

<Review>

Health issues and challenge in Vietnam

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1. General information

Vietnam is situated in one of the economically fastest growing regions of the world. The land area covers 329,841 sq. km. and stretches 3,260 kilometers in an elongated shape along the eastern coast of the Indo-Chinese Peninsula with 61 provinces, 600 districts and 10,300 communes. (cf. Fig. 1 (map))

The country is bordered on the west by Laos and Cambodia, and China on the north. Hills and mountains cover up to three-fourths of Vietnam's land area. In 1987, 20% of the total land area was cultivated although this varies widely by region, while another 30% was under forest, 45% was unusable and 5% built-up.

In the central region, about 24,000 sq. km. (7%) of land along the coast are saline. This region has often experienced typhoons and floods. Due to these conditions, the main occupations of the population in this region are salt production and fishing.

The delta regions are mainly available for agriculture. These regions occupy a surface area of 47,500 sq. km. and are located mainly in the Red River delta in the north and the Mekong River delta in the south. In general, the land is fertile and suited for a wide variety of crops, especially paddy. These characteristics have led to a much higher population density in these delta regions compared to the central part. So, population pressure in these regions is limiting the availability of land and is causing a lot of public health problems in Vietnam. This has to be kept in mind when one attempts to identify public health problems as challenges for the coming decade.

As mentioned earlier, the high plateau and mountainous regions cover most of the country. A large part of this area is degraded with deforestation and soil erosion, and hence, has become isolated and inhabited mainly by ethnic minorities who live in scattered communities. Some are engaged in shifting cultivation or slash and burn agriculture.

As far as climate is concerned, rainfall has the

(Dean, Hanoi School of Public Health, Medical University of Hanoi, Vietnam)



<http://www.kochi-ct.ac.jp/~canh/gif/mapvn.gif>

Fig. 1 Map of Vietnam

greatest influence on human activities. Vietnam is located in the tropical monsoon area of South east Asia. Rainfall is abundant, averaging 1,800 to 2,500 millimetres per year. Vietnam is among five major typhoon centres of the world. The typhoon and rainy seasons always cause substantial problems, including public health, particularly in the Red River delta and central provinces.

The social gains of the past have been of great benefit to the realization of the government's policy of "Doi Moi" and transformation to a market economy (Table 1). A high literacy rate (Fig. 2) has enabled the people to adapt quickly and flexibly to new technologies and know-how, and literacy has facilitated mass mobilization around economic objects.

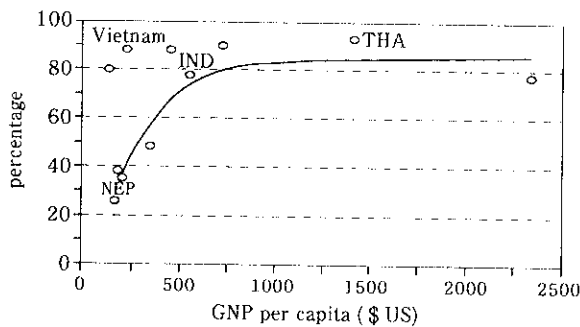
Table 1 Basic Data

Total population (millions) (1997)	76.5
Population density (per km ² , 1997)	231
Projected population (millions) (2025)	110.1
Ave. pop. growth rate (%) (1995-2000)	1.8
GDP per capita (1995) in USD	280
Life expectancy M/F	64.9/69.6
Under-five mortality M/F(‰)	61/67
illiterate (>15 years) M/F (%)	4/9
access basic health care (%)	90
access to safety water (%)	36
Public expenditure on health (as % of GDP) (1990)*	1.1
Population per doctor (1997)	2256

SOURCE

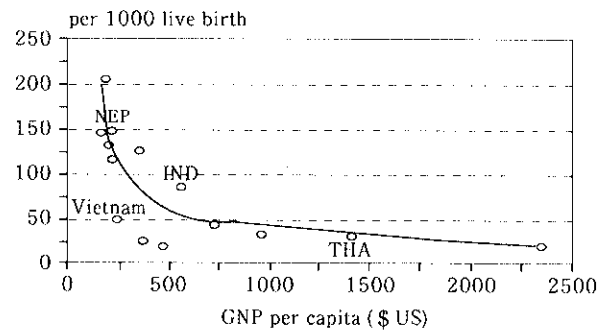
United Nations Population Fund. 1997. *The State of World Population 1997*. New York: UNFPA.

* United Nations Developing Programme. 1996. *Human Developing Report 1996*. New York: UNDP



Source : The state of the World's children 1993

Fig. 2 Literacy Rate (15+ Yr) in 14 Asian Countries



Source : The state of the World's children 1993

Fig. 3 Mortality rate of under-five age children and GNP in 14 Asian countries

Good health has enabled sustained hard work and physical productivity, and the high status of women has vastly contributed to national economic output.

As a result the Vietnamese people are highly literate (88 %); enjoy high life expectancy and low infant and young child mortality, and have a high level of female participation in the economy and society. These achievements are particularly impressive considering the low level of GNP per capita. As can be seen from figure 3, Vietnam compares very favourably with other countries.

