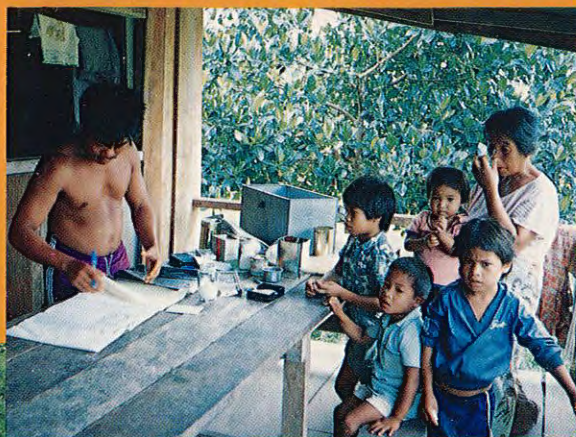


# PRIMARY HEALTH CARE IN KENINGAU, SABAH, MALAYSIA.



*By*

ST CHEN  
PCY CHEN  
MKC CHAN  
HA RAHMAN  
ML WONG

**PRIMARY HEALTH CARE  
IN  
KENINGAU,  
SABAH, MALAYSIA**

© SIEW TIN CHEN  
PAUL CHIEH YEE CHEN  
MECHIEL KC CHAN  
HASAN ABDUL RAHMAN  
MEE LIAN WONG

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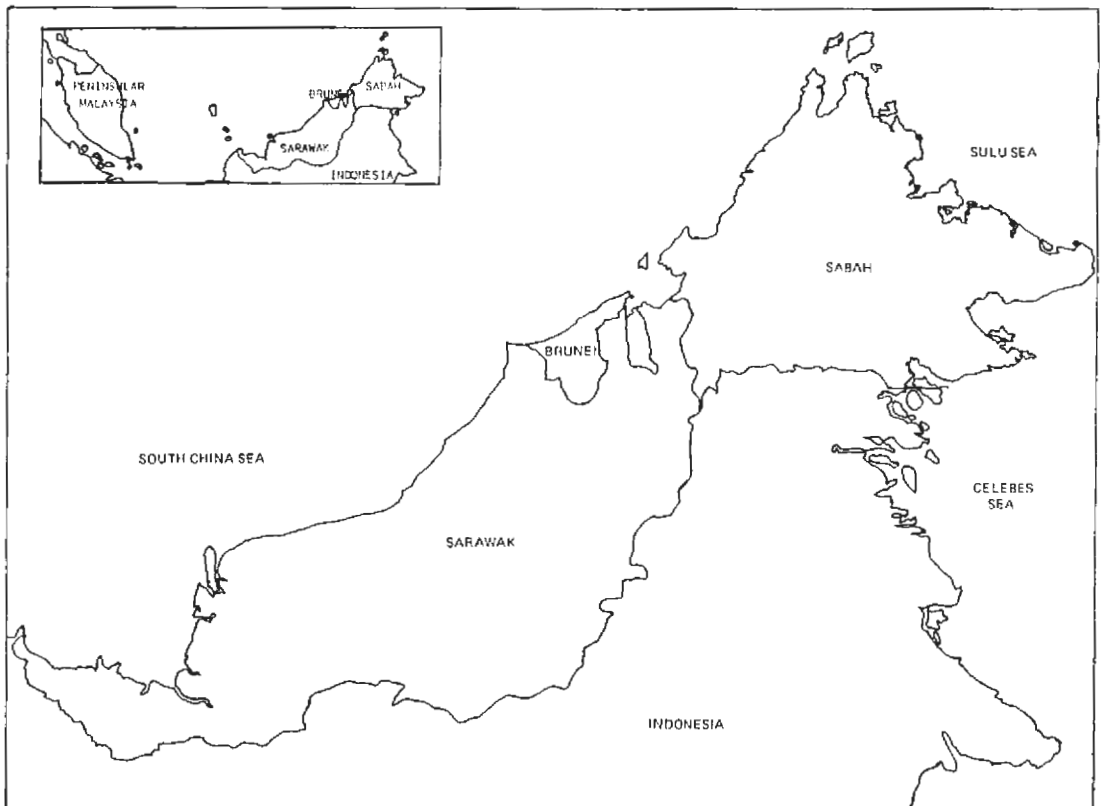
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# CHAPTER 1

## INTRODUCTION

### 1.1 Demographic and geographical background

Located at the northern tip of Borneo, Sabah is the second largest state in Malaysia with 23 districts and a total area of over 73,620 sq. km. Also known as the "Land below the Wind", it has over 2,300 km. of coastline bounded by the South China Sea, the Sulu Sea and the Celebes Sea.



*Fig. 1 : Map of Sabah, Malaysia*

Sabah is sparsely populated with a population of 1,271,278 and an average population density of 17 per sq. km. (Malaysia, 1986). The majority of its people live along the west coast, a few big towns in the east coast and in the interior.

Topographically, Sabah is a mountainous country with dense tropical forests, alluvial swampy coastal plains intersected by numerous rivers and valleys. Several mountains ranging from 1,219 to 1,829 metres rise from the coastal low hills and lead to the highest mountain in South East Asia, Mount Kinabalu (4,101 m.).



## 1.2 Sabah as an underdeveloped area

Generally, there has been good and sound development, both in the rural and urban areas of Malaysia, during the past quarter century. Nevertheless, for historical and geographical reasons, the people of Sabah and Sarawak have been least affected by developmental efforts and modernization.

Due to its topography, communications within Sabah is a major problem especially in the delivery of medical and health services. Few of the total motorable roads are metalled or sealed but are of gravel surfaces instead. In addition, numerous sections of roads are prone to flooding during rainy seasons or monsoon periods. Many rural areas are without electricity and safe water supply. Even in major towns, public transportation is inadequate. In general, the difficult geographical factors affect the accessibility, coverage as well as the effectiveness of medical and health services.



*Fig. 2 : Accessibility is a problem for many villages in the interior areas of Sabah*



*Fig. 3 : Sealed roads like this are rare in Sabah*

Thus, a study in 1979 (Chen, 1980) showed that 41.2% of the people in Sabah remained underserved by modern health facilities compared to 6.3% in Peninsular Malaysia, indicating that special problems exist in Sabah (Table 1).

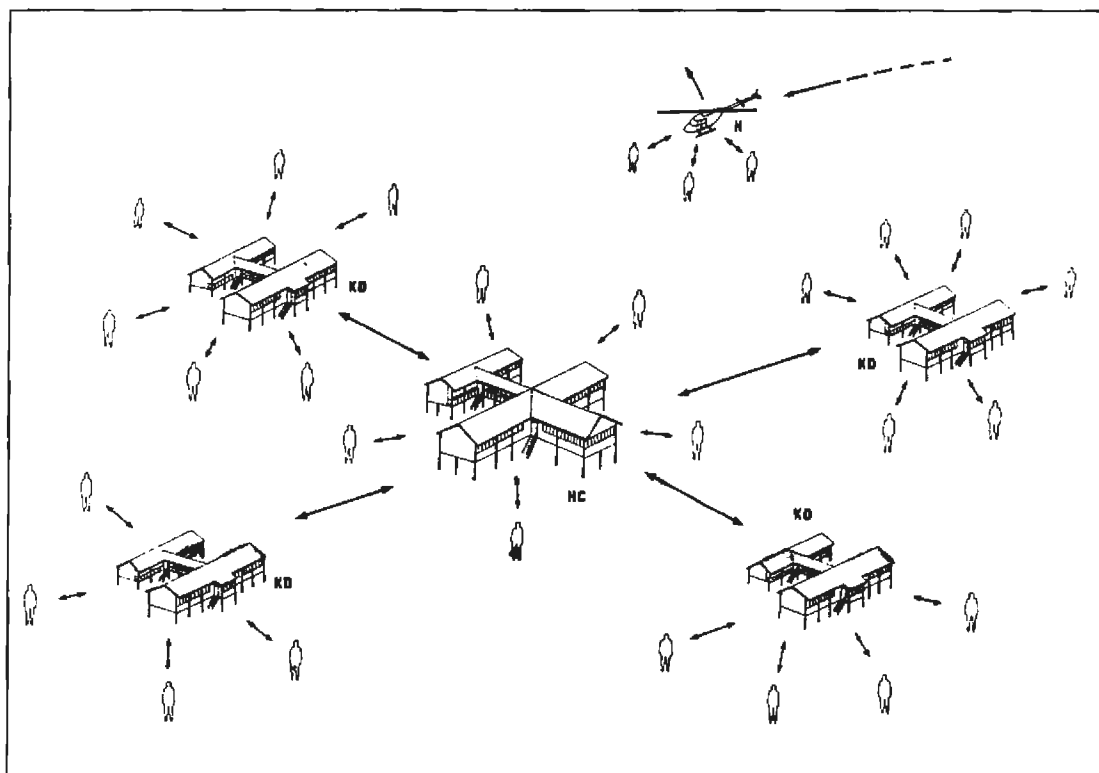
**Table 1**  
**Extent of undercoverage In Malaysia based on geographical delineation, 1979**

Region	No. (%) of villages geographically underserved	No. (%) of people geographically underserved	Mean size of underserved villages
Peninsular Malaysia	2,421 (15.1%)	460,743 ( 6.3%)	190.3
Sabah	2,151 (65.2%)	385,403 (41.2%)	179.2
Sarawak	3,702 (74.7%)	563,942 (68.1%)	152.3
Total	8,274	1,410,088	170.4

*(Source: PCY Chen, 1980)*

In terms of rural health care, Sabah had already established a network of static rural dispensaries, travelling clinics and village group sub-centres (VGSC). Up to the end of 1986, there were 230 VGSCs and 64 rural dispensaries. However, under the Fifth Malaysia Plan (1986-1990), the rural health services were upgraded. Rural dispensaries were upgraded to health centres while VGSCs were upgraded to *klinik desa* (community health clinics). These *klinik desa* are basically midwife clinic-cum-quarters and each *klinik desa* serves a group of villages with a total population of 2,000. Besides being trained in midwifery, the rural health nurses or community health nurses are also trained in the treatment of minor illnesses as well as in maternal and child health care. The health centres offer a broad range of basic health services, including curative care, maternal and child health, communicable disease control, environmental sanitation, health education, immunization and dental care. It also acts as a base from which mobile clinics operate at scheduled intervals of one to two months and cover an area with a radius of about eight kilometres. The more remote and inaccessible areas are served by the flying doctor service.

While intervention strategies such as the flying doctor service and mobile health teams have been implemented to overcome some of the weaknesses in the delivery of health services, they are insufficient to overcome the imbalance which continues to exist in remote and inaccessible areas.



**Fig. 4 :** Diagrammatic representation of a primary health care system showing the extension of health care to each village beyond easy reach of the klinik desa and the health care centres with the support of the Flying Doctor Service and village health promoters



**Fig. 5 : The child health clinic at Pusat Kesihatan Nabawan (Health Centre)**

### **1.3 Primary health care in Sabah**

For health administrative purposes, Sabah is divided into eight areas, each having two to four districts and under the jurisdiction of an Area Medical Officer of Health.

As the majority of the population resides in rural areas and because of the nature of the terrain and lack of public transport, it becomes necessary for health services to be brought to the community. Presently, the rural population is provided with patient care services through health centres, *klinik desa*, mobile clinics and the flying doctor service.

However, it is apparent that these services are insufficient to meet the needs of the rural population. Thus, it became imperative for the communities to take on the responsibility of looking after their own health needs. As there was an urgency to meet this felt need for medicare and basic health services along with needs in other sectors like economy, agriculture and education, an integrated solution was necessarily sought.

Realizing primary health care to be an integral part of the health care system and overall social and economic development, the Sabah Medical Department launched measures to provide primary health care for all its population. One of its earliest moves was to train *kampung bidan* or indigenous village midwives. In line with the primary health care concept, it was felt that this group of people could be better utilised by providing them with basic training in hygiene and child care techniques, and by bringing them closer to health care personnel and creating rapport between them and trained health workers. Consequently, training courses lasting up to two weeks were conducted throughout the state. One such training course was held in Keningau District in 1980. The following year, village midwives in Pensiangan District underwent the same course. Up to December 1982, a total of 390 village midwives had attended the courses (Malaysia, 1983).

Soon after that, the Sabah Medical Department also launched a pioneer village health promoter project in late 1985 when 11 village health promoters were trained. Four of them were from the Kinabatangan District, six were from Long Pasia while the remaining one came from the Labuk Sugut District (Sabah, 1986).

This pilot project served to highlight shortcomings in socio-cultural, organizational and administrative aspects and helped formulate solutions to these problems.

Recognizing that the Keningau Area is one of the most poverty stricken and underserved areas in Sabah, the present primary health care project was begun in 1987 by the Sabah Medical Department in collaboration with the Department of Social and Preventive Medicine and the Department of Paediatrics, University of Malaya, Kuala Lumpur with assistance from the International Development and Research Centre (IDRC), Canada.

