation and technological innovation, the production of rice had shown a reasonable growth up to the mid-1970s. In spite of various protective policy measures introduced in the 1970s under the NEP, the increase in farm income was rather insignificant, because of structural problems in the rice sector. The relative disadvantage of the rice sector compared to other fast-growing nonagricultural sectors resulted in the inevitable decline of rice farming from the end of the 1970s, with the increasingly serious problem of idle land. The National Agricultural Policy, formulated in 1984 with the aim of revitalizing the agricultural sector, placed emphasis on structural improvement.

The continued observation of economic and technological changes at the village level during the period from the 1970s to 1980s revealed a rational response among many farmers under the given conditions. In Seberang Prai, for instance, farmers successfully increased their farm income to a level above the poverty line by taking advantage of various protective measures introduced prior to NAP. In contrast, in spite of the available protective measures, many farmers reduced the scale of farming or completely abandoned their farming in order to move to the nonagricultural sectors in Kelantan. These two areas represent the opposite types of farmers' response to the changing economic opportunities, both of which are however considered to be rational in their endeavor to raise the level of income. One key factor responsible for such differences appeared to be technological innovation, the base for improved farm management.

The evolution of rice farming under the NEP thus seems to have both positive and negative aspects. Policy consideration per se had shown dual aspects in the last two decades: food security consideration and protection of the Malay farmers on one hand and the pursuit of economic efficiency on the other. It seems that the Malaysian government is actually in a dilemma between the two opposite

directions of policy pursuit, basically because of the nature of rice as a political crop.

REFERENCES

1. BROWN, C. P. "Rice Price Stabilization and Support in Malaysia," *Developing Economies*, Vol. 11, No. 2 (June 1973).
2. CHENG SIOK HWA. "The Rice Industry of Malaya: A Historical Survey," *Journal of the Malaysian Branch of the Royal Asiatic Society*, Vol. 42, Part 2 (December 1969).
3. FUJIMOTO, A. "An Economic Analysis of Peasant Rice Farming in Kelantan, Malaysia," *South East Asian Studies* (Kyoto), Vol. 14, No. 2 (September 1976).
4. ———. *Income Sharing among Malay Peasants: A Study of Land Tenure and Rice Production* (Singapore: Singapore University Press, 1983).
5. ———. "Marēshia higashi kaigan ni okeru inasaku gijutsu henka to sono shakai keizai teki eikyō" [Rice technological change and its socioeconomic impact on the East Coast in Malaysia], in *Tōnan Ajia no nōgyō gijutsu kakushin to nōson shakai* [Agricultural technology change and rural society in Southeast Asia], ed. T. Takigawa (Tokyo: Institute of Developing Economies, 1987).
6. ———. "Nōgyō seisaku taikō to inasaku nōgyō no saihen" [National agricultural policy and the restructuring of rice agriculture], in *Gendai Marēshia no shakai keizai henyō* [Socioeconomic transformation in modern Malaysia], ed. K. Horii and Y. Hagiwara (Tokyo: Institute of Developing Economies, 1988).
7. ———. "Marēshia ni okeru ine esutēto keiei no tenkai" [Evolution of rice estates in Malaysia], in *Tōnan Ajia nōgyō no shōgyōka* [Commercialization of agriculture in Southeast Asia], ed. H. Umehara (Tokyo: Institute of Developing Economies, 1989).
8. ———. "Sonraku reberu ni okeru shin keizai seisaku to nōmin no taiō" [New economic policy and farmers' responses at the village level], in *Marēshia no shakai saihen to shuzoku mondai* [Social restructuring and ethnic problems in Malaysia], ed. K. Horii (Tokyo: Institute of Developing Economies, 1989).
9. GIBBONS, D. S. *Paddy Poverty and Public Policy: A Preliminary Report on Poverty in the Muda Irrigation Scheme Area, 1972 and 1983*, Monograph Series No. 7 (Penang: Universiti Sains Malaysia, Center for Policy Research, 1984).
10. GOLDMAN, R. H. "Staple Food Self-Sufficiency and the Distributive Impact of Malaysian Rice Policy," *Food Research Institute Studies*, Vol. 14, No. 3 (1975).
11. HORII, K. "FELDA oiru pāmu nyūshokuchi ni okeru saibai soshiki to shotoku bumpai —burokku shisutemu no jittai chōsa jirei" [Production organization and income distribution in a FELDA oil palm scheme: a survey of the block system], *Ajia keizai*, Vol. 24, No. 8 (August 1983).
12. LIM CHONG-YAH. *Economic Development of Modern Malaya* (Kuala Lumpur: Oxford University Press, 1967).
13. LIM TECK GHEE. *Peasants and Their Agricultural Economy in Colonial Malaya, 1874–1941* (Kuala Lumpur: Oxford University Press, 1977).
14. LIM TECK GHEE, and MUHAMMAD IKMAL SAID. "Malaysia: Rice Peasants and Political Priorities in an Economy Undergoing Restructuring," in *Agrarian Transformations: Local Processes and the State in Southeast Asia*, ed. G. Hart, A. Turton, and B. White (Berkeley, Calif.: University of California Press, 1989).
15. Malaysia. *Fifth Malaysia Plan, 1986–1990* (Kuala Lumpur, 1986).
16. Malaysia, Ministry of Agriculture. *Paddy Statistics, Peninsular Malaysia* (Kuala Lumpur, various years).
17. MOHD. ARIFF HUSSEIN, and ABDUL AZIZ ABDUL RAHMAN. "The Dawn of the 1990s: Challenges for Agriculture," *Options*, Vol. 5, No. 1 (1990).
18. SELVADURAI, S. *Padi Farming in West Malaysia* (Kuala Lumpur: Ministry of Agriculture and Fisheries, 1973).

19. SUNDARAM, J. K. "Malaysia's New Agricultural Policy," *South East Asian Economic Review*, Vol. 6, No. 3 (December 1985).
20. TAN SIEW HOEY. *Malaysia's Rice Policy: A Critical Analysis* (Kuala Lumpur: Institute of Strategic and International Studies, 1987).
21. TAYLOR, D. C. *The Economics of Malaysian Paddy Production and Irrigation* (Bangkok: Agricultural Development Council, 1981).
22. World Bank. *Impact Evaluation Report, Malaysia: Muda and Kemubu Irrigation Projects*, Report No. 3587 (Washington, D.C., 1981).
23. ————. *Malaysia: Review of the Rice Industry*, Report No. 7395 (Washington, D.C., 1988).
24. ZAWIAH CHE CHIK. "Analysis of Developmental Roles of Agricultural Producers in Malaysia," Country Report, A Study Mission on the Analysis of Developmental Roles of Agricultural Producers in Asia, Asian Productivity Organization, Tokyo (1986).
25. ZULKIFLY HJ. MUSTAPHA, and SHAIK MOHD. NOOR ALAM. "Idle Agricultural Land in Peninsular Malaysia: Problems and Opportunities," *Malaysian Journal of Agricultural Economics*, Vol. 2, No. 1 (June 1985).