

THE UNIVERSITY OF HULL

SCHOOL LEAVERS AND RURAL DEVELOPMENT: CASE STUDIES

FROM SARAWAK AND PAPUA NEW GUINEA

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by

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PREFACE

This thesis has its origins during a period from 1964 to 1969 when I was the headmaster of a rural secondary school in Sarawak, East Malaysia. Initially my students experienced little difficulty in finding work when they left school, but by the end of my time there the situation had changed drastically. Many school leavers were unable to find work in the modern wage-paying sectors of the economy and had little alternative but to return to their home villages and long-houses. Follow-up studies showed these school leavers as being either unemployed or engaged in farming, but there was generally little reliable information about their activities. It seemed to me of vital importance to find out more about the extent of their participation in village agriculture and to discover whether they were able to use their education to make changes and improvements. If we were now educating the majority of our students for life in the village it was important to determine if this education was having a positive or negative effect. If the latter was the case, the next stage was to consider the possible changes that might be made, either in the school system itself or in rural development policies.

My initial studies in Sarawak were followed, in 1972, by a period of research at the Centre for South East Asian Studies at the University of Hull. During this time I also returned to Sarawak and carried out further field studies among school leavers in the Bau and Baram districts. Since then I have been concerned with education and training for rural development in Papua New Guinea. This newly independent country is facing similar problems to Sarawak, although at the time of my research it was mainly the primary school leavers who were experiencing difficulty in finding employment.

Sarawak and Papua New Guinea have formed the two case studies on which my thesis is based, but inevitably the study of the relationship between education and rural development has extended over a wide area. It has involved the examination of different methods used to determine the economic returns to education, also the factors which lead to change and agricultural innovations.

I have also investigated possible solutions to the school leaver problem. In many cases these involve a closer integration of the education system with development programmes; in my conclusion I have suggested some methods by which this might be achieved.

ACKNOWLEDGEMENTS

I wish to record my gratitude to the late Professor M.A. Jaspan for his enthusiastic support and encouragement in the initial stages of my work. Since his tragic death, Lewis Hill of the Centre for South East Asian Studies took over as my supervisor and I am especially grateful for his sympathetic help and advice.

Many government departments in both Sarawak and Papua New Guinea have given help and information. In Sarawak the staff of the following were particularly helpful: the Department of Education, the Department of Agriculture, the Sarawak Museum, the Bau and Baram District Offices. In Papua New Guinea the Department of Education, the National Planning Office and the Administrative College have all provided assistance. In the schools, headmasters, teachers and students have invariably been co-operative. The school leavers themselves were always helpful and ready to discuss their problems and answer my questions.

I also wish to acknowledge the assistance of the Ministry of Overseas Development who in 1972 provided me with a grant for six months to undertake research and fieldwork in Sarawak.

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The Development Centre

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PART I

THE PROBLEM

CHAPTER 1

INTRODUCTION

This study is concerned with the results of education in the less developed countries. In particular it examines the position and problems of school leavers in rural areas. In most cases these young people have had to return to village life when their education has finished and they have found themselves unable to obtain employment in the modern wage-paying sector of the economy. Sometimes these school leavers may have dropped out of school after only a few years education. Many have finished their primary or junior secondary courses but have not been selected for the next stage in the education system. Often they have obtained qualifications which in the past would have enabled them to get work in white collar occupations; now the great expansion of education has meant that only a small proportion of the output of the schools can be absorbed in the modern sector and employed in this way. The remainder form what has been referred to as a "huge under-used reservoir of human resources".¹ They are faced with the alternatives of joining the ranks of the urban unemployed or returning to agriculture which is still the main occupation of the majority of the people in these countries.

In examining the role of the school leavers in the villages, the first problem is to determine to what extent they are occupied in agriculture. Official statistics may categorise them arbitrarily as being either unemployed or engaged in farming. Economists may refer to them as being underemployed. More subjective accounts may describe them as "layabouts" whose education has left them with a dislike of manual labour and generally made them unfit for life in agriculture. The term "reluctant farmers" has been used to describe

1. G. Skorov, *Manpower Aspects of Educational Planning*, (Paris: Unesco, 1968), p.27.

their attitudes and status in the community. On the other hand there are the optimists who claim that the school leavers should prove to be agents of change and modernisation. They will become a new class of educated farmers able to apply their knowledge to their work and achieve greater agricultural productivity. This brings us to the second question which is concerned with the value and relevance of their education in the village environment. Is formal education making a positive contribution to rural development in many countries? Do its returns represent a worthwhile investment to the individual and the community?

If the answers to these questions are negative or partly negative, the next question must be whether this is the fault of the school system. Can schools and curricula be changed and restructured to make them more relevant to the needs of rural students? Studies of attempts to make education more vocational reveal, however, that students will still have difficulty in putting this education into practice if a favourable economic and social environment does not exist outside the schools. There is also often a need for the implementation of rural development policies in which the school can play an integral part.

These problems which I am examining in my thesis can perhaps best be summarised as follows:

1. What do school leavers do when they return to their villages?
2. Does their education help them or the community when they return to village? If so, in what way? If not, why not?
3. What is the most relevant type of education for these school leavers?
4. What types of rural development provide the best environment and institutional framework for school leavers to make use of this education?

5. How can the schools best be integrated into this development?

My own personal involvement in the problem began during a period from 1964 to 1969 when I was headmaster of a rural secondary school in Sarawak, East Malaysia. My students were Chinese, Land Dayaks (Bidayuh) and Malays. They came from an area where the main economic activities were the subsistence cultivation of rice and the growing of rubber and pepper as cash crops. The students usually left school after taking a public examination in Form Three (the ninth year of their formal education) or two years later after the Cambridge Overseas School Certificate in Form Five. During my early years as headmaster, the students experienced little difficulty in finding employment when they left school at either of these levels. This was the period immediately after Sarawak became self governing as part of Malaysia; an expansion of government services had meant an increasing number of opportunities for employment in the different government departments and in primary school teaching. There were also good opportunities for going on to Form Six and to various forms of tertiary education and training. It was a time when the demand for educated manpower was still much greater than the supply and when one could confidently state, as I remember doing at one school speech day, that "education was the key to development". Gradually, however, the position changed as most of the employment vacancies were filled and more and more students were coming from the schools. By the end of 1966 Form Three leavers were experiencing difficulty in obtaining employment in the modern or white collar sector of the economy. A year later, the Form Five leavers were facing similar problems. There was also much more competition for places in Form Six, teachers' colleges and other training institutions. The pendulum had swung and the supply of educated manpower with secondary qualifications was now much greater than the demand for it. The situation was particularly bad in Sarawak where the private sector was still largely undeveloped and restricted to Chinese family businesses.

At this stage there was no comprehensive system of employment exchanges or vocational guidance. Students and their parents would often turn to me as headmaster to help them find jobs. Occasionally I was able to help, but in most cases all I could do was to advise students to return to their villages and attempt to put their education to use in farming. At the same time I was attempting to bring a more agricultural bias into school activities. Husbandry and Agricultural Science were brought into the school curriculum and we expanded the area of school gardens and fish ponds. We also became increasingly involved in rural development projects in the villages.

Those of us in contact with the students were very aware of the difficulties they were experiencing in trying to find work, but there was for a long time little official recognition of the problem and nothing in the way of overall information or statistics concerning the facts of school leaver employment. It was in an attempt to remedy this situation that I carried out my first survey which was into all the students who had left my own school during the period from 1964 to 1968. I was fortunate that the catchment area of the school was relatively small by Sarawak standards; the administrative district it served was 831 square kilometres in area. I was able to walk around it and visit the different villages; I also gained information by questioning the students still at school. Eventually I was able to get a complete record of all the students for each year with information on their whereabouts and their employment. The results of this survey are shown in Tables 7 and 8. The figures for successive years provide a good example of the way the employment situation had deteriorated.

I then became involved in a Department of Education investigation of school leavers throughout Sarawak. The results of a questionnaire sent to all schools in the state are shown in Table 9 in the second part of this thesis. They showed that the majority of the students who had left school

in 1968 were classified as either unemployed or helping in family farming. In the case of rural students, the distinction between these two groups often seems to have been an arbitrary one dependent on the attitude of the individual headmaster answering the questionnaire. In either case it did indicate that the majority of school leavers had failed to find employment and had returned to their homes in the villages and longhouses.

The problem that remained was to determine to what extent these school leavers who had returned to their villages were fully engaged in agriculture. I was also interested in finding out if the school leavers had been able to use their education in village life and apply it to the farming that they were practising. These seemed to be the crucial questions in attempting to evaluate the role of education in the changing relationship between the school system and the community. It was with the object of finding the answers to these questions that I returned to Sarawak in 1972 and carried out surveys of secondary school leavers in two districts of the state.

In order to find out more about students' aspirations and attitudes I also undertook additional research into job preferences and attitudes to land schemes among students still at school. Additional investigations were concerned with the role of community development projects and of non-formal education schemes in helping the school leavers.

From 1975 to 1977 I was able to conduct similar research in Papua New Guinea and again made surveys of school leavers in village communities. One contrast to Sarawak was that these mainly involved primary school leavers: although at the time of writing, 1978, secondary school leavers are also beginning to experience difficulty in finding regular paid employment.

Contact with the school leavers gives one great sympathy with them and their problems. This feeling was well expressed by Guy Hunter when, in an African context, he wrote: "Through the dessicated official language of papers such as this must still shine the vision of human reality - the liveliness, the thirst for education, the vigour and potential of young Africans, today blunted and wasted by a society which has not yet found a way to develop them".¹

Any investigation of the relationship between education and economic development necessarily encompasses a very wide field. Experience of rural improvement programmes makes one increasingly aware that development is the result of the interaction of a large number of different factors. It is difficult to isolate the effects of any one of these variables such as education. Inevitably one is led to many other areas of study. This has certainly been the case in my examination of the literature relating to school leavers in the development situation. It has covered different countries and geographical regions; it has also included many different subject areas as can be seen in the following chapters of the introduction.

In the next chapter I have attempted to examine the relationship between education and economic development. From the time of Adam Smith, economists have sought to determine and measure the value of education as a form of investment in human capital. More recently there have been attempts at quantification in assessing the rates of return on various forms of education. The study of the relationship between the education system and employment opportunities has also meant the examination of different approaches to educational planning especially those based on projections of manpower

1. G. Hunter, "Manpower and educational needs in the traditional sector with special references to East Africa", *Manpower Aspects of Education Planning*, op. cit., p.180.

requirements.

In the third chapter I have examined the growth of the problem of unemployment among school leavers in less developed countries. I have also considered some of the proposals and attempts that have been made to adapt education in these countries to the needs of the student who is destined to become a farmer. In the fourth chapter I have continued the search for solutions by looking at some of the possible alternatives to formal education and some of the associated efforts at employment creation.

CHAPTER 2

THE CONTRIBUTION OF EDUCATION TO DEVELOPMENT

In this chapter I shall consider the relationship of education to economic development in three different ways. The first approach looks at the effect of education as a form of investment by attempting to measure the rates of return to different forms of education. This may be done by comparing differences in incomes or agricultural productivity of those with different levels of education. In addition to this rate of return method, I shall also examine two other sets of criteria which have been advanced as guidelines for educational planning: these are the social demand and manpower forecasting approaches.

The rate of return approach.

The concept of education as a form of investment has been accepted by economists from the early stages of the development of economic theory. Adam Smith referred to the worker's acquisition of talents by education, study or apprenticeship by creating "fixed capital ... making part of his fortune ... and that of the society to which he belongs".¹ Later Marshall also supported this view when he stated "the most valuable of all capital is that invested in human beings".² He mentioned the benefits of education in helping people of ability and genius to realise their potentialities and wrote "... good education confers great indirect benefits even on the ordinary workman. It stimulates his mental activity; it fosters in him a habit of wise inquisitiveness; it makes him more intelligent, more ready,

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1. A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, (Carnod ed., 1937), pp.256-266.
 2. A. Marshall, *Principles of Economics*, 1890 (8th ed. London: Macmillan, 1930), p.216.

more trustworthy".¹ These improvements that education can make to the quality of labour were to be stated in a very similar manner by Machlup² when he examined the contribution of education to economic growth. He listed five possible effects: better working habits and efforts, greater discipline and reliability; better health through more wholesome living; improved skills and efficiency, better understanding of work requirements; prompter adaptability to changes; and increased mobility to more productive occupations when opportunities arise.

The main quantitative method which has been used to evaluate the profitability of education as an investment has been the analysis of rates of return in the form of earnings related to years or standards of education. Much of this work has been done in the United States and often has been concerned with the earnings of college graduates relative to those who had dropped out at earlier stages in the educational system. The cost of the investment is represented by the expenses incurred by the education plus foregone earnings; the returns are represented by the differentials in earnings between those with different levels of education. Using this approach Becker³ calculated the rate of return on a college education as being 12.5 per cent in 1940 and 10 per cent in 1950. These figures were for private rates of return (the benefits to the individual) with income calculated after tax. If one includes in the costs the subsidy towards the education provided by the community and the state and also total taxes with earnings, then a social rate of return can be calculated which will give an

1. Ibid.

2. F. Machlup, *The Production and Distribution of Knowledge in the United States*, (Princeton: Princeton University Press, 1912).

3. G. Becker, *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, (Princeton: Princeton University Press, 1964), pp.80-86.

indication of the costs and benefits to society. In Becker's study the corresponding social rate of return was equal to 9 per cent in both years.

Other studies have attempted to estimate the rates of return for the primary, secondary and tertiary levels of education.¹ Psacharopoulos² examined 53 of these studies from 32 different countries. Most of the studies indicated that the rates of return declined with the higher levels of education. The average rates of return revealed by these studies are shown in Table 1.

Table 1
Average Rates of Return by Educational Level³

<u>Educational Level</u>	<u>Private Rate of Return</u>	<u>Social Rate of Return</u>
Primary	23.7 per cent	25.1 per cent
Secondary	16.3 per cent	13.5 per cent
Tertiary	17.5 per cent	11.3 per cent

Many of the studies examined by Psacharopoulos also attempt to compare the efficiency of investment in human capital with that in physical capital. Rates of return to education are compared to those from other types of investment. In calculating private rates of return the real lending rate is generally used as the basis for comparison: in the case of social rates

1. T.W. Schultz, "Education and Economic Growth", *Social Forces Influencing Education*, (Chicago: National Society for the Study of Education, 1961).

W.L. Hansen, "Total and Private Returns to Investment in Schooling", *Journal of Political Economy*, April 1963.

2. G. Psacharopoulos, assisted by K. Hinchcliffe, *Returns to Education*, (Amsterdam: Elsevier Scientific Publishing Company, 1973).

3. Source: *Ibid.*, p.65.

of return it is the yield on private corporate income before tax. Comparisons made in different countries indicated that returns to education investment or human capital tended to be greater than returns to physical capital in low income countries but less in more developed countries.

There are obvious limitations to methods which calculate returns from education by correlating personal earnings with educational attainment. Other variables have to be considered as determinants of income. Blaug lists these as "age, sex, race, native ability, social class background, place of residence, branch of employment and on-the-job training".¹ The relevance of income as an indicator is especially open to question in less developed countries. Streeten gives these three reasons for doubting its validity:

"first, differences in earnings do not reflect differences in productivity; second, even if they did, education is highly correlated with other causes of high productivity, such as intelligence, motivation and environmental influences; third, it cannot be assumed that an underdeveloped economy can absorb the educated irrespective of the type of education and irrespective of a host of other measures, and in particular agricultural modernisation and industrialisation. The marginal returns on education by itself may often turn out to be negative".²

Certainly these objections would seem to have validity in an economy where many school leavers are unable to find employment. The basic question about those who return to the village and agriculture must be to what extent has their education resulted in greater productivity? Has it, as Streeten suggested, actually had a negative effect, with the school leaver contributing less to the economy than his uneducated contemporaries?

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1. M. Blaug, *An Introduction to the Economics of Education*, (London: Allen Lane Penguin Press, 1970), p.23.
 2. P. Streeten, *The Frontiers of Development Policies*, (London: Macmillan, 1972), p.112.

Some of the studies that attempt to provide a quantitative means of evaluating the contribution of education to income have in fact been concerned with agricultural productivity. Surveys of farming in India have shown that there is some correlation between years of schooling and the adoption of modern methods using high yielding crops, mechanisation and fertilisers. Harker¹ refers to studies made by Murthy² and Roy³ which both give a zero order correlation of 0.36 between the number of years at school and the adoption of new practices. These studies also admit the influence of other variables. These were the socio-economic status of the family and the size of their holdings. In other words, all these surveys may have been proving is that if you come from a rich family you are more likely to go to school for a longer period and if you return to farming as part of the family unit your income from agriculture is likely to be higher than your poorer and less educated neighbours. If your income is higher and your farm is larger you are also more likely to be able to afford fertilisers and machinery. The situation is likely to be similar wherever the supply of education is limited and school fees have to be paid. I certainly found it to be the case among Dayak communities in Sarawak. The parents who send their children to school are usually the richer and more enterprising members of the community. They are the more progressive farmers who are already growing cash crops. If their children eventually join them as part of the family farming unit their activities are likely to show similar characteristics.

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1. B.R. Harker, "The Contribution of Schooling to Agricultural Modernisation: An Empirical Analysis", *Education and Rural Development*, eds. P. Foster and J.R. Sheffield, (London: Evans Brothers, 1973), p.360.
 2. A.S. Murthy, "Social and Psychological Correlates in Predicting Communication Behaviour of Farmers", (unpublished Ph.D dissertation, Indian Agricultural Research Institute, New Delhi, 1969).
 3. P. Roy et al., *Agricultural Innovation among Indian Farmers*, (Hyderabad: National Institute of Community Development, 1968).

If we are to attempt to isolate education from other variables associated with the family, Japan is a better example. A high proportion of the population is educated and there are a wide range of employment possibilities. Harker had made a study of the relationship between years of education and farm sales in Japan.¹ He found there was a correlation between the two, although at 0.14 this was lower than the Indian studies already mentioned. Harker's work emphasises the importance of communication skills and the mass media. Education is important because educated farmers were more likely to make use of agricultural broadcasts, magazines and extension agents. As a result they were more likely to make agricultural innovations and to use machinery. Another interesting aspect of Harker's study in relation to the general versus vocational education argument is that his results show that farmers who have received specifically agricultural schooling show only a slightly higher correlation (0.18) than those with a general education.

Other studies of the relationship of education to agricultural growth emphasise the importance of literacy in acquiring developmental knowledge which Wharton has described as being concerned with "new techniques of production ... and ... how to economise in production and marketing".² Examples of new inputs that may be of value to the farmer are new seeds, fertilizers, pesticides, sprays, breeds of animals, animal feeds and farm equipment. Techniques include time and method of planting, spacing, irrigation, drainage, weeding, harvesting and soil conservation; in animal husbandry, culling, weaning, feeding, inoculation and general medication. The economic aspects include knowledge of the best combination of inputs to produce the

1. B.R. Harker, op. cit., p.366.

2. C.R. Wharton, "Education and Economic Growth", *Education and Economic Development*, ed. C.A. Anderson and M.J. Bowman (Chicago: Aldine Publishing Co., 1965), p.212.

greatest returns and to minimise costs. In marketing, accurate price information and a knowledge of when to sell are necessary knowledge, together with information on how to prepare his goods for market, store and transport them. In acquiring all these types of information the literate farmer will have many advantages. He can also keep records and should be capable of making simple calculations and budgeting. He should also be able to understand and use weights and measures. His ability to read instructions, leaflets and bulletins means that he is in a good position to take advantage of extension services that may be available to the farmer. An additional benefit that education may bring takes the form of greater knowledge of health procedures, prevention of diseases and the nutritional value of foods.

In the attempt to diffuse information on agriculture and rural development, the mass media have a role to play, and it would appear that the educated farmer is likely to be more affected by them than the illiterate. For example, in his studies of modernisation in peasant societies, Rogers¹ brings out the importance of the mass media in the diffusion of innovations. He identifies five variables as being significant in an individual who is likely to be exposed to the mass media. These are literacy, formal education, social status, age and something he calls 'cosmopolitaness'. The latter refers to the degree to which an individual is oriented outside his social system and his relative freedom from conformity to the traditional village norms. In the case of each of Roger's variables except social status, school leavers would seem to be in a favourable position to benefit from the mass media and make innovations.

If a society is modernising its agriculture and if there is a

1. E.M. Rogers, in association with L. Svenning, *Modernization Among Peasants*, (New York: Holt, Rinehart and Winston Inc., 1969).

suitable environment for innovations, then both general and vocational education would seem to represent a valuable investment resulting in greater agricultural productivity. This view is supported by a study made by Chaudri¹ in thirteen Indian states. He found that both agricultural output and the adoption of new practices and inputs (chemical fertilizers and irrigation) were positively related to the education of farm workers. In his view "these relationships are likely to be much stronger in a more dynamic agricultural setting, e.g., the post-green- revolution situation in Indian agriculture".² However, if agriculture is not changing and if modernisation is being restricted by factors such as an outdated land tenure system, traditional resistance to innovations, lack of capital, difficulty of marketing cash crops, fluctuating prices, and the ineffectiveness of government extension services in diffusing knowledge, then investment in education is unlikely to produce results. This is the type of situation described by Schultz when he writes: "If a country is not embarked on modernization, if it is not acquiring and adopting new superior techniques and other inputs, but is coasting along in a traditional manner, there will be little or no pay-off on additional investment in education".³ It is also often the situation faced by the school leaver when he returns to his village.

The importance of combining educational and other types of investment is also stressed by Wharton when he writes "raising the level of human capital while simultaneously increasing the available factor outputs allows a higher

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1. D.P. Chaudri, "Rural Education and Agricultural Development: Some Empirical Results from Indian Agriculture", *Education and Rural Development*, op. cit.
 2. Ibid., p.382.
 3. T.W. Schultz, "Education of Farm People", *Education and Rural Development*, op. cit., p.64.

level of output".¹ Welch² also stresses the fact that increased education enables a farmer to use his other factors of production more efficiently and states that much of the effect of education on farmers is "drawn from the dynamic implications of changing technology".³ If this is not present, increased education is not likely to significantly affect output.

Education is constantly seen as one of the interacting factors affecting the modernisation of agriculture. The other factors tend to be listed and classified in different ways. For example, Mosher⁴ identifies five essentials for agricultural development: transport; markets for farm products; constantly changing technology; local availability of supplies and equipment; production incentives for farmers. He then goes on to list five accelerators that will contribute to speeding up the rate of growth. One of these is education; the others are the provision of credit facilities; voluntary farmer associations of various types; the improvement and expansion of agricultural land and national planning. These "essentials" and "accelerators" are significant because they also represent conditions that are necessary if the school leaver is going to be able to use his education in farming. His education should lead to greater productivity, but only in the right environment and if other development is also taking place.

The social demand approach

Social demand is a term generally used to describe the aggregate of

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1. C.R. Wharton, op. cit., pp. 226-227.
 2. F. Welch, "Education in Production", *Journal of Political Economy* 78, (January-February, 1970), pp.35-59.
 3. F. Welch, "Education in Production", *Journal of Political Economy* 78, (January-February, 1970), pp. 38-39.
 4. A.T. Mosher, "The Development Problems of Subsistence Farmers: A Preliminary Review", *Subsistence Agriculture and Economic Development*, ed. C.R. Wharton, (Chicago: Aldine Publishing Company, 1969), pp. 7-8. Also A.T. Mosher, *Getting Agriculture Moving*, (New York: Praeger, 1966).

individual demands for education. This will be influenced by a number of factors such as peoples' concepts of the cultural and economic benefits of education balanced against the costs in terms of fees and the opportunity costs of foregone income. Governments may influence social demand by making education at certain levels compulsory, also by the provision of free schooling.

The social demand for education has been an important factor in the accelerated expansion of education that has occurred in many newly independent countries. In their legislative assemblies, representatives have pressed for more schools in their constituencies; governments have sought to gain further political support by the provision of more educational facilities and often providing free tuition at the primary stage. This has reflected the rising expectations and aspirations of the people of these countries; They have seen the economic, social and political advantages that can result from formal education. As the outputs of the education systems have increased and many school leavers have failed to find employment in the modern sector of the economy, it is probable that this unquestioning appreciation of the value of education may diminish and there may be a lessening of demand, a trend that seems to be indicated by falling primary school enrolments and a higher rate of wastage in some countries. On the other hand, failure to find employment may lead to a greater demand for education at higher levels in order to obtain the qualifications that may still obtain a white collar job. Social demand is also likely to increase as education becomes a possibility for more inaccessible and underdeveloped areas, isolated ethnic groups and for girls in cultures where it has been hitherto a male preserve.

As a guide for educational planners, the social demand approach suffers from the fact that it is very difficult to measure the demand for education. It is possible to collect statistics for the number of children currently at school and relate these to the total in their age

group; this will give the present participation rate. Population projections can then be made for the numbers in the age groups for the period being planned and participation rates can be established. This was basically the method used by the Unesco conferences in the early 1960's in setting regional targets for educational expansion in Asia, Africa and Latin America. These aimed at an eventual 100 per cent participation in primary education and an increase in participation at the secondary and tertiary stages. It is the choice of the target participation rates which is the most difficult to determine and relate to aggregate individual demand, the needs of the economy and the availability of funds. These limitations of the social demand approach are outlined by Coombs in three main criticisms: "(1) it ignores the larger national problem of resource allocation and implicitly assumes that no matter how many resources go to education this is their best use for national development as a whole; (2) it ignores the character and pattern of manpower needed by the economy and can readily result in producing too many of some types and not enough of others; and (3) it tends to over-stimulate popular demand, to underestimate costs, and to lead to a thin spread of resources over too many students, thereby reducing quality and effectiveness to the point where education becomes a dubious investment".¹ These criticisms seem very relevant to Sarawak where secondary school enrolments more than doubled from 1963 to 1970. They also bring us back to the point made earlier that expansion in education alone may well have a negative effect if it is not accompanied by other types of development.

1. P.H. Coombs, *What is Educational Planning?* (Paris: Unesco: International Institute of International Planning, 1970), p.40.

The manpower approach

In an effort to relate the allocation of resources in education to the particular needs of their economies, many countries have attempted a manpower approach to educational planning. In Africa one of the earliest was Nigeria where in 1960 the Ashby Report, *Investment in Education*,¹ used a survey of high level manpower requirements by Harbison as the basis for recommending an expansion of post-School Certificate education. A Unesco inquiry in 1968² showed that sixty out of seventy-three national education plans in countries which had such plans and for which data was available, were based on manpower requirements.

The various stages in manpower planning have been well defined by Parnes in his study of manpower analysis and educational planning.³ The first stage is to make an inventory for manpower for the current year, differentiating between employed and unemployed and cross-classifying by occupation and industry, by occupation and education, and by educational attainment and age. This information may be obtainable from a national population census or a specific manpower survey.

The next stage is to estimate the size of the labour force for the forecast year or period, together with the needs of the different occupational categories. The data on requirements by occupational category can then be converted to requirements by educational qualifications. The anticipated supply of personnel with each major type of educational qualification can

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1. Nigerian Federal Ministry of Education, *Investment in Education: The Report of the Commission on Pre-School Certificate and Higher Education in Nigeria*, (Lagos: Government Printer, 1965).
 2. Unesco: *Educational Planning. A Survey of Problems and Prospects*, Paris: Unesco, 1968.
 3. H.S. Parnes, "Manpower Analysis in Education Planning", *Planning Education for Economic and Social Development*, (Paris: O.E.C.D., 1963).

be estimated on the basis of present stocks and anticipated outflows from the education system; in addition, allowance must be made for withdrawal from the labour force, death and retirement. The balance between the forecast of requirements and that of supplies will then provide the basis for the necessary changes in the annual outflow from the various levels and branches of the education system.

The most difficult stage in this process is the estimating of future manpower requirements. Rado and Jolly state "the hardest task of the manpower planner, both in theory and practice, is the choice of the basis on which to calculate manpower requirements at a later date".¹ Different approaches have been used in an effort to solve this problem. For example, in "Forecasting Nigeria's Manpower Needs 1963-68",² Yesufu suggests a series of statistical steps. The first is a rough approximation of the future employment. The anticipated increase in the labour force can be used as the first rough guide to an approximation of the future employment structure. Next a detailed analysis of each important economic activity has to be made; this should take into demand anticipated changes in demand for the products and services, also in hours worked and productivity. Estimates of future employment can then be made for each activity which can be used to modify the first approximation of future employment. The occupational breakdown of employment in each activity in the future can be derived from the available occupational composition patterns.

A different type of approach was used in the Manpower Report for Zambia.³ Here the manpower requirement projections for 1970 and 1980 were

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1. E.R. Rado and A.R. Jolly, "The Demand for Manpower - An East African Case Study", *The Journal of Development Studies* 3, 1965, p.226.
 2. T.M. Yesufu, "Forecasting Nigeria's Manpower Needs 1963-68: A Note on Methodology", *Manpower Problems and Economic Development in Nigeria*, ed. T.M. Yesufu (Ibadan: Oxford University Press, 1969), pp. 104-129.
 3. Zambian Government, *Manpower Report - Republic of Zambia*, (Lusaka: Government Printer, 1965).

based on a number of factors. Past productivity trends were analysed and extrapolated to provide a guide to the future occupational requirements of the economy. The targets in the development plans were used to estimate economic growth, and comparisons with other African states were used for the same purpose. Questionnaires were also sent to employers on their plans for expansion and anticipated manpower needs.

Manpower forecasting over a long period of ten or fifteen years, as in the Zambian case, is unlikely to be accurate. There will inevitably be considerable change in the demand for different skills. Ahamed and Blaug have examined a number of case studies of manpower forecasting and came to the conclusion that "it had not so far proved to be particularly useful for educational decision-making; we may even go so far as to say that it has on occasion been positively misleading".¹

Another serious limitation of manpower studies as applied to developing countries is that they have often concentrated on the high level manpower needed by the modern sector. They provided little information about the educational requirements of the majority of the labour force working in rural areas. Agriculture has tended to be regarded as a residual occupation to be undertaken by those who cannot find employment in the modern sector of the economy. For the educational planner, the problem remains of ascertaining the educational requirements of the large proportion of the population. This takes us to the broad argument of general versus vocational education and also to one of the main objects of inquiry in this study; the determination of the extent to which the school leaver is able to apply his education to farming and life in a rural environment.

1. B. Ahamed and M. Blaug, *The Practice of Manpower Forecasting*, (San Francisco: Jersey-Bass Inc., 1973), p.322.

In examining the school leaver problem in Sarawak, manpower planning techniques and models seemed to be limited in their application and relevance. There was little information about future manpower requirements and much of the population still worked in the informal and subsistence sectors of the economy. The early educational development had been spasmodic and due mainly to the activities of Christian missions and local Chinese boards of management. More recently there had been a great increase in school enrolments at all levels in the years immediately before and after self government; an expansion that seemed to have been largely determined by social demand and political pressures. More students and their parents were very aware of and motivated by the concept of education as an investment, but this was generally only considered in relation to white collar and professional employment, not agriculture or the informal sector.

School leaver studies

Another approach to investigating manpower problems has been described by Harbison¹ as the "tracer" study. This involves the follow up of students when they have left school or finished a training course. Details of how they obtained their jobs, their work experience and the relevance of their previous education help to provide realistic information for the evaluation of training and education programmes. Harbison describes a pilot study undertaken by researchers from the Institute of Development Studies at the University of Nairobi working in co-operation with headmasters and career masters in selected schools. School leavers were traced by mail questionnaires and also by contact with parents and friends still at school. 93 per cent of the school leavers were traced in this way and were then interviewed to find information about their occupations and other relevant information, such as their pay, how they found their job and how long it took.

1. F.H. Harbison, *Human Resources as the Wealth of Nations*, (New York: Oxford University Press, 1973), pp. 149-153.

After describing this project, Harbison goes on to suggest that simple and standardised tracer studies could be set up in many countries with the school and training institution having the responsibility for tracing their students for two to five years after they leave. He believes that not only would this provide facts about employment and unemployment, it would also be a means of establishing closer contact between the learning situation and the employment market.

In my own research into school leaver employment I have adopted a similar methodology to that suggested by Harbison. A follow up of students who had left school represented the only means of obtaining information on the type of employment school leavers obtained, the proportion who failed to find employment and what happened to this unemployed group when they returned to their villages. In addition, it provided an opportunity of evaluating the relevance of their education to their work and of finding out to what extent they had been able to make any innovations and contributions to rural development.

CHAPTER 3

UNEMPLOYMENT AMONG SCHOOL LEAVERS IN LESS DEVELOPED COUNTRIES

In this chapter I shall first attempt to examine the relation between education and unemployment. The popular argument is that the expansion of one leads to the development of the other, but this tends to ignore the existence of a number of other factors. One is that some form of unemployment or underemployment has always existed in traditional tribal and peasant societies. These are often characterised by long periods of seasonal inactivity with much of the basic routine work of farming being undertaken by women. In many areas of high population density and land shortage the marginal productivity of additional workers in agriculture tends to be very low. Disguised unemployment results from the fact that many of these unproductive workers are supported by the extended family system. When changes occur in these societies other factors begin to operate. A monetary economy may start to develop and create a different occupational structure. A paid work force comes into existence. It consists of wage-earners in specialist occupations which often require some education or training. When this occurs, those who cannot gain entry into this work force, even if they have the necessary educational qualifications, are easily identified and classified as being unemployed. Education has not created this unemployment, but it may aggravate the problem if it has created false expectations and alienated young people from rural life.

In the following section I will be concerned with the development of this imbalance between education and employment opportunities. In the subsequent sections I will consider problems of defining unemployment in relation to school leavers and then in an attempt to determine the extent of this unemployment I will examine three examples of research into school leavers conducted in Africa.



The expansion of formal education and the demand for educated manpower

In traditional societies the skills needed for farming and crafts were usually learnt informally from parents and older members of the community. In many African and Melanesian societies initiation ceremonies were often associated with periods when young men learnt the rules, customs, beliefs and values of their community. In other countries often the earliest types of formal education were associated with religion. Early schools in Indonesia were associated with the teaching of Hindu and Buddhist doctrines; later the Islamic schools, the *pondok* or *madrasah*, gave instruction in religious practices and rules in Arabic. In Hindu India much of the early education was confined to the Brahmin caste and took the form of learning the sacred traditions, lore and hymns. In Buddhist societies, education was open to more groups and was more general in character, but was still essentially religious and based on the community. The nature of the economy and of the education in these societies acted against the concept of going to school as a means of obtaining a profitable job. Foster pointed this out when he wrote: "Within traditional society the possibility of dysfunctional relationships between educational institutions and the economy did not exist; the educational process was generalized and undifferentiated and associated with a largely undifferentiated occupational structure".¹

The first schools established by Europeans in their colonies were also of a religious nature concerned with the spreading of Christian beliefs and doctrines. Portuguese and Spanish Catholic missions were active in this field in West Africa, South East Asia and Latin America by the end of the sixteenth century. These were followed by the colonising and mission activities of the Dutch, British and French. In addition to religion and

1. P.J. Foster, *Education and Social Change in Ghana*, (Chicago: University of Chicago Press, 1965), p.67.

moral education, the syllabus in the mission schools usually also included reading, writing and arithmetic. In the early stages the vernacular was generally used, but at later levels the language of the metropolitan country was introduced. Education was mainly at primary level but higher educational institutions were set up to train priests, ministers and teachers.

The limited resources of most colonial governments meant that education continued to be mainly the responsibility of the missions although in some cases they were to receive financial assistance in the form of grants-in-aid. This usually meant some degree of financial control and in British colonies it often meant the payments by results system with grants depending on the results achieved by students in an annual examination. With the gradual introduction of secondary schools, external examinations also became important to determine selection to the next stage of education. The certificate awarded at the end of primary and secondary education also became an important qualification in order to obtain employment.

The activities of European trading companies and the growth of colonial public administration created an occupational structure in which there was a limited demand for indigenous workers who had received some formal education; they were usually employed as clerks or in minor supervisory roles. The missions also employed some of those they had educated to work in primary schools and as hospital assistants. The Europeans had introduced a system of formal academic education; they had also created a demand for it. However, opportunities for employment in the modern or cash section of the economy were limited and even at early stages of the educational development of most countries there were those who left school to return to the village or who joined the unemployed in the towns.

Since 1945, in the periods immediately before and after they achieved self government, many countries experienced a great increase in the demand for educated manpower. There has been a desire to replace expatriates with local personnel in both the public service and in the private sector; there has also been an increase in capital investment and an expansion of government social services. The consequent increase in demand for manpower has often been exceeded by the expansion of education during the same period. In the Karachi Plan region the total number of students enrolled at all types of school increased from 49,900,000 in 1950 to 140,100,000 in 1967.¹ In Africa, primary school enrolments increased by 173 per cent and secondary school enrolments by 225 per cent between 1950 and 1963; the corresponding figures for Latin America were 103 and 225 per cent.²

This expansion of education has led to a large increase in the number of school leavers coming on the labour market. The modern or wage paying sector of the economy has only been able to absorb a small part of this number and as a result many school leavers have been unable to find employment of the type that had been available to those with their qualifications in the past.

An example from Tanzania shows the extent of the problem. In the period from 1965 to 1969 it was estimated that there would be 1,150,000 new entrants to the labour market. In the same five years the number of new jobs was expected to be 110,000; of these 44,000 would be in wage agricultural

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1. Unesco Regional Office for Education in Asia, *Progress of Education in the Asian Region: A Statistical Review*, (Bangkok: 1968) p.9. The Karachi Plan region comprised Afghanistan, Burma, Taiwan, India, Indonesia, Iran, South Korea, Cambodia, Laos, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, South Vietnam.
 2. *Unesco Statistical Yearbook*, (Paris: Unesco, 1965), pp. 165-167.

employment and 66,000 would be in non-agricultural employment.¹ As can be seen from these figures, only about one school leaver in ten could hope to find the type of paid employment to which he so often aspired.

In another example concerned with the secondary education, statistics from Malaysia² show that 145,000 students were expected to complete their education at School Certificate level during the period from 1965 to 1970, but projections of manpower requirements showed that during these years there would be opportunities for only 21,608 to find employment in what the Economic Planning Unit described as "white collar" occupations for which this type of education would be necessary.

Unemployment among school leavers

In most countries it is difficult to make a statistical assessment of the number of educated unemployed. Only a limited number will appear as registrants at labour exchanges. Many school leavers will be working spasmodically at peak periods of the year on the family farm or in local workshops. Many of the girls will marry earlier than would have been the case than if they had found employment. Official unemployment figures rarely give the full picture of the problem; often the school leaver who has drifted back to his family is considered engaged in farming or self-employed. Nevertheless the official statistics do show in nearly all cases a high proportion of young people among the unemployed. Figures quoted by Callaway in 1971 show that in Nigeria three quarters of the unemployed were between the ages of 15 and 25; in Sri Lanka the figure for the same group was 78 per cent. In Jamaica 43 per cent of the young people

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1. Unesco International Institute for Educational Planning, *Educational Development in Africa III, Integration and Administration*, (Paris: Unesco, 1965), p.62.
 2. Economic Planning Unit, *Report of the Higher Education Planning Committee*, (Kuala Lumpur: Malaysian Government, 1965), p.192.

aged 15 to 19 were unemployed; in Malaysia it was 50 per cent.¹ It must be remembered also that all these countries have a large proportion of their population under 21, a factor which is likely to make the problem even more acute.

There is often a lack of specific information about the school leavers who fail to find work in the modern sector. Statisticians are often unsure whether to classify them as unemployed or engaged in agriculture. In the International Labour Organisation's study of *Employment, Unemployment and Labour Force Statistics*, those employed are defined as "all persons in remunerated activities, regardless of age",² the remuneration may be in money or kind. The definition also includes "unpaid family workers who are engaged in tasks directly related to the operation of a family enterprise for a minimum of 15 hours a week"³ as being employed, although this category does not include unpaid domestic work. On the other hand in this classification it also states: "For statistical purposes, the unemployed should include all persons seeking work on a given day who are not employed but are able to take a job if offered one".⁴ Many school leavers who have returned to the villages to work with their families but who are constantly looking for a "proper job" would seem to fall into both groups.

The seasonal nature of much agricultural work in developing countries

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1. A. Callaway, *Educational Planning and Unemployed Youth*. (Paris: Unesco International Institute for Educational Planning, 1971), p.15.
 2. International Labour Organisation, *Employment, Unemployment and Labour Force Statistics*, (Geneva: 1948), p.9.
 3. Ibid.
 4. Ibid., p.12.

often makes it difficult to categorise workers as unemployed or underemployed. The International Labour Organisation report on Sri Lanka in 1971¹ classifies as unemployed those in the labour force who were not regularly employed or who were mainly in seasonal occupations, who were not unpaid family workers and who had not done ten days or more of casual work in the month preceding the survey. In this particular case 14 per cent of the labour force between 15 and 59 was found to be unemployed. In the case of Sri Lanka also, Selvaratnam and Fernando² pointed out how successive post-war censuses in 1946, 1953 and 1963 used different definitions as to what constituted being "gainfully employed". In 1963 family workers were considered employed if they worked a minimum of three hours a day.

Unemployment figures for many countries show that the rate for young workers in the 15-24 age group is often much higher than that for the whole labour force. In West Malaysia, for example, an urban survey in 1965³ showed that 21 per cent of this group were unemployed, although the overall rate was 9.8 per cent. In many cases the unemployment rates for young workers with secondary education are often higher than for those who are illiterate or who have only primary education. In the case of the Malaysian figures we have quoted, the break-down by educational qualification can be seen in Table 2.

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1. International Labour Organisation, *Matching Employment Opportunities and Expectations; A Programme of Action for Ceylon*, (Geneva: 1971).
 2. S. Selvaratnam and L.S. Fernando, "Measurement of Employed and Unemployed in Ceylon", *Employment and Unemployment Problems of the Near East and South Asia*, ed. R.G. Ridker and H. Lubell, (Delhi: Vikas Publications, 1971), p.145.
 3. D. Turnham, *The Employment Problems of Less Developed Countries: A Review of the Evidence*, (Paris: Organisation for Economic Co-operation and Development, 1970), p.51.

Table 2

Unemployment Rates at Different Educational Levels in Malayan
Towns, 1965.¹

Labour Force 15-24	Illiterate	Primary	Secondary Grades 1-4	Higher Certificate and above
Male	10.4	19.5	30.9	15.5
Female	17.4	32.4	19.7	27.5

The concept of underemployment may be expressed in a number of different ways. It may be described as hidden, concealed, invisible, potential or latent unemployment. In most cases the term implies although people are technically employed they are virtually idle, or if they are working they are adding very little to the total output. It is often used to describe a situation where the marginal productivity of labour is zero, although Myrdal attacks this approach when applied to South Asian agriculture as "airy and unrealistic".²

In many less developed countries the lack of a sharp distinction between work and leisure in the traditional sectors of the economy means that an individual may be present at the place of work but in fact much of the time not actually working or producing any goods or services. This is especially the case with the family unit engaged in agriculture, handicrafts or retailing and where the place of work may also be the home. This often makes attempts to calculate underemployment in terms of hours spent working

1. Ibid., extracted from Table III.II., p.61.

2. G. Myrdal, *Asian Drama: An Inquiry into the Poverty of Nations*, (New York: The Twentieth Century Fund, 1968), Vol. III, Appendix 6, p.2053.

rather difficult. Turnham reports that sample survey enquiries often suggest "that hours worked even in rural areas (although the evidence here is very thin) are long and that the quantum of unemployment in the sense of extra hours sought is not very great absolutely".¹

Another method adopted by Thorbecke and Stoutjesdijk² is to estimate the effective employment rate by working out the ratio of the total man days required to produce the total agricultural output against the total man days available. Using this approach, they conclude that effective employment in Peru and Guatemala amounted, respectively to only 57 and 70 per cent of the economically active population in agriculture in 1965.

Where attempts have been made to measure underemployment in terms of hours worked the data often shows a larger proportion of underemployed in rural areas. Where the statistics distinguish between males and females there is also a higher proportion of females. This can be seen from the survey data presented in the following table.

Table 3

Percentage of Employed Persons Working Less than 40 Hours a Week³

Country	Rural	Urban
Tanzania, 1965 Both Sexes	40.0	18.0
Philippines, 1962 Male	30.4	14.8
Female	71.2	36.7

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1. D. Turnham, op. cit., p.17.
 2. E. Thorbecke and E. Stoutjesdijk, *Employment and Output - A Methodology Applied to Peru and Guatemala*, (Paris: Organisation for Economic Cooperation and Development, 1971).
 3. Source: D. Turnham, op. cit., p.61.

Studies of unemployment among school leavers

Three pioneering studies of school leavers in Africa have particular relevance to this thesis in that they represent early attempts to find out more about school leavers, their activities and attitudes. The first of these was undertaken by Callaway who in 1964 made a study of the West Nigerian city of Ibadan.¹ The sample study of households showed that 15 per cent of the female labour force was unemployed and 28 per cent of the total male labour force. Nearly all these unemployed had completed their primary education and some had also attended secondary modern schools. Over half of these unemployed school leavers had come from areas outside Ibadan. Callaway related the proportion of school leavers who migrated from any particular area to a number of differentials such as the level of farm income, the availability of fertile land, and the date of the spread of education. He concluded that the move to the town had been greatest where the population density was high and education had been introduced at an early date. In examining the effects of free primary education in Western Nigeria, Callaway claimed that there was already some evidence "to show that primary education does raise productivity in the markets and workshops, in transport, on building sites, and even on farms".² The examples of the advantages of schooling that he cited are the abilities to make accurate measurements and calculations, and to keep rudimentary accounts and records. In the case of agriculture he stated "given opportunities, selected and willing school leavers are likely to be more ready to innovate new crops and to try new methods".³

Rather different conclusions were reached by Heijnen in a survey of a

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1. A Callaway, "Unemployment among school leavers in an African city", *Manpower Aspect of Educational Planning*, op. cit., pp. 124-139.
 2. Ibid., p.138.
 3. Ibid., p.138.

rural area carried out in 1965 in the Mwanza District of Tanzania.¹ He defined the unemployed sector of the labour force as "the total non-institutional population aged 15 to 59, with the exception of married women living with their husbands, who performed no work for pay or profit".² On this definition from his sample study of the Mwanza area, 7.2 per cent of the males and 2.6 of the females were unemployed. Heijnen also examined the influence of education as a factor encouraging the migration of youth away from the land to the towns and came to the conclusion that "the prime cause of the low value attached to agriculture cannot ... be the kind of primary education given, but the feeling of the whole community that through school education a better income can be achieved than is possible on the land".³ He administered tests on job preferences and expectations to Standard VIII students at the primary schools, and found that they were quite realistic in comprehending that if they were not selected for secondary school they were unlikely to obtain a paid job, and that the choice then lay between farming and unemployment. In any case it seems to have been parents and other relatives rather than the school leavers themselves who encouraged the idea of going to the towns in a search for work that was rarely successful.

Heijnen's conclusion was that the solution to the school leaver problem lay not in the towns but in "the productive and active participation of the school leavers in peasant agriculture".⁴ He then went on to examine

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1. J.D. Heijnen, *Development and Education in the Mwanza District (Tanzania): A Case Study of Migration and Peasant Farming*, (Rotterdam, Bronder - Offset, 1968).
 2. *Ibid.*, p.57.
 3. *Ibid.*, p.91.
 4. *Ibid.*, p.104.

the relationship between educational attainment and agricultural productivity, especially with relation to growing cotton, the main cash crop of the area. His conclusion was that the "growing methods of the primary school leavers hardly differ from the techniques employed by the peasants with less or no school education at all. ... From an angle of productive investment the primary school in the rural area does not pass the test for the greater part of its output, i.e., the school leavers who go into peasant farming. The children are unable to 'apply' the acquired knowledge in their daily life".¹

Heijnen does not attempt to analyse why the school leavers are unable to use their education in farming, but a similar study by Brownstein in Kenya² suggests that one reason may be because the school leavers do not have their own land, but continue to live and work with their families. Brownstein's survey was based on four sample districts: Central Nyanza, Kericho, Embu and Kitui. These districts were chosen in order to study the effects of differences of land potentiality and population distribution on the migration of school leavers. The study showed that 156 school leavers or 18.7 per cent of the sample were employed full-time at the period of the interviews. Of this category, 44 were still at home and mainly working as untrained primary or nursery school teachers. The remaining 112 had found jobs away from home with clerk, unskilled labourer and police being the commonest occupations. Those away from home and unemployed formed only 4.7 per cent of the sample, but these were often the young people who had moved to the towns and were contributing to the urban social problems. Those who were unemployed and staying at home formed 20.4 per cent of the sample; compared to the rest of the unemployed category, they tended to be slightly older and come from the

1. Ibid., p.150.

2. L. Brownstein, *Education and Development in Rural Kenya: A Study of Primary School Graduates*, (New York: Praeger, 1972). Brownstein's survey is based on 834 students who took the Kenya Preliminary Exam in 1964; it also includes those who continued their education.

poorest backgrounds. A large number had made unsuccessful trips to find work. Most said they had received little advice on how to find a job; in looking for employment, their main sources of information were personal contacts, newspapers, the radio and community bulletin boards. Out of a total of 123 boys living at home, 109 lived with their parents, seven with a sibling, one with an uncle, two on borrowed land, and only four on their own land. Some also had pieces of land set aside for their own use and 36 received a cash income from selling coffee and food crops at the local market. In the preceding interview 90 per cent said they had done some work on the family farm, although it was difficult to find out to what extent they were fully employed. They seemed to have "little if any voice in how the land was to be used" and "in discussions many expressed a desire to be trained as farmers only if they could get their own land".¹

1. Ibid., p.141.

CHAPTER 4

POSSIBLE SOLUTIONS TO SCHOOL LEAVER PROBLEMS

Making education more relevant to rural needs

A rigid and consistent adherence to manpower planning based on accurate projections could eventually solve the problem of the imbalance between the education system and the employment market. In fact, as we have seen in Chapter Two, this is not usually possible for primary and secondary education, nor if we think in terms of the social demand approach would it be desirable to limit the education of so many young people. Nevertheless there has remained a need to adapt what was often a basically western type of education to the needs of societies in which the majority of the population are engaged in traditional systems of agriculture. In the final part of this section we shall examine some of the attempts and proposals that have been made in order to make education more relevant to a rural community in which the majority of school leavers would be engaged in farming.

There has been a tendency to blame the schools themselves for the unemployment situation. It is often claimed that the education they give is too academic and that values and attitudes are inculcated that make students despise any form of manual labour. One very justifiable criticism was that syllabuses were too often based on those used in the metropolitan country. For example, in British territories European history and geography were taught and the plays of Shakespeare were learnt by rote. Examples from English wild life were used in teaching nature study and biology. The external examinations which formed such an important part of the system were often set in the metropolitan country; in British colonies the most often used were the Cambridge Overseas School Certificate and the University of London Matriculation examination. The influence of the British public school was very strong on some of the early secondary schools such as

Achimota College in Ghana, Budo in Uganda, Alliance High School in Kenya, Raffles Institute in Singapore; these schools in turn acted as models and set the standards for other educational institutions in these countries.

The position was very similar in French colonies. The schools and curriculum were often based on the French *lycée*. Rene Dumont describes how text books in Madagascar described in detail the reproductive organs of a chestnut, a tree unknown on the island, and how other books used and quoted by African students referred to "our ancestors, the Gauls". When he asked a Director of Education about the system of village education, he was told: "No cut - rate education here. It must be exactly as in France".¹

Many of these developments were a result of the belief that the only real formal education was western education. Not only was this part of the prevailing imperial ethos, it was also believed by many of the indigenous inhabitants who saw western education as a means of obtaining parity with Europeans and as a gateway to the most important occupations. Innovations which aimed to adapt education to local conditions were often viewed with suspicion as being attempts to provide an inferior education. In Ghana it was the African members of the Legislative Council who spoke most strongly against attempts to bring specifically 'African' courses into the curriculum at Achimota College and who insisted that classics should be compulsory.²

The Phelps-Stokes Reports on Education in Africa, written in 1920-1 and 1924 contained many criticisms of the content and methodology of much of the education in British colonial Africa. In Chapter 1 of the first report

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1. R. Dumont, "If your sister goes to school, your next meal will be your fountain pen", *Education and Nation Building in Africa*, eds. G. Gowan, J. O'Connell, D. Scanlon, (New York: Praeger, 1965), p.259.
 2. Gold Coast Government, *Legislative Council Debates 1928-1929*, pp. 172 and 286.

they stated: "It seems clear that educational policies of the governments and the missions have hitherto been inadequate and to a considerable extent unreal as far as the vital needs of Africa are concerned".¹ The Reports emphasised the need to adapt education to African conditions and how this might be effected by rural community education. In addition to reading, writing and arithmetic they recommended the inclusion into the curriculum of "such elements related to the community as hygiene, agriculture, and industrial skill, improved family life and healthful recreations".²

In fact many attempts were being made to give education a more rural and vocational bias. In Ghana the Basel Mission used the vernacular for teaching and emphasised training in agriculture and rural crafts. In Northern Nigeria, at Toro, Combe and Omu, teachers were given in-service courses which involved living in the village and learning practical skills.³ The Phelps Stokes Commission had recommended the establishment of community schools on the model of the Jeanes Schools that had been used in Negro education in the United States. The first Jeanes School was started at Kabete in Kenya in 1925 and more were established later in other parts of East Africa. These schools were concerned with mass education at grass-roots level; instruction was given in farming, health and sanitation, child care and home economics.

