DIVERSIFICATION OF AGRICULTURAL PRODUCTION IN SOME SOUTH-EAST ASIAN COUNTRIES

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An attempt is made in this paper to study the diversification of agricultural production attained during the 1950's by some of the Southeast Asian countries. Diversification of agricultural production was thought to be one of the important steps towards the transformation of a colonial economy into a national one. Characteristics of the colonial economy in the context of conditions around 1950 have been exhaustively studied from time to time.[1] During the subsequent years, however, conditions changed and new forms of dependence on the metropolitan countries emerged. These were summarized by the term neo-colonialism, the main characteristics of which are dependence on foreign collaboration for industrialization and chronic foreign exchange difficulties. It is not necessary to go into details of this problem in this paper.

The rationale of diversification, which holds under certain assumptions, was similar in all these countries owing to similarity of conditions. During the colonial rule, the economy of the colony was influenced by the metropolitan country with a view to developing it on lines wholly or partially complementary to her own economy. The grafting of exchange economy on the subsistence economy of the colony was a part of this development. The peculiarity of the exchange economy was that it remained at the mercy of wide fluctuations in the demand and price of a few export products, and consequently the economic life of the colony suffered considerably. In the initial years of freedom, therefore, the uppermost thought in the minds of national leaders was to reduce this dependence on forces beyond their control. One of the important steps in this direction was to diversify the economy by promoting industrialization. For industrialization, import of capital goods was needed, and for this a stable continuous flow of exchange was required. For this, export of agricultural goods was necessary. It was also necessary to grow all food items required for domestic consumption as far as possible so that exchange earned through the export of agricultural products would not be frittered away in importing food items; otherwise to that extent import of capital goods would have to be curtailed. Hence the country must become more self-sufficient in respect of food also by increasing and diversifying production. Further, if there are only a few items for export, fluctuations in the demand and prices for these items cause fluctuations in exchange

1 Asian Relations—being Report of the Proceedings and Documentation of the first Asian Relations Conference, New Delhi, March-April 1947, p. 121.

earning; these fluctuations would affect the industrialization programme, and hence the need of producing and exporting more agricultural goods.

The need for a diversification of the agricultural sector rather than a mere rise in productivity is thus very clear. In the following we will consider mainly the diversification of agricultural production in Burma, Thailand, the Philippines, and Indonesia. Malaysia and the Indo-China states have been excluded in this study due to the inadequacy of data.

Before we proceed, the concept of diversification and its measurement may be explained in brief.

We shall have to refer both to diversification of the economy and diversification of agriculture. As all the countries in question have a predominant agricultural sector, a more than proportionate increase in the industrial sector is taken to represent diversification of the economy.

As regards the diversification of agriculture, we study it through noting the proportion of the main crops to the rest, the proportion of the main export crops to total crops, and changes in proportions within the export crops, etc. (i. e., diversification of agricultural exports).

The description of diversification achieved through using the above-mentioned indices is supplemented by giving a single measure of diversification. This measure, which is based on a use of figures and the least square methods, contrasts unchanging proportions with changing proportions.

The data that we would require for our purpose would be the percentage distribution of land under different crops and the composition of production. Since diversification may occur with or without any change in the distribution of land, data relating to production is of more importance. There are some difficulties relating to the data regarding production. Production of different crops is available in terms of physical quantities and not in terms of money. In a sense it is not necessary since we are interested in the comparison of the proportionate changes in the production of individual crops. Money value changes at different rates and in different directions, and hence if at all we take production value, we must take them at some constant price to render comparison valid. Such data is not available. Value of a few items is available, but we require the whole set of prices of all commodities. This is not available.

But from another point of view, want of money value is a disadvantage. For deciding the place of each particular commodity in total production, it is necessary to have a common measure, i. e., value. In its absence it is difficult to guess the extent of diversification. A particular item or few items may show marked increase in production and may thus lead to the conclusion that diversification is taking place; but the total impact of this change may be negligible as these items may be occupying an insignificant place in total production. For example, production of tea may increase ten times, but its share in the total production may not be even 1 per cent. In order to know the place of individual items in total production, therefore, we must have the money value of each. For this purpose we have used the prices of the

U. S. for 1950. The prices are given in Appendix. All data have been drawn from the publications of the F. A. O.[2]

As mentioned above, the analysis of this data can be supplemented by giving a single measure of diversification, based on figures and the least squares methods. In the figure, as can be seen, the data is plotted with percentages in the first period on X axis and those in the second period in Y axis. Each point on this figure represents the percentage in the first and second period of a particular crop. Thus, we have a scatter of all points corresponding to all crops. From an examination of the scatter it seems possible to fit a straight line which will give a measure of diversification. The first step then is to obtain a line out of this scatter. This is $y=a+bx$ obtained by 'least square method.' If the composition of production had not changed, all the points would have occurred on the line $y=x$. But since there is a change we will get a different line, viz., $y=a+bx$. The next step is to compare $y=a+bx$ with $y=x$. The statistical hypothesis for this comparison is $b=1$; this is we test whether the regression coefficient b obtained from data is different from that of the line of no change (equal to 1). Wherever b is significantly different from 1, it is concluded that there is diversification; where b is not significantly different from 1, the conclusion is that there is no diversification.

We will analyse the data on these lines in respect to each of the countries as follows.