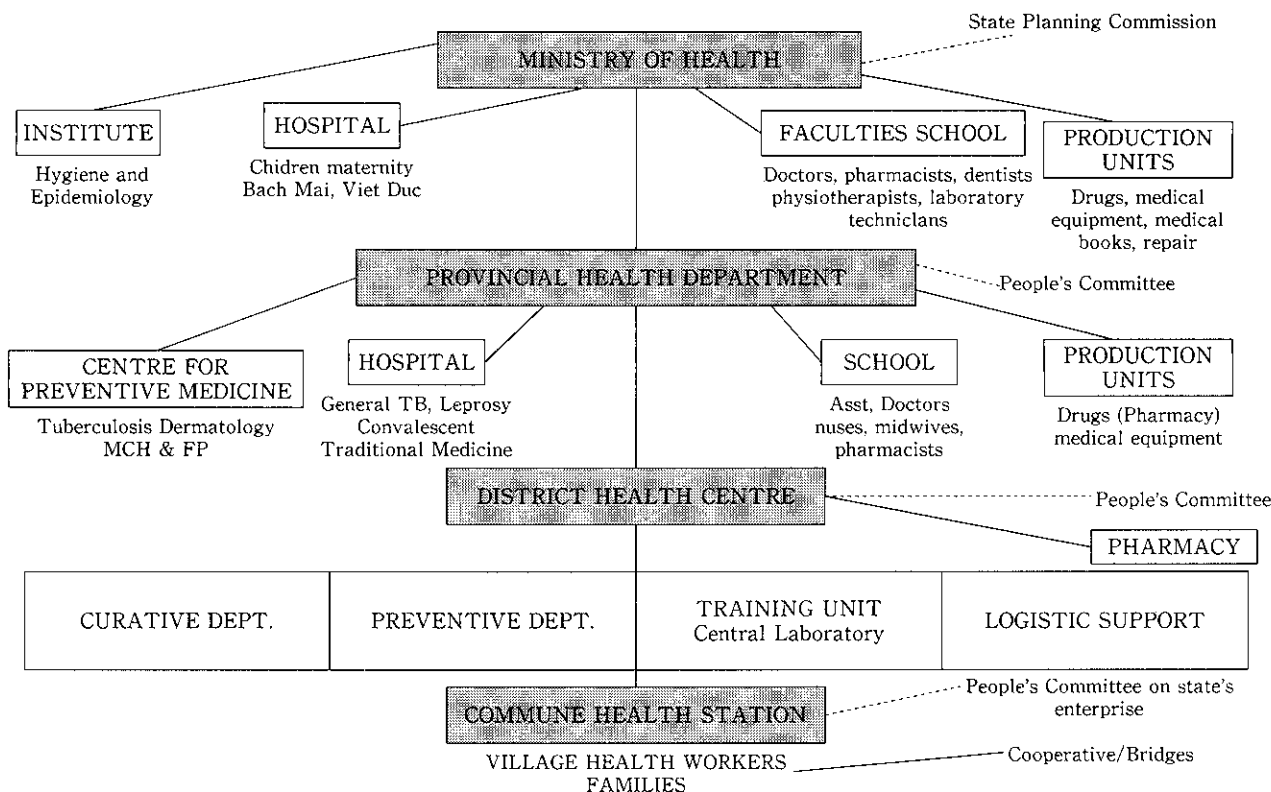
The fact that social gains have been more or less evenly spread throughout the entire population has honed national morale to a high degree and promoted great social cohesion and stability.

There is a great need to protect and further advance these social gains of the past, during and after the present transition to a market economy. This on-going and rapid transition brings many opportunities to make further progress, but it is also bringing many threats.

2. Health care system reform

The Vietnamese health system was established in the rural areas during the war years, on the basis of equity and emphasis on primary health care. The system was subsequently extended to include urban communities. Today, the country has a well-structured health system, which extends widely into both rural and urban areas. Almost every rural commune and every city ward has a trained health professional available. These primary health workers are supported by successively higher echelons of health service each echelon providing an increased level of skills and facilities (Fig. 4).

The priority concerns of the government are in making primary health care services available to the entire population and in improving the quality of health services. In developing the primary health care approach, the government's goal is to achieve a well coordinated system of services at the district level, including the provision of integrated home care and improving the quality of care provided at commune health centres.



(*) This structure is under review and is expected to change

Fig. 4. Structure of Health Services

Liberalization measures

Because of its commitment to former principles, international isolation and severe resource constraints, Vietnam has long pursued a health strategy that encouraged self-reliance and austerity. In 1989, the government put in hand a series of measures designed to liberalize the health sector and mobilize new resources.

With the introduction of a market economy to Vietnam, private medical practice is increasing in number and emerging as a source of medical care even in rural areas. Although this component is still small in terms of size and types of services provided, about two thirds of total health care expenditure has been estimated to be for private medical practice. This source is really playing a competitive role in improving the quality of services provided by the public sector. The major issue facing private practice is regulation to ensure standards of practice. Currently, private practice is a supplier's market, making it more difficult to control.

The health manpower in Vietnam comprises about 200,000 people, including physicians, assistant physicians, medical technicians, nurses, midwives, pharmacists, and traditional healers (Table 4). About half of the health workforce are deployed at the central and provincial levels, and the other half work at district and

commune levels. It is also worth mentioning that a greater proportion at central and district level have higher qualifications. For example, 15% of all physicians are employed at the central level and less than 4% of them work in Commune Health Stations, compared to 1.5 % of assistant physicians, nurses, midwives at central levels, and about 30% in Commune Health Stations. This manpower distribution pattern reflects the strategy of implementing primary health care where basic tasks are delegated to the lowest levels. Most of the tasks at the Commune Health Stations do not need highly skilled staff. In some ways it seems reasonable but in practice the need for more training in implementing primary health care is urgently needed to gain fruitful returns.

Another important aspect of public health is drug supply. Many issues have been considered in formulating the strategy for supply of essential drugs in Vietnam. A joint UNICEF/WHO Drug Action Programme Mission visited Vietnam and found that the Essential Drugs Programme has to start from scratch. The fact is that this programme has been available in Vietnam but there are still serious problems about the quality and the variety of drugs available on the difficult-to-control drug market. Vietnam is now gearing up to develop an

Table 2 Public Health Facilities in 1997

Facility	No.	Bed
Inst. with beds	10	2,140
Special hospitals	74	16,308
General hospitals	719	84,358
Trad. Med. hospitals	40	3,875
Inter-communal polyclinics	1,006	9,453
Maternity clinics	66	1,207
Rehabilitation hospitals	20	880
Sanatoria hospitals	80	10,809
Leprosy hospitals	19	2,637
Commune health centers	9,546	42,391
Hospitals of other ministries	77	4,875
Total	11,657	136,542