## CHAPTER 2

### BACKGROUND

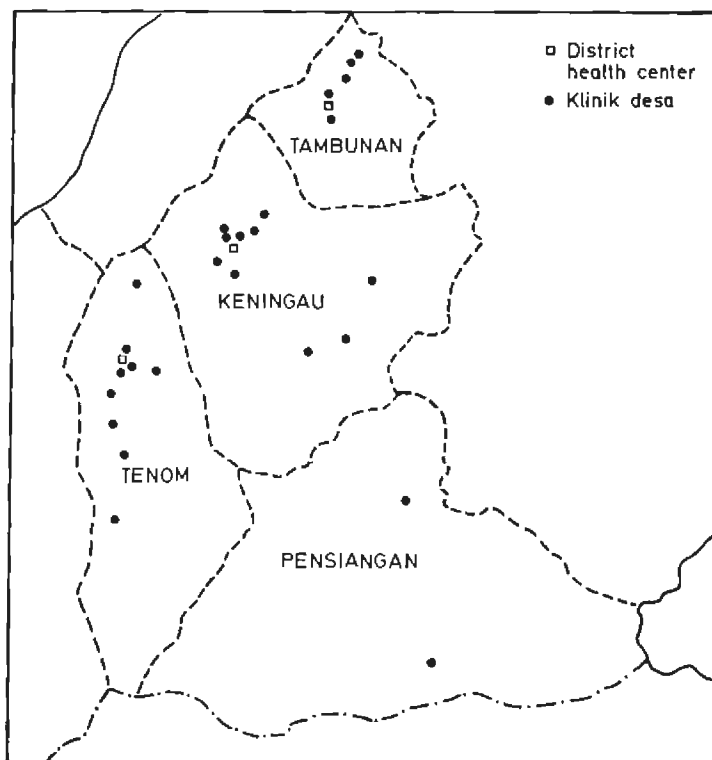
#### 2.1 Keningau Health Unit

The Keningau Health Unit comprises four districts, namely Keningau, Tenom, Tambunan and Pensiangan and has a total population of about 94,540 (Malaysia, 1987). The population covered by the project consists of two districts in this health unit, namely Keningau and Pensiangan (Table 2).

**Table 2**  
**Population census of Keningau area by district and village, 1980**

District	Total number of villages	Area (sq. km.)	Population size
Keningau	238	3,574	43,476
Tenom	167	2,408	27,772
Tambunan	127	1,346	15,004
Pensiangan	288	6,047	8,288
Total	820	13,375	94,540

(Source: Malaysia, 1987)



*Fig. 6 : Map of the Keningau Health Unit, showing the location of the health facilities available*



### **2.1.1 Location and geography**

Both Keningau and Pensiangan districts are located deep in the interior of Sabah, with Pensiangan sharing a common border with Indonesian Kalimantan.

Due to poor soils, low rainfalls, the relatively hilly land, prolonged dry seasons (May – October) as well as a lack of developmental infrastructure, Keningau has been plagued by poverty and ill-health. It also ranks as one of the most impoverished areas in Sabah.

### **2.1.2 Communication**

Only 140 km. of all motorable roads in Keningau are sealed. The rest are either of the gravel or earth type. Consequently, many of the settlements are still not accessible by road. Even where roads are available, they are frequently in a state of disrepair and it is not uncommon to find an entire section of a road washed away by heavy rain or see a vehicle stuck in thick mud. Although the many rivers and streams allow for travel by boat, their condition is easily affected by the wet and dry seasons. These constraints hamper the mobility of those living in more remote areas and leave them with no alternative but to rely on the travelling clinics or the flying doctor service to deliver health services to their doorsteps. However, as the frequency of visits by health teams depends on the ease of communication, problems continue to persist in rural areas. Therefore, in view of the poor communications within Keningau, an innovative primary health care programme, with all its essential elements, needs to be established to serve the rural population.



*Fig. 7 : Dirt roads make up a large portion of the roads available in Sabah*



*Fig. 8 : Travel in Mukim Pagalungan is mainly by boat*

### **2.1.3 Demography**

One of the major tribes living in the Keningau Area is the Murut. Traditionally living in the remote interior and engaged in hunting and shifting cultivation, the Muruts number around 39,000 and form about 41% of the population. Today, they are being resettled by the government in settlement schemes where modern amenities are available and cash crop cultivation practised.

These Muruts comprise a number of sub-tribes such as the Tagal, Lun Dayuh, Lun Bawang and Pensiangan Muruts. Despite the influence of several external forces such as missionaries and government agencies, they continue to practise age-old customs and agricultural techniques. For example, the Muruts have continued to retain skills in hunting with dogs. Consequently, they are exposed to a higher risk of malaria. However, there are differences in the response of the various sub-tribes to efforts aimed at improving their lot. It has been noted that the Tagal are especially disadvantaged both socio-economically as well as from the health perspective, principally because of their seeming reluctance to participate in various self-help schemes.

Traditionally a farming community, some of its members have lately ventured into new occupations. These occupations include boat-building, working in timber camps or the border scout patrol unit and running sundry shops. Some better-educated members have even become teachers.



*Fig. 9 : A resettlement scheme in Karamatoi Laut by SAFODA (Sabah Forest Development Authority)*



*Fig. 10 : Boatbuilding is another source of income for some Muruts in Mukim Pagalungan*

#### **2.1.4. Socio-cultural background of the Muruts**

Murut men hold a dominant role in the social structure of this patriarchal society and are the recognised heads of households and leaders of their community. Their wives and daughters play a subordinate role. Men and women work alongside each other in the farms but the women are also responsible for taking care of the children and performing all household duties.

Like most Asians, their staple diet is rice but the Muruts also consume tapioca and sago. They practice shifting cultivation and the main crops planted are hill paddy and tapioca. Some have also started to cultivate commercial crops such as rubber, coffee, cocoa and corn. They also hunt and fish.

The Muruts live in raised bamboo or wooden houses with spacious living rooms but small and poorly ventilated bedrooms. Some live as nuclear families in a single dwelling unit and some prefer to settle in communal longhouses with a room to one family. Many of the residents of a longhouse are often members of an extended family.

Breast-feeding is a norm among the Murut mothers and many of the children are still breast-fed at two years of age. Often, the mothers start to wean their children only because of the birth of yet another child.



*Fig. 11 : A meal of rice and sago in a Murut family*



*Fig. 12 : Hill paddy – one of the crops cultivated by the Muruts*



*Fig. 13 : A single dwelling unit with poor ventilation*





*Fig. 14 : Breast-feeding is a norm among the Muruts*



## CHAPTER 3

### ORGANIZATION OF PROJECT PHC

#### 3.1 Objectives

In response to the need to provide essential health care to the underserved communities in Sabah, the Sabah Medical Department in collaboration with the Department of Social and Preventive Medicine and the Department of Paediatrics, University of Malaya, Kuala Lumpur with assistance from the International Development and Research Centre (IDRC), Canada, initiated an action-research project in February 1987 with the following objectives:

- i) to identify the major health and health-related problems of the Keningau Area.
- ii) to identify the social structure, social groups, social channels (leadership patterns, channels of social mobilization and social motivation, means for identifying potential primary health care workers) that will serve to introduce primary health care among the Muruts and other tribes, and to identify cultural characteristics which can be usefully incorporated into the PHC system to be developed.
- iii) to identify possible linkages between the people and the existing health care system (the *klinik desa*, the mobile health team and the flying doctor service) which can serve as channels for the supervision of the primary health care worker and the referral of problems to the *klinik desa* and the flying doctor service.
- iv) to identify the role that the flying doctor service, the *klinik desa* and the mobile health team can perform in primary health care in Keningau.
- v) to assess the acceptability of this integrated primary health care system and its impact on the quality of life and health status of the Keningau people.

#### 3.2 Participating communities

The communities participating in the Project Primary Health Care in Sabah comprise mainly of Muruts from two geographical areas in the Keningau Health Unit, namely Keningau District and Pensiangan District.

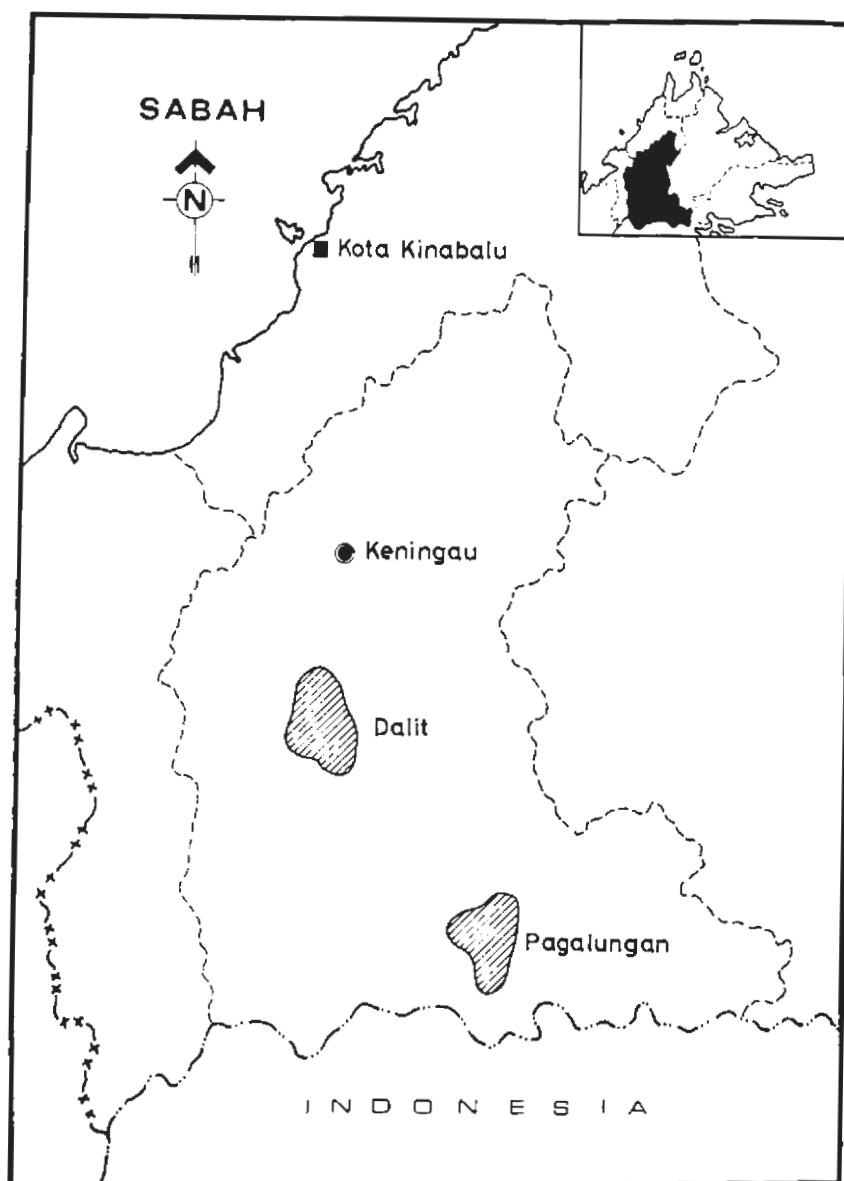


Fig. 15 : Map of Sabah, showing the areas covered by the PHC project

### 3.2.1 Keningau District

With a total area of 3,574 sq. km., Keningau District has a population size of 43,476 living in 238 villages (Malaysia, 1987). The population density is 12.2 persons per sq. km. (Table 2).

In this area the primary health care project covers 10 settlements of *Mukim* (Sub-district) Dalit with a total population of 1,387 from 379 households (Table 3).

**Table 3**  
**Study population in *Mukim* Dalit and *Mukim* Pagalungan, 1987**

<i>Mukim</i>	Settlements	No. of Households	Population
Dalit	10	379	1,387
Pagalungan	24	375	1,886
Total	34	754	3,273

The two main rivers found in this area are Sungai Dalit and Sungai Karamatoi. However, these settlements are also accessible by dirt road from Keningau Town and are served by two community clinics or *klinik desa*, found at Dalit Gana and Karamatoi.

### 3.2.1.1 Problems faced by the *Mukim* Dalit communities – Non-health problems

A survey carried out in 1987 showed that 48.0% of them were children below 15 years of age, 40.5% were between the ages of 15 and 49 while 11.5% were 50 years and older (Table 4).

**Table 4**  
**Population distribution by age in *Mukim* Dalit and *Mukim* Pagalungan, 1987**

Age (years)	<i>Mukim</i> Dalit		<i>Mukim</i> Pagalungan		Total	
	No.	%	No.	%	No.	%
<15	404	48.0	190	43.7	594	46.5
15–49	341	40.5	178	40.9	519	40.6
≥50	97	11.5	67	15.4	164	12.8
Total	852*	100.0	446*	100.0	1,298*	100.0

\*Excludes those whose ages were not available

The study also revealed that in a group of 297 Muruts aged 15 years and older, 21.5% had not received any formal education, 9.8% had less than four years of formal education, 47.2% had four to six years of education and only 21.5% had at least seven years of education. Table 5 shows that females had a lower level of education compared with males and that less females had received formal education compared with males being 29.8% and 14.1% respectively.