Indonesia: In Indonesia, during the period under review, no progress was achieved as regards the diversification of the entire economy. This is borne out by the fact that while the primary sector developed at an average rate of 3.8, the industrial sector grew only at the average annual rate of 0.02 (Table 1). Contribution of the agricultural sector in the gross national product increased from 55.6 per cent in 1951 to 62 per cent in 1960.[3] Thus, during this period reliance on the agricultural sector increased.

Table 1. AVERAGE RATE OF GROWTH OF GROSS NATIONAL PRODUCT AND IN PRIMARY AND INDUSTRIAL SECTOR FROM 1953-1954 TO 1960-1961 (At 1960 Prices)

Country	Average Rate of Growth			
	GNP	Primary Sector	Industrial Sector	Manufacturing
Indonesia	2.6	3.8	0.2	—
Burma	4.5	3.2	8.4	9.3
Thailand	5.6	4.6	6.9	4.9
Philippines	5.1	1.0	8.8	9.5

Source: United Nations, *Economic Survey of Asia and the Far East 1963*, p. 35.

2 (1) FAO, United Nations, *Production Year-book 1962*. (2) FAO, United Nations, *Trade Year-book 1962*.

3 *ECAFE Report 1963*, p. 35.

Within the agricultural sector, however, some trends towards diversification are seen. The important agricultural products in Indonesia are rice, cassava, and rubber, of which only rubber is the export crop. In the total exports rubber occupies an important position, and the exchange earned through exports are required, not in a small measure, to import food items. For example, in 1951, of the total imports 73 per cent represented consumption items, of which 18 per cent were food items. Rice is one of the important items of import in respect of which Indonesia is facing shortage since her independence. During the War, Indonesia was cut off from the countries which sent her rice and there was an acute food shortage. The need was felt to divert land from other crops to rice. This need is felt even in the times when the demand for and price of rubber declines. One of the measures to prevent such occasions is therefore to grow more rice and other food crops without decreasing the production and export of rubber as far as possible. This was necessary first to lessen the burden on exchange which can be utilized for importing capital goods, and second to explore possibilities of adding to the export list which at present is dominated by rubber.

Tables 2 and 3 reveal that some progress has been made towards achieving these objectives. There is significant increase in the volume of export of certain items, though on the whole rubber still dominates exports. On the side of production it can be seen that production of rice and cassava, the important food products, has increased in substantial measure as compared to that of rubber. While production of rubber increased by only 5 per cent, production of rice and cassava increased by 34 and 77 per cent respectively. Increase in the production of rice, however, has not enabled Indonesia to reduce her imports of rice; in fact, import of rice increased from 383.2 thousand metric tons to 877.1 thousand metric tons, i. e., by about 129 per cent (Table 3). Demand for rice seems to be much more than the domestic supply.

In the case of other products also the proportionate increase in production is much more than the corresponding increase in the production of rubber. Production of tea, coffee, and jute, etc., increased by more than 75 per cent, but their place in the total agricultural production is very small. Production of sugar-cane increased by 88 per cent and its percentage share in the total agricultural production increased from 1.2 to 1.6 per cent. In this connexion it may be noted that imports of sugar declined from 143 thousand metric tons to only 0.2 thousand metric tons. This is a significant fact as it indicates that Indonesia is on the way to attain self-sufficiency so far as sugar is concerned. On the whole, therefore, it can be said that while for the economy as a whole dependence on agriculture has increased, within the agricultural sector trends are visible to reduce the dependence on a few products.

From an examination of the scatter it seems that it is possible to fit a straight line which will give a measure of diversification.

Table 2. INDONESIA: AREA AND PRODUCTION

Crop	AREA					PRODUCTION						
						Average for 1948–1952			Average for 1959–1961			Percentage Change
	Average for 1948–1952 (1,000ha)	Percentage of Total	Average for 1959–1961 (1,000ha)	Percentage of Total	Percentage Change	Quantity (1,000MT)	Value ($1,000)	Percentage of Total	Quantity (1,000MT)	Value ($1,000)	Percentage of Total	
Rice (Paddy)	5,876	59.1	7,084.7	54.6	+ 21	9,441	1,057,392	33.1	12,706.7	1,423,150	30.7	+ 34
Cassava	873	8.8	1,461.3	11.3	+ 67	6,817	933,929	29.2	12,059.7	1,652,179	35.6	+ 77
Rubber	—	—	—	—	—	635.4	575,672	18.0	669.9	606,929	13.0	+ 5
Copra	—	—	—	—	—	714	158,508	4.9	665.3	147,697	3.2	− 7
Sweet-potatoes and Yams	265	2.7	382	2.9	+ 44	1,750	115,500	3.6	2,699.7	178,180	3.8	+ 54
Maize	2,020	20.3	2,482.7	19.1	+ 23	1,536	92,160	2.9	2,283.3	136,998	2.9	+ 49
Ground-nuts	285	2.9	370	2.8	+ 30	280	67,200	2.1	401	96,240	2.1	+ 43
Coffee	146	1.5	275	2.1	+ 88	50.6	56,166	1.7	99.6	110,556	2.4	+100
Palm Oil	—	—	—	—	—	113.9	44,193	1.4	141.5	54,902	1.2	+ 24
Sugar-cane	—	—	—	—	—	4,067	40,263	1.2	7,659	75,824	1.6	+ 88
Tea	78	0.8	71	0.5	− 9	22.5	19,575	0.6	40.3	35,061	0.7	+ 79
Palm Kernel	—	—	—	—	—	28.5	5,215	0.2	33.2	6,076	0.1	+ 16
Abaca	5	*	1	*	− 80	4.2	2,453	0.1	0.6	350	—	—
Soybeans	380	3.8	627.3	4.8	+ 65	270	24,570	0.8	431.3	39,248	0.8	+ 60
Cotton Seed	5	*	11.3	0.1	+126	2	190	*	2	190	*	—
Cotton Lint	—	—	—	—	—	1	880	*	1	880	*	—
Cocoa	—	—	—	—	—	0.8	566	*	1.1	779	*	+ 37
Jute and Allied Fibres	1	*	2	*	+100	1	313	*	3	939	*	+200
Sisal	11	0.1	5.3	*	− 52	8.1	2,786	0.1	192.3	66,151	1.4	more than 25 times
Tobacco	N.A.	—	188.3	1.4	—	N.A.	—	—	77.4	**	—	—
	9,945	100.0	12,961.9	100.0	—	—	3,197,531	100.0	—	4,632,329	100.0	

