CHAPTER I

INTRODUCTION

1.1 Backgrounds and Rationale

Nutritional status worldwide

Malnutrition is a highly lethal disorder. Children are its most visible victim. Malnutrition, "the silent emergency" is an accomplice in at least half of the 10.9 million child deaths each year. These young lives are prematurely and needlessly lost. (WHO,2004).

Malnutrition means "badly nourished" but it is more than a measure of we eat or fail to eat. Clinically, malnutrition is characterized by inadequate intake of protein energy and micronutrients and by frequent infections or disease. Nutritional status is result of the complex interaction between the food we eat, our overall state of health and the environment in which we live are: food, health and care, the three "pillars of well being"

Geographically more than 70% of protein energy malnutrition children live in Asia, 26% in Africa, and 4% in Latin America and Caribbean. And protein energy malnutrition affects every fourth child world wide 150 million (26,7%) are underweight and 182 million (32,5%) are stunted. (WHO,2004).

Under-nutrition is an important determinant of health status among young children. Thus, nutrition is a major contributor to child health status and is an outcome of many economic, behavioral and health factors.

Asian children suffer from micronutrient deficiency as well as protein-energy malnutrition. Iron deficiency anemia affects 40.0-50.0% of preschool and primary school children. Nearly half of all vitamin A deficiency and xeropthalmia in the world occurs in South East Asia, with large numbers of cases in India (35.3 million), Indonesia (12.6 million) and China (11.4 million). Another major micronutrient problem in the region is iodine deficiency disorders, which result in high goiter rates as manifested in India, Pakistan and parts of Indonesia. While under-nutrition problem persists, overweight problem in children has emerged in Asia, including Taiwan, Singapore and urban China and Malaysia. (Khor GL.2003, Update on the prevalence of malnutrition among children in Asia, Nepal Medical college Journal, 5(2), 113-22.)

Nutrition of the school-aged child.

Data from the Partnership for Child Development shows that nutrition problems of school children may be greater and more widespread than previously thought; its experience indicates that school-based health and nutrition programs are feasible and effective. Data on iron deficiency from a database developed by the World Health Organization (WHO) indicate a higher prevalence of anemia in school-age children than in pre-school children.

In school-aged children in Mongolia, the very low intake of fruit is responsible for the lower than normal values of some essential vitamins and minerals. Food-for-school programs, such as the national program in India, provide food to take home to children with high attendance records; this is used to attract the enrollment and attendance of children, particularly girls. In India, the government-funded Nutritional

Support to Primary Education Program has been successful in rural areas and will include the entire country by the end of 1998. In Indonesia, the school feeding program in designated 'poor' villages continues to be funded by the government in spite of the economic crisis there.

In South Africa, a case study has shown that the use of fortified biscuits as a snack food results in the significant improvement of the micronutrient status of school children. Guidelines that promote healthy eating for school children in the US have been developed. Overeating, obesity, eating disorders, and the future risk of chronic disease have become problems in developed countries and among some groups of people in developing countries. (SCN News. 1998 Jul;(16):3-4.) retreated from http// www.ncbi.nlm.nih.gov.pubmed.

Nutritional status in Indonesia (WHO n.d. nutrition in south-east Asia, retrieved 30, August 2004, from httt//www.who.int.). Indonesia is an archipelago state consisting I of more than 1 700 tropical islands. The five main islands are inhabited by most of the country's population which stands at a total of 206 million. Vital statistics reveal life expectancy at birth as 63 years (males) and 67 years (females), with a crude birth rate of 24, IMR, 48 and MMR, 390. The economy of Indonesia is largely based on oil and mineral resources. Per capita food production index is 145 (from 100 in 1980) and the CNP per capita has increased to US$980.