Efforts were also made to introduce relevant local material into the general school syllabus. At Bahkt er Ruda, in the Sudan, an elementary

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1. L.J. Lewis (Ed.), *Phelps - Stokes Reports on Education in Africa*, (London: Oxford University Press, 1962), p.8.
 2. *Ibid.*, p.57.
 3. L.J. Lewis, *Society, Schools and Progress in Nigeria*, (Oxford; Pergamon Press, 1965), pp. 69-70.

teachers' training college was set up in 1934 in rural surroundings. In addition to teacher training it extended its functions to include curriculum development and the preparation of text books and other teaching materials. Later the college changed its title to Institute and became responsible for adult education and for setting up a rural junior secondary school with agriculture as the core of the curriculum. In all the work at Bahkt er Ruda the emphasis was on practical projects and adaptation to rural conditions.¹

The Conference on African Education which was held at Cambridge in 1952 was also concerned with the relevance of much of what was being taught in African schools. It recognised that this was often open to criticism "for being too much bound by external examinations; for being too bookish and unpractical; for producing too many clerks and too few farmers".² Proposals to introduce more agriculture into the curriculum were discussed together with other suggestions for giving both primary and secondary education a more rural bias.³ The participants in the conference were aware of the problems of effecting any radical changes and the failure of many attempts to ruralise or vocationalise education in the past. African public opinion and the lack of suitably qualified agriculture teachers were seen as major problems. There was also a general awareness of the fact that changes in the school curriculum could not by themselves solve the problem of encouraging school leavers to take up agriculture.

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1. An account of the development at Bahkt er Ruda can be found in V.L. Griffiths, *An Experiment in Rural Education*, (London: Longmans, 1953).
 2. United Kingdom Colonial Office and Nuffield Foundation, *African education: a study of educational policy and practice in British Tropical African* (Oxford: Oxford University Press, 1953), p.5.
 3. These proposals can be found in two of the reports to the conference: G.B. Jeffery et al., "Report of the West African study group", and A.L. Binns et al., "Report of the East and Central Africa study group".

The vocational school argument

More recently, the problem of school leaver unemployment has led to an increased demand from certain quarters for education to be more vocational. The French agronomist, Rene Dumont, has been one of the strongest advocates of the farm schools; he argued in favour of their rehabilitation as being able to satisfy the two requirements of basic education and vocational training. He proposed irrigated gardens to provide for the school needs with the surplus to be sold through a co-operative organised by the children; this in turn would provide them with commercial experience and training. Livestock would be kept to increase the protein content of the students' diet. The teachers would receive special training in agriculture and Dumont mentions: "The use of donkeys with seeders and small ploughs, harnessing oxen to ploughs and wagons, simple cultivating techniques, installations for watering, preparation of manure and hay or silage, planting coconuts and coffee, with cover plants and secondary crops between the rows"¹ all as being part of the basic course. In early stages the farm school would recruit children from ten to thirteen years old for a period of three to four years. Practical work would be in the morning and basic education in the afternoon. The farm school should attempt to be self-supporting although Dumont wrote that "this pre-supposed good work from the students, careful management, and a low salary for the teacher".²

Another proponent of the farm school is President Nyerere of Tanzania. He proposed that schools should become communities practising self

1. R. Dumont, *False Start in Africa*, (London: Andrew Deutsch, 1966), p.161. Originally published in French as *L'Afrique Noire est Mal Partie*, (Paris: Editions du Seuil, 1962).

2. Ibid.

reliance and that "every school should also be a farm".¹ He visualised schools closely related to the rural communities where both teachers and pupils would act as farmers. The economist, Balogh, has been another strong supporter of vocational education and harsh critic of formal academic education which he considered an obstacle to development and responsible for negative attitudes to agricultural employment.²

Balogh's arguments are refuted by Foster in "The Vocational School Fallacy".³ He reasoned that in the past the more general and academic education could itself be described as vocational because it offered a preparation for the most desirable forms of employment. School leavers aimed at clerical or white-collar work rather than agriculture, not because of their education but because the rewards were so much greater in terms of wages and prestige.

Foster's views are often supported by follow up studies of students who have taken specialist courses in agriculture. These indicate that many of the students do not take up farming when their courses are finished, but look for paid employment elsewhere. Wilson writes about farm schools: "Records indicate that the proportion of those who have been trained and subsequently entered practical farming is very low".⁴ A follow-up study of students from agricultural vocational high schools in Korea showed that 52 per cent of the

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1. J.K. Nyerere, *Ujamaa; Essays on Socialism*, (London: Oxford University Press, 1968), p.65.
 2. These views are expressed in T. Balogh, "Catastrophe in Africa", *Times Educational Supplement*, 5th January 1962, p.8, and 9th February 1962, p.241.
 3. P.J. Foster, "The Vocational School Fallacy", *Education and Economic Development*, op. cit.
 4. F. Wilson, "Education for Rural Development", *Education and Rural Development*, op. cit., p.25.

highest ranking graduates of these schools for the years 1953 to 1962 were employed in non-agricultural service occupations in 1964.¹ A survey in the Philippines in 1965 showed that out of 6,396 graduates from vocational agricultural high schools only 33 per cent took up farming.² In Uganda, a survey of Busoga Farm School leavers between 1959 and 1970 showed only 15 per cent actually taking up farming, although a larger proportion, 51 per cent, were in government departments or teaching, often connected with agriculture.³

The agricultural trainee or school leaver with special agricultural education who did return to the village and to farming often found that it was difficult to put his training to practical use. Lack of capital and suitable land were often obstacles to making innovations. Problems of marketing often hindered the development of cash crops. The youth who returned to the village often found himself absorbed into the family system of subsistence farming using traditional methods with decisions made by the older and less educated members of the community.

Many of those concerned with agricultural education have come to the conclusion that this type of training by itself is not enough to enable the school leaver to become a better farmer. It must also be accompanied by institutional changes and development programmes that will enable him to make changes and make farming a more attractive career. Griffiths writes: "The

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1. B.R. Harker, "The Contribution of Schooling to Agricultural Modernization: An Empirical Analysis", *Education and Rural Development*, op. cit., p.351.
 2. G.T. Castillo, "Education for Agriculture", *Education and Rural Development*, op. cit., p.314.
 3. E.R. Watts, "Needs of Farmers in Developing Countries", *Education and Rural Development*, op. cit., p.156.

schools alone are helpless in effecting any dramatic change in rural life. They can only be effective as part of an economic plan which (a) makes farming economically attractive and (b) creates a sympathetic youth and adult opinion to back the progressive aims of the school. The lead has to come from the top."¹ Foster uses a similar argument when he writes: "Vocational instruction in agriculture by itself cannot induce youth to take up farming until an institutional complex exists which makes the utilization of new techniques profitable and meaningful".² In the next section I shall examine possible changes outside the formal education system that might help the school leaver contribute more effectively to agriculture and rural development.

Non-formal education

In the previous section we considered some of the attempts that have been made to give greater relevance to formal education. The vocational school argument, that the general or academic curriculum needs to be replaced by one that gives more direct occupational training, was also discussed. We have seen that attempts to make education more relevant or vocational have not usually been very successful if made in isolation, but that educational changes must rather be made in relation to general programmes of social and economic development. It is important, therefore, that now we look outside the formal education system in our search for solutions. It should be emphasised, however, that I am not considering non-formal education as an alternative to formal education in the sense that Illich³ might do when he writes of "deschooling society". Rather, I am looking at non-formal

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1. V.L. Griffiths, *The Contribution of General Education to Agricultural Development*, (New York: Agricultural Development Council Inc., 1965).
 2. P.J. Foster, op. cit., pp.145-6.
 3. I. Illich, *Deschooling Society*, (London: Calder and Boyan, 1971).

education as something that can help the young school leaver, as something to complement formal education not to replace it. This view accepts that although the schools have an important role in providing a relevant general education, this alone will rarely help the school leaver to become a better farmer or more effective member of the rural community. There is also a need for institutional changes and innovations outside the school system.

Non-formal education has been described by Coombs and Ahmed as "any organised, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children".¹ If we use this definition, non-formal education includes agricultural extension and farmer training, adult literacy programmes, occupational training outside the school system, youth clubs and different types of community education such as those associated with co-operatives, health, nutrition and family planning programmes. If we think in terms of the needs of the school leaver, it is also an integral part of many schemes for labour mobilisation, employment creation and land development. Many of the more successful projects that we shall examine have several aims. They often offer immediate opportunities for employment combined with vocational training and general education that will help the school leaver find work or become a better farmer when his period of employment and training is finished. In the case of agricultural training, this may also be accompanied or followed up by the allocation of blocks of land and the provision of the type of infrastructure necessary to make commercial farming a success.

1. P.H. Coombs and M. Ahmed, *Attacking Rural Poverty, How Non-formal Education Can Help*, (Baltimore: John Hopkins University Press, 1974), p.8.

There are a large number of different programmes of non-formal education. Some have been organised on a national basis; others are individual projects which may owe their inspiration to one man. Many have become a permanent feature of government policies; others have often been experiments of a more temporary nature. In this section I am going to examine some of those that seem especially relevant to the school leaver who cannot find employment or who is going to return to the village to take up farming. For this purpose the different types of schemes can be classified in three main groups: national youth services and brigades; community development projects; agricultural training through farmers' training centres and extension activities.

Brigades and National Youth Services

One method of mobilising school leavers is through some type of National Youth Service. This type of organisation not only provides employment, it often also has a training function and it may provide labour for public works and development schemes. Other arguments advanced in favour of some form of youth service are that it helps develop a sense of responsibility; it teaches people to work together; and it is a means of nation building and creating unity between different groups.

Among the earliest models of this type of organisation were the Workers' Brigades in Ghana. These were set up in 1958 and at their maximum provided employment for more than 29,000 people. Members of the Brigades served for specific periods; they received their board and lodging, also a low wage. Members might be required to serve in any part of Ghana; they were organised in nine regions and based on different camps. Initially most of their work was concerned with public works in agriculture and construction.

After the fall of Nkrumah in 1966, the Brigades were regarded with some suspicion by the new government as being too closely identified politically

with the previous regime. A Commission of Enquiry was set up to examine their functions and organisation. The Commission did in fact recommend that the Brigades should be continued as there was a need for the type of training and employment that they provided. The numbers were however reduced and the more uneconomic projects were dropped. At present some of the camps are engaged in industrial enterprises such as the manufacture of clothing and wooden carvings but the majority are involved in agriculture. Brigade farms were established with the original intention that they would develop into communal settlements with production organised on a co-operative basis; another important function was to provide agricultural training. After the reorganisation of the Brigades in 1966 the farms have mainly developed as commercial undertakings at which brigade members have worked for fixed wages with no real training being given. The change in the character of the Brigade system after 1966 is the main factor which has to be considered in any evaluation of their effectiveness; from a membership of 29,000 people, the numbers dropped to 15,133 by the end of 1968.¹ The main type of school leaver they provided employment for were those who had left after middle school. By 1965 the annual output of the middle schools was about 40,000 young people² and the Brigades were only able to provide employment for a small proportion of them. Before 1966 there had been suggestions that the Brigades should be made compulsory for all middle school leavers. This expansion never materialised because of the problems it would have presented in terms of administration and additional costs. At that time the Brigades were costing the government £7 million a year; after 1966 this grant was reduced to £1½ million.

The title of "Brigade" was also used in Botswana. The first Brigades

1. A.W. Wood, *Informal Education and Development In Africa*, (The Hague: Institute of Social Studies, 1974), p.65.

2. P.J. Foster, *Education and Social Change in Ghana*, op. cit.

developed from the attempts at community education being made by Patrick Van Rensburg at Swaneng Hill School.¹ In 1965 the Builders Brigade was set up at the school to provide training in construction skills and also create some form of employment for primary school leavers. It was hoped that the Brigade would earn enough cash from its commercial undertakings to be almost self-supporting. In its first four years it completed enough work to cover recurrent expenses. The period of training in the Brigade was for three years and also included general education in English, Arithmetic and Development Studies. After training it was hoped the trainees would be able to find employment as skilled carpenters and bricklayers or possibly start their own businesses on co-operative lines. Four other Builders Brigades were later set up at different centres.

There are also two textile Brigades which give girls a two year course in spinning, weaving, and dressmaking. The first trainees from these establishments found it difficult to find employment and one group has been encouraged to set up a co-operative business known as the Unity Workshop. The standard of the products of the Brigades and the Workshop has been high but there have been problems associated with marketing.

The first Farmers Brigades operated as farms where the students received training. Emphasis was on irrigation farming and the rearing of livestock. It was hoped that after their period in the Brigade the students would live and work on some type of co-operative settlement. The students do not seem to have been highly motivated in this direction and wanted certificates to be awarded in the hope of obtaining wage employment. Local tribal authorities were also unwilling to make land available for the establishment of

1. P. Van Rensburg, *Report from Swaneng Hill*, (Uppsala: The Dag Hammarskjold Foundation, 1974).

a co-operative. As a result of these problems, programmes were developed where training was divided between the central brigade farm and the trainees' settlement farms. These *in situ* schemes, which emphasised that post-training positions should be located before training started, also necessitated close co-operation with the local community in order to get them to contribute in terms of land, cattle and sometimes capital.

By 1971 there were 31 different types of Brigades in Botswana with about 850 trainees.¹ In the previous year Martin had concluded his report on the Brigades with the following statement: "Brigades in general have shown that they can provide a training for youth which is cheap, realistic, and effective, but they can still only reach limited numbers of young people. If they can solve the problem of the farmers, they will be capable of launching an attack on the wider problem of underdevelopment".²

The Zambia Youth Service was started in 1964 with 8 camps and 1500 trainees. The aim was to provide trade training and utilise potential manpower. Early organisational and discipline problems resulted in certain changes being made the following year. Israeli experts were brought in to help with the training. Greater emphasis was placed on drilling, physical exercises, cross-country running and other outdoor activities. A tighter disciplinary code was drawn up. Central training was at Kafue and then the servicemen were sent out to six bases. At two of these bases there was trade training in building, carpentry, metal work and leather work. At the other four centres the basis of the course was agricultural. At all the centres considerable time was given for general and political education. There was

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1. J.R. Sheffield, and V.P. Diejomaoh, *Non-Formal Education in African Development*, (New York: African-American Institute, 1972), p.66.
 2. A. Martin, "Report on the Brigades in Botswana", appendix to P. Van Rensburg, *Report from Swaneng Hill*, op. cit.

also a parallel scheme for girls, which had two camps. Recruits for the Youth Service had to be between the ages of 16 and 25, unmarried and unemployed. Initially they were mainly primary school leavers although later the proportion with secondary education increased. At the end of their two year period of service, those who had received agricultural training were encouraged to form co-operatives where large scale and often mechanised farming could be practised. Several were set up with a considerable amount of success; this was partly due to government support in the form of bush clearance, construction of elementary housing, extension work and agricultural credit schemes. It is significant that the co-operatives were also set up near the Youth Service bases and have continued to receive some support from them. In some cases the commercial farming benefited from the market for agricultural products provided by the Copperbelt towns.

The Kenya National Youth Service has been in existence since 1964. It is a voluntary organisation for young people between the ages of 16 and 30. The period of service is normally for two years with a third year optional. The service is organised on para-military lines with uniforms and army type ranks. There is a period of basic training which lasts five months and then the Servicemen are sent to field units. The Service has one large farm and several smaller ones, but most of its projects are concerned with public works such as road construction. It is highly capitalised and has a reputation for efficiency in executing various projects which are part of the Kenya Development Plan. It also provides some basic education and vocational training. There is no structured follow-up programme but the Service does attempt to help its members find employment when their period of service is over.

Some schemes are related to conscription for military service, with forms of community service being undertaken as an alternative or as a form

of commuted service. One of the most effective models of this was the Israeli *Nahal* which helped to develop the Negev Desert. This type of national service has also been tried in parts of the West Indies, Guiana and Afghanistan. In Iran, soldiers in the army could volunteer to teach literacy in remote villages, and this type of Education Corps first set up in 1963 came to be known as the 'Army of Knowledge'.

Community Development

In considering community development schemes in relation to school leavers it must be remembered that these are basically projects aimed at involving the whole community not just their particular group. They do, however, represent one means by which the school leaver can become involved in the development process. Community development may also be a way of making the school a more integral and relevant part of village society.

Definitions of community development vary but most agree that it involves a self-help approach to rural development. Batten quotes this description: "A movement to promote better living for the whole community, with the active participation and if possible on the initiative of the community".¹ The term gained currency in many British colonies in the period immediately before independence; in countries that had been French colonies the phrase *animation rurale* was used to describe a similar approach. It can also be argued that this type of development was nothing new and that it had often been a feature of traditional societies. A good example would be the *gotong royong* tradition in Malaysian and Indonesian village communities, self-help through mutual co-operation.²

1. T.R. Batten, *Communities and their Development*, (London: Oxford University Press, 1957), p.1.

2. For a description of *gotong royong* (or *gotong-rojong*) see Koentjaraningrat, *Villages in Indonesia*, (New York: Cornell University Press, 1967), pp.394-397.

Community development may also be used as a means of making government extension services more readily available to the people. This has been one of the aims in India where Village Level Workers act as a link between the government and the people in the villages. In the Comilla project¹ in Bangladesh, the villagers themselves chose one of their own number to serve as their educational link with relevant outside sources of knowledge. Those chosen, received training at a central Academy of Rural Development and then returned to the villages to teach their own people.

In the Comilla project the villagers organised co-operative societies. Co-operatives have also played a vital role in other community development programmes such as the *Ujamaa* villages in Tanzania and the Philippine Rural Reconstruction Movement.

Land Reform and Farmer Training

Co-operative societies may also be a feature of land tenure reorganisation after land reform. In his comprehensive study, *Land Reform and Economic Development*,² Dorner quotes examples such as the rural development co-operatives in Dahomey, production co-operatives in Peru, the *asentamiento* in Chile under Allende, and co-operatives set up following land reform legislation in the United Arab Republic. In Israel the *moshavim* and *kibbutzim* provide successful models of communal agricultural development which several countries have attempted to copy. At the end of this section we shall look at the role co-operative settlements can play in schemes to give agricultural training to school leavers. In many cases land reform must be regarded as an integral part of the development process. The splitting up of large estates

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1. The Comilla project is fully described in A.F. Raper, *Rural Development in Action; the Comprehensive Experiment at Comilla, East Pakistan*, (Ithaca: Cornell University Press, 1970).
 2. P. Dorner, *Land Reform and Economic Development*, (London: Penguin Books, 1972).

and plantations into small units often helps to create agricultural employment in that small farms usually have more workers per acre than do large ones. Redistribution may help in providing land for the school leaver to practice farming. Land reform that aims at giving him greater security of tenure and an individual registered title to his land will also encourage him to make greater improvements to his land and to grow perennial cash crops. At the same time, if other inputs such as education are lacking, land reform by itself is not likely to be effective or successful in leading to greater agricultural productivity.

Agricultural training outside the school has often taken two very distinct forms. There has been the training for a definite period at a centre and there has been the type of extension programme where assistance and advice are taken to the farmer. An example of the first type are the Farm Institutes in the Kano state of northern Nigeria. These take school leavers from 17 to 25 years of age. All must have been guaranteed at least ten acres of land by their families or local communities for farming after they have completed their training. The courses last for eleven months. The curriculum consists of crop, livestock and poultry husbandry, horticulture, co-operative management and organisation, hygiene, surveying, crafts, soil conservation and farm management. Much of the course is devoted to practical work and each student works a small plot of land. At the end of the courses the students do not receive any certificate, which it is feared might tempt them to look for work away from their own communities. Instead they are allowed to take home the crops they have produced and also their tools. In addition they receive a grant for fertilisers and cattle food. Arrangements are also made for agricultural extension workers to visit them on their farms. The Farm Institutes have been successful because of this type of follow-up programme and because of the incentives offered. Productivity per acre was much higher among Institute-trained farmers than farmers with no training: 61.4

per cent more for groundnuts, 71.5 per cent more for corn and 43.4 per cent greater for millet.¹ On the other hand, the total number of trainees has been relatively small; 620 up to 1973, and considerable expansion is needed if they are to make a sizeable impact on the economy.

The Farmer Training Centres in Kenya were organised on a somewhat larger scale. In 1967 there were 27 centres catering for about 1,500 trainees. The main aim of this training was to help Kenyan farmers who wanted to take up commercial farming; some of the centres were set up specifically for farmer taking over European farms in the former "white highlands". In reviewing the available evaluation evidence, Coombs and Ahmed suggest that useful results have been achieved by the Farmer Training Centres in that "(1) FTC farmers show a higher rate of adoption of recommended practices than other farmers; (2) a high percentage of FTC farmers name FTCs their major source of information on new practices; (3) FTC farmers appear to have influenced neighbouring farmers to become early adopters; (4) a high proportion would like to return to an FTC for further training; (5) FTC farmers have higher cash incomes and living standards than other farmers".² They do, however, also state that recently the Centres have been facing problems of a drop in farmer attendance and poor staff morale and a high turnover. It is perhaps also significant that over the years the duration of courses have shortened from one year, when they started in the mid-fifties, to courses which are now often only a week. These courses have tended to become more specialised and often deal with only one particular aspect of crop and animal husbandry. The Centres are no longer providing general and introductory

1. These figures are taken from J.R. Sheffield and V.P. Diejomaoh, op. cit., p.95.

2. P.H. Coombs and M. Ahmed, op. cit., p.40.

training but instead are being used for specialist short term courses relevant to the agricultural extension programme.

I have suggested earlier that school leavers are in an especially favourable position to take advantage of extension services. In addition to the training provided at residential institutes or centres, there are many other methods by which agricultural education can be carried to the farmer. This type of extension work may not only be a matter of giving advice and introducing the farmer to new crops and techniques; very often it is also concerned with changes in attitudes. In defining the aims of extension, Saville states: "The objective of all extension is to change people's outlook towards their difficulties".¹

Extension workers in the village will be most effective if initially they can work through local leaders and groups. In their comparative study of agricultural extension education systems, Axin and Thorat make certain conclusions; one is that "the success of an agricultural extension programme in any particular locality tends to be directly related to the extent of personal contact between the people of that locality and the staff of the agricultural extension organisation"² another is that success "tends to vary directly with the extent to which its 'first line workers' are local persons who are selected by the group to be served".³

New organisations or institutions may also be a feature of the extension programme. A good example are 4-H Clubs. These have their origin

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1. A. Saville, *Extension in Rural Communities*, (London: Oxford University Press, 1965), p.2.
 2. G.H. Axin and S. Thorat, *Modernising World Agriculture*, (New York: Praeger, 1972), p.189.
 3. Ibid.

in the United States where there are still over two million members. The clubs are open to boys and girls between the ages of 10 and 22 years. The four Hs in the title are the Head, Heart, Hands and Health, which are pledged to clear thinking, greater loyalty, larger service and better living as expressed in the oath taken by new members. The clubs have a wide range of activities, many of them social and recreational, but the emphasis is on those associated with farming and home management.

The American 4-H Clubs have acted as a model for similar youth organisations in other parts of the world, especially in those countries which have been recipients of American technical assistance. In some countries, such as Taiwan and South Korea, they have kept the title of 4-H Clubs; in others the words and initials have been adapted such as the 4-S Clubs of Brazil and the 4-K Clubs of Kenya.

In that they specifically cater for a young age group, 4-H Clubs and similar youth organisations have a direct relevance to school leavers. They also have the advantage of usually being based on the village. Members are encouraged to operate their own projects such as raising chickens, pigs, growing vegetables and trying new crops. They receive advice and assistance from extension officers. Visits and demonstrations are organised. Agricultural shows and competitions are encouraged. The clubs act as places where young people can meet and games and social occasions can be organised. In this way they help to make the villages more attractive places in which to live.

Development of the mass media in rural areas facilitate communications for agricultural extension. Broadcasts for farmers help them keep in touch with recent developments in techniques and crop and animal research; they may also provide valuable information on the latest market prices. The newspapers may be used to supply similar information and to publicise developments in

agriculture and government policies. The extension sections of many government agricultural departments produce their own newspapers, magazines, bulletins and leaflets. The use of these media can only be fully effective if the farmers are literate and have received some education.

Other extension methods may have a broader appeal and be especially successful with farmers who have little formal education, but who are impressed by practical results. In this category are the use of demonstration farms and farm visits. Farm days or weeks, together with agricultural exhibitions and competitions, will also help to stimulate interest in agriculture and greater productivity.

Evaluation of the impact of extension work is difficult; it cannot be considered in isolation but is rather linked with other components of the development process. Agricultural research may succeed in developing new products and techniques, but their adoption will depend on how effectively knowledge of them is spread by the extension system. Agricultural innovations and improvements may also depend on the provision of rural credit facilities; extension personnel are often concerned with the supervision of subsidy or loan projects. Increases in agricultural productivity and especially the introduction of new cash crops which can result from extension efforts, may also give rise to problems of transport, storage and marketing; their planning must be a part of any integrated rural development programme.

We have seen that school leavers as a group should be in a particularly favourable position to take advantage of the advice and aid provided by extension programmes. They may also function as a useful link between government officials and the village. They are in a good position to read, and sometimes translate information conveyed by the media. It would seem, therefore, in a search for solutions to problems of school leaver unemployment

and under-involvement in agriculture, agricultural extension should be considered as something to complement rather than act as an alternative to formal education. The long term effectiveness of any type of farmer training will also depend very much on the social and economic environment in which the school leaver has to work. He should be part of a community which is receptive to new ideas and methods. Land must be available and he should have security of tenure. Capital and marketing facilities should also be available if commercial farming is to be successful. For these reasons land settlement schemes have often been suggested as providing the most suitable institutional framework for school leavers taking up agriculture.

In the past, land settlement schemes have been initiated for a variety of reasons. Often they have involved transfer of population from over-populated areas to less developed sparsely inhabited regions with agricultural potential. Attempts by the Dutch to encourage Javanese farmers to settle in Sumatra, Kalimantan and the Celebes come into this category. In the Philippines, the National Land Settlement Administration encouraged the settlement of the Korondal Valley in Mindanao by farmers from denser populated areas in the Visayan Islands and Luzon.

Land settlement may also be a necessity when an area has to be evacuated by its population. In some of the earliest schemes in Africa people had to be moved from areas infected by sleeping sickness. This occurred in Uganda where the inhabitants were moved from some of the areas on the coast of Lake Victoria and in Nigeria where population from infected areas was resettled on the Anchau Rural Development and Settlement Scheme. More recently the building of dams and the inundation of areas by man-made lakes has also necessitated the resettlement of the inhabitants of the affected areas. The building of the Kariba, Volta, Kainji and High Aswan dams all resulted in settlement schemes.

Land reform and changes in systems of land tenure may also result in land settlement schemes. One of the objectives of the National Land Settlement Administration of the Philippines was to provide opportunities for tenant farmers and landless workers to own their own farms.¹ In Kenya the Million-Acre Scheme was concerned with settling Africans on land that had been acquired from Europeans.

Land settlement schemes have also been associated with attempts to change the type of land use. An extreme example of this would be the sedentarisation of nomadic herders that is occurring in some parts of the Sahel region of Africa. More often settlement schemes may aim at encouraging subsistence farmers to grow cash crops. The Federal Land Development Authority in West Malaysia encourages Malays to grow oil palm or rubber. In the Philippines one of the objectives was to diversify the cash crops grown; settlers were encouraged to grow coffee, rubber, cocoa and cotton, rather than the traditional exports of the country: sugar, copra, tobacco and abaca. Mechanised farming is also a feature of some land settlement schemes which may use a central pool of machinery. Other types of land settlement have resulted from irrigation schemes; one of the most successful was associated with the growing of cotton at Gezira in the Sudan.²

The general expansion of education in less developed countries should mean that an increasing proportion of those involved in land settlement schemes will have received some formal education. In that school leavers tend to be more mobile and less tied to traditional life in the village than

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1. Section 2 of the Act creating the National Land Settlement Administration (Commonwealth Act No. 441) states as part of the second objective of the Association. "To afford opportunity to own farms to tenant farmers and small farmers from congested areas". Taken from K.J. Pelzer, *Pioneer Settlement in the Asiatic Tropics*, (New York: American Geographical Society, 1948), Appendix A, p.244.
 2. The standard account of the first thirty years of this scheme may be found in A. Gaitskell, *Gezira, a Story of Development in the Sudan*, (London: Faber and Faber, 1959).

their contemporaries, it can be expected that once they make a decision to take up agriculture as a career, even as a last resort, they will be attracted by land settlement schemes and the opportunities they offer for more profitable farming. In his comparative study of pioneer settlement in South East Asia, Pelzer¹ emphasised that a large number of the settlers in the Philippines, who went to Mindanao, had more than average education and had been attracted by what they had learnt about the resources and potentialities of the new regions that had just been opened up. He suggests this as a reason why resettlement schemes in the Philippines were relatively more successful than those in Indonesia during the period immediately before the Second World War.

Some land settlement schemes have been set up specifically for school leavers. In 1960 capital-intensive co-operative farm settlements were started in Southern Nigeria with the object of settling school leavers on the land and demonstrating that rural life could be as profitable and attractive as that in urban areas. Thirteen of these settlements were set up in the Western Region and, two years later, six more in the Eastern Region.

Similar schemes for unemployed youths, who are generally primary school leavers, have been set up as state projects in West Malaysia. The settlers are unmarried and in most cases, Malays. They are each allocated five to eight acres of cleared land with the promise of eventual ownership. Most of the land is used for growing oil palm or rubber; marketing is done centrally.

We have also seen earlier in this section that co-operative settlements were started in Zambia for those who had received agricultural

1. K.J. Pelzer, op. cit.

training in the Youth Service. They provide an example of the type of organisation which is often necessary if there is to be a successful follow up to agricultural education.

Two schemes in Uganda have been of particular interest because they combine settlement and training. Both were sponsored by the Church of Uganda and owe much to the inspiration and leadership of a missionary, Stephen Carr. The first was at Nyakashaka in the Ankole District of Western Uganda. This was a mountainous and isolated area with a sparse and declining population. Three thousand acres of land were acquired and it was decided that, because of the altitude and cool climate of the region, the major commercial crop of the scheme would be tea, with strawberries and potatoes as secondary cash earners. Young men who wished to join the scheme had to be prepared to work as general labourers for six months before being accepted as settlers. Then for three years each trainee farmer was allocated six acres of land, five of which were used for growing tea and the other for secondary crops and the settler's house. During these three years, the farmer was given practical training in modern farming techniques and in the organisation of co-operative marketing. Then at the end of this period, provided he satisfied the management, the farmer received an individual land title to his farm and full membership rights of a successful co-operative organisation.

The scheme was started in 1963 and by 1967 one hundred and twenty farmers had been trained and settled. The total cost for this period was £40,000, of which £27,400 was ultimately recoverable from the settlers as it represented loans for tea stumps, fertilisers and housing materials. It was hoped that settlers would be able to get an annual income of £300.¹ After

1. These figures are based on an analysis of capital and recurrent costs made by Christian Aid who provided much of the original finance. They are referred to in A.W. Wood, op. cit., p.230.

1967 the Nyakashaka scheme continued to prosper and other farmers were attracted to what had been a backward region. Social amenities in the area have been improved with the building of schools, churches and a community centre.

Following the initial success of Nyakashaka, Carr moved as manager to start another scheme at Kidoma in the Bunyoro District. Although this region was much lower and hotter, tea was again the main crop. More land was available in this area and each individual farmer received an area of fifteen acres.

In that Nyakashaka and Kidoma have both proved successful examples of school leaver settlement and training, it is perhaps of value to summarise their main features. Firstly, the schemes achieved commercial viability as quickly as possible, so that the settlers did not have to wait too long before they achieved some cash reward for their work. Although the settlers had to repay loans, the repayment was spread over a long period so that the settlers were not saddled with too heavy a debt burden in the early stages when they were still establishing their farms. Initially, also, most of the buildings were simple grass huts; more permanent buildings were not constructed until the schemes were well established. The training given to the farmers was essentially practical and directly related to the work being done on the farms and to the running of co-operatives. The co-operatives were responsible for marketing and the transport of the tea to the factories.

It is interesting to compare the organisation of these schemes with models which have been suggested by other commentators on settlement schemes.

Chambers¹ classifies settlement schemes into four types. The simplest type and the one with least central direction is the settlement of individual holdings where only land boundaries are planned and controlled. The second type differs in that it is characterised by the organisation of compulsory marketing which necessitates a slightly greater control by the management. Nyakashaka comes into this second classification. The third and more complex type are the scheduled production schemes. In these the main feature is the organisation of a centrally controlled technical service, mechanised or irrigational, upon which crop production on individual holdings depends. The Gezira scheme is a good example of this type. The fourth group are described as communal economy schemes. These are co-operative settlements of the kibbutz type in which the land is usually owned collectively and the labour and rewards are shared.

In his evaluation of African schemes, Chambers suggests that "from the point of view of settling people, the most effective projects have been individual holding schemes".² In terms of the allocation of resources, opportunity costs and the amount of risk involved, he believes the complex and more highly capitalised schemes often compare unfavourably with other forms of agricultural development. He concludes:

"Where a settlement scheme is unavoidable, and where there is a choice of type to be adopted, there is much to be said on organisational grounds for the simplest type of settlement that is compatible with the circumstances of settlement. The simpler approaches are relatively undemanding of scarce administrative and technical capacity, and engage it for shorter periods. They involve relatively low risk and low commitment. Moreover, schemes with individual holdings exploit the drives of property ownership and individual incentive which can make productive the labour which is the most

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1. R. Chambers, *Settlement Schemes in Tropical Africa*, (London: Routledge and Kegan Paul, 1969), p.231.
 2. *Ibid.*, p.250.

abundant unused resource in much of the third world. The simpler schemes also require intermediate levels of organisation corresponding with the intermediate technology which may also be appropriate. If the beginning is ambitious, a complex organisation may collapse and find equilibrium at a lower level; but if the beginning is modest, a more complex technology and organisation can grow up organically and gradually".¹

In "Thoughts on Land Settlement",² W.A. Lewis identified several factors as necessary for the success of settlement schemes. The first was the choice of a site that was suitable for agricultural development. In the selection of settlers, Lewis believed that preference should be given to those with agricultural experience and that settlers for a particular scheme should come from a similar social and economic background. In considering the amount of preparation necessary, he suggested that in many cases although the centralised agency should be responsible for road building and water supplies, land clearing and house building could often be done more economically by the settlers. He believed that many schemes had failed because of lack of working capital to cultivate the land economically, and suggested the settlement agency should ensure, in addition to roads and water, seeds, fertiliser, tools and livestock that would be necessary for a scheme to be successful. Lewis was doubtful whether large units could be run successfully under collective ownership and believed that the family size unit represented the best means of settlement in most less developed countries. At the same time, a central agency was necessary to organise credit, marketing and processing where it was needed. However, he believed that complete centralised control was only successful in the case of the Gezira scheme. In terms of the classification suggested by Chambers, Lewis would seem to favour compulsory marketing schemes as combining "the social advantages of small scale operation with the economic advantage of large scale control".³

1. Ibid., p.261.

2. A.W. Lewis, "Thoughts on Land Settlement", *Agriculture in Economic Development*, ed. C. Eicher and L. Witt, (New York: McGraw-Hill, 1964), pp. 299-310.

3. Ibid., p.306.

Any general evaluation of settlement schemes is difficult. Schemes have been set up for many different reasons. They have also faced a variety of problems, some have been on marginal land; others have had unsuitable settlers. In some cases there has been a high drop-out rate among the settlers and some schemes have had to be abandoned altogether. On the other hand, there have been schemes which have been successful in different situations and environments. These include the *kibbutzim* and *moshavim*, the Gezira scheme and Nyakashaka; they all represent very different types of schemes. It is unrealistic to suppose that any of these could be adopted as a model which could be universally adopted for the settlement of school leavers. Similar arguments apply to the different types of non-formal education and youth organisation described earlier in this section; their adoption depends upon the conditions existing in a country at a particular time. One of my objects in the next section will be to see the extent that land settlement, non-formal education and youth organisations have been able to help rural school leavers in the two study areas, Sarawak and Papua New Guinea. In my conclusion, I will attempt an evaluation and comparison of their roles, together with recommendations on the types of education, training, extension work and rural organization which are most likely to help the school leaver who is returning to the village in these two areas.

PART II

SARAWAK

CHAPTER 5

SARAWAK: THE LAND, PEOPLE AND ECONOMY

Sarawak is situated in the north west part of the island of Borneo. It developed as a political entity in the nineteenth century when an Englishman, James Brooke, became governor and then rajah of the lands around the Sarawak River. Under his rule and that of his successors, Charles and Vyner Brooke, the territory of Sarawak was expanded to include much of the area that had formerly been administered by the Sultan of Brunei.¹ The three "White Rajahs" of the Brooke family ruled Sarawak from 1841 until 1942 when it was occupied by the Japanese during the Second World War. Following the war, Sarawak was ceded to Britain as a colony. In 1963 it became self-governing as part of the new federation of Malaysia.

Sarawak is the largest of the Malaysian states with a total area of 124,935 square kilometres. It is divided up into seven administrative divisions and these are sub-divided into districts which also generally correspond to local government areas.

There are three main geographical regions in the country: the coastal lowlands, the undulating hilly area further inland and then the higher mountain ranges. The main rivers have their sources in these ranges near the Indonesian border and then flow westwards to the South China Sea.

Sarawak's position just to the north of the equator means that it has a climate characterised by high temperatures with a low seasonal

1. Full accounts of the history of Sarawak under the Brookes can be found in the following: R. Payne, *The White Rajahs*, (London: Robert Hale, 1960) and S. Runciman, *The White Rajahs: A History of Sarawak from 1841-1946*, (Cambridge: Cambridge University Press, 1960).

range.¹ The rainfall is very heavy with most parts of the state receiving over 3,000 millimetres a year. Rain falls throughout the year but the wettest period is from October to November when the north east monsoon is the prevailing wind.

Partly as a result of the heavy rainfall, the soils tend to be leached and infertile. The most common soils are red and yellow latosols. Peat soils occupy much of the badly drained lowlands of the coastal and delta areas.

Over three quarters of Sarawak is covered by tropical rain forest. Much of this is mixed dipterocarp forest in which *meranti*, *kapor* and *resak* are the three main species. In the higher areas are regions of montane and sub-montane forest where the trees become more stunted and there is often a thick layer of moss. In the swampy lowland areas much of the land is covered by peat forest in which *ramin* and *alan* are commercially important. Mangroves and nipah palm form the main type of vegetation in the coastal swamps; on more sandy soils the casuarina becomes dominant.

Sarawak has a population of slightly more than one million (976,629 in the 1970 Census and 1,116,111 according to estimates for 1974).² During the period of Brooke rule there was considerable Chinese immigration and today they form nearly 30 per cent of the population. The Chinese are found in all seven divisions of Sarawak and form the majority of the population in the urban areas. The most numerous of the indigenous people are the Iban or Sea Dayak; they are dispersed throughout the state, usually

1. Kuching, the state capital, has an average mean temperature of 25.5°C in January which is the coolest month, and 26.7° in June, the hottest month.

2. Department of Statistics: *Annual Statistical Bulletin, Sarawak, 1976*, (Kuching: Government Printer, 1977), p.9.

living in long-houses. The third most numerous group are the Malays who live mainly in the coastal areas. Another major group are the Iban.

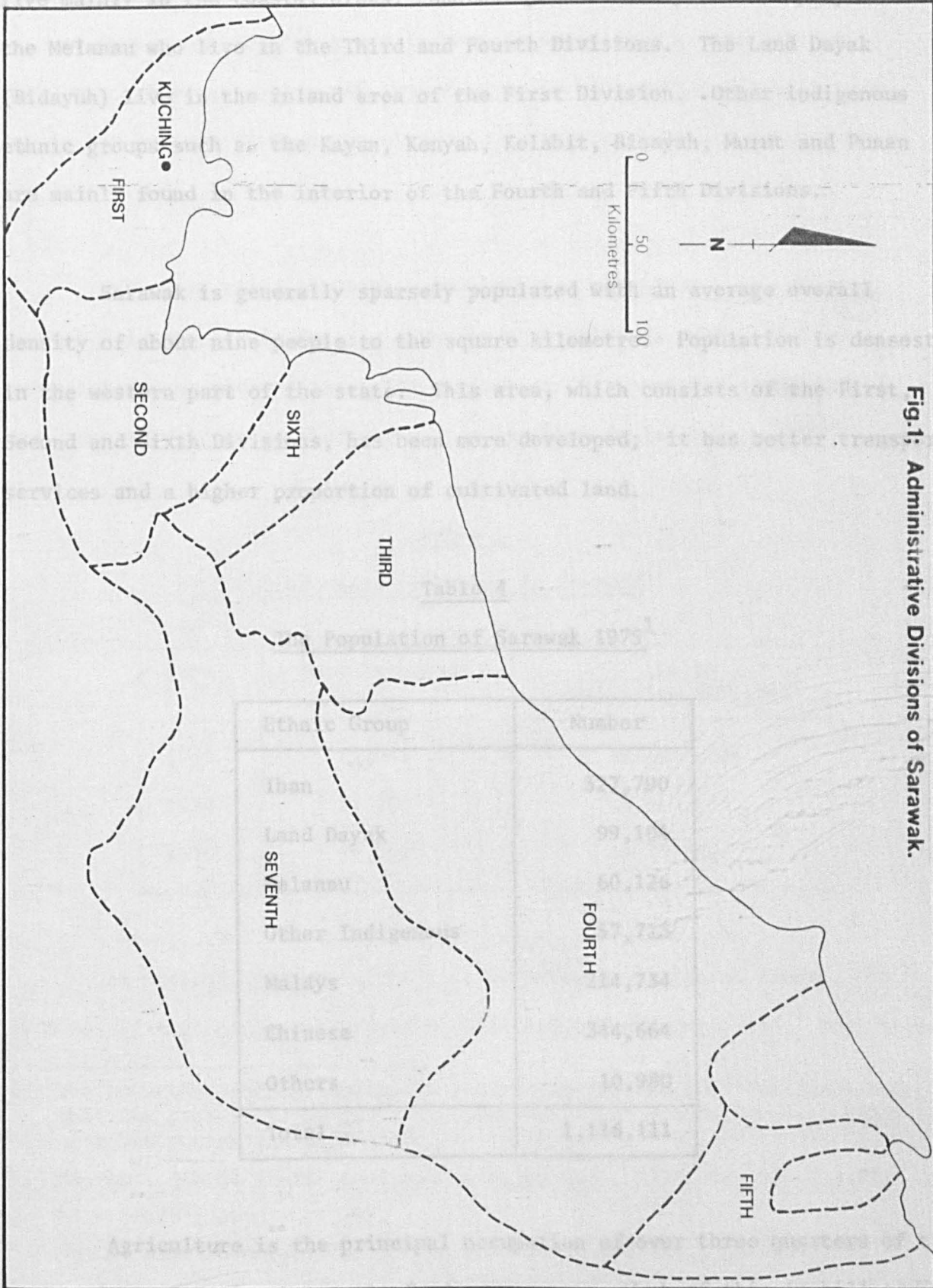


Fig.1: Administrative Divisions of Sarawak.

Table 1
Population of Sarawak 1975

Ethnic Group	Number
Iban	57,790
Land Dayak	99,100
Malay	60,126
Other Indigenous	17,725
Malays	114,734
Chinese	344,664
Others	10,980
Total	1,116,111

Agriculture is the principal occupation of the three quarters of the population. Rice is the staple food crop and is grown in the lowlands.

living in long-houses. The third most numerous group are the Malays who live mainly in the coastal areas. Another predominantly coastal people are the Melanau who live in the Third and Fourth Divisions. The Land Dayak (Bidayuh) live in the inland area of the First Division. Other indigenous ethnic groups such as the Kayan, Kenyah, Kelabit, Bisayah, Murut and Punan are mainly found in the interior of the Fourth and Fifth Divisions.

Sarawak is generally sparsely populated with an average overall density of about nine people to the square kilometre. Population is densest in the western part of the state. This area, which consists of the First, Second and Sixth Divisions, has been more developed; it has better transport services and a higher proportion of cultivated land.

Table 4
The Population of Sarawak 1975¹

Ethnic Group	Number
Iban	327,790
Land Dayak	99,104
Melanau	60,126
Other Indigenous	57,713
Malays	214,734
Chinese	344,664
Others	10,980
Total	1,116,111

Agriculture is the principal occupation of over three quarters of the population. Rice is the staple food crop grown. Much of this is hill *padi*

1. Ibid, pp. 9-10.

grown by shifting cultivation on an eight to fifteen year cycle.

Swamp *padi* is also grown in certain areas such as the Kelabit Highlands. Average yields per acre tend to be higher than for hill *padi*¹ and it has been part of the government's agricultural policy to encourage its growth.

Rubber is still the most commonly grown cash crop. In contrast to West Malaysia, it is usually grown on smallholdings rather than on large estates or plantations. The production of rubber has shown itself very sensitive to price fluctuations as is shown in Table 5.

Table 5
Production of Rubber in Sarawak²

Year	Tons Exported	Value (Malaysian dollars) ³
1960	49,949	122,440,000
1970	21,460	23,976,000
1976	39,767	64,301,000

At present, pepper is the most valuable agricultural export. In 1976 34,851 tons of pepper valued at \$124,443,000 were exported.⁴ Most pepper

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1. The Department of Agriculture's statistics for the 1969-70 season show that the average yield for swamp *padi* was 1,460 pounds per acre compared with 789 pounds for hill *padi*.
 2. Source: *Annual Statistical Bulletin, Sarawak, 1976*, op. cit., p.98.
 3. £1 = \$4.45 (January, 1979).
 4. *Annual Statistical Bulletin, Sarawak, 1976*, op. cit., pp. 100-101.

growers are Chinese, although the number of indigenous farmers producing the crop is increasing.

Another important crop, both for food and export, is the sago palm. This is grown by the Melanau in swampy coastal regions. The growing of coconuts is becoming increasingly important, especially in the better drained coastal areas of the First and Second Divisions. In addition, a variety of other crops, vegetables and fruit are grown on a small scale for local consumption. The Second Malaysia Plan¹ emphasised the importance of agricultural diversification and now crops such as oil palm, coffee, cocoa, tea, soya beans, groundnuts and tapioca are being developed.

Livestock farming is relatively unimportant in the economy. Pork is a favourite food of most of the non-Muslim population and many of the villages and long-houses have pigs. There has also recently been a development of commercial piggeries near the towns. In a similar way, the keeping of poultry is widespread and there has been an increase in the amount of battery farming. Cattle rearing is not at present very important in Sarawak, although Indian and Chinese farmers keep small herds near Kuching. Buffaloes are important to the Kelabit and Murut of the Fourth and Fifth Divisions where they are kept for meat and also used in preparing the fields for the growing of swamp *padi*.

In the coastal areas fishing is usually the main occupation, frequently combined with some type of farming such as rice, coconut or sago palm production. A wide variety of methods are used by the inshore fishermen, who are usually Malays or Melanaus. There are drift nets which are known as the *rantau* and *pukat tangsi*. There are nets operated from fishing stakes,

1. Malaysian Government, *Second Malaysia Plan, 1971-75*, (Kuala Lumpur: Government Printer, 1971).

different types are known as *inggian*, *jermal* and *kilong*. Another method of fishing is the use of the seine net, *pukat tareng*, which is operated from the beach. Offshore fishing is mainly undertaken by the Chinese Heng Hua group. They use long drift nets operated from diesel-powered launches known as *kotaks*. Trawling is also becoming important and ships from Japan, Thailand and Taiwan also sometimes operate off the Sarawak coast.

The forests which cover much of Sarawak provide a number of important products. Timber is a major export; much of the early development occurred in the more easily accessible coastal forests, but increasing attention is now being paid to the hill forests further inland. Other forest products include illipe nuts, jelutong, damar, rattans and edible birds' nests.

Minerals have played an important part in the development of Sarawak. James Brooke first gained power as a result of a civil war over the control of the antimony mines in the Bau district, or Upper Sarawak as it was then called. Later the exploitation of gold in the same area was to attract some of the first Chinese immigrants. Mercury was an important export in the latter part of the nineteenth century. From 1871 to 1931 coal was mined near Simunjan and more recently, from 1958 to 1965, bauxite in the Lundu district; in both cases mining ceased when the main accessible deposits were worked out. At present gold and antimony are still being mined on a small scale in the Bau district. The most important mineral today is oil. This has mainly come from the Miri area where the first successful well was drilled in 1910. Production from the Miri oilfield has declined, but the discovery and exploitation of offshore deposits have now made oil the most valuable of the state's exports.

An important factor in determining the pattern of land use is the

system of land tenure. Land in Sarawak is divided into five categories. The largest area, including most of the land used for shifting cultivation, is classified as native customary land. Rights to this land have been created in different ways, but the most common is through the felling of virgin forest for farming purposes. The land has not been surveyed or titles to it recorded by the government, except in rare cases, usually as a result of an ownership dispute. Another similar category is native area land to which only natives (Malays and Dayaks) may hold title and occupy. The only type of land that all ethnic groups, including the Chinese, can own is the mixed zone land; this covers an area of about 11,914 square kilometres and includes much of the area of settled and more intensive cultivation. A fourth category is the area of permanent forests which is classified either as forest reserves, protected or communal forests; in these areas felling is controlled and licences have to be obtained. A final category is the native area land which includes all land which does not fall into the other four classifications. It consists mainly of primary forest and a small amount of cleared land over which no customary rights exist.

A large proportion of the population is involved in agricultural activities. Most of the farmers are self-employed and the family is the typical unit of production. The indigenous farmers mainly grow rice for subsistence purposes and depend on a limited range of cash crops for any income. Opportunities in manufacturing industries and commerce are limited, with the Chinese forming over two thirds of the work force in these occupations. The Government is the most important employer in the state; a large proportion of the educated sector of the work force are in the various state and federal departments, quasi-government bodies and local government authorities.

Manufacturing industries are not generally well developed. Many of them are concerned with the processing of primary products. There are sawmills throughout the state. Timber products include veneers, plywood, mouldings and dowels. Industries concerned with the processing of minerals are oil refining near Miri and gold extraction by the cyanide process in the Bau area. Sea foods are processed at Kuching where prawns are shelled and frozen. Rubber is usually rolled and smoked by the smallholder himself, but there is also a hevea crumb factory at Sarikei. There are several vegetable oil factories where coconut oil is obtained from copra, with soap and animal feedstuffs being important by-products. There are also small factories where sago flour is produced.

Most of the other manufacturing industries in Sarawak are concerned with production of consumer goods for the domestic market. These industries are mainly located in the Kuching and Sibuan areas which offer the largest local markets and sources of labour, together with the best transport facilities and power supplies. In this category are the making of biscuits, soft drinks, towels, shirts, rubber footwear, cigarettes, matches and furniture. Other forms of industrial development are the small Chinese workshops concerned with welding, bicycle and vehicle repair. There is also a boat-building industry concerned with the making of wooden fishing boats and launches.

There are also crafts traditionally associated with the subsistence economy of the indigenous peoples. This group includes the weaving of blankets, the making of mats and baskets, pottery and wood carving; all use local materials and traditional skills. Although these manufactures have tended to suffer as a result of competition from mass-produced imported substitutes, they have received some stimulus from the development of an incipient tourist industry.

