

An Overview of Nutrition Sector Activities in Cambodia



Special Report

An Overview of Nutrition Sector Activities in Cambodia

Helen Keller International
Cambodia

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Helen Keller International/Cambodia. *An Overview of Nutrition Sector Activities in Cambodia*. Phnom Penh: Helen Keller Worldwide, 2002.

This publication was made possible through support by the Office of Health, Population and Nutrition, United States Agency for International Development (USAID)/Cambodia, under the terms of Award No. 442-G-00-95-00515-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

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Executive Summary

The health and nutrition situation in Cambodia is among the most critical in the Asia-Pacific Region. In Cambodia, the infant mortality rate is estimated at 95 per 1000 live births, the under-five mortality rate at 124 per 1000 live births and the maternal mortality ratio at 437 per 100,000 live births. Malnutrition and micronutrient deficiencies, such as vitamin A deficiency (VAD), iron deficiency anemia (IDA), and iodine deficiency disorders (IDD), are widespread among preschool-aged children and women. Evidence shows that malnutrition, even in its milder forms, increases the likelihood of mortality from a number of different diseases and can be associated with up to 56% of all childhood mortality. This makes malnutrition one of the most serious public health problems in developing countries. In addition, infection with human immunodeficiency virus (HIV), tuberculosis (TB), and malaria, are serious public health problems in Cambodia. These infections and malnutrition are inextricably related.

Various organizations are currently conducting nutrition activities in Cambodia; however, a clear understanding of the extent and nature of the interventions was unknown. Given limited resources for nutrition programming, the new Royal Government of Cambodia (RGC) Nutrition Investment Plan, and the need for improved coordination in this sector, useful information on ongoing nutrition programs was necessary. Thus, this nutrition sector review was undertaken to assess what is being done, where, and by whom. Based on this information programming gaps, priorities, and recommendations are presented.

Information gathered from 58 governmental and non-governmental organizations (NGOs), and United Nations agencies, shows that the main interventions being conducted in nutrition are nutrition education, food supplementation, vitamin/mineral distribution, growth monitoring, breastfeeding promotion, nutritional assessment, and homestead food production. The major organizations involved with nutrition programs include the MOH, UNICEF, WHO, WFP, HKI, and WV-C, and other important contributors include ADRA, CARE, FAO, GTZ, HU, LWS, PFD, RACHA, SC-A, and SC-F. The scope and scale of nutrition programs was found to be limited and, in general, there is a lack of coordination among programs and between organizations.

This review found that many organizations face the same types of constraints in their efforts to conduct nutrition activities. These include limited human, material and financial resources. Another major constraint is the lack of training opportunities in nutrition for NGO and government health/nutrition staff. This low level in staff knowledge was reported as an obstacle that results in reduced capacity to conduct extensive training and expand nutrition interventions at the community level. Because of these constraints, there are many gaps in the area of nutrition programming in Cambodia. This is true for programs related to vitamin A deficiency, iron deficiency anemia, iodine deficiency disorders and malnutrition – vitamin A capsule coverage for

preschool-aged children and postpartum women is low, there are few interventions targeting groups at high-risk for iron deficiency anemia, few households consume iodized salt and there is poor knowledge among health workers, staff of various agencies, and community members about infant and child feeding.

Because of the impact that nutrition has on maternal and child morbidity and mortality, governmental and non-governmental organizations and UN agencies urgently need to increase support for nutrition programs in order to improve the lives of Cambodian women and children. The following actions are recommended:

- Upgrade capacity of the Ministry of Health (MOH)/Nutrition and NGO staff to implement nutrition programs.
- Provide financial and technical support to the MOH/Nutrition Unit, and National Council for Nutrition, for nutrition programs.
- Strengthen the health care delivery system by improving health center staff knowledge and capacity to implement nutrition interventions, by supporting outreach services, by ensuring adequate supplies and distribution of commodities, and by establishing adequate health information systems.
- Establish a nutrition and health surveillance system to monitor key indicators of program implementation and impact on health and nutrition.
- Raise community awareness about nutrition using a “social marketing-type” campaign and training village health volunteers for community mobilization.
- Support the National Vitamin A Capsule Distribution Program in order to improve VAC coverage nationwide by improving the health system and social mobilization.
- Support pilot projects addressing the problem of IDA in preschool-aged children and based on findings, establish a policy for iron supplementation – prevention and treatment.
- Support homestead food production activities aimed at increasing production and consumption of plant and animal products, ultimately improving food security and household income.
- Intensify efforts related to salt iodization by garnering political support for legislation, and investigate the feasibility of fortifying other foods with vitamin A and iron.