Protein-Energy Malnutrition (PEM)

The major nutritional problems in Indonesia are PEM and micronutrient malnutrition. According to recent surveys, the young children whose weight-for-age is below -2SD using WHO-NCHS median value has decreased to 36 percent in 1995 from 54.7 percent in 1986. However, there was a slight increase in the prevalence of severe malnutrition during this period. The analysis showed that girls have better nutritional status than boys up to age of five years. The proportion of malnutrition was higher in rural areas (>40 percent) as compared to urban areas (>30 percent). On the other hand, proportion of overweight children was higher in urban areas (30). The growth monitoring system is quite satisfactory in the country, except that the weighing scales used, need to be standardized and checked for their quality. Also, health functionaries should be motivated to take prompt corrective action in case of growth faltering,(WHO n.d. nutrition in south-east Asia, retrieved, 30 August 2004, from httt//www.who.int).

Anemia

Iron deficiency is the most common cause of nutritional anemia among pregnant women and school children. Prevalence of anemia dropped from 70 percent in 1986 to 51 percent in 1995 among pregnant women while in school children, it came down to 40.5 percent in 1995 from 55.5 percent in 1992). Low consumption of harmed iron and exposure to parasitic infections are the major causes of anemia. As part of a long term strategy, deworming of school children and nutrition education through family improvement programmes (UPGK) are undertaken. (WHO n.d. nutrition in south-east Asia, retrieved 30, August 2004, from httt//www.who.int.)

Iodine Deficiency Disorders (IDD)

The national prevalence of TGR decreased from 37.2 percent in 1980-82 to 27.2 percent in 1992. Total goiter rate in school children was 9.8 percent (1992-97). A presidential decree banning non-iodized salt was issued in 1995. It was estimated that 60 percent of households were consuming adequate amount of iodized salt in the country in 1996. One of the operational strategies planned in the country is to integrate IDD and iodized salt issues into the education system and establish an efficient monitoring and reporting system at the provincial and district levels (WHO n.d. nutrition in south-east Asia, retrieved 30, August 2004, from httt//www.who.int.).

Vitamin A Deficiency (VAD)

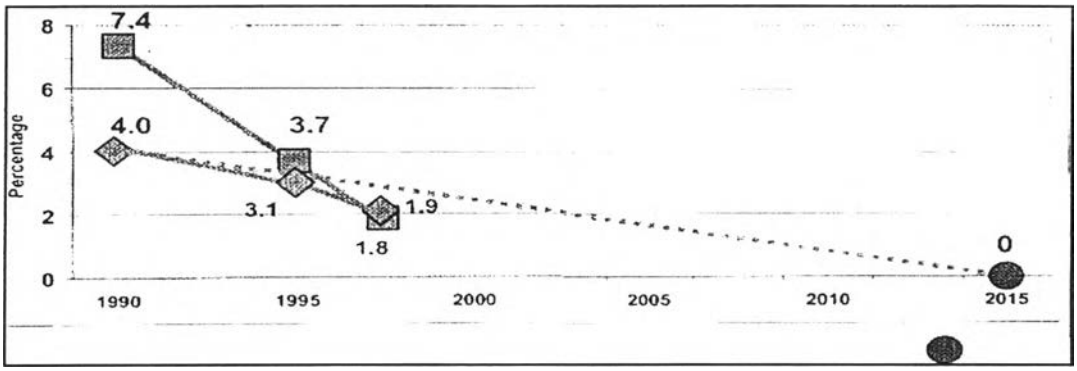
National xerophthalmia surveys (1992) showed a downward trend in the prevalence of xerophthalmia in children to 0.3 percent in 1995 from 1.2 percent in 1986. However, in three provinces, South East Sulawesi, South Sulawesi and Maluku, the prevalence was more than 0.5 percent. Besides fortification of certain foods with Vitamin A, capsules of Vitamin A are selectively distributed in areas where the problem is still prevalent. Nutrition education activities have been intensified to promote increased consumption of Vitamin A through natural sources such as vegetables and fruits and big effort is underway in promotion of consumption of eggs (Central Java) and other animal sources of vitamin A. (WHO n.d. nutrition in south-east Asia, retrieved 30, August 2004, from httt//www.who.int.)

