THE HUMAN RESOURCE PERSPECTIVE

TOWARDS ACHIEVING VISION 2020

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THE QUALITATIVE AND QUANTITATIVE COMPONENTS OF INPUT AND OUTPUT OF LABOUR FORCE IN SARAWAK

Yap Yin and Chan Soon Huat

1. INTRODUCTION

In the process of industrial development of a country, the population variables have a close interlinkage with the socio-economic variables. Hence, they must be incorporated into the development plans of a country. However, before making any long-term plan on education, health or provision of basic needs, the vital demographic variables should be considered. For instance, a high rate of population increase will pose a challenging problem of finding productive employment for each new entrant to the labour force. There is a common tendency to over-emphasize the so-called 'hardware' of development such as capital, raw materials, land and machineries instead of the 'software' aspects of human resource development especially in developing countries because the process of human resource development is lengthy and its impact can only be realized after a longer period.

In the early 80's Malaysia was still classified as moderately outward-oriented in terms of trade orientation. However, in terms of manufacturing earnings and output, Malaysia ranked 78th within the grouping of the Upper-Middle Income Economy. To further accelerate the pace of industrialization, the Industrial Master Plan (IMP) was launched in 1983 and published in 1985. In the report, three critical human resource factors were mentioned as follows:

(a)   The need to have local research and development personnels to enhance value-added within the Malaysian industry.

(b)   Engineers and skilled technicians are needed to manage the more complex production processes of the future.

(c)   Labour productivity and product quality to facilitate competitiveness.

Projections of manpower-needs especially the technical manpower were made up to the year 1995. Currently the IMP has been revised as some of the projected values have since been exceeded. However, since then Hong Kong and Singapore have progressed into the group of High-Income Industrial Market Economies while Malaysia is still trailing behind.

To keep abreast of the status of the so-called four little 'dragons' of Asia, the structure of export-led industrialization policy can no longer be based on the labour intensive and low value-added type of industries but rather on the high skilled, knowledge intensive and high value-added type of industries. It is in this context that there is a need to look into the quality and quantity of the output of manpower at all levels.

Sarawak which is a state of Malaysia is physically separated from Peninsula Malaysia by the South China Sea. Thus, she has to some extent been trailing behind the rapid industrial development which has taken place in Peninsula Malaysia, particularly in the Klang Valley, Penang and Johore. As Sarawak is richly endowed with natural resources such as petroleum, natural gas, timber, Kaolinite clay and land for industrial and agricultural activities, it is

imperative that her human resources be developed in order that the natural resources could be exploited optimally.

Since education is one of the key components of industrialisation, investment in education should go hand-in-hand with investment in physical assets of which Malaysia and in particular Sarawak is not lacking. Generally, returns to investments in education is higher than in physical assets. Hence, it is necessary to survey the qualitative and quantitative aspects of the labour force in Sarawak and its implication with regard to the aim of the government to achieve Vision 2020. In order to provide an overall view of the labour force in Sarawak, data relating to Malaysia, other neighbouring countries and the world in general are considered.

2.   POPULATION GROWTH

Table 1 (compiled from World Development Report) shows that the annual growth rate of population in Malaysia of 2.6% over the years 1980-89 is fairly high compared with the rest of the world. At this rate, the projected population in 2020 according to OPP2 will be 22,660,500. For low income economies like India and Indonesia, the rate of growth for the corresponding period is 2.1% for both countries. For countries in the middle income economies (the same grouping as Malaysia) such as Thailand and the Philippines, the corresponding rates are 1.9% and 2.5% respectively. As in other developing countries, the natural increase in the rate has not been due to the level of fertility but a decline in mortality rate. In fact, the fertility rate of Malaysia has declined from 6.3 per woman in 1965 to 3.7 per woman in 1989 while the corresponding mortality rate has reduced from 55 to 22 per 1000 in the same period.

According to Table 2, the average annual population growth rate of Sarawak during the period 1980-90 is 2.4%, which is the same as Peninsula Malaysia. Table 3 shows that between 1970 and 1990, there is a gradual decline in crude birth rate from 31.2 to 27.0 per 1000 in Sarawak. The most significant factor in the decline is the sharp fall in fertility rate among the Chinese community. According to the Demographic Estimates for Sabah and Sarawak 1970-80, the total fertility rate for the Chinese declined from 5.7 to 3.7 per woman. This is why the annual growth rate of the Chinese in Sarawak during the 1986-90 period was dropping as shown in Table 4. Among the indigenous people and the Malays the fertility rates were 6.8 and 5.9 respectively in 1970 and thereafter declined to 5.3 and 4.9 respectively in 1980. In spite of the overall decline in fertility rates, Sarawak still maintains a fairly high annual rate of population growth. This is probably due to the significant decline in the infant mortality rate which dropped from 31.1 per 1000 in 1970 to 10.0 per 1000 in 1990 (refer to Table 3). The drop in the crude death rate from 5.2 per 1000 in 1970 to 3.8 per 1000 in 1990 also contributes to the overall population growth rate. These improvements are probably the results of education and other modernisation factors such as better health and sanitary amenities.

The drop in fertility among the Chinese has the following implications at the turn of the century. There will be a lower percentage distribution of Chinese in the labour force especially in the private sector where they are presently playing a dominant role. In fact, more than 90% of the entrepreneurs of the Small and Medium Industries (SMIs) in Sarawak are Chinese. To maintain the same pace of development, more Malays and other indigenous people need to join the private sector. According to a recent survey on the attitude and aspiration of the students in Sarawak, the majority of the Malays and Indigenous people prefer to work in the government sector. Unless this trend is reversed, the private sector will have shortage of labour force by the turn of the century.

TABLE 1
RATE OF POPULATION GROWTH

COUNTRIES	YEARS		
	1965-80	1980-89	1989-2000
LOW-INCOME ECONOMIES			
Indonesia	2.4%	2.1%	1.6%
India	2.3%	2.1%	1.7%
MIDDLE-INCOME ECONOMIES			
Malaysia	2.5%	2.6%	2.2%
Thailand	2.9%	1.9%	1.3%
Philippines	2.8%	2.5%	1.8%
UPPER-MIDDLE INCOME ECONOMIES			
(Average)	2.0%	1.9%	1.8%
HIGH-INCOME ECONOMIES			
Singapore	1.6%	1.2%	1.0%
United Kingdom	0.2%	0.2%	0.3%
United States	1.0%	1.0%	0.8%
Japan	1.2%	0.6%	0.4%

Source: World Development Report 1991

TABLE 2
POPULATION SIZE AND RATE OF GROWTH
(MALAYSIA 1980-90)

YEAR	MALAYSIA	PENINSULAR MALAYSIA	SABAH	SARAWAK
1980	13,764,400	11,442,100	1,013,000	1,309,300
1985	15,681,100	12,981,000	1,222,700	1,477,400
1990	17,755,800	14,616,700	1,470,400	1,668,700
1980-90	AVERAGE ANNUAL GROWTH RATE			
	2.5%	2.4%	3.7%	2.4%

Source: Current Population Estimates of Sabah and Sarawak 1990
Department of Statistics

TABLE 3
CRUDE BIRTH RATE, CRUDE DEATH RATE & INFANT MORTALITY RATE OF SARAWAK, 1970-90

RATE	1970	1975	1979	1986	1990
CRUDE BIRTH RATE (PER 1000)	31.2	30.0	29.2	27.8	27.0
CRUDE DEATH RATE (PER 1000)	5.2	5.0	4.0	3.6	3.8
INFANT MORTALITY (PER 1000)	31.1	30.2	19.5	10.2	10.0

Source: Vital Statistics Sarawak, 1977, 1986 & 1990.