- Coordinate efforts focusing on improving infant and child feeding practices, especially promotion of exclusive breastfeeding and timely introduction of quality complementary foods.
- Support operations research related to infectious diseases and nutrition, especially HIV/AIDS, TB and malaria.

Programs to improve the nutritional situation of women and children must start early on in the lifecycle and will need to focus on improving the health care system and mobilizing community members for nutrition activities. Efforts will require strong local and political commitment, clear policies and guidelines, and coordination between governmental agencies, UN agencies and local and international NGOs. In addition, donors must be made aware that the consequences of malnutrition on individuals and societies are devastating, long lasting and often irreversible and in order to prevent further damage to the next generation of Cambodians, action must be taken immediately.

List of acronyms used in this report

AAH	Action Against Hunger	ECHO	European Community Humanitarian Affairs Office
ADRA	Adventist Development and Relief Agency	EU	European Union
ANC	Antenatal Care		
AOC	Asian Outreach Cambodia	FAO	Food and Agriculture Organization
AOG	Assemblies of God	FHI	Food for the Hungry International
AusAID	Australian Agency for International Development		
		GMP	Growth Monitoring Promotion
BF	Breastfeeding	GTZ-IFSP	German Technical Cooperation-Integrated Food Security Program
BMI	Body Mass Index		
CADET	Cambodian Association for the Development of Economy Together	Hb	Hemoglobin
CARE	Cooperation, Assistance, Relief Everywhere	HC	Health Center
CCK	Chamroeun Cheat Khmer Chivith Thmey	HI	Handicap International
CERCP	Cambodian Development and Relief Centre for the Poor	HNI	HealthNet International
CHED	Cambodian Health Education Development	HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
CIDA	Canadian International Development Agency	HKI	Helen Keller International
CIDSE	Coopération Internationale pour le Développement et la Solidarité Programme in Cambodia	HU	Health Unlimited
CNMS	Cambodia National Micronutrient Survey		
CORD	Christian Outreach Relief and Development	ICC	International Cooperation Cambodia
CRD	Community for Rural Development	IDA	Iron Deficiency Anemia
CSB	Corn-Soya Blend	IDD	Iodine Deficiency Disorders
CSCS	Cooperation for a Sustainable Cambodian Society	IEC	Information/Education/ Communication
CWDA	Cambodian Women's Development Association	IMCI	Integrated Management of Childhood Illnesses
CWS	Church World Service	ITN	Insecticide-Treated Nets
		IVY	International Volunteers of Yamagata
DFID	Department for International Development	KHANA	Khmer HIV/AIDS NGO Alliance
DHS	Cambodia Demographic and Health Survey	KHReDO	Khmer Human Resources for Development Organizations
		KRDA	Khmer Rural Development Association
		KWCD	Khmer Women's Cooperation for Development
		KWWA	Kratie Women's Welfare Association

LWS	Lutheran World Service	TB	Tuberculosis
		TBA	Traditional Birth Attendant
MCH	Maternal and Child Health	TOT	Training of Trainers
MDM	Médecins du Monde		
MHD	Malteser Germany	U5	Under 5
MOH	Ministry of Health	UN	United Nations
MSF	Médecins sans Frontière	UNICEF	United Nations Children's Fund
MODE	Minority Organization for the Development of Economy	USAID	United-States Agency for International Development
MUAC	Mid-Upper-Arm Circumference		
MTCT	Mother-To-Child-Transmission	VA	Vitamin A
		VAC	Vitamin A Capsule
NCHP	National Centre for Health Promotion	VAD	Vitamin A Deficiency
		VADD	Vitamin A Deficiency Disorders
NCN	National Council for Nutrition	VDC	Village Development Committee
NGO	Non-Governmental Organization	VHV	Village Health Volunteer
NIDS	National Immunization Days	VSG	Village Support Group
NIP	National Immunization Program		
NMCHC	National Mother and Child Health Centre	WFP	The United Nations World Food Programme
		WR-C	World Relief – Cambodia
OD	Operational District	WV-C	World Vision – Cambodia
ORS	Oral Rehydration Solution	WHO	World Health Organization
		WOSO	Women's Service Organization
PEM	Protein Energy Malnutrition		
PFD	Partners for Development		
PHD	Provincial Health Department		
PNC	Postnatal Care		
RACHA	Reproductive and Child Health Alliance		
RE	Retinol Equivalents		
RGC	Royal Government of Cambodia		
SC-A	Save the Children – Australia		
SC-F	Save the Children – France		
SC-UK	Save the Children – UK		
SIDA	Swedish International Development Agency		
SNAP	Supplemental Nutrition Action Program		