Note: *=Insignificant, N.A.=Data not available, **=Omitted so as to make the comparison of two periods valid.

Table 3. INDONESIA: EXPORT AND IMPORT COMPOSITION

Item	EXPORT (1,000MT) Average for 1948–1952	Average for 1959–1961	Item	IMPORT (1,000MT) Average for 1948–1952	Average for 1959–1961
Maize	10.5	—	Maize	0.4	—
Rice (Paddy)	0.2	—	Rice	380.2	877.1
Raw Sugar	9.8	13.3	Raw Sugar	—	—
Raw Equivalent of Refined Sugar	14.0	12.3	Raw Equivalent of Refined Sugar	14.3	0.2
Palm Kernel	25.2	39.9	Copra	0.1	—
Soybeans	1.4	0.4	Coffee	0.1	—
Ground-nuts	11.0	6.0	Cotton (Lint)	2.8	8.8
Copra (a)	395.4	177.5	Oranges	0.1	—
(b)	N. A.	47.6	Potatoes	1.8	0.4
Coffee	12.8	48.3	Onions	0.7	—
Cocoa Beans	0.3	0.2	Pepper	24	—
Tea	26.6	32.3	Tobacco	4.6	7.0
Abaca	4.5	0.2	Oats	0.1	—
Sisal	6.8	15.6	Sorghum, Millet, etc.	0.3	0.2
Rubber (a)	627.6	632.8	Wheat Flour	90.8	114.6
(b)	2.2	0.9	Wheat & Wheat Flour	126.1	159.2
Oranges	0.1	—	Apples	0.4	0.1
Potatoes	1.5	0.8	Dates	3.1	2.0
Onions	0.3	—	Pulses	0.6	—
Pepper (a)	4,554	19,968	Hops	50.6	59
(b)	1,029	1,848	Linseed Oil	0.9	0.3
Milling by Products	N. A.	65	Coconut Oil	0.3	—
Tobacco	8.8	18.2			
Castor Beans	0.9	0.3			
Sesame	0.7	1.3			

Notes: 1. *Copra* (a): Official figures.
(b): Estimate of unrecorded shipments to Malaya-Singapore and North Borneo.

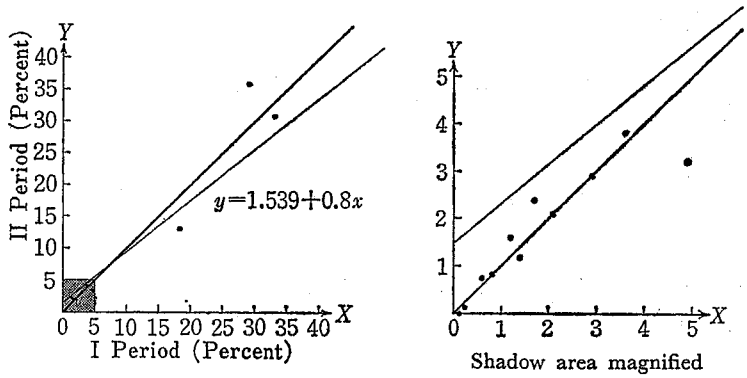
2. *Rubber* (Reported Trade) (a): Including dry rubber content of latex.
(b): Balata, gutta-percha, jelutong, and similar natural gums.

3. *Pepper* (a): Black pepper.
(b): Red pepper.

4. N.A.=Data not available.

The same data has been presented graphically in Figure 1. The method has been described already. The method gives the measure of diversification and makes clear that the change is highly significant.[4]

Figure 1. SHOWING DIVERSIFICATION IN INDONESIA



Burma: Burma presents a case which is in contrast to that of Indonesia. The industrial sector is growing at a substantially faster rate than the agricultural sector. The average annual rate of growth of the industrial sector (Table 1) is 8.4 while that of the agricultural sector is 3.4. Contribution of the primary sector to the gross domestic product shows a decline from 46.4 per cent in 1951 to 43.2 per cent (Table 4). This indicates that diversification of the economy as a whole is under way.