**Table 5**  
**Frequency distribution of population aged 15 years and older by sex and level of formal education in *Mukim Dalit* and *Mukim Pagalungan*, 1987**

Level of education	No. and % of people											
	<i>Mukim Dalit</i>						<i>Mukim Pagalungan</i>					
	Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Nil	22	14.1	42	29.8	64	21.5	19	23.8	44	64.7	63	42.6
<4 yrs	14	9.0	15	10.6	29	9.8	6	7.5	5	7.4	11	7.4
4-6 yrs	77	49.3	63	44.7	140	47.2	26	32.5	9	13.2	35	23.6
≥7 yrs	43	27.6	21	14.9	64	21.5	29	36.2	10	14.7	39	26.4
Total	156	100.0	141	100.0	297	100.0	80	100.0	68	100.0	148	100.0

Out of the 160 households surveyed, 4.4% had no cash income, 68.1% had a yearly cash income of under M\$2,000 and only 5.0% had a yearly cash income of M\$5,000 and above. The median yearly household income was only M\$720 (Table 6).

**Table 6**  
**Frequency distribution of households by income and location, 1987**

Yearly household income (MR)	No. and % of households					
	<i>Mukim Dalit</i>		<i>Mukim Pagalungan</i>		Total	
	No.	%	No.	%	No.	%
Nil	7	4.4	1	1.2	8	3.3
1-99	3	1.9	7	8.2	10	4.1
100-1999	106	66.2	62	72.9	168	68.6
2000-2999	14	8.7	4	4.7	18	7.3
3000-4999	22	13.8	5	5.9	27	11.0
5000 and above	8	5.0	6	7.1	14	5.7
Total	160	100.0	85	100.0	245	100.0

Being an agricultural society, agricultural tools such as hoes, axes and *parang* (long knives) were common items possessed. Cooking utensils were also owned by the majority of households. Hunting by blow-pipe was popular as evidenced by the fact that almost half (49.4%) of the households possessed blow-pipes while 19.4% had begun hunting with shot-guns. 61.9% of the households possessed a watch each, 46.9% of them possessed a radio each, and 10.0% had a television.



Fig. 16 : The Muruts have traditionally hunted with blow-pipes but some have begun using shot-guns

– Health problems

73.8% of the households had pit latrines, 23.1% had pour flush latrines while the remaining 3.1% of the households were without latrines (Table 7).

Table 7  
Frequency distribution of households by types of latrines in *Mukim Dalit* and *Mukim Pagalungan*, 1987

Type of latrines	No. and % of households					
	<i>Mukim Dalit</i>		<i>Mukim Pagalungan</i>		Total	
	No.	%	No.	%	No.	%
Pit	118	73.8	83	97.6	201	82.1
Pour flush	37	23.1	–	–	37	15.1
Bush	5	3.1	–	–	5	2.0
River	–	–	2	2.4	2	0.8

Five out of nine villages had access to the gravity-feed water system but only 26.7% of the households were supplied with water from this source. The households without access to the gravity-feed water system used rain or river water.



*Fig. 17 : Source of a gravity-feed water system*

The study also indicated that 61.5% of the expectant mothers had received at least one dose of antenatal tetanus toxoid. However, only 27.0% of births were delivered by trained midwives, thus 73.0% of births were unsafe deliveries. The stillbirth rate was 19.6 per 1,000 births, and the infant mortality rate was 40.0 per 1,000 livebirths. Although 90.6% of the children below six years of age had received BCG, only 61.9% of them had received at least three doses of Diphtheria, Pertussis and Tetanus Toxoid (DPT) and oral Polio.

The children's nutritional status was assessed using Waterlow's classification (Waterlow 1972 & 1974). Waterlow classifies children according to the severity of stunting and wasting. He distinguishes three grades of deficit in height for age (stunting) : Grade 1 = 95–90%, Grade 2 = 90–85% and Grade 3 = less than 85% of reference standard (Harvard 50th percentile); and three grades of deficit in weight for height (wasting) : Grade 1 = 90–80%, Grade 2 = 80–70% and Grade 3 = less than 70% of reference standard (Harvard 50th percentile). In this study, in order to detect a significant degree of protein-energy malnutrition, the cut-off point in the case of height for age is taken as 90% and weight for height as 80% and the reference standard used is NCHS



50th percentile. Of the 193 children who were below six years of age, 38.9% were found to be nutritional dwarfs (stunting with no wasting) while 9.3% were suffering from wasting with or without stunting. Only 51.8% could be classified as normal.

Of the 852 persons examined 32.0% had head lice, 5.9% had tinea versicolor, 3.5% had impetigo, and 2.7% had scabies (Table 8).

**Table 8**  
**Incidence of common skin conditions in 852 and 446 people in Mukim Dalit and Mukim Pagalungan respectively, 1987**

Condition	No. and % of people					
	Mukim Dalit		Mukim Pagalungan		Total	
	No.	%	No.	%	No.	%
Head lice	273	32.0	114	25.6	387	29.8
Tinea versicolor	50	5.9	22	4.9	72	5.5
Impetigo	30	3.5	13	2.9	43	3.3
Scabies	23	2.7	12	2.7	35	2.7



**Fig. 18 : The survey team checking for goitre among schoolchildren**

The same 852 people were also asked to recall illnesses suffered during the previous month. 11.6% cited diarrhoea, 8.1% had fever including malaria, 7.5% recalled respiratory infections such as cough and cold, 3.1% had worms, 2.2% of them had headache, 1.9% had abdominal pain, 1.5% had body aches and 0.1% had tuberculosis (Table 9).

**Table 9**  
**Frequency distribution of symptoms by 852 & 446 Muruts from *Mukim Dalit* and *Mukim Pagalungan* respectively, 1987**

Illnesses	No. and % people with symptoms			
	<i>Mukim Dalit</i>		<i>Mukim Pagalungan</i>	
	No.	%	No.	%
Diarrhoea	99	11.6	22	4.9
Fever including malaria	69	8.1	58	13.0
Cough & cold	64	7.5	35	7.8
Worms	26	3.1	10	2.2
Headache	19	2.2	16	3.6
Abdominal pain	16	1.9	4	0.9
Body aches	13	1.5	3	0.7
Tuberculosis	1	0.1	1	0.2

The study also showed that none of the households consumed iodized salt. It was not surprising that 82.6% of the Murut women aged 15 years and older exhibited at least a palpable goitre (Table 10).

**Table 10**  
**Prevalence of goitre by age and sex in *Mukim Dalit*, 1987**

No. and % of people														
Goitre	MALE						FEMALE						Grand Total	
	<15 Yrs		≥15 Yrs		Total		<15 Yrs		≥15 Yrs		Total			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
With	39	23.2	53	43.8	92	31.8	58	33.7	138	82.6	196	57.8	288	45.9
Without	129	76.8	68	56.2	197	68.2	114	66.3	29	17.4	143	42.2	340	54.1
Total	168	100.0	121	100.0	289	100.0	172	100.0	167	100.0	339	100.0	628	100.0



*Fig. 19 : A Murut woman with a Grade 4 goitre*

### **3.2.2 Pensiangan District**

Located deep in the interior of Sabah is the Pensiangan District which shares a common border with Indonesian Kalimantan for approximately 220 km.. Housing 288 settlements within a total area of 6,047 sq. km., this district is the largest district in the Keningau Health Unit but is sparsely populated with only 8,288 residents and a population density of 1.4 persons per sq. km. (Table 2). However, movement of population across the border is common at numerous points along the border.

As there are few roads in this district, many settlements are accessible only by boat. These villages are generally small and located along the banks of the Sepulot River, Pensiangan River, Tagul River and Logongan River.

In this area, the primary health care project covers 24 settlements of *Mukim Pagalungan* with a total population of 1,886 from 375 households (Table 3). Until recently, the people of this area were served by the mobile clinic from Pensiangan Health Centre but since early 1989, a *klinik desa* has also been established in Pagalungan.



Fig. 20 : Most of the villages in *Mukim Pagalungan* are situated on river banks



Fig. 21 : The *klinik desa* (community health clinic) in Pagalungan

### **3.2.2.1 Problems faced by the *Mukim* Pagalungan communities**

#### **– Non-health problems**

A baseline study carried out in seven villages in *Mukim* Pagalungan in 1987 showed that 43.7% of the people were children below 15 years of age, 40.9% were aged 15–49 years while 15.4% were above 50 years of age (Table 4).

Of the 148 Muruts aged 15 years and older, 42.6% had not received any formal education, 7.4% had received less than 4 years of formal education, 23.6% had between 4–6 years of education while the remaining 26.4% had at least 7 years of education. Overall, the adult literacy rate was higher in Keningau at 78.5% compared to 57.4% for Pensiangan. Similar to Keningau, the adult literacy rate of females was lower than that of males (Table 5).

The study also indicated that the households were poor. 1.2% did not receive any yearly household cash income while 72.9% earned between M\$100–\$1999 yearly and 7.1% earned M\$5,000 or more. The median yearly household income was M\$600 which was lower compared with that of M\$720 among the Keningau Muruts (Table 6).

Household possessions were similar to those of the Keningau Muruts except that fewer households owned watches and radios. Only 40.0% of the households owned a watch each and 18.8% owned a radio each as compared with 61.9% and 46.9% respectively in Keningau.

#### **– Health problems**

The study in 1987 revealed that 97.6% of the households used pit latrines. No pour flush latrines were available. Thirteen out of the twenty four settlements had access to the gravity-feed water system for their water supply while the remainder depended on river and rain water (Table 7).

The survey also showed that 54.2% of the pregnant women had received antenatal tetanus immunization. However, only 20.5% of births were safe deliveries which meant that 79.5% were unsafe deliveries. The stillbirth rate was 31.9 per 1,000 births as compared to 19.6 per 1,000 births among the Keningau Muruts. The infant mortality rate of 65.9 per 1,000 livebirths was also higher than that in Keningau. In 1987, the immunization coverage for children below six years of age was already high for BCG. As many as 98% of them had received BCG. However, the coverage for DPT and oral Polio was only 41.4% as compared to 61.9% for Keningau.

84 children below six years of age were examined for their nutritional status. It was discovered that 41.7% were nutritional dwarfs (stunting with no wasting), 17.8% suffered from wasting with or without stunting and only 40.5% could be classified as normal.

The study also revealed that none of the households consumed iodized salt. Consequently, it was found that the prevalence of goitre was 77.8% among the female Muruts aged 15 years and older and this is comparable to that of the Keningau female Muruts (82.6%) (Table 11).

**Table 11**  
**Prevalence of goitre by age and sex in Mukim Pagalungan, 1987**

Goitre	No. and % of people											
	MALE						FEMALE					
	<15 Yrs	≥15 Yrs	Total		<15 Yrs	≥15 Yrs	Total		<15 Yrs	≥15 Yrs	Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
With	12	15.2	22	35.5	34	24.1	19	29.7	63	77.8	82	56.6
Without	67	84.8	40	64.5	107	75.9	45	70.3	18	22.2	63	43.4
Total	79	100.0	62	100.0	141	100.0	64	100.0	81	100.0	145	100.0

Of the 446 persons examined, 25.6% had head lice, 4.9% had tinea versicolor, 2.9% had impetigo and 2.7% had scabies. This trend is similar to that of Keningau (Table 8).

In a morbidity recall study, the same 446 Muruts were asked to recall illnesses suffered during the previous month. Fever including malaria was the most common illness recalled (13.0%) followed by cough and cold (7.8%) and diarrhoea (4.9%). The other illnesses recalled included headache (3.6%), worms (2.2%), abdominal pain (0.9%), body aches (0.7%) and tuberculosis (0.2%) (Table 9). The high prevalence of tuberculosis could be partly due to the poor ventilation of the Murut homes.



*Fig. 22 : A child with tuberculosis of the spine*



### 3.3 Developmental activities

#### 3.3.1 Social preparation

Social preparation of communities is an essential and important step in the establishment of a primary health care project. In order to help the villagers understand the aims, contents and philosophy of primary health care and to convince them of the benefits of participating in the project, several visits were made to each village by the Principal Investigator, the Area Medical Officer of Health (AMOH) and other medical and health staff. Details on the concept of self-reliance and community participation were explained to them. Dialogue sessions with village leaders were also held and queries dealt with. After several visits, the communities were convinced that they wanted development through primary health care. As village development and security committees were already in existence, their leaders were asked to select volunteers from their respective communities to be trained as village health promoters. The social preparation aspect was not restricted merely to the preliminary stage of the project. It was stressed at every stage in order to sustain enthusiasm in the villagers for further community development.



*Fig. 23 : Discussion between the principal investigator, the health staff, the VHP and leaders of the community*

#### 3.3.2 Administrative preparation

In order to ensure that quality supervision and support would be available for this innovative approach, the medical and health staff had to be re-oriented from a largely curative role to a preventive and promotive role.

For this purpose, a three-day workshop was held to enable the medical and health staff to understand the concept of primary health care in order for them to develop, train, supervise and follow-up village health promoters in the context of community participation, and to give technical support to the village development and security

committees of the participating communities. They were also equipped to assist in the assessment and monitoring of PHC in rural communities. It was attended by medical and health officers, public health sisters, public health nurses, community health nurses, medical assistants, health inspectors, rural sanitarians, tuberculosis and malaria technicians.