Economic development in many parts of Sarawak has been hindered by transport difficulties and problems of accessibility. Only a small part of the state is served by the road network. In 1976 there were only 2,563 miles of all types of road in Sarawak,¹ much of this development has been very recent. In most regions transport has traditionally been by river. Chinese launches operate along their lower courses and higher up where the rivers become shallower and faster flowing, longboats are used. Civil aviation has become increasingly important. The total of incoming passengers using Sarawak airports increased from 34,357 in 1960 to 385,498 in 1976.²

The importance of primary production in the economy can be seen in the occupational structure of the labour force as shown in Table 6.

Table 6
Main Occupations of the Economically Active Population
in Sarawak, 1970³

Occupation	Number
Agriculture, Forestry, Hunting and Fishing	247,661
Mining and Quarrying	1,112
Manufacturing	18,318
Construction	5,587
Public Utilities	1,451
Commerce	18,025
Transport, Storage and Communication	6,624
Services	40,002
Others	25,420
Total	364,200

1. *Annual Statistical Bulletin, Sarawak, 1976*, op. cit., pp. 108-9.

2. *Ibid.*, p.114.

3. Source: 1970 Census of Population.

CHAPTER 6

EDUCATION IN SARAWAK

The Development of Education before Malaysia (1963)

Under the Brookes there was no fixed overall policy of educational development. The Rajahs generally believed that each of the ethnic groups should try to preserve their cultural identity and that each should be taught in their own language. Charles Brooke emphasised that the education of his subjects needed to be practical rather than over-academic. Vyner Brooke seems to have shared this attitude; in his speech to Council Negri he asked the Christian Missions "to co-operate with my government in laying rather less emphasis on English, and rather more on the principles of hygiene, agriculture and other useful arts".¹

During the Brooke period, government expenditure on education was relatively low. In 1876 it was \$1,864, 1.4 per cent of the total budget.² In 1938 it had become \$100,117, but this still represented only 2.3 per cent of all expenditure.³

The first schools established by the government were for Malays. One was established in Kuching in 1883 and a second one in 1889. Instruction was mainly in Malay and the students learnt Malay script. Attendance tended to be irregular and there was a large amount of wastage due to drop-outs.⁴ A large school was later opened in Kuching in 1903; this also catered for some Indian and Chinese students. There were also government-assisted Malay

1. H.H. The Ranee of Sarawak (Sylvia Leonora Brooke), *The Three White Rajahs*, (London: Cassell, 1939), p.376.

2. *The Sarawak Gazette*, May 1877, pp. 37-38.

3. *Sarawak Administrative Report*, 1938, p.25.

4. *The Sarawak Gazette*, August 1859, pp. 111-112.

schools at Simanggang, Oya and Bintulu. At Bintulu the curriculum was closely geared to the environment and its needs; there was instruction in fishing and the extraction of sago and jelutong. At Sibu there was an independent school for the study of Muslim theology and the Koran. Malay schools were later set up at other centres. In these out-station areas the standards of teaching were low and grants were sometimes refused to schools for this reason.¹ Attendance was generally low and the majority of 2,242 students attending Malay government schools in 1936 were in the Kuching area.

The Chinese schools were usually set up by the Chinese communities themselves, sometimes with a small amount of government assistance. Chinese education expanded more rapidly than that of the Malays, and by 1938 there were 144 Chinese schools. The language of instruction at these schools was Chinese; teachers, syllabus and text-books were often brought from China. The curriculum tended to be an academic one and in 1913 we find Charles Brooke suggesting the introduction of "carpentry and tinsmithing" into it.²

The mission schools tended to be more multi-racial, although in the urban areas there was often a preponderance of Chinese students, while other schools were in predominantly Sea Dayak or Land Dayak areas. The first Anglican missionaries arrived in 1848. A mission school was built in Kuching near the church on what became known as College Hill. It was hoped that this school would eventually become a training ground for local Anglican priests and in 1851 Reverend Francis McDougall, who was later to become the first Bishop of Labuan and Sarawak, wrote to the Secretary of the S.P.G. (Society for the Propagation of the Gospel): "I look upon this school as the one great fact that has resulted from our labours in Sarawak, the nucleus of an

1. *The Sarawak Gazette*, 1932 June, p.10.

2. *The Sarawak Gazette*, 1913 June, p.115.

institution which will one day supply a ministry for Borneo, and in the meantime as a point of attraction that fixes the attention of the natives upon the mission and causes them to regard it favourably".¹

As the number of Anglican missionaries increased, other schools were set up in more remote areas of the First and Second Divisions. In these schools, in addition to instruction in the scriptures, much of the education took a practical form. Instruction was in the vernacular. Students learnt gardening and did practical work such as cutting grass and gathering firewood. Some even managed to grow a surplus of agricultural goods for sale. Some of the missionaries were aware of the danger of alienating the Dayaks from their environment. Reverend Gomes, in describing what he believed to be the main aims of education in these rural schools, wrote:

"The way to improve the Dayaks is not to educate a certain number of them to earn their living elsewhere, but to take some young people from the Dayak village, improve them by implanting right ideas, and then send them back to live with their own people the ordinary work-a-day life of the Dayak. I agree with those who say that to place Dayak boys in one of the larger schools in Kuching for any length of time will make a return to their own surroundings distasteful to them, and unfit them for the ordinary life and occupation of their people. And therefore I think that only those who show a special aptitude to become teachers should be sent on to school at the capital to be taught to read and write English. A certain number of clerks are needed, but that number is very limited, and to produce a large number of Dayak clerks for whom there is not sufficient work is surely a mistake. There are some who advocate technical education for the Dayak. No doubt he would, with training, make an excellent carpenter or smith, but again he would find difficulty in getting work. He would never be able to compete with the Chinese artisan into whose hands all the skilled labour has fallen".²

In the larger mission schools the education continued to be geared to the ideas and curriculum of the English public school. This is how the Anglican Bishop described the largest mission school in his diocese during a

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1. C.J. Bunyon: *Memoirs of Bishop McDougall and of Harriette, his Wife*, (London: 1889), p.79.
 2. E.H. Gomes: *Seventeen Years Among the Sea Dayaks of Borneo*, (London: Sealey and Co., 1911), pp.105-6.

prize-giving ceremony: "St. Thomas' School has brought the tradition of English knowledge to Sarawak, and in addition to the necessities of everyday knowledge, the pupils learn the ideas and virtues which are typically English".¹

With sentiments such as these being expressed, it is hardly surprising that in the first official report on the education system Le Gros Clark stated: "There is no doubt that, in recent years, the mission schools had been turning out young men imbued with a standard of education on western lines, but with little or no chance of employment in any post that their training had led them to hope for".²

In addition to the Anglican mission, other groups became increasingly active in education. The Roman Catholics established a large school in Kuching, later to be called St. Joseph's, and others in the First and Third Divisions. The influx of Foochow immigrants into the Lower Rejang region in the early part of the twentieth century resulted in the establishment of Methodist schools in that area. Towards the end of the Brookes' rule, the Seventh Day Adventist mission established three schools in the First Division.

In 1924, Vyner Brooke created a Department of Education with a Director. During the depression in the early 1930s this had to be closed and a new Director was not reappointed until 1939.

During the period of the Japanese occupation, from 1941 to 1945, all the mission schools and the majority of the Chinese schools were closed. Most of the government Malay schools continued to function and some attempt was made to use them for the teaching of Japanese. There was also considerable

1. *Sarawak Gazette*, October 1929, p.175.

2. C.D. Le Gros Clark: *Sarawak Blue Report*, (Kuching: Government Printer, 1935), p.7.

physical damage to the schools during this period; 17 schools were destroyed and 35 damaged.¹

After the war, when Sarawak became a British colony, an Education Department was created and a Director was appointed. In 1948 local authorities were set up and entrusted with the management of primary schools. In that year there were 29,611 pupils at schools; 19,522 of these were at Chinese schools.

In 1954, the Woodhead Report² recommended that more public funds be allocated to education and two years later this was put into effect by the implementation of the grant-in-aid code. By 1960, the total number of students at school in Sarawak had increased to 104,039, of whom 9,266 were at secondary school. The previous year the method of selecting students for entry to secondary school by a state-wide competitive examination had been introduced. This had caused some controversy, as had the insistence on age limits for admission to primary school and on automatic promotion to the next form each year. These new measures were, however, upheld by the McLellan Report³ which also recommended the provision of additional sums for capital grants and loans to aided schools. Particular emphasis was laid on the need to expand native primary education and it was also proposed that new junior secondary schools should be established under Government management to cater for the increased number of students from rural areas. These recommendations were implemented. Increased funds were made available and six new junior secondary schools were built.

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1. *Sarawak Annual Report, 1945*, (London: H.M.S.O., 1946).
 2. E.W. Woodhead, "Report upon the financing of education and conditions of service in the teaching profession in Sarawak", (Kuching: mimeo, 1955).
 3. D. McLellan, *Report on Secondary Education in Sarawak*, (Kuching: Government Printer, 1960).

By 1963, the year when Sarawak became part of Malaysia, total school enrolments had increased to 203,612. During the colonial period, most of the Chinese schools had been assimilated into the general system by grants-in-aid, the setting up of a Teacher Training College at Sibu for teachers at Chinese schools, and the conversion to English medium in 1961 of some of the Chinese middle schools. At the same time efforts were made to reduce the disparities between the indigenous groups and the Chinese, between the rural areas and the towns. This was also a period in which most students who left secondary school were able to find employment, often in primary school teaching or government services. In fact, many primary school leavers were also successful in finding jobs as was shown by a survey carried out by the Education Department. This showed that of the children under 15 who had completed their primary education, 70.4 per cent were continuing their education and 23.9 per cent were in employment.¹

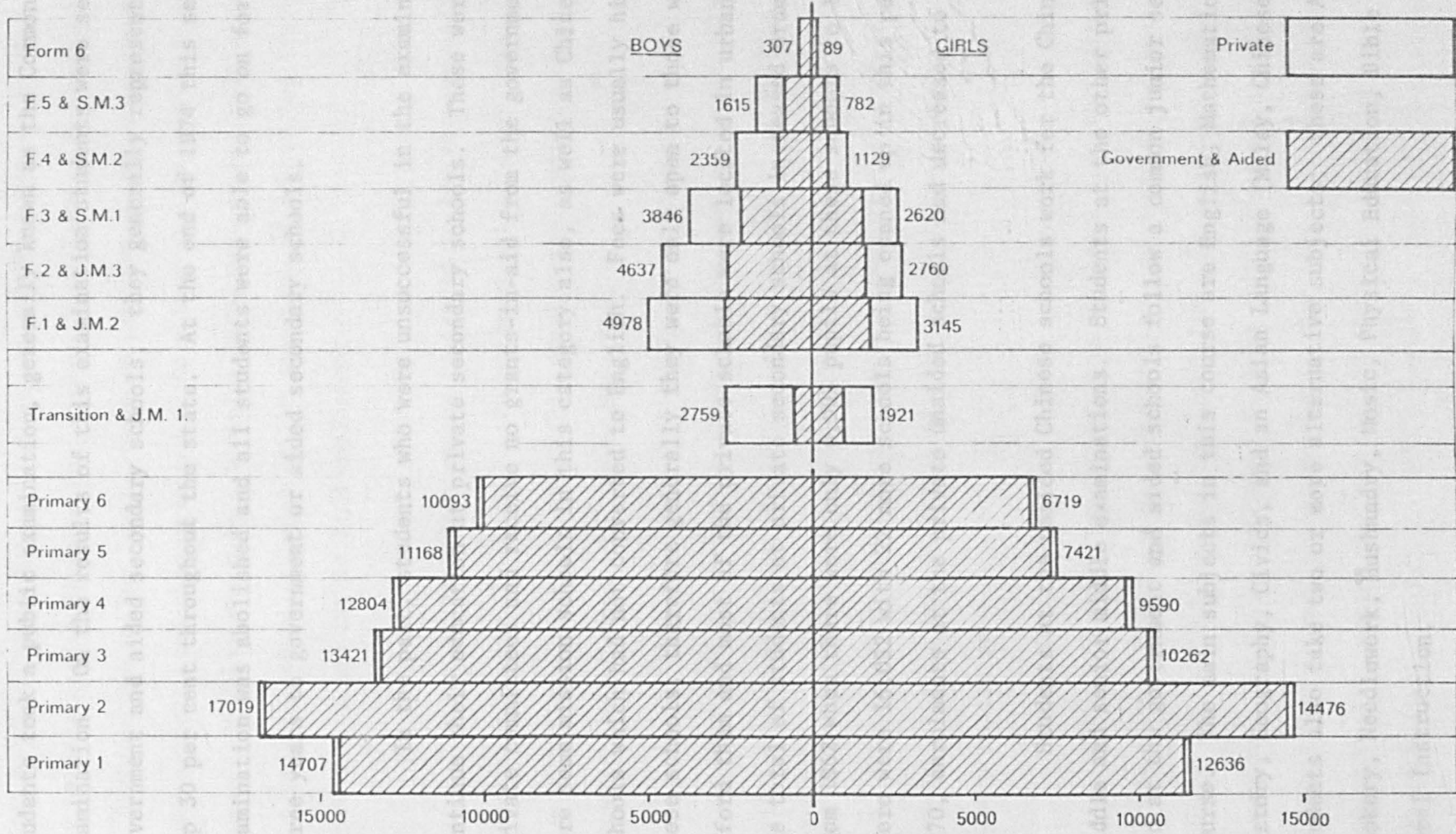
The Present Education Structure

Primary School education lasts for six years, starting at a minimum age of six. In 1966, primary school fees were abolished with the aim of making education at this level available to all: in practice about 87 per cent of the relevant age group were able to attend school. Primary schools were administered by Chinese committees of management, Christian missions and local councils. In 1973 the Government took control of all primary schools. The medium of instruction has been English, with the exception of the Chinese schools. There has been however, increased pressure to use Malay or *Bahasa Malaysia*, the national language, and in 1970 it was first introduced as the medium of instruction and by 1975 it was being used in 215 primary schools.²

1. *Sarawak Annual Report, 1960*, (London: H.M.S.O., 1961), p.96.

2. Department of Education, Sarawak, *Annual Report for 1975*, (Kuching: Government Printer, 1976), p.7.

Fig.2; Education Pyramid, Sarawak, 1967.



Department of Education, Annual Report for 1967, (Kuching: Government Printer, 1971).

Until 1974, at the end of the six years of primary education the students took a public examination, generally known as the Common Entrance Examination. On the results of this examination students were selected for government and aided secondary schools; they generally represented the top 30 per cent throughout the state. At the end of 1974 this selection examination was abolished and all students were able to go on for a further three years to government or aided secondary schools.

In the past, students who were unsuccessful in the examination could continue their education at private secondary schools. These were run by private committees and receive no grants-in-aid from the government; there were some mission schools in this category also, as well as Chinese-medium schools which had not converted to English. Fees were usually higher at these schools, therefore generally they were only open to those who could afford them and most of the private schools were located in urban areas. The total of students at private secondary schools increased dramatically from 1962 when there were only 6,905 pupils at these schools to 1967 when there were 16,052 with 22 more schools being opened up in this period. By 1970, enrolments at the private unaided schools had decreased to 8,878.¹

Students at the unaided Chinese schools work for the Chinese junior middle and senior middle examinations. Students at the other private schools and at the government and aided schools follow a common junior secondary course. The main subjects in this course are English, Mathematics, Science, History, Geography, Civics, and an Asian Language (Malay, Chinese or Iban). Students also take two or more alternative subjects; these are Art, Woodwork, Cookery, Needlework, Husbandry, Music, Physical Education, Bible Knowledge and Moral Instruction.

1. Department of Education, *Annual Report for 1970*, (Kuching: Government Printer, 1971).

At the end of three years, all students take a public examination known as the Sarawak Junior Examination. Overall passes in this examination may be attained at Division One, Two or Three level. Students who pass at Division One or Two level, about 40 per cent of those at government and aided schools, are then selected to Form Four and the senior secondary course. Students who gain a Division Three pass or who fail either continue at a private school, attempt to get some type of vocational training or leave school and try to find employment.

The senior secondary course is geared to the requirements of the School Certificate, in which a wide range of subjects are taken with English as a compulsory subject. After this examination a small proportion of students are selected to go on to Form Six.

The Form Six course is a two-year one leading to a Higher School Certificate examination. In 1972, there were Form Sixes at five government and aided schools, with two more at private schools. The Government policy is to increase the proportion of Form Six students following science courses, although this is made difficult by the fact that the private schools only teach arts courses.

There are three teacher training colleges. In the past the Batu Lintang Teachers' College has provided two-year courses for both secondary and primary school teachers, but now specialises in secondary school teacher education. The Rajang Teachers' College at Binatang and the Sibul Teachers' College train primary school teachers. The Sibul College has also been concerned with courses for unqualified teachers, including those from Chinese medium schools. In 1975 there was a total of 879 students in teacher training at the three colleges.¹

1. Department of Education, *Annual Report for 1975*, p.44.

There is at present no university in Sarawak, although there are opportunities for Sarawak students to study overseas. There are Colombo Plan, Federal and State Government scholarships for courses in West Malaysia, Australia, New Zealand, Canada, Singapore, Japan and the United Kingdom. In 1970, 282 students were on degree courses and 187 students were on diploma or certificate courses. In addition, an increasing number of Sarawak students are going overseas privately to study at their own expense.

Vocational Education

Organised vocational training undertaken by the Education Department began with the setting up of a Commercial Institute at Kuching in 1959. It began with a Shorthand Typists course and an intake of 12 full-time students. Later there were additional part-time courses in typing, shorthand and book-keeping; then in 1962 a full-time Copy Typist course was started. In 1962 also, the first trade courses were started.

A course in Carpentry and Joinery was followed in the next year by a temporary one in Machine Shop and Bench Fitting. It is interesting to note that for the first course, only 14 applications were received for 20 vacancies and all were accepted; the response was better for the second course and 20 students were selected from 40 applications. Other courses were started later in Mechanical Engineering, Electrical Installation and Building Construction.

Until 1970, the different classes were housed in a variety of temporary premises, but in that year they were brought together into one compact unit at the newly-built Kuching Vocational School. Statistics for 1970 show that the total enrolment was 116 boys in the three-year technical trade courses and 58 girls in the one-year commercial courses. In addition, 101 students were taking various part-time courses.

Students in the commercial section of the Kuching Vocational School take London Chamber of Commerce examinations and in the technical and trade subjects they take City and Guilds examinations. Results have been generally good, especially in the latter, as in shown by the following percentages of passes in the 1970 examinations:

Motor Vehicles Mechanics Work Theory	-	100%
Mechanical Engineering	-	100%
Electrical Installation, Course A and B	-	78% and 92%
Carpentry and Joinery	-	93%

The minimum qualifications for entry to the Vocational School are the Sarawak Junior Certificate, although an increasing number of students have the Cambridge Overseas School Certificate. A large proportion of the students are Chinese. There has been an increasing demand for places at the Vocational School. The Principal said that in 1972 there had been about a thousand applications for 145 places.¹ There were generally a small number of drop-outs which he explained as being due to lack of interest, financial problems, obtaining jobs outside and receiving scholarships to study elsewhere.

No exact figures exist as to the type of employment the students obtain after they have finished their courses. Initially students had experienced difficulty in finding jobs suited to their training; this was especially the case with those that had done the Carpentry course. In 1972, however, the Principal claimed that now the school was well established most of the students found appropriate jobs, although in some cases they were of a supervisory nature rather than following the particular trade. Some of the

1. Personal interview with the Principal, Kuching Vocational School.

main employers have been the Public Works Department, the Borneo Development Corporation, Brooke Dockyard and Shell. At present only a limited number are taken by the smaller private firms. The Principal's personal opinion was that for the next five years the economy would be able to absorb the trainees, but then opportunities would be limited unless there was a much greater expansion of industrial activity.

Employment opportunities for girls tend to be limited as much of the clerical work in both the public and private sectors is still performed by men. Girls who complete the government Vocational School course also face competition in finding work from those who have been trained in the private Commercial Institutes which have developed in the main towns (in 1972 there were eight in Kuching).

There is also a Vocational School at Sibu, at present giving only training in commercial courses, automotive engineering, electrical engineering and electrical installation. At Sibu there are also nautical courses of three months' duration for launch masters and engine drivers.

Various types of vocational education and pre-service training are organised by other government departments. These are described in Chapter 9 where I examine the different means of preparing school leavers for careers in agriculture and other forms of employment.

CHAPTER 7

THE DEVELOPMENT OF UNEMPLOYMENT AMONG SCHOOL LEAVERS

L.W. Jones, who was responsible for the Census in 1960, made the following comment on the relationship between education and employment at that time:

"Unemployment, that is to say not having a job despite efforts to find one, hardly exists, and being of negligible size and importance, was not enquired into by the census, even though no other source on employment exists. It is true that young people leaving school after six to nine years of education now have some difficulty in finding work. This is partly because ten years ago labour in all grades was so short that this level of schooling was accepted for the clerical and equivalent grades in the civil service and commerce. Since then it has been possible to raise the entry standard, but not to dissipate the impression that literacy automatically leads to a white collar job".¹

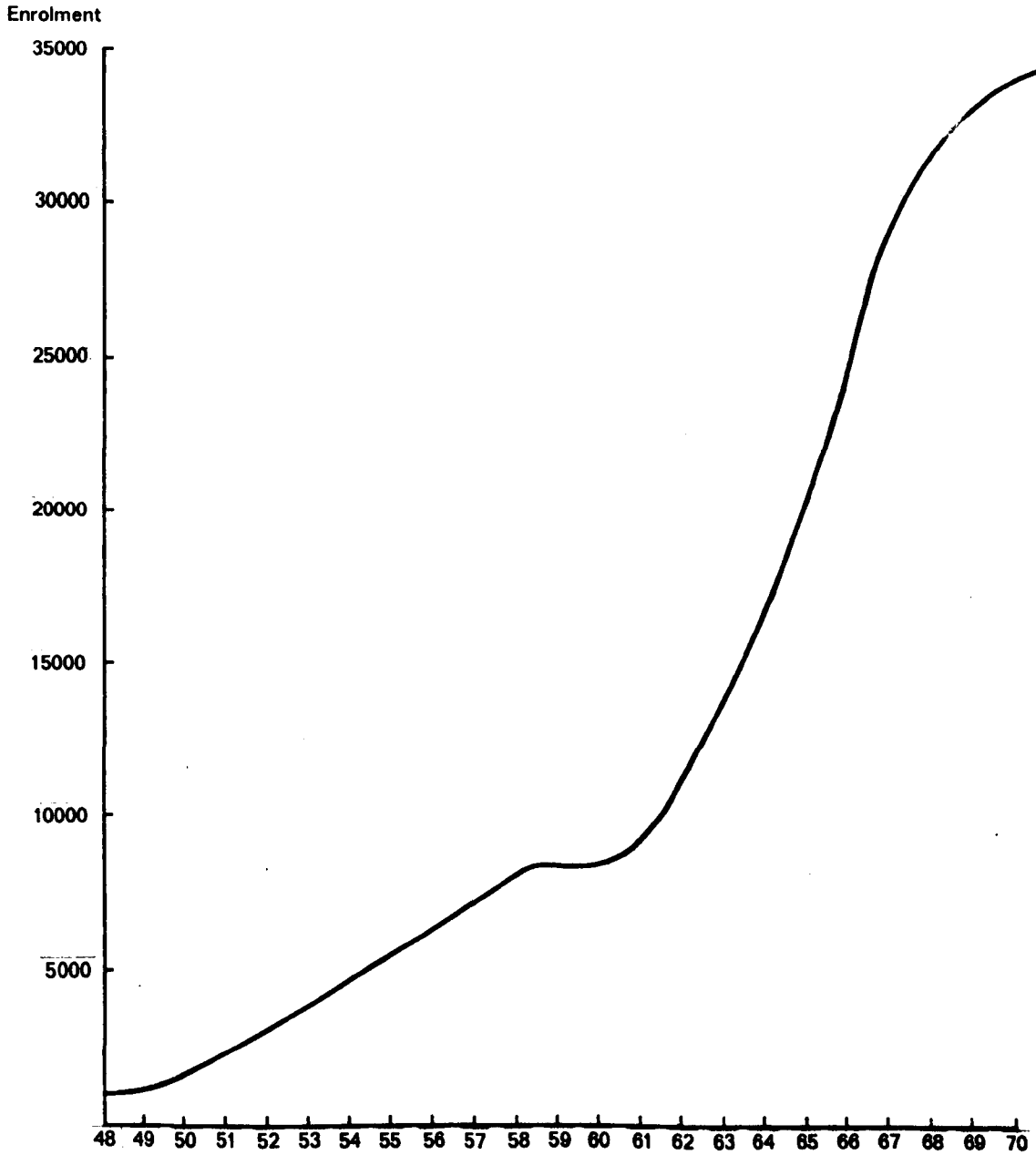
In the period immediately before and after the formation of Malaysia in 1963, the demand for educated manpower still remained high. The expansion of primary school education and of government services meant that there were employment opportunities in these sectors for school leavers at both Form Three and Five levels. There were also opportunities for teacher training, technical training at the Kuching Vocational School and training for nurses at the Kuching General Hospital. At Form Six level, those who had gained the Higher School Certificate were generally able to get a scholarship to study at a university overseas.

By 1968 the position had changed drastically. The total enrolment at secondary school level had almost doubled from 17,727 in 1963 to 34,498.² There had been no proportionate increase in employment opportunities.

1. L.W. Jones, *The Population of Borneo*, (London: The Athlone Press, 1966), p.155.

2. Source: Sarawak Education Department statistics.

Fig.3; Total Secondary School Enrolments, Sarawak, 1948-70.



1. Source: Sarawak Education Department Annual Report, 1970

A survey I conducted at Bau Government Secondary School, where I was headmaster from 1964 to 1969, illustrated the problem at a local level. The school served the Bau District, an area of 823 square kilometres with a population numbering 23,119 in the 1960 census. The main ethnic groups were the Land Dayak and Chinese, with smaller numbers of Iban and Malays. The predominant economic activity of the area was farming. The Land Dayaks grew rice as the main food crop; this was usually hill *padi* by shifting cultivation. Rubber and pepper were grown as cash crops by both Chinese and Dayaks. There was no large-scale manufacturing in the area, but some quarrying of limestone and mining of gold and antimony. Primary schools in the district were administered by the Roman Catholic Mission, Chinese boards of management or by the Bau District Council. Bau Government Secondary School had been set up in 1962 as a result of the recommendations of the McLellan Report. A second government school, Lake School, was set up in 1966 and there was also a private school, Kin San School.

1964 was the first year that Bau Government Secondary School had Form Three and thirty-five students took the Sarawak Junior public examination. Eighteen of these students went on to Form Four in a government secondary school, six went to the vocational school and two to a private school. The remaining nine, who finished their education at this stage, all found some type of employment.

The next year, 1965, there were seventy-six students in Form Three taking the public examination. Forty-four went on to Form Four in their own school, five went to the vocational school and the remaining twenty-seven all found employment. In 1966 there were three streams and one hundred and sixteen students took the examination. Sixty-six students went on to Form Four, seven went to the Vocational School and two to private schools. Of those who left school, thirty-eight found employment but, for the first

time, three were unsuccessful.

1967 was a critical year for students who left at Form Three level. In this year they also had to compete with students finishing at Bau after Form Five. Previously many school leavers had found employment as primary school teachers, not only in the Bau District, but also in the nearby Lundu and Upper and Lower Sadong Districts. The development of government secondary schools in these districts, with their own school leavers, meant that there were less openings for Bau students. At Form Three level, seventy-six students sat the examination. Of these, forty went on to Form Four, three went to the Vocational School and eight to private schools. Twenty-five students completed their education, but only six of them were able to find employment. At Form Five level, thirty-five students took the examination. Ten were selected for Form Six in Kuching or Miri, six went to the teachers' training college and three to private schools. Fifteen of the sixteen students who left at this level were able to find employment.

By the end of 1968, the situation had become even more difficult. Thirty-six of forty-two leavers failed to find employment. An additional twelve went to private schools in the hope of gaining higher qualifications; generally this was only postponing the problem. Form Five leavers also experienced difficulty in finding employment. Thirty out of the thirty-eight students finishing their education were still unemployed at the end of March 1969. A few of these did eventually find jobs, although it took a significantly longer time than it had done in previous years.

Table 7

The Employment of School Leavers, Bau
Government Secondary School, 1964-8

Year	Form 3	Form 5	Continued Education	Employed	Unemployed	Percentage Unemployed
1964	35	-	26	9	-	-
1965	76	-	49	27	-	-
1966	116	-	75	38	3	7.3
1967	76	35	70	21	20	48.8
1968	121	67	110	12	66	84.6

Table 8

Break-down of Employment of School Leavers,
Bau Government Secondary School, 1964-8

Employment	1964	1965	1966	1967	1968
Primary school teaching	1	24	27	10	3
Clerk in government service	3	2	4	2	-
Agricultural Department	2	1	2	-	-
Police	1	-	1	3	6
Other posts in government service	-	-	3	3	1
Temporary work	2	-	1	3	2

Table 8 shows the type of employment that the school leavers obtained. Primary school teaching was the most important. The policy of the Batu Lintang Training College at that time was to accept Form Three leavers after they had gained some experience of teaching. Most of the Bau students who took up teaching eventually received training. Those who remained untrained faced the threat of becoming redundant when the schools were fully staffed by trained teachers. Very few students found employment in the private sector, although by 1968 some Form Three leavers were forced to take up labouring and

factory work. There were some opportunities for this type of work in building and mining in the Bau area; and around Kuching, boys could also obtain employment in the brickworks and sawmills. This type of work was often temporary and was usually badly paid; boys in the brickworks earning between two and three dollars a day.

In my survey I have classified those who returned to the long-houses or village as being unemployed. Interviews I have conducted with these school leavers showed that they regarded themselves as being unemployed and looking for jobs. Their parents and the rest of the village community tend to regard them in the same way.

The situation was similar in many other areas of Sarawak. In 1967 the Education Department began a programme of vocational guidance in schools. A Peace Corps Volunteer with vocational guidance qualifications was appointed as adviser and a survey was carried out of school leavers throughout the state. This survey showed that out of 3,862 students completing their education in 1968, only 853 were known to have succeeded in obtaining paid employment.

The results of this survey can be seen in Table 9. The figures are based on the answers to a questionnaire which was completed by seventy-nine of the eighty-two secondary schools which offered the Sarawak Junior Examination or above. Schools below the Sarawak Junior level and those offering only Chinese Junior and Senior Middle Examinations were not included.

Table 9

Survey of Students Finishing the Junior Secondary and Senior Secondary Courses throughout Sarawak, 1968

	Form 3	Form 5	Form 6	Total
Continuing education	4,187	654	77	4,918
Teaching	38	181	92	311
Government service	60	105	10	175
Other wage-earning employment	225	135	7	367
Helping in family farming	555	102	-	657
Helping in family business	188	156	-	344
Not working	642	441	18	1,101
Not known	585	312	10	907

In 1967 the Malaysian Government made an application to the World Bank for financial assistance in expanding general secondary education in Sarawak. This proposal was rejected by a World Bank appraisal mission who did not feel that current manpower requirements justified any further investment in general secondary education. They estimated that during the period from 1971 to 1980 "the need for professional, sub-professional 'white' and 'blue' collar workers is expected to average about 3,600 a year of which 1,250 will be 'blue collar' workers whilst the output from Form Five of 'white collar' workers in 1967 was 2,500".¹

In the period after 1968 there was some slowing down in the rate of expansion of secondary education and total enrolments increased by less than a thousand (34,498 to 35,459 in 1970) in the next two years. This was partly due to an actual fall in the number of students at private schools; from

1. Kum Boo, "Education and Employment Opportunities", mimeo paper to Senior Officers Seminar, Kuching, 26th March 1968.

16,052 in 1967 to 13,774 in 1970. However, there was again a sharp increase in numbers at government and aided schools in 1973 when the proportion of selected students was raised to 50 per cent of all those in primary six

The decline in numbers at the private schools between 1967 and 1970 was partly a result of the changing employment position; as parents saw that secondary education would no longer guarantee their children white-collar jobs they became less willing to pay the relatively high private school fees.

Another aspect of this problem has been an increase in the number of drop-outs (i.e. students leaving school before they finish their courses and take the public examinations) both at primary and junior secondary level. There are no published statistics for secondary schools, but in the case of the primary schools two methods have been used to calculate this wastage. One was to calculate the total number of students there should have been in 1970 basing it on the total for the previous year, then subtracting the number in primary six in that year and then adding the number of new entrants in the present Primary One. This total was then compared with the actual total enrolments for 1970 and it was found that this number was considerably lower showing a wastage of about 6.2 per cent.¹ The second method was to estimate the number of students in Primary Six as a proportion of those who had originally joined Primary One five years previously; it was found that only 70 per cent of the original number were still attending Primary Six in 1970. Both methods show an increase in the proportion of drop-outs over the previous year, a trend which is especially marked in the rural areas. Again this increase is probably partly due to the fact that as school leavers were no longer assured of regular employment some of the incentive to attend

1. *Annual Report of the Sarawak Education Department*, 1970, p.10.

school had been removed. Some teachers have complained that this lack of motivation has also been reflected in standards of work and discipline within the school.

In the period after 1968, there was no further official information on the employment of school leavers. However in 1972 I carried out a number of surveys in the Bau and Baram districts, the results of which are shown in Table 10.

Table 10
Employment of School Leavers in Study Areas, 1972¹

Employment	Bau Villages %	Bau Bazaar %	Kelabit Highlands %	Mid-Baram and Apoh %
Staying at home in village, long-house or bazaar	22	44	9	37
Looking for work elsewhere	3	-	9	1
Housewife	8	2	11	5
Employed in occupations not requiring secondary education qualifications	25	8	20	18
Employed in occupations requiring secondary education qualifications	37	28	42	32
Post-school education and training	4	17	8	5

The proportion of school leavers staying in their villages in the Bau District was less than was indicated by the earlier survey I carried out in 1969. Many school leavers, especially those finishing at Form Three level, have been obliged to change their level of job expectations and have taken types of work, such as labouring and domestic service, that would not

1. In this and subsequent tables, percentages have usually been rounded off to the nearest whole figure. Therefore, totals may not always come to exactly one hundred.

have been considered before. The fall in the market price of rubber has been another factor encouraging them to leave the villages and take temporary work elsewhere. There has also been an increase in some types of employment opportunities, especially in the police and armed forces. Land Dayak students finishing at Form Five level have benefited from the government policy of encouraging the employment of indigenous peoples in public service and private companies. In the case of the school leavers in the villages, most of them were found to be engaged in some form of agricultural activities although their cash incomes were generally low.

The survey of the Bau town area showed that a high proportion of Chinese school leavers were still at home, some helping in the family shop or with housework. This was partly a result of the lack of employment opportunities and was also due to their reluctance, very often, to undertake certain types of work, such as serving in the armed forces or labouring.

The Kelabit Highlands showed the smallest proportion of school leavers staying in their long-houses. The migration of young people from this area was mainly due to its isolation but probably also owed something to enterprising and restless traits in the Kelabit character. There was a considerable demand for labour in the coastal areas of the Fourth Division, especially for work in the oil companies and for labourers in the oil palm schemes. The Kayan and Kenyah long-houses studied showed a higher proportion at home and engaged in farming.

At Bintulu Government Secondary School I carried out another survey with the object of finding out what had happened to those students who had left school a year before at the end of 1971. The method I used was to interview the present Form Four who had been class-mates of the previous Form Three and who also had a fairly good knowledge of what had happened to the Form Five.

Table 11

Employment of 1971 School Leavers, Bintulu

Government Secondary School

	Form 3	Form 5
<u>Employed</u>		
Government Department	-	6
Teaching	-	7
Typist	-	1
Working in a shop	3	5
Labourer	8	1
Launch driver	1	-
Anti-malaria spraying	-	2
Housewife	2	-
<u>Continuing education</u>		
Form Six	-	13
MARA ¹ scholarship	-	8
Kuching Vocational School	1	2
Private typing course	4	-
Private school	9	2
<u>Unemployed</u>		
Chinese bazaar	11	8
Malay or Melanau kampong	12	8
Iban or Kayan long-house	22	5
Looking for work in Kuching or Miri	2	3

Bintulu school is senior secondary and is a representative one in that it serves the town of Bintulu itself and several smaller Chinese bazaars, Melanau and Malay communities living near the coast, and Iban and Kayan long-houses further inland. The Bintulu region is also of significance in that it is one of the areas scheduled for regional development under the Miri-Bintulu project.

1. *Majlis Amanah Ra'ayat* - formed to give technical and financial assistance to Malays and other indigenous groups. In this case it provided scholarships for students to continue studying in West Malaysia.

The survey showed that of those whose education finished at junior secondary level 75 per cent had so far failed to find regular paid employment and for those who finished at senior secondary level the figure was 55 per cent. In the case of the Iban and Kayan students who have returned to their long-houses, most of them are probably occupied in farming, but interviews I made in Melanau villages near the town seemed to indicate that few of the school leavers there are engaged in any productive economic activity. The group I interviewed were mainly from Kampong Sibow and included Form Three leavers from both the government secondary school and the private school in Bintulu. In most cases their fathers were, or had been, in junior grades of government service. Most of the boys were doing nothing at the time I visited them, although some had been temporarily employed in the past for short periods in sawmills, anti-malaria spraying and labouring for the district council and the Land and Surveys Department. Only one boy said his family had sufficient land for him to farm full-time and he grew pepper, fruit and *padi*. None of the group I interviewed was engaged in fishing, although this is an important occupation in the area. With the exception of those who were too young, all the boys had unsuccessfully applied for posts in government service. The girls interviewed said that they stayed at home helping their mothers in cooking, washing and looking after the younger children.

Guide-lines to government policy on unemployment are found in the Second Malaysia Plan. This recognised the fact that in Sarawak, employment growth was less than the 37 per cent labour force growth during the period of the First Malaysia Plan with the result that "Sarawak was already experiencing signs of worsening employment, particularly among white-collar job seekers".¹ The Plan emphasizes the need to provide "greater opportunities

1. *The Second Malaysia Plan, 1971-5*, p.100.

for more productive employment, particularly in the modern sectors". It recognises the fact that

"increasingly new job seekers are educated up to the level of Lower Certificate of Education. The kind of employment they are looking for is typically urban and non-agricultural and it is often clerical or technical in nature. Economic development continues to increase the number of such jobs available, but often not at a fast enough rate to satisfy the ambitions of all the young job seekers. Therefore, some of the job seekers will have to accept employment in fields less preferred by them".¹

A number of measures are suggested as part of the employment strategy. The first was the need for expanded economic growth, especially in the modern industrial sector. Another was land development:

"The emphasis on new land development is especially important in order to take advantage of the abundant land resources to create more jobs. Employment opportunities in the newly opened land areas are seen as crucial steps in diversifying rural jobs and making them both attractive and remunerative. However, some portion of the employment demand created is likely to lead to fuller employment of presently underemployed farm labour".²

A third measure suggested was making industries more labour intensive. The abolition of the payroll tax was suggested as one means of achieving this development. Other measures to be implemented were: education and training programmes; increased labour mobility aided by improved placement services; youth employment programmes.

Some aspects of the application of these measures to Sarawak will be examined in subsequent chapters, especially the work being done in agricultural education and land settlement. In the final chapter of this section I shall describe surveys carried out in 1972 in certain rural areas in order to determine what the employment position of school leavers was in those areas and to what extent they were participating in agriculture and taking advantage of the different forms of government assistance.

1. Ibid., p.51.

2. Ibid., p.103.

CHAPTER 8

SOLUTIONS TO THE PROBLEM OF SCHOOL LEAVER UNEMPLOYMENT

The School Response: Agricultural Education and Vocational Guidance

As it became more and more difficult to find jobs, there was a very real need for the schools to meet the challenge of the changing employment situation. In terms of the school curriculum there was a move to increase the amount of time devoted to subjects of a more practical and vocational nature. In the junior secondary school curriculum there was provision for courses in Husbandry, Woodwork and Home Economics (divided into the separate subjects of Cookery and Needlework). These were all optional subjects and to a considerable extent their adoption depended upon the existence of facilities such as suitable land for the Husbandry and the provision of equipment and specialist rooms for Woodwork and Home Economics. There was also a shortage of teachers with the necessary specialist training, skills and aptitudes. Gradually, however, an increasing number of schools have been able to offer these subjects. In 1971, twenty-five secondary schools were teaching Husbandry and four were teaching Agricultural Science. Agriculture was not a regular part of the primary school syllabus, but was encouraged as an extra-curricular activity. In each division there is a Primary Agricultural Science Adviser; the aim is to initiate agricultural programmes in selected "Model Schools".

In most secondary schools teaching Husbandry, four periods of forty minutes per week were allowed for the subject. Practical work was usually done in a double period and also in time outside the school timetable, either in the early morning or late afternoon when it was cooler. The practical work consisted of growing vegetables and other crops, keeping livestock and fish-ponds.

In addition many of the rural boarding schools had extra-curricular activities such as gardening, agricultural societies and 4-H Clubs. The main

types of activity that were organised were growing vegetables, keeping poultry, and digging and maintaining fish-ponds. As these activities were run on a profit-making basis they had some success in encouraging interest in commercial farming.

One of the greatest obstacles to these attempts to promote agriculture, was that both the students and their parents continued to regard agriculture as an unsuitable and unprofitable form of employment. Students claimed that it was not an occupation in which they could "use their education". In an effort to change these attitudes, in 1967, the Education Department suggested that Agricultural Weeks should be held in secondary schools with the aim of showing that agriculture could be a profitable and interesting occupation. During the year Agricultural Weeks were held by 28 schools. Lectures, demonstrations and exhibitions were given during these weeks. Students worked out accounts for model farms to show that a good income could be obtained from farming. Parties of students visited agricultural research stations and other places relevant to agricultural development. Each of the agricultural weeks was opened with some ceremony by a leading public figure who stressed in his speech the importance of agriculture to the country and the contribution that school leavers could make to it. Recordings of these speeches were broadcast over the radio and they were also given headlines in the local newspapers. This publicity did have some effect on the public and on the students in making them realise that the future of many school leavers was necessarily in agriculture.

Another result of the Education Department's growing concern over school leavers was the introduction of a formal schools' guidance programme. In 1968 a Peace Corps Volunteer with post-graduate qualifications in guidance was appointed to act as Adviser. Several schools' guidance booklets were produced. In the first of these, "Secondary School Guidance for Teachers and

Students", emphasis was laid on the three goals of the programme which were to help each student to (a) learn more about himself; (b) learn more about his surroundings; (c) apply this knowledge to himself and his surroundings. Another part of the programme was a series of broadcasts by senior members of government departments. In these broadcasts, usually followed by a questions session, information was generally given about the different types of work, entrance qualifications, training and the wage structure. These were later printed as a pamphlet under the title of "Careers in Sarawak".

The Education Department proposed to secondary schools that they should appoint careers masters who would be responsible for advising students. Short in-service courses were arranged for these teachers. It was also suggested that schools should have notice-boards specifically for the display of information about careers, public service commission circulars and advertisements of situations vacant.

It was hoped that the programme would provide students with more information about careers and help them enter one suited to their aptitudes and abilities. As with agricultural education, the success of the programme would eventually depend on development outside the schools and the consequent creation of employment opportunities.

Vocational Education and Training Outside the School System

In the Commonwealth Conference on Education in Rural Areas in 1970, Callaway begins his paper on this topic with two questions:

"What types of modern out-of-school education can best supplement the traditional learning which children receive in their homes and villages?" and "What part can out-of-school educative activities take in providing skills to enable youth, who would otherwise be unemployed, to take up existing jobs, or, much more important, otherwise to self-create new jobs?"¹

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1. A. Callaway, "Out-of-school Education and Training of Young People", *Education in Rural Areas*, (London: Commonwealth Secretariat, 1970), pp. 112-113.

If we examine this type of education in Sarawak, we see that much of it takes the form of pre-service or in-service training in government departments or, alternatively, agricultural training provided by the Agricultural Department.

In the Public Works Department, for example, Technical Assistants may receive in-service training for a period of three years. This includes twelve months full-time attendance at the Engineering Survey School, six months with a road construction unit, six months of learning drawing office and contract procedure, six months on building works and six months on civil engineering works. In the Telecommunications Department, there is in-service training at the Telecommunications Training School in Kuching. These courses are generally short and of about four or five weeks duration; they include overhead line construction, telephone apparatus installation, diesel generator maintenance and operation, and telegraph operating by both Morse and Teleprinter. More advanced training can be obtained at the Kuala Lumpur Training Centre.

In the Medical Department, there is training for Nurses, Hospital Assistant Trainees, Dispensers, Laboratory Technicians and Health Inspectors. The Police, Marine and Civil Aviation Departments all have their own training schemes both in Sarawak and overseas, as do quasi-government organisations such as the Sarawak Electricity Supply Corporation, Kuching Water Board and the Kuching Port Authority. In Kuching, there is a Civil Service Training Centre where courses in general administration and clerical duties are held.

Training for members of the Agricultural, Forestry and Land and Survey Departments is held at the Natural Resources Training Centre at Semongkok, twelve miles from Kuching. Junior Agricultural Assistants and Home Demonstrators receive training in agricultural methods and extension work. The Home Demonstrators course (for girls) also includes home economics, rural

health and child-care. The course for Forest Guards at Semonggok is an in-service course, generally for those who already have three years experience. They are trained in field operations, and measuring timber and blocks that are to be felled. The Land and Survey course is a practical and academic one which lasts for two years.

In the private sector there is less evidence of formal training procedures. There is no clearly defined apprenticeship system, although Chinese craftsmen and mechanics may employ young men at low wages on the understanding that they are learning the job. Sometimes there is genuine training, sometimes it seems more a case of exploitation of the worker who does the routine and heavy labour without learning any trade.

Some of the larger European commercial companies have traineeship schemes, usually for executive and sales positions. Examples are those operated by the Borneo Company and Sarawak Shell Company. The Shell Company also have their own Trade School in Brunei, to which some Sarawak students have gone in the past.

Any assessment of in-service and on-the-job training in Sarawak would seem to indicate that this is often well developed in government departments but not elsewhere. As opportunities in government services are likely to be limited in the future, opportunities for this type of training in the future would seem to depend on the development of some type of apprenticeship system or formal training procedure in the private sector.

There are two organisations officially responsible for adult education in the state. One is the Sarawak Council for Further Education, a semi-independent organisation supported partly by tuition fees and partly by an annual government grant of \$40,000. In 1971, 4,231 part-time students were

enrolled at twelve different centres throughout Sarawak. Most of these centres were in urban areas and over half the students were found in Kuching. There were classes in Malay, English, Chinese, Tamil, typing, shorthand, book-keeping and sewing.

The State Adult Education Department mainly serves the rural areas and is at present confined to the first three divisions of Sarawak. Again the majority of classes are to teach Malay but there are also some in Home Economics and a few in vocational subjects such as radio mechanics, farming and handicrafts. In 1972, the total enrolment at all classes run by the Adult Education Department was 9,909, of whom 5,816 were women.

Vocational training is also provided at the Timber Research and Technical Training Centre, situated on the outskirts of Kuching. This had been started with assistance from the Canadian government under the Colombo Plan, and the Centre was officially opened in 1971. Its main object is to train men in sawmill operations, sawmill maintenance, sawdoctoring and woodworking methods in order to improve technical standards in the timber processing industries. Research is also carried out into methods of timber utilisation and preservation. At the Centre is a complete sawmill layout, a wood preservation and drying kiln plant, and a fully equipped carpentry shop.

The Centre conducts a twenty-week training course in sawmill maintenance and another in sawdoctoring; both contain a large proportion of practical work. Each course is intended for ten trainees, although when I visited the Centre in September, 1972, there were eight on one course and seven on the other. Seven of these trainees were classified as school leavers, the remainder were employees from sawmills. Trainees are also accepted from Sabah and in the future may also come from West Malaysia. The Principal stated that there were generally over a hundred applicants for each course,

the majority of whom were Chinese. Trainees from sawmills returned to their places of previous employment at the end of the courses; the school leavers generally found places in sawmills, although a few return to their home villages and fail to utilise their training.

With such a large proportion of the population engaged in agriculture, vocational training and other forms of assistance given to farmers has particular significance. The aid and extension work of the Agricultural Department takes a variety of forms. More efficient farming is encouraged by a system of subsidies. There is a *padi* planters' scheme which aims at stimulating the growth of swamp *padi*. Farmers who want to grow swamp *padi* may receive subsidies of up to \$75 an acre during each of the first two years. Some of this may be in cash, but it is also for supplying tools, materials for water gates, fertilisers, pesticides and digging drains and bunds.

There were two schemes to help the rubber grower. Under Rubber Scheme A, farmers were encouraged to replant with higher yielding trees. They received assistance in money, fertilisers and plants if they cleared their land and planted new rubber. There was also a Rubber Planting Scheme B; this was the scheme used in the land development schemes, the settlers received a block of eight acres of rubber when it was two years old.

In January, 1972, the Rubber Planting Scheme was discontinued, mainly due to the fact that only about 30 per cent of the trees planted under the scheme were being tapped, this was a result of the fall in the market price of rubber.

Subsidies for coconut growing were in the form of seedlings, fertilisers and cash. A Freshwater Fisheries scheme was introduced in 1957; under this scheme the following were provided: a cash subsidy of \$200 per acre of fish-pond, pipes, cement, lime, fertiliser, imported carp fry and locally

produced fry.

The heavy dependence by Sarawak farmers on revenue from rubber and pepper has prompted the Agricultural Department to seek ways and means to diversify the crops grown in the state. Under the Second Malaysia Plan, subsidies were provided for cocoa, coffee, soya beans, groundnuts, tapioca, sweet potatoes, tobacco, ginger and fruit trees. There are also pilot schemes and land development projects for the growing of oil palm.

In 1972, a Pepper Subsidy Scheme was introduced, financed by funds diverted from the Rubber Planting Scheme. In 1972, it was hoped to subsidise 5,441 acres, and the targets for the following three years were: 1973 - 6,378 acres, 1974 - 7,295 acres, 1975 - 7,554 acres.¹

The granting of subsidies under these different schemes depends upon the adoption of planting procedures, maintenance standards and acreages recommended by the Agricultural Department. Agricultural extension staff ensure these standards are kept and give further advice to the farmers.

One of the earliest attempts at providing education for farmers was at the Rural Improvement School at Kanowit set up in 1948. An interesting characteristic of the trainees at this school was that they were all young married couples. Each course lasted two years and the average enrolment was twenty-seven couples. An area of 232 acres of land provided the basis for "the demonstration of agricultural techniques and agricultural and dry land crops, animal husbandry, soil conservation and reclamation, reforestation and communal forest conservation".² The men learnt blacksmithing, carpentry

1. Source: *785 Days, Progress under the Sarawak Coalition Government*, (Kuching: Government Printer, 1972), p.22.

2. R.A. Brewsher, "The Rural Improvement School of Sarawak", *Overseas Education*, Vol. XXI, No. 4, July 1950, p.1096.

and tinsmithing; the women received training in garment making, cooking, housekeeping and child-care. The team also learnt the use of simple drugs and home remedies; when they left the school they were equipped with a home medicine chest. It was emphasised that the training was not for employment in government services "but to help make good farmers". It was recognised that the trainees might find difficulty in putting their education into practice: "We know that, in the reactionary environment of the long-house, these young couples will need every stimulation and education to carry out what they may be persuaded is of value to them in their training".¹

In 1957 the Rural Improvement School was closed. Agricultural education, however, continued in the community development centres at Budu, Padawan, Long Lama and Lemanak. Today, the main institutions for agricultural education are the Farmers' Training Centres run by the Agricultural Department. At the end of 1970 there were seven of these Centres in operation. They were at Semonggok, Sungei Pinang, Temudok, Ridan, Oya Road, Kapit and Kubong. In 1970 a total of 630 young people of all races completed a year's course at the different centres. Of these, the majority were in 16-19 age group and 253 were girls. The bulk of the trainees had attended primary school, and a few had also received junior secondary education. The 1970 Report of the Education Branch of the Agricultural Department says this about the trainees:

"Based on the comments of some principals of FTCs it appeared that those with the higher qualifications, i.e. Form Three and above, did not show as keen an interest in farming as those with the lower education. A number of them were still keen on looking for non-agricultural jobs. Those who were too young were not very serious about what they were doing, especially those below sixteen years of age. It seems that the best group of students are those older students with primary education".²

During the course there was practical work in growing most of the main crops cultivated in Sarawak, as well as in the keeping of different types

1. Ibid.

2. Agricultural Department, "Report of the Education Branch, 1970", p.5.

of livestock. The classroom work placed special emphasis on Farm Management; the trainees learnt about Record Keeping and Accounting, Farm Planning and Marketing. They also learnt about agricultural aspects of the Malaysian Development Plan, Farm Societies (i.e. 4-H Clubs, Farmers' Organisations, the Co-operative Movement), Rural Credit and Personal Health.