An innovative School snack program in Indonesia

In developed countries, there have been school lunch programs for decades, but Indonesia has not had that. Because under the current economic situation, it could not be afforded Also, over the past 25 years, the priority has been on preschool children because of the high mortality of children under five. Now, after 25 years of development, the situation among preschoolers is relatively better. In addition, the people's incomes are increasing, as is their education level. The government believes that communities and families are now better equipped to take care of children under five. So the Indonesia government has shifted its attention to the primary school children (Soekirman, 1997, Indonesia continues Groundbreaking model for fighting hunger and poverty, (retrieved October, 27, 2004 from http://www.ifpri.org/2020/ newslet/nv).

Since 1996, the Indonesia government has launched a school feeding program in poor villages as part of the national poverty alleviation program and in 1998, it covered more than 49,000 primary schools with 7.2 million school children in 26,420 villages over all regions of across the country (Soekirman, Hardinsyah, Idrus Jus'st and Abas basuni Jahari, 2002, regional study of nutritional status of urban primary schoolchildren.2. West Jakarta and Bogor, Indonesia, Food and Nutriton Bulletion, 23(1),31-40). In very poor areas of Indonesia, most of the children consume only about 70 percent of the calories they need. They are anemic and infected with parasitic intestinal worms. Because their health is so poor, they have little motivation to learn and dropout rates are high. Here we can see the graph showing dropout rates for primary school children in Indonesia

Dropout Rates for Primary School (age 7-12) & Junior Secondary School (age 13-15), Indonesia



◇ Actual rate, Primary School □Actual rate, Junior Secondary School

○ Goal

Source: Ministry of National Education

To solve this problem, the program provide snack—not: a meal, but snack is to contribute the 30 percent of calorie requirements that the student is now lack. (Soekirman,1997, Indonesia continues Groundbreaking model for fighting hunger & poverty, retrieved October, 27,2004 from http://www.ifpri.org/2020/newslet/nv).

Those snacks are made by parents', teachers', and women's groups using money provided by the government. The snacks have to be made from locally grown products. They cannot be prepackaged goods from the towns or cities. The reason is that the program wants to spur the cultivation of the parents' home-based gardens in the villages. (Soekirman, 1997, Indonesia continues Groundbreaking model for fighting hunger and poverty, (retrieved October, 27, 2004 from http://www.ifpri.org/2020/ newslet/nv).

Bekasi in Indonesia

The population of Bekasi in 2000, was 1,637,610 people (821,923 males and 815,687 females) which is relatively big compared to other cities in West Java. (The result of the population census from the Statistics Central Committee in 2000).

The population rate of growth from 1998-1999 has reached 5.5% while the rate-growth from 1999-2000 has decreased to 5.19% (1.50% birth rate-growth and 3.69% migration rate-growth). The number of population –aged 15 years and over in Bekais Municipality was 1,311,015 persons in 2002. Percentage of population aged 15 years and over, which is labor force group, is around 55.23% (724,127 persons). Notice that this number is bigger than that in 2001. This labor force group can be categorized into those who are working (626,856 persons) and looking for job (97, 271 persons). The rest of population aged 15 years and over were not included in labor force (586,888 persons or 44.77%). It means that they may attend school (22.40% or 293,692 persons), do housekeeping (19.11% or 250,487 persons) and other activities (6.92% or 84, 483 persons). Based on the highest education completed, a large part (433,858 persons or 33.09%) of economically active group graduated from high school, while those who never attended school was only 30,604 persons or 2.33 %. Industry sector dominates economy in Bekasi Municipality (32.31%). Trade, hotels and restarants (26.06%) and service (21.80%) follow it, while sector of electricity, gas and water supply has a very little contribution (0.73%).