TABLE 4
ANNUAL POPULATION GROWTH RATE OF SARAWAK
BY ETHNIC GROUPS, 1986-90

YEAR	MALAY	IBAN	OTHER BUMI	CHINESE	OTHERS	OVERALL
1986	3.2	2.3	2.7	2.2	0.9	2.5
1987	3.1	2.3	2.7	2.0	1.1	2.4
1988	3.1	2.4	2.8	2.2	1.0	2.6
1989	2.9	2.3	2.6	2.3	0.8	2.5
1990	2.7	2.2	2.5	1.9	0.5	2.3

Source: Vital Statistics Sarawak, 1990

3.   DEPENDENCY RATIO

The conventional definition of labour force, those aged between 15 and 64 years, is of limited utility for rural South East Asia. This is because generally, children below the age of 15 and those above the age of 64 are also involved in agricultural and manufacturing activities although technically, they are classified as dependents.

From Table 5, it can be seen that the population of Malaysia, like other middle-economies countries is characterised by more than a third of the population in the 0-14 years age group as compared with countries of the high income economies such as Singapore and Japan where the percentages of population in the 0-14 years age group are 23.7% and 19.0% respectively. This also implies that the percentage of population being classified into the labour force group (15-64 years) is lower than those from the high-income economies. According to the World Development Report 1991, the labour force of Malaysia is projected to increase from 58.2% in 1989 to 67.4% in 2025. In numerical terms, the OPP2 has estimated the size of the labour force to increase from 7,000,000

in 1990 to 9,400,000 in the year 2000, representing an increase of 2.9% per annum. As seen in Table 5, this figure falls within the range of 61.9% which is the average percentage of labour force in 1989 for the high-income economies countries.

Table 6 shows that the dependency ratio (the percentage of the population aged less than 15 and more than 64) in Malaysia will drop from 41.8% in 1989 to a projected figure of 32.6% in the year 2025. Such decline could probably be due to the decline in fertility rate from 6.3 in 1965 to 3.7 in 1989 and finally to a projected rate of 3.0 in 2000. For the developed world, the dependency ratio in 1989 is 33.2%.

According to the Current Population Estimate for Sabah and Sarawak 1990 (Department of Statistics), Sarawak has a relatively high dependency ratio of 67% in 1990. This is shown in Chart 1 below. This figure is very high when compared with Malaysia as a whole (41.8%) and the neighbouring ASEAN countries such as Thailand (30.1%), Singapore (29.2%) and Indonesia (40.7%). The high dependency ratio is a reflection of high population growth rate and increasing life expectancy as Sarawak has an annual growth rate of 2.4%, which is considered high when compared to other countries.

TABLE 5
PERCENTAGE OF POPULATION IN THE LABOUR FORCE

COUNTRIES	AGE GROUP / YEAR			
	0 - 14 YEARS		15 - 64 YEARS	
	1989	2025	1989	2025
LOW-INCOME ECONOMIES				
(Average)	43.3	32.8	53.6	62.6
Indonesia .	36.8	23.3	59.3	68.2
Vietnam	40.1	24.2	55.7	68.8
MIDDLE-INCOME ECONOMIES				
(Average)	37.9	26.3	57.5	65.8
Malaysia	37.8	23.6	58.2	67.4
Thailand	33.4	21.6	61.9	68.2
HIGH-INCOME ECONOMIES				
(Average)	32.1	26.4	61.9	61.9
Singapore	23.7	18.0	70.8	61.5
United Kingdom ·	19.0	17.5	65.5	61.2
Japan	19.0	15.7	69.3	58.8

Source: World Development Report 1991

CHART 1: DEPENDENCY RATIOS FOR SARAWAK
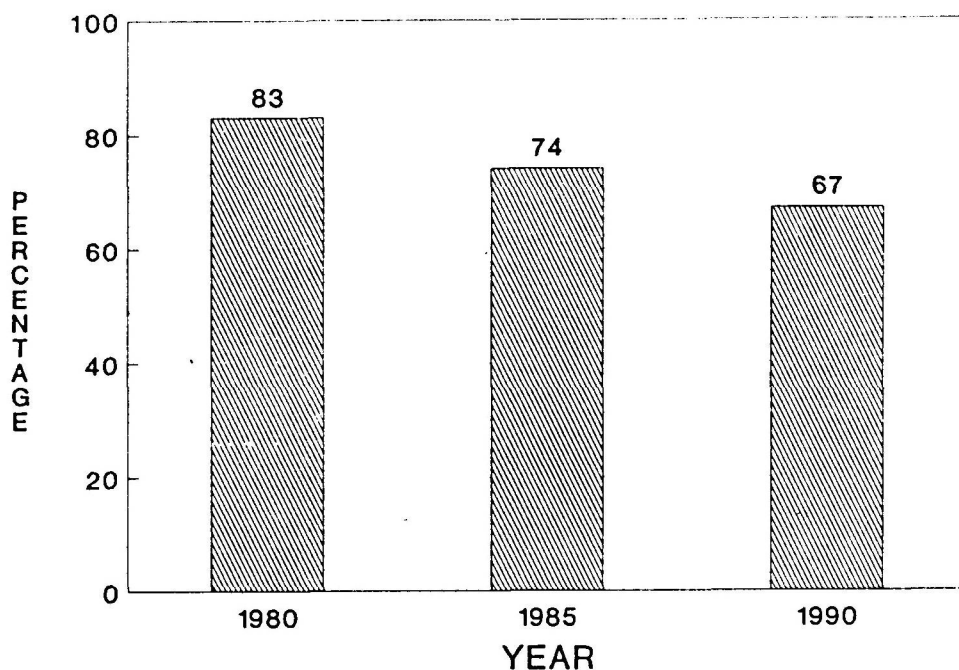
TABLE 6
DEPENDENCY RATIOS FOR VARIOUS COUNTRIES

COUNTRIES	YEAR	
	1989	2025
LOW-INCOME ECONOMIES		
Indonesia	40.7	31.8
Vietnam	44.3	31.2
MIDDLE-INCOME ECONOMIES		
Malaysia	41.8	32.6
Thailand	30.1	31.8
HIGH-INCOME ECONOMIES		
Singapore	29.2	38.5
United Kingdom	34.5	38.8
Japan	30.7	41.2

Source: World Development Report 1991

The positive side of having a high dependency ratio is that by the turn of the century, a high proportion (59.8%) of the workforce will be in their mid-thirties. Hence the youth and flexibility of the workforce will give the state an advantage over the industrialized competitors with older work force. This is because younger workers are more mobile, more willing to learn new skills and also more adaptable to new technologies.