Increasing emphasis was being placed on some sort of follow-up after the course. Staff from the centres and the local Agricultural Department office visited the ex-trainees and gave them advice on how to plan and develop their farms. A check was kept on the progress of the different projects and record books were kept by the trainees. Project certificates were awarded to those trainees who did especially well in their projects. In 1970, seventy-five of these project certificates were awarded. The projects included the keeping of pigs and poultry, the growing of fruit, vegetables and pepper.

Attempts have been made to assess the effectiveness of the training provided by the Agricultural Department; this evaluation has been mainly based on visits to trainees. In 1968, Agricultural Department staff made visits to 412 of the 810 young people who had been trained in 1966 and 1967. Two or three visits were made to each trainee. The trainees had been encouraged to keep up a number of different projects such as pepper gardens, poultry units, fruit growing, pig-keeping, fish-ponds, growing rubber, coconuts, coffee and swamp *padi*. Most of these projects were sustained, although in the case of swamp *padi* it was found that "only three were under the Assistance of *Padi* Planters scheme, a disappointing number".¹ It was also found that there had been a considerable increase in the number of these trainees who were 4-H Club members, and that also many were members of co-operative societies.

1. J.A. Hendricks, *Sarawak Gazette*, June 1968, p.132.

Forty-seven of the trainees visited had ceased farming altogether, representing a wastage of slightly more than 11.4 per cent. "The main cause for trainees giving up farming appeared to be immediate financial reasons. They could not afford to wait six years for their rubber or coconuts to grow or even two years for their pepper. Their families demanded immediate returns".¹ At that time many of the trainees who dropped out were able to gain wage-paying employment in lumbering.

In assessing the projects, it was found "significant that more projects per trainee were undertaken by women than men".² Out of 1,000 projects being undertaken, only forty-six were classified as failures.

In 1970 the Agricultural Economics section of the Agricultural Department were requested to help with an evaluation survey of ex-students of the Farmers' Training Centres. A pilot Farm Management investigation was carried out. Its main conclusions were as follows:

- (a) "that ex-trainees were in many cases heavily committed to helping their families with 'traditional' farming activities (e.g. *padi*, rubber) leaving little time available for their own projects.
- (b) Existing follow-up advice did not adequately take account of (a) above; it is probably a mistake to try to make a clear distinction between family and trainees' own projects.
- (c) While in some cases ex-trainees may have been prevented by family pressures from following or extending potentially profitable projects, others were at the same time being encouraged by their follow-up advisers into supposedly 'progressive' projects (usually vegetable gardening and livestock) which compared rather unfavourably in economic terms with some of the 'traditional' projects available to them. It seemed that another result of the emphasis on individual projects in follow-up was that an ex-trainee was considered successful if he had a large number of his own projects. It would apparently have paid some of the ex-trainees visited to have concentrated on a few or only one of their most profitable projects and to have dropped others".³

1. Ibid., p.133.

2. Ibid., p.132.

3. Department of Agriculture, *F.T.C. Farm Management Project*, Paper No. 1, p. 2.

In 1971 and 1972 a random sample survey was carried out with the following aims:

- (a) "To collect input-output data for individual farm projects implemented by returned F.T.C. trainees.
- (b) To provide a composite picture of farm types in Sarawak.
- (c) To identify inefficiencies in the economics of individual projects".¹

A total of 244 ex-F.T.C. trainees (116 males and 128 females) were interviewed in the First, Second and Third Divisions. It was found that 75 per cent of all the trainees were still farming. The proportion for girls (83 per cent) was somewhat higher than the percentage for boys (65 per cent). The proportion still farming was greatest in the more remote areas served by the Kapit centre (92 per cent) and least in the more accessible First Division areas served by Semongkok (57 per cent), a result probably of the greater alternative employment opportunities in the latter area. The survey also showed that 165 of the 183 ex-trainees, who were still farming, had remained in their original villages. Of the 43 ex-trainees not farming, 37 were described as having a job, 3 as having no job and 3 as searching for work.²

Another type of training centre started in 1970 were the Farm Institutes. These were intended for young people with generally higher academic qualifications than those who attended Farmers' Training Centres. Applicants were expected to have reached at least Sarawak Junior standard. The courses lasted one year and included Farm Management, Mathematics, Biology, Science, Agricultural Engineering, Home Economics and Farm Organisation. About 80 per cent of the time was spent on practical work and the trainees keep Field Diaries. Farm Institutes have been opened at Tarat and Kabuloh.

1. Department of Agriculture, *F.T.C. Farm Management Project*, Paper No. 2, p.1.

2. *F.T.C. Farm Management Project*, Paper 1, p.2.

Another innovation which was intended to provide agricultural education was the 4-H Club. This type of young farmers' society was introduced from the United States, initially with Peace Corps Volunteers as organisers. Clubs were usually based on schools, villages or long-houses. Although the emphasis was on agricultural projects, training was given in citizenship and the clubs had recreational activities. At the end of 1970 there were 215 of these clubs, with a total of 7,684 members. Primary schools accounted for 63 clubs and 3,045 of the membership; there were 9 of these clubs in secondary schools with 573 members. Projects were undertaken by groups or by individuals in the clubs. Among the most popular projects in 1970 were vegetable gardening, fruit growing, poultry raising and egg production, keeping fish-ponds, home and village improvement, sewing, cooking and handicrafts.

The Agriculture Department provides information for farmers and the general public by means of leaflets, posters, pamphlets and a monthly paper called the *Farmers' Bulletin*. The paper is printed in English, Malay, Iban and Chinese; it is free and 16,000 copies are distributed each year.

Community Development

There is at present no official community development department in Sarawak, although in their minor rural development projects the government now places a great deal of emphasis on the concept of *gotong royong*, work of a self-help nature. In addition, much of the work of government extension officers especially those from the Department of Agriculture, is concerned with "effective ways of stimulating, helping and teaching people to adopt new methods and learn new skills"¹ which Batten suggested as one of the main aims of community development. However, because of the specialist nature of their

1. T.R. Batten, *Communities and their Development*, (London, Oxford University Press, 1957), p.5.

work it is doubtful whether extension workers are able to achieve the other aims given by Batten: "to help people adapt their way of life to the changes"¹ and "to ensure that the feeling or spirit of community is not destroyed".²

In the past, several schemes in Sarawak have been described as being specifically community development projects. The most significant of these has been associated with John Wilson and the Iban people of the Budu area. Wilson's work has been described by Mora Dickson in *Longhouse in Sarawak*³ and by Wilson himself in *Budu, Twenty Years in Sarawak*⁴. Wilson began his career in Sarawak in 1949 as Principal of the Batu Lintang Training College. He became increasingly concerned about the problems of the trained teacher who returned to the rural areas where conditions often made it difficult for him to put his ideas into practice. Wilson also felt that the schools were not acting as agents of rural change and foresaw that many students would want to leave their home areas. He wrote of the parents: "Almost without exception, all believed that the purpose of the school was to provide education to enable the child to get a government job".⁵ He realised the integral role that the school must play in development:

"It appeared to me then, even as it does some fifteen years later, that it was almost being dishonest, almost cheating, to continue training teachers to open schools in remote parts if no parallel development could be initiated with the school at the focal point. The teacher, I argued, had to be a member of a team, or at least organise the work of visiting teams, to bring enlightenment to the people and initiate some type of development that would and could provide a living for the child as he left school".⁶

1. Ibid., pp. 5-6.

2. Ibid., p.6.

3. M. Dickson, *Longhouse in Sarawak*, (London: Victor Gollancz Ltd., 1971).

4. J.K. Wilson, *Budu, Twenty Years in Sarawak*, (North Berwick, Tantallon Press, 1969).

5. Ibid., p.9.

6. Ibid.

At the end of 1952, Wilson resigned from his post as college principal and went to Budu on the Krian River above Saratok to become the teacher in charge of the primary school. Initially Wilson's work and development activities were based on the school. It was in the role of teacher that he was first accepted by the Iban, among whom there was a strong desire for formal education. However, in addition to the primary school curriculum he began to teach his students agricultural activities. Coffee, pineapples, tea, oil palm and rubber were planted in an area near the school. Wilson had brought pigs with him to Budu and these were penned rather than allowed to wander around freely as the pigs did under the longhouses.

Before coming to Budu, Wilson had taken a crash course in medical aid and had been supplied with medicines by the Department of Medical Services. At first these were only dispensed to the school children but within a short time these medical services were also being extended to the adults of the surrounding area. This was to be the pattern for much of the early development: starting from the school at the centre and then expanding to the community at large. It was important that the people should state their needs and be prepared to do something about them. Wilson wrote that it was "vital that any plan for progress came from the people themselves".¹ A Committee of Progress was formed to supervise and instigate development work and in addition to the clinic a shop was set up at the centre.

In order to expand activities, Wilson recruited two young men from Britain; one to be in charge of the clinic and medical services, the other to be responsible for the running of the shop and the commercial activities of the scheme. Later a doctor was appointed from Canada and some of the first volunteers under the British Voluntary Service Overseas programme came to work

1. Ibid., p.11.

for short periods at Budu and the other centres. The employment of overseas volunteers was only intended to be a temporary feature of the scheme's development and from the start emphasis was placed on the need to select and train local leaders. Following Budu, a new scheme was set up at Nanga Entaih on one of the tributaries of the Kanowit River and eventually eight different centres for development were established together with a programme for training local leaders known as the Iban Teams Project.

Wilson visualised the community development work as having four phases. The school, clinic, co-operative shop, agricultural extension work and the Committee of Progress represented the First Phase. The Second Phase was one of consolidation and training for local leaders as in the Iban Teams Project. The Third Phase was the handing over of the centres to the Committees of Progress with locally trained secretaries. The final stage was to be the setting up of secondary schools with a vocational bias. Two schools were started, one at Budu and the other at Nanga Entabai. They were both private schools and received no financial assistance from the government, but Wilson did succeed in obtaining aid from organisations such as Oxfam, the Asia Foundation and the Scottish General Co-operatives. It was intended that the schools would be supported by the communities themselves but the fall in local income due to the decline in rubber prices made this difficult and was one of the reasons why the schools eventually closed. The other major reason for the schools closing down, and Wilson himself being expelled from Sarawak in 1968, seemed to have been largely political and due to the Malaysian government's fear of his influence among the Iban.

Apart from the failure of the vocational secondary schools, Wilson's work in the Budu area was important because it did provide a successful model for the integration of the schools with the community development process. The children's education was not intended to estrange them from the long-house communities, rather rural development would ensure that their home areas became

attractive places to live. Wilson told the people that if they "were keen to make progress in their home areas, make sunk pit latrines, raise pigs properly, plant things that could be sold; then their educated children would not be in such a hurry to leave".¹ The Wilson schemes were essentially self-help ones with the Iban being encouraged to raise the standard of living in their home areas through their own efforts. It was not development instigated by the government or government agencies, as was to be the case with the land development schemes later. In considering the wider application of this type of community development to other parts of Sarawak, the obvious question that has to be asked is how much the success of the Budu projects owed to the personal factor of Wilson's brand of charismatic leadership. Could the community produce its own leaders with the strength of character and the necessary mixture of vision and practical ability? Wilson himself believed that it could, and emphasised the importance of training and further education for these leaders. Whenever possible he deferred decision making and planning to these leaders and the progress committees. Nevertheless the projects continued to owe a great deal to his suggestions and guidance; above all he had provided the necessary stimulus or catalyst for the community development.

If we go on to consider the next question of whether it is possible for other teachers to play a similar role in development, in addition to Wilson's personality, we have to look at the other factors which led the Iban community to accept this wider concept of the teacher's work in the community extending beyond the traditional limits of the classroom. One of the factors seems to have been the resources in terms of medical aid and agricultural materials that Wilson brought with him and was subsequently able to obtain. Mora Dickson

1. Ibid., p.29.

writes that an important stage in his relationship with the Iban also came when he helped defend one in a court of law against prosecution by the Department of Agriculture for defying a temporary ban on the planting of pepper by indigenous farmers. She suggests: "Suddenly he was more than a teacher with strange ideas: he was a Community Development Officer being consulted by his people".¹ Wilson succeeded in getting the pepper planting ban lifted, he also helped the farmers in marketing their rubber and dealing with Chinese merchants. By helping the people set up their own co-operative store he helped to meet a definite local need. The implications would seem to be that the teacher should be in a position to help the community economically and also have access to resources that enable him to help. If the teacher is to be active in community development he is also likely to need training in skills other than those which are purely pedagogic, for example, in first aid, agriculture and simple book-keeping. Special consideration will also be necessary in considering staffing and time-tabling in schools where teachers are working outside with the community. The school itself must also be recognised as having a different and central position in the planning and implementation of development. In the conclusion of my thesis I have made some suggestions as to how this might be achieved.

In addition to Budu, three other community development projects were attempted in Sarawak. These were at Padawan, Lemanak and Long Lama.

The Padawan Development Scheme lasted from 1957 to 1963 and served an area of Land Dayak villages around the headwaters of the Sarawak Kiri river. The area is only about thirty miles south of Kuching but was at that time relatively isolated, being about three days journey upriver from the state

1. M. Dickson, *op. cit.*, p.56.

capital. The people were poor and had few cash crops; nutrition and health standards were very low, there was a considerable amount of sickness. The Anglican Church had had pastoral and educational contact with the area since 1938, and they provided personnel for the initial administration and implementation of the scheme.

Under the scheme a general clinic was set up in Padawan and visits were also made to the villages by a nurse and her assistants. Rubber was introduced to the area, although the mountainous relief often made it difficult to find sufficient suitable land. Citrus fruit, coffee and vegetables were also planted. Fish-ponds were dug and stocked. New breeds of pigs were introduced and piggeries constructed that drained into the fish-ponds.

Instruction was provided at adult literacy courses; there was instruction in agriculture, carpentry, sewing, cooking and hygiene. Men and women taking these courses lived at the Padawan centre for ten days each month, a full course extended over ten months in the year.

The scheme also aimed to raise the standard of local primary schools, and students at the Padawan School took an active part in the practical aspects of the development scheme. In an evaluation report on the scheme it is claimed that this meant "the almost total absence of failed Primary Sixes who did not know what to do with themselves, and that school leavers wasted no time in hunting for jobs in Kuching, but went home and got down to agriculture. Some of the best rubber ... is of their planting, and much of the continual increase in pepper planting is also due to them".¹

The scheme finally finished in 1963. Although the results of some of

1. P. Howes, "The Padawan Development Scheme, 1957-63 - Evaluation Report", (Kuching: mimeo, 1963).

the projects, such as the adult literacy classes and some of the agricultural innovations, were not as great as had been hoped, the general effect of the scheme was to provide a considerable rise in the standard of living in what had formerly been a depressed area. As in the Budu scheme, there had also been an effort to integrate education with development at the local level.

Another rather shorter-lived community development scheme was that from 1961 to 1963 at Lemanak in the Engkilili district of the Second Division. Here it was stated that "the real objective ... was to wean the Iban away from a way of life rooted in a subsistence economy based on a shifting cultivation of hill rice which could be satisfied only in repeated migration. While this continued, Iban land resources were continuously devastated and effective development remained impossible".¹ The scheme aimed to propagate and improve settled agriculture, education, medicine and health teaching. At the Lemanak Scheme Centre one-month courses were held in contour terracing, vegetable gardening, fruit growing, fish-pond management, rubber maintenance and tapping, sewing and cooking.

A fourth development scheme was at Long Lama in the Baram District of the Fourth Division. The main aim here was to teach useful skills rather than community development in the wider sense. There were courses in subjects such as carpentry, metal working, outboard engine overhaul, electric power plant installation and maintenance, the growing of swamp *padi* and vegetable gardening. Later Long Lama became a Farmers' Training Centre and subsequently became known as an Agricultural Development Centre.

The community development projects described in this section were all basically features of the latter part of the British colonial period, although

1. *The Sarawak Gazette*, February 1962, p.45.

the Budu schemes did continue for some time after 1963. After Sarawak became part of Malaysia no similar schemes were started. The buildings and physical assets at the centres of the existing projects were generally handed over to government departments. The services provided by the schemes were often continued by these departments, mainly those of Agriculture, Health and Education. The schools were administered as separate units. This was unfortunate as one of the main achievements of the Budu and Padawan schemes had been to make the schools part of the development schemes, and to encourage the students and school leavers to play a constructive role in their other activities.

Land Settlement Schemes

I have shown that even if the school leaver has received agricultural education, he may find it difficult to put this education into practice when he returns to the village or long-house. The traditional system of shifting and subsistence cultivation continues and in this he often finds himself less experienced and not as capable as his uneducated contemporaries. The rest of the community tend to regard him as a failure in that he has not continued his education or managed to find a white-collar job. He remains part of the family unit which owns and works the land. It is very difficult in this type of environment for the individual youngster to effect any innovations or improvements.

The young farmer may also face other problems. There may be a shortage of land, especially for the Chinese who can only buy and own land in areas classified as Mixed Zone. Young farmers often lack the necessary capital to improve their land. They may also face a time-lag before crops are harvested and they can obtain any income. In many areas transport is difficult and there are problems in marketing crops.

Land Development Schemes represent one means of overcoming these obstacles and providing a better environment for productive farming. These schemes represent a means of inducing people to change from shifting cultivation to intensive and permanent agriculture. The resettlement also involves the setting up of planned villages with a majority of individual houses. The schemes were administered and initially financed by the Sarawak Development Finance Corporation, and then administered by the Sarawak Land Development Board, working in close co-operation with the Agricultural Department. Under the schemes, land is redistributed with block planting of high yielding cash crops. The income from these crops should enable the settlers to pay back the initial loans they have received for the purchase of their houses, fertilisers and costs of maintenance during the first few years. The new villages are also provided with social amenities such as community halls, schools, water supplies and dispensaries.

Most of the existing schemes are associated with the planting of high yielding rubber, a planned development known as Rubber Scheme B. Modern methods of production are used. During tapping, the latex is protected against wet weather by polystyrene rain guards; the latex is caught in polythene bags which only have to be collected once a week. The rubber is generally taken by lorry for processing at a hevea crumb factory near Sarikei. Each settler has eight acres of land for rubber growing and also additional areas for rice growing, fruit trees, vegetables and livestock.

Seven schemes are associated with the growing of rubber. These are at Triboh in the First Division, Melugu and Skrang in the Second Division, Meradong and Sabintek in the Sixth Division, Lambir in the Fourth and Lubai Tengah in the Fifth Division. All are in areas where soil conditions, relief and drainage are relatively favourable to the growth of rubber; in addition all are located close to areas of recent road development. Oil palm is grown

at an eighth scheme at Bukit Peninjau near Miri.

In future the emphasis will be on oil palm development. In 1972 the Board announced that it hoped to resettle at least 2,500 people on oil palm schemes during the next four years.¹ Land has been cleared, drained and planted in the Lambir-Subis area to the south of Miri. Some school leavers were employed as labourers in this development work for which there was an acute labour shortage.²

One of the development schemes I visited was the rubber scheme at Lambir. Here there were originally 180 settlers to whom land titles had been issued, but 34 had temporarily left the scheme and were classified as non-resident. Most of the latter group were Ibans who had gone off to look for work in other areas following the custom of *bejalai*.³ This type of mobility tends to defeat the purpose of the scheme where one of the conditions is that the settlers should stay resident. In the case of Lambir, however, the powers of the Land Development Board were limited by the fact that land titles were issued prematurely before the settlers had started to pay back their initial loans.

Another type of development scheme that has been suggested as a possible solution to the unemployment problem is one that would be specifically for school leavers which would be organised on a partially co-operative basis.

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1. *Sarawak Gazette*, July 1972, p.134.
 2. In a personal interview at Lambir in October 1972, the Regional Manager of the Sarawak Land Development Board told me that he could employ up to a thousand more labourers.
 3. *Bejalai* can be translated as 'to walk' or 'to go on a journey' and refers to a journey to find work, profit and prestige. This Iban custom is described by Freeman in *Iban Agriculture: A Report on the Shifting Cultivation of Hill Rice by the Iban of Sarawak*, London, H.M.S.O. (Colonial Research Studies No. 18), 1955, pp. 74-75.

Table 12

Ethnic Composition and Places of Origin of
Settlers on the Lambir Development Scheme, 1972

Ethnic Group	Place of Origin	Total
Ibans	Lubok Antu - 13	102
	Baram - 12	
	Simanggang - 22	
	Sibu - 4	
	Bintulu - 9	
	Local area - 42	
Malays	Miri - 7	11
	Kuching - 4	
Kedayan	Local area - 7	7
Melanau	Local area - 4	4
Kayan	Baram - 1	1
Chinese		8
Tamil		2

The original proposal by the Sarawak Development Finance Corporation was for a scheme in the Fourth Division which would comprise an area of about 4,000 acres and eventually aim to accommodate about 400 youths between the ages of seventeen and twenty-five. Each youth would look after about ten acres of land, and rubber or oil palm would be the main cash crops. During the early years before these crops started to yield, each settler would receive a loan of from \$40 to \$60 a month, although eventually his income from the rubber or oil palm could be expected to be over \$300 a month. Initially accommodation would be in dormitories and the scheme would be restricted to boys who would not be allowed to marry for the first three years.

In order to make some type of assessment of the attitude of young people towards this type of settlement, the scheme was explained to potential school leavers in Forms Three and Five at the government secondary schools at Bau and Serian in the First Division and Kanowit and Sibu Rural in the Third Division. They were then asked to write a short essay on "Why I would like or would not like to join a youth settlement". I then made an analysis of these essays. Out of a total of 266, 195 students wrote they were in favour and 71 that they were opposed to it.

A variety of reasons were given for their choice by those in favour of the scheme. Many accepted it as a solution to the employment problem:- "When I leave school I have nothing to do at home". "It is very hard to look for jobs". Several students also wrote about lack of land at home. The difficulties of farming in the home village were well illustrated by one student who wrote of the people in his village:- "If I introduce modern methods to them, they will laugh at me". Several students looked on the schemes as a means by which they might receive more training in agriculture; others regarded them as a means of using the education they had already received. It was also hoped that the schemes would provide a more profitable form of farming, especially if oil palms were the main cash crop. Students were also attracted by the community aspects of youth settlements and the prospect of living together in a multi-racial society with young people of their own age.

Those who would not like to live on a youth settlement often gave the reason that it was "too far away" or "too far to travel", and that they would seldom be able to go home to visit their parents. This might seem to indicate that the settlements would be more popular if they were located nearer the home areas of the school leavers, a development that may come if the number of settlements are increased. Other criticisms were based on the absence of girls from the scheme and the fact that settlers would not be allowed to get married

in its early stages. Among some students, the traditional attitudes towards manual labour as being unsuitable for those with secondary education still persisted:- "After being a student for eleven years I am not at all prepared to work in the sun". Several students wrote that they thought that the work would be too hard or too dull. Others were concerned with the financial rewards and the low initial income.

The results of the survey are summarised in Tables 13, 14 and 15. The main conclusion to be drawn from it would seem to be that, although other forms of employment might be preferred, the majority of students would prefer farming on a youth settlement to farming at home.

Table 13

Analysis of Students' Essays on "Why I Would Like
or Not Like to Live and Work on a Youth Settlement Scheme

School	Students in favour	Students against
Bau	37	27
Serian	100	21
Sibu Rural	31	14
Kanowit	27	9
Total	195	71

Table 14

Main Reasons Given in Favour of Youth Settlements

Main reasons given in favour	Incidence
No other jobs, better than doing nothing	42
Opportunity to learn about agriculture	33
Enjoy communal life, community of young people	24
Chance of regular earnings and improved standards of living	17
Useful in the future	15
Importance of agriculture in the economy	14
Interest in growing oil palms	14
Opportunity for multi-racial living	12
Chance to use education and put school ideas into practice	11
Can help the Government in developing the country	11
Not enough land for farming at home	9
Opportunities for sport and recreation	7
Opportunities to meet new people and see new places	7
Want to work away from home	3
Difficulty of introducing change in traditional farming methods at home	2

Table 15

Main Reasons Given Against Youth Settlements

Main reasons given against	Incidence
Too far to travel; too far away from home and family	40
Initial earnings too low	37
Unable to help or support parents	13
The work would be tough, dull, hot and unpleasant	15
No girls; unable to get married	13
Dormitory accommodation	8
Parents would not allow	8
Farming plans at home; can earn more at home	7
The type of work is unsuitable for qualifications and education	4
Holidays too short	2

When the first youth settlement scheme was begun in Sarawak in 1972 it was administered by the Agricultural Department. The area chosen was known as Pujut Lopeng. It was located on the flood plain of the Miri River and comprised an area of about 1,400 acres, most of which was covered by secondary forest or grassland. About 280 acres of the area is deep peat and unfit for cultivation.

The main objectives of the scheme were to create employment opportunities for unemployed youth in farming; to put farming on a sound and economic basis using advanced techniques and scientific knowledge; to assist Farm Institute trainees to put their knowledge into practice and to start farming on their own.

The settlers were chosen from those who had just completed courses at one of the two Farm Institutes at Kabuloh and Tarat. It was originally intended that in the first year there should be twenty settlers; in fact the scheme started with eighteen, one of whom dropped out in the early stages and another said he was going to leave in October. The settlers came from different parts of Sarawak and most of the major groups were represented, with Melanaus being the most numerous.

All seventeen settlers had been educated up to Form Three level and most of them had passed the Sarawak Junior Certificate with a Division Three grade; several had been to private schools. All had left school within the last six years. Many had been employed before going to the Farm Institute and then the Youth Settlement; this had usually been in temporary work such as labouring in sawmills, but a few had also been in government departments from which they had resigned to go to the Farm Institute. Three had only been engaged in farming; they helped their family to grow rice, kept livestock and tapped rubber. The settlers are officially not supposed to marry in the first

three years at the scheme, but in fact one was already married and his wife lived with him at the scheme.

Table 16

Ethnic Break-down of the Settlers at the Pujut
Lopeng Youth Settlement Scheme

Ethnic Group	Number
Melanaus	6
Ibans	5
Chinese	4
Malay	1
Kelabit	1

Table 17

Home Areas of the Pujut Lopeng Settlers

Area	Number
Miri	2
Bintulu	4
Tatau	1
Kelabit Highlands	1
Limbang	1
Mukah	3
Matu	2
Kanowit	1
Kapit	1
Kuching	1

When I visited the scheme in October, 1972, the settlers were still living in temporary accommodation although a communal dormitory and a dining hall were in the process of being built. The settlers were working eight

and a half hours each day from Monday to Friday, and on Saturday they worked on their own individual projects.

The settlers were engaged in transplanting wet *padi*. Each had an area devoted to this crop. It was intended that coconuts would be the main cash crop and each settler would eventually receive two plots of five acres for this crop. In addition there were plans for growing cocoa, coffee, groundnuts, maize, ginger, chillies and vegetables.

During the first three years of the scheme the settlers received fifty dollars a month from the government in the form of an interest-free loan. Thirty dollars a month was usually deducted from this amount to pay for food. The settlers also receive cash subsidies from the Assistance to *Padi* Planters Scheme.

After three years the titles to the land would be handed over to the settlers and they would also receive house lots of a third of an acre each. It was expected that individual houses would be built with the aid of loans from the Sarawak Economic Development Council.

The settlement also provided some tools and machinery including a power tiller and tractor. Marketing of the products was to be on a co-operative basis.

Table 18

Reasons Given for Joining the Pujut Lopeng Youth Settlement Scheme

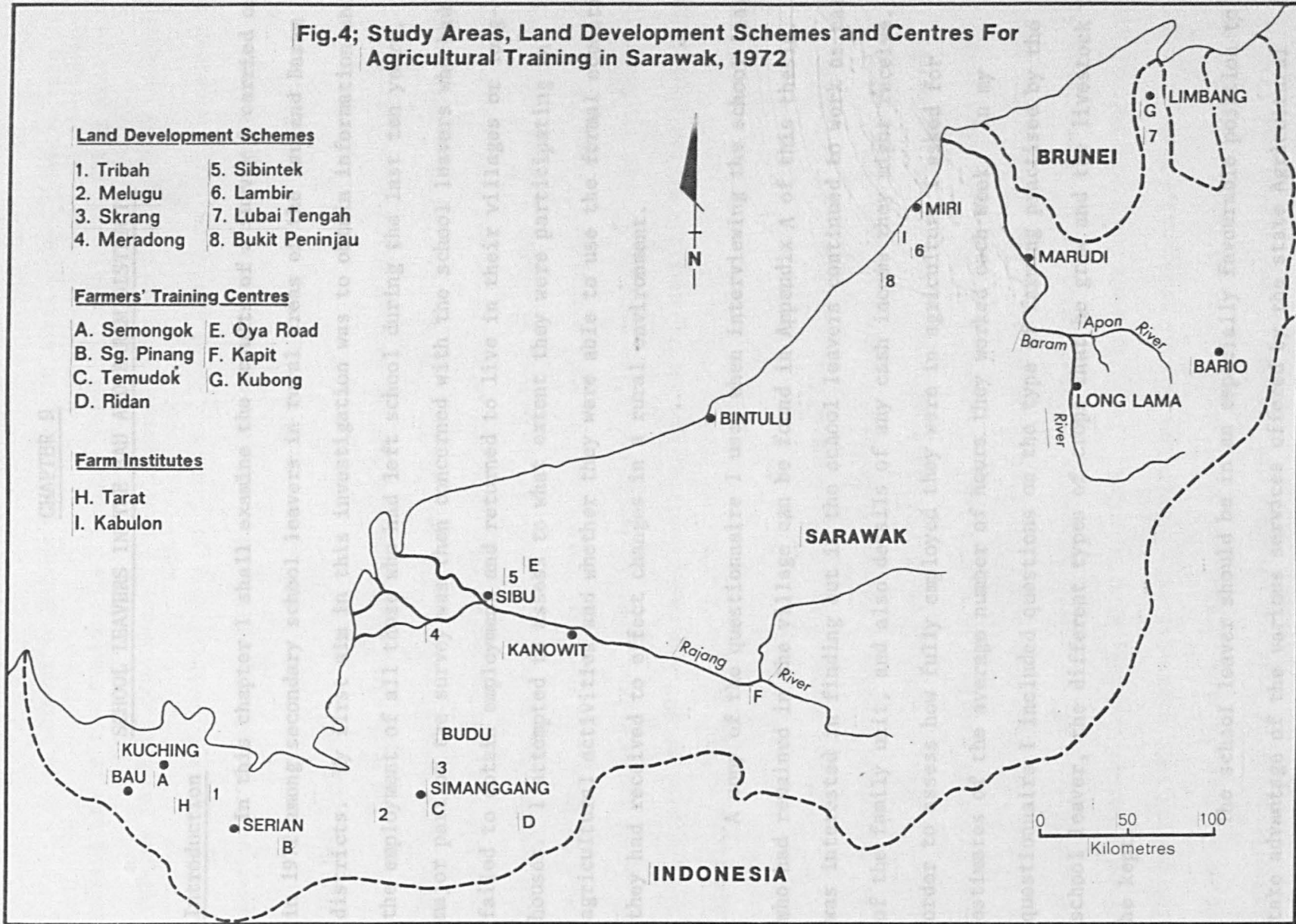
Reason	Incidence
Near town; easy transport and marketing	12
Availability of land; no land at home	10
Want to make a career of farming	7
Modern methods and machinery	4
Want to work with other young people	1
No means of support at home	1

The Pujut Lopeng youth settlement is very much in the nature of being a pilot scheme. It faced several initial difficulties at the time of my visit. The land for coconut growing still needed to be drained by the Drainage and Irrigation Department before the seedlings could be transplanted. Buffaloes, which are kept by the neighbouring Kedayan villagers, are untethered and have done some damage to young plants on the scheme. The wet *padi* fields depend on direct rainfall for their water supply; 1972 proved to be a very dry year by Sarawak standards and there was still a shortage of water at the time of transplanting.

When I visited the scheme, one settler had already dropped out, a Land Dayak from the First Division. He had obtained a supervisory post in the oil palm scheme at Bukit Peninjau. Another was about to drop out; he was Chinese and he gave as his reason that he wanted to practise farming in his home area near Kapit. It was perhaps significant that although the majority of the settlers had attended the Kabuloh Farm Institute, the two dropping out were both from Tarat. The agricultural officer in charge of the scheme suggested that in future it might prove more effective to select all the settlers for a scheme from one particular Farm Institute.

It is planned to increase the number of settlers at the scheme to seventy within the next four years. If the scheme proves successful, similar projects will be started in other areas.

Fig.4; Study Areas, Land Development Schemes and Centres For Agricultural Training in Sarawak, 1972



Department and questions were asked about attendance at Farmers' Training Centres and other courses; the receipt of subsidies; membership of C.A. Clubs and the receipt of the Farmers' Service and other information published by the department.

CHAPTER 9

SCHOOL LEAVERS IN THE BAU AND BARAM DISTRICTS

Introduction

In this chapter I shall examine the results of a survey I carried out in 1972 among secondary school leavers in rural areas of the Bau and Baram districts. My first aim in this investigation was to obtain information about the employment of all those who had left school during the last ten years. The major part of the survey was then concerned with the school leavers who had failed to obtain employment and returned to live in their villages or long-houses. I attempted to assess to what extent they were participating in agricultural activities and whether they were able to use the formal education they had received to effect changes in a rural environment.

A copy of the questionnaire I used when interviewing the school leavers who had remained in the village can be found in Appendix A of this thesis. I was interested in finding out if the school leavers continued to work as part of the family unit, and also details of any cash income they might receive. In order to assess how fully employed they were in agriculture I asked for estimates of the average number of hours they worked each week. In my questionnaire I included questions on the type of farming practised by the school leaver, the different types of crops that he grew and the livestock that he kept.

The school leaver should be in an especially favourable position to take advantage of the various services offered by the state Agricultural Department and questions were asked about attendance at Farmers' Training Centres and other courses; the receipt of subsidies; membership of 4-H Clubs and the reading of the *Farmers' Bulletin* and other information published by the department.

In an attempt to assess the extent to which school leavers were making use of their education, I asked about any changes they had made in farming in their home area. I also asked if they considered their education had helped them in their work as farmers. Other questions were concerned with attitudes towards migration, land development and youth settlement schemes.

The Bau District

The main study area selected was the Bau administrative district. There were several reasons for this choice. It was the region I knew best as I had been headmaster of the secondary school there for nearly six years. I had carried out an earlier survey of employment of school leavers there from 1964 to 1968. It was relatively simple to make a complete survey of the whole district because land communications are fairly good by Sarawak standards; also, with an area of 823 square kilometres, Bau is the smallest of the administrative districts in the state.

The Bau District has certain other characteristics of relevance to the employment problem. Education was developed at an early stage here by the Catholic mission and the local Chinese committees; the result has been a high proportion of people with some school education. The area has been settled for a longer time than many other parts of Sarawak and it has the highest density of population, 26 per square kilometre, of the districts of Sarawak outside the urban areas of Kuching, Sibü and Miri. There is a shortage of land suitable for agriculture under the existing system of land tenure and farming. Employment opportunities outside agriculture are limited, although there is some mining and processing of gold and antimony ore. Kuching, the capital and largest town of Sarawak, is only twenty-two miles from Bau itself and this makes movement to urban areas in search of employment relatively easy.

At the time of the survey, the district was served by three secondary

schools: Bau, a government secondary school, going up to Form Five; Lake, a government junior secondary school with students leaving after Form Three; and Kin San, a private school for unselected students. At different stages in the educational development of the area, students had also gone to secondary schools outside the district. Students selected for Form Six went to Kuching or Miri. There was no agricultural education in the curriculum at Kin San school, but Husbandry was taught as a subject in the junior secondary course at both Bau and Lake schools. Agricultural Science was taught as an optional subject to senior secondary students at Bau; there was also a 4-H Club for girls at that school.

There were thirty-eight primary schools in the district. Twenty-two were run by the local authority, Bau District Council; seven by the Catholic mission; nine by Chinese committees. Agricultural education did not form part of the curriculum of these schools, although gardening often featured as an extra-curricular activity.

My survey covered school leavers from all the Land Dayak villages of the district. The Land Dayaks form nearly two thirds of the population of the district and slightly more than half of its school population. An employment survey was also made of Chinese school leavers in the town of Bau itself. In addition, twenty-five Chinese school leavers living on smallholdings in the area to the north of the town were interviewed.

Table 19
The Population of the Bau District, 1970¹

Ethnic Group	Male	Female	Total
Malays	1,091	947	2,038
Land Dayaks	9,161	9,425	18,586
Chinese	4,615	4,132	8,747
Others	113	103	216
Total	14,980	14,607	29,587

1. Source: 1970 Census.

Land Dayak Village Survey

Interviews in all the villages were conducted by myself or by two assistants, who were themselves Land Dayak school leavers with senior secondary qualifications. The survey was carried out in the month of September, which in the calendar of hill *padi* cultivation was the period when the farmers were burning off their land and sowing next year's crop. In some cases the school leavers were staying away from their villages and living on temporary farms; when this happened second visits had to be made or, in a few cases, the questionnaires were left with relatives and collected later. Altogether, out of a total of 115 school leavers living in the villages and farming, we were able to interview 108 (72 boys and 36 girls). In the case of our initial inquiry into the employment of all those who had left school during the last ten years, information was obtained from the school leavers themselves or other people in the villages, often primary school teachers or the *tua kamponge* (village headmen).

The results of the employment survey are shown in Table 20. Slightly more than a quarter of all the school leavers (26 per cent) were employed in teaching, government departments and clerical work. A surprisingly large proportion, nearly a fifth, had joined the police or armed forces. Many of the other school leavers were engaged in manual work, often of a temporary nature. Boys worked as labourers in construction projects, sawmills, brick factories and on the gold fields. Both boys and girls worked in the gold and antimony mines. Some of the girls also worked in Kuching as domestic servants, waitresses and shop assistants.

Most types of employment tended to take the school leavers away from their villages. Some had gone as far away as Miri, Brunei and West Malaysia; a large number were in the Kuching area.

Table 20

Occupations of all School Leavers from Bau Land Dayak Villages

Occupation	Male	Female	Total	Percentage
Farming in the village	78	37	115	22.2
Mining	8	3	11	2.1
Police	29	2	31	6.0
Field Force	44	-	44	8.6
Army, Navy, Air Force	27	-	27	5.2
Teaching	42	16	58	11.2
Nurse, Dental Nurse, Midwife	-	9	9	1.7
Agricultural Department	10	4	14	2.6
Radio Malaysia	7	-	7	1.4
Sarawak Administrative Officer	4	-	4	0.8
Clerk	14	5	19	3.7
Other government and semi- government departments	25	-	25	4.8
Labourer	36	-	36	6.9
Factory worker	4	-	4	0.8
Domestic Servant	-	12	12	2.3
Cook, waiter, waitress	3	2	5	1.0
Salesman	2	-	2	0.4
Shop Assistant	3	4	7	1.4
Bus Conductor	4	-	4	0.8
Mechanic	1	-	1	0.2
Gardener, groundsman	2	-	2	0.4
Rearing cows near Kuching	1	-	1	0.2
Priest, nun	1	2	3	0.6
Housewife	-	39	39	7.5
Disabled	1	-	1	0.2
Unemployed and looking for work elsewhere	10	3	13	2.5
MARA training	8	-	8	1.7
University	6	-	6	1.2
Teacher training	3	2	5	1.0
Vocational School	2	-	2	0.4
Private typing course	-	2	2	0.4
Total	375	142	517	100

The proportion of school leavers who still lived in their villages and were principally engaged in agriculture represented 22 per cent of the total; the proportion of girls (26 per cent) was higher than that of boys (21 per cent). In addition, a number of the girls who had married were still living in their own villages.

The majority of school leavers who had stayed in the village had completed their education at Form Three level, although there were twenty Form Five leavers and a smaller number who had dropped out in the early stages of junior secondary education. Their ages varied from fourteen to twenty-five.

Table 21
Levels of Education Reached by School Leavers, Bau District
Village Survey

Level	Incidence
Form 5	20
Form 3	72
Form 2	15
Form 1	1
Total	108

Table 22
Ages of School Leavers in the Bau District Village Survey

Years of Age	Incidence
25	1
24	1
23	1
22	3
21	5
20	23
19	21
18	24
17	18
16	6
15	3
14	2

The school leavers who had stayed in the villages generally lived with their families. Most of them had in the past applied for posts in government service or teaching, but without success. Some had been temporarily employed since leaving school, often as census enumerators or as untrained teachers who had become redundant. They were all to some extent involved in agricultural activities. The survey showed that the majority worked as part of a family unit. A few had their own projects or were employed by other people, but most of these also continued to help their families, especially on the *padi* farms. It was difficult to determine the cash income of most school leavers. A few denied receiving any money at all. Most said that they received pocket money from their parents but that this was not a regular account, but rather given when they asked for it. The school leavers, who worked on their own projects, usually had a direct income from selling crops or livestock. Those who worked for wages were employed by Chinese pepper farmers and came from the Singghi area. Their wages were higher than the cash incomes of the other groups. The mean average monthly cash income of those receiving pocket money and income from the sale of products was only \$21.62; for those working for wages it was \$140.

Very few of the school leavers obtained income from any other source than agriculture. One made a good income from collecting and selling birds' nests from the caves of the area; two did casual work as labourers; one was also manager of the village co-operative society.

The school leavers were also asked to estimate how many hours they worked each week. The answers given varied from two to fifty hours and are summarised in Table 25. The survey was made when there was considerable activity on the hill *padi* farms and the school leavers' answers indicated that during this period the majority of them were fully occupied in farming.

Table 23
Types of Farming Practised by School Leavers,
Bau District Village Survey

Type of Farming	Incidence
Working only as a member of the family unit	84
Working as a member of the family unit and also for wages	2
Working as a member of the family unit and also farming by himself	18
Working for wages only	4

Table 24
Forms of Cash Income of School Leavers,
Bau District Village Survey

Form of Income	Incidence
Pocket Money	69
Wages	6
Direct income from selling products	20
No cash income reported	13

Table 25
Estimates of the Number of Hours Worked Each
Week by School Leavers in the Bau District Village Survey

Number of Hours Worked	Incidence
41 - 50 hours	36
31 - 40 hours	32
21 - 30 hours	28
11 - 20 hours	10
10 hours or less	2

The types of farming activity, the crops grown and the livestock kept by the school leavers were largely typical of the area; a result of the fact that most were farming with their families. Nearly all were concerned with the growing of rice, in most cases hill *padi* grown by shifting cultivation. The

growing of wet *padi* depended to a considerable extent on the geographical distribution of flat land with a suitable supply of water, but there was evidence that in some cases school leavers had encouraged their families to start growing it. A high proportion of school leavers were also concerned with the growing of pepper and this seems to have been an innovation for which they were sometimes responsible. Not many school leavers were tapping rubber although most of their families had some trees; this was mainly a result of the low market price at that time. Among other crops that were grown, maize, sweet potatoes, coconuts, bananas and rambutans were the ones most often mentioned. Most of the school leavers' families kept pigs and hens, but less than a fifth had fish-ponds and these were often poor and unstocked.

Table 26
Types of Crops Grown and Livestock Kept by the
School Leavers and Their Families, Bau District Village Survey

Crop or Livestock	Incidence
Hill <i>Padi</i>	100
Wet <i>Padi</i>	56
Pepper	91
Rubber	77
Vegetables	52
Cows	3
Hens	102
Pigs	43
Ducks	33
Fish-ponds	21

Seven of the school leavers had also attended Farmers' Training Centre courses. This training seems to have been of benefit in that six of them said they had tried to make changes and improvements in farming. They were more likely than other school leavers to have their own projects, grow pepper and vegetables, benefit from Agricultural Department extension activities and subsidy schemes, and keep written records and accounts of their farming.

Both school Husbandry lessons and the Farmers' Training Centre courses emphasise the importance of keeping some written record and accounts of farming. The survey showed that in fact very few did so; only eight of those interviewed said that they kept any form of written records, four of them had been to Farmers' Training Centres.

None of the school leavers interviewed had attended a Farm Institute. Three had been on Inland Fisheries courses, but of these only one had gone on to make his own fish-pond.

A large number of those interviewed said that they read Agricultural Department publications such as *The Farmers' Bulletin* and leaflets on the growing of individual crops, although several qualified this by saying they only read them infrequently or that it had been a long time since they had last done so.

Many of the school leavers said that they, or their families, had received subsidies from the government under Rubber Scheme A. Other schemes under which assistance had been received were in connection with freshwater fisheries, assistance to *padi* planters, coconuts, pepper, fruit trees, pigs and cows.

Membership of 4-H Clubs was mainly determined by the existence of a club in the home village. At the time of the survey there were seventeen clubs in the Bau District, but eight of them were based on schools. The schools also provided the bulk of the membership, with 559 individual members out of a district total of 770. Seventeen of the school leavers interviewed said they were still members.

Only three school leavers said that they were members of co-operative societies. This was mainly a result of the poor development of the societies

in the Bau District generally; there were only four savings and loans societies and one multi-purpose society, the manager of the latter being a school leaver.

Table 27
Agricultural Education of School Leavers, Bau District
Village Survey

Studied Husbandry in the junior secondary course	72
Studied Agricultural Science in the senior secondary course	11
Member of a 4-H Club or Agricultural Society at school	44
Had attended a Farmers' Training Centre course	7
Had attended an Inland Fisheries course	3
At present member of a 4-H Club	14
Reads Farmers' Bulletin and other Agricultural Department Information	66

Table 28
Assistance and Subsidies from the Agricultural Department
Received by School Leavers and Their Families, Bau
District Village Survey

Rubber Scheme A	56
Rubber Scheme B	-
Assistance to <i>Padi</i> Planters' Scheme	2
<i>Ulu</i> Pigs' Scheme	4
Freshwater Fisheries Scheme	8
Pepper Scheme (or applying)	8
Fruit Trees	4
Coconut Planting Scheme	3

Twenty-five school leavers said that they had attempted to make changes to the traditional system of agriculture in their home area. As this group would seem the ones trying to use their education to make innovations in farming, I was especially interested to find out if their answers to other parts of the questionnaire gave any indication of what other factors might have been important in stimulating innovations and change. I found that compared with

the results for all the school leavers staying in the villages, the group showed a higher proportion of the following: those who had finished their education at Form Three level; those who had attended Farmers' Training Centres; those who read *The Farmers' Bulletin* and other Agricultural Department information; and those who said that they considered their education had helped them in farming. The proportion of boys to girls was about the same, but the percentage who had studied Husbandry at school and who were still members of 4-H Clubs was less than for the whole group.

I also examined the geographical distribution of this group and found that although they were generally scattered throughout the district, a significantly high proportion were from the villages of Stenggang and Stass. These villages are some way from each other but they do show certain common factors. They are both larger villages than the average: In 1970 Stenggang had 142 households and a population of 989, Stass had 118 households and a population of 848.¹ Each is some distance from the town of Bau itself, but is located near a road with a bus service to Bau. Each also has a mission school and church.

The school leavers who said that they had made changes sometimes mentioned special innovations such as the growing of pepper and wet *padi*. In other cases they mentioned enlarging the area of cultivated land and improving it by the application of fertilisers. A few gave rather more general answers saying that they had tried to make farming more scientific and systematic, giving as examples the use of fertilisers and the application of insecticides.

1. 1970 Census information from the Bau District Office.

Table 29

Relationship between the Group Saying That They Had Made Changes in the Agriculture of Their Home Area and Other Variables, Bau District Village Survey

	Number	Percentage for Group	Percentage for Total Number Interviewed
Boys	17	68	67
Girls	8	32	33
Junior secondary education only	24	96	81
Working on own project	16	64	17
Studied Husbandry at school	13	52	67
Present member of 4-H Club	3	12	13
Had attended Farmers' Training Centre course	5	20	6
Reads Farmers' Bulletin and other Agricultural Department information	23	92	61
Believes his education has helped him in his work as a farmer	18	72	49

Table 30

Types of Changes in Farming Made by School Leavers, Bau District Village Survey

Type of Change	Incidence
Introduction of pepper	11
Growing vegetables	5
Growing wet <i>padi</i>	3
Keeping livestock	3
Construction of fish-ponds	2
Use of fertilisers	2
Use of insecticides	1
Clearing land for settled cultivation	2
More systematic and scientific methods	2

One section of the questionnaire was concerned with attitudes towards migration to other areas and to land development schemes. The school leavers were asked if they would be prepared to move to another district or division if they could make a better living as a farmer there. The majority showed a willingness to move. More of them were interested in the possibility of living and working in youth settlement schemes than in the normal type of land development schemes.

Table 31
Attitudes to Migration and Development Schemes,
Bau District Village Survey

	Incidence
Prepared to move to another district in order to make a better living from farming	77
Had heard of Land Development schemes	48
Would like to live and work on a Land Development Scheme	49
Would like to live and work on a youth settlement scheme	64

Table 32
Main Reasons Given by School Leavers for Wanting to Live
on a Youth Settlement Scheme, Bau District Village Survey

Reason	Incidence
To gain more knowledge of farming	17
Opportunity for better and more profitable farming	10
Would like to mix with people of other races and other young people	9
Advantages of co-operation	4

Table 33

Main Reasons Given by School Leavers for Not Wanting to Live on a Youth Settlement Scheme, Bau District Village Survey

Reason	Incidence
Prefer to stay at home	2
Need to help parents	3
Dislike living communally	2
Not interested in farming	3
Scheme too far away	2
Waiting to get married	2

In their final question the school leavers were asked if they considered that their education had helped in their work as farmers. There was a fairly equal division of opinion but slightly more said they thought that their education had helped. They gave as their main reasons the value of learning to read and calculate, together with the knowledge about farming acquired in Husbandry and other school subjects. Those who said their education had not helped often stated that what they had learnt at school was not very applicable to the type of agriculture they were now practising. They often said that they were "still following the old method of farming". The following quotations are also typical: "What has been learnt from school in Agricultural Science has very little connection with the farming I am doing. Machines and fertilisers are not used on our farm". "Because so far none of the things that I have learnt at school could be applied to my everyday life".

Table 34

Summary of Answers to the Question: "Do You Consider that Your Education Has Helped You in Your Work as a Farmer?", Bau District Village Survey

Answer	Incidence
Yes	53
No	49
Uncertain	6

Table 35
Difficulties Mentioned by School Leavers in Their Work
as Farmers, Bau District Village Survey

Difficulty	Incidence
Low income from farming	9
Low price of rubber	9
Lack of capital	6
Hard manual labour, dull work	6
Unsuitable land, infertile soil	5
Transport difficulties	3
Not enough equipment	2
Cannot get high-yielding plants	1
Diseases and pests	1

Some of the problems that the school leavers faced in their work as farmers were also given in this section. These often emphasised the low income from farming and the low market price of rubber, together with the lack of capital for effecting improvements in farming.

Chinese School Leavers

In the case of Chinese school leavers, a study was made of the Bau town area and of the agricultural area immediately to the north of Bau around Sebuku and Tundong.

The survey of the town area was based on fifty-nine students who had left secondary school since the end of 1967. Twenty of these school leavers had found regular employment, mainly in teaching and clerical work. Twenty-seven were at home with their families, either helping with the housework, in the case of the girls, or in the family shop. Seven were doing some type of vocational course in Kuching and three were studying overseas.

Table 36
Chinese School Leavers in Bau Town

	Boys	Girls	Total	Percentage
Regular employment	15	5	20	34
Helping at home	-	14	14	24
Helping in the family shop	12	-	12	20
Helping in the family gold-smith business	1	-	1	2
Housewife		2	2	3
Vocational School	1	-	1	2
Private typing and book-keeping courses	3	3	6	10
Studying overseas	3	-	3	5
Total	35	24	59	100

Twenty-five school leavers (13 boys and 12 girls) were interviewed on the farms in the Tundong and Sebuku areas. Most of them had been to Chinese-medium primary schools and then to the private school in Bau; all had left within the last four years.