Acknowledgements

The development and production of this report was generated by the need for up-to-date and comprehensive information on what is currently being done to improve nutrition, and its impact on the health of Cambodians, and what gaps need to be addressed. This need – and the means by which it could be met – was identified by the United States Agency for International Development (USAID), both in Cambodia and in Washington. We would like to acknowledge USAID for their support to nutrition programming in Cambodia. In particular, we would like to acknowledge Mr. Ngudup Paljor of the Office of Public Health, USAID/Cambodia, who has been especially supportive of this project and who was instrumental in making it happen.

We would like to thank the many agencies and organizations that provided information for this report (see Appendix I for a list). They were eager to share information about their program activities and were willing to spend the time to do so. Without their help, this report could not have been produced. Our sincere thanks go out to all those involved, for their cooperation, interest and motivation. While the information in this report aims to provide an accurate reflection of the state of the art in Cambodia, it is possible that the work of some organizations may have been missed and that new nutrition activities may have started since the review was conducted. Therefore, we apologize for any omissions in this report.

We would also like to acknowledge the key role of the Helen Keller International (HKI)/Asia-Pacific Regional Office, which was instrumental in the preparation of this document. Among the HKI/Asia-Pacific team who contributed their time and expertise to provide guidance and other assistance to this review were Dr. Saskia de Pee (Regional Scientific Advisor), Dr. Anuraj Shankar (Micronutrient Supplementation Program Director/Indonesia and Regional Advisor on Interactions between Micronutrients, Immunity and Infectious Diseases), Dr. Regina Moench-Pfanner (Regional Coordinator) and Dr. Martin W. Bloem (Regional Director). We are also grateful to the HKI/Asia-Pacific Publications Unit for their assistance with the layout of this document.

I Introduction

This nutrition sector review is the first of its kind in Cambodia. The main objectives in conducting this review were to better understand current nutrition programming in Cambodia – to assess what is being done, where, and by whom and based on that, identify the programmatic gaps, and prioritize areas of need for future actions in the field of nutrition. This was done by documenting, describing and analyzing the different nutrition interventions underway in Cambodia by the Royal Government of Cambodia (RGC), United Nation’s Agencies, and local and international non-governmental organizations (NGOs). This review could also serve as a tool to foster greater sharing of information and experiences among agencies working in nutrition, and can also be used to guide decision-makers on technical and financial support needed for nutrition programming in the coming years.

This nutrition sector review focused on organizations that were identified as working directly or indirectly in the field of nutrition. Organizations that support activities in one or many sectors of nutrition, such as nutrition education, food supplementation, vitamin/mineral distribution, growth monitoring, breastfeeding promotion, nutritional assessment and homestead food production, were selected to be part of this review. A total of 71 organizations were contacted. Of these 71 organizations, 8 were not conducting any nutrition programs/activities, and 5 did not return our calls and/or messages. Therefore, 58 organizations were interviewed, which included government departments, UN organizations, and local and international NGOs. A questionnaire was administered to a representative of each organization involved in the nutrition program/s. The interviews were structured to record information in the following areas:

- Main objectives of the organization’s nutrition program/s or activities
- Target areas (province, district, commune)
- Target groups
- Implementation strategy
- Type and frequency of training activities and a description of the trainees

- Type of communication tools and strategies
- Main constraints faced in the implementation of the program/s or activities
- Future plans

The information from the questionnaires was compiled, and a profile of the different organizations was organized into a table to facilitate analysis. This table is presented in Appendix II and it describes each organization’s activities in nutrition. From this analysis, a summary of findings describing current nutrition interventions in Cambodia, and geographic coverage, was made possible.

In Section II of this report, a comprehensive situation analysis of the major nutritional issues in Cambodia is presented, namely vitamin A deficiency, iron deficiency anemia, iodine deficiency disorders, and malnutrition. This section describes the prevalence of the nutritional problem, possible causes, and strategies to address the deficiency. The next section of the report (Section III) describes the interaction between malnutrition and infection, and especially focuses on the problems of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), tuberculosis (TB) and malaria.