4. LABOUR FORCE PARTICIPATION

Labour force participation rate is defined as the ratio of the labour force in a specified category to the number of working age persons in the same category. Table 7 shows that on the whole in 1990, the Bumiputera labour force participation rate in Sarawak was 79.8%, which was 8% higher than the Chinese. For the 15-19 age group, the Chinese ethnic group had a lower participation rate of 38.1% while the participation rate among the Bumiputeras in 1990 was 71.4%. This could be due to the fact that the remaining 61.9% of the Chinese in the 15-19 age group were busy pursuing their studies in schools or other training institutions. Conversely, the high participation rate for the Bumiputeras implies that only about 28% of the Bumiputeras in this age group were probably pursuing their studies in schools or other training institutions.

The labour force participation rate for women increased from 37.2% in 1970 to 46.7% in 1990. This is still low when compared to over 70% in China and Thailand in 1987 according to the studies of the International Labour Office.

For Malaysia as a whole, the 15-24 age group had the highest percentage of unemployment which made up 72.1% of the total unemployed persons in 1988. This is shown in Table 8. The corresponding figure for Sarawak was also 72.1% in 1988. The percentage of unemployed persons who fall under the 25-34 age group was 13.5% in 1980 which increased to 16.0% in 1988. For the 55-64 age group, it constituted 4.9% of the unemployed persons in 1980 and declined to 1.9% in 1988. Overall the distribution pattern of unemployed persons in Sarawak is quite similar to the distribution pattern of Malaysia.

5. LABOUR FORCE BY EDUCATIONAL LEVEL

On the whole, the educational level of the labour force in Sarawak is much lower than that of the nation. This comparison can be seen in Table 9. For instance, in 1988, the percentages of labour force in Sarawak having no formal education and having tertiary education were 23.9% and 3.4% respectively while the corresponding figures for Malaysia as a whole were 11.7% and 5.1% respectively. According to the World Development Report 1991, the percentage of labour force in 1988 having tertiary education in Japan and the United States of America are 30% and 60% respectively. In Sarawak, classification by ethnic groups would paint an even more dismal picture especially for the Bumiputeras.

From Table 10, it can be computed that in 1990, 61.7% of the labour force from the indigenous group had either received education at primary level or had not received any formal education at all. On the other hand, the corresponding figure for the Chinese was 37.4%.

As a whole in 1990, only 41.8% of the labour force received secondary education while only 3.8% of the labour force received tertiary education. Among the indigenous group, only 2.9% completed tertiary education. On the other hand, 21.6% of the labour force had no formal education while 32.8% attained only primary education.

TABLE 7
LABOUR FORCE PARTICIPATION RATES BY AGE GROUP
AND ETHNIC GROUP - SARAWAK (1988-1990)

AGE GROUP	LABOUR FORCE PARTICIPATION RATES - TOTAL								
	TOTAL			BUMIPUTERA			CHINESE		
	1988	1989	1990	1988	1989	1990	1988	1989	1990
15-64	78.2	77.8	77.4	80.7	80.6	79.8	72.2	71.7	71.8
15-19	65.5	63.8	62.1	73.0	72.5	71.4	46.2	42.1	38.1
20-24	83.4	83.1	82.3	81.9	81.9	80.0	86.0	85.6	87.5
25-29	80.4	80.2	80.8	79.6	78.7	79.8	81.0	82.4	82.3
30-34	80.9	79.0	81.9	82.4	80.5	83.2	77.9	76.8	79.2
35-39	83.5	83.2	83.5	85.4	85.5	85.8	79.8	78.3	78.5
40-44	85.3	85.3	82.9	87.2	87.7	85.2	80.2	81.0	77.3
45-49	85.6	85.1	86.1	87.9	87.8	88.2	80.9	79.2	82.3
50-54	81.2	83.9	81.7	86.9	88.0	86.2	67.4	73.8	71.1
55-59	75.3	74.5	70.8	82.1	82.1	73.0	58.3	51.6	67.0
60-64	62.2	67.9	64.9	68.7	73.1	72.7	45.3	55.7	43.3

Source: Annual Statistical Bulletin Sarawak, 1990

TABLE 8
PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS
BY AGE GROUP - MALAYSIA & SARAWAK

AGE GROUP	MALAYSIA (%)					SARAWAK (%)		
	1980	1985	1986	1987	1988	1988	1989	1990
TOTAL	100	100	100	100	100	100	100	100
15-24	72.0	71.6	69.2	70.4	72.1	72.1	68.4	69.1
25-34	13.5	14.9	17.0	15.9	16.0	16.2	17.1	16.6
35-54	9.5	10.5	11.1	11.0	10.0	9.7	10.5	11.1
55-64	4.9	2.9	2.7	2.7	1.9	2.0	4.0	3.2

Source: Yearbook Of Statistics, 1989 & Annual Statistical Bulletin Sarawak, 1990

TABLE 9
PERCENTAGE DISTRIBUTION OF LABOUR FORCE
BY EDUCATION LEVEL - SARAWAK (1982-90) & MALAYSIA (1988)

EDUCATION LEVEL	SARAWAK					MALAYSIA
	1982	1984	1986	1988	1990	1988
NO FORMAL EDUCATION	34.8	30.0	27.4	23.9	21.6	11.7
PRIMARY	35.1	33.9	32.6	33.3	32.8	37.4
LOWER SECONDARY	15.5	19.7	20.8	22.4	22.4	45.8
UPPER SECONDARY	10.7	12.2	14.1	15.7	17.7	
FORM SIX	1.0	1.3	1.8	1.4	1.7	
COLLEGE/UNIVERSITY	3.0	2.9	3.3	3.4	3.8	5.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Yearbook of Statistics, 1989 & Annual Statistical Bulletin Sarawak, 1990

TABLE 10
PERCENTAGE DISTRIBUTION OF LABOUR FORCE
BY EDUCATIONAL LEVEL AND ETHNIC GROUP - SARAWAK (1988-1990)

EDUCATION LEVEL	LABOUR FORCE - TOTAL								
	TOTAL			BUMIPUTERA			CHINESE		
	1988	1989	1990	1988	1989	1990	1988	1989	1990
TOTAL	100	100	100	100	100	100	100	100	100
NO FORMAL EDUCATION	23.9	23.8	21.6	32.0	31.8	29.2	4.1	4.1	3.1
PRIMARY	33.3	31.8	32.8	32.2	31.5	32.5	37.0	33.7	34.3
LOWER SECONDARY	22.4	22.9	22.4	19.9	20.6	20.0	28.3	29.2	28.6
UPPER SECONDARY	15.7	16.4	17.7	12.6	12.8	14.5	23.1	25.1	25.0
FORM SIX	1.4	1.4	1.7	0.8	0.9	0.9	2.6	2.6	3.6
COLLEGE/UNIVERSITY	3.4	3.7	3.8	2.4	2.5	2.9	4.9	5.3	5.4