They all worked with their families and received their income in the form of pocket money. Two boys also worked part-time as carpenters and another occasionally in a shop.

Their farming shows an emphasis on the growing of cash crops such as pepper and rubber, together with the keeping of livestock and the cultivation of vegetables.

Table 37

Type of Farming Practised by Chinese School Leavers

Crop or Type of Livestock	Incidence	Percentage
Vegetables	25	100
Pepper	24	96
Rubber	18	72
Hens	24	96
Ducks	18	72
Pigs	9	36
Fish-pond	6	24

Some advantage had been taken of government subsidy schemes in the case of rubber, fish-ponds and pigs. Only three of the school leavers interviewed said they read *The Farmers' Bulletin* or any other leaflets issued by the Agricultural Department. None of the group had ever attended any type of course organised by the Agricultural Department.

Table 38

Assistance for Chinese School Leavers from
Agricultural Department Subsidy Schemes

Scheme	Incidence
Rubber Scheme A	10
Freshwater Fisheries	4
Pigs	1

Only three of the school leavers had attempted to make any changes in the family farming. One had made a fish-pond, another planted pepper and the third planted bananas.

The majority (fifteen) said that they would be prepared to move to

another district or division if they could make a better living there as a farmer. Most of the school leavers said they had heard of land development schemes and about a half said they would like to live and work on one. However, more were in favour of farming by themselves than living on a youth settlement scheme.

Thirteen, or just over a half of those interviewed, thought that their education had helped them in their farming, and mentioned the advantages of literacy together with facts learnt about agriculture in different subjects. The students who said their education had not helped them, mainly gave the lack of agricultural content in their school courses as the reason. In discussion of the problems that they faced, the Chinese farmers several times mentioned the problem of land shortage and the fact that their farms were too small. As one expressed it: "Many brothers work in a small farm".

Table 39

Attitudes of Chinese School Leavers to Development Schemes

	Number	Percentage of Total
Those who had heard of land development schemes	23	92
Those who would like to live and work on a land development scheme	12	48
Those who would like to live and work on a youth settlement	7	28

The Baram District

The Baram District in the Fourth Division was chosen as the second study area. In many ways it is a contrast to the Bau District. It is situated in the north-east of Sarawak, while Bau is in the south-west. It is one of

the largest districts of Sarawak with an area of 29,993 square kilometres, but is sparsely populated having a population of only 39,508 in 1970. The population itself has considerable ethnic diversity; a large proportion of the less numerous indigenous groups, such as the Kayan, Kenyah and Kelabit, are found in this district. There are few roads in the area and transport is usually by river, on the Baram itself and on its major tributaries. On the upper courses of the rivers, communications are often made difficult and dangerous because of rapids. In the case of the Kelabit Highlands in the interior region, air transport is of special significance. Partly as a result of the difficult and expensive transport, much of the economy is of a subsistence type based on the growing of rice. The timber industry is the second most important economic activity and there are several sawmills in the area. Stone is quarried at Batu Gading on the Baram and birds' nests are obtained near Long Laput a little further upriver. The main unit of settlement of most of the indigenous people continues to be the long-house.

Table 40
The Population of the Baram District, 1970¹

Ethnic Group	Male	Female	Total
Malay	1,228	1,027	2,255
Chinese	2,803	2,558	5,361
Iban	6,222	5,718	11,940
Kayan	3,594	3,342	6,936
Kenyah	3,527	3,060	6,587
Punan	1,191	1,030	2,221
Kelabit	963	1,040	2,003
Other Indigenous	1,118	941	2,059
Others	96	50	146
Total	20,742	18,766	39,508

1. Source: 1970 Census.

At the time of the survey the district was served by four secondary schools. The largest was Marudi Government Secondary School, a senior secondary school with an enrolment of 665 students. The other two government schools were at Long Lama and Bario; these were junior secondary schools with enrolments of 133 and 72 respectively. There was also a private secondary school, St. Mark's, run by the Catholic Mission at Marudi for unselected students.

Two areas of the Baram district were selected as being of particular interest. One was the Kelabit Highlands and the other was the mid-Baram and Apoh region.

The Kelabit Highlands

The Kelabit Highlands are located in the interior of the Fourth Division. To the east are the mountains on the Indonesian border, to the west is the Tama Abo Range and in the north is Sarawak's highest mountain, Gunung Murud. The main areas of Kelabit settlement are in fertile valley basins in the highland area. Because of the altitude, temperatures are generally lower than in the rest of Sarawak.

In the past the region has been inaccessible except by long journeys on foot and by river. Since 1945, however, the area has benefited by the development of air transport. At the present time there are regular Malaysian Airways flights connecting Bario, the main centre of settlement, with Marudi, Miri and Lawas. There are also frequent charter flights, mainly carrying freight. The Borneo Evangelical Mission have also been very active in the area and frequently use their own air transport. The main difficulty arising from the reliance on air transport is its cost, making it expensive to bring goods into the area and also to sell its products.

The main economic activity is the growing of wet *padi*. Most families

are self-sufficient and there is usually a surplus for sale to other areas. An important source of cash income is the sale of buffalo meat. Buffaloes are often bought from across the border in Indonesia, fattened and then slaughtered; the meat is then sent by plane to the towns on the coast. Temperate vegetables grow well in the cool climate but are not yet produced on a commercial scale. Coffee is grown and is of considerable potential importance. Tea is also being grown experimentally, although difficulties of processing make it unlikely that it will be able to compete effectively with tea from the Cameron Highlands in West Malaysia.

Much of the trade of the area goes through the Bario Multi-purpose Co-operative Society. It buys and markets surplus rice, coffee and buffalo meat. The society also runs a *padi* store and mill, a retail shop and a sawmill.

There is no town in the area, but there has been a concentration of settlement at Bario itself where there are several long-houses all within walking distance of each other. Altogether there are fourteen long-houses on the plateau area and two more, Long Seridan and Long Lellang, to the west of the Tama Abo Range.

In 1972 the area was served by four primary schools and a government secondary school at Bario itself. The latter was a relatively small school with three classes and four teachers. Husbandry was taught at the school, but there were no 4-H Clubs in the area. Students selected for the senior secondary course generally went to Marudi.

I visited the Bario area in October and from interviews in the long-houses was able to make an analysis of what had happened to all the secondary school leavers from the area. This information was also cross-checked with the

Bario Secondary School headmaster who was able to give a fairly comprehensive account of what had happened to all of his students who had left within the last three years. I then interviewed all the school leavers in the Bario area who were still in the long-house and engaged in farming.

The most significant fact shown by the survey was that there had been a very large exodus of secondary school leavers from the Kelabit Highlands to other parts of Sarawak. Only 24 per cent of the school leavers were still in the Kelabit Highlands. Some of these were teachers or other government servants, some were girls married to husbands in these occupational groups. Only eleven, ten of whom were girls, were still engaged in farming.

Most of the earlier school leavers had been able to find employment in some type of government service, but as elsewhere in Sarawak, this had become more difficult in the previous four years, especially for the Form Three leavers. Many of the boys who had left at this level were now employed in labouring work in the coastal areas, especially in the Miri area, where there were employment opportunities in the oil palm schemes, with the oil companies, and in the sawmills. Some of the work could be classified as semi-skilled, especially in the case of those working for the oil companies as mechanics or in the off-shore drilling. Some of the school leavers were still unemployed and looking for work in the towns, often staying with relatives. Some of the girls with Form Five qualifications had found work as nurses or were in secretarial posts; others with junior secondary education were working as domestic servants in Miri or as school mothers in their home area. Those who had become house-wives had generally married teachers, other government employees and oil company workers; none had married farmers.

Table 41

Occupations of School Leavers from the Kelabit Highlands Region

Occupation	Male	Female	Total	Percentage
Teacher	11	3	14	11
Agricultural Department	1	2	3	2
Nurse	-	4	4	3
Police	5	-	5	4
Telecommunications Department	2	-	2	2
Electrician	2	-	2	2
Civil Aviation Department	2	-	2	2
Radio Malaysia	1	-	1	1
Rural Health Supervisor	3	-	3	2
School Mother	-	2	2	2
Army	1	-	1	1
Sarawak Administrative Officer	1	-	1	1
Secretary or clerk in a private company	2	3	5	4
Supervisory post in oil palm development	4	-	4	3
Labourer in oil palm develop- ment	7	-	7	6
Working for oil companies	7	-	7	6
Labourer in sawmill	2	-	2	2
Domestic servant	-	2	2	2
Working for the Gurkhas	2	-	2	2
Trader	1	-	1	1
Salesman	1	-	1	1
Hunting in the forest ¹	1	-	1	1
Youth Settlement Scheme	1	-	1	1
Farming in the Kelabit Highlands	1	10	11	9
Housewife in Kelabit Highlands	-	5	5	4
Housewife elsewhere	-	8	8	7
Missionary training	-	2	2	2
MARA training	3	-	3	2
University	4	-	4	3
Teacher training	3	-	3	2
Trade School in Brunei	1	-	1	1
Unemployed, looking for work in the towns	6	5	11	9
Total	75	46	121	100

Table 42
Present Geographical Distribution of
School Leavers from the Kelabit Highlands

Region	Male	Female	Total	Percentage
Kelabit Highlands	11	18	29	24
Miri area	26	10	36	30
Other parts of the Baram District	5	2	7	6
Other districts of the Fourth Division				
Division	2	-	2	2
Fifth Division	7	7	14	12
Third Division	4	2	6	5
Kuching	4	7	11	9
West Malaysia	7	-	7	6
Brunei	7	-	7	6
New Zealand	1	-	1	1
Australia	1	-	1	1
Total	75	46	121	100

In the Kelabit Highlands I was only able to interview eight school leavers who still lived in their long-houses. These were all girls; two had married recently and the other six were living with their families and helping them in farming.

The main agricultural activity was the growing of wet *padi*. At the time of the survey the girls were engaged in preparing and weeding the plots of land in the *sawehs*, then transplanting the rice from the nurseries. They generally started work at about 7.00 a.m. and continued until 6.00 p.m. with a break for lunch. Most of the girls worked on Saturday, but Sunday was always a day of rest.

Most of the farms also had some hill *padi* and grew vegetables. Other crops grown were maize, sugar cane, oranges, coffee and pineapples. Two of the farms had fish-ponds; all kept hens; five kept pigs and five also had buffaloes.

There were no 4-H Clubs in the area and none of the girls had been on any courses organised by the Agricultural Department. Two said they sometimes read the *Farmers' Bulletin* and one that she kept some simple accounts of her farming. All said that their families had received help from the Agricultural Department under the Assistance to *Padi* Planters Scheme, and three had received assistance in keeping their buffaloes, in the form of fencing and medicine. Five said that their families belonged to the co-operative society, although they themselves were not individual members.

Two girls said they had attempted to make changes in agriculture, one by starting a vegetable garden and the other by draining an area of swampy land. Four thought their education had helped them in farming and they mentioned the learning of Husbandry as one subject that had been useful.

The Kelabit Highlands give a general impression of being a region with considerable agricultural potentialities. It is a rice surplus area, already producing meat and with the possibilities of producing several different types of cash crops. The main problem lies in the cost of marketing these products; development is hindered by the difficulty and expense of transport.

Many of the young people have left the area; this is especially so in the case of the men and includes those who completed their education at Primary 6 level, in addition to the secondary school leavers. In some long-houses this has resulted in a labour shortage and Muruts from Indonesia are being employed to work on the farms.

Some of the young Kelabits have probably left permanently. Others should return although this may depend to a considerable extent on the improvement of communications, the development of cash crops and the provision of more social services and amenities in the area.

Table 43
Summary of Information from Six School Leavers Farming
in the Bario Area of the Kelabit Highlands

Age	16 years		17 years		19 years	
	3		2		1	
Level at which education finished	Form 1		Form 2		Form 3	
	1		2		3	
Method of farming	Helping family		Also working for wages		Also own vegetable garden	
	6		1		2	
Hours worked	41 - 50 hours			51 - 60 hours		
	4			2		
Crops grown	Wet padi	Hill padi	Vegetables		Other Crops	
	6	4	4		4	
Livestock kept	Buffaloes	Pigs	Hens		Fish-pond	
	5	5	6		2	
Willingness to move to:	Another district		A Land Development Scheme		A Youth Settlement Scheme	
	4		3		3	

Mid-Baram and Apoh Region

This survey included Long Ikang and Kuala Tutoh on the Baram River itself; Long Bemang, Long Atip and Long Bedian on the Apoh. The two settlements on the Baram are mainly Kenyah although there is also a Kayan long-house at Long Ikang; the long-houses visited on the Apoh are all Kayan, with a small Kelabit community also living at Long Bedian. The survey covered 88 school leavers of whom 35 were still staying in their own long-houses. This was a higher proportion than among the Kelabits; another point of contrast was that fewer girls, especially from the Kayan long-houses, seem to have gone to secondary school.

Altogether I interviewed 23 of the school leavers who were still engaged in farming. All the school leavers interviewed had left school within the last five years; their ages ranged from seventeen to twenty-three.

The activities of the school leavers were to a large extent representative of the economy of the area. Much of their time was devoted to subsistence farming. All helped their families in the growing of rice and all were self-sufficient in that crop. In addition they often obtained a small cash income from tapping rubber or growing coffee. Over half had at different times worked for wages, usually temporary employment with timber companies. Although most of them said that they followed traditional methods of farming, a few had tried to make changes by growing coffee, trying to introduce wet *padi* and taking part in buffalo schemes. Generally, they said it was hard to make any innovations.

Three of the school leavers interviewed had just finished courses at the Kabuloh Farm Institute, two had not yet started any projects and were waiting for assistance under the pepper scheme.

Four of the long-houses had 4-H Clubs but only about a third of the school leavers belonged to them, although those who were members had often been appointed leaders or officials. There were co-operative societies in each of the long-houses, and seventeen school leavers said they or their families were members; two were managers of the co-operative stores.

The majority of the school leavers interviewed said that they were prepared to move to another area if they could make a better living there from farming. The idea of a youth settlement was generally more popular than existing development schemes. The majority had also applied for other jobs outside farming at some time since leaving school. Several complained that it was difficult to get information about employment opportunities in the long-

houses where there were no newspapers or Public Service Commission circulars advertising vacancies. This seems to be one reason why school leavers may go to stay in the towns where this information is more readily available.

Table 44
Occupations of School Leavers, Mid-Baram and Apoh Survey

Occupation	Male	Female	Total	Percentage
Teacher	7	-	7	8
Nurse	-	2	2	2
Police	3	-	3	3
Civil Aviation Department	1	-	1	1
Rural Health Supervisor	2	-	2	2
Immigration Department	1	-	1	1
Medical Department	2	-	2	2
Drainage and Irrigation Department	1	-	1	1
Fire Brigade	1	-	1	1
Clerk in government service	1	-	1	1
Laboratory Attendant	1	-	1	1
Malaria spraying	2	-	2	2
Army	1	-	1	1
Supervisory post in oil palm development	1	-	1	1
Labourer - sawmills	7	-	7	8
Working for oil companies	9	-	9	10
Salesman	1	-	1	1
Petrol Pump Attendant	-	1	1	1
Labourer - shop	1	-	1	1
Co-operative Store Manager	2	-	2	2
Farming	24	7	31	35
Housewife	-	4	4	5
Teacher training	3	-	3	3
MARA training	2	-	2	2
Looking for a job in town	1	-	1	1
Total	74	14	88	100

Table 45
Geographical Distribution of School Leavers, the
Mid-Baram and Apoh Survey

Place	Male	Female	Total	Percentage
Their own long-house	28	7	35	40
Other parts of the Baram District	15	1	16	18
Miri	9	1	10	11
Other districts in the Fourth Division	1	-	1	1
Fifth Division	1	-	1	1
Kuching	3	1	4	5
Third Division	3	2	5	6
Sabah	1	-	1	1
West Malaysia	4	-	4	5
Brunei	9	-	9	10
United States	-	2 ¹	2	2
Total	74	14	88	100

Table 46
Ethnic Composition of School Leavers Interviewed, the
Mid-Baram and Apoh Survey

	Male	Female	Total
Kayan	15	1	16
Kenyah	4	2	6
Kelabit	1	-	1
Total	20	3	23

All the school leavers interviewed said that they thought their education had helped them in farming. They mentioned the general advantages of being able to read and write, and more specifically the value of some of the things they had learnt in studying Husbandry and also, in a few cases, Science and Geography. Knowledge of fertilisers was an example given several

1. These were two girls from Long Atip who had married Peace Corps Volunteers.

times. The value of school visits to agricultural stations was mentioned, and another reason given was the fact that it was often easier for those with some education to contact government officials and to take advantage of the different subsidy schemes and other forms of assistance that might be available.

Table 47

Level of Education of School Leavers interviewed in the
Mid-Baram and Apoh Survey

Level of Education	Number
Completed Form 5	6
Dropped out in Form 4	1
Completed Form 3	10
Dropped out before completing Form 3	6

Table 48

Agricultural Education of School Leavers Interviewed in
the Mid-Baram and Apoh Survey

Studied Husbandry at school	9
Belonged to an agricultural club at school	8
Had attended a Farm Institute course	3
Had attended other Agricultural Department courses	3
Belonged to a 4-H Club at present	8
Reads the Farmers' Bulletin and other Agricultural Department information	14

Table 49

Number of Hours Spent in Farming Each Week, Mid-Baram
and Apoh Survey

Number of Hours	Incidence
41 - 50 hours	10
31 - 40 hours	7
21 - 30 hours	4
11 - 20 hours	1
10 hours or less	1

Table 50

Main Crops Grown and Animals Kept, Mid-Baram and Apoh Survey

Crop or Livestock	Incidence
Hill <i>Padi</i>	22
Wet <i>Padi</i>	10
Rubber	17
Pepper	5
Vegetables	13
Coffee	14
Rambutans	6
Bananas	5
Pineapples	2
Maize	5
Pigs	17
Cows	4
Buffaloes	1
Hens	21
Ducks	5
Fish-ponds	6

Table 51

Assistance Received by School Leavers and Their Families from the Agricultural Department, Mid-Baram and Apoh Survey

Subsidy Scheme	Incidence
Rubber Scheme A	15
Assistance to Padi Planters' Scheme	5
<i>Ulu</i> ¹ Pig Scheme	3
Coffee	1
Fruit trees	2
Buffaloes	1
Have applied for Pepper Scheme	3

1. Upriver.

Conclusion

Any conclusions that can be made from this survey must depend on the reliability of its results in providing information about school leavers. The figures about the different forms of employment of the school leavers from each village were all based on information from somebody in that village: school leavers, students, primary school teachers or *tua kampongs*. This information was always cross-checked and secondary school headmasters were also asked what they thought had happened to recent school leavers. Given this dependence on secondary sources, it is possible that a small number of school leavers may have been omitted or others may have changed employment, but generally the information on the employment pattern seems to have been accurate and comprehensive.

In assessing the reliability of the information obtained from the questionnaire, it is important to distinguish between those questions that were purely factual, those that asked the informant to make an estimate and those of a still more subjective nature that asked for an opinion or attitude. The questions on personal details, education and farming activities all appear to have been accurately answered. The answers on estimates of monthly income were probably less reliable. One reason for this was that the income was often regarded as pocket money; it was not a regular amount but rather given when the school leaver needed or asked for it. In any attempt to assess the real income from farming, the whole family unit generally needed to be taken into account and the fact that much of the farming is subsistence must also enter in the calculations. This was beyond the scope of the survey, which aimed to find what cash income, if any, school leavers were receiving. The answers showed that this was generally pocket money and the estimates given were usually of an arbitrary nature, probably in some cases an under-estimate. The answers did not take into account food and other goods and services received from the family.

The other estimate asked for was the number of hours the school leaver considered he was occupied in farming. In attempting to answer this question, the informant would go through his time-table for each day, add up the number of hours spent in farming, then multiply by the number of working days in each week. Some of the estimates seemed rather high; one reason for this was that much of the work in the growing of rice is of a seasonal nature and the time of the survey, September and October, was one of the period of intense activity. It is the time in the hill *padi* farming of the Land Dayaks when the clearing, burning and sowing take place; in the wet *padi* cultivating of the Kelabits it is when the transplanting occurs. Checking the work of the farmers generally showed that the high figures given were accurate for that time of the year, although at other times of the year they would tend to be lower. I also found that in the case of the Land Dayaks engaged in hill *padi* farming, the estimates included time taken in walking to the farm and in periods of rest while working.

In considering the more subjective questions which asked for attitudes and opinions, the answers were often of an arbitrary nature and the informants were not always able to give reasons for their choices. A high proportion expressed interest in moving to another area, to a land development scheme or a youth settlement; it is difficult to determine whether in fact they would all go if given the opportunity. I aimed at avoiding any bias in the questions, but given the fact that some of those interviewed, especially in the Bau District, knew I had been connected with education, it is possible that this may have influenced some of those who said that they considered that their education had helped in their work as farmers.

If the limitations of the survey are accepted, certain conclusions can be made. The majority of school leavers who have returned to village or long-house, work as part of the family unit and have not made any changes in the

traditional system of farming. Their cash incomes often take the form of pocket money from their parents. Farm incomes are generally low, often because of the low market price of rubber or, in the Baram District especially, difficulties of transport and marketing.

The hours that the school leavers work in agriculture vary; using this as a criterion, only a few seemed to be underemployed at the time of the survey. Only 11 per cent in the Bau District and 5 per cent in the Baram District said that they worked less than twenty-one hours a week, although this proportion is almost certainly higher at other times of the year.

Many of the school leavers did not seem to consider themselves permanently employed in agriculture and were hoping to find other forms of employment. As one school leaver said on being interviewed: "I'm not a real farmer; I'm just helping while looking for other jobs".

Where school leavers had made changes in agriculture, this had usually taken the form of introducing pepper, wet *padi*, coffee, vegetables or livestock. A considerable number have taken advantage of the services offered by the Agricultural Department.

Most school leavers felt that their agricultural education had been of value, but often said that they had been unable to apply what they had learnt. Many of the school leavers showed an interest in the idea of youth settlements, and this type of institutional framework could well prove to be one means of providing a better environment for their participation in agriculture.

PART III

PAPUA NEW GUINEA

CHAPTER 10

THE ENVIRONMENT

My second case study is Papua New Guinea where I have worked from 1973. The expansion of education had begun later here. Only recently have school leavers found it difficult to obtain employment in the wage-paying sector of the economy when they completed their secondary education in the fourth year. My field investigations were mainly concerned with primary school leavers and those who had left after the second year of secondary school, a cut-off point which affected about a third of the students. In many other ways Papua New Guinea was similar to Sarawak, although it was better endowed with natural resources and generally had a richer and more diverse economy offering more employment opportunities. Papua New Guinea was also fortunate in having a large amount of Australian financial aid enabling a greater expenditure on education and other government services.

The Geographical Environment

Papua New Guinea has a total land area of about 476,500 square kilometres. It consists of the eastern part of the island of New Guinea and also several island groups. The interiors of all the main islands are mountainous. In New Guinea a series of mountain ranges form a central cordillera with the highest point being Mount Wilhelm, 4,350 metres, in the Bismark Range. In the south east this mountain backbone becomes the Owen Stanley Range. There are also mountain ranges in the north, separated from the main cordillera by the valleys of the Sepik, Ramu and Markham rivers. There are a large number of volcanoes especially in the region of the islands and northern Papua. The largest areas of lowlands occur along the south coast; these include the swamp regions in the deltas of the Fly, Strickland, Kikori and Purari rivers.

Papua New Guinea is in the equatorial region and generally experiences a hot and wet climate. Temperatures in lowland areas range from a mean minimum

of 22°C to a mean maximum of 31°C; the highland areas are cooler and experience a larger range of temperature. The annual rainfall is high and generally over 2,500 millimetres, although there are considerable regional and seasonal variations.

Most of the country is covered by a vegetation of tropical rain forest. There are variations with altitude: above 1,000 metres, species of pines, tree fern, beach and oak become prevalent. Higher still, in areas often covered by rain clouds, the trees become smaller and there are large areas of moss forest; on the highest mountains this gives way to alpine vegetation, shrubs, grass and bare rock. In the driest parts of the country, where the annual rainfall is less than 1,000 millimetres and there is a distinct dry season in the middle of the year, there is a savanna type of vegetation with grassland and scattered trees.

Soils are of varying fertility and suitability for agricultural development. In many areas they have been subject to considerable leaching and laterisation. In the highland areas erosion is a major problem in the cultivation of the steep mountain slopes. In the coastal regions there are many areas of swamp and poor drainage. The most fertile soils are andosols which are volcanic in origin; these are found mainly in the Northern Province and on the islands of New Britain and Bougainville.

Population

The last Census in Papua New Guinea was in 1971, the population then totalled 2,489,935.¹ Since then the population has increased rapidly and

1. Bureau of Statistics, *Population Census 1971*, (Port Moresby: Government Printer, 1974).

estimates for 1978 put the figure at nearly three million.¹ A fall in mortality rates has resulted in a population growth of about 3 per cent per year. The average density of population is still low, just over six people per square kilometre, but there are some areas of population pressure on land. The greatest population densities occur in the Highland provinces and in the Gazelle Peninsula of East New Britain. The most sparsely populated areas are in the Western, Gulf and West Sepik Provinces.

The ethnic structure of Papua New Guinea shows a great deal of diversity. The people are generally regarded as Melanesian, but there are a number of different physical types and it has been estimated that there are about seven hundred language or dialect groups. Fragmentation into separate societies based on the village or clan also results in the *wantok* (same language) system with individuals having special relationships and obligations to others from the same group or area. The official language is English but Melanesian Pidgin and Hiri Motu are also often used as common languages between different groups.

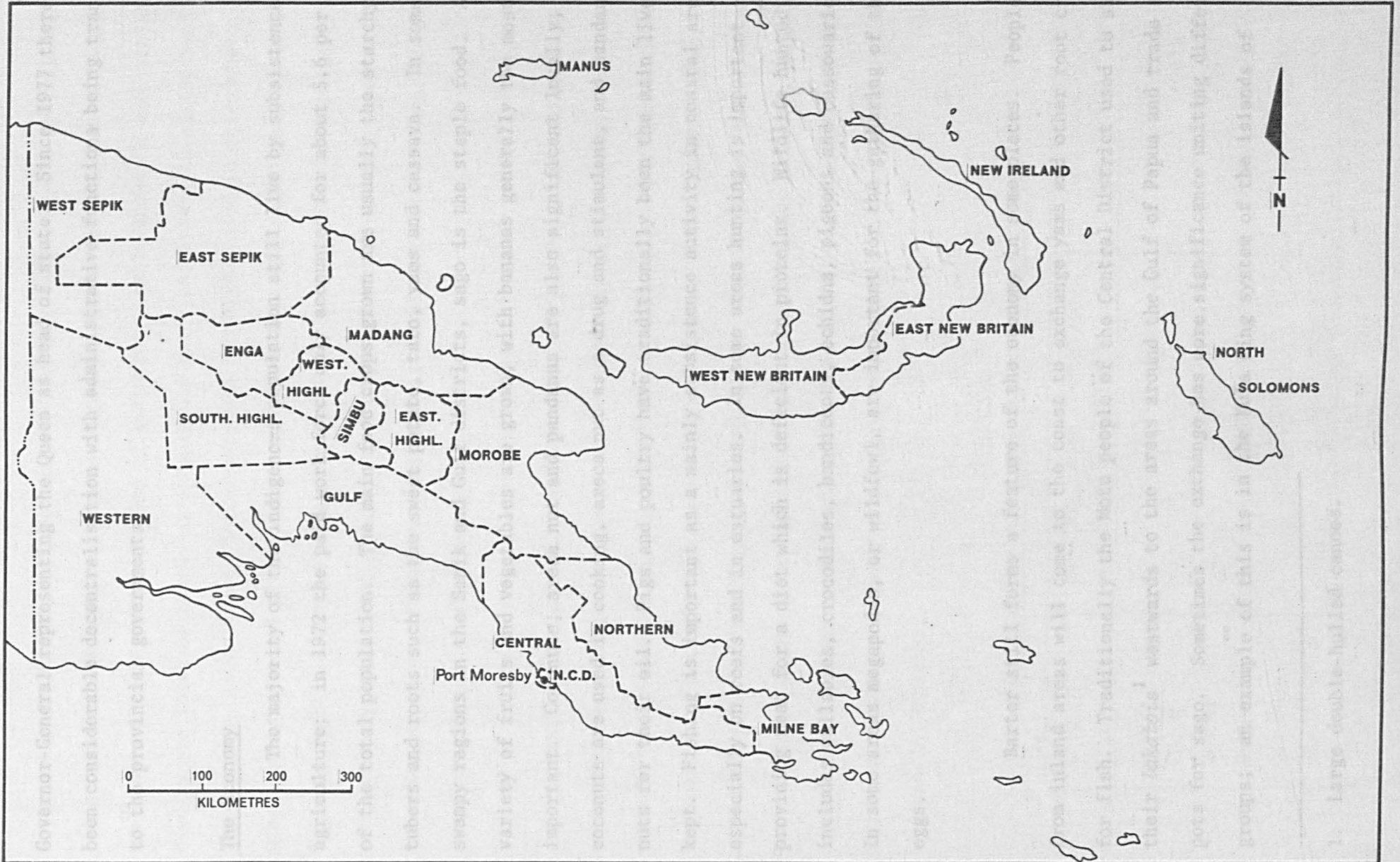
Political Development and Administration

Papua was administered by Great Britain from 1884 to 1902 and then by Australia. New Guinea was administered by Germany until the first World War when it was occupied by Australian troops and from 1920 was ruled by Australia under a League of Nations mandate. Parts of both Papua and New Guinea were invaded by the Japanese during the Second World War. After the war, from 1946 the two territories were governed as one administrative unit. Internal self-government was granted in 1973 and full independence in 1975.

Papua New Guinea has a parliamentary system of government, with a

1. Office of the Environment, *The Effects of Population Development*, (Port Moresby: 1978), p.40. The total population was estimated at 2,984,800.

Fig.5; Administrative Provinces of Papua New Guinea.



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Governor-General representing the Queen as head of state. Since 1977 there has been considerable decentralisation with administrative functions being transferred to the provincial governments.

The Economy

The majority of the indigenous population still live by subsistence agriculture; in 1972 the paid work force only accounted for about 5.6 per cent of the total population. The main food crops grown are usually the starchy tubers and roots such as the sweet potato, taro, yams and cassava. In some swampy regions in the Sepik and Gulf districts, sago is the staple food. A variety of fruits and vegetables are grown, with bananas generally the most important. Coconuts, areca nut and pandanus are also significant locally; coconuts are used in cooking, areca nut as a drug and stimulant, and pandanus nuts for their oil. Pigs and poultry have traditionally been the main livestock kept. Fishing is important as a mainly subsistence activity in coastal areas, especially on reefs and in estuaries. In some areas hunting is important in providing meat for a diet which is deficient in proteins. Wildlife hunted includes wallabies, crocodiles, bandicoots, echidna, pigeons and cassowaries. In some areas megapodes, or wildfowl, are important for the gathering of their eggs.

Barter still forms a feature of the economy in some places. People from inland areas will come to the coast to exchange yams and other root crops for fish. Traditionally the Motu people of the Central District used to sail their *lakatois*¹ westwards to the areas around the Gulf of Papua and trade clay pots for sago. Sometimes the exchange has more significance uniting different groups; an example of this is in the Kula Ring system of the islands of

1. Large double-hulled canoes.

eastern Papua. In the Highlands especially, pigs often have a special significance being used for bride prices, paying compensation and for special festivals. Some goods have also served as a means of exchange; shells known as *tabu* are still used by the Tolai of the Gazelle Peninsula for transactions involving land, compensation, inheritance, bride price and for buying food in the markets. Other commodities which have acted as a means of exchange in other areas have included dogs' teeth, pigs' tusks, green snail shells, birds of paradise plumes and cassowary quills. When Papua New Guinea introduced its own currency in 1975, the units equivalent to the Australian dollar and cent were the *kina* and *toea*, named after types of shell money.

Most of the land of Papua New Guinea, 97 per cent, is held under customary tenure systems. These vary but generally ownership is by a group, the clan or village. An individual may establish limited use rights especially with regard to arable land which he has cleared and cultivated. Inheritance of these rights may be patrilineal, matrilineal or ambilineal. Land which has been alienated mainly belongs to the government which may lease it to smallholders, private companies and missions. Some plantations are owned by expatriates and these have been responsible for growing a high proportion of the cash crops for export as is shown by Table 52.

Table 52
Cash Crop Production in Papua New Guinea, 1974¹

Crop	Non-Indigenous Production (in metric tonnes)	Indigenous Production (in metric tonnes)
Copra	72,696	54,921
Cocoa	18,067	11,370
Coffee	9,702	34,117
Rubber	6,051	248
Oil Palm	23,044	20,982
Tea	2,831	610

1. *Papua New Guinea Summary of Statistics 1974/5*, (Port Moresby: Government Printer, 1978), p.71, Table 67.

Copra, cocoa and rubber are mainly grown in the coastal areas; coffee and tea in the Highlands. Coffee was introduced by Europeans but quickly adopted by the indigenous people. Oil palm is grown on nucleus estates in West New Britain and Northern Province; the central plantation with its processing factory is surrounded by smallholdings using its processing and marketing services.

The plantation crops used to form the main exports of Papua New Guinea, but now copper from the Bougainville Copper Ltd.'s mine at Panguna is more important as an earner of foreign currency and source of government revenue. The ore deposit was first discovered in large quantities in 1964 and production of it started in 1972. The ore is mined by open cast methods, then processed to form a concentrate which is pumped by pipeline to Anewa Bay where it is loaded on ships for export to Japan, West Germany and Spain, the main smelting countries.

Deposits of copper have been found in several other areas. The one with the greatest potentialities is at Ok Tedi in Western Province. Gold prospecting and mining have played an important part in the opening up of several areas in Papua and New Guinea. The richest fields were in the Wau and Bulolo area of the Morobe District, and although production has now diminished, some gold is still mined. There has been extensive prospecting for onshore and offshore oil and natural gas, especially in the Gulf of Papua region, but to date the results have been disappointing.

Over three-quarters of Papua New Guinea is covered by forest and it has been estimated that about a third of this is of commercial value. At present the main lumbering areas are on the island of New Britain and in the Central, Morobe and Madang provinces. Most of the trees that are felled are hardwood species such as taun, erima, kwila, beech and walnut; but klinki and hoop pine

are being increasingly grown on plantations, as are teak and kamarere.

Papua New Guinea has rich offshore fisheries of skipjack tuna. Most of the fish are caught by foreign ships and exported overseas, especially to Japan. The most productive areas are the seas around the Bismarck Archipelago. In the Gulf of Papua area, prawns, crayfish and barramundi are commercially important. The freshwater fish with the greatest potentialities for development are tilapia which are especially abundant in the Sepik River system. Rainbow trout have been introduced into several rivers in the Highlands.

Many of the manufacturing industries are associated with the processing of primary products. In addition to sawmills there are timber processing factories at Lae and Bulolo, and a wood chip factory at Madang. Associated with the plantation crops are copra driers and mills, cocoa fermentaries, tea and oil palm factories.

Food and drink processing includes making biscuits, baking, bottling soft drinks, brewing, cigarette and pipe tobacco manufacture. Related to the building and construction industries are the manufacture of concrete blocks, pipes and wire netting. Engineering industries include the repair of ships and automobiles.

With its high rainfall and mountainous relief, Papua New Guinea has many sites which are suitable for hydro electric power development. Port Moresby is supplied with electricity by three power stations on the nearby Laloki River. The main towns of the Highlands and the New Guinea mainland coast receive their power from an underground power station on the Ramu River. Several small micro-hydro stations are being set up to supply other areas with electricity.

Transport in many parts of Papua New Guinea is difficult and expensive. The first roads were built in areas around the ports, with the best network being on the Gazelle Peninsula. The early German colonial administration also built a road running southeastwards from Kavieng, along the coast of New Ireland. The first major trunk road was the Highlands Highway from Lae to Goroka, then extended on to Mount Hagen and other areas of the Western and Southern Highlands. Madang is also now connected with the Highlands by road. The roads around Port Moresby have been extended along the coast to the south east and north west, but at present there is no road linking the national capital with the Highlands or the New Guinea coast. In many areas, especially in the Bismarck Archipelago and the Papuan coast, sea transport is responsible for most of the carriage of freight. The means of passenger transport throughout much of the country is by air.

Before 1973 one of the main features of Papua New Guinea's Balance of Payments was a deficit on visible trade. In most years, however, the current account showed a surplus due to the large annual grant paid by Australia to the Papua New Guinea Administration. The development of Bougainville copper has now also resulted in a surplus visible trade balance. In 1975 the total value of all exports was K402,560,000¹ with copper ores and concentrates forming over half this total. Other major exports are all primary products: coffee, copra, cocoa and timber. Manufactured goods, especially transport equipment and foodstuffs, form the bulk of the imports. Traditionally, much of Papua New Guinea's trade has been with Australia which still provides over half the imports, but the development of copper production has resulted in Japan and West Germany taking a larger share of the exports.

1. Bureau of Statistics, *Papua New Guinea Summary of Statistics*, Op. Cit., p.170.

Social accounting is difficult in Papua New Guinea where a large proportion of the population is in the subsistence sector of the economy. However, allowing for this non-market component, the gross domestic product was estimated at 1,300 million kina in 1976 giving a per capita figure of 463 kina.¹

The relationship of the non-market or subsistence sector to the monetary sector of the economy is shown in diagram form in Figure 6. It has been estimated that the subsistence sector accounts for only 13 per cent of the gross domestic product but that it represents the lifestyle of over 70 per cent of the working age population. This imbalance between the two sectors in the dual economy has special relevance to school leavers in their attempt to find employment in the monetary sector.

Development Policies

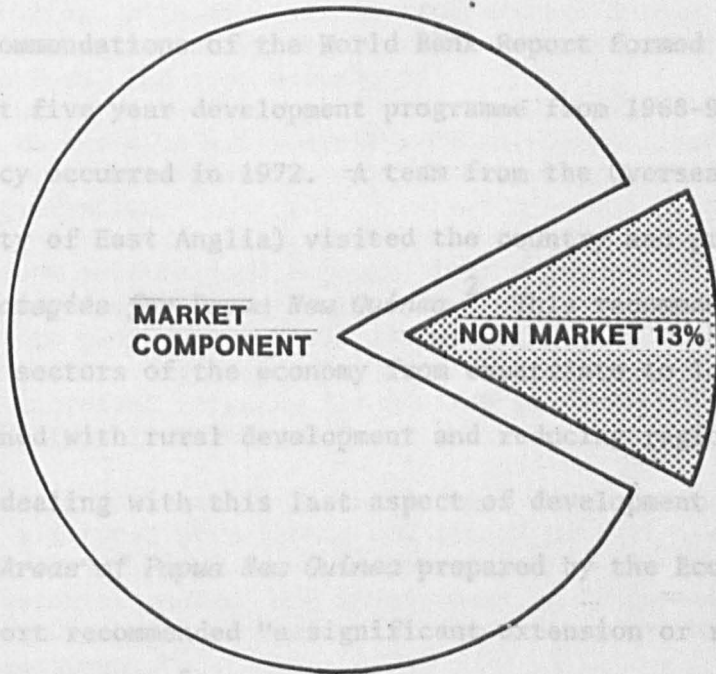
The first attempt at overall development planning in the pre-independence period was in 1963 when an economic survey mission was sent by the World Bank to make recommendations to assist the government in "planning a development programme designed to stimulate and expand the economy and thereby raise the standard of living of the people".² In its report, *The Economic Development of the Territory of Papua and New Guinea*, the mission recommended that development efforts and expenditure should be concentrated on areas and activities where the returns would be greatest. In the case of the areas, this meant those regions which were already the most developed and had roads and other infrastructure. It recommended an expansion of activities such as cash crop growing and beef cattle farming, the development of tourist and

1. This is based on figures supplied by the Central Planning Office of the Papua New Guinea Government, 1977. 1 Kina = £0.72 (1976).

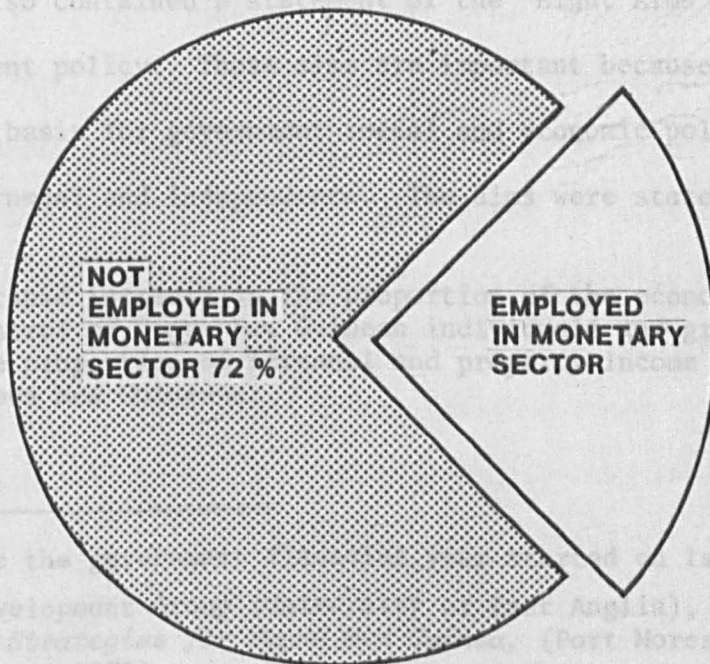
2. International Bank for Reconstruction and Development, *The Economic Development of the Territory of Papua and New Guinea*, (Baltimore: John Hopkins Press, 1965), p.vii.

Fig.6; Comparison of the Non-Market Sector as a Proportion of the Gross Domestic Product and of the Labour Force

a. Gross Domestic Product



b. Labour Force



1. Source; Papua New Guinea Central Planning Office, 1977

manufacturing industries, improvements in transport and increased hydro electric power production.

The recommendations of the World Bank Report formed the basis of the government first five year development programme from 1968-9 to 1972-3.¹ Changes in policy occurred in 1972. A team from the Overseas Development Group (University of East Anglia) visited the country and prepared *A Report of Development Strategies for Papua New Guinea*.² This recommended the transfer of ownership of sectors of the economy from expatriate to local ownership. It was also concerned with rural development and reducing regional inequalities. Another report dealing with this last aspect of development was *A Study of the Less Developed Areas of Papua New Guinea* prepared by the Economist Intelligence Unit. This report recommended "a significant extension or redistribution of infrastructural services".³

The next government development programme, *Papua New Guinea's Improvement Plan 1973-74*,⁴ placed much greater emphasis on achieving equality and self-reliance. It also contained a statement of the "Eight Aims" of the government's development policy. These aims are important because they have provided the ideological basis for government social and economic policies in the period after self-government and independence. The aims were stated as follows:

"(1) A rapid increase in the proportion of the economy under the control of Papua New Guinean individuals and groups, and in the proportion of personal and property income that goes to Papua New Guineans;

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1. At that time the government financial year started on 1st July.
 2. Overseas Development Group (University of East Anglia), *A Report of Development Strategies for Papua New Guinea*, (Port Moresby: Office of the Chief Minister, 1973).
 3. The Economist Intelligence Unit, *A Study of the Less Developed Areas of Papua New Guinea*, (Melbourne: 1972), p.vii.
 4. Central Planning Office, *Papua New Guinea's Improvement Plan 1973-74*, (Port Moresby: Government Printer, 1973).

- (2) More equal distribution of economic benefits, including movement towards equalisation of incomes among people and towards equalisation of services among different areas of the country;
- (3) Decentralisation of economic activity, planning and government spending, with emphasis on agricultural development, village industry, better internal trade, and more spending channelled to the local and area bodies;
- (4) An emphasis on small-scale artisan, service and business activity, relying where possible on typically Papua New Guinean forms of organisation;
- (5) A more self-reliant economy, less dependent for its needs on imported goods and services, and better able to meet the needs of its people through local production;
- (6) An increased capacity for meeting government spending needs from locally raised revenue;
- (7) A rapid increase in the active and equal participation of women in all types of economic and social activity; and
- (8) Government control and involvement in those sectors of the economy where control is necessary to assure the desired kind of development."¹

Different measures have been taken to help achieve these aims. An Investment Corporation was set up to enable Papua New Guineans to buy unit shares in companies operating in the country. Foreign investment is controlled by the National Investment Development Authority. The Development Bank provides credit for small-scale economic projects. The Department of Business Development provides encouragement and guidance for local entrepreneurs. Certain imports have been restricted or more highly taxed in order to encourage local production and self-sufficiency. Food crop production has been encouraged and smallholder commercial farming has increased. In many areas rural development has been helped by extensions to the existing roads. Funding for minor development projects is provided by a Rural Improvement Fund. Decentralisation has been encouraged by the establishment of provincial governments. The amount of internally raised revenue has increased, although much of this is tax on

1. Ibid, p.2.

expatriate earnings and on the profits of the Bougainville Copper Company. Australian aid still provides a significant part of the budget and enables a relatively high level of government expenditure.

Table 53
Government Revenue, Papua New Guinea, 1975-6¹

Source of Revenue	Amount - K'000
Customs and Excise	55,304
Other Tax	89,601
Other Revenue	103,887
Australian Government Grant	119,391
Loans	60,357
TOTAL	428,540

Since the 1973-74 Improvement Plan, government policies have been outlined in *Strategies for Nationhood*² in 1974 and a white paper on *National Development Strategy*³ in 1976. Both reiterated the importance of the "Eight Aims" and emphasised the importance of rural development.

Many obstacles to rural development and problems faced by school leavers are related to the land tenure system. The World Bank Report stated that land tenure was the "social institution affecting most profoundly the organisation of agricultural production"⁴ and that the "tenure system is quite unsuited to the rapidly emerging commercial farming scene which needs the

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1. Source: Bank of Papua New Guinea, *Quarterly Economic Bulletin*, December Quarter 1976, p.21.
 2. National Planning Committee, *Strategies for Nationhood: Policies and Issues*, December 1974, (Port Moresby: Government Printer, 1975).
 3. National Planning Committee, *National Development Strategy*, (Port Moresby: Government Printer, 1976).
 4. *The Economic Development of the Territory of Papua and New Guinea*, op. cit., p.173.

assurance of permanent use rights by individuals to specific areas of larger size than needed for subsistence gardens".¹ Both the colonial administration and the present government have favoured some registration of customary land as a means of encouraging more modern types of farming and preventing land disputes. To date, attempts at registration have not been very successful. The establishment of a Native Lands Commission in 1953, and its replacement ten years later by the Land Titles Commission, both proved ineffective in registering titles. A Land Tenure Conversion Act was passed in 1963. This enabled customary tenure to be converted to individual ownership but it was only implemented on a small scale in one area, Northern Province. Legislation for more systematic registration of customary land was introduced to the House of Assembly in 1970 but it was withdrawn in the face of considerable opposition from those who felt an alien system was being imposed from outside.

In an attempt to solve land problems, a Commission of Inquiry into Land Matters was set up in 1973. The recommendations of its report² have been the basis for much of the land policy and legislation since that time. Nothing has yet been done on the registration of customary land although the report recommended it in areas where there was a demand for it and stated that different types of title could be registered, including group titles. Two sections of the report which have already been implemented are those concerned with plantation redistribution and land dispute settlement.

In areas where there is a shortage of land because much of it has been alienated and taken up by expatriate owned plantations, the redistribution scheme has enabled groups descended from the original customary landowners to repurchase the plantations with the aid of government loans. The Land

1. Ibid, p.174.

2. *Report of the Commission of Inquiry into Land Matters*, (Port Moresby: Government Printer, 1973).

Acquisition Act provides for the valuation of the plantations and gives the government powers of compulsory acquisition if necessary. By February 1977, forty plantations had been repurchased under the scheme and several more were under negotiation. In addition, some other plantations have been purchased by private agreement with the owners.

The Land Disputes Settlement Act in 1975 set up machinery to settle disputes at three levels: mediation, arbitration and appeal. Local mediators have been appointed with the task of bringing together disputing parties and helping them reach an agreement. If this procedure fails, the dispute is taken to a local land court which consists of a magistrate and mediators. Appeal can be made from this court to a provincial land court. In many areas mediation has been successful and much expensive litigation has been avoided.

One other type of land reform of particular significance to school leavers is the establishment of land settlement schemes. In Papua New Guinea these have often been a means of redistribution of population from overcrowded areas to more sparsely populated and undeveloped regions. They have provided an opportunity for settlers to develop their own farms under secure conditions of tenure. Although some of the smaller schemes have been mainly concerned with the allocation of blocks for subsistence farming, one of the main aims has been to encourage cash crop growing. The largest and most successful of these schemes have been for the growing of oil palm in West New Britain. The settlements have had much of the infrastructure provided and are located around a nucleus estate and factory. These schemes are likely to provide a model for similar rural development in other provinces in the future.

CHAPTER 11

EDUCATION IN PAPUA NEW GUINEA

The Development of Formal Education

The religious missions were responsible for the first formal education both in British Papua and in German-administered New Guinea. In the Mission schools the main emphasis was on moral and Christian training. More advanced training was aimed at training catechists, evangelists, pastors and teachers.

The London Missionary Society were the first in the field and in 1873 established a school in the Port Moresby area. Here children were taught literacy in the vernacular and also the use of English. Education spread to other London Missionary Society centres and at Kwato near Milne Bay there was also the beginning of some training in industrial crafts such as furniture-making, house-construction, timber-milling, boat-building, printing and book-binding.

The Anglican mission started operations in the northern parts of what are now the Milne Bay Province and Northern Province. The first mission and school were established at Dogura in 1891; this was also the site of the first Anglican Teachers' Training College, St. Aidan's, which was built in 1917. The main area of activity of the Roman Catholics in Papua was to the north west of Port Moresby around Bereina and on Yule Island.

In New Guinea the first schools were started in New Britain by George Brown of the Methodist Mission who used Fijian teachers. In 1910 a Methodist training college was set up on Ulu, one of the Duke of York Islands. The numbers at this College had increased to about a hundred in 1910 when it was renamed George Brown College. Later the Roman Catholics established a mission at Vunapope ("the place of the Pope") where they started separate boarding schools for boys and girls. Catholic Mission schools were later established

on Bougainville Island and in the Madang and Sepik areas. The Lutheran Mission was also active in mainland New Guinea during the period of German rule. They opened schools in the Finschafen and Madang area and later started central schools for training teachers.

Government involvement in education was generally limited in the period up to 1941. In Papua there was originally no official education policy, although the teaching of English was encouraged. During the period Sir Hubert Murray was Lieutenant-Governor, from 1909 to 1940, taxation of the indigenous inhabitants was used to provide money for what became known as the Native Education Fund. This subsidised mission education in several ways: by establishment grants to schools; giving aid to promote technical education in schools; there were also per capita subsidies for examination passes, a payment by results system. Later assistance was also given to help in paying teachers' salaries and boarding expenses.

The German administration's attitude to education was similar. In the earlier stages the missions were encouraged to set up schools but given little financial support. However, in 1907 a government school was started at Namanalu near Rabaul; here teaching for the first two years was in the local Tolai language and then in German. The courses at this school had a strong practical bias and one of the main aims was to produce skilled artisans.

The German administration of New Guinea was replaced by Australian military government in 1914 and many of the German schools were closed. During the period of the League of Nations mandate, education continued to be left mainly with the missions. The government offered financial aid if the missions would accept inspection and undertake to use English, but this was generally rejected. Expenses for the provision of government education were met from a Native Education Trust Fund, similar to that in Papua. A limited number of

government schools were started. The largest was at Rabaul where Malanguna Technical College was established in 1924. Carpentry, mechanics, metalwork and printing were taught and emphasis was also placed on the production of saleable goods and government work such as making water tanks, guttering and office furniture. The total number of students in all government schools increased from 146 in 1924 to 588 in 1940.