### **3.3.3 Village administration and the village development and security committees**

Headmen are appointed and authorised to lead the villages and they receive a nominal monthly allowance. They also assist the *ketua anak negeri* (native chiefs) in native courts which deal with cases pertaining to minor offences and offences against the Murut traditional culture.

Village development and security committees have long existed in Sabah. Every village has a village development committee which is sometimes chaired by the headman. The chairman, together with the other committee members, are elected by the villagers but require authorization letters from the government. Only the chairman receives a monthly allowance from the government.

As a link between the villagers and the government, the role of these committees is to see to the implementation of various developmental projects under their jurisdiction. Each committee member heads a section and is responsible for all activities related to it. For example, the committee member who holds the education portfolio has the responsibility of ensuring that all children of school-going age are enrolled in a local school. He also attempts to convince parents of the importance of education and of taking advantage of educational opportunities for their children. In the same way, the health and cleanliness section is responsible for motivating the villagers to maintain personal and environmental cleanliness. This section is also responsible for the village health promoters.

### **3.3.4 Development of village health promoters**

#### **3.3.4.1 Selection**

Village health promoters are volunteers trained to deal with health problems of the community and are answerable to the village development and security committee. They form an important link between the established medical and health services and the communities in which they serve.

Each village was asked to select two persons, preferably one male and one female, to be trained as village health promoters. Ultimately, only four female village health promoters were chosen as compared to 40 men. All village health promoters were selected by their respective communities through the village development and security committees and carefully scrutinised by the Area Medical Officer of Health of Keningau through visits and dialogue sessions held with the committees as part of the social preparation. Selection of village health promoters was based on certain criteria though not all the selected VHPs had all the preferred qualifications such as:

- \* Have a strong leaning towards voluntary service.
- \* Have a steady source of income.

- \* Be respected and accepted by the villagers. Preferably he should hold a leadership position such as village headman or be a member of the village development and security committee.
- \* Have a keen interest to upgrade the status of health and the standard of living of the village.
- \* Be preferably aged between 24–50 years, and have a strong sense of responsibility.
- \* Be a permanent resident of the village and preferably married.
- \* Be able to read and write and have at least six years of formal education.
- \* Be able to work closely with the elders and the village development and security committee.

Few female VHPs were selected due to a number of factors. Firstly, many of the Murut women in the preferred age group were married and this meant they had heavy family commitments. Consequently, many were not receptive to the idea of taking on added responsibility as a VHP. Besides, none of them held leadership positions in their communities and few were literate.

#### **3.3.4.2 Training manual and curriculum**

As the extended arm of the medical and health services, the village health promoters have to be equipped with the basic knowledge and skills in treatment of minor illnesses, health promotion as well as preventive measures against diseases.

The curriculum and training manual used were the same as was employed in a similar project in Sarawak since their health problems were similar (Chen *et al.*, 1989). The contents of the training course were limited to the basic essentials of primary health care with emphasis on health promotion through health education, protection through immunization, promotion of food production and proper nutrition with emphasis on breast-feeding and proper weaning diet, environmental sanitation, care of mothers and children and treatment of common minor illnesses including oral rehydration therapy for diarrhoea.

As many of the village health promoters had only basic education of four to six years, the training manual was illustrated with numerous figures and a minimum of words to enable them to learn about common illnesses and to record the illnesses that they treat. For example, a colour code identified all drugs: a circular symbol being used for drugs that may be taken orally while a square symbol indicated drugs that are to be applied to the skin. Besides being used as the basic text for training courses, this highly simplified training manual also doubled up as a reference guide for the village health promoters during their practice. It should be emphasized at this point that much of the focus of the manual was on health promotion using curative care and diseases as the entry point towards health promotion and prevention of disease.

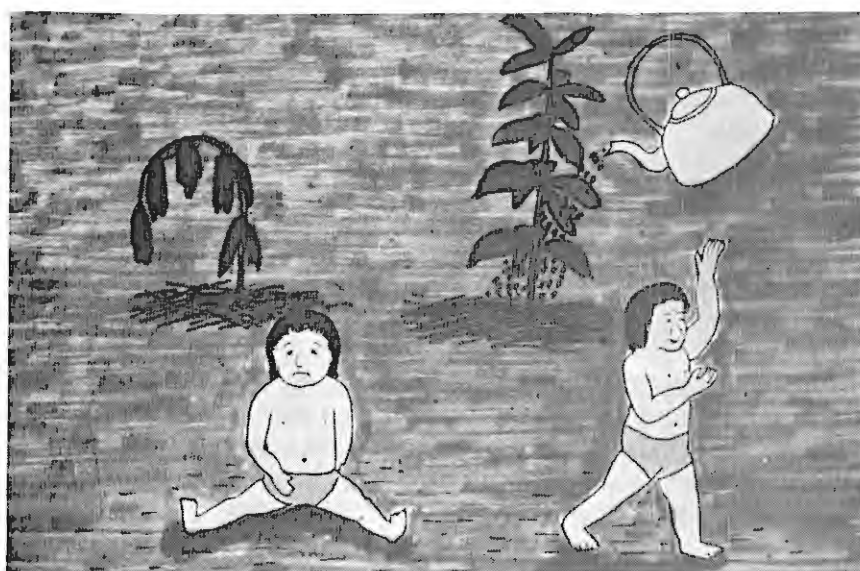


Fig. 24 : An illustration showing the need for oral rehydration during diarrhoea

# LAYAN-LAYAN KESAKIT

NGEBA RONG (running nose)		MIKET (cough)	
DAREM (fever)		MAMO ANI (diarrhoea)	
SUHAT (wounds)		LASO (burns)	
ANGAT (worms)		SAKIT ULUN (headache)	
SAKIT MATEN (eye disease)		SAKIT JIPEN (dental and oral disease)	
SAKIT TEGORO (sore throat)		SAKIT KEBAH (chest disease)	
SAKIT ADIB (abdominal colic)		SAKIT KELUHAT NGAN TULANG (backache)	
SAKIT GATEN (skin disease eg. scabies)			

Fig. 25 : Symbols used for recording symptoms of illnesses by semi-literate village health promoters

#### **3.3.4.3 Training and retraining courses for village health promoters**

The first training course for village health promoters was held in *Kampung* (village) Dalit Gana, Keningau. Nineteen volunteers, including four women, participated in this course which lasted for two weeks in late 1987. Four months later, in 1988, the second batch of 25 all-male participants were trained for two weeks in *Pekan* (Town) Pensiangan.

Visual aids were used during the training both to expedite the learning process and for variety in presentation. At the end of the workshop, the participants were given an oral test. All of them responded fairly well. Participants were also asked to evaluate the training course in terms of the presentations, the practical sessions and the medium of instruction. The feedback received indicated that generally, the participants understood the value of their voluntary service to their communities and they had been made aware of the essential elements of health care through preventive measures.

Since the PHC approach also encompasses the socio-economic aspects in the development of the participating communities, the agriculture and welfare departments became co-trainers in the VHP training course. The VHPs learnt about food production, storage of food and the types of welfare benefits available for the aged, handicapped or destitute.

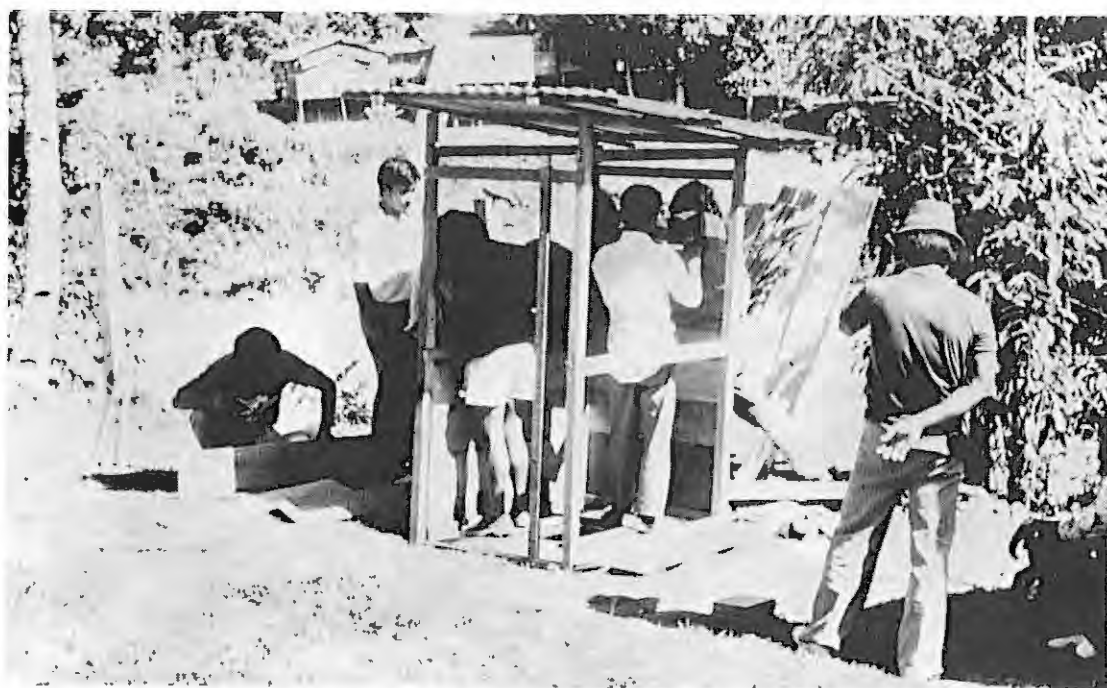
Subsequently, refresher courses were also held in September 1989 to provide continuity of education to the VHPs, to give them feedback concerning the impacts of the programme on the health status of the community as well as to obtain feedback on their performance, identify their problems and weaknesses and solve them; and to enable them to share their experiences with each other. These were achieved through group discussions, practical sessions and formal lectures. Emphasis was laid on disease prevention and health promotion through health education. The VHPs were also reminded to stress on self-reliance and community participation in their respective communities.



*Fig. 26 : Live demonstration on the proper care of infants*



*Fig. 27 : A village health promoter taking a blood smear during a practical session*



*Fig. 28 : Supervised building of a latrine during the training course*





*Fig. 29 : Reinforcing the skill of VHPs in the diagnosis of tuberculosis during a refresher course*



*Fig. 30 : Sharpening the skill of VHPs in the diagnosis of common illnesses during a refresher course*



#### **3.3.4.4 Supervision and follow-up of village health promoters**

Regular and effective supervision is essential in order to sustain performance and high morale among the village health promoters. Supervisory and follow-up visits are carried out by the various arms in the health department such as the mobile health team, the maternal and child health team, and the malaria team. Visits are made monthly by the *klinik desa* staff and once in three months by the personnel of the Area Medical Office of Health, Keningau. In the meantime, the village health promoters with the help of the health staff are expected to document data on immunization, antenatal and post-natal care, deliveries, high risk groups, health education, environmental sanitation, community developmental activities and patient care.

These record books are examined at each supervisory visit by the supervisory staff who will also replenish material supplies and discuss problems faced by the village health promoters and make efforts to resolve them. The supervisory staff also reinforce the special skills learnt at training courses and if necessary, provide on-the-job training, emphasizing in particular the promotion of health and the prevention of disease.



*Fig. 31 : On-the-job retraining with the aid of the VHP manual*

#### **3.3.5 Integration with the flying doctor service, static *klinik desa* and the mobile health team**

The medical and health staff form an important component of the primary health care system and are responsible for continual support to the village health promoters in terms of supervision, follow-up, retraining and evaluation. Having played a mainly curative role, most of the medical and health staff continue to require re-orientation to this innovative approach in health care.

It is noted that integration with the *klinik desa* has been good. The VHPs are aware that they possess limited knowledge in curative care and they will not hesitate to refer cases which they are unable to treat to the *klinik desa*. On their part, the *klinik desa* are often the nearest health facility and this could have accelerated the integration process since there is frequent interaction.

### **3.3.6 Coordination with agricultural services and activities**

Since farming has long been the main occupation of the Murut community, many of them hardly need instruction on farming techniques. Nevertheless, the role of the Agriculture Department is to equip them with newer and more advanced skills in order to increase food production. Where possible, this government sector also introduces new crops and gives instruction on how to cultivate them.

Following its participation in the VHP training course, the Agriculture Department has adopted a couple of "model" villages which it visits regularly for supervision and training. These villages are taught how to plant vegetables and cash crops, and supplied with seeds as well as some basic agricultural tools.

However, the increased agricultural activities in most of the villages may be credited to the VHPs. These VHPs did not only verbally encourage their communities to plant more vegetables and fruits but they showed the way by planting vegetables in their own house compounds.



*Fig. 32 : VHPs learning how to operate agricultural equipment during a training session*

## CHAPTER 4

### IMPACT

#### 4.1 Acceptance of primary health care activities by the participating parties

##### 4.1.1 Acceptance by the communities

The village health promoters are well accepted by the villagers who have been quick to appreciate the advantages of having at least one person trained in health and simple medical care in each community. Since the launching of the PHC project, the villagers have sought treatment from them for minor illnesses such as fever, coughs, diarrhoea, cuts and wounds, headaches, body aches and eye infections. This acceptance is largely due to the fact that the nearest health facility is far from many of these villages. For example, Bonor is a village 22 km. south of *Klinik Desa Dalit Gana*. It was noted that 28 villagers had been sick during the month before the 1989 resurvey. The first source of treatment for 71.4% of them was the local VHP.