Table 4. BURMA: DISTRIBUTION OF GROSS DOMESTIC PRODUCT

	1951	Per cent	1961	Per cent	Percentage Increase
Agriculture, Forestry, Hunting, Fishing.	1,713	46.4	2,688	43.2	57
Mining and Quarrying	58	1.6	92	1.5	59
Manufacturing	380	10.3	878	14.1	131
Construction	95	2.6	173	2.8	82
Wholesale and Retail Trade	876	23.7	1,231	19.8	41
Others*	568	15.4	1,159	18.6	104
Total	3,690	100.0	6,221	100.0	

Note: * These include (a) electricity, gas, and water; (b) transportation, storage, and communication; (c) banking, insurance, and real estates; (d) ownership of dwellings; (e) public administration and defence; and (f) services.

Sources: 1. United Nations, *Statistics of National Income & Expenditure 1954–57.*
2. United Nations, *Year-book of National Accounts Statistics 1962.*

4 Line of regression $y=1.539+0.8x$ $r^2=0.954$
Standard error of b is 0.063. It is found that 0.8 is significantly different from 1.

Table 5. BURMA: AREA AND PRODUCTION

Crop	AREA				Percentage Change	PRODUCTION						Percentage Change
						Average for 1948–1952			Average for 1959–1961			
	Average for 1948–1952 (1,000ha)	Percentage of Total	Average for 1959–1961 (1,000ha)	Percentage of Total		Quantity (1,000MT)	Value ($1,000)	Percentage of Total	Quantity (1,000MT)	Value ($1,000)	Percentage of Total	
Rice (Paddy)	3,758	72.4	4,107	71.1	+ 9	5,481	1,194,858	89.8	6,840	1,491,120	89.6	+ 25
Sesame Seed	371	7.1	422	7.3	+ 14	43.7	**	—	69.7	**	—	+ 59
Ground-nuts	277	5.3	454	7.8	+ 64	154	36,960	2.8	329.7	79,128	4.7	+114
Dry Beans	220	4.2	244	4.2	+ 11	N.A.	—	—	N.A.	—	—	—
Millet	199	3.8	138	2.4	− 31	56	2,296	0.2	28	1,148	0.1	− 50
Cotton Seed	118	2.3	133	2.3	+ 13	37	3,515	0.3	36.3	3,448	0.2	− 3
Cotton Lint	—	—	—	—	—	19	16,720	1.2	19	16,720	1.0	—
Chick-peas	87	1.7	102	1.8	+ 17	31	**	—	40.3	**	—	+ 29
Maize	67	1.3	52	0.9	− 21	30	1,800	0.1	34	2,040	0.1	+ 13
Tobacco	48	0.9	44	0.8	− 8	45.2	51,528	3.9	41.6	47,424	2.8	− 7
Sugar-cane	21	0.4	28	0.5	+ 38	1,076	10,652	0.8	939	9,296	0.5	− 13
Wheat	14	0.3	25	0.4	+ 78	4	292	—	8.5	620	—	+125
Onions (dry)	N.A.	N.A.	12	0.2	—	58	2,204	0.2	43.5	1,653	0.1	− 24
Tea	1	*	1	*	—	—	—	—	—	—	—	—
Dry Peas	9	0.2	12	0.2	+ 33	N.A.	—	—	6	468	—	—
Jute, etc.	N.A.	—	5	0.1	—	N.A.	—	—	4.5	1,408	0.1	—
Rubber	—	—	—	—	—	9.9	8,969	0.7	10.1	9,150	0.5	+ 2
	5,190	100.0	5,779	100.0	—	—	1,329,794	100.0	—	1,663,623	100.0	—

Note: *=Insignificant, N.A.=Date not available, **=Price data not available.

Within the agricultural sector, however, there are no notable signs towards diversification. The data presented in Tables 5 and 6 and the Figure 2 reveal this. Rice was the dominant crop accounting for about 70 per cent of the total land and about 90 per cent of the total production in both the periods. The lack of change in this respect indicates that the production-mix remains unchanged over the period under consideration. In fact, in respect to minor crops like tobacco, sugar-cane, etc., production has gone down. Production of rice increased by 25 per cent and in some cases, e. g., wheat and ground-nut production has increased more than two times; but the place occupied by these products is so minor that its impact on total agricultural production is insignificant. And further, in spite of increase in the production of wheat, imports have increased almost two times.

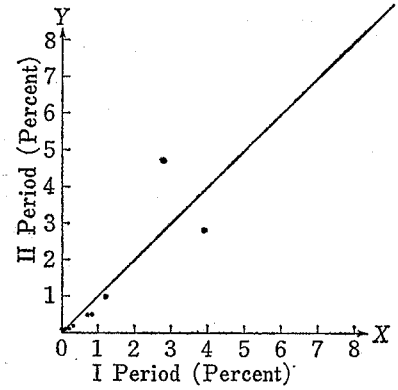
Rice is the main item of exports of Burma. During the War and the insurrection vast lands under rice remained uncultivated. After independence one of the important objectives was to restore the land to rice cultivation and reach the pre-war level of rice exports. During the period under review, rice exports increased by 31 per cent. More significant is the increase in the volume of exports of maize and pulses. Export of maize increased from 8.4