In both Papua and New Guinea, it can be seen that there was often an emphasis on practical education. This was partly due to the immediate needs of expatriate employers, and partly also reflected a low opinion of the academic abilities and potentialities of the indigenous inhabitants. In Papua, Murray saw the task of education as the "elevation of the natives to such a standard as they are capable of attaining"¹ and came to the conclusion that it should be technical education, ruling out any form of higher education. Agricultural education was nevertheless neglected, as Ainsworth pointed out in 1924 in a report on the administration of the mandate.² A few years later, in 1928, an agricultural school was established near the Keravat River in East New Britain.

At the beginning of the Second World War a total of approximately 90,000 students were attending different types of schools in Papua New Guinea. The country was under military administration from 1942 to 1944, missionaries were withdrawn from some areas and educational development was restricted. The Japanese set up schools in some of the areas that they occupied; their main function seems to have been teaching the Japanese language.

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1. Francis West, *Hubert Murray*, (London: Oxford University Press, 1968), p.183.
 2. J. Ainsworth, *Report by Colonel John Ainsworth on administration arrangements affecting the interests of natives in the Territory of New Guinea, Parliamentary Paper Vol. 4 1923-4*, (Canberra: Government Printer, 1924), p.41.

In 1946 the first Director of Education, W.C. Groves, was appointed; he had a staff of two clerks and six teachers. The policy was to take a wide view of education and spread the available resources over the different age groups of the community. There was an emphasis on educating the whole community by use of radio, periodicals and other types of mass education. A system of grants was also set up in 1947 to give financial assistance to approved church schools, mainly run by the missions and in the vernacular. Students from these schools might then go on to village higher schools which were often also boarding institutions. The next stage was a three year course at a "central school" and then finally there were two years of secondary education at an "education centre". Gradually the village schools came to be replaced by primary schools with a seven year course and using English as the medium of instruction; this was particularly the case at government stations where many of the parents were government servants.

Programmes of education were adapted to the conditions and needs of Papua New Guinea to a greater extent than had been attempted before. Secondary and teacher education were extended. By 1960 there were a total of 1,197 primary schools, 7 high schools and 26 institutions associated with teacher education. In 1964 the Currie Commission on Higher Education¹ was able to recommend strongly the earliest possible establishment of institutions for higher technical and academic education as an investment for the future economic advancement and social development of Papua New Guinea. As a result of these recommendations, the University of Papua New Guinea was established in 1966 at Port Moresby, and the Institute of Technology at Lae in 1967.

1. *Report of the Committee on Higher Education in Papua and New Guinea*, (Canberra: Government Printer, 1964).

In 1969 the Weeden Commission¹ recommended a national system of education which would advance the objectives of:

- (a) Higher standards in education.
- (b) A truly professional body of teachers.
- (c) More effective use of resources.
- (d) System of financing and controlling education which would be workable at that time and also after self-government has been achieved.
- (e) Education to strengthen national unity.
- (f) A system of education which, subject to the rights of parents to choose as far as possible the type of school their children attend, will safeguard the identity of schools conducted by all voluntary agencies for that purpose.

In the Education Ordinance of 1970, a greater amount of decentralisation was allowed for and powers were vested in the National Education Boards, the Teaching Service Commission, District Education Boards, Local Government Councils, Education Agencies and the governing bodies of the schools.

By 1975, the year of Papua New Guinea's independence, there were 238,318 children enrolled in 1,800 primary schools.² This number represented 57 per cent of the 7-12 year old population. There were considerable variations in the proportion of children enrolled between the different provinces, ranging from 27 per cent in Enga to 89 per cent in East New Britain.

About 35 per cent of the students who complete the six years of primary education are selected to go on to secondary school. Again there is a regional imbalance; for example in East New Britain 49 per cent of the 13 year olds are

1. *Report of the Advisory Committee on Education in Papua and New Guinea*, (Canberra: Government Printer, 1969).

2. Department of Education, *1976 Annual Report*, (Port Moresby: Government Printer, 1977), p.9.

enrolled in the first year of secondary education while the figure for the Eastern Highlands is only 7 per cent. There are also over twice as many boys as girls enrolled at this level. In 1975 there were 28,844 students enrolled at 80 secondary schools.¹ Further selection occurs after the second year of secondary education when 40 per cent of the students have to leave school; in the past some of these were able to go to technical colleges to complete their secondary education but now these courses have finished and nearly all the leavers enter the employment market. Students who remain at secondary school continue for another two years and take the school certificate examination. At this stage most of them complete their formal education. A small proportion go straight into the preliminary year at one of the two universities. Others may be selected for a two year course at one of the three senior high schools from which the majority will also go to university. It is anticipated that the senior high schools will eventually completely replace the university preliminary year.

A proposed five year plan for educational development² was drawn up in 1974 recommending that a further two years be added to the existing primary school courses to give eight years of universal primary education. This would also have had the effect of making primary school leavers two years older.

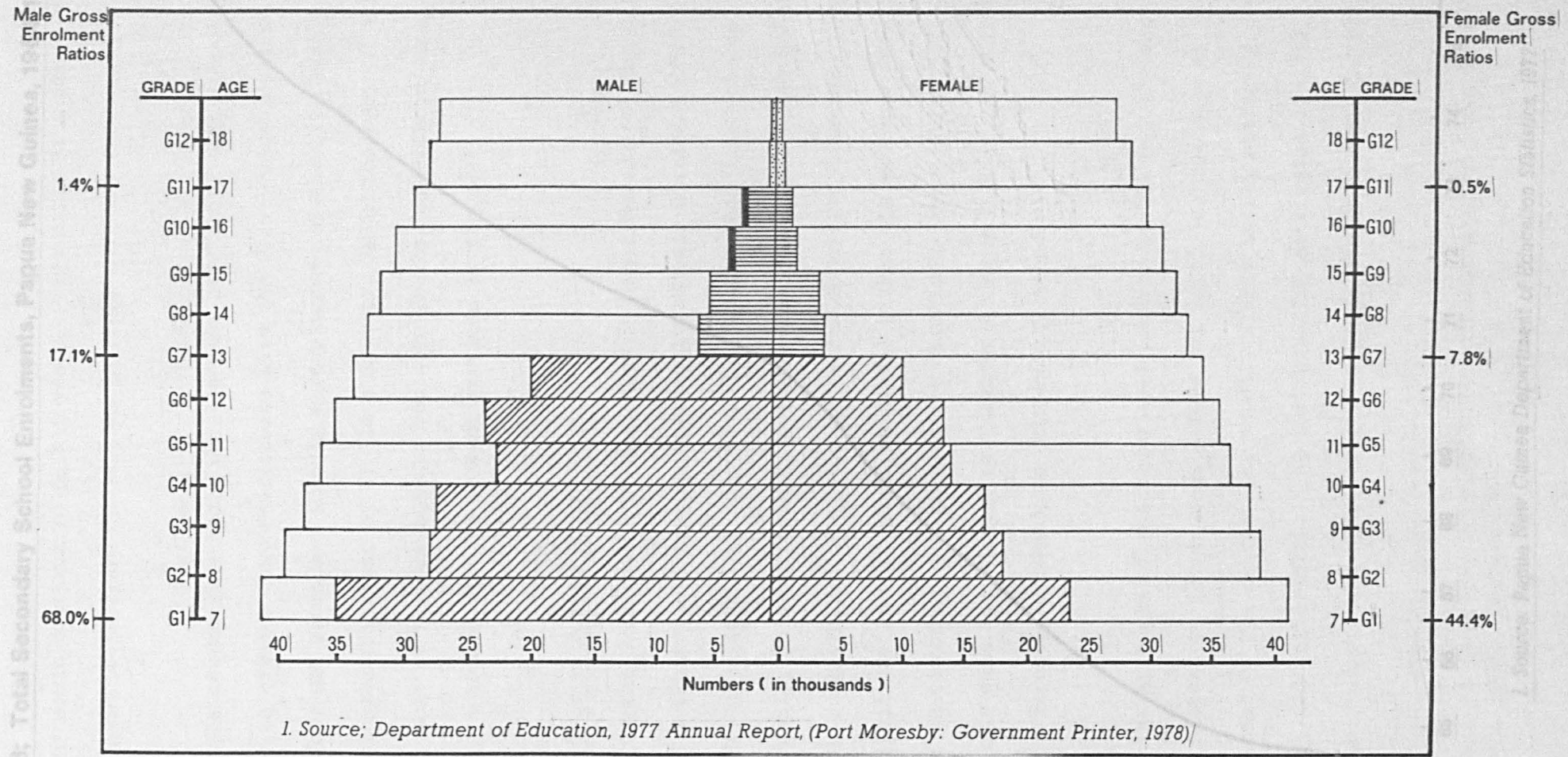
The plan was not accepted by the Cabinet but they did accept a modified plan for the 1976-80 period.³ This plan made few changes. It stated that primary education should be community based and the schools would be renamed community schools. The age of entry would remain at seven and the length of primary

1. Ibid.

2. Department of Education, *Report of the Five Year Education Plan Committee*, (Port Moresby: mimeo, 1974).

3. Department of Education, *Papua New Guinea Education Plan 1976-80*, (Port Moresby: Government Printer, 1976).

Fig.7; Educational Pyramid, Papua New Guinea 1977

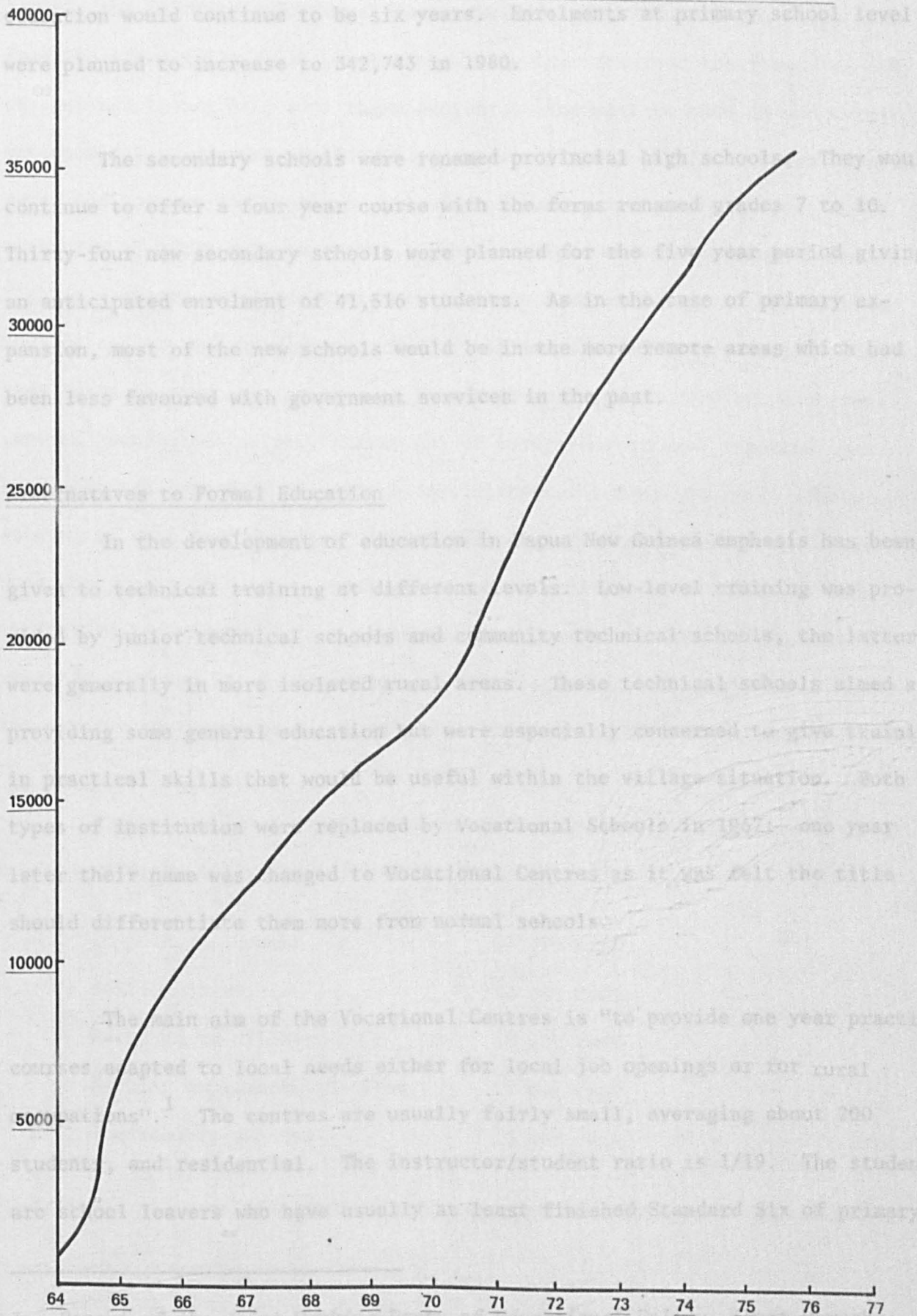


Total Population in Age Group
 Primary
 Secondary (high school)
 Secondary (technical college)
 Senior High School

Fig.8: Total Secondary School Enrolments, Papua New Guinea, 1977

Source: Papua New Guinea Department of Education Statistics, 1977

Fig.8; Total Secondary School Enrolments, Papua New Guinea, 1964-1977



1. Source: Papua New Guinea Department of Education Statistics, 1977

education would continue to be six years. Enrolments at primary school level were planned to increase to 342,743 in 1980.

The secondary schools were renamed provincial high schools. They would continue to offer a four year course with the forms renamed grades 7 to 10. Thirty-four new secondary schools were planned for the five year period giving an anticipated enrolment of 41,516 students. As in the case of primary expansion, most of the new schools would be in the more remote areas which had been less favoured with government services in the past.

Alternatives to Formal Education

In the development of education in Papua New Guinea emphasis has been given to technical training at different levels. Low-level training was provided by junior technical schools and community technical schools, the latter were generally in more isolated rural areas. These technical schools aimed at providing some general education but were especially concerned to give training in practical skills that would be useful within the village situation. Both types of institution were replaced by Vocational Schools in 1967; one year later their name was changed to Vocational Centres as it was felt the title should differentiate them more from normal schools.

The main aim of the Vocational Centres is "to provide one year practical courses adapted to local needs either for local job openings or for rural occupations".¹ The centres are usually fairly small, averaging about 200 students, and residential. The instructor/student ratio is 1/19. The students are school leavers who have usually at least finished Standard Six of primary

1. *Report of the Joint Working Party of Educational Policy*, (Port Moresby: mimeo, 1968), Section 74.

school, the majority are over fifteen years of age. Students generally come from the surrounding area, so that when they have finished their courses they can get additional help with their projects. The centres have no set curricula but should have courses which suit the needs of their particular area. In a rural environment the emphasis will often be on agriculture, in towns motor mechanics is often more important. Other courses include building, plumbing, fishing, joinery and trade store management. Courses for girls have a bias towards cookery and needlework. One of the features of the centres is that they often receive some assistance from outside. In a survey of vocational centres¹ conducted in 1969, thirty out of thirty-one centres reported that they received some form of external assistance with their courses. These sources of help included Agricultural Officers, Fisheries Officers, Public Work Department officials, local government councils, local villagers and expatriate individuals (often plantation managers). The majority of centres reported that the local villagers were interested in their work, but in only two cases were they actively involved in the work of their centres.

A survey of what happened to trainees when they had finished their courses gave the following information for 1968:²

In paid employment	-	37 per cent
Self-employed	-	12 per cent
Returned to village	-	10 per cent
Seeking employment in towns	-	21 per cent
Whereabouts unknown	-	20 per cent

Ex-trainees who were described as self-employed were engaged in agriculture,

1. Department of Education, *A Report on Vocational Training Centres*, (Port Moresby: mimeo, 1970), p.15.

2. Ibid., p.23.

fishing and building. The survey does show that at this stage vocational centres were not completely fulfilling their aims. Only a tenth of the trainees were shown as returning to the village and many were being drawn to paid employment in the towns.

Nevertheless the vocational centres were meeting a need in that they provided training for primary school leavers. Their enrolment had increased to 5,415 students by 1976.¹ One factor limiting further expansion has been the lack of suitable instructors. At present over a half (173 out of 306 in 1976) are expatriates. It is difficult to recruit Papua New Guinean staff with suitable experience and training because of competing demands for their trade skills.

Another institution providing some form of post-primary education is the *skulanka*. The name was chosen to suggest a school that was anchored to the local community. The aim of the *skulankas* was to give practical training in vocational subjects plus general education in a two year course for students who had not been selected for secondary schools. Certificates of attendance were awarded to students who had completed the course but it was not intended that they should re-enter the formal education system but rather go back to the village. The *skulankas* were started in 1972 and have not generally been very successful, mainly because they gave rise to false expectation with regard to paid employment opportunities and gaining further education. In the 1976-80 Education Plan it was stated that no new *skulankas* would be set up. In 1976 there were ten *skulankas* with a total enrolment of 608 students.²

Another scheme for providing further education for primary school leavers

1. 1976 *Education Annual Report*, op. cit., p.32.

2. Ibid., p.24.

has been the Community Secondary School Education programme. The aim has been to provide a further three year community-oriented course for those not selected for secondary schools. General education is continued with programmed lesson materials in English, Arithmetic and General Studies. Study materials are provided by the College of External Studies in Port Moresby which also supplies correspondence courses at higher levels.

Another aim of the programme has been to provide training in practical skills of a vocational value. Examples of these suggested activities are pig and poultry raising, simple furniture making, carpentry and basic vehicle maintenance. This practical training can be provided by skilled villagers or extension workers from the various government departments.

It has also been intended that there should be emphasis on activities that would strengthen ties with the local community. Traditional culture could be strengthened by students learning songs, dances and legends from older villagers. They could also learn skills such as pottery, carving and weaving; activities which might also earn them a cash income.

The scheme has used existing facilities such as club houses, youth centres and schools. Much has depended on the quality of the supervision and co-ordination; this has often been provided by missionaries, teachers and community leaders. The groups are generally self-supporting. It was stated that "the Government will help and provide the necessary guidance but the major effort must come from the people themselves".¹

In 1975 there were 1,646 students enrolled at Community Secondary

1. Statement by the Minister for Education, Mr. E. Olewale, *Post Courier*, 2nd April, 1973.

Education centres¹ and Adult Education officers report that numbers have increased at many centres since then. It is difficult at this stage to evaluate the success of the programme. It does represent an attempt to provide further education opportunities in the villages. The Education Plan for 1976-80 states:

"... their real value, as with vocational centres, will depend largely on the energy and imagination of the co-ordinator. Some groups appear to be developing very well, others are not. It is not yet clear to what extent their growing popularity is a function of student expectations about continuing their education through whatever avenue is open to them with the object of one day obtaining wage employment, or even getting back into the formal education system. Such expectations, if they are present, will not continue for long given the large numbers of underemployed high school leavers that will be produced during this and succeeding plans".²

The idea of a National Youth Service has also been suggested as a possible solution to the problem of school leaver unemployment. In 1973 it was discussed in the House of Assembly. Miss Josephine Abaijah, the Member for the Central Regional Constituency, proposed a motion:

"That this House, noticing the grave problems that have arisen with school drop-outs, unemployed school leavers and other young people, and recognising the need for a comprehensive national plan for the all-round development of these and other special classes of young people calls on the Government to set up a high-status commission to investigate thoroughly the status and developmental needs of our young people".³

Miss Abaijah went on to suggest that the subjects of the inquiry should include employment opportunities for young people, their integration into productive urban and rural life, and national young citizens' organisations and service corps. The motion received considerable support. Michael Pondros, Member for Manus, stated that "... those who drop out at the age of 12 to 14 can hardly

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1. K.J. MacPherson, "A Study of the Standard 6 Leaver Problem in Papua New Guinea and Educational Measures Used in an Attempt to Alleviate It", (Unpublished M. Ed. thesis, University of Papua New Guinea, 1975), p.213.
 2. *Education Plan 1976-1980*, op. cit., pp. 94-95.
 3. *House of Assembly Debates, Third House, Vol. III, No. 13*, (Port Moresby: Government Printer, 1973), p.1612.

do anything to help their parents. They cannot make use of the education they have gained".¹ Andigari Wabira, Member for Koroba-Kopiago, talked of "children at the end of primary school wandering around in the village with nothing productive to do but play marbles and become rascals".²

Miss Abaijah's motion was defeated but later in the year a Study Group was set up to report on the feasibility of establishing a National Youth Service. The group had ten members who were mainly Papua New Guinean public servants. They held discussions at institutions and community centres throughout the country; they also received a number of written submissions. Their main findings were that the majority of people supported the idea of a National Youth Service. In their report³ they suggested that it should be compulsory for unemployed young people of both sexes between the ages of 14 and 21. It should be organised on civilian lines but have some paramilitary features. It was recommended that a National Youth Service Council should be set up to co-ordinate and supervise activities, although most of the organisation of activities would have to be at local level. Types of activities suggested to the Study Group could be broadly classified as follows:

- "(a) Agricultural activities to be expanded and increased throughout rural areas.
- (b) Expansion of present vocational centres which are concerned with agricultural activities and livestock.
- (c) Youths to undertake industrial activities including small or large scale cottage industries.
- (d) General community development projects planned by Local Government Councils."⁴

1. Ibid., p.1617.

2. Ibid., p.1621.

3. *Interim Report of the Study Group on National Youth Service*, (Port Moresby: mimeo, 1974).

4. Ibid., pp. 38-39.

In examining the costs of the scheme, the Study Group recognised the large amounts of funds that might be needed. One conservative estimate for the setting up of youth camps in one district was 60,000 kina a year. It recommended "if possible appropriations of funds from relevant Government Departments and other organisations ... together with Government grants, public appeals and later, as centres become self-supporting, income from projects".¹

At the time of writing, 1979, no action has yet been taken on the Study Group recommendations. It was felt by several government departments that the report did not offer enough constructive advice: "it has failed to recommend a workable system, a method of operation or the financial and staff resources required".² The 1976-80 Education Plan is cautious about the merits of a National Youth Service. It mentions the expense involved in the scheme and the need for motivation, skilled administration and careful planning. It also queries whether many areas could in fact absorb their quotas of young people undertaking service and fears that it might hinder genuine community development if it made the rest of the community less self-reliant.

Another type of non-formal education is the extension work already undertaken by a number of government departments. The Department of Primary Industry (formerly named the Department of Agriculture, Stock and Fisheries) has a Rural Development Service with extension staff based on administrative centres, agricultural stations and special project areas. These officers provide the farmer with technical assistance, advice and information. They may also act as agents of the Development Bank in the administration and supervision of rural credit schemes.

1. Ibid., p.34.

2. Department of Labour and Industry, "The Implementation of a Rural Improvement Policy through Youth Involvement", (Port Moresby, mimeo, 1974), p.1.

Patrol officers from the Department of Provincial Affairs often serve as the only government representative in the more remote areas and carry out important extension activities. Other departments whose workers in the field provide specialist services for rural areas are Public Health, Lands, Forestry, Education and Business Development. The National Broadcasting Commission provides programmes at provincial level in English, Pidgin and the more widely used local languages.

The different Christian missions are often active in providing community services and non-formal education. One organisation concerned especially with extension work in agriculture is the *Yangpela Didiman* (Young Farmers) first started by the Lutheran Church in the Highlands. In 1973 there were 79 *Yangpela Didiman* clubs with a total of 2,500 members. The aim of the clubs is to improve the quality of life in the villages and encourage self-reliance. Project leaders are trained in a Lutheran agricultural school and then return to the villages and help with activities that will increase food production such as vegetable gardening and animal husbandry. Frost is a hazard in the Highlands and *Yangpela Didiman* have encouraged the introduction of new frost-resistant crops such as oats and buckwheat. The organisation also helps with the processing and marketing of agricultural products. Members of clubs are given loans of livestock, seeds, pig meal and chicken food for their projects. One factor which often makes the *Yangpela Didiman* worker more effective than a government extension officer is that he is usually part of the village community rather than somebody who makes infrequent visits.

CHAPTER 12

SCHOOL LEAVERS

In the early stages of educational development the primary school leaver could often expect to find some form of paid employment in government service, commercial companies or with the missions. Now, although students and their parents often retain expectations of this type of employment, the expansion of secondary education has made it progressively more difficult for the school leaver who has only been to primary school to find any type of white collar job.

An early survey of primary school leavers was made by Conroy in 1968.¹ This covered 819 Grade Six leavers from thirty-five primary schools from the Gulf and Southern Highlands districts. These two areas were chosen because they offered a contrast. The Gulf District had a relatively long history of contact with Europeans and experience of the cash economy; it was fairly cheap and easy to travel to Port Moresby in search of work. The Southern Highlands had only experienced contact recently and travel from there to the major urban centres was more expensive and difficult.

An initial questionnaire on occupational expectations showed that the majority of students in the survey expected to find employment in semi-professional and skilled occupations. Only 8.5 per cent of the boys and less than 1 per cent of the girls expected to remain in farming.² The majority preferred monetary sector employment which would usually take them away from their home areas. In fact, within three months of finishing school, 40 per cent

1. J.D. Conroy, "School Leavers in Papua New Guinea: Expectations and Realities", in M. Ward (ed.), *Change and Development in Rural Melanesia*, (Canberra: Australian National University/University of Papua New Guinea, 1972), pp. 355-373.

2. Ibid., p.360.

of the group had left their villages. Of the forty-three boys still at home, seven had obtained wage employment, four were doing traditional village work and the rest were looking for employment. Eighteen girls had stayed in the village; one had obtained wage employment, eleven were looking for work and six had remained in the traditional community.¹

Two years later there was a further survey of the students originally questioned which gave the information summarised in Table 54.

Table 54
The Location of School Leavers from Primary Schools in
the Gulf and Southern Highlands, 1968²

Location	Boys %	Girls %
Still being educated	49.8	38.2
At home	23.2	47.9
Had left home	21.4	10.1
Unknown	5.6	3.8

Conroy commented on these results: "Bearing in mind that the mean age of the boys surveyed was only slightly more than 16 years, the data reveal a very high propensity to migrate".³

Conroy also made a survey of all the previous Standard Six leavers, the results of which are summarised in Table 55.

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1. Ibid., p.364.
 2. Ibid., p.365.
 3. Ibid., p.366.

Table 55
Location of All Previous Standard Six Leavers,
Gulf and Southern Highlands¹

Location	Boys	Girls
Further education	482	123
Village	126	174
Local wage employment	30	23
Away	347	59
Unknown or dead	77	4
Total	1,062	383

These results suggest the same pattern as Conroy's previous surveys. Only a few boys were staying in the village and even less had found local wage employment; most had moved away. The girls were something of a contrast in that the majority of them had stayed in the village.

In 1971 the Education Department attempted a comprehensive survey of students who had left primary school the previous year. Questionnaires were sent to all primary schools and answers were received from 794 schools or 51 per cent of the total. The results of the survey are summarised in Table 56.

Analysis of these results shows nearly a half of those finishing primary school continued their education either at a secondary school or vocational centre. Those finishing their education were regarded as employed if they received money for their work; 49 per cent of the leavers were in this category. All students not in paid employment were classified as unemployed; 31 per cent of those leaving school were in this category. Nothing was known of the whereabouts or occupations of the remaining 20 per cent.

1. Ibid., p.369.

Table 56

The Employment and Location of 1970 Primary School Leavers¹

Location	Remaining in the same area			Have moved to another area			Unknown			Total		
	B	G	Total	B	G	Total	B	G	Total	B	G	Total
Employed	1,545	1,259	2,804	350	114	464				1,895	1,373	3,268
Unemployed	1,151	572	1,723	248	110	358				1,399	682	2,081
Unknown	209	66	275	191	58	249	620	180	800	1,020	304	1,324
Total	2,905	1,897	4,802	789	282	1,071	620	180	800	4,314	2,359	6,673
Further Schooling	4,343	2,074	6,417	-	-	-	-	-	-	-	-	6,417
GRAND TOTAL	7,248	3,971	11,219	789	282	1,071	620	180	800	4,314	2,359	13,090

A similar survey was made of students who had left secondary and technical schools in 1969 and 1970. This showed a decrease in the proportion of school leavers in employment or training and a corresponding increase in those unemployed. A further survey was conducted of school leaver placement at the end of 1971. The results of the two surveys are summarised in Table 57.

Table 57

The Employment of Secondary School Leavers, 1969-1971²

	1969	1970	1971
Higher study, traineeship or employment	3,057	3,581	3,557
Unknown	344	475	305
Unemployed	280	467	264
Total	3,681	4,523	4,126

1. Department of Education, *Papua New Guinea Education Gazette*, December 1971, p.273.
2. Based on figures provided by the Guidance Branch, Department of Education, Departmental Circular of 28th March, 1973.

The reason for the lower unemployment figures for 1971 leavers was that this group contained a larger proportion of Form Four and Six leavers who were still finding it relatively easy to find work. The Form Two leavers were already finding it difficult to obtain work and formed the bulk of those unemployed. This trend continued and by 1975 80 per cent of the students who had left this level were unemployed, while the comparable figure for Form Four leavers had increased to 28 per cent.¹

Statistics of manpower requirements for the period from 1971 to 1976 indicate that although there continued to be a shortage of professional and sub-professional manpower (categories that usually required a degree or diploma qualifications), there was already an excess of supply over demand for those with only secondary education.

Table 58
Additional Manpower Requirements and Supply, 1971-1976²

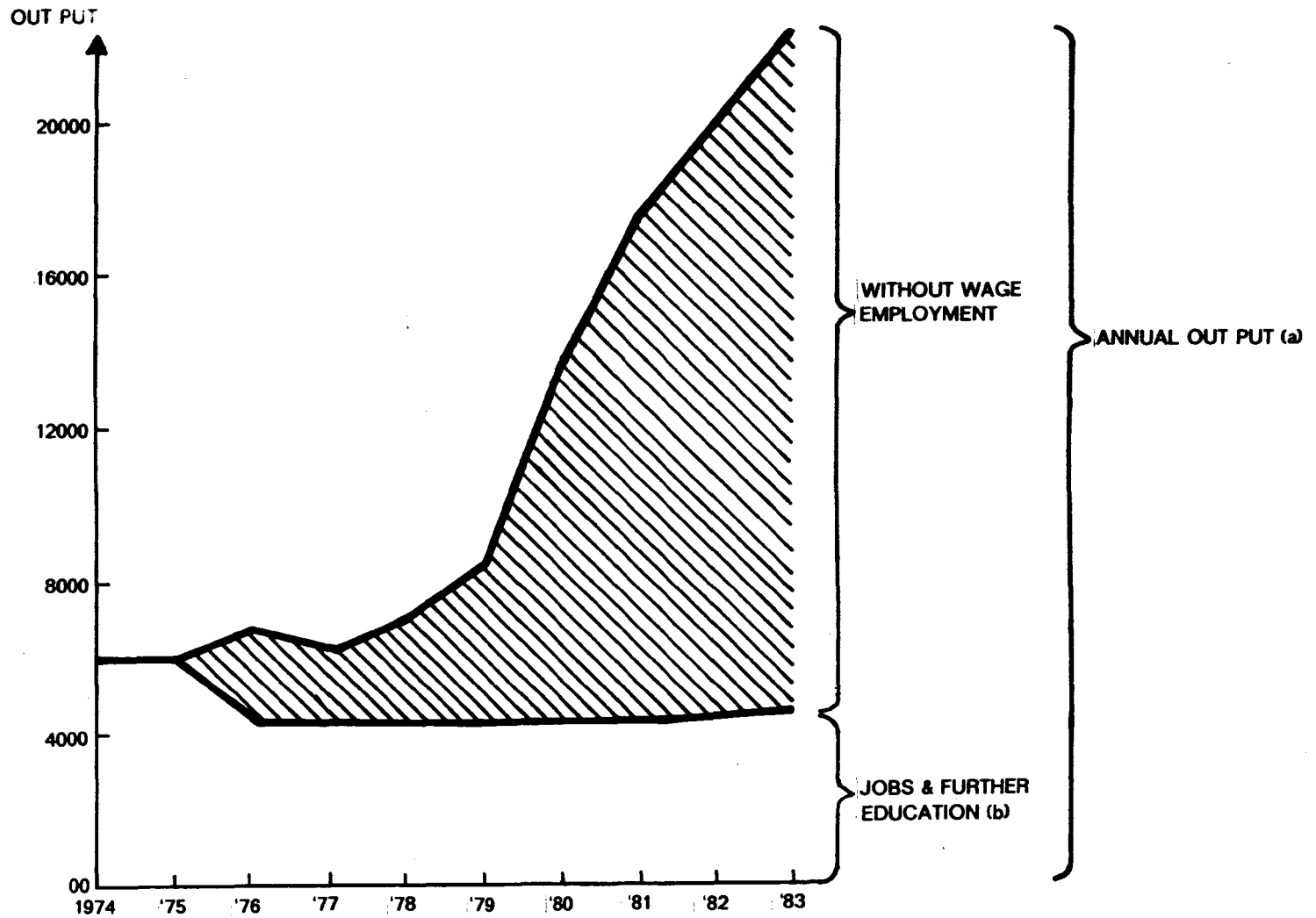
Manpower Class	Requirements	Supply	Shortfall
Professional and Managerial	3,929	588	3,341
Sub-Professional and Higher Technical	6,635	3,831	2,804
Skilled	15,976	26,688	-10,712
Semi-Skilled	22,643	18,282	41,361

Projections for the period after 1976 indicate that it will become increasingly difficult for even Form Four (Grade 10) leavers to obtain

1. Source: National Employment Service Statistics, April 1976.

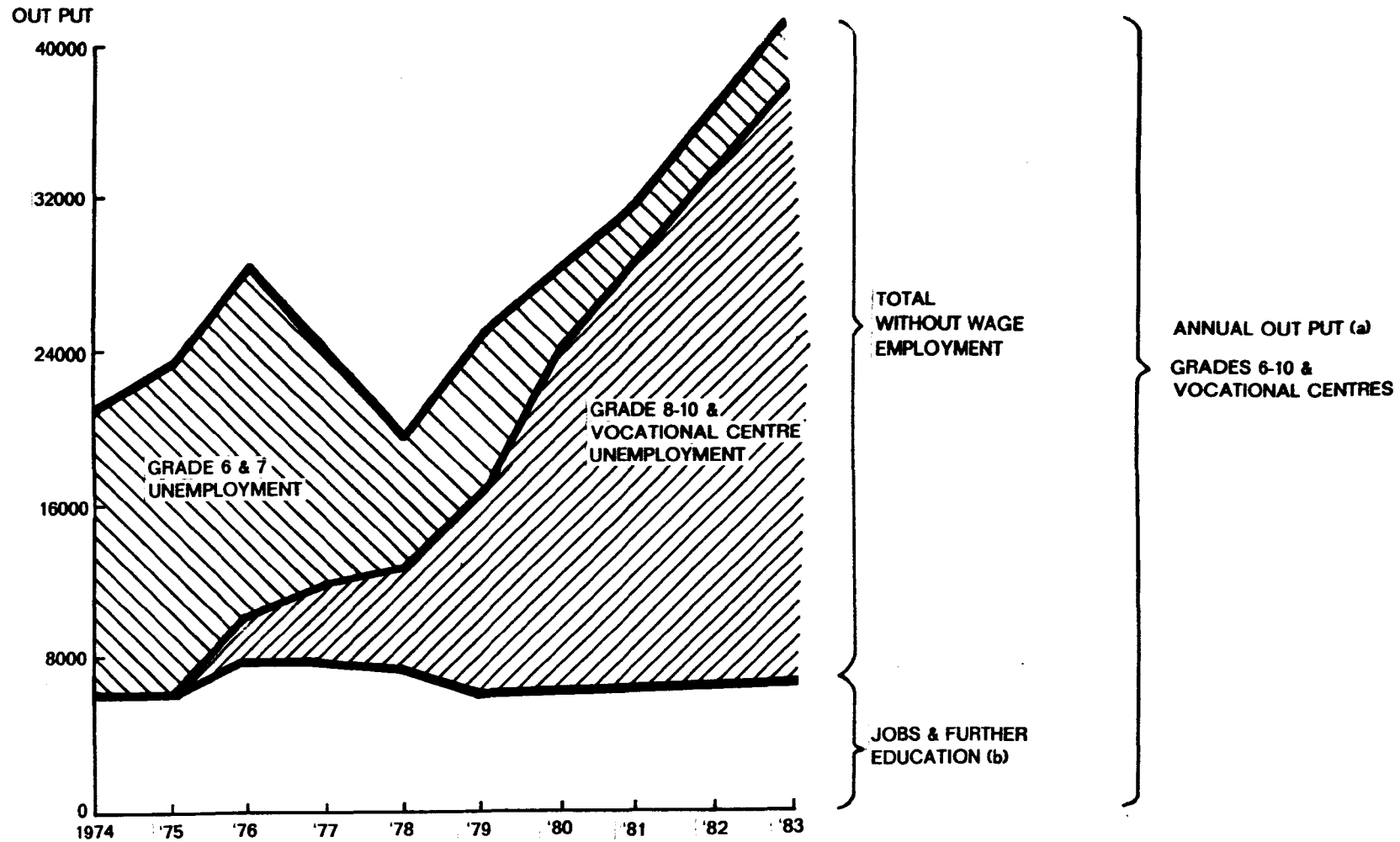
2. Source: Manpower Planning Unit, Central Planning Office, 1973.

Fig.9; Grade 10, 11 & 12 Unemployment in the Skilled Work Force.



1. Source; Manpower Planning Unit, Central Planning Office, 1975.

Fig.10; Grade 6 to 10 and Vocational Centre Unemployment in the Semi-Skilled Work Force.



1. Source: Man power Planning Unit, Central Planning Office, 1975

employment. This is clearly demonstrated by the graph in Figure 9 which shows the relationship between the numbers in this group and the manpower requirements for those with this level of education. Some of these secondary school leavers may find employment in semi-skilled or unskilled occupations, but it seems probable that many will return to the village. Some will continue to migrate to the towns but there is evidence that this trend is declining. Although Conroy had found that almost half his sample had left their home villages within two years of leaving school,¹ a study by Wilson in the Western Highlands² showed only a quarter of the school leavers had left their homes during their first year after leaving school. Another survey carried out by Macpherson³ in 1975 showed that only 6 per cent of primary school leavers left home within three months of leaving school and 17 per cent after fifteen months. In his account of "School Leavers in a Coastal Area" in 1975, Wilson suggests that "it is possible that the proportion of rural leavers migrating is falling as the realities of town life become better known".⁴

Research into school leaver problems in Papua New Guinea has tended to concentrate on urban areas especially Port Moresby. There is less information on school leavers in the village situation except for Wilson's studies in the Western Highlands and New Ireland. These were both based on relatively small samples but they include several interesting observations. He found that "most of the activities pursued by leavers were the same as those undertaken

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1. Conroy, op. cit.
 2. M. Wilson, "The Primary School and Development" in R.J. May (ed.) *Priorities in Melanesian Development*, (Canberra: University of Papua New Guinea and Australian National University, 1972), p.252.
 3. K.J. Macpherson, op. cit., p.123.
 4. M. Wilson, "School Leavers in a Coastal Area", (Unpublished seminar paper, 1975), p.3.

by all members of the village community whether educated or not".¹ Many of the school leavers helped in farming, fishing (in the case of New Ireland), house-building and domestic work, but the impression was that "their efforts were rather spasmodic".² A significant point to emerge from the New Ireland study was that several of the older members of the community said that they felt "the activities of school leavers depended largely on their parents".³ The school leavers could do useful work if there was the necessary supervision and guidance. School leavers were also able to help other people in the village by reading and writing letters, doing simple calculations and translating from English. Few had made any changes although in the Western Highlands a few mentioned "planting pyrethrum and potatoes as they had been taught at school".⁴

The two areas chosen for my own fieldwork in many ways represented very contrasting environments. The first survey was in the Bereina area of the Central Province. This is a region near the Papuan coast where there has been contact with Europeans for a relatively long period, the first mission was established there in 1875. The other area I chose was in the Western Highlands, where the development of education and contact with the cash economy has been restricted to the last thirty years.

The Bereina Area

The villages of Beipa'a and Aipeana were selected for the first survey in the Kairuku district.⁵ These are two large villages situated within a mile

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1. Wilson, "School Leavers in the Village", op. cit., p.142.
 2. Ibid., p.141.
 3. Wilson, "School Leavers in a Coastal Area", op. cit., p.14.
 4. Wilson, "School Leavers in the Village", op. cit., p.140.
 5. The main ethno-linguistic group in this area are the Mekeo people.

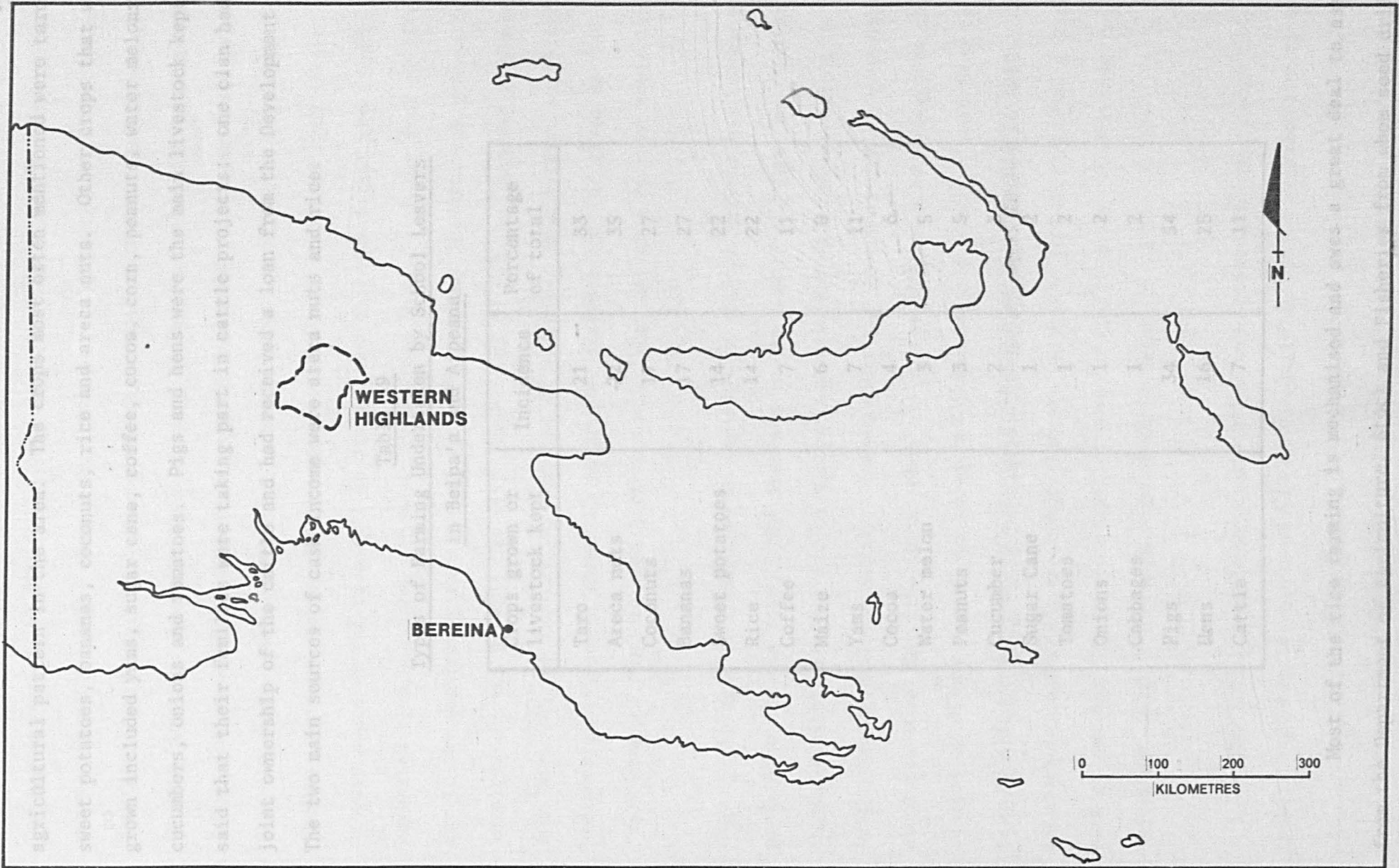
of each other on the fertile flood plain to the west of the Angabunga river (generally known locally as the St. Joseph's river). The two villages are connected by road with the district headquarters at Bereina about twenty-five kilometres away. There is a large mission primary school, St. Paul's, situated between the villages and students selected for secondary education usually study either at the De La Salle School for boys near Bereina or at the Our Lady of the Sacred Heart School for girls on Yule Island. Some of the school leavers interviewed had also attended Vocational Training Centres after completing their primary education; the nearest centres were at Bereina for the boys and at Kubuna for the girls.

A total of 63 school leavers were interviewed; 38 from Beipa'a and 25 from Aipeana. The majority had left school at Standard Six level at the end of their primary education. A few had dropped out before this stage and seven had received some secondary education; the highest level reached had been Form Three. Most had left school in the last three years. The ages of those interviewed ranged from 11 to 23; the mean was 15.6 years. There were 19 girls in the group and 44 boys.

Only one of the school leavers interviewed was in regular employment; he drove a truck. Another helped part-time in a trade store. One boy had worked in the past as a painter and another for the Catholic Mission. One of the girls, who had been educated up to Form Three and had also received secretarial training, had worked for a year and a half in Port Moresby, but had been asked by her parents to come back to the village and help at home. All the school leavers interviewed, with the exception of the driver, said that they now worked with their families and helped in farming.

One of the things asked in the questionnaire concerned the crops cultivated by the school leaver. The answers here generally reflected the

Fig.11; Location of Study Areas in Papua New Guinea.



agricultural pattern in the area. The crops most often mentioned were taro, sweet potatoes, bananas, coconuts, rice and areca nuts. Other crops that were grown included yams, sugar cane, coffee, cocoa, corn, peanuts, water melons, cucumbers, onions and tomatoes. Pigs and hens were the main livestock kept. Six said that their families were taking part in cattle projects; one clan had joint ownership of the cattle and had received a loan from the Development Bank. The two main sources of cash income were areca nuts and rice.

Table 59
Types of Farming Undertaken by School Leavers
in Beipa'a and Aipeana

Crops grown or livestock kept	Incidence	Percentage of total
Taro	21	33
Areca nuts	22	35
Coconuts	17	27
Bananas	17	27
Sweet potatoes	14	22
Rice	14	22
Coffee	7	11
Maize	6	9
Yams	7	11
Cocoa	4	6
Water melon	3	5
Peanuts	3	5
Cucumber	2	3
Sugar Cane	1	2
Tomatoes	1	2
Onions	1	2
Cabbages	1	2
Pigs	34	54
Hens	16	25
Cattle	7	11

Most of the rice farming is mechanised and owes a great deal to assistance from the Department of Agriculture, Stock and Fisheries from whom seed drills

and harvesters can be hired at a rate far below the economic cost. Harvesting was taking place at the time of our visit, the beginning of the dry season. The rice is sold to a mill run by the department at Bereina and then marketed in Port Moresby. Two problems mentioned by the rice growers were shortage of labour for weeding and inadequate storage facilities. In some cases people from the coastal area or the local women's club were hired to help with the weeding; several school leavers mentioned it as a source of cash income. The storage space at the rice mill is limited and this meant that the freshly harvested rice was often stored in open-sided barns, with the risk of deterioration due to the weather or rats and other pests. School leavers were generally involved in rice growing, as with other forms of farming, because of their families. It was interesting that two of the older rice farmers we talked to had previously been employed as government servants but had given up their 'white collar jobs' to come back to the village and grow rice on their land.

The sale of areca nuts in the markets of Port Moresby has become very profitable for the Mekeo. The increase in the number of Papua New Guineans in the capital city has led to a rise in demand for areca which cannot be met by the immediate local supply; consequently the present price is very high at about ten toea¹ for five nuts. When the school leavers were questioned about sources of direct income, 25 mentioned that they had obtained cash from the sale of areca nuts. The amounts they received varied from K40 to K200, although in most cases the school leavers only seem to have retained a small part of the sum themselves as pocket money. Pocket money, rather than regular wages, was in fact the main form of their income.

The school leavers were also asked to estimate how many hours they thought that they worked a week. In the calculations we included the time

1. There are one hundred toea to one kina. Ten toea equals about seven pence.

taken to walk to the farms, and also the time spent in village cleaning and improvement on "council day" when once a week adults are supposed to be involved in communal work. The answers we received varied from 5 to 48 hours a week; the mean was 26 hours. This would seem to indicate that most of the school leavers are participating in its economic life, although some of them are still relatively young and there is obviously some degree of underemployment.

Table 60
Average Number of Hours Worked a Week by School Leavers
in Beipa'a and Aipeana

Number of hours	Incidence	Percentage
40 hours and above	11	17
30 - 39 hours	24	38
20 - 29 hours	6	10
Less than 20 hours	22	35

One of the villages, Aipeana, had a consumers' co-operative society and twelve of the school leavers from there said that they belonged to it. Eighteen also said that they were members of other types of clubs and societies, such as the women's club or a youth club run by the mission.

Education should enable school leavers to make good use of the assistance and advice available from government departments and other agencies. Six of those interviewed said that they had received help from the Department of Agriculture, Stock and Fisheries with their rice growing. Two more had received advice and assistance with coffee and coconut growing. Three said that their families had received loans from the Development Bank for cattle projects.

In an attempt to assess the extent to which young people had made innovations or used their education to modernise agriculture in any way, they

were asked if they had tried to make changes in the type of farming or any improvements to the village. Twenty-three said that they had tried to make changes. Those mentioned in connection with agriculture included using a tractor, planting coconuts, growing vegetables, rice schemes, cattle projects, planting peanuts, starting a cocoa nursery, chicken farming and the use of tools. In nineteen cases they claimed that the changes had achieved some degree of success. A chicken rearing scheme had not been successful as half of the hens had been sold off too soon to friends and relations wanting them for feasts. One thirteen year old had tried to dig drains and rubbish pits but said his work had been unsuccessful because "big people look upon us as small kids and do not listen to us". Two attempts to grow cocoa failed because of unsuccessful farming and "lack of techniques in better farming". Lack of knowledge and insect pests were other reasons given for crop failure.

On questions concerned with migration, ten said that they would move to another area if they could make a better living as a farmer there; one of the reasons given was to make money without the *wantok* system. When asked to express a preference for living in the village or a town, 34 chose village life and 29 the town.

In reply to the question "Do you think your education has helped you in farming or life in the village?", 36 school leavers, 57% of the group, stated that they thought it had helped; ten definitely thought it had not and the remainder were in the "don't know" or "not sure" category. The reasons most often given for a positive answer were that reading and writing helped with communications and obtaining information; also that education helped them to plan agricultural projects such as rice growing. Some mentioned particular skills such as farming and sewing that they had learnt at vocational training centres. Those who said their education had not helped, generally gave as their reason the lack of agricultural content in the school courses.

The school leavers were also asked if they had been able to help people in their village by using the knowledge and skills that they had learnt at school. About half said that they had been able to use their education to help others, usually those in their own family. Writing and reading letters was the most frequent method mentioned. Three said that they helped in liaison with government officers and in explaining government policy and political changes. The new Papua New Guinea currency had been issued the week before our visit to the villages and some of the younger people had been attempting to explain the different values; as in other areas, some of the older people regretted the fact that there were no pictures of people on the coins and notes, only birds and animals.

Fifteen students said that they had attended Vocational Training Centres. The courses they had taken included farming, carpentry, mechanics, metalwork, plumbing, sewing and cooking. The responses of this group did not vary significantly from those of the other school leavers. Seven said that they had tried to make changes in farming; three were involved in cattle projects and five in rice growing. Most of them felt that their training had helped, but one of the girls complained that the training in cooking and sewing had not helped because of lack of "proper equipment" in the village. One of the needs suggested by the school leavers in their comments was the provision of sewing machines in the village. Another suggestion that was made was the setting up of another Vocational Training Centre in the immediate area.

The Western Highlands

Two study areas were chosen in the Western Highlands. One was the Nondugl area in the Minj sub-district. It is situated in the Wahgi valley to the north of the Highlands Highway about 57 miles east of the district capital of Mount Hagen. The other area was around Rugli in the Muglump sub-district in the upper part of the Baiyer Valley. In conducting the survey in these two

areas, I was assisted by two teacher trainees from the Goroka Teachers' College.