Section IV gives a summary of findings from an analysis of the information gathered in interviews conducted with the 58 participating organizations. It is organized by nutrition intervention and describes the extent to which that intervention is being addressed in Cambodia. Based on the analysis of agency work, compared to objectives of the Royal Government of Cambodia, a gaps and priorities table was developed (Section V). The report concludes with general and program-specific recommendations.

I Current Nutrition Situation

The health and nutrition situation in Cambodia is among the most critical in the region. The infant mortality rate is estimated at 95 per 1000 live births, the under-five mortality rate at 124 per 1000 live births and the maternal mortality ratio at 437 deaths per 100,000 live births.¹ The main causes of child illness are acute respiratory infections and diarrheal diseases, which are estimated to account for about half the under-five deaths. Other major causes are dengue fever epidemics and malaria, the effects of which are compounded by widespread malnutrition and micronutrient deficiencies. Evidence shows that malnutrition, even in its milder forms, can increase the likelihood of mortality from a number of different diseases and may be associated with up to 56% of all childhood mortality. This makes malnutrition one of the most serious public health problems in developing countries.² Furthermore, micronutrient deficiencies have been shown to increase the risk of morbidity, impair cognitive development and growth and lower work productivity.

In 2000, HKI, in partnership with the Royal Government of Cambodia, and with funding from USAID, conducted the first Cambodia National Micronutrient Survey (CNMS) to assess the magnitude and key determinants of micronutrient deficiencies in the country. This section describes findings from that survey as well as possible causes and strategies for addressing nutritional deficiencies in Cambodia. The main problems are vitamin A deficiency (VAD), iron deficiency anemia (IDA), iodine deficiency disorders (IDD) and malnutrition.

Vitamin A deficiency

Vitamin A is crucial for effective immune-system functioning, protecting the integrity of epithelial cells lining the skin, the surface of the eyes, the inside of the mouth and the alimentary and respiratory tracts. When the body's defense breaks down as a consequence of vitamin A deficiency (VAD), the person is more likely to develop infections, and the severity of an infection is likely to be greater. Vitamin A deficiency disorders (VADD) can affect the entire population but those most at risk are preschool-aged children, and pregnant and lactating women. Results from the first National Micronutrient Survey of Cambodia show that each of these risk groups has high prevalence rates of vitamin A deficiency.

Prevalence

Preschool-aged Children. Results from the Cambodia National Micronutrient Survey show that vitamin A deficiency is still a problem of public health significance. In seven (7) of the 10 provinces included in the micronutrient survey, the prevalence of night blindness, the first clinical sign of vitamin A deficiency, among children aged

18-59 months was above the WHO cut-off that indicates a public health problem. The prevalence of night blindness, and with a WHO cut-off of 1%, is only the tip of the iceberg – suggesting that a large proportion of children in Cambodia suffer from VADD,³ including a higher risk of morbidity and mortality. **Figure 1** shows night blindness prevalence by province. Night blindness prevalence varies by province. In the provinces of Preah Vihear, Rattanakiri, Otar Meanchey, Koh

Figure 1. Prevalence of night blindness among children aged 18-59 months, by province. (n=12,820)
Bars indicate 95% CI (Confidence Interval) corrected for design effect.

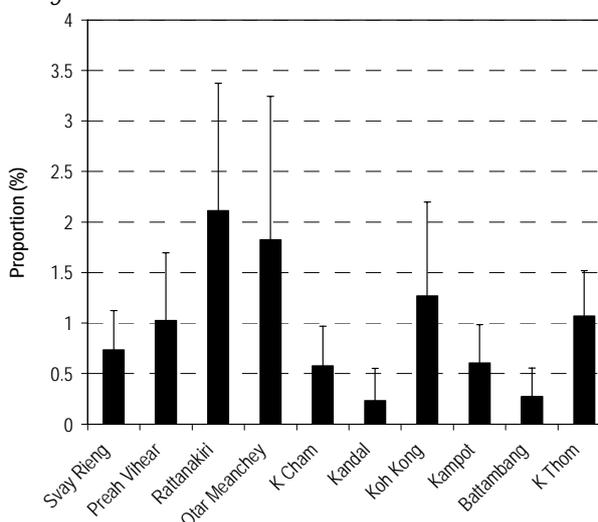
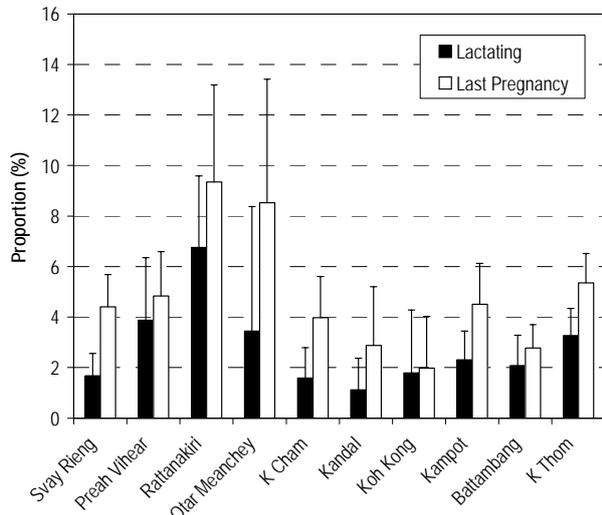