Table 6. BURMA: EXPORT AND IMPORT COMPOSITION

EXPORTS (1,000MT)			IMPORTS (1,000MT)		
Item	Average for 1948–1952	Average for 1959–1961	Item	Average for 1948–1952	Average for 1959–1961
Wheat Flour	0.3	—	Wheat	3.8	11.3
Maize	8.4	21.4	Wheat Flour	—	12.6
Rice	1,231.3	1,617.3	Wheat & Wheat Flour	12.3	39.7
Cotton Seed	1.0	—	Tea	0.2	—
Tea	0.2	0.1	Tobacco	0.1	0.2
Tobacco	0.2	—	Cotton (Lint)	0.5	0.9
Cotton (Lint)	7.7	11.6	Jute	—	12.6
Jute, etc.	—	0.2	Sugar-cane	7.9	26.6
Rubber	10.0	11.0	Pulses	0.5	—
Sugar	0.1	—	Oats	—	0.2
Potatoes	3.1	2.4	Coconut	3.3	4.5
Pulses	47.0	99.0	Dates	—	0.4
Milling By-products	N.A.	96.3	Onions	1.3	—
Oil-seed Cake	N.A.	142.3	Pepper (black)	110	—
Rapeseed	0.1	0.1	Pepper (red)	—	168
			Lard and Shortening	0.1	0.4
			Copra	—	4.2
			Linseed Oil	0.4	0.6
			Ground-nut Oil	9.5	12.7
			Coconut Oil	11.5	4.7

Note: N.A.=Data not available.

Figure 2. SHOWING DIVERSIFICATION IN BURMA



Notes:
Lost point (x=89.8 y=89.6) is not located in the Figure. St. line y=0.20+0.997x will be almost the same as the line of 'no-change,' i. e., $y=x$

thousand metric tons to 21.4 thousand metric tons; export of pulses increased from 47.0 thousand metric tons to 99 thousand metric tons. This indicates that, so far as exports are concerned, attempts are being made to reduce the dependence on rice.

The figure presented in a similar manner as in the case of Indonesia shows that points representing major crops have moved to the lower half and points representing minor crops have moved to the upper half; in other words, trend is not towards diversification. The regression line was almost the same as the line of no change. Obviously it indicates that no significant change has taken place in the production composition.

Thailand: Thailand is attaining diversification both for the economy as a whole as well as within the agricultural sector. The average annual rate of growth for the industrial sector has been 6.9 while in the primary sector it has been 4.6 (Table 1). The proportion of contribution of the primary sector to the gross national product declined from 51.6 per cent in 1951 to 37.9 per cent in 1961 (Table 7). This shows that for the economy as a whole, dependence on agriculture is being reduced.

Table 8 presents data relating to the area and production of different crops. Rice was the dominant crop in the first period, accounting for about 80 per cent of the total production. Its share in the second period was reduced to about 60 per cent even though there was an absolute increase in the production to the extent of 10 per cent. This shows that production of other crops increased substantially as compared to the increase in the production of rice. Marked increase was recorded in respect to cassava, sugar-cane, ground-nut, and many other minor crops. Production of cassava increased by almost four times and its percentage share increased from 3.8 per cent in the first period to 12.6 per cent in the second period. Production of sugar-cane increased by almost four times and has enabled Thailand to reduce her imports of sugar from 17.5 thousand metric tons to 3.3 thousand metric tons.

On the side of exports also, some significant changes are seen. Maize seems to have gained importance as an export item. Export of rice showed slight decline. There are many other minor items appearing on the export list such as banana, jute, etc. Export of pepper has increased by more than ten times; export of castor beans increased by about three times.

The figure drawn in the same manner as in the case of Indonesia illus-

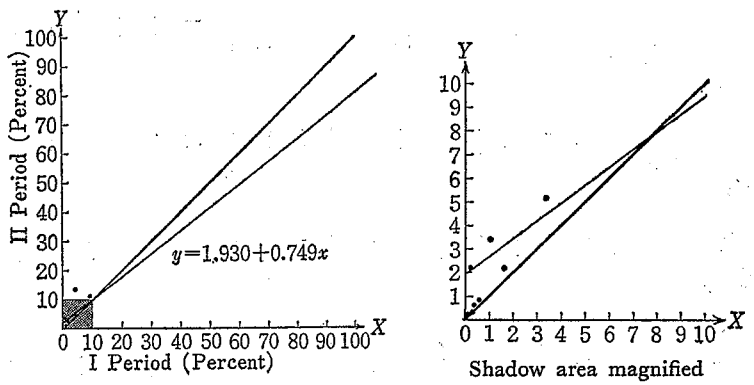
Table 7. THAILAND: DISTRIBUTION OF GROSS DOMESTIC PRODUCT IN 1951 AND 1961

	1951	Per cent	1961	Per cent	Percentage Increase
Agriculture, Forestry, Hunting, Fishing	14,586	51.6	21,716	37.9	49
Mining and Quarrying	532	1.9	854	1.5	61
Manufacturing	3,521	12.5	6,739	11.8	91
Construction	492	1.7	3,247	5.7	560
Others*	9,095	32.3	24,665	43.1	171
Total	28,226	100.0	57,221	100.0	

Note: * These include: (a) electricity, gas, and water; (b) transportation, storage, and communication; (c) banking, insurance, and real estates; (d) ownership of dwellings; (e) public administration and defence; and (f) services.

Sources: 1. United Nations, *Statistics of National Income & Expenditure 1954–57.*
2. United Nations, *Year-book of National Accounts Statistics 1962.*

Figure 3. SHOWING DIVERSIFICATION IN THAILAND



trates that the change is highly significant.[5]

Philippines: In the Philippines the industrial sector recorded maximum average rate of annual growth, viz., 8.8; as against this, the rate of growth of the primary sector was only 1.0 (Table 1). The disparity in the rate of growth of these two sectors indicates that the economy of the Philippines has been diversified at a faster rate as compared to any other country so far considered. Contribution of agriculture to the gross national product declined from 40.8 per cent in 1951 to 33.9 per cent in 1961 (Table 10). As compared

5 The line of regression is $y=1.930+0.749xr^2=0.970$
Standard error of b is 0.038. It is found that 0.749 is significantly different from 1.