Source: Annual Statistical Bulletin Sarawak, 1990

The implication of such a scenario is that there exists a very wide learning gap for the labour force having no formal or primary education. *The learning gap is the difference between what these workers are able to do and what they can already do.* According to the World Development Report 1991, "*increasing the average amount of education of the labour force by one year raises GDP by 9%. This holds for the first three years of education, that is, three years of education as compared with none raises GDP by 27%. The return to an additional year of schooling then diminishes to about 4% a year or a total of 12% for the next three years.*" It has also been shown that economic returns to primary education in developing countries have averaged 26% compared with estimated returns on physical capital of 13%. In other words, there could be a great increase in the GDP contribution of the agricultural sector if some form of literacy programme is implemented for the

workers in this sector having no formal education. This is because the successful implementation of such programmes will help the workers to absorb new information faster whilst being able to apply unfamiliar inputs and new processes more effectively. In 1988, this sector accounted for 51.7% of the labour force in Sarawak. Occupational hazards manifest in the fact that the majority of the labour force in this sector do not have functional literacy or scientific skill to use the potent pesticides and fungicides within the safety margin. Even in Peninsula Malaysia, there have been and still are incidents of farmers using potent cocktails of pesticides and fungicides from lack of education.

The general low level of education of the labour force in Sarawak also results in the proliferation of the SMIs in the industrial sector. According to the World Development Report 1991, in a study of entrepreneurs in Northern Thailand, 40% of them have University degrees. In Malaysia, entrepreneurs in larger enterprises are more educated than the entrepreneurs in smaller firms. Hence, the size of the SMIs can be said to be proportional to the educational level of the entrepreneurs. In the 1990 Study of the SMIs in Sarawak, the educational profile of the 613 entrepreneurs or owners of manufacturing establishments in Sarawak are not encouraging albeit better than that of the general labour force in Sarawak in terms of educational level. Most of these SMIs are of sole-proprietorship in legal status. As most of the entrepreneurs have only school level education or none at all (a total of 78.8%), the technological level of these establishments is very low. About 90% of these establishments were partially mechanised and only 5% used more sophisticated technology.

It has been found that among the employees from the SMIs in Sarawak, very few of them have received formal technical training. Among the entrepreneurs themselves, only 3.59% indicated that they possess a Diploma from technical institutions of sorts. Generally, they may know how to do their job like operating the machine, but they lack the theoretical knowledge. This will put them at a disadvantage as they would not have much diagnostic skill when technical judgement is required. Nevertheless, it has been recognised that technicians perform a wide variety of important jobs in industry, commerce and public service and numerically make up a very significant proportion of our skilled manpower. It is difficult to define what jobs or parts of jobs a technician does and it is therefore impossible to state with certainty the number of technicians in this country.

According to the Committee on Manpower Resources For Science and Technology (UK), *"Technicians and other technical supporting staff occupy a position between that of the qualified scientist, engineer or technologist on the one hand and the skilled foreman or craftsman or operative on the other hand. Their education and specialized skill enable them to exercise technical judgement."*

The issues of primary importance are :-

(a)   The ratio of technicians to technologists and other professional staff who depend on supporting technical staff

(b)   The end result is that the majority of the workers or the so-called technicians in the industrial sectors are not able to cope in an optimal manner with the complexities of the existing technology, if any, in their respective job sectors. With the advent of new technology in the future, they will be relegated to manual jobs if they are not given relevant training.

There is a distinct advantage in training these categories of workers to handle highly automated production process and to operate sophisticated diagnostic equipment. This is because most of them have over the years acquired the skill and craft either through informal apprenticeship or hands-on experience and are thus able to make reliable subjective judgement should any defects arise in the production processes.

In terms of quality, slightly less than half of the establishments under the SMIs Study practised quality control of any kind. Because of the low educational background of the workers, it is difficult, if not impossible, to inculcate the concept of quality assurance in terms of design specification, appearance/colour scheme, conformity to performance, conformity to safety and durability/serviceability. This is because traditionally, school dropouts enter the job market without any formal training and their employers prefer to train them on an ad hoc in-house basis rather than through formal training courses organised by government agencies or other training institutions because they are afraid of losing them to their competitors. The end result is that product defects are significant, be they minor, major or critical. Therefore, much needs to be done to upgrade the quality of products made in Sarawak to that of the SIRIM Standards. To reach the ISO 9000 series of standard seems to be a formidable task.

In addition to the above drawbacks, in the 1986 Study of Graduates in Sabah and Sarawak by Jasbir Sarjit Singh & Ozay Mehmet, out of the 1336 respondents from Sarawak, it was found that only 43.8% of the graduates who responded were Engineering and Science degree holders. This included the West Malaysians who accounted for 15.2% of the Engineering and Science graduates in Sarawak at the time of the study. Out of the 43.8%, a high percentage were Chinese while the Malays and the Indigenous group mostly majored in Arts courses. From this study, it was found that the Chinese accounted for 78.5% and 47.3% of the degree holders in Engineering and Science respectively while the Malays and the Indigenous group together accounted for only 17.9% and 27.5% of the degree holders in Engineering and Science respectively. All these imply that there is an insufficient supply of high level manpower especially those specialising in Science and Technology in Sarawak to meet the needs of Sarawak, not to mention the critical manpower needs as recommended by the Industrial Master Plan.

6.   DISTRIBUTION OF LABOUR FORCE BY MAJOR INDUSTRIES

Table 11 indicates that in terms of percentage distribution of labour force by major industries in Sarawak, the prominent sector is still the Agriculture, Forestry, Hunting and Fishing sector. However, there was a decline from 68% in 1970 to 47.1% in 1990. The corresponding figure for Malaysia as a whole indicates that the labour force distribution in this sector has declined from 31.3% in 1985 to 27.8% in 1990 and is projected to decline further to only 20.0% by the year 2000, as shown in Table 12.

In the manufacturing sector, the increase in labour force in Sarawak has been sluggish; from 3.9% in 1960 to 9.1% in 1990. It can be inferred from these figures that the rate of growth of industrialisation is less than 1% per year for that period. In fact only 9.1% of the distribution of labour force in Sarawak in 1990 was in the manufacturing sector compared to 19.5% of the distribution of labour force in Malaysia as a whole. This is because in Sarawak, manufacturing skills and employment in the manufacturing sector is considered new especially for the Bumiputeras who are mostly from agricultural-based employment. Table 11 shows that the number of workers employed in the agricultural sector has steadily declined over the last two to three decades while that of the manufacturing, commerce and service sectors have increased. In fact the decline of employment in the agricultural sector with respect to percentage distribution is 34.3% from 1960 to 1990. This shows a gradual shift of employment from the primary sector (agro-based) to the secondary and tertiary sectors where income or wages are higher. However, the Sarawak labour force in the agriculture, forestry, hunting and fishing sector is still quite dominant in 1990 with a percentage distribution of 47.1% compared to Malaysia as a whole (27.8%).