As the majority of these communities are financially poor, the presence of VHPs has also enabled them to save precious money and time since the services provided by the VHPs are easily accessible and free of charge.

The VHPs are well-accepted also because they were selected by the communities themselves and were persons known and trusted by them. In addition, most of the male village health promoters are leaders in their own communities. In fact, many of them are either village headmen or members of the village development and security committees holding important posts such as chairman, vice-chairman or secretary.

Consequently, activities such as health talks and *gotong-royong* (communal mutual effort) sessions have received the support and cooperation of the villagers.



*Fig. 33 : The VHP treats minor illnesses, cuts and wounds*



*Fig. 34 : A VHP collecting a blood slide for malaria parasites from a child with fever*



*Fig. 35 : A VHP and villagers working together to clear the area for the construction of a refuse pit*

#### **4.1.2 Acceptance by the village development and security committees**

Although the village development and security committees had been established in Sabah long before the PHC project was started, nevertheless, their members were very receptive towards this innovative programme. They were very cooperative and eager to assist. This positive attitude was mainly due to the efforts of various people such as the Area Medical Officer of Health (AMOH) and his staff who made repeated visits to the villages to discuss and formulate strategies for development which were acceptable to them.

As a result of this careful social preparation, the leaders of these communities were won over and became the pillars of support for the project. Many of these committees work very closely with the VHPs to bring about a higher standard of living and health status. Some of the committee members have also become VHPs who command much support both from the village development and security committees and the villagers.

Some of these committees have even taken measures such as charging a nominal fee for each visit to the VHP (M\$0.2 is the maximum) so that the services provided are not taken for granted. In this way, the villagers are deterred from being too dependent on their VHPs and they also learn to treat themselves for simple medical problems. Consequently, this serves to screen the patients seeking treatment from the VHPs and prevents these volunteers from being overworked. The money collected is used to pay the travel costs of the VHPs to Keningau for regular medical supplies. This clearly shows that strong support is given to the VHPs by these development and security committees.

#### **4.1.3 Acceptance by the village health promoters**

Of the 44 village health promoters (25 from Pensiangan and 19 from Keningau), two VHPs have recently resigned, one who developed tuberculosis and the other was replaced by her husband who had previously assisted her in her duties as a VHP. The others are still actively serving their communities with responsibilities ranging from promotive and preventive to curative care and encompassing all essential elements of PHC. Their performance and progress have generally been satisfactory. Each village health promoter is equipped with a medical kit and is trained to provide simple curative care. They are also required to record the particulars of the patients seen and these include the names of the patients, details of the ailments seen, treatment given and the verbal advice given. This advice may take the form of instruction on when to take the medication given, the proper way to dress cuts and wounds, oral rehydration therapy for diarrhoea and even giving advice to those with dental problems on how to avoid dental decay.

However, since the VHPs have received only basic training, more serious cases are referred to the nearest *klinik desa* after first-aid has been rendered. Besides providing curative care, the VHPs also give advice on the prevention of disease. They are constantly reminded to hold health education talks on a regular basis. These talks are usually well-attended. The VHPs sometimes utilise visual aids such as colourful

posters or a practical demonstration in a community project. Presently, it appears that many of the VHPs favour topics which pave the way for immediate action such as environmental cleanliness leading to a session of *gotong-royong* (communal mutual effort) to clear the village of overgrown grass. Other topics include hygiene, refuse and excreta disposal, animal fencing, boiling drinking water, vegetable planting and breast-feeding.

Many VHPs set aside time for personal visits which may be as frequent as once a week or in bigger settlements, once a month. They are generally conscientious and assume their new-found responsibilities seriously. Care is taken in recording illnesses seen. Blood slides taken indicate that they are able to screen for malaria with a high rate of accuracy. Due to the difficulty in communication, some VHPs have even taken the initiative to regularly visit the Area Medical Office of Health in Keningau where they may replenish medical supplies or receive some technical support.



Fig. 36 : Health education through colourful posters in the VHP's home in Kahaba

#### 4.1.4 Patient workload of the village health promoters

Although the village health promoters provide simple curative care as well as educate their respective communities on health promotion and disease prevention, it presently appears that the curative aspect is the most widely emphasized.

In an analysis of the patient record books of 15 VHPs in *Mukim Dalit*, it was noted that a total of 2,075 villagers sought curative care over a period of three months, ie. July-September, 1988. Up to 47.8% of the patients seen complained of headaches, 18.8% had body pain or aches and 14.4% had fever and cough. Other ailments included stomach aches, diarrhoeas, eye infections, dental caries and cuts. On the average, it was found that each VHP treated 46.1 patients monthly or 1.5 patients daily. In actual



fact, the least busy VHP saw only 0.2 patients daily as compared to the 4.4 patients a day for the most busy VHP. The most busy VHP was a female VHP from *Kampung Kahaba*. She treated a total of 399 patients during this period as compared to 240 patients seen in the same period by her fellow male VHP in Kahaba.



*Fig. 37 : This VHP in Mukim Dalit, seen with her medical kit, sees an average of 4.4 patients daily*

An analysis of the patient record books of 21 VHPs in *Mukim Pagalungan* revealed that 5,582 villagers were treated during a period of six months, ie. July-December 1988. 53.3% of those treated complained of headaches, 19.5% had fever and cough and 14.2% had body pains or aches. Diarrhoea, eye infections, dental caries, stomach aches and cuts were the other minor ailments treated. On the average, each VHP saw 44.3 patients monthly or 1.5 persons daily. In actual fact, the least busy VHP only attended to 0.4 patients daily while the most busy VHP had 3.2 patients a day.

#### **4.1.5 VHPs and "treatment rooms"**

In the absence of village clinics, many VHPs treat patients either in the *ruang tamu* (guest hall) of longhouses or in their own dwelling units. The *ruang tamu* is the informal meeting place for the villagers and also the most popular venue for health education talks. Visiting health staff, however, treat the sick at the *balairaya* (community hall) which is usually better ventilated.





*Fig. 38 : A community centre built by the people of Dalit Gana*



*Fig. 39 : A group of Murut women and children at a balairaya (community centre)*

## **4.2 Impact on the quality of life and health status**

### **4.2.1 Environmental status**

#### **4.2.1.1 Keningau District**

The baseline survey in 1987 showed that the Murut settlements were generally quite clean. However, it was noted that some of the livestock and poultry

reared were free to wander and this inevitably led to an unhealthy environment as animal droppings could be seen everywhere. In addition, poultry and sometimes dogs could also be found inside of dwelling units. Assessment in 1989 showed that animal droppings have been reduced noticeably as a result of animal fencing. Except for the occasional family pet dog, no animals were allowed into the house. It was also immediately noticeable that grass was kept trim and neat. House compounds were also much cleaner.

The survey in 1989 showed that six settlements had access to the gravity-feed water system compared with five in 1987. Up to 74.4% of the households surveyed have been equipped with pour flush latrines as compared to 23.1% in 1987. Refuse is either burnt or buried in pits, with each household having its own refuse pit.



*Fig. 40 : Bare but clean environment in a Murut village*

#### **4.2.1.2 Pensiangan District**

Generally, Pensiangan did not exhibit as many positive changes as found in Keningau. This is partly due to the fact that only one year has lapsed since the project was introduced as compared to 17 months in Keningau. As such, the communities might not have had sufficient time to fully grasp the concept of PHC. In addition, *Mukim* Dalit communities are slightly more urbanised and are more accessible.

Similar to the situation in *Mukim* Dalit, the villages surveyed in *Mukim* Pagalungan were more dirty when seen in 1987 compared to 1989. Animal droppings littered the compound and could sometimes be found inside the houses. Animal fencing has been put up to define the parameters of human and animal droppings.

The survey carried out in 1989 showed that 21 of the 24 settlements have access to the gravity-feed water system compared with 13 in 1987. By 1989, 30.1% of these households have had pour flush latrines installed as compared to none in 1987. The remaining 69.9% use mainly pit latrines.



*Fig. 41 : Gravity-feed water system available in the longhouse*



*Fig. 42 : A well maintained pour flush latrine*

#### **4.2.2 Agricultural development and food supplies**

##### **4.2.2.1 Keningau District**

In 1987, the most common crops planted were hill paddy, tapioca and corn which were for home consumption. Vegetables and fruits were scarce. However, some households had begun to plant rubber as a cash crop. By 1989, more variety and quantity could be seen in the crops cultivated. Some communities have managed to harvest enough paddy, tapioca and corn to sell. In addition to rubber, cocoa and coffee have also been planted as cash crops. Although vegetable planting is a relatively new occupation, every household now has its own vegetable garden and reaps enough for home consumption. The vegetables planted include brinjals, long beans, spinach and french beans. Fruit trees have also been planted and they range from seasonal fruits

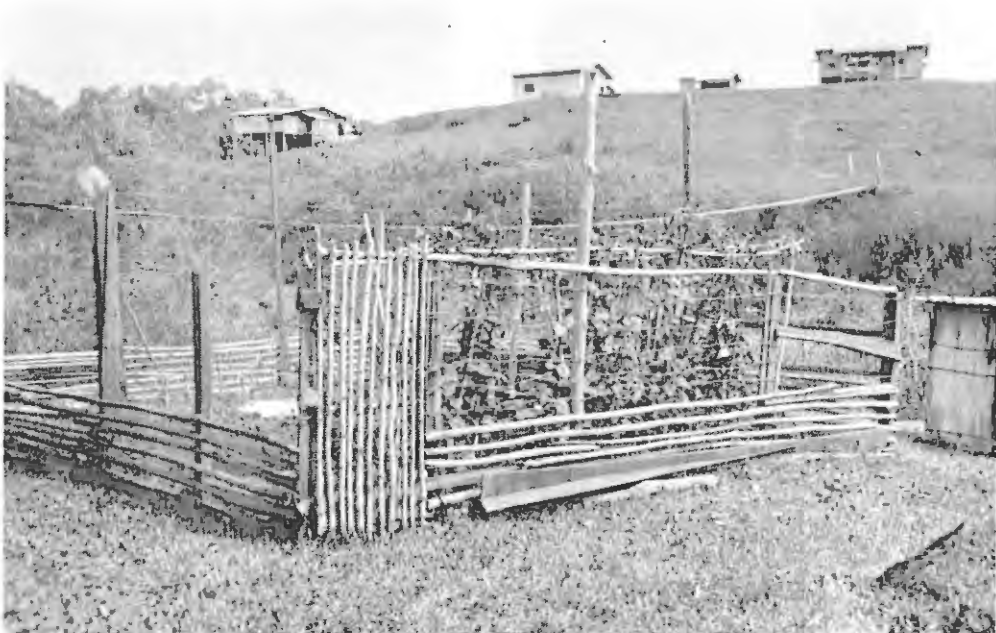
such as durians, mangoes and rambutans to fruits available all year round such as papayas, bananas and pineapples. In one particular kampung, each household owned one acre of fruit trees.

Poultry rearing for home consumption was already popular in 1987 and every household had at least 7 chickens each for home consumption. Only one household reared ducks. By 1989, some households were rearing up to 50 chickens each and any surplus was sold. More households had begun to rear ducks and some had even started to rear geese.

Buffaloes are reared mainly for dowry purposes and in 1989, nine villages were rearing buffaloes compared to six villages in 1987. By 1989, more cows and pigs were also being reared.

The survey in 1989 also revealed that one village has ventured into fish-rearing as another source of food and income. As many of the *Mukim* Dalit villages are located near streams and rivers, fishing continued to be an important source of food. Most of the villagers indicated that they went fishing whenever they had the time.

The Muruts also continue to hunt and gather. Traditionally hunting with blow-pipes, some of them have begun to use shot-guns. The catch includes animals such as wild boar, deer, monkey and mousedeer. Edible ferns which grow in abundance along the river banks are used for vegetable while rattan is collected as a cash crop.



*Fig. 43: A successful vegetable plot which has been fenced to keep out animals*



*Fig. 44: A corn field at Dalit Laut*



*Fig. 45: A vegetable plot of long beans and brinjal plants*





*Fig. 46: Chicken coops for poultry rearing*



*Fig. 47: The Muruts have begun to venture into fish rearing to supplement their income*

#### 4.2.2.2 Pensiangan District

As only seven villages were surveyed in 1987, the other 16 villages surveyed in 1989 were not taken into account when comparing for changes in agricultural activities and livestock rearing.

In all the villages surveyed, hill paddy and tapioca were the main crops planted in 1987. A few households managed to sell part of the paddy harvested but no other crop was sold. Coffee had been planted but did not yield enough for sale while fruits and vegetables were not even enough to be taken as part of the daily diet of the people.