Fifty-nine school leavers were interviewed in the four villages of Nondugl, Milep, Kamgi and Bamina. The ages of the school leavers ranged from 14 to 27; the mean was just 18.5 years. Nine of the group interviewed were girls; in most Highland areas the proportion of girls going to school is much lower than that of boys. About half the group had completed their primary education at Standard Six; most of the rest had finished at Standard Four; five had been to secondary school and two had gained school certificates.

Most of the school leavers were helping their families on farms, although some described themselves as just being "village boys". Three of the girls were married; two boys called themselves businessmen; two were drivers of PMVs;¹ two worked for the Department of Public Works as labourers maintaining the main road; one was a coffee buyer and one a primary school teacher. Eight had worked at some form of paid employment previously.

The main crops grown on the family farms were sweet potatoes, yams, bananas, sugar cane, cassava, peanuts, cabbages and other green vegetables. Coffee was the main cash crop and some tea was also grown. All families kept pigs and many had some hens; three also mentioned keeping cassowaries. The hours a week the school leavers said they worked on the farm ranged from three to fifty; the mean average was 17.5 hours. Most said the only income they received was in the form of pocket money from their families, although a few said they received a direct income from selling coffee. Only four school leavers said that they had tried to make changes; in three cases the innovations concerned poultry projects and in one, tea growing.

1. PMV: Public Motor Vehicle - a truck licensed to carry passengers.

The only co-operative society in the area is a Savings and Loan Society; four school leavers were among its members. Two of the married girls were members of a women's club and one was the secretary. Two boys belonged to a group which had combined to buy an expatriate coffee plantation, another was a member of a similar group who had joined together to buy a PMV truck.

Fifteen of the school leavers said they thought their education had helped them in farming, although a larger number, twenty-seven, said they had been able to use it to help people in the village. The most common way was by writing and reading letters and filling in forms. A large number also mentioned the ability to read and count weights when coffee selling. Two of the girls said that they helped the village women in home management, giving advice on cooking and child care. Two school leavers said that they used their education to read the gospel at church.

Only four of the school leavers said that they would prefer to live in the town rather than the village, although several others had no definite preference. Eight said that they would be prepared to move to another area if it meant more income; most of the rest said that they had enough land and did not want to leave their *wantoks* and families. One very basic reason for school leavers' inertia was expressed by one in the statement: "I don't want to do anything as my parents are kind".

Very similar results were obtained from questionnaires to 40 students in the Rugli area. The ages ranged from 12 to 26, with a mean of 16.6; there were only three girls in the group. All but two, had only primary education. Most were working as subsistence farmers; three were assistant carpenters with the Lutheran Mission; two worked in a trade store; one was a PMV driver. Eight had previously had paid jobs. The main crops mentioned were sweet potatoes, corn, sugar cane and coffee; coffee being the main source of income. The hours they

said they worked ranged from 5 to 48, with a mean of 18. Eight had attended Vocational Centres. Three school leavers said that they had tried to make changes, mainly in the form of planting more coffee, peanuts and vegetables. One had received a loan from the Development Bank to help set up a trade store. Only four said they would prefer to live in a town and only three wanted to move to another area; reasons for not going elsewhere were often expressed as "fear of trouble and danger". Five said that they thought their education had helped them in farming; the feeling of others was expressed by the answer: "People are not willing to listen to small people like us". Their youth, low standard of education and lack of finance were the problems most often mentioned. Eight said that they were able to use their education to help people in the villages and again mentioned most often reading and writing letters, and also explaining the news, laws and "business".

Table 61
Types of Farming Undertaken by School Leavers in the
Western Highlands Survey

Crops grown or livestock kept	Incidence ¹
Coffee	44
Sweet Potatoes	29
Vegetables	18
Bananas	5
Peanuts	4
Yams	2
Corn	2
Pigs	49
Hens	22
Cassowaries	3
Cattle	1

1. There were 99 school leavers interviewed, so the percentage should be approximately the same as the incidence.

Table 62
Average Number of Hours Worked a Week by School Leavers
in the Western Highlands Survey

Number of hours	Incidence
40 hours and above	13
30 - 39 hours	10
20 - 29 hours	19
Less than 20 hours	57

The surveys of these two areas and impressions I gained from talking to other school leavers in the Highlands would seem to indicate that the life of the younger ones who have only had primary education does not differ very much from their uneducated contemporaries in the village. They take part in the usual village economic and social activities. They follow the residential pattern, with the men of the village living in one separate house; the women stay in different huts. A boy shares the customary beliefs in sorcery and has the same rights to land as other members of his clan; he is also likely to be involved in tribal fighting if it occurs. He does differ in that he is likely to be fluent in speaking English and Pidgin; he is rather more mobile and is likely to have travelled to other areas, sometimes having taken temporary work. In the monetary sector of the economy, his literacy and numeracy are an advantage especially in the selling of coffee and running a trade store. If a club, adult education or self-help activity exists in the village, he is likely to participate in its activities. In many parts of the Highlands the *Yangpela Didiman* organisation has been successful in stimulating rural development amongst the school leavers. Many of the older Highlands students and those in teacher training also expressed an interest in returning to work in their villages. Another significant aspect is the education of women and their influence on the family and community. The interviewer made this comment on one of the married girls in the Nondugl area: "From this lady I learnt that all women who have some form of education are

badly needed in their own home area. I really believe that if the women work back in the village the quality of life will greatly improve, because women are the ones the family depends on most".

Some of the results of the surveys can be seen summarised in Table 63. It will be noticed that although the results for Nondugl and Rugli are in most respects similar, those for the Mekeo area show certain differences. This is partly due to the fact that the group itself tended to be younger and had a higher proportion of girls; generally they seem to have participated more in farming and be more prepared to make changes. However, in all three groups there is a similar pattern in that nearly all the school leavers are taking part in the same type of farming as their families and experiencing the same problems in trying to effect any changes.

Table 63
Comparison of the Results of the School Leaver
Surveys in the Mekeo, Nondugl and Rugli Areas

	Mekeo	Nondugl	Rugli
Average age in years	15.6	18.5	16.6
Percentage of girls	30	15	7.5
Percentage with secondary education	11	8.5	5
Average hours worked in agriculture	26	17.5	18
Percentage attempting changes	36	7	7.5
Percentage preferring town to village	40	7	10
Percentage willing to move to another area	15	13.5	7.5
Percentage believing education had helped in agriculture	57	25	12.5
Percentage reporting that they used their education to help in the village	49	45.8	20

PART IV

CONCLUSION

CHAPTER 13

CONCLUSION

School Leavers in Sarawak

When I began my investigations in 1967, my first task was to ascertain if a general problem did indeed exist. A follow-up study of leavers from my own school and then a state-wide survey did in fact show that many secondary school leavers were returning to their villages and families on completion of their education because they could not find employment or opportunities for further education or training. It should be emphasised that in no way could these students be described as "drop-outs". They had completed a course of education and in most cases passed the public examination that served as the terminal evaluation and qualification at the end of that course. In previous years this standard of education and this qualification would have secured the school leaver regular paid employment in government service, or with a commercial company in the private sector, or in teaching. However, in a country where 80 per cent of the population were engaged in agriculture, mainly at subsistence level, there were only a limited number of employment opportunities in the modern or cash sector of the economy and most of these had already been taken. The expansion in education at all levels also meant that there was increased competition for the jobs that did exist. With the changing situation there was a downward trend in the level of job expectations of the school leavers and an upgrading of entry qualifications by employers. This meant that many of the jobs previously performed by primary school leavers now went to those with junior secondary qualifications while the types of occupation that previously had gone to them were taken by students with school certificate. For the majority, however, there was no employment at all.

The problem varied slightly in different areas and between the various sectors of the population. Girls, for example, generally found that their employment opportunities were even more restricted than those of boys. The

process of Malayanisation that slowly followed the formation of Malaysia meant that Malays were often in a more favoured position than other ethnic groups in obtaining government employment or receiving scholarships for further education and training. Many Chinese could return, albeit somewhat reluctantly, to a family business which was often already overcrowded; some joined the clandestine communist organisation in the jungle. For the different Dayak groups, who formed the largest section of the population, failure to find work usually resulted in returning to the village or long-house. Some moved to the towns to look for jobs but this was generally only a temporary measure; there was certainly no urban drift as in many other third world countries. This was probably because the towns themselves were small and there were few manufacturing industries; the private sector there was dominated by the Chinese and there were few employment opportunities for other ethnic groups. The only region I studied where there did seem to have been an exodus of school leavers, especially males, was the Kelabit Highlands; this seems to have been an exception, probably due to its isolation together with the fact that there were employment opportunities in the coastal areas downriver.

The next question that had to be answered was what were the school leavers doing when they returned to their villages and long houses. Impressions and reports varied. Some were said to be sitting around doing little but listening to transistor radios and strumming their guitars; others, one hoped, were using their education in commercial agriculture and contributing to rural development. There was little reliable and consistent information about school leavers who were officially classified as being employed in agriculture, but who themselves did not seem to consider they were employed at all; most were certainly looking for a job or "proper employment" elsewhere. The main aim of my second survey was to find out in certain selected areas the extent to which school leavers were participating in agriculture. The conclusion that could be drawn from the survey was that the

majority were participating in agriculture although the activities and time involved showed considerable variations. It was significant that nearly all had returned to work as part of the family economic unit and in most cases any income was in the form of pocket money rather than wages or direct income from selling goods. If they were growing cash crops or making innovations it was often because these had been started by their parents; the fact that they had been sent to school and that their parents had paid fees and encouraged them to stay as long as possible was an indication that their families were usually among the more progressive sections of the community.

Parts of my questionnaire in this survey aimed to find out to what extent the school leavers had been able to use their education in farming back at the village. The answers indicated that often it had been difficult to relate what had been learnt at school to traditional farming. The following was typical of many of the answers: "What has been learnt from school in Agricultural Science has very little connection with the farming I am doing. Machines and fertilisers are not used on our farm". It was interesting to note that there was generally little difference between the agricultural activities of those who had studied Husbandry and Agricultural Science at school and those who had not. School leavers who felt their education had helped them usually gave as a reason the value of reading and writing, together with the ability to do arithmetic and keep accounts. Very few kept any records or accounts in their farming but they did read agricultural extension material when it was available.

I had also been interested to find out the extent to which school leavers were able to take advantage of extension services. This seemed to necessarily depend on the distribution and availability of these services. If extension materials were available the school leavers were willing to use them and would read and explain posters and booklets to other people in the

village. If there were 4-H clubs or co-operative societies in the area the school leaver would often become a member. However, he would rarely take the initiative in forming a club or writing to obtain information. This was possibly a result of his indefinite status and restricted role in village society; many still hoped that their stay in the village might be of a temporary nature.

The school leavers generally showed considerable mobility and a willingness to move to other areas in their search for work. Answers to questionnaires also indicated that many would be prepared to go to land development schemes in other areas if they could not find work outside agriculture.

The results of my studies in different areas of Sarawak generally showed a similar pattern of school leaver activities and problems, although some regional and ethnic variations did occur. For the Chinese the problem was often one of land shortage: "many brothers work one small farm". By contrast, in the Kelabit Highlands many school leavers had moved away from the area and there was a shortage of labour. In the Kayan and Kenyah areas of the mid-Baram a larger proportion of the school leavers had stayed in their long houses, but lack of transport facilities often made the marketing of cash crops difficult and limited access to extension services.

Comparison between Papua New Guinea and Sarawak

In Sarawak my studies of school leavers were restricted to those who had been to secondary school. Similar investigations in Papua New Guinea made in 1975 were mainly concerned with primary school leavers; at that time those with secondary education were still usually able to find employment in the modern sector of the economy. In many ways, however, their experiences and problems seemed to parallel those of the secondary school leavers in Sarawak.

Manpower planning forecasts also indicated that by 1977 many Form Two (Grade Eight) and Form Four (Grade Ten) students would be unable to find employment.

I attempted to make the questionnaire I used in Papua New Guinea as similar as possible to the one I had prepared for Sarawak, although it was necessary to make allowances for differences in agricultural activities, the educational system and the structure of government services.

The results of my surveys in the Mekeo and Western Highlands areas of Papua New Guinea showed many similarities to those in Sarawak. All the school leavers engaged in agriculture were working as part of the family unit. Their income was mainly pocket money, although a rather larger proportion obtained money from selling cash crops. The number who said that they had attempted to make changes was relatively smaller: 19 per cent as opposed to 22 per cent.

There were considerable differences in attitudes to migration and resettlement. In Sarawak the majority, 72 per cent, said that they would be willing to move to another area; in Papua New Guinea only 14 per cent said they would be prepared to move. This probably reflects the average Papua New Guinean's close attachment to his own clan, village and land; together with his fear of other groups and the dangers of sorcery and tribal warfare. It is significant in this respect also that societies in Papua New Guinea are lineal, whereas in Sarawak, Dayak and Malay kinship groups are cognatic.

Papua New Guineans also seemed more doubtful about the relevance and value of formal education. Only 36 per cent of those questioned believed that their education had helped them in rural life, compared with 57 per cent in Sarawak. This may have been partly as a result of the difference in educational standards between the two groups, but it probably also shows a more sceptical attitude to what is considered a western type of education.

If one compares the education systems of Papua New Guinea and Sarawak it is difficult to assess whether either has been more successful or effective in preparing young people for life in the village. In Sarawak there has been more emphasis on higher academic standards and working towards external examinations. In Papua New Guinea attempts have been made to make education more directly vocational and more relevant to the needs of the school leaver who returns to the village. The school curriculum at all levels has been much more oriented towards the local environment than has been the case in Sarawak.

It is perhaps also relevant to compare the expenditure and outlay of resources on education in the two areas. These seem to have been much greater in the case of Papua New Guinea. In 1975 the Education Department budget was 53,412,000 kina. Total enrolments at all types of schools during this year were 277,101. This means the average expenditure per student for one year was about 193 kina, equivalent to approximately £138. In Sarawak comparable figures for 1975 were 77,386,000 Malaysian dollars for 235,269 students giving an average expenditure per head of 329 Malaysian dollars equivalent to approximately £73.¹

The study of non-formal education programmes in the two areas provides an indication of the different services that are available to school leavers. In both Sarawak and Papua New Guinea the government agricultural departments have been the most important rural extension agent. Both have provided Farmers' Training Centres. In Sarawak the Department of Agriculture has also been active in organising 4-H Clubs; sending out bulletins and pamphlets,

1. These figures are based on the *Papua New Guinea Education Plan 1976-80* and the *Annual Statistical Bulletin Sarawak, 1976*.

training Home Demonstrators to carry out extension work and giving much help and advice through its subsidy schemes. In Papua New Guinea it was estimated that in 1973-74, 55 per cent of the Department of Agriculture, Stock and Fisheries staff was directly employed in agricultural extension duties.¹ Much of this work was concerned with the introduction of cash crops, especially coffee, and with livestock schemes. Other departments concerned with rural extension work in both countries include Health, Information and Broadcasting. In the more inaccessible regions of both countries many of the government services tend to get carried out by the officials responsible for district administration: the District Officer in Sarawak, the Patrol Officer and District Officer in Papua New Guinea.

One extension agency that exists in Papua New Guinea, but not in Sarawak, is the Department of Business Development. This gives help and advice to those wanting to start businesses in rural areas. It has given assistance to small industries, retail and wholesale activities and transport enterprises.

Access to extension services is often a problem in both countries, especially in the more remote areas where transport is difficult. Tours by government extension teams were often considered too infrequent and visits to villages too short in duration. This seems to have been especially a problem in Papua New Guinea and was mentioned several times in interviews with school leavers.

Christian missions have been active in both countries in providing services and non-formal education outside the government system. Papua New

1. R.F. McKillop, *The Agricultural Extension Service in Papua New Guinea. Can we make it more effective?* Extension Bulletin No. 5, (Port Moresby: Department of Agriculture, Stock and Fisheries, 1974).

Guinea has the greater number and diversity of missions. Some are mainly concerned with evangelical work, but others have organised vocational centres and activities for school leavers. The most significant contribution made to agricultural extension work with school leavers in the Highlands region has been made by the *Yangpela Didiman* organisation which has been sponsored by the Lutheran Church.

If one compares the different community development schemes that might involve school leavers and help to integrate the schools and rural development, the Budu scheme in Sarawak seems to have been the most successful. It did, however, depend on expatriate inspiration and when this was removed as a result of political pressures, it ceased to be so effective or self-sufficient.

In Papua New Guinea there have been a variety of self-help schemes ranging from those associated with cargo cults to those which have been associated with more modern business development ventures. These have often been important locally, but it is doubtful if any could serve as a general model or be widely adopted. They have tended to be a result of particular local social circumstances and individual charismatic leaders.

I have indicated in my introduction that in many less developed countries, school leavers' problems are often associated with those of land tenure and land development. The school leaver who returns to the village may find that he has no land for his own use, or that his use of the land is often subject to the restrictions imposed by customary land tenure. In these cases some type of land reform is often necessary before the school leaver can make a contribution to rural development. In both Sarawak and Papua New Guinea most of the land is under customary ownership. The sale of land is restricted and in most cases there is no registered title to the land. In the case of Sarawak, the Chinese, who form a third of the population,

can only buy land in areas which have been designated as mixed zone. The customary form of land tenure which had been suitable for the shifting cultivation of different annual food crops was often difficult to adapt to more commercial farming based on the growing of perennial tree crops.

In both Sarawak and Papua New Guinea, land settlement schemes have been set up as a means of encouraging the indigenous growing of cash crops. In Papua New Guinea the largest and most successful schemes have been associated with the growing of oil palm in West New Britain. In Sarawak there have been more land settlement schemes, some based on the growing of rubber and others on oil palm. Schemes in Papua New Guinea were organised under the Department of Lands and Environment with oil palm being grown on nucleus estates in association with commercial companies. In Sarawak schemes were administered by the Sarawak Land Development Board. In both countries the settlers have been able to benefit from the provision of rural credit. In Sarawak loans were provided by the Sarawak Development Finance Corporation; in Papua New Guinea by the Development Bank. In both areas the land settlement schemes could well provide a suitable social and economic environment for school leavers to take up agriculture; but to date most of the settlers recruited have been older people with families. The exception has been one smaller scheme in Sarawak specifically for school leavers with agricultural training.

One type of land reform which has only taken place in Papua New Guinea has been the plantation redistribution scheme. This is a development which has not proved necessary in Sarawak because there was never any large scale foreign ownership of plantations; most cash crops were grown on locally owned smallholdings. In Papua New Guinea, some school leavers are already being trained in plantation management and this is an area in which there may be opportunities for school leavers in the future.

Comparison of the two areas covered by the case studies would seem to indicate that school leavers returning to the village face similar problems. There is a difference between the education systems and generally more effort has been made in Papua New Guinea to make education relevant to rural areas. There are also more opportunities for non-formal education and vocational training. However, in spite of these programmes and the much greater resources which have been allocated to them, it seems doubtful whether the school leaver who returns to the village is likely to be any more effective than his counterpart in Sarawak. In both cases it seems that they are only likely to be able to use education if changes occur in the economic and social environment in which they work.

School leavers and rural development

At the beginning of my thesis, I stated that the questions I should be examining were as follows:-

1. What do school leavers do when they return to the villages?
2. Does their education help them or the community when they return to the village? If so, in what way? If not, why not?
3. What is the most relevant type of education for these school leavers?
4. What types of rural development provide the best environment and institutional framework for school leavers to make use of their education?
5. How can the schools best be integrated into this development?

My research into school leaver problems has suggested certain answers to these questions. These form the final part of my conclusion.

What do school leavers do when they return to their villages?

My research indicated that initially many secondary school leavers when they return to the village regard themselves as being unemployed. They are still looking for the types of employment which have been available to

those with their qualifications in the past. Many will continue to look for such work, answer advertisements and sometimes travel to towns and stay with relatives in their search for jobs. If they stay in the village, they will usually participate in their family's economic activities. Most of them are occupied for a considerable time each day in agricultural or domestic activities. They function as part of the family economic unit. If their family grow cash crops or have some type of business enterprise, they will also take part in these activities. Only in a few cases do they attempt to make changes or start new activities. They may share in any profits made by the family, but in most cases their income was irregular and tended to be regarded as pocket money.

In the case of the primary school leavers who formed the bulk of those interviewed in Papua New Guinea, most realise that their qualifications are unlikely to find them regular employment and that in most cases they are also too young for this type of work. These are the boys or girls who can most accurately be described as drop-outs or push-outs from the education system. They have received a primary education which in most ways was a preparation for the next stage in their education, but they have been unable to go on to secondary school.

The youngest primary school leavers tended to work shorter hours and be less involved in economic activities. Those who had left school several years ago, however, were often more settled and more fully occupied in agriculture. Girls were more likely to stay in the village and many had already married.

My conclusion that school leavers eventually tend to follow traditional family agricultural activities is supported by field work in Papua New Guinea by Wilson and Young. It also corresponds very closely to the findings of Heijnen in Tanzania and Brownstein in Kenya.

Does their education help school leavers when they return to the village?

If so, in what way? If not, why not?

This is the crucial question in evaluating the role of education in less developed countries. We have seen some of the methods used to determine the economic value of education. Studies by Becker, Schultz and Hansen compared incomes after different levels of education and Psacharopoulos provides us with a comparative survey of different studies concerned with estimating rates of return to education. These studies generally show that at all levels education can be regarded as a profitable investment both for the individual and society. There are, however, disadvantages and problems in the application of the rates of return approach to less developed countries where the main employer is the government and salary levels are often fixed by educational qualifications. Blaug and Streeten both question the validity of income as an indicator of the value of education and list other variables that must also be considered. Streeten even suggested that education might have a negative effect of marginal productivity in the case of agriculture. There is, however, evidence from quantitative studies by Murthy, Roy and Chaudhri in India and Harker in Japan that education leads to greater agricultural productivity. Wharton, Schultz, Welch and Mosher all emphasise that the educated farmer is more likely to use modern techniques, and be able to take advantage of extension services. He should also be more aware of the combination of inputs which will give him the greatest profits, and have more knowledge of market conditions. Rogers suggests that the educated farmer is more likely to benefit from the mass media and be able to make innovations. In my fieldwork I was anxious to see if the school leaver was in fact making innovations and if he was using his education to adopt modern techniques and new types of farming. Was he using his literacy to read agricultural extension materials and his numeracy in marketing, keeping records and the calculation of costs? Answers to my questionnaire suggest that the majority of the school leavers interviewed, 78 per cent in Sarawak and 81 per cent in Papua New Guinea,

had not attempted to make any changes or innovations. In Sarawak the changes that were mentioned included the growing of higher yielding wet *padi* rather than hill *padi*; the growing of cash crops such as coffee and pepper; and the improvement of agricultural land by drainage and the application of fertilisers. Changes mentioned in Papua New Guinea were the growing of coffee, cocoa, peanuts and rice as cash crops; also livestock projects associated with poultry and cattle.

The school leavers were also asked in the questionnaire if they considered that their education had helped in their work as farmers and in their life in the village. In Sarawak over half (57 per cent) said they thought it had helped, although in Papua New Guinea the proportion was slightly less than a third.

The reasons given why education had helped often mentioned the ability to read, write and do simple arithmetic. Literacy had given the school leavers the ability to read newspapers and extension materials. They were also able to communicate better with government officials and take advantage of subsidy and credit schemes. They were able to help others in the village by reading and writing letters for them. Sometimes they could explain the political changes associated with self government to the older people.

Numeracy was of value in making calculations related to the selling of agricultural products. In the Highlands of Papua New Guinea this seems to have been especially useful in the weighing and selling of coffee.

Education should also help in the keeping of records of inputs and outputs from farming. Agricultural education emphasises the value of these records, but very few school leavers made any claim to keeping records, unless they were associated with a project following a course at a Farmers' Training

Centre in Sarawak. Agricultural and science education were mentioned as being of importance in teaching about fertilisers. Health education was also seen by the school leavers as being relevant to life in the village. The need for proper sanitation and the boiling of drinking water were mentioned, also knowledge about the nutritional value of different foods.

The reasons given by school leavers who thought their education had not helped, and problems encountered by those who had attempted to make innovations, give an indication of some of the difficulties in relating education to the rural environment. Many of the answers stressed that the new techniques they learnt about in school agricultural lessons could not be applied to the village where the people were "still following the old method of farming". Other difficulties mentioned were shortages of land, difficulties in marketing and storage, fluctuations in market prices and lack of capital. The youth of many of the school leavers and their position in relation to the rest of the community is perhaps best expressed by the Mekeo boy who said: "Big people look on us as small kids and will not listen to us". One reason for the uncertain social status of the school leaver is that he belongs to the first generation of educated young people who have had to return to the village. There is often no role for him in the traditional society. This may change in the future, but the present relationship of education to rural development in both Sarawak and Papua New Guinea is perhaps best expressed by Schultz when he writes: "If a country is not embarked on modernization, if it is not acquiring and adopting new superior techniques and other inputs, but is coasting along in a traditional manner, there will be little or no pay-off on additional investments in education".¹

1. T.W. Schultz, "Education of Farm People", *Education and Rural Development*, op. cit., p.64.

In answering the second question, my fieldwork suggests that some of the school leavers have been able to apply parts of their education to life in the village, but they have rarely been able to make the innovations or achieve the higher agricultural productivity that a study of the literature on the relationship of education and agricultural modernisation might lead one to expect. On the other hand there was little indication that education had had a negative effect on attitudes to farming and village life as has been suggested. If school leavers regard the village as a second-best option, it is because they perceive the opportunities and rewards offered by formal employment and urban life as being much better, and giving them more possibilities of using their education.

What is the most relevant type of education for rural school leavers?

In the introductory sections of this thesis we saw how much of the early education in less developed countries was based on European models. The need to make this education less academic and more relevant to local conditions was realised from an early stage and finds its best expression in the Phelps-Stokes reports on education in Africa. However, as education systems become established with particular sets of qualifications they tend to develop their own momentum. There is often resistance from within the less developed countries themselves to any radical modification of the curriculum, especially as an educated class emerges which is itself a product of the school system. There is also the suspicion that any special type of education for poorer countries or rural areas might prove to be very much a second-class alternative.

The growth of the problem of school leaver unemployment led to the frequent accusation that this was the fault of the education system being too academic. We have seen how Balogh and Dumont have been among those who have made a strong case for the wide-scale adoption of vocational training, especially of the farm school type. Against this, others have pointed out the

ineffectiveness of the many attempts at vocational education in the past. The most powerful argument is that of Foster in "The Vocational School Fallacy" when he states that any system of education must be related to the opportunities and incentives that exist in the economy. This is supported by my earlier conclusions on the need to relate education to development and to create the type of environment in which school leavers can use their education. There is a need for specific vocational training, but it should be directly related to work opportunities. For this reason it would often seem more effective as pre-employment or on-the-job training rather than part of the school programme. The schools should continue to supply a general education, although efforts should be made to avoid the rigidity and irrelevance of curriculum and learning methods that have characterised much of the education in less developed countries in the past.

School leavers' answers to the parts of the questionnaire on the value of education indicate some of the parts of the school curriculum that they perceive as being directly useful. The most commonly mentioned advantages were literacy and numeracy, underlining the importance of basic education in reading, writing and arithmetic. Other subjects referred to by the secondary school leavers tended to be those which occurred to them in answering the questionnaires as being most obviously applicable to farming, such as husbandry and science. Advantages of learning other subjects, such as the better understanding and knowledge of society gained from the study of social sciences, did not suggest themselves so readily although the school leaver might agree on their value in further discussion. One field of instruction which was generally felt to be important and applicable to village life was health education. This may be taught in the primary school course or as part of general science, in Sarawak it was also an optional subject in the Cambridge Overseas School Certificate. Whatever level they had learnt it at, the school leavers felt that it had given them much valuable information on disease prevention and

better nutrition in their home environment. One hopes that the benefits of health education will become even more apparent when the present generation of school leavers become parents and bring up their own children.

In both Sarawak and Papua New Guinea there was considerable curriculum development aimed at making school courses suitable for the needs of rural areas. My own feeling was that the effectiveness of this education varied and often depended on the quality of the teaching, nevertheless in both cases it was providing a general education that should have been suitable for the individual development of the students and the wider needs of society. The problems in the application of this education lay rather in the relationship of the school to the community and the frequent failure to provide an institutional framework in which the young people could participate in rural development programmes, both while they were at school and when they left it. These are the problem areas dealt with in my last two questions.

What types of rural development provide the best environment and institutional framework for school leavers to make use of their education?

In this question we are really concerned with two things: one is the concept of the most desirable types of rural development and the other is the involvement of the school leavers in these types of development. If we accept a simple definition of rural development as being change which improves the quality of life in rural areas, then immediately we can think in terms of a number of aims, for example increasing the range of goods and services available; raising nutritional levels and health standards; improving the physical environment in which people live. Activities can be considered worthwhile if they help to achieve these aims. If we think in terms of agriculture, the following types of development would seem to be important in improving nutritional levels or providing income to purchase additional goods and services:

- (a) Improving yields from existing food and cash crops.
- (b) Diversification of agriculture to introduce new food and cash crops.
- (c) Introduction of new types of livestock and intensification of existing methods of animal rearing.
- (d) Better control of animal and plant pests.
- (e) Reform of existing land tenure systems to give greater productivity and more equal distribution of wealth.
- (f) Improvement in the storage, transport and marketing of agricultural products.

Most of these activities have featured in the rural development programmes of Sarawak and Papua New Guinea during the last twenty years.

In Sarawak, the Second Malaysian Plan emphasised agricultural diversification and the adoption of new crops such as oil palm, coffee, cocoa, tea, soya beans and groundnuts. Agricultural subsidies were used to encourage the growing of these crops and also fruit, coconuts, pepper and higher yielding rubber. Another subsidy scheme encouraged the growing of swamp *padi*; this aimed at giving higher yields and also a change from shifting to sedentary cultivation. A Freshwater Fisheries Scheme encouraged the making of fish-ponds; more intensive rearing of pigs and hens were also supported. Land development schemes were set up to grow high yielding cash crops, such as rubber and oil palm. Agricultural training was provided at Farmers' Training Centres and Farm Institutes. Extension work was carried out by Home Demonstrators and 4-H Clubs were organised in villages and schools.

In Papua New Guinea much agricultural extension work was concerned with encouraging the growing of new cash crops by indigenous farmers, especially coffee in the Highlands and oil palm in West New Britain. More recently, government policy has aimed at import replacement and making the country self-sufficient in food. Cattle projects have received a great deal of assistance and there has been more emphasis on increasing the production of fruit,

vegetables, rice and other food crops. The number of extension staff per thousand of the rural population is 0.76¹ which is high compared to many other less developed countries.

In both Sarawak and Papua New Guinea the agricultural development programmes should have been effective both in improving the quality of life in rural areas and in giving the school leavers opportunities to make farming more productive and profitable. In reality the programmes have had only limited success in either of these ways. Several of the problems have already been mentioned in this chapter in association with the difficulties faced by the school leaver when he returns to the village. The customary land tenure system also presents obstacles to development. The farmer may have no individual title to his land and in consequence no security of tenure if he wants to make improvements. Suitable land is often not available for new agricultural projects. Traditional farming methods often do not seem to provide the most effective form of land utilisation in terms of agricultural productivity or employment creation.

Other problems are often concerned with transport and marketing. There may be no local market for food crops. The price of export crops is subject to fluctuation which makes long-term planning difficult. For example, falls in the price of rubber had an adverse effect on land development schemes in Sarawak and a downward trend in copra prices made it difficult to repay loans under the plantation redistribution scheme in Papua New Guinea.

Limitations to rural development may involve the effectiveness of the

1. Papua New Guinea Government, *Programme and Performance 1976-7*, (Port Moresby: Papua New Guinea Printer, 1976), p.83. The statistics refer to the 1976-7 financial year.

extension and rural credit programmes. Staffing and transport problems often mean that more inaccessible areas are rarely visited. Only a limited number of the rural population seem to get the assistance that these programmes should provide.

Another difficulty often mentioned by the extension workers themselves is the lack of co-ordination between the different government departments involved in rural development. The schools, especially, seem to have few links with the rest of the development programme or, in many cases, with the communities they serve. If students were more involved in development activities while they were at school and were already working with extension agencies and in village projects, then the break that occurs when they leave school would not be so traumatic but would rather be part of an ongoing process enabling them to use their education in village life. In the following sections I will attempt to suggest ways by which this might be achieved.

How can the schools best be integrated into rural development?

In attempting to find answers to this question I shall examine some of the ways that the school can be more closely related to the rural community and I shall also be suggesting an organisational framework that would make the school an integral part of the development process. Some of my comments and proposals will be relevant to education at all levels, but I will be essentially concerned with the junior secondary school (or the upper levels of the middle school in some systems). This was the type of education that was being expanded most rapidly in Sarawak and Papua New Guinea. It is also the target of many countries in providing general education for all. The junior secondary school is also the most important stage in the preparation of students to return to the village. In contrast to the primary school leaver, they should be old enough to assume a more independent and self-sufficient role.

I have already discussed the most relevant forms of education to rural development in an earlier part of this chapter and the conclusion was that the function of the school at this level should be to continue to provide a general education rather than specific vocational training. There are still strong arguments for what can be regarded as the traditional constituents of the curriculum, both in terms of the way they can assist the student to develop his potentialities and in the preparation they can provide in helping him earn a living. In many cases, however, there is a need to make syllabi and teaching methods more relevant to the environment and the student's needs when he leaves school. For example, science should relate closely to agriculture and health problems; mathematics could use exercises on farm management and simple book-keeping for co-operative societies. The social sciences would provide a means of learning about the local environment and then progressing to find out more about the outside world. Language teaching should emphasise the importance of communication skills that are likely to be useful in the village, such as letters to extension or rural credit agencies. Creative arts teaching would provide a means of ensuring that local cultural activities and traditional crafts were not just preserved, but developed as a means of promoting a feeling of local identity. In all subject areas project work should be encouraged as a method of learning and using resources from the immediate environment. None of these suggestions are new and many feature in recent curriculum changes in less developed countries, nevertheless they need reiterating as ways general education can be made relevant to the needs of the school leaver who returns to the village.

In the same way there is nothing novel about the concept that parents and the local community should be more involved in the work of the school, but this often does not happen. It is of value to examine some of the methods by which this relationship can be achieved.

The work of the school should be explained to parents when they visit the school and can be displayed at Open Days. I have explained how "agricultural weeks" at Sarawak schools were used to show how farming could be made a profitable activity for students who returned to the villages.

Parents and community leaders should be well represented on governing bodies of the school. In Papua New Guinea this was done through a number of formal bodies such as boards of governors, parents and citizens' committees and district education boards. In Sarawak this did not happen in the case of government secondary schools, although Chinese schools often had strong and effective boards of management.

Schools can be centres for many activities for the surrounding district. They often have the only sports field in the area, and an assembly hall which can be used for social and recreational purposes. Other amenities possessed by the school may include a library and film projector. School facilities can also be used for adult education; literacy classes and home economics for women's groups were two activities of this type I initiated in Papua New Guinea.

Students should be encouraged to go out and help in the village. In Sarawak I started a community service group which would visit villages at week-ends and help with projects such as land clearing, digging pit latrines, improving roads and making fish ponds. Senior students would undertake longer periods of voluntary work. This was usually in their last term at school after they had completed the public examinations. They worked in local primary schools and also at the Hospital, Blind Centre and Salvation Army Homes in Kuching.

The school can also be a focus for cultural activities. Experience in

schools where I have been headmaster has shown the success of school orchestras and drama groups which have gone out and given performances in the villages.

The relationship between the village and the school should not only be one way. Local people should also be encouraged to give help and assistance to their schools. Older people can be asked to come and give instruction in traditional crafts and skills. I have found this type of teaching very effective in the case of basket-making in Sarawak and pottery in Papua New Guinea.

The amount of material and financial help the community gives to a school will often contribute to their feeling of identity with it. The *Harambee* schools in Kenya owed much of their success to the fact that they were set up and supported by the local communities. In many other countries local communities have helped in the building and maintenance of schools and teachers' houses. Financial contributions to the costs of tuition and boarding are generally made in the form of school fees, although fetes and other fund-raising activities can also provide means of local support and participation in school life. The local community should also be able to help in the feeding of students. For example, parents have generally provided rice for boarders in primary schools in Sarawak.

All links between the school and the local community should help the school leaver in the transition back to village life. However, they do not necessarily solve all the problems that have been discussed earlier in this chapter. They do not ensure that young people will be able to make full and effective use of their education. There is still the need to make the school an integral part of the development machinery.

In Sarawak the Budu scheme was probably the most successful example of the school playing a vital role in a community development project. Staff and students at the school were also involved in agriculture, the running of a co-operative store and the provision of medical services. Basic training was given in relevant technical skills. The co-operative society was responsible for the transport and sale of cash crops. The scheme was economically viable, the community was involved and the school was part of it. It produced educated young people who were able and prepared to take innovative roles in their societies.

A question that must be asked is "Can the Budu scheme be taken as a model for development in other areas or did its success depend on particular conditions and circumstances?" One important factor that must be considered is the type of leadership. The Budu scheme had been initiated by an expatriate with exceptional qualities; its expansion had also depended on the employment of overseas volunteers. These outside influences were important although local leadership was encouraged and the community was always fully involved in decision making. Committees of Progress were set up and some of the most promising students were selected for further training overseas. When Wilson was forced to leave Sarawak there was little doubt that the scheme lost much of its impetus. At this stage also the services provided by the scheme were being replaced by those administered by government departments under rural development schemes. This inevitably meant the loss of the close association between the school, community and development activities.

My own conclusion would be that although leadership, either local or from outside, is a necessary prerequisite for the success of a community development scheme, it is even more important that all major development and service activities are seen as integral parts of the scheme. This will provide the necessary co-ordination of activities and it will also ensure that

students are involved in rural development and will continue to be when they have left school. My recommendation would be that this might be achieved by the establishment of a development centre which would combine a school, workshop, agricultural extension centre, co-operative trading society and a medical aid centre. The relationship between these different branches is shown in matrix form in Figure 12 and the proposal is explained more fully in the following section.

The Development Centre

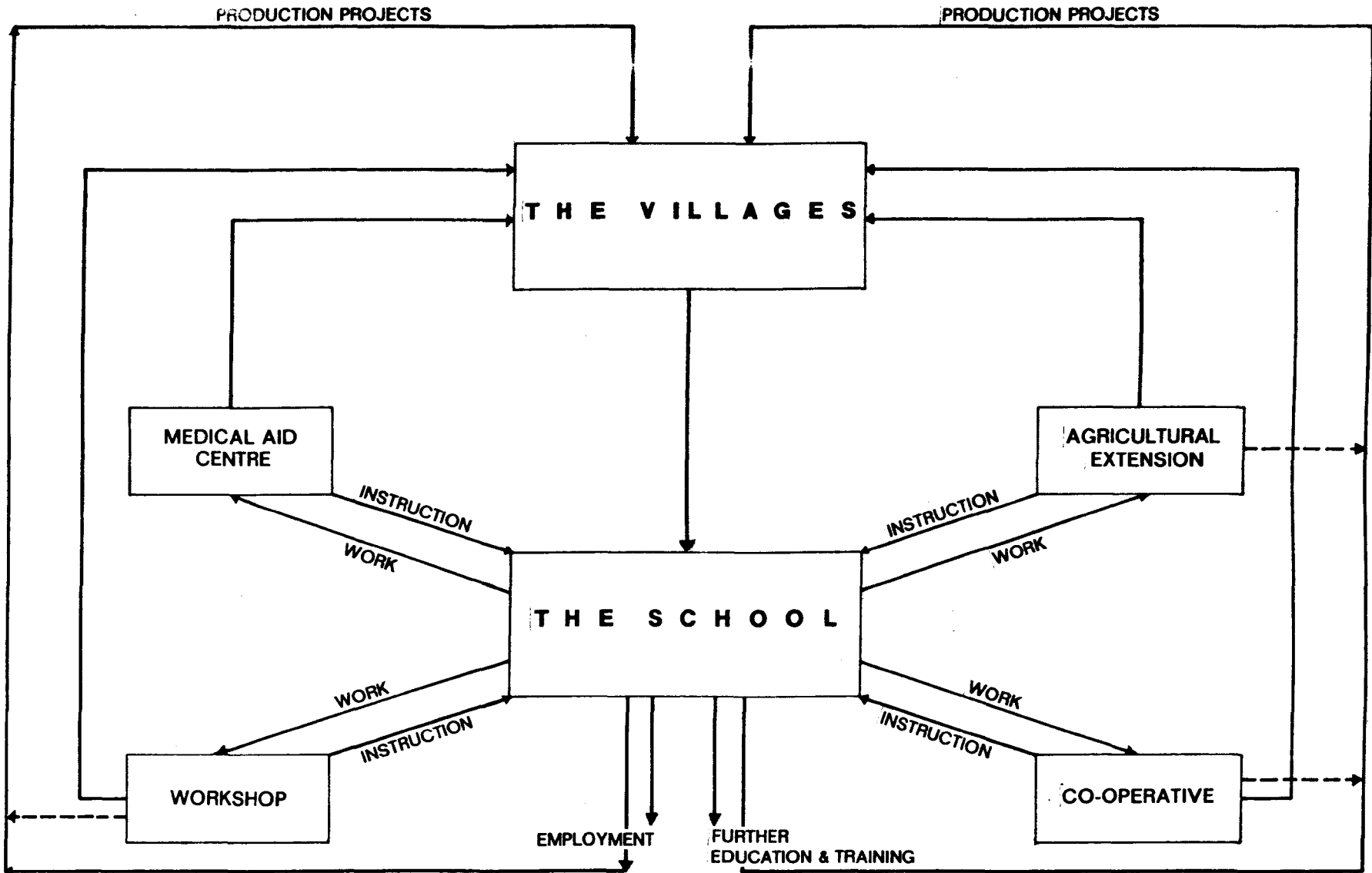
Figure 12 shows the school occupying a central position in the organisation and functioning of the development centre. It would teach a junior secondary course. In Sarawak this would be equivalent to Forms One to Three of the secondary course; in Papua New Guinea it would be Grades Seven to Ten; in some countries it would approximate to the senior part of a middle school course. It would provide education up to the basic minimum levels which are the goals of most governments in the less developed countries.

The principal function of the school would be to provide a general education, both for those returning to the village and for the smaller group who would later go elsewhere for further training and education. Its aims would be those suggested by Edgar Faure:

"The aim of education is to enable man to be himself, to 'become himself'. The aim of education in relation to employment and economic progress should be not so much to prepare young people and adults for a specific lifetime vocation, as to 'optimize' mobility among the professions and to afford a permanent stimulus to the desire to learn and to transform oneself".¹

1. E. Faure et al., *Learning To Be*, (Paris: Unesco, 1972), Preamble pp. xxxi - xxxii.

Fig.12; The Development Centre



The core subjects would be the traditional ones of the secondary school curriculum: Language, Mathematics, Science, Social Studies (or Geography and History) and Expressive Arts. In earlier parts of this thesis I have discussed how both teaching methods and the content of these subjects can be related to the rural environment and its needs.

In addition, each branch of the centre would provide instruction in its own field of operations. In some cases this could be directly related to subjects in the school curriculum. For example, instruction in health or agriculture would be closely associated with science. Mathematics would be seen to have direct relevance when applied to the working and accounts of a co-operative society. The organisation of the centre would provide what Castle has described as "the development situation in miniature".¹ It should provide a variety of opportunities for learning through activity and encourage a thematic and problem-solving approach to education.

The activities and character of the branches would depend very much on local conditions. Each would serve the centre and the surrounding area. Agricultural extension workers would also travel around giving assistance and advice to local farmers. If sufficient suitable land was available at the centre, a demonstration farm could be set up which would have both an educational function and help to make the centre self-sufficient in food.

The medical aid centre would be staffed by trained nurses and medical auxiliaries. It would provide treatment and dispense medicines to the inhabitants of the centre and nearby village. Emphasis would be on health education and the prevention of disease. It would combine with the workshop

1. E.B. Castle, *Education for Self-help: New Strategies for Developing Countries*, (London: Oxford University Press, 1972), Chapter 13, pp. 124-144.

branch in the provision of piped water and the installation of sanitary latrines in villages.

The role of the workshop would be important in providing services for other types of development. In addition to water supplies and sanitation, it could also be concerned with rural electrification using small generators or micro-hydro power plants. Maintenance of transport is a constant problem in rural areas, and an important function of the workshop would be the servicing and repair of road vehicles and also in some cases boat engines. The branch would be in a favourable position to initiate small-scale industries of the intermediate technology type.¹ These would use relatively simple methods and require little capital for machinery. Use would be made of local materials and production would be mainly for local consumption.

Much of the commercial life of the area would depend on the co-operative society. This would be multi-purpose combining several different functions such as retailing, marketing local products and providing rural credit.

While they were at school, students would do part-time work in each of the branches, providing labour and assistance. In his last year each student would have a period of full-time attachment to one of the branches. In many cases this could involve a project in the student's own home area which would be continued after he left school. Many of the projects would be agricultural, but they could also include commercial operations and small-scale industries. When students left school there would be no break with the

1. The concept of "appropriate" or "intermediate" technology owes its origin to Dr. E.F. Schumacher who emphasised the value of small scale production using a technology at a level between traditional methods and those of western-type mass production. His book, *Small is Beautiful*, (London: Blond and Briggs, 1973), provides a full exposition of this argument.

development centre, they would be encouraged to continue to take advantage of its services. It would continue to be a centre for ongoing education and should also be the focus of social, cultural and recreational activities in the area.

Co-ordination of the different activities of the development centre would present an obvious problem; there would be a need for a high level of co-operation and supervision. In the past, the co-ordination of the efforts of different government departments in extension and development work has been a major problem; the development centre would have the advantage of providing an institutional framework that would make it possible for the different branches to work together. For day to day administration there would be a co-ordinating committee consisting of the school headmaster and heads of the other branches. There would also be a broader advisory or governing body which would include representatives of the local people and the students.

Other problems that might be encountered would be in finding suitable staff for the different branches of the centre, especially in finding people with specialist technical knowledge who are also able to act as instructors and willing to work in rural areas. These staffing difficulties could be solved as the centres become established and some of the school leavers find employment in the branches.

Ideally all the activities of the development centre would be located close together. Certainly this should be the case for pilot schemes and when new buildings are necessary. Reasons of economy however, would mean that any wide-spread adoption of the scheme would involve the use of existing facilities. Many towns that act as district headquarters in less developed countries, certainly those in Sarawak and Papua New Guinea, already have a secondary school, a clinic, an agricultural department and a Public Works

Department workshop; these could be used but organised as one unit, with the school having a central role. In areas where government services are being provided for the first time, as in parts of the Highlands of Papua New Guinea, the development centre could be built as one complex; in these conditions it should be at its most effective.

Further Research

I have suggested the development centre as one type of model that might be investigated further. There are other similar schemes which need further examination in the search for solutions to the problem of the rural school leaver. One example that is just being initiated in Papua New Guinea is the "Secondary Schools Community Extension Project". This is still very much at the pilot stage and began with two schools in 1978, although three more will be included before 1981. Then if the scheme is considered successful it will be extended further to more schools.

Project schools will differ from others in that all students take a full four year secondary course in contrast to the present system where deselection occurs after Grade 8 and only 60 per cent continue to Grades 9 and 10. During these last two years of schooling, students will be involved in a number of external projects. It is hoped that most of these will be profit-making and that students may continue with them after they have left school. Activities that have been suggested include cattle ranching, pig rearing, vegetable growing, fishing, cocoa production, clothing manufacture, tobacco growing and crocodile farming. Other projects are likely to be of a community service type and would include village sports development, nutrition extension work, cultural activities and entertainment. Students will spend about a third of their time on project work. They will be taught the basic operations and skills needed for each project; these will include marketing and the keeping of financial records. Government extension workers will also

provide assistance and give instruction. Although the basic curriculum of the project school will be similar to other secondary schools, less time will be spent in the classroom and efforts will be made to relate teaching to the practical activities. Many schools will not have sufficient suitable land available for projects and will need assistance from the community and local authorities in finding suitable sites. It has been suggested that disused education centres, deserted plantations and unused government land might be used. These would be described as "satellite stations" and students would live on them for part of the year, working on projects and also continuing with their general education.

It is hoped that the "Secondary School Community Extension Project" will mean better oriented students who will be able to apply their knowledge to rural life. It is argued that there will be a close interchange of ideas and skills between children and parents, resulting in students being less alienated from village life. It is also hoped that eventually the schools and centres will become largely self-supporting, an important factor in estimating the cost-effectiveness of the scheme. In its pilot stage it is likely to prove expensive. Extra staff are being appointed for it, both in the schools and at headquarters level. There will be a need for additional teaching resources and materials. An additional K792,000 in funds has been allocated for the project for the four year period from 1978 to 1981.¹ At the end of this period a careful review of the operation of the pilot scheme and a follow-up of students after they have left school should prove an important field for further investigation.

Another important area for further research would be related to land

1. Papua New Guinea Government, *The National Public Expenditure Plan 1978-1981*, (Port Moresby: Government Printer, 1978), p.142.

tenure and land settlement schemes. In the course of my research I have become increasingly aware of the significance of land problems in rural development. The relationship between educational development and land reform is one that needs further exploration. In Papua New Guinea the types of development that are likely to be of importance are the redistribution of plantations, the registration of customary land and land settlement schemes based on nucleus estates. In Sarawak also, further research is needed into the records of school leavers who have joined land development schemes. Youth settlement schemes in particular need careful evaluation in determining their effectiveness in absorbing school leavers into a different system of agricultural organisation.

These topics have been suggested as possibly offering solutions to some of the problems outlined in this thesis. Earlier in the conclusion I have discussed the questions which seemed fundamental to an understanding of the predicament of educated youth in the rural areas of less developed countries. My two case studies have been based on countries where I have worked and had first-hand experience of education, training and rural development. In Sarawak no similar research had been done on school leavers and initially there was an official reluctance to admit that a problem existed. My research in the Bau and Baram districts provided information on the employment, activities and attitudes of school leavers in two contrasting areas. In the case of Papua New Guinea there had already been some research into problems of education, employment and migration. There was an awareness of the problem which was most clearly manifested in a concern with the effects of the movement of young people to urban areas. Solutions had been attempted but my research in rural areas indicated that they had been no more effective than those in Sarawak.

In my thesis I have been especially concerned with the first generation of school leavers who have had to return to their villages. For them and for

their parents it has been essentially a period of adjustment, one in which attitudes and expectations with regard to education have changed. In the future, similar investigations may show that school leavers will have a more defined status and a more important economic role in the villages. It will only be possible to fully evaluate the effects of their education when the school leavers themselves have become parents and mature members of the rural communities. As these societies change, it is possible that systems of general education will be seen to be more appropriate than they were in the transitional stage I have been describing. At this stage also, views on the aims and objectives of education should have become realistic and the schools themselves should have progressed further in their search for relevance.

APPENDIX A

QUESTIONNAIRE FOR SCHOOL LEAVERS IN THE VILLAGE, SARAWAK

- A. 1. Name Sex Age Race
2. Home address
3. Primary School Secondary School
4. Level to which educated Examination passed
5. Did you take Husbandry or Agricultural Science at School?
6. Did you belong to a 4-H Club or any other type of Agricultural Society?
.....
- B. 7. Do you help your family on their farm?
8. Do you farm for somebody else?
9. Do you farm by yourself?
10. Do you receive Wages Pocket Money
or a Direct Income from farming?
If so, give details of how much you receive a month on average:
.....
11. Do you receive income from any other type of employment?
If so, give details:
- C. 12. How many hours a week are you occupied in farming, on average?
.....
13. Which types of farming activity have you been engaged in during the
past year?
(a) Growing hill *padi* (d) Tapping rubber
- (b) Growing swamp *padi* (e) Growing vegetables
- (c) Growing pepper (f) Growing other crops.....
(give details)
14. Do you have a fish-pond?
15. Do you keep livestock?
- (a) Pigs (d) Hens
- (b) Cows (e) Ducks
- (c) Buffaloes (f) Any other animals
- (in each case, state how many at present)
- D. 16. Have you ever attended:
(a) A Farmers' Training Centre
- (b) A Farm Institute
- (c) Any other course organised by the Agricultural Department
-
17. Do you belong to a 4-H Club?