According to The Second Outline Perspective Plan 1991-2000 (OPP2), in 1990 the sector which contributed the most to the GDP of Sarawak is the Mining And Quarrying sector which is shown in Table 13. It accounted for 26.7% of the total sectorial GDP contribution. However, the bulk of

this contribution came from the LNG and Petroleum products which had in fact been declining from 39.35% in 1984 to 26.7% in 1990. It is projected to decline further to only 15.18% in the year 2000.

The agricultural sector ranked second in terms of sectorial GDP contribution in 1990 in Sarawak. However, there was a gradual decline from 37.09% in 1970 to 24.16% in 1990. This was mainly due to the weakening external demand and falling prices of some commodities. This is evident from the fact that the export values of sawn logs, cocoa beans and palm oil in 1990 were less than those recorded in 1989. The sectorial GDP contribution by the agricultural sector is projected to decline further to 17.46% in 2000.

On the more positive aspect, the manufacturing sector's GDP contribution grew from a mere 9.42% in 1970 to 12.17% in 1984 and further improved to 16.84% in 1990 for Sarawak. The apparent increase could probably be due to the contributions from the LNG and Petroleum refinery sub-sectors. This sector is more productive in terms of value added than the agriculture, forestry, hunting and fishing sector since it only employs 9.1% of the labour force as compared to more than 47% employed by the agriculture, forestry, hunting and fishing sector. However, according to OPP2, the percentage share of the manufacturing sector to the GDP of Malaysia increased from 12.21% in 1970 to 26.68% in 1990. This augers well for the nation's transition towards industrialization economies. Sarawak, however, is still lagging behind the mainstream of economic projections.

Table 13 shows that most of the tertiary or service sectors have declined in terms of their percentage GDP contribution in Sarawak since 1970. However, with the projected increase of the manufacturing GDP contribution to about 30% by the year 2000, the tertiary sectors' contribution is expected to increase by the spill-over effect as well.

TABLE 11
PERCENTAGE DISTRIBUTION OF LABOUR FORCE
BY MAJOR INDUSTRY - SARAWAK

INDUSTRIES	1960	1970	1980	1990
AGRICULTURE, FORESTRY, HUNTING & FISHING	81.4	68.0	60.6	47.1
MINING & QUARRYING	0.8	0.3	0.4	0.5
MANUFACTURING	3.9	5.0	6.1	9.1
ELECTRICITY, GAS, WATER & SANITARY SERVICES	0.2	0.4	0.3	0.8
CONSTRUCTION	1.6	1.5	3.4	6.0
COMMERCE	4.7	5.0	8.5	14.3
TRANSPORT, STORAGE & COMMUNICATION	1.9	1.8	2.2	2.8
SERVICES	5.5	11.0	17.5	19.4
INADEQUATELY DESCRIBED	-	7.0	1.0	-
TOTAL	100.0	100.0	100.0	100.0
BASE NUMBER	294,285	364,100	457,192	698,900

Source: Annual Statistical Bulletin Sarawak, 1990

TABLE 12
EMPLOYMENT ESTIMATES BY SECTOR - MALAYSIA (1990-2000)

SECTOR	1990		2000		AVERAGE ANNUAL GROWTH RATE (%) 1991-2000	NEW JOBS	
	('000)	(%)	('000)	(%)		('000)	(%)
AGRICULTURE, FORESTRY, LIVESTOCK & FISHING	1,837.6	27.8	1,799.9	20.0	-0.2	-37.7	-1.6
MINING & QUARRYING	39.1	0.6	42.3	0.5	0.8	3.2	0.1
MANUFACTURING	1,290.2	19.5	2,143.9	23.9	5.2	853.7	36.1
CONSTRUCTION	426.9	6.4	664.4	7.4	4.5	237.5	10.0
SERVICES	3,027.2	45.7	4,335.8	48.2	3.7	1308.6	55.3
a. Electricity, gas & water	45.9	0.7	50.2	0.6	0.9	4.3	0.2
b. Transport, storage & communication	285.4	4.3	410.5	4.6	3.7	125.1	5.3
c. Wholesale and retail trade, hotels & restaurants	1,239.4	18.7	2,049.8	22.8	5.2	810.4	34.3
d. Finance, insurance, real estates & business service	231.3	3.5	306.5	3.4	2.9	75.2	3.2
e. Government Services	850.2	12.8	894.2	10.0	0.5	44.0	1.9
f. Other services	375.0	5.7	624.6	7.0	5.2	249.6	10.6
TOTAL	6,621.0	100	8,986.3	100	3.1	2365.3	100
LABOUR FORCE	7,046.5	-	9,364.5	-	2.9	-	-
UNEMPLOYMENT	425.5	6.0	378.2	4.0	-	-	-

Source: The Second Outline Perspective Plan 1991-2000

TABLE 13
PERCENTAGE GDP CONTRIBUTION BY SECTOR, 1970, 1990 AND 2000

SECTOR	MALAYSIA (%)			SARAWAK (%)		
	1970	1990	2000	1970	1990	2000
AGRICULTURE, FORESTRY & FISHING	32.42	18.50	12.70	37.09	24.16	17.46
MINING & QUARRYING	5.72	9.59	5.44	3.49	26.70	15.18
MANUFACTURING	12.21	26.68	35.39	9.42	16.84	29.17
CONSTRUCTION	4.49	3.48	3.34	5.35	4.01	4.27
UTILITIES	2.29	1.89	2.39	1.28	1.86	2.77
TRANSPORT, STORAGE & COMMUNICATION	5.66	6.85	8.66	6.51	4.95	8.89
WHOLESALE, RETAIL, HOTEL & RESTAURANT	13.29	10.85	11.98	13.49	8.05	9.17
FINANCE, INSURANCE, REAL ESTATE, BUSINESS & DWELLING	7.81	9.54	10.06	7.67	4.63	5.31
GOVERNMENT SERVICES	7.42	10.55	7.98	5.12	7.97	6.61
OTHERS	8.16	2.07	2.07	10.47	0.82	1.18
TOTAL %	100.00	100.00	100.00	100.00	100.00	100.00
TOTAL GDP (M$'MILLION)	10,708	80,151	163,930	860.0	6,947.8	14,313.5

Source: Second Outline Perspective Plan 1991-2000

7. OUTPUT FROM SECONDARY SCHOOLS & TERTIARY INSTITUTIONS

There are four main institutional sources of manpower supply namely:

(a)   Local Universities and Institutions of Higher Learning
(b)   Polytechnics
(c)   Vocational training institutes and secondary schools
(d)   Overseas institutions

As Sarawak is part of Malaysia, whatever policies or strategies adopted by the national educational system, in particular the higher educational system will have an impact on the composition of the labour force in Sarawak quantitatively and qualitatively.

In any quantitative study of manpower or human resource, it is essential to classify the manpower and there are several ways of doing this. One method is to classify manpower into distinct occupational groups and subgroups. Such a method is very exhaustive and detailed. Another less exhaustive but nevertheless useful approach is to classify manpower into different categories using qualifications and managerial hierarchy as the criteria. Using this approach, manpower can be divided into categories as follows:

Category I personnel will include all persons who have obtained degrees from recognised universities and other equivalent professional qualifications. This category will include senior

administrators and managerial staff, graduate teachers, lawyers, engineers, architects, accountants and etc.