Figure 2. Prevalence of night blindness among lactating women (child < 24 mos; n=9,050) and during the mother's most recent pregnancy (< 3 yrs ago; n=14,933), by province. Bars indicate 95% CI (Confidence Interval) corrected for design effect.



Kong and Kampong Thom it is above the cut-off indicating a public health problem, while for Svay Rieng and Kampot the 95% confidence interval includes the cut-off of 1%, which means that in those two provinces the prevalence could also be above 1%.

Women. The CNMS also found that vitamin A deficiency is a large problem among lactating mothers and during pregnancy. **Figure 2** shows the prevalence of night blindness among lactating women and during the mother's most recent pregnancy, by province. Night blindness prevalence among lactating women ranged from 1.1-6.8% in the 10 provinces included in the national survey. The reported prevalence of night blindness during the last pregnancy in the previous 3 years ranged from 2.0-9.3%. However, a much larger proportion of women in Cambodia are likely to suffer from VADD; again, this is only the "tip of the iceberg".

Causes of vitamin A deficiency

Vitamin A deficiency, as a public health problem, results from a chronic, insufficient dietary intake of vitamin A. It often occurs in association with protein-energy malnutrition, other micronutrient deficiencies and, as part of a "vicious cycle" with

infection, in which one exacerbates and increases vulnerability to the other.

Vitamin A deficiency can begin at an early age when an infant is exposed to poor breastfeeding practices. In Malawi, premature introduction of complementary foods and early cessation of breastfeeding were associated with increased risk of preschool xerophthalmia (severe VAD).⁴ In Cambodia, few children 0-6 months are exclusively breastfed and, many mothers discard the colostrum (first breastmilk that is rich in immunoglobulins and nutrients). Introduction of complementary foods occurs too early, and these foods are often of poor quality, as good sources of micronutrients are often more expensive foods that are outside the economic reach of poor rural households. For young infants, especially during the weaning period, and for pregnant and lactating women, there are also food taboos that need to be addressed as these play a role in the type of foods these vulnerable groups can and cannot consume. For example, in Cambodia, nutritious foods such as green leafy vegetables, fruits and most types of meats are prohibited in the diet of infants during the weaning period, as they are believed to cause diarrhea (fruits and vegetables) and worm infestation (meats).⁵

The 2000 Cambodia National Micronutrient Survey showed that vitamin A intake was very low. When vitamin A intake was estimated using the conversion factors for vitamin A obtained from fruits and vegetables that are based on recent research in Indonesia and Vietnam,⁶ less than 10% of women and children met their recommended daily intake (500 and 350 RE, respectively). But it was also found that vitamin A intake was higher among women and children of households that grew fruits and vegetables and/or kept poultry. Over 70% of the households had some poultry, but more than three-quarters of them used the eggs mainly for producing new poultry, while only 19% mainly used them for their own consumption.

In addition to dietary intake, disease also plays a role in the "vicious cycle" contributing to VADD. Severe diarrhea, dysentery, measles, and other

severe, febrile illnesses are frequently reported to precede xerophthalmia.⁷ The CNMS found that one third of children surveyed suffered from diarrhea on one or more days during the previous two weeks. And, reports from the Ministry of Health (MOH) and WHO show that measles outbreaks are still common in certain parts of the country.

Strategies to address vitamin A deficiency

The main strategies for addressing the problem of vitamin A deficiency include supplementation to high risk groups (preschool-aged children and postpartum women), dietary diversification and fortification. These efforts should be done alongside efforts to reduce infectious diseases.