Beds in CHCs are excluded from the total number

Table 3 Private health facilities in 1997

Facility	No.
Hospital(total : 150 beds)	3
General clinics	4,329
General polyclinics	45
Special clinics	1,454
Dental clinics	2,523
Maternity clinics	215
X ray	69
Ultra sound	55
Laboratory	213
Other facilities	8,795
Total	17,701

Table 4. Health Personnel (1995-1997)

No	CATEGORIES	1995	1996	1997
	-- TOTAL	204,640	212,103	213,099
1	-- Medical Doctors	31,152	33,470	34,001
2	-- Pharmacists	5,186	5,286	5,406
3	-- Assistant Doctors	46,988	48,238	48,459
4	-- 2 nd Degree Medical Technicians	6,050	6,332	6,221
5	-- Assistant Pharmacists	5,307	6,274	6,485
6	-- 2 nd Degree Pharm. Technicians	1,691	1,709	1,655
7	-- 2 nd Degree Nurses	21,251	22,536	22,672
8	-- 2 nd Degree Midwives	7,145	8,101	8,563
9	-- Elementary Nurses	24,310	20,886	20,768
10	-- Elementary Midwives	4,608	4,461	4,479
11	-- Lab. Technicians	1,773	1,597	1,760
12	-- Traditional Medicine Practitioners	901	461	415
13	-- Elementary Pharmacists	7,185	7,852	8,067
14	-- Other Bachelor Degrees	3,735	3,965	4,224
15	-- Other 2 nd Degree level	4,831	5,560	6,038
16	-- Others	32,527	35,375	33,886

Notes :

--2nd Degree Nurses and Midwives :

--Entry requirement : after 12 years schooling in general secondary school.

--Duration of training : 30 months

--Job : Mostly in hospitals

--Place of training : in 50 Medical Secondary School of the Provinces

--Elementary Nurses and Midwives :

--Entry requirement : after 9 years schooling in general secondary school.

--Duration of training : 1 year

--Job : Mostly in rural commune health stations (similarly to public health nurses)

Recently, the training of this categories has been stopped.

Action Programme on Essential Drugs. However, there is a lack of a centralized and standardized procurement system to assure that drugs used in the health care system conform to quality standards, and to the list of Essential Drugs.

The introduction of user-fees at all health care levels was implemented several years ago. However, exemptions were considered for those who cannot afford to pay for health care services. Unfortunately, there has very little improvement in the quality or services pro-

vided.

There is wide recognition of the need to streamline overall management of the health care system. Often, there is limited coordination between the various departments and institutes. Supervision, which is supposed to take place from the central to the peripheral levels, is insufficient because of a lack of resources and know-how. In addition, the vertical structures that were very useful in a former environment are now providing inefficient in a market economy.

3. Population/Family planning

Vietnam ranks second in terms of population size compared to other countries in Southeast Asia, with a population of 77million in 1997. It also has a high population density by 231 people per sq. km. The King majority account for nearly 90% of the population. The balance of more than 10% (about 8.5 million) is from 53 distinct minority groups.

A national family planning programme has reduced the average population growth rate to 2.1% per annum for the 1979-1989 period, compared to a rate of 3.9% per year during the period from 1954 to 1960, and a rate of 3% per year for period 1970 to 1976. Population growth rates vary considerably between regions. The central highland region has a growth rate of 5.8 %, while the

Mekong-river delta region has a rate of 1.9% per annum in 1989 (United Nations Children's Fund 1994).

The population pyramid of Vietnam is typical of a less-developed country, with a wide base and narrow top (Figure 5). The top half from the age of 35 years up to more than 80 years is very narrow reflecting the influence of war from 1940-1975. At the same time, the proportion of children under the age of 14 is extremely high.

Together with rapidly declining mortality, the population age-structure is expected to maintain a high population growth for a long time, despite a falling fertility rate. An estimation from the Census Bureau said that the population of Vietnam will be 80 million by the year 2000 and 100 million by 2015. This will add 30 million more to the current population during a short period of 20 years which will lead to very serious problems for all sectors, including public health.

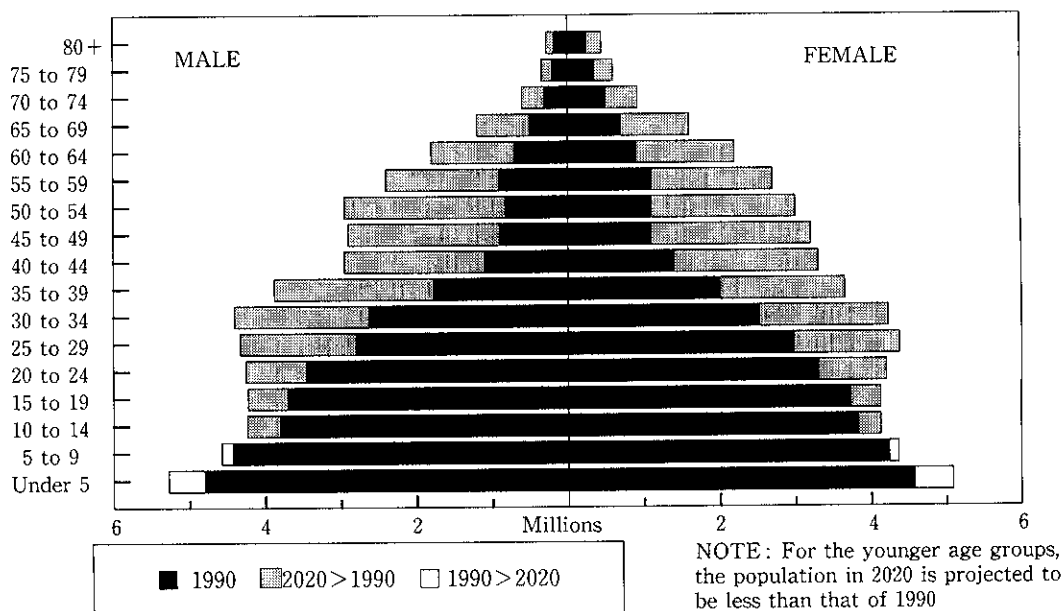
Women occupied 53.2% of the population and a substantial per-centage of them are in the reproductive age group (15-49 years). The sex ratio is 94.7 males to 100 females (1989 data). The ratio of male to female is higher in urban than in rural area due to migration of more single males to urban areas for employment.