However, by 1989, tapioca, corn and coffee had begun to be sold. Planting fruit trees is gaining popularity but the success of vegetable planting has been undermined by incidences of flooding as most of the project villages are along river banks. The types of fruits and vegetables are similar to the ones planted in *Mukim* Dalit. There has also been an attempt to cultivate cocoa and oil palm in some areas.

Ducks and geese were not reared in 1987 but by 1989, these two types of fowl were found in two villages. Each household had between 3-20 chickens in 1987 but by 1989, it was found that some households had up to 50 chickens each although it was mostly for home consumption.

By 1989, one household reared three cows and another two households had one cow each. This compares well with only one household rearing one cow in 1987. There was an increase in the number of households rearing buffaloes and pigs by 1989 and at the same time, the maximum quantity reared also increased from 6 and 5 in 1987 to 7 and 10 respectively. All livestock reared were for home consumption and any excess was sold for cash.



*Fig. 48: Fishing is a favourite pastime and provides food for the Muruts*



To supplement their diet, these communities turn to fishing and hunting at least once a week. They have also begun to rear fish. Ferns are gathered for food and rattan is collected to be sold.

### 4.2.3 Health status

Children under five years of age usually represent the most sensitive group to any changes in a given population, especially in matters of nutrition and health care. As such, the results of the one-month morbidity recall are shown in two ways; firstly for the entire population and then for children below five years of age.

#### 4.2.3.1 Keningau District

Of the 982 villagers seen in 1989, only 4.9% had fever (including malaria), 1.2% had diarrhoea and 0.6% had abdominal pain. These figures compare favourably with 8.1% for fever (including malaria), 11.6% for diarrhoea and 1.9% for abdominal pain in 1987. These differences are statistically significant ( $p < 0.001$ ).

A one-month morbidity recall for children below five years of age in 1987 revealed that 20.4% of them had diarrhoea and 18.9% suffered from fever (including malaria). By 1989, only 3.4% of the children below five years of age had diarrhoea and 7.6% had fever (including malaria). These differences are statistically significant ( $p < 0.01$ ) (Table 12).

**Table 12**  
**Incidence of diarrhoea & fever in a one-month morbidity recall for children below five years of age in *Mukim* Dalit and *Mukim* Pagalungan, 1987 and 1989**

Type of illness	No. and % of children with symptoms									
	<i>Mukim</i> Dalit					<i>Mukim</i> Pagalungan				
	Pre-PHC No.	%	With PHC inputs No.	%	P	Pre-PHC No.	%	With PHC inputs No.	%	P
Diarrhoea	41/201	20.4	8/236	3.4	<0.01	13/94	13.8	14/335	4.2	<0.01
Fever including malaria	38/201	18.9	18/236	7.6		16/94	17.0	43/335	12.8	

Of the 335 people who were sick in the month before the 1989 survey, 50.4% went to the *klinik desa* and 18.6% sought treatment from the local VHP. However, it should be noted that *Mukim Dalit* is more accessible and has two *klinik desa* in its vicinity.

In 1987, none of the *Mukim Dalit* households consumed iodized salt. However, the 1989 survey revealed that 41.7% of the households consumed iodized salt in addition to fine table salt or coarse salt.

#### **4.2.3.2 Pensiangan District**

The one-month morbidity recall in 1989 showed that 10.3% of a total of 1,338 people had fever (including malaria) and 1.6% had diarrhoea. These figures compare favourably with 13.0% for fever (including malaria) and 4.9% for diarrhoea in 1987. These differences are statistically significant ( $p < 0.001$ ).

In 1987, 13.8% of the children under five years of age had diarrhoea and 17.0% had fever (including malaria). In comparison, only 4.2% of the children in this age group had diarrhoea and 12.8% had fever (including malaria) in 1989. These differences are statistically significant ( $p < 0.01$ ) (Table 12.)

Of the 324 people who were sick in the month before the 1989 survey, 42.6% went to the *klinik desa* and 23.5% sought treatment from their VHPs, indicating that the VHPs are gaining acceptance and favour among their communities. In comparison, the Keningau VHPs were cited by 18.6% as the first source of treatment.

None of the households surveyed in 1987 consumed iodized salt but by 1989, it was found that 18.7% of 252 households consumed iodized salt.

#### **4.2.4 Maternal and child health indicators**

##### **4.2.4.1 Keningau District**

A few positive changes in maternal and child health indicators have been noted. Antenatal tetanus immunization coverage has improved from 61.5% during the pre-project period to 91.1% after PHC inputs. This improvement is statistically significant ( $p < 0.01$ ) (Table 13).

**Table 13**  
**Immunization coverage of children below six years of age and pregnant women in**  
***Mukim Dalit*, 1987 and 1989**

Type of immunization	Pre-PHC		With PHC inputs		P
	No. received/ No. eligible	% received	No. received/ No. eligible	% received	
Antenatal tetanus toxoid (at least one dose)	126/205	61.5	204/224	91.1	< 0.01
BCG	193/213	90.6	238/244	97.5	< 0.01
DPT (at least three doses)	125/202	61.9	190/211	90.0	< 0.01
TOPV (at least three doses)	125/202	61.9	190/211	90.0	< 0.01

Safe deliveries have increased from 27.0% during the pre-PHC period to 67.2% after PHC inputs. This increase is statistically significant ( $p < 0.01$ ) and shows that delivery by trained personnel is gaining favour among the Murut women (Table 14).

**Table 14**  
**Frequency distribution of births by type of delivery,**  
***Mukim Dalit* and *Mukim Pagalungan*, 1987 and 1989**

Type of Delivery	<i>Mukim Dalit</i>					<i>Mukim Pagalungan</i>				
	Pre-PHC		With PHC inputs		P	Pre-PHC		With PHC inputs		P
	No.	%	No.	%		No.	%	No.	%	
Safe	24	27.0	43	67.2	< 0.01	9	20.5	20	23.0	> 0.05
Unsafe	65	73.0	21	32.8		35	79.5	67	77.0	
Total*	89	100.0	64	100.0		44	100.0	87	100.0	

\*Excludes births where information on type of delivery was not available.

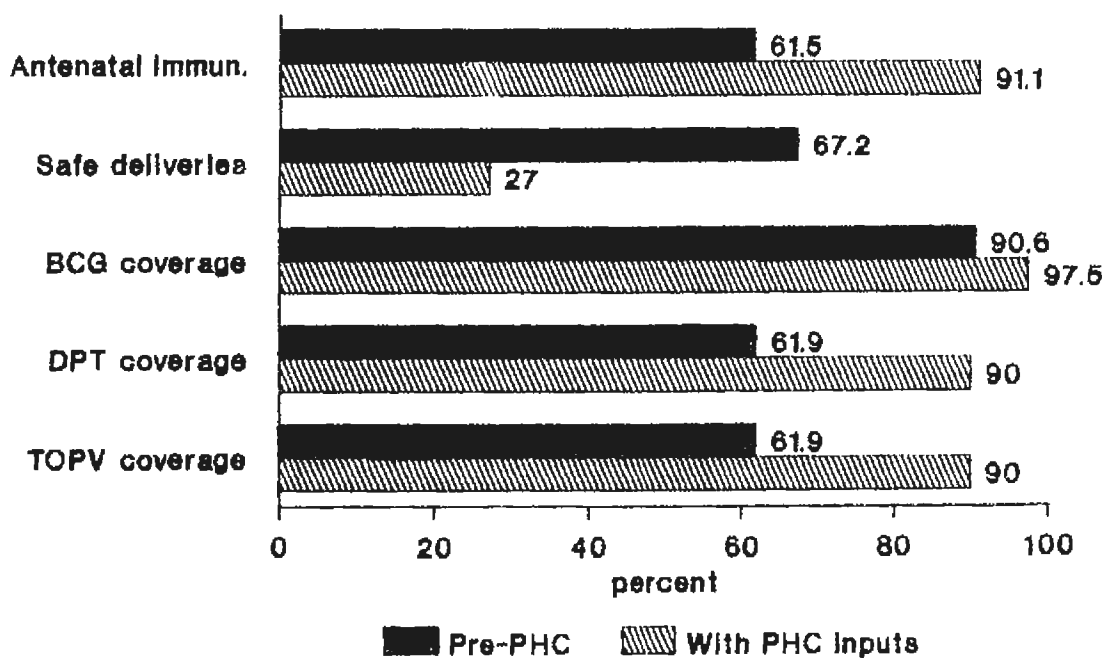
Since the start of the PHC project, no stillbirths have been recorded in *Mukim Dalit* (Table 15). The infant mortality rate has been reduced from 40.0 per 1,000 livebirths in 1987 to 15.4 per 1,000 livebirths by 1989 (Table 16).

**Table 15**  
**Stillbirth rates in *Mukim Dalit* and *Mukim Pagalungan*, 1987 and 1989**

Period	Rate per 1,000 births	
	<i>Mukim Dalit</i>	<i>Mukim Pagalungan</i>
Pre-PHC	19.6 (4/204)	31.9 (3/94)
With PHC inputs	— (0/65)	— (0/90)

**Table 16**  
**Infant mortality rates in *Mukim Dalit* and *Mukim Pagalungan*, 1987 and 1989**

Period	Rate per 1,000 livebirths	
	<i>Mukim Dalit</i>	<i>Mukim Pagalungan</i>
Pre-PHC	40.0 (8/200)	65.9 (6/91)
With PHC inputs	15.4 (1/65)	11.1 (1/90)



*Fig. 49: Maternal and child health indicators, Mukim Dalit*

Immunization coverage for children below six years of age has improved. BCG coverage has increased from 90.6% in 1987 to 97.5% in 1989. 90% of this group of children have received at least three doses of DPT and Polio as compared to 61.9% in 1987. All these changes are statistically significant ( $p < 0.01$ ) (Table 13).

The results of the 1989 survey also indicated that the nutritional status of children below six years of age has improved. Of the 222 children seen, 64.9% were normal, 29.3% were nutritional dwarfs and 5.8% were suffering from wasting with or without stunting. This compares favourably with 51.8%, 38.9% and 9.3% respectively for 1987. This difference is statistically significant ( $p < 0.05$ ) (Table 17).

**Table 17**  
**Frequency distribution of children aged 0–5 years by nutritional status in**  
***Mukim Dalit and Mukim Pagalungan, 1987 and 1989***

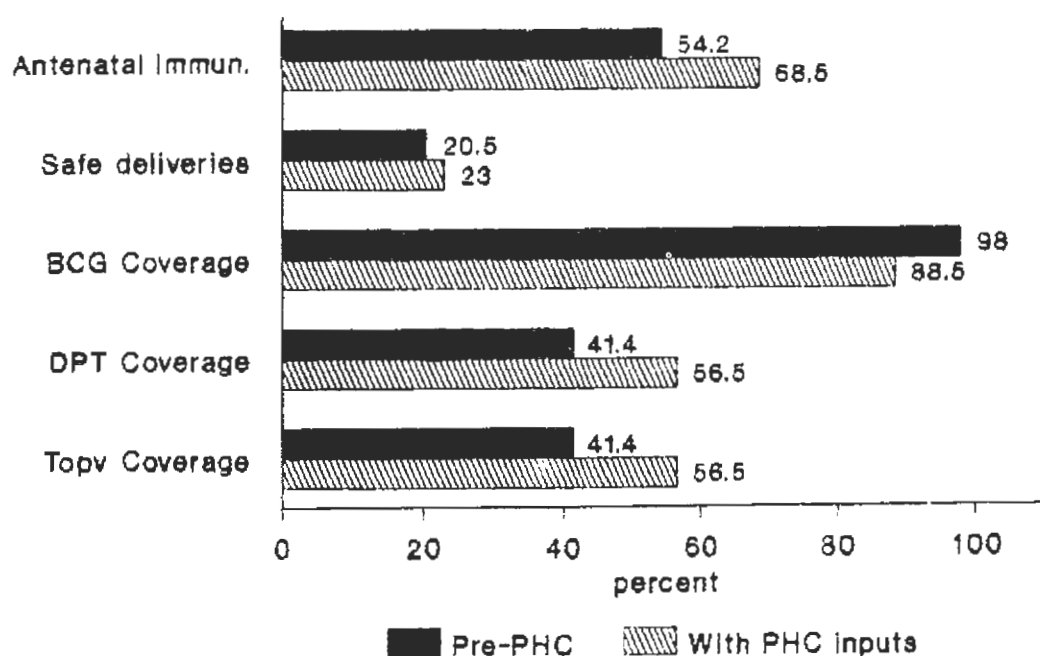
Nutritional status	<i>Mukim Dalit</i>				P	<i>Mukim Pagalungan</i>				P
	Pre-PHC No.	%	With PHC Inputs No.	%		Pre-PHC No.	%	With PHC Inputs No.	%	
Normal	100	51.8	144	64.9		34	40.5	145	52.9	
Stunting with no wasting	75	38.9	65	29.3	<0.05	35	41.7	114	41.6	<0.01
Wasting with/without stunting	18	9.3	13	5.8		15	17.8	15	5.5	
Total	193	100.0	222	100.0		84	100.0	274	100.0	

#### **4.2.4.2 Pensiangan District**

In 1987, only 54.2% of the pregnant women in Pensiangan had received antenatal tetanus immunization. This figure has increased to 68.5% in 1989 but BCG coverage for children below six years of age dropped from 98.0% to 88.5%. However, the percentage of children who have completed at least three doses of DPT and Polio has increased to 56.5% from 41.4%. All these changes are statistically significant ( $p = < 0.05 - < 0.01$ ) (Table 18).