18. Do you belong to a Co-operative Society?
19. Do you ever read "The Farmers' Bulletin" or any other leaflets from the Agricultural Department?
20. Do you receive help and subsidies from the Agricultural Department under any of the following schemes:
 - (a) Rubber Planting Scheme A
 - (b) Rubber Planting Scheme B
 - (c) The Assistance to *Padi* Planters' Scheme
 - (d) The *Ulu* Pigs' Scheme
 - (e) The Freshwater Fisheries Scheme
 - (f) Any other scheme
- E. 21. Have you tried to make any changes in the type of farming in your home area? If so, give details
.....
Were your attempts successful? If not, give reasons:
- F. 22. If you could make a better living as a farmer in another district or division, would you be prepared to move there?
If not, give reasons:
23. Have you heard of land development schemes?
Would you like to live and work on a land development scheme?
.....
Would you like to live and work on a youth settlement scheme?
.....
Give reasons for your choice:
- G. 24. Do you keep any records or simple accounts of your farming?
- H. 25. How many years ago did you leave school?
Do you consider that your education has helped you in your work as a farmer? Give reasons for your answer:

APPENDIX B

QUESTIONNAIRE FOR SCHOOL LEAVERS IN THE VILLAGE, PAPUA NEW GUINEA

- A. 1. Name Sex Age
- 2. Village District
- 3. Primary School Secondary School
- 4. Highest level to which educated
- 5. Present occupation of father or guardian
- B. 6. What is your present occupation?
- 7. If you are farming, what type of activities are you engaged in?
Names of crops grown:
Types of livestock kept:
- 8. Do you help your family; work for somebody else;
have your own farm/business
- 9. Do you receive Wages Pocket Money or a
Direct Income from selling goods?
(In each case state your average cash earnings a week)
- 10. How many hours a week do you work on average?
- 11. Have you received a cash income from any other type of employment
during the last twelve months? If so, give details
- C. 12. Have you ever attended a Vocational Training Centre?
- If so, give details:
- 13. Have you ever taken an adult education course?
- If so, give details:
- 14. Have you received assistance from the Development Bank, D.A.S.F. or any
other government department?
- If so, give details:
- 15. Do you belong to a co-operative society?
- If so, give its name and any offices you have held:
- 16. Do you belong to any other club or organisation?
- If so, give details:
- D. 17. Have you tried to make any changes in the type of farming in your home
area or any improvements to your village?
- If so, give details:
- Were your attempts successful? If not, give reasons:
- E. 18. Do you keep any records or simple accounts of your farming activities?
.....

- F. 19. Would you prefer to live in a village or a town?
- 20. If you could make a better living as a farmer in another district, would you be prepared to move there?
If not, give reasons:
- G. 21. When did you leave school?
- 22. Do you think that your education has helped you in farming or life in the village? Give reasons for your answer:
.....
.....
- 23. Are you ever able to help people in your village by using the knowledge and skills you learnt at school (e.g. by writing letters, reading to them, explaining political developments and government information)? Explain in what ways:
.....
.....
Any additional information or comments:
.....
.....

APPENDIX C

STUDENT ASPIRATIONS AND JOB PREFERENCES IN SARAWAK

Any assessment of students' aspirations needs to strike a balance between the careers that students would ideally prefer and the expectations of the type of work they expect in reality. The first survey of job preferences that I carried out was in 1971. Students were asked to state the occupation they preferred; also to give reasons and their fathers' occupations. It was based on 189 junior secondary students from three schools: an urban co-educational government school, a rural co-educational government school and an urban private boys' school. This choice resulted in a survey with an urban bias and also one with a relatively high proportion of boys to girls (156:33); both factors which influenced the list of preferences.

The preferences are shown in Table 64. The two most popular choices were teaching and business; the latter a rather general term covering most forms of trading and a common choice with many of the private schools students who possibly felt that they were unlikely to gain the academic qualifications necessary for other professions. Doctors and engineers were high on the list, being occupations commanding high incomes and considerable social prestige. Nursing represented one of the main occupations open to girls. The fact that so many boys chose to be mechanics would appear to indicate that there is no resistance to this type of "blue collar" employment, although in some cases the students were probably doubtful about the distinction between this and engineering.

The reasons given for the occupational choices were often of an altruistic character; the desire to help other people or serve the country features in many of the answers. Often the knowledge and choice of jobs seem to have been influenced by the father's occupation or that of other relatives and friends. The most unusual answer was given by a boy who said he wanted to be a priest because "the world is getting more and more wicked each day and I want to be sure of going to heaven".

In 1972 I carried out another series of job preference tests with Form Five students from Marudi and Bau Government Secondary Schools. Twenty-six occupations were listed and students were asked to indicate their attitude towards each in one of five columns which indicated whether: they liked it very much; liked it; did not mind; disliked it; disliked it very much.¹

1. This was similar to the procedure used by J.H. Heijnen in his job preference tests carried out with Standard VIII pupils in Tanzania: *Development and Education in the Mwanza District*, op. cit.

Table 64

Occupational Choices of 189 Junior Secondary Students

Occupation	Incidence	Ranking
Teacher	18	1
Businessman	18	1
Engineer	15	3
Mechanic	15	3
Nurse	14	5
Doctor	13	6
Sailor	13	6
Clerk	12	8
Police	12	8
Farmer	12	8
Soldier	10	11
Scientist	4	12
Pilot	4	12
Carpenter	3	14
Driver	3	14
Shopkeeper	2	16
Hawker	2	16
Postman	2	16
Artist	2	16
Air Hostess	2	16
Agricultural Department	1	21
Tourist promotion	1	21
Journalist	1	21
Priest	1	21
Architect	1	21
Electrician	1	21
Dresser	1	21
District Officer	1	21
Salesman	1	21
M.S.A. ¹ staff	1	21
Shoeshine boy	1	21
Foreman	1	21
Civil Servant	1	21

1. M.S.A.: Malaysian Singapore Airlines.

Table 65

Main Reasons Given for Occupational Choices

Reasons	Incidence
Help other people; help country	28
Father's occupation	23
High income	17
Interesting work	16
Opportunities for travel	14
Relation's occupation	9
Friend's occupation	9
Good position and prestige	5
Opportunities to learn more	5

When making my analysis these choices were then scored from five to one. Then when the average mark was worked out it was possible to rank the occupations in order of preference for the whole group.

In the case of Marudi the group consisted of Chinese, Kenyah, Kelabit, Kayan, Malay and Iban students. The Bau students were Land Dayak, Chinese and Malay. Their preferences can be seen in Tables 66 and 67. These show that professional and administrative occupations were the most popular. It is interesting to note the high rating of the post of agricultural officer, especially among indigenous students. There appear to be some anomalies in that in the Marudi tests, doctors and engineers do not score very highly; my impression is that in these cases the qualifications and the long periods of study required were recognised by students as putting these professions beyond their reach.

The girls' preferences were influenced by the fact that at present their range of occupational choice is more limited than that of the boys. In my analysis I selected sixteen of the occupations which I knew were performed by girls. The preferences, with nursing proving the most popular at both schools, also seemed to have been influenced by their familiarity with certain jobs as being particularly suitable for girls.

In separate questions the students were also asked to indicate which particular job they liked most of all and which they liked least, giving reasons in each case. Again agricultural officer and nursing were the most popular;

Table 66
Job Preferences of Form Five Students at Marudi Government
Secondary School, 1972

Boys			Girls		
Occupation	Score	Ranking	Occupation	Score	Ranking
Agricultural Officer	4.6	1	Nurse	4.5	1
Administrative Officer	4.4	2	Clerk	4.4	2
Teacher	4.2	3	Teacher	4.3	3
Lawyer	4.2	3	Typist	4.1	4
Accountant	3.9	5	Lawyer	3.9	5
Engineer	3.7	6	Accountant	3.6	6
Mechanic	3.7	7	Doctor	3.4	7
Doctor	3.5	8	Policewoman	3.4	7
Clerk	3.4	9	Post Office worker	3.1	9
Draughtsman	3.3	10	Draughtsman	2.8	10
Dresser ¹	3.2	11	Cook	2.8	10
Farmer	3.2	11	Farmer	2.5	12
Businessman	3.1	13	Shopkeeper	2.3	13
Post Office worker	3.1	13	Factory worker	2.3	13
Factory worker	2.9	15	Salesgirl	2.0	15
Driver	2.9	16	Labourer	1.7	16
Typist	2.6	17			
Salesman	2.5	18			
Shopkeeper	2.5	18			
Policeman	2.4	20			
Soldier	2.4	20			
Sailor	2.4	20			
Carpenter	2.3	23			
Labourer	2.1	24			
Fisherman	1.9	25			
Cook	1.9	25			

1. Dresser: Medical Assistant.

Table 67

Job Preferences of Form Five Students at Bau Government
Secondary School, 1972

Boys			Girls		
Occupation	Score	Ranking	Occupation	Score	Ranking
Engineer	4.4	1	Nurse	4.5	1
Agricultural Officer	4.2	2	Typist	4.3	2
Administrative Officer	4.0	3	Clerk	3.8	3
Doctor	3.9	4	Post Office worker	3.7	4
Teacher	3.9	4	Teacher	3.6	5
Accountant	3.8	6	Doctor	3.6	5
Lawyer	3.7	7	Accountant	3.4	7
Dresser	3.7	7	Lawyer	3.3	8
Clerk	3.6	9	Policewoman	2.8	9
Policeman	3.6	9	Factory worker	2.7	10
Typist	3.2	11	Draughtsman	2.6	11
Mechanic	3.1	12	Cook	2.6	11
Draughtsman	3.0	13	Shopkeeper	2.6	11
Post Office worker	3.0	13	Farmer	2.2	14
Sailor	3.0	13	Salesgirl	2.1	15
Businessman	2.9	16	Labourer	2.1	15
Salesman	2.7	17			
Driver	2.7	17			
Shopkeeper	2.7	17			
Factory worker	2.6	20			
Farmer	2.5	21			
Cook	2.2	22			
Carpenter	2.1	23			
Soldier	2.1	23			
Fisherman	1.8	25			
Labourer	1.8	25			

most of the reasons emphasised the importance of the work and the need to help other people. There was a wider range of jobs which were disliked most, but labouring was mentioned most frequently. The reasons given often made interesting reading. Labouring was unpopular because of the hard and dull nature of the work, also because it meant being employed by other people. Being a businessman was disliked because "it did nothing for the country". The army was disliked because "death might come at any moment". The reasons against farming were often based on the fact that it gave no fixed income.

The final question was based on job expectations: "What job, not necessarily from the list above, do you expect to do when you leave school?" Again there was a wide range of answers but teaching, clerical work and farming were most often mentioned. The attitude of many students was expressed by the comment: "I will take any job that I come across".

Job Preference Test used with Form Five Students at Bau and Marudi Schools

Job Preferences

<u>Job</u>	<u>Like it</u> <u>very much</u>	<u>Like it</u>	<u>Do not</u> <u>mind</u>	<u>Dislike it</u>	<u>Dislike it</u> <u>very much</u>
Accountant					
Agricultural Officer					
Businessman					
Carpenter					
Clerk					
Cook					
Doctor					
Draughtsman					
Driver					
Engineer					
Factory Worker					
Farmer					
Fisherman					
Labourer					
Lawyer					
Mechanic					
Nurse/Medical Assistant					
Policeman					
Post Office Worker					
Sailor					
Salesman					
Administrative Officer					
Shopkeeper					
Soldier					
Teacher					
Typist					

Which of these jobs do you like best of all?

Give reasons:

.....

Which of these jobs do you like least of all?

Give reasons:

.....

What job, not necessarily from the list above, do you expect to do when you
leave school?

Name Age Sex Race

Home Address

APPENDIX D

THE PUJUT LOPENG YOUTH SETTLEMENT SCHEME, SARAWAK

Section 1, Department of Agriculture Guidelines¹

Objectives

1. To create employment opportunities in farming for unemployed youth.
2. To farm as a viable economic unit using advanced techniques and scientific methods.
3. To assist keen Farm Institute trainees to start farming on a firm footing and achieve an efficient farming business.

The Location

The Pujut Lopeng area lies on the eastern side of the town of Miri behind Canada Hill and five miles from the town centre. The area is approximately 1,400 acres and consists of grassland and secondary jungle. Part of it is deep peat; an area of 1,120 acres is considered suitable for youth settlement purposes. The Department of Drainage and Irrigation is responsible for drainage and irrigation work in the area.

Eligibility to join the scheme

Only graduates from Farm Institutes are eligible to participate in the scheme. Twenty graduates will be selected each year. They should be:

- (a) eighteen to twenty-five years old;
- (b) have secondary education up to at least Form Three level;
- (c) be unmarried and willing to give an assurance that they will not marry during the first three years of settlement;
- (d) used to outdoor life;
- (e) willing to live and work together communally.

Pre-Settlement Land Preparation

Provisionally selected settlers will begin to undertake practical work well in advance of settlement. They will work the area for vegetables and home livestock, living on a communal basis temporarily until they move into the area after graduation. The produce from this communal garden will serve for immediate needs when the settlers commence settlement.

1. The first section of this appendix is an extract from "Development Guidelines on Youth Settlement Schemes", (Kuching: Department of Agriculture Mimeo, 1972).

Communal Settlement Period

On completion of the one year course at Kabuloh Farm Institute, selected graduates are expected to move into the area and begin development of the area. Selected graduates will sign an agreement form concerning the scheme prior to entry into the scheme.

Before commencing the ground work, the Block allocated for housing/ short-term cash crops and the APPS¹ Block will be divided and pegged into numbered lots of twenty lots per block. The *padi* block is divided into three acre lots and the housing and short-term cash crops block into 1/3 acre lots.

When the settlers move into the area, they will be allocated their *padi* lots and housing and short-term cash crops lots so that each settler can work on his own lot. The lot will automatically become his own property when a land title is issued to him. Although settlers work individually on their own lots they must work in groups for the major work involving the smooth implementation of the agricultural development scheme.

The coconut block will not be divided into lots of ten acres each until the coconut seedlings are all planted and established. Once the coconut block is established, the area will be divided and pegged into ten acre lots for each individual settler. All work involving the establishment of the coconut plantation will be done on a communal basis until the lots are allocated, and then each settler will be responsible for maintenance of his particular lot.

Land titles will be issued to individual settlers when the permanent crops are suitably established, which may be in the second or third year depending on the progress shown by the individual settler. A panel will be formed to assess the eligibility of the individual settler to receive a land title.

Settlers will receive subsidies under the Assistance to *Padi* Planters' Scheme and Coconut Planting Schemes.

Settlers will be accommodated in communal buildings consisting of a dormitory with reading room, a dinning hall/assembly/kitchen, one bath unit with

1. Assistance to *Padi* Planters' Scheme.

latrines, a store/tool/shed/garage. A 4-door barracks will also be constructed for the staff.

A cook will be employed to cook for the settlers while they live communally. A Mess Subcommittee will be responsible for collecting ration funds from individual settler. The subcommittee will be responsible for planning food rations for the day or month in order to have a balanced diet.

Hand tools and agricultural equipment will be issued to the settlers as recoverable assistance in the first instance and these may be withdrawn if the settlers indicate a desire to leave the scheme. The equipment includes water pumps (diesel 3"), monkey winch, two chain saws, a tractor, sprayer, *padi* thresher and land rover. Working clothes and kitchen equipment will also be supplied under recoverable assistance.

A land rover driver will be employed for the group. He will be responsible for the vehicle up-keep and daily use record. The husbandry subcommittee will be responsible for recording the communal equipment inventory.

Settlers will be entitled to a maintenance allowance from the government of \$50.00 a month, interest free, for the first three years of settlement. This recoverable assistance will only be given at the request of the individual settler. The maintenance allowance can be terminated earlier at the request of the settlers, thus reducing the amount to be repaid.

Individual Settlement

When a land title has been issued to the individual settler, the settlers who wish may avail themselves of the credit facilities offered by the Sarawak Development Finance Corporation for a housing loan.

The hand tools will become the property of the individual and the agricultural equipment will become the property of the group and come under the charge of the co-operative.

Repayment of Outlay

Settlers will be expected to repay most of the financial outlay except staff wages, agricultural development scheme costs and temporary accommodation costs. The recoverable assistance is free of interest and is repayable in monthly instalments of not less than \$50.00.

The youth settlement method of becoming established in farming

There are several methods of becoming established in farming. In the scheme we have chosen one approach which is considered more appropriate for our conditions. The Government has kindly provided financial assistance to assist in the initial establishment of the farm business while the settlers earn sufficient funds to maintain themselves and at the same time accumulate capital for the eventual establishment of their own farm business.

One may query, what is our procedure in achieving an established farm?

Basically, a farmer can begin by growing the food crops and short-term cash crops. The aim is to be self-sufficient in food and provide a small income to build up the production incentive in the farmer. The income from the short-term cash crops is a small amount. However, if the farmer is determined to save his money, he can build up his capital accumulation from which he can expand his farm.

While establishing the short-term cash crops and food crops, the farmer can begin work on his major cash crops or livestock. He must try and allocate his labour time proportionately according to the importance of the crops and their return.

The major cash crops take a long time before they come to production. For example, coconut takes 8 to 10 years for full production of nuts. Thus, income from the crop only becomes available from that time in the future. Until such time, the farmer is wholly dependent on his subsidiary crops for his immediate income.

When the major crops have been established and come to production, the job is not over by any means, the farmer needs to operate the business efficiently. He has to manage to maintain the farm. He needs to study the market price, improve his marketing systems and keep records of his activities (or input/output) for farm management analysis. The more efficiently the farmer operates, the higher his return and more stable his income.

The following section outlines the plans and programmes for establishment.

Plans and Programmes

The following are the main enterprises to be undertaken at Pujut Lopeng Y.S.S.

<u>Enterprises</u>	<u>Approximate Size (acreage)</u>	<u>Time of the year</u>
Vegetables	½ acre (communal basis)	May-July/August
Short term crops (2 acres allocation)		
a) groundnuts	acreage depends on market demand	May-September October-February
b) maize		
c) ginger		
d) chilli etc.		
<i>Padi</i> (wet)	3 acres per settler	August-February
Coconut (10 acres allocation)	5 acres per settler in the 1st year and another 5 acres in 2nd year	All months
Poultry	2 dozen (communal basis) initially	March and all months

A PLAN OF WORK FOR THE PERIOD OF MAY 1972 - 1973

Month of May

- 1) Vegetable - Land preparation Block 1 1st week. Planting 2nd week.
- 2) Short-term cash crops - Land preparation 2nd week. Planting 3rd week.

Month of June

- 1) Maintenance of vegetables - Land preparation for Block 2 and short-term cash crop.
- 2) Continue with short-term cash crop.

Month of July

- 1) Vegetables harvested in Block 1, maintenance of Block 2 and land preparation for Block 3.
- 2) Maintenance of short-term cash crops.
- 3) *Padi* - Land preparation for planting *padi* 3rd and 4th week.

Month of August

- 1) *Padi* nursery 1st week.
- 2) Harvesting of short-term cash crops.
- 3) Transplanting of *padi* 4th week.
- 4) Land preparation for coconut commence if labour is available.
- 5) Vegetables harvested in Block 2 and maintenance Block 3.

Month of September

- 1) Harvesting of short-term cash crop.
- 2) Vegetables - Harvesting Block 3.
- 3) *Padi* - Continue transplanting in 1st week.
- 4) Coconut - Land preparation for coconut.

Month of October

- 1) Land preparation for short-term cash crop e.g. maize, livestock or vegetables (depending on individual choice).
- 2) *Padi* - Pest control, weeding and manuring.
- 3) Livestock bought.
- 4) Coconut - Continue with land preparation.

Month of November

- 1) Weeding of *padi* 2nd week and manuring.
- 2) Coconut - Land preparation continues.
- 3) Continue with maintenance of short-term cash crop or livestock or vegetables by particular individual.

Month of December

- 1) *Padi* - pest control etc.
- 2) Coconut - Land preparation continues.
- 3) Livestock sold & purchase of new batch of chicks for concerned.
- 4) Maintenance of vegetables or short-term cash crops e.g. Maize.

Month of January

- 1) Harvesting short-term cash crops e.g. Maize or vegetables.
- 2) *Padi* maintenance - weeding and pest control.
- 3) Maintenance of short-term cash crops.
- 4) Coconut - application for another 3 acres CPS. Land preparation continues.

Month of February

- 1) *Padi* maintenance.
- 2) Livestock sold and purchase of new batch of chicks.
- 3) Harvesting short-term cash crops e.g. maize and vegetables.
- 4) Coconut - Land preparation continues.

Month of March

- 1) Harvesting *padi* or maintenance of either vegetables, groundnuts or livestock.
- 2) Coconut - Land preparation continues if labour is available.

Month of April

- 1) Continue with maintenance of either vegetables, groundnuts or sale of livestock and purchase of a new batch of chicks.
- 2) Coconut transplanting commences. If labour available land preparation for another 3 acres CPS commences.
- 3) *Padi* storing.

Section 2, Cost Estimates for Pujut Lopeng Youth Settlement Scheme¹

Estimated Costs for one Batch of 20 Settlers

Item A.	<u>Building</u>		
	Communal Dormitory for 20	\$ 18,000	
	Dining Hall/Assembly Room/Kitchen	14,400	
	Bath Unit with latrines	5,400	
	Store/Tool shed/garage	5,000	
	4-Door Barrack (1st year only)	30,000*	
	Furniture etc.	4,500	
	Wiring for electricity	1,500	
	Piping for water	1,650	
	Electricity Main	<u>60,000*</u>	
		<u>\$140,450</u>	** \$140,450
Item B.	<u>Contract Work</u>		
	Bulldozer work, fish-ponds etc.		\$ 6,000
Item C.	<u>Tools & Equipment</u>		
	20 sets of hand tools at \$100/-each	\$ 2,000	
	Kitchen equipment	500	
	Working clothes	500	
	Water pump diesel	1,500	
	Monkey winch	1,500	
	2 chain saw 24"	2,200	
	Pedestrian tractor	2,384	
	Land Rover	10,000	
	Motoblo sprayer	475	
	<i>Padi</i> thresher	<u>1,600</u>	
		<u>\$ 29,659</u>	\$ 29,659
Item D.	<u>Planting Materials, seeds, pesticides</u>		
	Coconut Planting Scheme		
	Assistance to <i>Padi</i> Planter Scheme		
	Agricultural Diversification Scheme		
	Other planting materials, fertilizer		
	livestock costs at \$1,000/- per trainee		\$ 20,000

1. These figures were supplied by the Department of Agriculture, Miri, 1972.

Item E. <u>Wages and Maintenance Loan (excluding Agric. Dept. Staff)</u>		
Driver for Land Rover at \$5/- per day + overtime for 1 year	2,000/-**	
Trainees maintenance loan at \$50/- per month for 3 years	36,000/-	
Cook at \$5/- per day + O.T.	2,000/-**	
One Labourer at \$4/- per day + O.T.	1,600/-**	\$ 41,600

Item F. <u>Fuel etc.</u>		
Petrol for Land Rover)		
Pump)	
Tractor) at \$500 per month	\$ 6,000
Chain Saw)	
Generator)	

Item G. Survey Fees & Titles at \$100/- per holding		\$ 2,000
---	--	----------

Total	\$245,709
-------	-----------

* once only	Not deductible from settlers	\$146,050
** not deductible from settlers	Deductible from settlers	99,659
	Amount deductible per settler	4,982.95

The amount deductible per settler will be \$4,982.95.

Thus the cost to Government in the first year will be \$245,709/- of which \$99,659/- will be recoverable interest free from the settlers, and in the subsequent years \$155,709/- of which \$99,659/- will be recoverable interest free from the settlers.

Estimated Cost of Settling 70 Youths in Pujut Lopeng

<u>Year</u>	<u>No. Settlers</u>		<u>Estimated Cost</u>
Year 1	20		\$245,709/-
Year 2	20	(\$245,709 - \$90,000) =	\$155,709/-
Year 3	20	(\$245,709 - \$90,000) =	\$155,709/-
Year 4	10	(½ of \$155,709/-) =	\$ 77,854/-
Total:	70		\$634,981

Costs Breakdown by Years for Pujut Lopeng Youth Settlement Scheme

<u>Item</u>	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>Total</u>
A. Building	*93,650	*46,800	-	-	-	*140,450/-
B. Contract Work	-	6,000	-	-	-	6,000/-
C. Tools & Equipment	2,000	27,659	-	-	-	29,659/-
D. Planting Materials, Seeds, Pesticides	-	5,000	15,000	-	-	20,000/-
E. Wages & Maintenance Loan	-	8,800	14,800	12,000	6,000	41,600/-
F. Fuel etc.	-	3,000	3,000	-	-	6,000/-
G. Survey Fees	-	-	2,000	-	-	2,000/-
Total:	95,650	97,259	34,800	12,000	6,000	245,709/-

* This includes expenditure of \$60,000 for construction of 4-Door Barrack and Electricity main which will be required for first batch of settlers only. Financial requirements for subsequent batches of settlers are 1st year \$33,650/-, 2nd year \$16,800/-, Total \$50,450/-.

Section 3, Recent Development¹

Tallpon: 54111
(Telephone)
Kawat: PERTANIAN, KUCHING
(Telegram)
Bil. Kita: DA.2746/(133)
(Our Ref.)
Bil. Tuan:
(Your Ref.)

JABATAN PERTANIAN,
(DEPARTMENT OF AGRICULTURE),
KUCHING, SARAWAK.

26th February 1979.

Mr. Peter Eaton,
Senior Lecturer in Land Administration,
P.O. Box 1216,
Boroko,
Papua New Guinea.

Dear Sir,

We acknowledge receipt of your letter dated 6th February, 1979 requesting information on the development of our Pujut Lopeng Youth Settlement Scheme.

Up-to-date, we have no other new scheme except continuing to develop the present one which is a pilot project of this nature in the state. There are now thirty two youth settlers in the scheme taken in three separate exercises in 1972, 1974 and 1976 respectively. We still have room for twenty eight more settlers whom we hope to take in this year and in 1980.

The present settlers in the scheme are settling down in their own individual houses and continuing to develop and improve their individual land lots allocated to them. The coconuts planted by the earlier group of settlers are growing at last after several attempts.

We still have difficulty with buffalo disturbance on the crops; which also affect the drainage system in the area resulting in slow land consolidation and improvement for crop growing.

We hope that the above information is of use to you.

Yours sincerely,

(Joseph Kong Ted Chong)
Director of Agriculture,
Sarawak.

1. Personal communication from the Director of Agriculture, 1979.

APPENDIX E

THE SECONDARY SCHOOL COMMUNITY EXTENSION PROJECT, PAPUA NEW GUINEA

Department of Education Submission

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SUMMARY STATEMENT OF THE OBJECTIVES, ASSUMPTIONS, AND OPERATION OF THE
SECONDARY SCHOOL COMMUNITY EXTENSION PROJECT - AN NPEP¹ SUBMISSION

I. OBJECTIVES

- A. The Secondary School Extension Project shares the objectives of the National Development Strategy:
1. "The National Development Strategy calls for a high proportion of the nation's resources to be directed to rural areas." (p.1)
 2. "The strategy aims to reduce the present uneven distribution of incomes by efforts to generate income-earning opportunities in all rural areas." (p.17)
 3. "The main objective of the strategy to develop rural areas will be to ensure that people have a chance to improve their well-being through their own efforts, and in their own areas." (p.23)
 4. "Strong links are required to allow skills acquired at school to be applied directly to village situations." (p.23)
 5. "Particular emphasis will be placed on effective education and training for the most important skills required for rural development" (p.29)
- B. SSCEP aims to put increased resources into selected rural communities over the next four years in order to construct a model of more relevant secondary education which better prepares students to remain in the rural sector and generate meaningful work in the village.
- C. SSCEP is a pilot project to identify practical procedures. It should have national relevance for the re-orienting of secondary education.
- D. The objectives of SSCEP are those of integrated rural development: to afford learning opportunities appropriate to rural populations.
- E. SSCEP focuses on secondary school populations in a manner which places

1. NPEP: National Public Expenditure Plan.

new importance on non-formal alternatives and the sharing of educational resources in direct working relationships with the surrounding communities.

F. Relationship to Departmental Objectives

1. The Department of Education is vitally concerned with the effective implementation of the published policy on rural and agricultural bias of the formal school system.
2. However the preconditions of acceptance of curricula change most often depend on socio-economic incentives which are seldom within the control of the Ministry of Education.
3. The objective of meeting the formal commitments to school-age populations is rapidly becoming tied to the less formal techniques of adult education, life-long education.
4. The Department of Education is, of course, concerned with maintaining the quality of present educational efforts as well as increasing the equity, i.e. increasing enrolments. There is great political pressure for expanding formal education.
5. It is in this context - of the necessity for turning to less formal methods of learning and the constraints of maintaining the formal system, and indeed expanding it - that SSCEP is endorsed as the most logical course of action at this time.
6. The Department of Education puts strong emphasis on determining acceptable policies to more efficiently meet the learning needs of rural populations.
7. Part of this emphasis is curative - to find alternative methods of education which lessen present social problems - and part is preventive. SSCEP initially restricts its influence to a relatively small target population, but the long-range curative and preventive effects should be significant.
8. SSCEP is designed to meet departmental objectives. It has been initiated by the Secondary Division and has received co-operation from the Policy and Planning Division and all senior Department of Education officers.

- G. SSCEP proposes to establish programmes of locally-directed secondary education in five high schools which have the greatest potential in five different provinces for realising the integration of academic abilities with community needs.

- H. SSCEP will employ specialised staff on the national level to co-ordinate the pilot project's implementation and innovations in educational materials, methodology and assessment; each of the five high schools will require the full-time employment of a highly-qualified school co-ordinator to ensure that the best staff may be posted to the project school and that the extension activities are fully supported by local communities.
- I. Common features of all SSCEP schools include:
1. One year of preparation. Two high schools to lay the foundation for a full extension programme operational in 1979; another three schools in 1979 prepare for 1980.
 2. A full four-year education for all high school entrants. This allows a continuous exposure, increasing in rural relevance. Block-release of three to eight weeks for practical learning projects in "satellite stations" permits more efficient use of existing buildings and staff.
 3. Modification of curricula to integrate the practical work of the students with formal lessons. Feasibility studies of correspondence, self-directed, and programmed learning strategies to complement in-class approaches to learning.
 4. New assessment procedures which serve to reward the students most able to apply knowledge to the needs of their community.

II. ASSUMPTIONS

Educational Change for Rural Development: Four Major Assumptions and a Conclusion

- A. Change cannot be imposed.
1. It must be "homegrown."
 2. People will only accept what they see to be of value to them.
 3. People must take part in deciding what changes they will accept, or even tolerate for a short time.
- B. The present educational system reflects social values.
1. Parental and community attitudes reinforce the type of education supplied by the government.
 2. Teachers and educational administrators have as many self-justifying attitudes about the purpose of schools as do parents who send their children to school hopeful of their child's

promotion out to a better life, with the prospect of sending back some money.

3. High school selection procedures and the exam-mentality for promotion to tertiary education reinforce the irrelevancies of earning diplomas. At the same time, they undermine traditional culture, necessarily devalue subsistence agriculture, and thus further alienate the generations.
 4. It is naive to think attitudes will change quickly. It will take many years for people to change their perception of school as supplying a lottery ticket for urban employment and material wealth.
 5. The village must be a better place to live before the educational bias towards the village will have much meaning to parents and students.
 6. Vocational Centres have for the most part failed to retain graduates in the rural sector.
 7. There is increasing political pressure for expanding the formal educational system.
 8. The unmet expectations for salaried employment should rise dramatically in the near future.
- C. Education should be tailored to the nation's learning needs.
1. "Learning" should be emphasised more than "teaching" or "schooling."
 2. Each student (and every person) should be given the opportunity to learn the minimum set of relevant competencies to enable him to have a productive life in the village.
 3. Large segments of the nation's population are presently neglected by the educational system.
 4. At the same time, education for high-level manpower needs must not be discounted.
- D. The alternative to revolution in formal education is evolution.
1. A sudden or nation-wide change is both impossible from a logistical point of view and ill-advised because of the complexity of factors. Large-scale mistakes cannot be afforded.
 2. What is needed is a pattern of successful adaptation which may be variously interpreted by all secondary schools.

3. If the emphasis on agricultural and practical skills is to have any lasting effect, it must be given special priority in the upper grades of secondary education. Programmes in primary or early secondary education are greatly frustrated or else totally ineffectual because of the students' lack of maturity and the impossibility of establishing realistic future employment prospects. Students must be able to do the work and understand its importance for them.
4. It is not enough to change curricula. This has been tried.
5. Rural education cannot be separate from the work of all government extension agents. There need to be examples of how secondary institutions naturally weave the numerous agricultural, health, nutrition, business, market and transport initiatives into the fundamental tasks of providing literacy, numeracy and attitudes of problem-solving.
6. Assessment procedures must be changed in a basic way, so as to re-structure institutional rewards to encourage the application of academic knowledge to reach practical solutions to immediate rural problems.

Conclusion: There is a need to gain experience in evolving a secondary rural education for the nation by beginning a pilot project which may be sequentially implemented, closely monitored, and have the benefit of adequate support from the community, provincial government, and national headquarters.

III. OPERATION

There are three levels of activity within the Secondary School Community Extension Project.

National: Division of Secondary Education, Supt. Operations

- . Departmental co-ordination of all divisions affected.
- . Establishment of advisory committees on curricula, methodology, assessments.
- . Maintenance of standards.
- . Trouble-shooting the inevitable difficulties of a pilot project: e.g., staff inspection and promotion in pilot schools, ensuring equal opportunity for students from pilot schools to progress to tertiary education with comparable academic preparation, promoting inter-departmental liaison, flow of information within the department from the schools.

Provincial: Project Co-ordinator, Prov. Supt. of Education, Provincial Education Board, Provincial Government.

- . Approval of projects and policies, regular advice sought by National Co-ordinator of all provincial authorities.
- . Financial support supplied by province, in consultation.
- . Facilitating the SSCEP school programme, e.g. clearing staff appointments expeditiously, promoting good community relations through positive publicity, continued interest and moral support.

School: Project Co-ordinator, School Co-ordinator, Administration and Staff, Students, Community, All Government Extension Workers.

- . Education of staff: in-service courses, workshops.
- . Planning: assessment of resources, needs; deciding strategy.
- . Writing of Materials: locally-based curriculum in conjunction with national syllabus requirements.
- . Designing New Assessment Procedures: e.g. workshop assessments, peer-assessment, self-assessment; gradual implementation.
- . Timetabling Block-Release Periods: identification of most promising projects for satellite stations; logistical support systems, e.g. transport, housing, supervision.
- . Continuous Assessment: school co-ordinator responsible to national co-ordinator, regular documentation of developments.

SELECTED BIBLIOGRAPHY

General

- Adams, D. and Bjork, R.M., *Education in Developing Areas*, New York: David McKay, 1969.
- Ahamed, B. and Blaug, M., *The Practice of Manpower Forecasting*, San Francisco: Jersey-Bass Inc., 1973.
- Anderson, C.A. and Bowman, M.J., eds., *Education and Economic Development*, Chicago: Aldine Publishing Co., 1965.
- Axin, G.H. and Thorat, S., *Modernising World Agriculture*, New York: Praeger, 1972.
- Batten, T.R., *Communities and their Development*, London: Oxford University Press, 1957.
- Becker, G.S., *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, Princeton: Princeton University Press, 1964.
- Beeby, C.E., *The Quality of Education in Developing Countries*, Cambridge (Mass.): Harvard University Press, 1966.
- Blaug, M., *An Introduction to the Economics of Education*, London: Allen Lane Penguin Press, 1970.
- Brownstein, L., *Education and Development in Rural Kenya: A Study of Primary School Graduates*, New York: Praeger, 1972.
- Callaway, A., *Educational Planning and Unemployed Youth*, Paris: Unesco International Institute for Educational Planning, 1971.
- Callaway, A., "Unemployment among School Leavers in an African City", *Manpower Aspects of Educational Planning*, Paris: Unesco I.I.E.P., 1968.
- Castle, E.B., *Education for Self-help: New Strategies for Developing Countries*, London: Oxford University Press, 1977.
- Chambers, R., *Settlement Schemes in Tropical Africa*, London: Routledge and Kegan Paul, 1969.
- Coombs, P.H., *The World Educational Crisis: A Systems Analysis*, New York: Oxford University Press, 1968.
- Coombs, P.H. and Ahmed, M., *Attacking Rural Poverty: How Non-Formal Education Can Help*, Baltimore: John Hopkins University Press, 1974.
- Curle, A., *Educational Strategy for Developing Societies; A Study of Educational and Social Factors in Relation to Economic Growth*, London: Tavistock, 1963.

- Denison, E.F., "Measuring the Contribution of Education to Economic Growth" in *The Residual Factor and Economic Growth*, Paris: OECD, 1964.
- Dore, R., *The Diploma Disease: Education, Qualifications and Development*, London: George Allen and Unwin, 1976.
- Dorner, P., *Land Reform and Economic Development*, London: Penguin Books, 1972.
- Dumont, R., *False Start in Africa*, London: Andrew Deutsch, 1966.
- Faure, E. et al., *Learning to Be: The World of Education Today and Tomorrow*, Paris: Unesco, 1972.
- Foster, P.J., *Education and Social Change in Ghana*, Chicago: University of Chicago Press, 1965.
- Foster, P.J. and Sheffield, J. eds., *Education and Rural Development*, London: Evan Brothers, 1973.
- Foster, P.J., "The Vocational School Fallacy in Development Planning", Anderson and Bowman eds., *Education and Economic Development*.
- Griffiths, V.L., *An Experiment in Rural Education*, London: Longmans, 1953.
- Griffiths, V.L., *The Problems of Rural Education*, Paris: Unesco: International Institute for Educational Planning, 1968.
- Hansen, W.L., "Total and Private Returns to Investment in Schooling", *Journal of Political Economy*, April, 1963.
- Harbison, F.H., *Human Resources as the Wealth of Nations*, New York: Oxford University Press, 1973.
- Harker, B.R., "The Contribution of Schooling to Agricultural Modernization: An Empirical Analysis", in *Education and Rural Development*, eds. P.J. Foster and J. Sheffield.
- Heijnen, J.D., *Development and Education in the Mwanza District (Tanzania): A Case Study of Migration and Peasant Farming*, Rotterdam: Bronder-Offset, 1968.
- Houghton, H. and Tregear, P., *Community Schools in Developing Countries*, Hamburg: Unesco Institute for Education, 1969.
- Hunter, G., "Manpower and Educational Needs in the Traditional Sector with Special Reference to East Africa", in *Manpower Aspects of Educational Planning*, Paris: Unesco, 1968.
- Illich, I., *Deschooling Society*, London: Calder and Boyan, 1971.
- International Labour Organisation, *Employment, Unemployment and Labour Force Statistics*, Geneva: 1948.

- International Labour Organisation, *Matching Employment Opportunities and Expectations: A Programme of Action for Ceylon*, Geneva: 1971.
- Jolly, R., *Planning Education for African Development: Economic and Manpower Perspectives*, Nairobi: East African Publishing House, 1969.
- Lewis, L.J., ed., *Phelps-Stokes Reports on Education in Africa*, London: Oxford University Press, 1962.
- Lewis, L.J., *Society, Schools and Progress in Nigeria*, Oxford: Pergamon Press, 1965.
- Lewis, W.A., "Thoughts on Land Settlement" in *Agriculture in Economic Development*, eds. C. Eicher and L. Witt, New York: McGraw-Hill, 1964.
- Malassis, L., *The Rural World: Education and Development*, London: Croom Helm, 1976.
- Mosher, A.T., *Getting Agriculture Moving*, New York: Praeger, 1966.
- Mosher, A.T., "The Development Problems of Subsistence Farmers: A Preliminary Review" in *Subsistence Agriculture and Economic Development*, Chicago: Aldine Publishing Company, 1969.
- Myrdal, G., *Asian Drama: An Inquiry into the Poverty of Nations*, New York: The Twentieth Century Fund, 1968 (3 Vols.).
- Nair, K., *Blossoms in the Dust*, London: Gerald Dutchworth, 1961.
- Nigerian Federal Ministry of Education, *Investment in Education: The Report of the Commission on Pre-School Certificate and Higher Education in Nigeria*, Lagos: Government Printer, 1965.
- Nyerere, J.K., *Education for Self-Reliance*, Dar es Salaam: Government Printer, 1967.
- Parnes, H.S., *Planning Education for Economic and Social Development*, Paris: O.E.C.D., 1963.
- Pelzer, K.J., *Pioneer Settlement in the Asiatic Tropics*, New York: American Geographical Society, 1948.
- Psacharopoulos, G. assisted by Hinchcliffe, K., *Returns to Education: An International Comparison*, Amsterdam: Elsevier Scientific Publishing Company, 1973.
- Raper, A.F., *Rural Development in Action: the Comprehensive Experiment at Comilla, East Pakistan*, Ithaca: Cornell University Press, 1970.
- Rogers, E.M. in association with Svenning, L., *Modernization among Peasants*, New York: Holt, Rinehart and Winston Inc., 1969.

- Saville, A., *Extension in Rural Communities*, London: Oxford University Press, 1965.
- Schumacher, E.F., *Small is Beautiful: A Study of Economics as if People Mattered*, London: Blond and Briggs, 1973.
- Schultz, T.W., *The Economic Value of Education*, New York: Columbia University Press, 1963.
- Seers, D., "New Approaches Suggested by the Colombia Employment Programme", *International Labour Review*, Vol. 102, No. 4, October 1970.
- Seers, D., "New Light on Structural Unemployment: Lessons of a Mission to Ceylon", *International Labour Review*, Vol. 105, No. 2, February 1972.
- Sheffield, J.R., ed., *Education, Employment and Rural Development: The Proceedings of a Conference held at Kericho, Kenya, in September, 1966*, Nairobi: East African Publishing House, 1967.
- Sheffield, J.R. and Diejomaoh, V.P., *Non-Formal Education in African Development*, New York: African-American Institute, 1972.
- Streeten, P., *The Frontiers of Development Policies*, London: Macmillan, 1972.
- Thorbecke, E. and Stoutedijk, *Employment and Output - A Methodology Applied to Peru and Guatemala*, Paris: O.E.C.D., 1971.
- Turnham, D., *The Employment Problems of Less Developed Countries: A Review of the Evidence*, Paris: O.E.C.D., 1970.
- Unesco, *An Asian Model of Educational Development: Perspectives for 1965-80*, Paris: Unesco, 1966.
- Unesco, *Economic and Social Aspects of Educational Planning*, Paris: Unesco, 1964.
- Unesco, *Manpower Aspects of Educational Planning*, Paris: Unesco, 1968.
- Unesco International Institute for Educational Planning, *Manpower Aspects of Educational Planning*, Paris: Unesco, 1968.
- Unesco International Institute for Educational Planning, *Educational Development in Africa III, Integration and Administration*, Paris: Unesco, 1965.
- Unesco Regional Office for Education in Asia, *Progress of Education in the Asian Region: a Statistical Review*, Bangkok: Unesco, 1968.
- Van Rensburg, P., *Report from Swaneng Hill*, Uppsala: The Dag Hammarskjold Foundation, 1974.
- Welch, F., "Education in Production", *Journal of Political Economy*, January - February 1970.
- Wharton, C.R., "Education and Economic Growth", *Education and Economic Development*, ed. C.A. Anderson and M.J. Bowman.

- Wharton, C.R., ed., *Subsistence Agriculture and Economic Development*, Chicago: Aldine Publishing Company, 1969.
- Wilson, F., "Education for Rural Development", in *Education and Rural Development*, eds. P.J. Foster and J. Sheffield.
- Wood, A.W., *Informal Education and Development in Africa*, The Hague: Institute of Social Studies, 1974.
- Yesufu, T.M., "Forecasting Nigeria's Manpower Needs 1963-68: A Note on Methodology", *Manpower Problems and Economic Development in Nigeria*, ed. T.M. Yesufu, Ibadan: Oxford University Press, 1969.

Sarawak

- Baring-Gould, S. and Bampfylde, C.A., *A History of Sarawak under its Two White Rajahs, 1839 - 1908*, London: Henry Sotheran and Co., 1909.
- Brewsher, R.A., "The Rural Improvement School in Sarawak", *Overseas Education*, Vol. XXI, No. 4, July 1950.
- Browne, F.G., *Forest Trees of Sarawak and Brunei and their Products*, Kuching: Government Printer, 1954.
- Bunyon, C.J., *Memoirs of Bishop McDougall and of Harriette, his Wife*, London: 1889.
- Dickson, M., *Longhouse in Sarawak*, London: Victor Gollancz, 1971.
- Dickson, M.G., *Sarawak and its People*, Kuching, Government Printer, 1965.
- Freeman, J.D., *Iban Agriculture: A Report on the Shifting Cultivation of Hill Rice by the Iban of Sarawak*, London: H.M.S.O., (Colonial Research Studies No. 14), 1955.
- Geddes, W.R., *Nine Dayak Nights*, London: Oxford University Press, 1961.
- Geddes, W.R., *The Land Dayaks of Sarawak*, London: H.M.S.O. (Colonial Research Studies No. 14), 1954.
- Gomes, E.H., *Seventeen Years among the Sea Dayaks of Borneo*, London: Sealey and Co., 1911.
- Harrisson, T., *The Malays of South West Sarawak before Malaysia*, London: Macmillan, 1970.
- Harrisson, T., *World Within: A Borneo Story*, London: Cresset Press, 1959.
- Jackson, J.C., *Sarawak, a Geographical Survey of a Developing State*, London: University of London Press, 1968.
- Jones, L.W., *Sarawak: Report on the Census of Population, 1960*, Kuching: Government Printer, 1962.
- Jones, L.W., *The Population of Borneo: A Study of the Peoples of Sarawak, Sabah and Brunei*, London: Athlone Press, 1966.
- Leach, E.R., *Social Science Research in Sarawak*, London: H.M.S.O., (Colonial Research Studies No. 1), 1950.
- Lee, Y.L., *Population and Settlement in Sarawak*, Singapore: Asia Pacific Press, 1970.
- Macdonald, M., *Borneo People*, London: Jonathan Cape, 1956.
- Malaysian Government, *First Malaysia Plan, 1966-70*, Kuala Lumpur: Government Printer, 1966.

- Malaysian Government, *Second Malaysia Plan, 1971-75*, Kuala Lumpur: Government Printer, 1971.
- Morris, H.S., *Report on a Melanau Sago Producing Community in Sarawak*, London: H.M.S.O., (Colonial Research Studies No. 9), 1953.
- Payne, R., *The White Rajahs of Sarawak*, London: Robert Hale, 1960.
- Runciman, S., *The White Rajahs: A History of Sarawak from 1841-1946*, Cambridge: Cambridge University Press, 1960.
- Sarawak Government, Department of Agriculture, *Agriculture Statistics of Sarawak, 1970*, Kuching: Government Printer, 1971.
- Sarawak Government, Department of Agriculture, "Annual Report of Education Branch, 1970", Kuching: mimeo., 1971.
- Sarawak Government, Department of Education, *Annual Report 1970-75*, Kuching: Government Printer.
- Sarawak Government, Department of Statistics, *Annual Bulletin of Statistics, 1970-76*, Kuching: Government Printer.
- Sarawak Government, *Sarawak Annual Report, 1956-62*, London: H.M.S.O.
- Sarawak Government, *The Sarawak Gazette, 1870-1941, 1946 -* , Kuching: Government Printer.
- Tien Ju-Kwang, *The Chinese of Sarawak: A Study of Social Structure*, London School of Economics and Political Science, Monographs of Social Anthropology, No. 12, 1953.
- Wilson, J.K., *Budu, Twenty Years in Sarawak*, North Berwick: Tantallon Press, 1969.

Papua New Guinea

- Ainsworth, J., *Report by Colonel John Ainsworth on Administration Arrangements Affecting the Interests of Natives in the Territory of New Guinea*, Parliamentary Paper Vol. 4, 1923-4, Canberra: Government Printer, 1924.
- Australian Government, *Report of the Advisory Committee on Education in Papua and New Guinea*, Canberra: Government Printer, 1969.
- Australian Government, *Report of the Committee on Higher Education in Papua and New Guinea*, Canberra: Government Printer, 1964.
- Brammall, J. and May, R.J. eds., *Education in Melanesia*, Canberra: Australian National University, 1975.
- Brookfield, H.C. and Brown, P., *Struggle for Land: Agriculture and Group Territories among the Chimbu of the New Guinea Highlands*, Melbourne: Oxford University Press, 1963.
- Brookfield, H.C. and Hart, D., *Melanesia: A Geographical Interpretation of an Island World*, London: Methuen, 1971.
- Conroy, J.D., *Education, Employment and Migration in Papua New Guinea*, Canberra: Australian National University, 1972.
- Conroy, J.D., "School Leavers in Papua New Guinea: Expectations and Realities", in M. Ward ed., *Change and Development in Rural Melanesia*, Canberra: Australian National University/University of Papua New Guinea, 1972.
- Dick, G. and McKillop, B., *History of Agricultural Extension and Education in Papua New Guinea*, Port Moresby: Department of Primary Industry, 1976.
- Economist Intelligence Unit, *A Study of the Less Developed Areas of Papua New Guinea*, Melbourne: 1972.
- Epstein, A.L., *Matupit: Land, Politics and Change among the Tolai of New Britain*, Canberra: Australian National University Press, 1969.
- Finney, B.R., *Big-Men and Business: Entrepreneurship and Economic Growth in the New Guinea Highlands*, Canberra: Australian National University Press, 1973.
- Howlett, D.R., *A Geography of Papua and New Guinea*, Melbourne: Nelson, 1967.
- International Bank for Reconstruction and Development, *The Economic Development of the Territory of Papua and New Guinea*, Baltimore: John Hopkins Press, 1965.
- McKillop, R.F., *The Agricultural Extension Service in Papua New Guinea. Can We Make It More Effective?* Extension Bulletin No. 5, Port Moresby: Department of Agriculture, Stock and Fisheries, 1974.

- Macpherson, K.J., "A Study of the Standard 6 Leaver Problem in Papua New Guinea and Educational Measures Used in an Attempt to Alleviate It", M.Ed. thesis, University of Papua New Guinea, 1975.
- Papua New Guinea Government, "Interim Report of the Study Group on National Youth Service", Port Moresby, mimeo, 1974.
- Papua New Guinea Government, *Report of the Commission of Inquiry into Land Matters*, Port Moresby: Government Printer, 1973.
- Papua New Guinea Government, Bureau of Statistics, *Papua New Guinea Summary of Statistics 1974/75*, Port Moresby: Government Printer, 1978.
- Papua New Guinea Government, Bureau of Statistics, *Population Census 1971*, Port Moresby: Government Printer, 1974.
- Papua New Guinea Government, Central Planning Office, *Papua New Guinea's Improvement Plan, 1973-74*, Port Moresby: Government Printer, 1973.
- Papua New Guinea Government, Department of Education, "1976 Annual Report," Port Moresby: Government Printer, 1977.
- Papua New Guinea Government, Department of Education, *Papua New Guinea Education Plan 1976-80*, Port Moresby: Government Printer, 1976.
- Papua New Guinea Government, Department of Education, "A Report on Vocational Training Centres," Port Moresby: mimeo, 1969.
- Papua New Guinea Government, Department of Labour and Industry, "The Implementation of a Rural Improvement Policy through Youth Involvement", Port Moresby: mimeo, 1974.
- Papua New Guinea Government, National Planning Committee, *National Development Strategy*, Port Moresby: Government Printer, 1976.
- Papua New Guinea Government, National Planning Committee, *Strategies for Nationhood: Policies and Issues, December 1974*, Port Moresby: Government Printer, 1976.
- Powell, J.P. and Wilson, M., *Education and Rural Development in the Highlands of Papua New Guinea*, Port Moresby: The University of Papua New Guinea, 1974.
- Sack, P.G., *Problem of Choice: Land in Papua New Guinea's Future*, Canberra: Australian National University Press, 1974.
- Van der Veur, K. and Richardson, P., *Education through the Eyes of an Indigenous Elite*, New Guinea Research Bulletin, No. 12, Canberra: Australian National University Press, 1966.
- West, F., *Hubert Murray*, London: Oxford University Press, 1968.

Wilson, M., "School Leavers in the Village", in *Education and Rural Development in the Highlands of Papua New Guinea*, op. cit.

Wilson, M., "School Leavers in a Coastal Area", *Papua New Guinea Journal of Education*, Vol. 12, No. 1, March, 1976.