The fall in birth rates in recent decades may be contributed by the low sex ratio mentioned above due to

CURRENT & PROJECTED POPULATION

By Age & Gender : 1990-2020

Total Population 1990 : 67, 718, 186 Total Population 2020 : 102, 359, 259



Source: BUC9401

Fig. 5 Current & Projected Population by Age & Gender : 1990-2020

wars, separation of spouses for a long period of time, and a high percentage of widowhood. A high sex ratio among the younger age groups will result in an increase in the overall sex, ratio in the future. The decline in birth rates may begin to slow down unless the family planning efforts by the Government are maintained and strengthened. The total fertility rate (TFR) for 1989 is 3.8 children per woman compared to 5.1 for 1979 (Table 5).

The infant and under-five mortality rates estimated in 1989 are 45 and 70 per thousand livebirths, respectively. However, there is wide variation for the former rate across regions, ranging from less than 30 in the Red River delta region to more than 60 per thousand in northern mountainous and central highland regions. The life expectancy at birth is relatively high at 63 years for boys and 67.5 years for girls.

With a population density of 231 persons per sq. km.,

Table 5 Comparison on birth per woman between Vietnam and the other Asian Countries

	Country	Birth per woman
1	HONG KONG	1.4
2	KOREA	1.7
3	SINGAPORE	1.7
4	CHINA	2.3
4	THAILAND	2.3
6	KOREA, DEM	2.4
	REGIONAL AVERAGE	2.6
7	INDONESIA	3.2
8	MALAYSIA	3.7
9	PHILIPPINES	4.0
10	VIETNAM	4.0
11	MYANMAR	4.3
12	CAMBODIA	4.5
13	MONGOLIA	4.7
14	PAPUA NEW GUINEA	5.0
15	LAO REP.	6.7

(Source: UNICEF. Hanoi. 1994)

Vietnam ranks third in Southeast Asia after Singapore and Philippines. The main proportion of the population is located in the two delta regions. Among those, 81% are in the rural areas. Furthermore, the rate of population growth in urban areas is higher than that of rural areas due to the progressively rising pace of urbanization. This has implications for urban health. The migration of ethnic minority groups from North to South and vice-versa will facilitate the transmission of communicable diseases.

As far as the economic situation is concerned, Vietnam is among the poorest countries of the world with a

per capita income of about US\$280. About three-quarters of employment is in the agricultural sector, contributing about 40% of GDP in 1992 (World Bank 1992). Industry provided 20% of the GDP and accounted for 10% of employment. Economic reforms have been regarded as the pushing mechanism for the development in this period. The results of economic reform have been visible with a continuously high growth rate for last several years.

However, with increasing industrialization and urbanization in the country, waves of migration from rural to urban areas have spawned the growth of urban poor slums within and in the outskirts of big cities, and the consequent public health problems. The reforms include the removal of many subsidies without any preparation, thus, making it very difficult for households to have enough time to increase its income to cope with and compensate for these losses. The process of privatization and introduction of user fees without adequate controls on the practices and quality of the providers and their services have had varying degrees of positive and negative impact on different problems.

Women and children especially are the target of health improvements, both physical and mental. Health indicators for children and women will be a reflection not only of the health care system, but also the social welfare system. In most households, activities for both income generation and unpaid work have fallen on women.

Social services, such as community-provided child care, utilize the mechanism of user-paid services so far. These may negatively affect women's health.

Very relevant to health is the issue of poverty. Economic reforms have led to a significant impact on the majority or the people in terms of positive outcomes on economic growth. However, there have been some negative social effects. Poverty can be analyzed by ethnic, geographic and gender terms. The prevalence of poverty tends to be higher in the mountainous and isolated areas where the ethnic minorities live (UNICEF 1994). Poverty is also higher in areas with a high frequency of natural disasters such as typhoons and floods. The role of women has been mentioned above and is particularly critical, as economic reforms have directly increased workloads in the home and in the field. Together with the migration of males from rural to urban areas for jobs, the women in the rural areas have to shoulder the traditional male responsibilities, as well as their own, in the fields and at home.

4. Environment problems

Environment and sanitation are among the list of priority problems. Relating to health, the environment is very important in terms of safeguarding and improving the health of the people. Air, water, and soil quality are being considered the direct links between environment and human health. At present, air pollution is not yet a major problem in nation wide. However, in some industrial areas, there are concerns due to the fast development of industry with no or very limited investments on preventing pollution. It is obvious that the pace of urbanization is increasing rapidly. Ubiquitous construction activities are causing massive dust pollution. Worthy of note is the example of a chemical factory in Viet Tri town where the rice fields surrounding the factory has been destroyed due to chemical gas discharged from the factory. One could also speculate that factory emissions will increase air pollution, in addition to gas exhaust from motor vehicles. The Government has issued a law on environmental protection, but needs to enforce strict monitoring and supervision activities to ensure control of air pollution.