Category II personnel will include those who have successfully completed two or more years of college education or sub-professional training. This will include college-trained teachers, higher-grade technicians and junior executive or administrators.

Category III personnel will include those with the Malaysian Certificate of Vocational Education or equivalent including those who have completed at least two years of vocational training in various skills following the Lower Certificate of Education.

Category IV personnel will include those not enumerated in categories I, II and III above.

Apart from classifying manpower into four categories according to qualifications and management hierarchy, educational planners have also subdivided Category I, II and III manpower into Arts, Science and Technical using the following scheme of classification: The term 'Arts' includes all such subjects as humanities (history, law, languages, literature, etc.), economics, accountancy, fine arts, business administration and secretarial courses; the term 'Science' includes physics, chemistry, biology, agriculture, animal husbandry, medicine, dentistry, veterinary science, biochemistry and pharmacy while the term 'Technical' or 'Technology' includes all fields of engineering, metallurgy, architecture, town planning, land and quantity surveying and telecommunication. This scheme of classification is by no means exhaustive but it provides a basis for a quantitative evaluation of the higher educational system of Malaysia.

Having classified manpower into the above four categories and three groups within the first three categories, it is possible to gauge the output of the national higher educational system to see if they match the demand for the different types of personnel to meet the developmental needs of the country.

Table 14 shows the total output of trained manpower at the degree, diploma and certificate levels under the Fifth Malaysia Plan (FMP) and Sixth Malaysia Plan (SMP). If Degree holders are considered as Category I manpower, Diploma holders as Category II manpower and Certificate holders as Category III manpower, then the ratios for FMP (1985-90) and SMP (1990-95) are shown in Table 15. A reasonable decision from many countries suggests the ratio of Category I to Category II manpower to be 1:4. This rough ratio implies that ideally there should be four Category II workers to each Category I worker. However, in Malaysia the corresponding ratio is 1:0.69 under the FMP which suggests that the Malaysian educational system over-emphasised the production of Degree holders and at the same time underproduced Category II manpower. Table 15 indicates that Category III manpower is even lower compared to Category II manpower.

The Fifth Malaysia Plan called for the slowing down of rapid expansion of academic education at tertiary level while emphasising on technical and engineering training and increasing cost effectiveness and relevance of the training. One way to measure the cost effectiveness and relevance of the training programmes of the educational system at tertiary level is to look into the ratios of output in Arts, Science and Technology. Table 16 shows that under the Fifth Malaysia Plan (1985-1990), the ratio of Arts, Science and Technical courses at degree level is 3.68 : 2.32 : 1.00. This ratio suggests an over-production of Arts Degree holders. Such an imbalance might have contributed to the high rate of unemployment among university graduates during the economic recession in the mid 80's.

The average annual growth rate for the enrolment of Arts courses at Degree level is 11.2% while the corresponding figures for Science and Technical courses are 5.9% and 11.6% respectively during the Fifth Malaysia Plan (1985-1990). If this trend persists, there will be insufficient manpower trained in Science and Technology to provide the technological base and the Research and Development capability for the significant expansion of the Malaysian technological base as stressed by the Manpower Training section of the Industrial Master Plan. For instance, in the

field of Engineering, almost half of the supply of Engineers are Civil Engineers while there is a shortage in the supply of Mechanical, Production, Electrical and Electronic Engineers.

In order to obtain some idea of whether enrolment in the higher educational system is geared towards modern science and technology, it is necessary to have some form of quantitative measure. In the United Kingdom, the Robbin's Committee recommended an optimum ratio of 1.3 : 1 : 1 for enrolments in Arts, Science and Technology while the 'Asian Model' recommended the ratio of 4:6 for the proportion of Arts and Science (including Technical or Technology). Incidentally, the Higher Educational Planning Committee also recommended the ratio of 1.3 : 1 : 1 for the enrolments in Arts, Science and Technology respectively.

TABLE 14
OUTPUT OF DEGREE, DIPLOMA & CERTIFICATE COURSES
FROM LOCAL PUBLIC INSTITUTIONS, 1985-95

LEVEL	COURSE	FMP (1985-1990)		SMP (1990-1995)		% INCREASE
		NO.	%	NO.	%	
DEGREE	ARTS	27,780	52.57	50,250	60.70	81
	SCIENCE	17,510	33.14	21,110	25.50	21
	TECHNICAL	7,550	14.29	11,430	13.80	51
	TOTAL	52,840	100.0	82,790	100.0	-
DIPLOMA	ARTS	18,450	50.07	29,970	53.31	62
	SCIENCE	7,950	21.57	10,500	18.68	32
	TECHNICAL	10,450	28.36	15,750	28.01	51
	TOTAL	36,850	100.0	56,220	100.0	53
CERTIFICATE	ARTS	2,140	14.88	13,510	39.98	531
	SCIENCE	-	-	210	0.62	n.a.
	TECHNICAL	12,240	85.12	20,070	59.40	64
	TOTAL	14,380	100.0	33,790	100.0	135

Source: Sixth Malaysia Plan

TABLE 15
RATIO OF OUTPUTS FOR CATEGORY I, CATEGORY II AND
CATEGORY III PERSONNELS

YEAR	CATEGORY I	CATEGORY II	CATEGORY III
FMP (1985-1990)	1.00	0.69	0.27
SMP (1990-1995)	1.00	0.68	0.41

Source: Compiled from Sixth Malaysia Plan

For the Category I manpower, there seems to be an acute shortage of personnels in the Engineering , Administrative and Management groups. In the first half of 1991, the estimated vacancies of these two groups based on the newspaper advertisement as compiled by the Manpower Department was 4662 and 2078 respectively. For the Category II manpower and below , the production and clerical groups generated the largest demand of 16,276 and 4,472 respectively in the same period. The persistence of such a trend will inevitably culminate in an overwhelming general demand of manpower at all levels.

The output of labour force at certificate level is mainly occupational by nature. Numerically, it is the least under the FMP or SMP. Such courses play a very useful role in expanding job opportunities for school dropouts or those with insufficient qualifications to pursue diploma or degree courses at college or university level. However, the number of trade certification is meagre, neither comprehensive nor exhaustive enough and there is no provision for further follow-up advanced courses. In addition, some training institutions or agencies are using old and obsolete hardware for training with the result that the output is not marketable. Unless these institutions are capable of accommodating new and upcoming technological breakthroughs and innovations, they may not be able to draw the bulk of school-dropouts.

In Sarawak, SRP (34%) and SPM (39%) dropouts can benefit from such courses and they may be able to provide a solid manpower base for the introduction of new technology. It should be noted that the training institutions which produce graduates at degree or diploma level also conduct short-term certificate courses.