Table 8. THAILAND: AREA AND PRODUCTION

Crop	AREA					PRODUCTION						
	Average for 1948–1952 (1,000ha)	Percentage of Total	Average for 1959–1961 (1,000ha)	Percentage of Total	Percentage Change	Average for 1948–1952			Average for 1959–1961			Percentage Change
						Quantity (1,000MT)	Value ($1,000)	Percentaeg of Total	Quantity (1,000MT)	Value ($1,000)	Percentage of Total	
Rice (Paddy)	5,211	94.5	5,532	86.2	+ 6	6,846	766,752	78.9	7,556.3	846,306	56.8	+ 10
Rubber	—	—	—	—	—	103.6	93,862	9.6	177.0	160,362	10.7	+ 70
Cassava	14	0.3	77.3	1.3	+445	269	36,853	3.8	1,343.7	184,087	12.6	+399
Tobacco	33	0.6	53.3	0.8	+ 61	27.2	31,008	3.3	62.6	71,364	4.7	+ 23
Ground-nuts	63	1.2	99	1.5	+ 57	60	14,400	1.6	128	30,720	2.1	+113
Sugar-cane	58	1.0	143.3	2.3	+147	990	9,801	1.0	4,784.7	47,368	3.2	+383
Cotton Lint	34	0.6	52.3	0.8	+ 54	7	6,160	0.6	13.3	11,704	0.8	+ 90
Cotton Seed	—	—	—	—	—	14	1,330	0.1	27	2,565	0.2	+ 93
Dry Beans	32	0.6	44.3	0.7	+ 38	24	3,936	0.4	48.7	7,987	0.5	+103
Copra	—	—	—	—	—	15	3,330	0.3	20.8	4,618	0.3	+ 39
Jute	3	*	5.7	0.1	+ 90	3	939	0.1	7.3	2,285	0.2	+143
Soybeans	17	0.3	22	0.3	+ 29	14	1,274	0.1	24.3	2,211	0.1	+ 73
Maize	34	0.6	266.7	4.2	+684	31	1,860	0.2	4,843	29,058	1.9	+ 56
Sesame Seed	16	0.3	18.7	0.3	+ 17	8.1	**—	—	15.9	**—	—	+ 96
Onions	—	—	16	0.2	—	—	—	—	31.3	1,189	0.1	—
Tomatoes	—	—	2	*	—	—	—	—	7	987	0.1	—
Banana	—	—	67.7	1.1	—	—	—	—	474.7	79,952	5.1	—
Pineapples	—	—	—	—	—	—	—	—	285	***	—	—
Sweet Potatoes & Yam	—	—	16	0.2	—	—	—	—	143	9,438	0.6	—
	5,515	100.0	6,416.3	100.0	+ 16	—	971,505	100.0	—	1,488,201	100.0	

Note: *=Insignificant, **=Price data not available, ***=Omitted to make comparison of the two periods valid.

Table 9. THAILAND: EXPORT AND IMPORT COMPOSITION

Item	EXPORT (1,000MT) Average for 1948–1952	Average for 1959–1961	Item	IMPORT (1,000MT) Average for 1948–1952	Average for 1959–1961
Maize	8.8	439.6	Wheat & Wheat Flour	15.8	34.7
Rice	1,293.5	1,286.8	Wheat	0.4	0.4
Sugar-cane	0.2	2.5	Wheat Flour	11.1	24.7
Onions	1.5	0.9	Barley	0.2	—
Banana	—	0.7	Potatoes	0.1	—
Soybeans	2.9	3.6	Sugar-cane	17.5	3.3
Soybean Oil	3.4	—	Coffee	1.9	5.0
Ground-nuts	16.7	12.1	Onions	0.4	2.2
Ground-nut Oil	2.3	0.8	Pepper (Red)	—	4.0
Sesame Seed	1.0	3.3	Palm Oil	—	0.1
Tobacco	—	1.3	Tobacco	1.7	5.4
Cotton Seed	—	6.7	Cotton (Lint)	0.5	5.2
Jute	—	80.2	Coconut	N.A.	1.7
Rubber	103.4	176.2	Pulses	0.7	0.1
Pepper	493	5,197	Tea	1.1	1.5
Barley	0.1	—	Lard and Shortening	—	0.1
Sorghum, Millet and Other Cereals	—	0.6	Linseed Oil	0.1	0.3
Citrus Fruit	1.5	0.6	Milling By-products	—	0.2
Coconut	—	0.1			
Coconut Oil	2.0	—			
Pulses	17.8	25.9			
Tea	—	0.1			
Castor Beans	7.5	29.3			
Lard and Shortening	—	0.1			
Oilseed Cakes	N.A.	10.4			
Milling By-products	N.A.	0.1			

Note: N.A.=Data not available.