**Table 18**  
**Immunization coverage of children below six years of age and pregnant women**  
**in Mukim Pagalungan, 1987 and 1989**

Type of Immunization	Pre-PHC		With PHC inputs		P
	No. received/ No. eligible	% received	No. received/ No. eligible	% received	
Antenatal tetanus toxoid (at least one dose)	52/96	54.2	183/267	68.5	< 0.02
BCG	97/99	98.0	261/295	88.5	< 0.01
DPT (at least three doses)	41/99	41.4	83/147	56.5	< 0.05
TOPV (at least three doses)	41/99	41.4	83/147	56.5	< 0.05



*Fig. 50 : Maternal and child health indicators, Mukim Pagalungan*

There has been no significant improvement in the percentage of safe deliveries from 1987 (20.5%) to 1989 (23.0%). There have been no stillbirths in Pensiangan since 1987. The infant mortality rate has dropped from 65.9 per 1,000 livebirths in 1987 to 11.1 per 1,000 livebirths by 1989 (Table 16). The low rate of safe deliveries is partly

due to the inaccessibility of these communities. The people prefer government midwives but often could not get to the *klinik desa* on time or the community health nurse was not available. A solution to this problem would be for the people to build "resthouses" near the *klinik desa* so that, as full term approaches the pregnant women can move into these "resthouses" and be delivered by trained nurses. The people have shown interest in this solution which has worked well in Sarawak.

Unlike in Keningau, there were no female VHPs in Pensiangan District and this has probably contributed to the little improvement found in immunization coverage.

The nutritional status of children below six years of age has improved significantly ( $p < 0.01$ ). In 1987, only 40.5% of them could be considered normal but by 1989, this figure has increased to 52.9%. Only 5.5% were found to be suffering from wasting with or without stunting compared with 17.8% in 1987. However, there is no change in nutritional dwarfism (Table 17).

#### 4.2.5 Knowledge, attitudes and practices

A total of 100 respondents (50 males and 50 females) from Keningau and Pensiangan were randomly sampled to gauge their health literacy.

When questioned on the causes of diarrhoea, 68% of the respondents cited contamination of food or drinks as the main cause. Not ensuring personal or environmental cleanliness was mentioned by 21% of them. Partaking of "wrong" food such as too much meat and *tapai* (local rice wine) were mentioned by 16% of the respondents (Table 19).

**Table 19**  
**Causes of diarrhoea as cited by 100 respondents, 1989**

Causes	Responses	
	No.	%
Contamination of food/drinks	68	68
Not ensuring personal or environmental cleanliness	21	21
Wrong food, eg. <i>tapai</i> (local rice wine), too much meat, bananas, overly sweet food, etc.	16	16
Others, eg. exposure to natural elements like rain, sun, sandflies; worm infection, etc.	16	16
Unknown	16	16



Most of the respondents indicated that they would seek modern treatment for diarrhoea. 61% said they would visit the hospital for treatment, 30% preferred to seek treatment from the *klinik desa* and 15% of them responded that they would see the village health promoters. Only 8% preferred traditional medicine or Chinese medicine (Table 20).

**Table 20**  
**Sources of treatment of diarrhoea as cited by 100 respondents, 1989**

Source	Responses	
	No.	%
Hospital	61	61
<i>Klinik desa</i>	30	30
VHP	15	15
Traditional medicine, eg. herbs gathered from the jungle or Chinese medicine	8	8
Others	4	4

Cleanliness of food or drinks was mentioned by 62% of the respondents as a preventive measure against diarrhoea. Personal hygiene or environmental cleanliness was the next commonly mentioned measure (40%). Other measures included abstinence from wrong food, *tapai*, etc. (Table 21).

**Table 21**  
**Prevention of diarrhoea as cited by 100 respondents, 1989**

Prevention	Responses	
	No.	%
Ensure cleanliness of food or drinks	62	62
Ensure personal or environmental cleanliness	40	40
Avoid "wrong" food, eg. too much fruits, overly sweet food, <i>tapai</i> , etc.	8	8
Others, eg. eating in moderation, staying at home, avoiding rain, etc.	10	10
No response	21	21

Mosquitoes were said to cause fever (malaria) by 59% of the respondents. 40% believed exposure to sun, rain or cold to be the cause of fever while 18% thought diet to be the cause. Another 2% felt that failure in taking anti-malaria pills caused fever while others mentioned dirty environment and stagnant water as causes of fever (Table 22).

**Table 22**  
**Causes of fever (malaria) as cited by 100 respondents, 1989**

Causes	Responses	
	No.	%
Mosquitoes	59	59
Exposure to sun, rain or cold	40	40
"Wrong" diet, eg. uncooked food, too much sweet & sour food, etc.	18	18
Not taking anti-malaria pills	2	2
Others, eg. dirty environment, stagnant water	13	13
Unknown	14	14

The main sources of treatment for fever (malaria) cited are similar to those mentioned for treatment of diarrhoea. 58% of the respondents replied that they would go to the hospital for treatment, 24% indicated that they would visit the *klinik desa* and 15% said they would seek treatment from the village health promoters. Another 9% would go to the VHP for a blood examination, 5% preferred to use traditional medicine and 2% would apply a tepid sponge or drink plenty of fluid (Table 23).

**Table 23**  
**Sources of treatment of fever (malaria) as cited by 100 respondents, 1989**

Source	Responses	
	No.	%
Hospital	58	58
<i>Klinik desa</i>	24	24
VHP	15	15
VHP for blood examination	9	9
Traditional medicine	5	5
Self such as tepid sponging or drinking fluid	2	2
No response	2	2

Preventive measures such as mosquito control by destroying breeding places, using mosquito nets and wearing long-sleeved shirts and long pants were used by 55% of the respondents. Taking anti-malaria pills was mentioned by 18% of the respondents as a preventive measure against malaria. Personal hygiene, environmental cleanliness and cleanliness of food or drinks were mentioned by 29% of the respondents while 17% cited avoidance of rain, sunlight or wind as preventive measures (Table 24).

**Table 24**  
**Prevention of fever (malaria) as cited by 100 respondents, 1989**

Prevention	Responses	
	No.	%
Mosquito control, eg. destroying breeding places, using mosquito nets & coils, wearing long-sleeved shirts & long pants, etc.	55	55
Ensuring personal hygiene, environmental cleanliness and cleanliness of food and drinks	29	29
Taking anti-malaria pills	18	18
Avoiding over-exposure to rain or sun or wind	17	17
Others, eg. ensuring a balanced diet, keeping away from malaria patients, etc.	13	13
No response	17	17

The study showed that in general, the people of Keningau and Pensiangan had some knowledge of the causes and prevention of diarrhoea and fever (malaria). The majority of them preferred to seek treatment from government facilities or from the VHPs rather than taking traditional medicine. Their responses also indicated that many of them have understood the importance of preventive measures against diarrhoea and fever.

#### **4.3 Acceptance of the primary health care programme by the medical and health staff**

The primary health care programme is well accepted by the medical and health staff ranging from health administrators to health supervisors, *klinik desa* staff as well as staff from the mobile health teams. Action has been taken to modify the health care system whereby primary health care activities were integrated into the existing health care system. The active participation of the medical and health staff in the primary health care activities including training and supervision of the VHP has largely contributed to the success of the project. Without their effort, this primary health care project could never have been carried out.

#### **4.4 An evaluation of the impact of inputs on health status**

PHC inputs in the project area were concentrated on *Mukim Dalit* and *Mukim Pagalungan*. It will be seen from the data presented previously that inputs did produce significant improvements. Towards the end of the project life, both the *Mukim Dalit* and *Mukim Pagalungan* communities were living in cleaner surroundings. Variety and increased quantity were seen in the crops planted and more Muruts were cultivating cash crops such as cocoa, rubber and corn. There has also been an increase in the variety and quantity of livestock reared.

Generally, immunization coverage has improved. Antenatal tetanus immunization has increased from 61.5% to 91.1% in *Mukim Dalit* and from 54.2% to 68.5% in *Mukim Pagalungan* while DPT and polio coverage has increased from 61.9% to 90.0% and 41.4% to 56.5% respectively. Safe deliveries too have increased from 27.0% to 67.2% in *Mukim Dalit*. However,

there has been no significant improvement in *Mukim Pagalungan*. The infant mortality rate has decreased from 40.0 to 15.4 per 1,000 livebirths in *Mukim Dalit* and from 65.9 to 11.1 per 1,000 livebirths in *Mukim Pagalungan*. The nutritional status of children below six years of age had also improved significantly in both areas. The evidence thus points to the fact that the PHC inputs have brought significant improvements to these two communities.

While it is apparent that this innovative approach has brought about many positive changes to these two Murut communities, the influence of other socio-cultural factors may have affected the success of the primary health care project. The main factor is the social structure of the Murut community. The patriarchal system practised by the Muruts tend to place women at a disadvantage in terms of educational opportunities and social status. This often means that they are accorded a lower status in society and their opinions are neither sought nor heeded. Frequently, this also implies little or no access to formal education. Given this traditional upbringing and background, it is therefore not surprising that only four out of 44 VHPs are females. The absence of female VHPs could have contributed to the poor improvement in immunization coverage in *Mukim Pagalungan*.

#### **4.5 Extension of the PHC programme to other areas**

Stimulated by the several distinct positive changes observed since the implementation of the primary health care project, the Medical Department of Sabah has extended the programme to four other areas in the Keningau Area; namely Sepulot, Tenom, Sook I and Sook II. In each of these areas, the VHPs were trained using the same training manual. Up to September 1989, there were 78 trained VHPs in Keningau outside the project area. Three other areas have also requested the Area Medical Office of Health to train VHPs from the communities. At a PHC post-project meeting in October 1989, at Kota Kinabalu, Sabah, attended by the principal investigator, the Sabah Director of Medical and Health Services together with his senior management staff, a decision was made for the State Health Department to extend a similar PHC programme to all underserved areas in Sabah. A committee has been set up to look into the implementation of this programme.

## CHAPTER 5

### SUSTAINABILITY

It cannot be denied that the primary health care project has created a linkage between the health team and the communities and empowered them with the knowledge to organize themselves to achieve an increasingly high level of health through community participation and self-reliance. However, it is important to identify the individual factors that have contributed to the success of the project as well as the factors which have hampered its total effectiveness. This is to ensure that the project will sustain itself even after the withdrawal of the research component and that the health status of the communities will continue to improve. The following are important factors to consider.

#### 5.1 The commitment of the government

From the very inception of the project, the vision of the principal investigator was that the project would be wholly the responsibility of the State government with the researchers only acting as facilitators. One of the evidences that this vision was clearly communicated is that the endorsement of the certificates given to the VHPs was by the State Director of Medical and Health Services, clearly indicating that the project was the responsibility of the government. External financial assistance was minimised and used exclusively for research while the recurrent cost for implementation was borne by the government.

#### 5.2 The commitment of the health staff

Commitment was obtained from all categories of health staff, from the Director of Medical and Health Services, Area Medical Officer of Health, VHP trainers, *klinik desa* and mobile health team by having induction and orientation courses to introduce them to the PHC concept and by involving them right at the planning stage. The orientation of the medical and health staff is a continuous process and briefing sessions were held from time to time to orientate new staff to their role in the PHC programme. A refresher course was also held in 1989. Furthermore the staff were also involved as trainers and this reinforced the identification of the project as their own, with the result that the staff felt committed and interested in the project and its final outcome.



Fig. 51 :  
A  
refresher  
course for  
health  
staff

### **5.3 Careful sensitization of the community**

Another very important aspect that ensured sustainability was careful social preparation to obtain the full and willing participation of the community. The community understood that the project was their project and not a government project. If the community and its leaders are not convinced that their participation in the project will benefit them, they will not cooperate and the project will fail. Therefore the sensitization process is of utmost importance and must not be hurried. The community must be given sufficient time to understand clearly and to discuss among themselves all aspects and implications of their involvement in the programme. The sensitization team must be prepared to make several visits to the village to do the necessary groundwork of familiarising themselves with the people, their culture, resources, needs, leadership patterns and perceptions and to utilize the best way of discussing the community's needs and how these needs may be met through the programme. Often the community may not perceive certain needs as such, for example they may need food but may not realize the importance of acquiring further agricultural skills to produce more food. It is a bargaining process which requires much patience, a willingness to listen and the ability to find solutions acceptable to them. The social preparation of the community must not be limited only to the preliminary stage but should be ongoing to continually motivate the community and to sustain their commitment to the project.

### **5.4 Village development and security committee**

Once the community had clearly understood the PHC concept, they were encouraged to strengthen the various sectors in the village development and security committee as the improvement of the standard of living and health status of a community must be a multi-faceted approach involving simultaneous inputs in other areas such as education and agriculture. An important aspect which needs to be looked into is the development of guidebooks and training courses for committee members to equip them with the necessary skills to function effectively in their role of coordinating the village's developmental activities. The village development and security committee is also responsible for the selection of VHPs.