TABLE 16
PERCENTAGE DISTRIBUTION OF OUTPUT OF DEGREE, DIPLOMA & CERTIFICATE COURSES FROM LOCAL PUBLIC INSTITUTIONS, 1985-95

COURSE	PERIOD	%/RATIO	ARTS	SCIENCE	TECHNICAL	TOTAL
DEGREE	1985-90 (FMP)	%	52.57	33.14	14.29	100.0
		RATIO	3.68	2.32	1.00	
	1990-95 (SMP)	%	60.70	25.50	13.80	100.0
		RATIO	4.40	1.85	1.00	
DIPLOMA	1985-90 (FMP)	%	50.07	21.57	28.36	100.0
		RATIO	1.77	0.76	1.00	
	1990-95 (SMP)	%	53.31	18.68	28.01	100.0
		RATIO	1.90	0.67	1.00	
CERTIFICATE	1985-90 (FMP)	%	14.88	-	85.12	100.0
		RATIO	0.17	-	1.00	
	1990-95 (SMP)	%	39.98	0.62	59.40	100.0
		RATIO	0.67	0.01	1.00	

Source: Sixth Malaysia Plan

The rate of increase in outputs from secondary schools over the 1985-88 period was 1.89% for Malaysia as a whole (as computed from Table 17). According to the OPP2, the estimated total labour force will increase from about 7 million in 1990 to 9.4 million in the year 2000, representing an increase of 2.9% per annum. This far exceeds the rate of increase of output of 1.89% per annum from the secondary schools.

Table 18 is compiled from the Projection of Enrolments in Secondary Schools in Sarawak (1985-1996) which is the findings of the School Mapping Study in Sarawak (1986-1989) by the Educational Planning & Research Division, Ministry of Education Malaysia. The estimate of output from Form 3 leavers in any given year was obtained by subtracting the Form 5 enrolments of two years later from the total Form 3 enrolments of the given year. (The output at Form 4 is negligible as there is no qualifying examinations for entry into Form 5.) For example, the 1985 Form 3 outputs of 11,891 is obtained by subtracting the total Form 5 enrolments in 1987 from the total Form 3 Enrolments in 1985. Similarly, estimate of Form 5 leavers is obtained by subtracting Form 6 (Upper) enrolments two years later. The Form 6 (Upper) output is assumed to resemble the enrolments of the same year as after Upper Six, this group of people are available either for direct recruitment into the labour force or for training like pursuing tertiary education.

Table 18 shows that the output from Primary Six is still quite significant. For instance, the actual output for 1985 was 5,020 and it declined gradually to a projected figure of 3,376 in 1994. This group has only acquired rudimentary literacy. The actual output for Form 3 in 1985 was 11,891 and it is projected to decline to 9,852 by 1994. The majority of the output are from Form 5 which was 9,079 in 1985 and is projected to increase to 14,448 in 1994. For the Upper Six Arts, the actual number in 1985 was 761 and the projected output in 1994 is only 1,244 whereas for the Upper Six Science, the actual number in 1985 was 488 and the projected output in 1994 is only 1,000.

Over the years from 1985-1994(projection), the percentages of the new entrants into labour force having only Primary Six, Form One or Form Three education are decreasing while those with Form Five and Form Six qualifications are increasing in numbers. This signifies that the educational level of the labour force in Sarawak is constantly improving.

There is no exact data on Malaysian students pursuing education overseas. However, in 1985 it was estimated that there were 83,400 students enroled in overseas educational institutions including about 8,050 at the primary and secondary school levels as shown in Table 19. It is not known how many of these students will join the labour force upon completion of their studies. Although the figure is not staggering, it becomes quite significant as in the case of engineering. It has been estimated that in 1990, the number of engineers trained overseas at degree and diploma level exceeded that trained locally (IMP Table B-111-19, pp. B-23).

TABLE 17
ESTIMATED OUTPUTS FROM SECONDARY SCHOOLS - MALAYSIA (1985-90)

YEAR	FORM 3	PERCENTAGE (%)	FORM 5	PERCENTAGE (%)	FORM 6 UPPER	PERCENTAGE (%)	TOTAL
1985	81,995	38.88	110,412	52.36	18,460	8.76	210,867
1986	85,771	39.36	111,756	51.33	20,270	9.31	217,737
1987	86,505	38.98	113,728	51.24	21,710	9.78	221,943
1988	85,867	37.78	119,363	52.52	22,050	9.70	227,280

Source: Industrial Master Plan

TABLE 18
ESTIMATED OUTPUT FROM SCHOOLS--SARAWAK (1985-94)

YEAR	STANDARD SIX	%	FORM 1	%	FORM 3	%	FORM 5	%	UPPER 6 ARTS	%	UPPER 6 SCIENCE	%	TOTAL
1985	5,020	16.6	2,945	9.8	11,891	39.4	9,079	30.1	761	2.5	488	1.6	30,184
1986	4,592	16.3	3,189	11.3	9,836	34.9	9,524	33.8	675	2.4	400	1.4	28,216
1987	5,703	17.4	2,757	8.4	10,361	31.7	12,689	38.8	724	2.2	481	1.5	32,715
1988	4,153	13.1	2,504	7.9	10,639	33.6	13,129	41.4	764	2.4	496	1.6	31,685
1989	4,005	12.7	2,168	6.9	10,588	33.5	13,097	41.5	1,027	3.3	695	2.2	31,580
1990	3,316	10.4	2,279	7.1	10,741	33.6	13,808	43.2	1,072	3.4	752	2.4	31,968
1991	4,600	14.1	1,437	4.4	10,560	32.5	14,068	43.2	1,080	3.3	785	2.4	32,530
1992	3,792	12.0	1,161	3.7	10,062	31.8	14,637	46.2	1,150	3.6	865	2.7	31,667
1993	3,539	11.4	953	3.1	9,731	31.3	14,768	47.5	1,182	3.8	920	3.0	31,093
1994	3,376	11.1	629	2.1	9,852	32.3	14,448	47.3	1,242	4.1	1,000	3.3	30,547

Source: School Mapping Study in Sarawak (1983-1996)

8. PROFILES OF LABOUR FORCE IN SARAWAK SMIs

The OPP2 considers that the growth of the SMIs will play a crucial role in the industrial expansion and the creation of inter-industry linkages and support. They are expected to contribute significantly in terms of value-added and labour absorption in the manufacturing sector to the level of 40% and 50% respectively within the next decade from the current position of 20% and 30% respectively. Similarly, the entrepreneurs play an important role in the economic growth of a country. In market economies like Malaysia, the main link between innovations and production are the entrepreneurs because they are the ones who perceive economic opportunities, take risks and change their methods of production and distribution. Education enhances their entrepreneurial abilities. In Sarawak, the SMIs account for about 95% of the manufacturing establishments. Therefore it is pertinent, at this juncture to look into the labour productivity of the SMIs in Sarawak as they form the nucleus of the technological base for the eventual industrialisation of Sarawak.