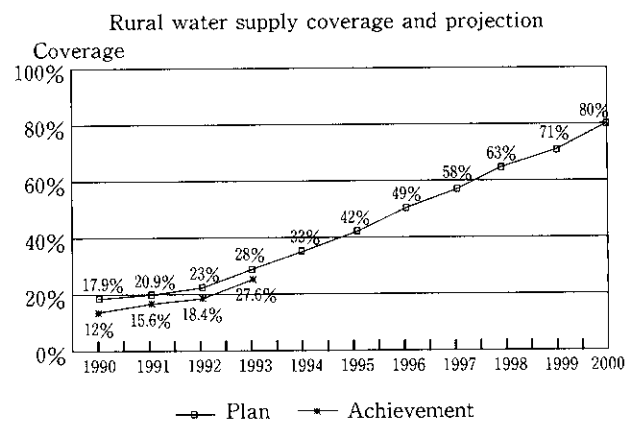
While air pollution is not yet a major problem, water pollution is a big problem in Vietnam now and in coming years. At regional level, due to the six month dry season in the south, people have to deal with a lack of fresh water. Thus, water-borne diseases cause epidemics during this season, for example, the typhoid epidemic in 1993 in the Mekong river delta region where dozens of deaths occurred. In the northern part of the country, the lack of clean water occurs not only in rural but also in urban areas. In the rural areas, the water is contaminated by human excrement and insecticides which are now widely used for the purpose of protecting agricultural products. In the urban areas, surface water is polluted by different kinds of discharges from human population as well as industrial activities. Leaks in the old water supply distribution in urban areas pose a danger to water quality.

Soil pollution is another aspect of concern, especially when one considers that million tons of fertilizers and insecticides are used on all agricultural fields. One can also remember the fact that during a period of about 40 years, there was a desecration of more than seven million hectares of forest giving rise to more than 14 million hectares of bare ground and hills. In the central part of the country and western highlands, more than 500,000 hectares have been eroded and the forest cover reduced from 43.8% to 22%. At the North-West and Song Da upstream, the forest cover is only 9%, as

compared with 90% in 1945. In addition to the direct harm on people's health this situation will have an ecological impact in terms of floods, and other natural disasters.

4-1 Access to safe water

Improved access to safe water is one of the greatest perceived needs of the people of Vietnam. Water-borne water-related disease are among the most important factors in child morbidity and mortality. Furthermore, the collection of water significantly increases the workloads of rural women and children when water sources are far from their homes. Problems related to the lack safe water and adequate environmental sanitation have a severe impact on the health of the population, particular women and children. Because poor health has a negative economic impact, improving access to safe water sanitation can have far-reaching consequences.



Goals: To increase the proportion of the overall population with access to safe drinking water from the current 29.7% to 82%, and in rural areas, from 20.9% to 80%; one public source of safe water to be provided for every 300 people by 1995 and for every 120 people by the year 2000; by 1995, 5,000 primary schools to be provided with safe drinking water and 13,000 schools to be covered by 2000; maintenance network to be set up to ensure that hand pumps remain in operation consistently; the proportion of the overall population with access to adequate sanitation facilities to rise from 23.6% to 65% for the country and in rural areas, from 13.2% to 60% by the year 2000.

Fig. 6 Rural Water Supply

4-2 Environment problems related to war consequences

About 100,000 tons of herbicidal chemical, 550 Kg of orange dioxin for the destruction of South Vietnam were sprayed. War hazard consequences still persist.

Dioxin contamination in breast milk of mothers of Song Be province and Ho Chi Minh City(southern) is also higher than those at Hanoi(northern) and elsewhere by many fold (Table 6).

Table 6 Dioxin Contamination in Breast Milk

Place	Dioxin concentration (ppt)	
	After nutrition criterion	By equivalent units
Hanoi	2.2	8.3
Ho Chi Minh City	7.0	18.4
Song Be Province	17.0	31.7

(From the 10-80 Committee 1990)

A study on 50 patients contaminated with war chemical toxics revealed 27% of cases presenting affected chromosomes. Normally, this proportion is only 1%. So, the survey and control of environmental pollution by dioxin residues and its consequences on human health are necessary and should be taken persistently.

The second International symposium entitled "Herbicides in war-the long term effects on Man and Nature" was held in Hanoi November 15-18, 1993, ten years after the first conference in Ho Chi Minh city in 1983. Scientists and representatives of humanitarian organizations from many countries concerned with consequences of war and of chemical use and the effects on human and the environment in Vietnam and other countries attended. Unfortunately, Vietnam provides a unique opportunity to study the effects of herbicides and dioxins because Agent Orange was used during war time with large amount. This use for defoliation at that time, is believed to be the world's largest dioxin contamination. More men, women and children have been exposed to the mixture of chemicals found in Agent Orange in Vietnam than elsewhere. Ecological damage seriously caused by herbicides used during the II Indochina war was irrevocable. Data shown since the first conference have been evident. Flora and fauna were seriously attacked. Plenty species of animals disappeared. Uncovered land has caused serious problems, not only by erosion but also by climatic changes to humans. In the nature of Vietnam, there still exist a certain quantity of residual dioxin in soil from Agent Orange of which the levels depend on geographical areas with different characteristics (for example, low land, highland, meteorologic conditions etc...). The body burden of dioxin with residual levels in Vietnamese people has been evidently demonstrated. Dioxin exist in various tissues e.g in milk, adipose tissue, blood, etc.

Dioxin level varies proportionally to the severity of exposure. Birth defect and infant mortality rates in exposed population is higher than that of non-exposed community. Immuno-deficiency, simple goiter and xerophthalmia, higher rate of trophoblastic diseases in young women contaminated with Agent Orange in utero compared with that of older females. Experiences drawn

from many countries and Vietnam will be very useful not only for the time being but also for the future in protecting the environment which has been seriously threatened.

Restoration of barren soil has been carried out actively after the war by all the people. Reforestration have not been so easy because of exhaustion of manpower and shortage of funds. In order to cover the forest area destroyed, it would take this country many more decades, even a century with industrious labour in combination with international material and financial assistance. By doing so, hopefully one could overcome such a big difficulty.

4-3 Fundamental resolutions for environmental priority problems

Promoting the participation and financial contribution of communities, popular organizations and local authorities in each practical programme of activity.

Emphasizing the role of legislation and supervising controlling activities in the field of environmental protection.

Investing appropriately national budget to purchase technical equipment for environment control, for exploitation and utilization of clean water sources and for drainage and processing waste water.