Table 10. PHILIPPINES: DISTRIBUTION OF GROSS NATIONAL PRODUCT

	1951	Per cent	1961	Per cent	Percentage Increase
Agriculture, Forestry, Hunting, Fishing.	2,759	40.8	3,909	33.9	42
Mining and Quarrying	82	1.2	210	1.8	156
Manufacturing	938	13.8	2,015	17.5	115
Construction	237	3.5	372	3.2	57
Others*	2,755	40.7	5,012	43.6	82
Total	6,771	100.0	11,518	100.0	

Note: * These include: (a) electricity, gas, and water; (b) transportation, storage, and communication; (c) banking, insurance, and real estates; (d) ownership of dwellings; (e) public administration and defence; and (f) services.

Sources: 1. United Nations, *Statistics of National Income & Expenditure 1954–57.*
2. United Nations, *Year-book of National Accounts Statistics 1962.*

Table 11. PHILIPPINES: AREA AND PRODUCTION

Crop	AREA				Percentage Change	PRODUCTION						Percentage Change
						Average for 1948–1952			Average for 1959–1961			
	Average for 1948–1952 (1,000ha)	Percentage of Total	Average for 1959–1961 (1,000ha)	Percentage of Total		Quantity (1,000MT)	Value ($1,000)	Percentage of Total	Quantity (1,000MT)	Value ($1,000)	Percentage of Total	
Rice	2,350	55.8	3,228	51.0	+ 37	2,767	309,904	35.4	3,784.7	423,886	33.9	+ 37
Maize	969	23.0	1,968	31.1	+103	696	41,760	4.8	1,189.7	71,382	5.7	+ 71
Abaca	285	6.8	178	2.8	− 38	105	61,320	7.0	103.5	60,444	4.8	− 2
Sugar-cane	170	4.0	247	3.9	+ 45	7,700	76,230	8.7	**	110,533	8.8	+ 45
Banana	122	2.9	206	3.2	+ 69	462	73,920	8.4	393.7	62,992	5.0	− 15
Sweet Potatoes & Yam	113	2.7	151	2.4	+ 34	465	30,690	3.5	754	49,764	4.0	+ 62
Dry Beans	58	1.4	78	1.2	+ 35	36	5,904	0.7	42	6,888	0.5	+ 17
Cassava	49	1.2	91	1.4	+ 86	290	39,730	4.5	494.7	67,774	5.4	+ 70
Tobacco	37	0.9	101	1.6	+173	22.5	25,650	2.9	64.3	73,302	5.9	+186
Ground-nuts	27	0.6	24	0.4	− 9	19	4,560	0.5	15.5	3,720	0.3	− 19
Citrus Fruits	10	0.2	26	0.4	+160	—	—	—	6.3	750	*	—
Tomatoes	10	0.2	24	0.4	+140	29	4,089	0.5	50.3	7,092	0.5	+ 73
Onions	3	0.1	6	0.1	+ 90	7	266	*	16	608	*	+128
Cotton Seed / Cotton Lint	1	—	2	*	+100	—	—	—	1	95	*	—
Centala	7	0.1	3	*	− 57	3.0	—	—	2.1	—	—	− 30
Potatoes	—	—	2	*	—	1	33	*	9.3	307	*	—
Pineapples	—	—	—	—	—	55	—	—	119	—	—	+116
Copra	—	—	—	—	—	875	194,250	22.2	1,207.3	268,020	21.4	+ 38
Coffee	—	—	—	—	—	4.3	4,773	0.5	33.8	37,518	3.0	+686
Cocoa	—	—	—	—	—	0.9	637	*	3.3	2,336	0.2	+267
Rubber	—	—	—	—	—	1.4	1,268	0.1	2.9	2,627	0.2	+107
TOTAL	4,211	100.0	6,335	100.0	—	—	874,984	100.0	—	1,250,038	100.0	—

Note: *=Insignificant, **=Figures for the period 1959–1961 were not available. It is assumed that production of sugar-cane increased to the same extent as the increase in the land under it, i.e. by 45 per cent.

Table 12. PHILIPPINES: EXPORT AND IMPORT COMPOSITION

(A) EXPORT (1,000MT)

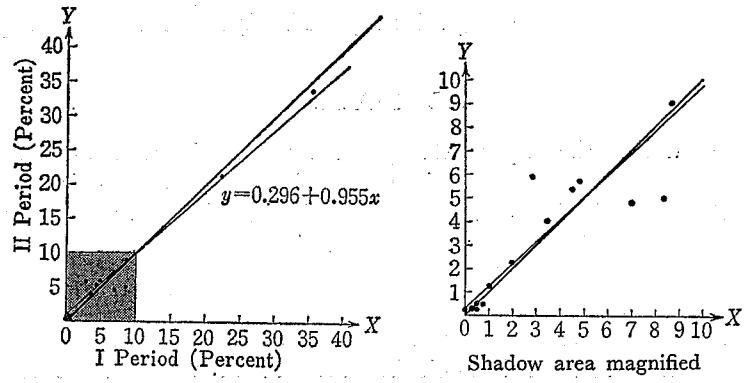
Item	Average for 1948–1952	Average for 1959–1961	Item	Average for 1948–1952	Average for 1959–1961
Maize	—	32.3	Abaca	93.4	93.9
Rice	6.7	0.6	Coconuts	55.7	48.3
Sugar	510.1	972.1	Milling By-products	N.A.	13.7
Copra	653.1	738	Sisal	1.9	—
Coffee	1.0	—	Coconut Oil	68.4	66.2
Tobacco	6.0	9.8			

(B) IMPORT (1,000MT)