### **5.5 Selection and support of the VHP**

To minimise the dropout rate, the selection of the VHPs was done carefully. The VHP is the link between the community and health services and it is important to choose a responsible person who will be able to command the respect of the community and to mobilize them. Therefore, as far as possible, the VHP must be the unanimous choice of the community. It is essential that the VHP and the community understand that the VHP is responsible to the community and is answerable to the village development and security committee and is not an employee of the Medical Department. The village development and security committee was also encouraged to work out an appropriate scheme to compensate the VHP for the time and money spent in carrying out his duties, for example by having the whole village work on the VHP's field a few days in a year or by periodically collecting a fixed amount of money or food from every household for the VHP.

### **5.6 Training the VHP**

The training of the VHPs was carried out as soon as possible so as to sustain the interest of the community. The emphasis of the training was on the promotive and preventive aspects rather than on curative care. As many VHPs had a low level of education, the training manual was simple and well-illustrated. The trainers were innovative and used their ingenuity to

communicate, for example by giving live demonstrations, using colour posters, slides and other methods. The training itself was always task-oriented and problem-solving in nature. The training was always conducted as close to the community as could be managed and at the health centre that would serve as the next level of care.

### **5.7 Refresher courses for VHPs and VHP trainers**

Refresher courses were held to provide continuity of education and commitment to primary health care. Consequently, these should be planned for when training is being considered. The VHP trainers too require refresher courses in order to receive a more indepth knowledge of certain specific areas of the VHP project and to understand their role better.

### **5.8 Supervision**

Supervision as a means to ensure quality is a crucial aspect of the programme. Mechanisms were developed to ensure that each category of worker at the health centre, mobile clinic as well as at the community level received regular supervision from a higher level. The actual supervisor of the VHP is the village development and security committee, to whom he is directly responsible. The staff of the Medical Department act as technical supervisors on behalf of this committee and must therefore operate through them. The VHP must be given backup support by the Medical Department in terms of management, supervision, logistic support, evaluation and retraining. In principle, the less training a health worker receives, the more supervision will be required. Field experience indicates that in the case of VHPs, supervision should take place at least once every two months. The VHPs can gather together at the health centre or be visited by their supervisors and be given on-the-job training to reinforce skills learnt at training courses. Most primary health care programmes have failed as a result of a lack of supervision. Time and again workers are trained and forgotten. Without adequate quality assurance, primary health care will degenerate into inadequate health care.



*Fig. 52 : Discussion with VHPs during a supervisory visit*



## **5.9 Rewards and recognition for the participating villages and VHPs**

Another important aspect is the provision of rewards and recognition of the achievements of the VHPs and their respective villages as a means of ensuring continued motivation. The PHC project is a people's project and when implemented properly, it is the people who will benefit from it. The role of the Medical Department is to assist, encourage and motivate the people to benefit from the project.

The villages were encouraged to participate by giving them priority for various environmental projects such as pour flush latrines and gravity-feed water system. Villages with VHPs were also given consideration for other agricultural and development projects. These villages may also be used as "model villages".

The earliest incentives given to the VHPs were certificates and medical kits at the completion of the training course. In addition, these VHPs will soon have their own special identification cards that will enable them and their families to receive free outpatient treatment at the district hospitals. A competition among the villages will also be held soon and prizes will be awarded to the best among them.

## **5.10 Intersectoral coordination**

As the prerequisites of improving family health in the poor families are adequate food and adequate income, intersectoral participation is imperative if the project is to have an impact. One of the ways of involving the community and the other agencies and departments was by incorporating their participation in the project planning and implementation. However, it must be made clear that the Medical Department should ultimately be the coordinator of the project.

## **5.11 The Future**

This project was only begun two years ago and although it is still in its initial implementation phases some measureable impact has already been seen. In addition a number of measures have been taken to ensure sustainability and self reliance as outlined above. However, time has not permitted the initiation and development of a number of other measures necessary to ensure even greater self reliance. For the guidance of the Sabah Medical Department and others who will continue this project after the present principal investigators have left, these measures are outlined below:-

### **5.11.1 Financing mechanisms**

In the long run the VHPs need to receive some form of compensation for their time and labour as VHPs. The communities should therefore arrive at some financial mechanisms to provide them with adequate economic compensation. The most important initial step has been for the VHP to gain the acceptance of the community, who need to feel that the VHP's contribution is valuable. Once this has been achieved his advice will be readily received and financial support either in cash or in kind will be more readily contributed by the community. This can be in the form of regular small fixed cash contributions, contributions of food eg. rice, or fixed quantities of communal labour in the VHP's fields once or several times each year. However it must be emphasized that whatever the financial arrangements may be, this should be with the mutual consent of the VHPs, the village development and security committees and the people as a whole.

### **5.11.2 Curative services as an entry point**

Curative know-how is the entry point into the community and should be maintained and sustained. However the thrust of the PHC programme is to transfer preventive and health maintenance know-how from the health professionals to the VHPs and thence to the people themselves so as to enable the people to be self reliant in the prevention of disease and the maintenance of health. The emphasis on technology transfer should be on prevention and health promotion rather than on curing diseases.

### **5.11.3 Greater participation of the community**

It is important to spell out the elements of a participatory strategy. At present, the community involvement has been largely through the recruitment of the VHPs and the support of the village development and security committees. Greater village participation should be solicited by stepping up all activities; giving the village development and security committees greater responsibility and a wider self-generated programme and by involving the people in more self-generated *gotong royong* projects. Examples could include the development of kindergardens, supplementary feeding programmes for children and "resthouses" next to the *klinik desa* for antenatal mothers awaiting childbirth near term.

### **5.11.4 Involvement of women as VHPs**

More women should be involved in the programme as they play an important role in the health status of any community especially those dealing with maternal and child care. Due to the social organization of these communities, there is a bias in the present criteria against selection of women. Most of the women in the communities do not hold leadership positions and neither do they have much formal education. Thus a change in the criteria would enable more women to be selected as VHPs. Further incentives could be offered to encourage women to volunteer as VHPs.

### **5.11.5 Guidelines for extrapolation to other areas**

Listed below are several guidelines for the extrapolation of the study to other areas:-

1. The commitment of the government in providing technical and financial support for the project is vital to its success.
2. The commitment of the health staff at all levels must be obtained as the outcome of the project depends on their identifying themselves with the project and their sustained interest.
3. Careful sensitization of the community must be done to prepare them and to ensure their full and willing participation.
4. Collaboration with the village development and security committees is important as they are ultimately responsible for all community aspects of the project.
5. Careful selection and continuous support of the VHP must be ensured to minimise the dropout rate and to accelerate the acceptance of the VHP's role in the community. Emphasis should be given to recruit women, criteria being revised so as to permit more women to volunteer.

6. In-depth training of the VHP with emphasis on the transfer of preventive and promotive technology to the general community must be included.
7. Refresher courses for VHPs and VHP trainers should be conducted from time to time.
8. Adequate supervision of all level of workers is a crucial aspect of the programme.
9. Rewards and recognition for participating villages, their committees and VHPs should be given to motivate them in their work.
10. Intersectoral coordination particularly with relevant government departments is imperative for the project to have an impact.

## CHAPTER 6

### CONCLUSIONS, RECOMMENDATIONS AND SUMMARY

#### 6.1 Conclusions and recommendations

The primary health care project has been successful in making essential health care accessible to the underserved people of Keningau, Sabah. It has served to upgrade their health status in many ways, mobilizing them through self-reliance and community participation to enhance their quality of life. While it is apparent that this programme has brought about many positive changes in the lives of the participating communities, much remains to be done for the underserved people of Sabah. To this end, it is hoped that the following recommendations will serve as a useful guideline for maintaining and further improving the health of the people:

1. The commitment of all the staff from the Sabah Medical Department and the University of Malaya, from the Director of Medical Services, Area Medical Officer of Health, VHP trainers, mobile health team, *klinik desa* staff as well as staff of all categories contributed to the project's success and every effort should be made to maintain the level of commitment. Every member of the supervisory staff should be involved in training the VHPs because this will cause them to identify the project as their very own and therefore their responsibility.
2. More Murut women should be selected and trained as VHPs in order that the maternal and child health aspect is not neglected. Where possible, the establishment of women-to-women groups could serve to strengthen this area. The main purpose of this programme is to help the women in the community to discover their potential in contributing to the improvement of their own health and the health and development of the whole community.
3. Sufficient interest has been shown in the curative care aspect and this should be sustained. However, the VHPs should be continually encouraged and guided to give greater emphasis on the promotion of health and the prevention of disease. Further, care must be taken in the selection, training, supervision and monitoring of the VHPs for them to function effectively and to minimise the dropout rate.
4. Although the VHP is a voluntary worker, an appropriate scheme should be worked out within each community to compensate him for the time and money spent in looking after the health needs of the community. Incentives or rewards and recognition for their achievements could also be given by having competitions among the VHPs; and awarding certificates of participation and prizes.
5. To ensure that the developmental activities of the village are well coordinated, the village development and security committees must be given all available technical support and assistance to enable them to function effectively in their role. A guidebook should be drawn up and training courses conducted for them to assist them in organising the community more efficiently and in selecting suitable VHPs.

6. As follow-up and supervision are crucial to the success of the programme, orientation of the medical and health staff should be an on-going process for the new staff to enable them to contribute more effectively. Refresher courses and workshops should be conducted from time to time.
7. It is important that monitoring and evaluation be constantly carried out to ensure that all levels do not slacken in their functions and to enable a more efficient feedback to both the supervisors and VHPs.
8. Intersectoral coordination with other government departments and agencies concerned with community development should be strengthened by having intersectoral briefings at state, divisional and district levels. This would also help to stream-line priorities.
9. Further steps should be taken to encourage greater participation of the community by giving the village development and security committees greater responsibility and a wider self-generated programme as well as involving the people in more self-generated *gotong-royong* projects.
10. Currently, there is no legislation for the iodisation of salt in Sabah. Iodised salt is given only to pregnant women attending the maternal and child health clinics. Unless legislation requiring salt iodisation is enforced to cover all forms of salt (including coarse salt) imported into Sabah, endemic goitre will continue to be a major problem in Sabah. It is urgent to initiate salt iodisation and to ensure adequate and even distribution, particularly to the more remote areas of Sabah.

## **6.2 Summary**

Malaysia has made considerable improvement both in the socio-economic and health care aspects of her people. A long-established rural health care system provides preventive and curative health services to a large proportion of the rural population. However, studies in 1979 indicated that 41.2% of the people in Sabah remained underserved. One of the least served and poverty-stricken areas is the Keningau Area.

Engaging in shifting cultivation, the Muruts continue to live in remote and sometimes inaccessible areas and consequently, many lack basic amenities resulting in poor health and high morbidity and mortality.

In order to meet the health needs of the people, an action-research primary health care project was started in 1987 with full community participation and integration with the existing health care system. Several discussions were held with the leaders and influential members of each village and the communities were given time to deliberate on their participation in the programme. The health staff were re-orientated to their new role which emphasized health promotion and disease prevention rather than curative care. As a result, 44 village health promoters were chosen and given two weeks of intensive full-time training in the essential elements of primary health care with emphasis on health promotion and disease prevention. These VHPs form the link between the community and health services, acting as facilitators of community activities as well as agents of change in their respective villages. A comprehensive supervisory system was also developed and mechanisms for supervision established to ensure quality and success.

Generally, evaluation carried out indicate improvements in all participating communities. Village development and security committees have given strong support to the project and the selected VHPs, many of whom are members of these committees. The communities too have been supportive as evidenced by their participation in various development projects such as construction of sanitary utilities, cleanliness campaigns and agricultural projects. Environmental sanitation, safe deliveries, immunization coverage, nutritional status and agricultural activities have improved while the infant mortality rates have been reduced.

The primary health care project has not only served to bring essential health services to the disadvantaged Muruts in Keningau, but it has also helped to develop and sustain a sense of self-reliance. They have been stimulated to achieve and visibly improve their level of health and economic status through community participation. Although much has been achieved and emulated for other areas, much remains to be accomplished. Nevertheless, it cannot be denied that the primary health care project has benefitted the people of Keningau.

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## INVESTIGATORS

ASSOC. PROF. S.T. CHEN,  
Department of Paediatrics,  
Faculty of Medicine,  
University of Malaya,  
Kuala Lumpur,  
Malaysia.

Principal Investigator  
1988 – 1989

PROF. P.C.Y. CHEN,  
Department of Social & Preventive Medicine,  
Faculty of Medicine,  
University of Malaya,  
Kuala Lumpur,  
Malaysia.

Principal Investigator  
1987

DATUK (DR.) MECHIEL K.C. CHAN,  
Director of Medicine & Health Services, Sabah.

DR. HASAN ABDUL RAHMAN,  
Area Medical Officer of Health, Keningau, Sabah.

DR. MEE LIAN WONG,  
Department of Social & Preventive Medicine,  
Faculty of Medicine,  
University of Malaya,  
Kuala Lumpur,  
Malaysia.

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