Calling for international cooperation on funds, experts and technology for resolving environmental problem priorities.

Designing a long-term strategy on environment protection in Vietnam.

Enhancing education and information on environment protection, promoting theformation of environmental protection workers.

Introducing Environmental Health to Medicine and Public Health training.

5. Infectious diseases

Vietnam is undergoing changes in a developing country with change in diseases patterns, but infectious diseases still rank the first. Hospital based statistics available (Table 7) give an increasing in morbidity and mortality in infectious diseases:

Table 7 Morbidity, Mortality (% of total cases and deaths) in the hospital according to ICD. 10(ordered by morbidity)

Disease category	Morb.	Morta.
1. Infectious and parasite	21.9	16.8
2. Respiratory system	17.9	12.5
3. Digestive system	12.9	6.0
4. Accident, injury, intoxication	8.7	24.2
5. Muscula, skeleton system	6.4	23.0
6. Genitourinary system	5.4	1.4
7. Eyes diseases	4.3	0.0
8. Endocrine, nutritional, metabolic	3.8	1.1
9. Unclassified signs/symptoms	3.1	1.6
10. Circulatory system	2.9	0.1
11. Pregnancy, childbirth, puerperium	2.8	0.6
12. Nervous system	2.6	1.2
13. Skins, subcutaneous tissue	2.5	0.4
14. Ear diseases	1.5	0.0
15. Mental diseases	1.2	0.2
16. Neoplasma	0.8	2.3
17. Pernatal diseases	0.5	6.8
18. Blood forming	0.5	1.1
19. Congenital abnormalities	0.1	0.6
	100%	100%

Source: Routine health statistics reports (first 9 months, 1977) from 48 provinces

5-1 Malaria Control

Over 40% of total population (77 million) are living in the hyper and mezoendemic areas, and the rest are in the sporadic and imported malaria ones (delta regions).

Malaria ranks the first among the communicable

diseases in respect of morbidity and mortality in Vietnam. Over the last years, malaria tends to be resurgent (Table 8).

According to the first results of investigation on the parasites, the structure and the species are as follows:

—P. falciparum 80-85%

—P. vivax 15-20%

—P. malariae 1-2%

Drug resistant P. falciparum is widespread and the resistance level is increased with every passing day.

Main malaria vectors:

—An. minimus is widely distributed in the thick, thin jungles and savannah and still sensible with DDT.

—An. dirus is also distributed in the thick and thin jungles from 19th parallel down south and sensible with DDT as well

—An. subpictus is spread in the coastal plain regions from North to South. This species is resistant to DDT already.

—An. sudaicus is present in the southern coastal plain region and resistant and highly tolerant to DDT.

Main constraints:

—No change of environmental conditions to be suitable for vector development.

—Technical problems: drug resistance vector ecology...

—Socio-economic and financial problem: big movement of population

—Primary health care system not yet capability for control and management of the carriers among the population.

MALARIA CONTROL PROGRAMME 1991-2000

1. Objectives:

Table 8 Malaria Control 1995-1997

	1995	1996	1997
Population protected	10,902,000	12,138,439	13,091,031
No. of treatments	2,498,200	2,363,811	1,724,924
Treatment of malaria cases	659,186	541,083	455,730
preventive therapy	1,839,014	1,822,728	1269194
No. of blood smears tested	2,538,137	2,528,306	2,419,494
No. of positive smears	10,254	76,356	65,857
Percentage of positive smears	1.04	3.02	2.72
Malaria affected patients	666,153	532,860	444,893
No. of Malignant cases	4,222	2,146	1,530
Pregnant women		4	3,299
Children <14		71	59,030
No. of deaths due to malaria	348	198	152
Morbidity rate per 100,000 inhabitants		707.1	580.0
Mortality rate per 100,000 inhabitants	0.47	0.3	0.2

Source: Institute of Malaria

- To control the speed of malaria increase, gradually to obtain the stable situation.
 - To reduce morbidity and mortality.
 - To reduce outbreaks.
2. Strategies.
- 2.1 To improve the quality of care detection and treatment in various levels.
- 2.2 Application of various vector control measures.
- 2.3 To integrate malaria control activity in PHC programme.
- 2.4 To strengthen the training of various level health workers in malaria epidemiology, case detection, treatment (including anti-drug resistant malaria treatment), vector control (permethrin impregnated bednets), malaria information system, planning of malaria control.
- 2.5 Research: To continue the researches on:
- Epidemiology of malaria: stratification into epidemiological zoner of malaria, to find out various indicators and suitable information for malaria evaluation.
 - To monitor the drug resistant parasites (to set up a monitoring system in 11 provinces), to study various schemes for anti-drug resistant parasites (Artemisinin).

- To study the dynamics of vectors, various vector control measures suitable with different areas, and new insecticides.
 - To establish suitable model of malaria control in PHC, and integrated with other health programmes.
- 2.6 The financial support from the Government is requested as supplies drug for hyper-endemic areas with people's, and various branches' contribution.
- 2.7 Malaria services network in PHC.

5-2 HIV/AIDS Problem

An emerging health and social problem is the rapid rise in HIV/AIDS transmission, especially in big cities. The number of HIV positive cases is remarkably increasing (Table 9). About one tenth of these have been become AIDS (Fig. 7) and more than half of the AIDS patients have died. Compared to the figures of neighbouring countries, this figure seems modest but this is the lip of the iceberg, that is, only people seeking help from hospitals have been tested. With the very high rate of urbanization and the market system, including the waves of migration to the urban cities or both adults and children, the mechanisms for spreading HIV/AIDS are facilitated by drug abuse, child sex abuse, and prostitu-

Table 9 HIV(+) by Age Group (Cumulative)

Age group	1996		up to 20/3/1998	
	No-of.HIV(+)	percentage %	No-of.HIV(+)	percentage %
Total	4,765	100	8,302	100
< 13	14	0.3	28	0.3
13-19	148	3.1	419	5.0
20-29	1,058	22.2	2,461	29.6
30-39	1,982	41.6	2,890	34.8
40-49	1,248	26.2	1,985	23.9
> 50	105	2.2	171	2.1
Unknown	210	4.4	348	4.2