Data from Ministry of Manpower showed that number of persons looking for a job in Bekasi Municipality increase from 28,564 persons in 2001 to 53,163 persons in 2002. A large part of those that look for a job graduated from high school (18,043 persons) and university (5, 297 persons). So far, only 1,451 persons from the total number of 53,163 persons got the job. Most of them (656 persons) were high school graduate and the rest, which was only 84 persons, were a university graduate. The decrease of number of people looking for jobs in 2002 seemed closely related to the economic condition, which was not fully recovered, from the crisis, especially industry sector (Bakasi Municipality in Figure 2003).

1.2 Research Questions

(1). What is the difference of nutritional status between public primary school children with and without school snack program in Jati Asih sub district, Indonesia ?

(2). What are the determinants of nutritional status in public primary school children with and without school snack program in Jati Asih sub district, Indonesia?

1.3 Objective

1.3.1 General objective

To inform the recent nutritional status among public primary school children with and without school snack program, and main affecting factors related to nutritional status in Jati Asih sub district, Indonesia, thereby to contribute to the national poverty alleviation program.

1.3.2 Specific objectives

(1). To determine the nutritional status such as underweight, and normal among public primary school children program, in Jati Asih sub district , Indonesia.

(2). To identify the relationships between nutritional status and school snack program among public primary school children, in Jati Asih sub district , Indonesia.

(3). To identify the relationships between nutritional status and social economic, demographic, environmental, and mother's food practice and knowledge factors among public primary school children, in Jati Asih sub district, Indonesia.

1.4 Variables

1.4.1 Dependent Variable

Child nutritional status is the result of nutrient's intake and it utilization in child's body (Hermana,1993), in the survey was measured by three indices, weight for height, height for age and weight for age. These provide approximate reflection of nutritional status. WHO use the U.S. National center for health statistic (NCHS) standard, since many studies have shown that the growth of normal, healthy, and adequately nourished children almost always approximate these reference values. These three indices refer to an international reference population. If the children have lower height and low weight in regards to their age according to the WHO standard criteria, then they were considered to have the poor nutritional status (WHO, 1983).

However, for the current study, BMI of children among public primary school children will selected to study the differences of nutritional status among public primary school children with and without school snack program in Jati Asih sub district, Indonesia.

1.4.2 Independent Variable

Duration of Breast Feeding (ratio)

Less than 6 months

6-12 months

12-24 months

Age of Child (ratio)

Respondent 's Age (ratio)

Respondent's age was taken as complete years during interview. They were grouped as five years group interval starting from less than 20 years to 60 years or above age.

Knowledge/Education (ordinal) (for husband and maternal)

No education

Primary school

Completed primary school (sixth grade)

Secondary school (ninth grade)

University or other higher education

Occupation (nominal) (Husband's and Maternal's)

Not working

Government official

Clerk

Employed

Labor

Trade

Sex of children (Nominal)

Male and female

Morbidity

Whether the child had got any episode of any one of three condition, diarrhea, acute respiratory infection or fever within the two weeks preceding the interviews.

House hold Possession (Nominal)

May be does not have any direct measure of an income , the household possessions will be used as proxy of economic variable. House hold belongings radio, television and motorbike is considered in this regards.

Access to mass media (nominal)

Three indicators are used , such as access to listening to the radio daily, watching TV weekly and reading newspaper weekly.

Cultural/ belief (nominal)

Muslim

Christian

Buddhism

Hindus

Other

Electricity (Nominal)

Supply electricity at the household is considered as approximate for measuring economic status i.e. economic variable and as well as environmental variable. The households having electricity supply at their house or not were considered as yes and no categories.

Sanitation Facility (Nominal)

Sanitation facilities used by the household are divided into five indicator's such as septic tank, (modern toilet), water sealed/ slab latrine, pit latrine, hanging/open latrine and no facilities.

Mother's food practice and mother's food knowledge