TABLE 19
MALAYSIAN STUDENTS ENROLED IN OVERSEAS INSTITUTIONS BY COURSES

COURSE LEVEL	NUMBER
DEGREE	43,200
DIPLOMA	26,000
CERTIFICATE	6,150
PRIMARY/SECONDARY SCHOOLS	8,050
TOTAL	83,400

Source: Sixth Malaysian Plan

On the whole, the manufacturing establishments in Sarawak are very labour-intensive, in particular the SMIs. Table 20 shows that the SMIs account for 72.8% of the total employment, 80.69% of the value-added and 85.38% of the gross sales. The Large Industries (LIs) or those establishments with 200 and more workers, on the other hand account for only 3.31% of the total number of establishments but account for 27.2% of the workers in the manufacturing sector. They account for only 14.72% of the total gross sales and 19.31% of the value-added. It should be noted that in the study, the LIs such as the petroleum refineries and LNG plant were omitted so that data for the other LIs are not distorted. This implies that the LIs in Sarawak, apart from the petrochemical plants, do not play a significant role in terms of employment generation and contribution to the overall value-added of the manufacturing sector.

Table 21 shows that for the LIs, the K/L ratio (capital labour ratio, normally used as a general indicator for the technological level of the establishments) for the manufacturing establishments in Sarawak according to the 1990 SMIs study was $16,135; a relatively low figure in comparison with the national figure of $61,745 for the LIs. In terms of labour productivity, the V/L (value-added per worker) ratio for the LIs in Sarawak was found to be $18,641 per worker per year while the national figure for the manufacturing establishments (of size 200-499) is $33,189. The low labour productivity in Sarawak is attributed to the low educational level of the work force which provides the input for the low skilled, low value-added labour intensive type of industries as

In terms of labour productivity, the mean value-added for all the establishments is $26,489 compared to that of $24,665 for Peninsula Malaysia according to the 1989 Yearbook of Statistics. However, the LIs have a significantly lower mean value-added per worker of $18,641. The lower labour productivity of these establishments could be due to the low level of technology employed in their production process. In fact according to the 1990 Study of the SMIs in Sarawak, only 19% of the LIs are either fully mechanised or using more sophisticated technology. Perhaps this also accounts for the fact that the average K/L ratio for the LIs is $16,134; a relatively low figure in comparison with the national figure of $68,392 for the LIs. Another possible reason which could account for the low value-added of the LIs is that most of them have to import their intermediate or capital goods and equipments from outside Sarawak as the local SMIs which can supply the intermediate or capital goods are either non-existent or not able to satisfy the demand in terms of quantity and quality. The huge transportation and freight charges will certainly inflate the cost of production.

In terms of efficiency with respect to capital productivity, the LIs have a value of 1.15 which is only slightly less than that of the medium-sized establishments which have a value of 1.19. With a capital efficiency of 0.68, the tiny industries (those having one to nine workers) seem to be the least efficient. This is followed by the small industries which have a capital efficiency value of 1.04. This confirms the general belief that the tiny industries and small industries are not efficient because they cannot take advantage of the economies of scale in their production processes.

In terms of wage cost, Malaysia's is higher than many neighbouring countries such as Indonesia, Thailand and the Philippines and this negates its comparative edge in labour cost. For instance, according to the Comparative Study of the Wage Level of Textile Industries in Asia (1978-85), the garment manufacturing sub-sector of Malaysia labour cost constitutes 27% of the total production cost which is more than double that of Thailand (13%) and Indonesia (10%).[1] In this respect, Sarawak seems to have the comparative advantage. According to the 1990 Study of the SMIs in Sarawak, the labour cost ranges from 12% in the Food and Beverage Industry to 29% in the Non-Metallic Mineral Products Industries. However, as the state hastens its pace of industrialization, the percentage labour cost in the production process will increase eventually due to capital deepening. Hence, to maintain its competitiveness, Sarawak should move from the low skilled, labour intensive industries to higher skill and higher value-added type of industries.

TABLE 20
PERCENTAGE DISTRIBUTION OF VALUE-ADDED, FIXED ASSET, GROSS SALES,
LABOUR AND ESTABLISHMENTS BY EMPLOYMENT SIZE OF SMIs IN SARAWAK

EMPLOYMENT SIZE	VALUE ADDED (%)	FIXED ASSET (%)	GROSS SALES (%)	ESTABLISHMENT (%)	LABOUR (%)
1 - 9	6.10	9.83	8.32	35.16	5.48
10 - 49	31.33	32.54	35.25	46.45	28.76
50 - 199	43.26	39.45	41.71	14.03	38.56
200 & ABOVE	19.31	18.17	14.72	3.31	27.20

Source: Report on The Study of SMIs in Sarawak, 1990

[1]Fong Chan Onn. Technological Leap: Malaysian Industry in Transition, Oxford University Press, (1986) p. 106.

TABLE 21
RATIOS OF VA/L, K/L AND V/K BY ESTABLISHMENTS
AND EMPLOYMENT SIZE OF SMIs IN SARAWAK

EMPLOYMENT SIZE	ESTABLISHMENTS (%)	VA/L (M$'000)	K/L (M$'000)	V/K (M$'000)
1 - 9	35.16	29.255	43.374	0.68
10 - 49	46.45	28.605	27.470	1.04
50 - 199	14.03	29.455	24.714	1.19
200 & ABOVE	3.39	18.641	16.134	1.15

Source: Report on the Study of SMIs in Sarawak, 1990

9. CONCLUDING REMARKS

The present crop of labour force in Sarawak is characterised by:

(a) high dependency ratio, the result of high rate of population growth

(b) low educational level among the labour force as more than half of the labour force have either no formal education or primary education only in 1990

(c) high percentage of school output from Form Three and Form Five entering the labour market without any formal training

(d) low percentage of the labour force who have completed tertiary education.

As a result, nearly half of the labour force are involved in the Agricultural sector which accounted for only 24.16% of the GDP contribution in 1990. This implies a comparatively low labour productivity. In addition, the growth of the SMIs in the manufacturing sector is stifled by the general low educational background of the entrepreneurs.

It is the primary objective of the government to enhance the educational level of the labour force so that they are equipped to contribute optimally in the industrialisation of Malaysia as well as Sarawak.

Agricultural productivity needs to be increased to facilitate industrialisation which in turn encourages the growth of the service sector. All these call for properly planned and well coordinated human resource development so that the right kind of skill, skill mix, expertise and experience are available in the labour market. To achieve the industrial development target of Vision 2020, other non human resource development (HRD) factors such as the natural resources of the country, the fiscal, monetary and foreign exchange policies that the government pursues and above all the optimal choice of the pace and character of the industrial development in the state must be taken into consideration as well to ensure that the process might not leave the State with only the symbol rather than the substance of industrialization .

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QUESTIONS AND ANSWERS

Comment: I would like to make an observation. I note that in your paper you define large, medium and small industries using the criterion of number of workers whereas dominant specifically in the Ministry of Trade and Industry, the criterion used is that of capital. I wonder if you were to use the criterion of capital in SMIs, whether it would gather the scenario altogether. Thank you.

Reply: The word 'small' is used because for international comparison, especially the World Bank, it tends to stress on employee size rather than paid-up capital. If we used paid-up capital for international comparison, there is the problem of currency conversion. But on the whole if we try to compare both the criterion as far as I know in Sarawak there is not much difference.