Source: AIDS Program, MOH

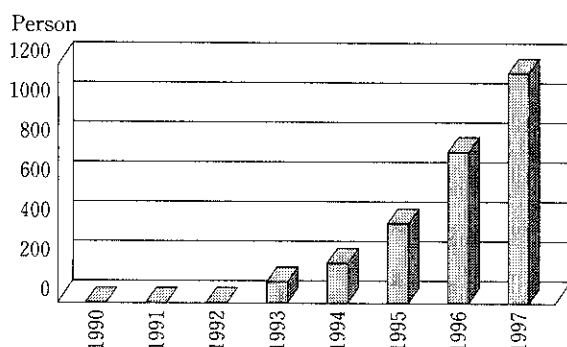


Fig. 7 Cumulative number of AIDS patients

tion. Limited access to condoms, particularly in rural areas, lack of knowledge about HIV/AIDS infection and sex education, especially among school children, lack of equipment and supplies, poor hygiene conditions and repeated use of syringes, are also conducive to disease transmission. Given the high frequency of infections from both preventive and curative treatments, this situation is critical. It is very clear that there is an urgent need to provide education on the transmission of sexually transmitted diseases and HIV/AIDS.

6. Nutrition

6-1 The Government measures poverty by identifying the number of food-deficit months per year. A survey undertaken by the National Institute of Nutrition in a representative sampling of 1,251 households showed that 9% were experiencing calorie deficit (below 1,500-1,800 kcal per person per day), reflecting famine, while 23% had satisfactory (1,800-2,100 kcal) intake, and 54% had over 2, 100 Kcal per day considered satisfactory. This varies widely by region (Table 10, Figure 8). There are also seasonal variations in food consumption. Just before the rice harvest, calorie intake decreases by up to 15%. Given the above mentioned low intakes, even a small decrease can lead to famine. This commensurates with increasing incidence of diseases such as acute respiratory infections (ARI), and diarrhea which are usually associated with malnutrition. Another indicator of poverty is the decreasing enrollment and increasing dropout rates among school children due to the need to contribute to generating family income.

Table 10 Malnutrition rate (%) in children under 5 by region

Region	(weight for age)		
	1995	1996	1997
1. North highland	55.3	50.1	41.9
2. Red River delta	46.7	43.3	36.9
3. North central coast	56.0	49.6	52.7
4. Central coast	48.3	45.1	41.3
5. Central highland	53.1	50.0	45.0
6. South-east region	33.2	35.4	37.0
7. Mekong delta	42.0	38.7	38.2
8. Big Cities			26.3
Total	44.9	43.9	40.6

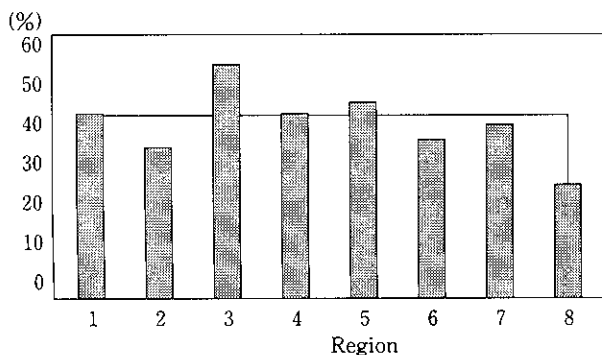


Fig. 8 Malnutrition rate (%) by region, 1997

6-1.2. Low-birth weight

Data available from hospital births estimated the proportion of low birth weight to be 20% in 1980 ; 17% in 1989 and birth reports between 1990 and 1992 showed

figures of 12% and 14%.

6-1.3. Vitamin A deficiency

The prevalence of more severe ocular lesions such as corneal xerosis and keratomalacia, as well as corneal scars are higher than the WHO criterion for determining that vitamin A is a public health problem. The prevalence of corneal scars attributed to vitamin A deficiency is 0.12%, 2.4 times higher than the public health significance level of 0.05%.

6-1.4. Iodine deficiency disorders (IDD)

Moderate and mild iodine deficiency results in goiter and impaired brain function with IQ losses of 10-20%. In 1993 a nationwide study conducted under the authority of the Ministry of Health on a total of 3062 children aged 8 to 12 from 30 randomly selected schools showed that 94% of the Vietnamese population suffer from iodine deficiency disorders; severe IDD was found in 16% of the sampled clusters, moderate in 45% & mild in 23%.

6-1.5. Iron Deficiency Anemia

Nearly fifty % of all iron deficiency anemia occurs among pregnant women and preschool children. Severe anemia has been partially associated with 50%-and wholly blames for up to 20% of all maternal deaths. It is known that anemia linked to iron deficiency is a major problem in Viet Nam.

6-2 Strategy for improving nutrition situation

6-2.1 The health and nutrition education and communication should be upgraded, using individual counseling, printed materials, audio-visual productions and mass media. This is often integrated into growth monitoring.
 6-2.2 The training in all levels, in particular at the grass-root level is necessary to upgrade the capacity for using information to access, analyze and design actions. Moreover, training in preventive health education and public health including community nutrition, growth monitoring and nutrition surveillance.

6-2.3 Nutrition addition: Provision of some essential drugs, direct feeding programs and distribution of micronutrients need to be promoted.

6-2.4 Expansion and improvement of the primary health care delivery system at all levels as well as family planning. In addition, household food security and improved feeding practices.

6-2.5 Maternal and child care: The care of the child is linked with the situation of the household and situation of women. The establishment of community-based child-care arrangements, income-generating activities for women and the training and education of families should all aim to give women the skills and knowledge required

to create better opportunities for improved care for themselves and their children.