Item	Average for 1948–1952	Average for 1959–1961	Item	Average for 1948–1951	Average for 1959–1961
Wheat & Wheat Flour	262.6	322.1	Pepper	77	98
Wheat	—	147.4	Milling By-products	0.1	0.1
Wheat Flour	189.1	129.1	Oilseed Cake	N.A.	15.0
Rice	92.4	5.2	Lard and Shortening	0.1	—
Barley	—	7.3	Tobacco	6.6	0.7
Maize	3.3	—	Ground-nuts	0.3	—
Oats	—	1.2	Copra	0.8	—
Oranges & Tangerines	9.5	1.0	Palm Kernel	—	0.5
Apples	10.1	2.5	Soybeans	3.1	1.4
Grapes	4.9	0.8	Sesame	0.1	—
Pears	0.4	0.2	Rubber	—	56
Raisins and Currants	0.7	0.5	Cotton (Lint)	0.9	28.5
Potatoes	9.6	0.1	Jute	—	9.5
Pulses	5.1	1.1	Linseed Oil	0.4	1.3
Hops	88	165	Soybean Oil	—	0.2
Onion	13.4	—	Cotton-seed Oil	—	0.3
Coffee	3.9	1.5	Palm Oil	—	4.7
Cocoa Beans	1.2	2.4	Palm Kernel Oil	N.A.	0.6
Tea	0.2	0.2			

Note: N.A.=Data not available.

Figure 4. SHOWING DIVERSIFICATION IN THE PHILIPPINES



to other countries in the region, the Philippines are thus less dependent on agriculture.

Important crops in the Philippines, from the point of view of their contribution to total agricultural production, are rice and copra; rice occupies more than 50 per cent of the total cropped area and accounts for about 35 per cent of total production. Copra accounts for about 22 per cent of total production. The main export product, however, is sugar, exported more or less entirely to the U. S. A. with which the Philippines is in special economic relations. Rice is not an export crop, nor its production adequate for domestic consumption. Large quantities of rice are required to be imported from outside. The problem before the Philippines is therefore to reduce excessive dependence on the export of sugar for earning exchange and to increase the production of rice and other agricultural products so that imports of these will be reduced and the exchange earned could be used for promoting industrialization of the country. Tables 11 and 12 indicate that this objective is not fulfilled to a great extent. Exports continue to rely heavily on sugar; in fact, export of sugar has increased considerably without being associated with a similar increase in the export of any other commodity. This has become possible because of the free trade facilities offered by the U. S. A. But as and when these facilities will cease to exist, there will be difficulties in the marketing of sugar.

In the field of production some changes are favourable. Production of rice increased by about 37 per cent and perhaps as a result of this import of rice declined from 92.4 thousand metric tons to 5.2 thousand metric tons, almost by the same amount as the increase in production. Production of copra also increased to a similar extent. Production of minor crops like maize, sweet-potato, and yam, cassava, tobacco increased much more substantially as compared to the production of major crops. But the total impact of this on the general composition of agricultural production was insignificant. In respect to the import of these minor crops, there is significant reduction.

Thus, in the case of the Philippines, there is little change in the export position, production of important items like rice has increased, and imports of food items have declined. But the over-all composition of agricultural production has not changed significantly. The figure illustrates this point.

CONCLUSION

To summarize, the paper attempts to examine the extent of diversification in agricultural production in some of the Southeast Asian countries. As regards Indonesia, it was found that while for the economy as a whole dependence on agriculture increased, within the agricultural sector some definite trends are visible indicating diversification. In Burma, while the economy as a whole reveals diversification as indicated by the faster rate of growth of the industrial sector, within the agricultural sector there is no diversification. Thailand is achieving diversification of the economy as a

whole as well as within the agricultural sector. In the Philippines over-all the composition of agricultural production has not changed significantly; however, the industrial sector is progressing at a faster rate.

APPENDIX

Item	Prices in U. S. Cents/kg.	Item	Prices in U. S. Cents/kg.
Wheat	7.3	Oats	5.4
Barley	5.4	Sorghum & Millet	4.1
Maize	6.0	Sugar-cane	0.99
Rice	21.8	Potatoes	3.3
Cane Sugar	12.0	Dry Beans	16.4
Sweet Potato & Yames	6.6	Cassava	13.7[a]
Dry Peas	7.8	Tomatoes	14.1
Onions	3.8	Pears	8.3
Apples	6.1	Citrus Fruits	11.9
Oranges	16.5	Raisins	28.8
Lemons	20.8	Banana	16.0
Prunes	27.0	Soybeans	9.1
Tree Nuts	60.2	Cotton Seed	9.5
Ground-nuts	24.0	Copra	22.2
Linseed	13.1	Soybean Oil	31.1
Olive Oil	76.7	Cotton Seed Oil	34.8
Ground-nut Oil	38.1	Palm Oil	38.8
Palm Kernels	18.3[b]	Cocoa	70.8
Coffee (dollars/kg.)	1.11	Jute and Allied Fibres	31.3 (1953)
Rice (Paddy)	11.2	Abaca	58.4
Tea (1952 dollars/kg.)	0.87	Sisal	34.4
Cotton (dollar/kg.)	0.88	Rubber	90.6
Rye	5.2	Tobacco (dollars/kg.)	1.14

Note: 1. a=U. K. Prices, b=Belgium Prices.
2. Prices otherwise not mentioned pertain to the year 1950.