6-2.6 Environmental sanitation and water supply: Improved water supply is often the priority concern selected by communities because it improve the quality of life in so many ways. More emphasis should be given to the maintenance of water supply systems, the use of local technologies and the hygienic use of water.

6-2.7 Technology assessment and development: Priority should be given to the development of technologies that reduce the work-load of women in household tasks (food production, fetching water and firewood and cooking) through the introduction of more efficient technology.

6-2.8 The family economical ecosystem through which households and communities are encouraged to establish vegetable gardens. This can increase the quality of the diet as well as overall food availability at the household level.

7. Health expenditures

The government health expenditures at present is around 5 US dollars per capita. If added with the expenditures from user fees, health insurance and lottery allocation for health, the total government expenditures on health is almost 8 US dollar per capita. Also putting together with other social contribution and people's out-of-pocket expenses, Vietnam's health expenditures is not high but too low to sustain and develop the sector if these resources are well managed and utilized (Table 11, 12, 13 and Fig. 9).

Average budget for medicines per capita

—1990: 0.5 USD

Table 11 Health Budget

Indicator	1995	1996	1997
GDP(bil VND)	222,840	270,000	320,000
Total expenditures(bil VND)	63,080	75,400	89,700
Regular expenditures(bil VND)	37,800	45,000	52,500
Health expenditures(bil VND)	2,350	2,430	2,780

source: Dept. of Finance MOH

Note: Exchange rate in June, 1997: 1USD=11500 VND

Table 12 Health Sources (billion VND)

Source	1995	1996	1997
Hospital fees	338	472	500
Health insurance	420	500	540
Foreign aids	270	350	510
Gover. budget	1,950	2,050	2,270
Total	2,978	3,372	3,820

source: Dept. of Finance MOH

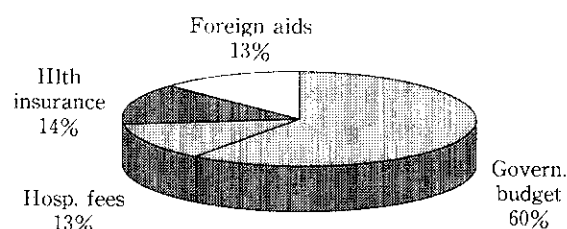


Fig. 9 Proportion of health sources (%)

Table 13 Foreign aids for health in 1997

Donor	Amount(USD)
SIDA, Sweden	6,710,000
World Bank	4,600,000
NGOs	4,513,679
UNICEF	4,186,000
WHO	4,163,337
Australian Government	3,738,722
UNFPA	3,194,310
French Government	2,600,000
WFP	2,190,722
Japanese Government	1,565,355
Thailand Government	100,000
Belgium Government	32,600
Total	37,594,775

Source: Dept. of Planning-MOH (estimate)

—1995: 4.2 USD

—1997: 5.0 USD

8. Health policy and strategy

To respond to the above-mentioned health problems in coming years, the Ministry of Health has set up its objectives. Based on these objectives, a National Health Policy and Action Plan have been defined as follows:

8-1. Strengthening and consolidating the health care network of the whole country including the health care organization. Health care at basic levels (district and commune) will be organized so that it can implement primary health care activities effectively. The system of public health or preventive health will be consolidated so that it can better fulfill its tasks, the curative system will be reorganized by clusters of population so that it can be more accessible to the people. A referral system of curative services will be applied to provide appropriate services for different categories of clients. Special curative health centres will be set up in Hanoi, Ho Chi Minh City and other regions.

8-2. Improving the quality of training for health care staff, including changing the curriculum for appropriate training in medical schools, public health schools and secondary medical schools. The strategy of training by residence will be increased in order to have staff work-

ing in difficult areas, and to tailor to the needs of the society. A suitable strategy of retraining for health staff will also be developed. Topics of research will be chosen on the basis of the needs of the service providers with an emphasis of research on traditional medicine.

8-3. More investment and management will be given to health care resources, including from the government, various organizations, UN agencies and non-governmental organizations (NGOs). Health economics will be increased to use resources more effectively.

8-4. Social mobilization of health care activities, including mobilizing all sectors and enlisting peoples active participation in planning and implementing health care activities by using a participatory approach.

8-5. Pushing forward the implementation of targeted health programmes. During the last period, the targeted health programmes have had effects in improving health, particularly in public health. In coming years, these programmes will be implemented in a more effective way in order to achieve the objectives given. These activities include: continued implementation of the EPI, CDD, ARI programmes; strengthening the programme on health education, school health, food safety and hygiene, occupational health, mental health, health for elderly, prevention of chronic diseases related to industrialization and urbanization like cardio-vascular diseases, cancers, and road accidents, programmes on rehabilitation, and community based rehabilitation, programmes on reproductive health integrated with programmes on family planning and maternal and child health, programme on adolescent health geared towards health education on reproductive health, STD and HIV/AIDS prevention.

8-6. Supporting and developing the traditional medicine sector, include consolidating and making stable the organization of the traditional network from central to grass-root levels. More investment will be given to research and application of traditional medicine, training staff in the field of traditional medicine and building international collaborations in research and practice of traditional medicine.

8-7. Assuring the quantity and quality of drugs to meet with the needs of people through reorganizing and modernizing the system of production and delivery of drugs, and through the system of drug quality assessment.

8-8. Improving the administration and management of the health care system to increase the accessibility of the health care system for the users.

Main Strategic Health indicators for the year 2000 and 2020

1. Life expectancy at birth will increase to 68 and 75 years.
2. Infant mortality rate will reduce to 35 and 15-18/1000 live-births.
3. Under five mortality rate will decrease to 42 and 20/1000 live-births.
4. The rate of low birth weight new-borns (less than 2500 gram) will reduce to 8% and 5%.
5. The rate of malnutrition in children under 5 will reduce to 30% and 25% (without severe malnutrition).
6. The average height of Vietnamese youth will increase to 165cm.
7. The Iodine deficiency disorders will be eliminated by the year 2005 and the goiter rate in children aged 8-12 years less than 5%.

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