Supplementation

Periodic, high-dose vitamin A supplementation remains the most widely practiced direct means to prevent vitamin A deficiency by governments throughout the world. Supplementation has been proven to be effective in preventing VADD. This is evident from results from the CNMS. Both among the provinces where the prevalence of night blindness was equal to or greater than the cut-off of 1% as well as among the provinces where the prevalence of night blindness was below this cut-off, children that had received a VAC had a 2.2 - 2.3 times lower risk to be night blind than those who had not received a VAC.⁸ This shows that VAC are protective against vitamin A deficiency, also in the provinces where the prevalence of night blindness was below the cut-off of 1%.

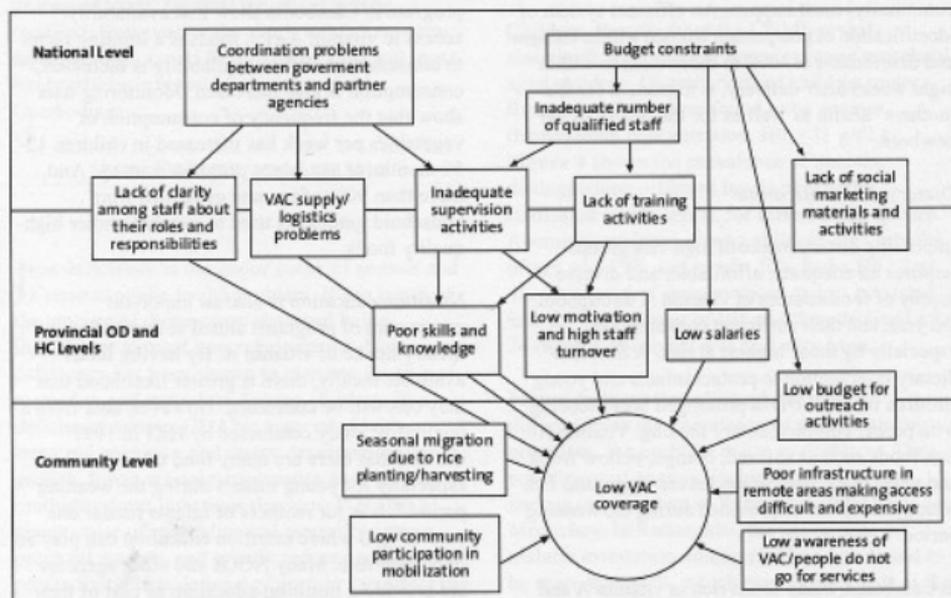
In Cambodia, a national vitamin A working group, consisting of members from the MOH, UNICEF, WHO and HKI, was formed in 1993, which drafted a National Vitamin A Policy that was adopted by the RGC in 1994. A national vitamin A supplementation program was launched to provide VACs to all children 6-71 months of age every 3 - 6 months. In 1996, following a pilot in 1995 by the MOH, WHO, UNICEF and NGOs, including HKI, VAC distribution became fully integrated into the National Immunization Days

(NIDS). In 1998, VAC distribution was fully integrated into the National Immunization Program (NIP) in 15 major provinces with distribution three times per year and coordinated with sub-national immunization days. In 1999, a revised national vitamin A policy was drafted with target groups for universal supplementation being children 6-59 months of age (100,000 IU vitamin A capsule for children aged 6-11 mo and 200,000 IU for children aged 12-59 mo) and women up to eight weeks postpartum (200,000 IU). For children, the strategy includes improving VAC coverage through routine immunization outreach twice a year.

The Cambodian National Micronutrient Survey and Assessment of the Vitamin A Program found that coverage varies widely between different communes within a province, because health centers face different challenges with respect to delivery of the capsules. Some health centers have a large turnover of staff, in which case new staff is often unaware of the VAC distribution policy and distribution schedule. Associated with this is often a poor understanding of staff roles and responsibilities, which could also be due to insufficient coordination at the national level. It frequently happens that VACs are not taken for immunization outreach activities because the immunization staff think that VAC distribution is not one of their responsibilities or because the health center staff think that VACs are not meant for distribution outside the health center. Also, the more remote areas are the most difficult to reach and are often neglected due to poor infrastructure and the high costs associated with transportation, which becomes increasingly difficult during the rainy season. **Figure 3** describes the factors contributing to low VAC coverage in Cambodia.

Another important underlying factor related to poor VAC coverage is budget constraints faced by the national VAC distribution program. This affects all stages of VAC distribution, including overall planning, training, supervision, outreach activities and social marketing of VAC. In addition, health worker salaries are low, which may result in low motivation and absenteeism. In order to address these problems, and hence

Figure 3. Factors contributing to low VAC coverage in Cambodia



increase VAC coverage, it is important to improve the delivery of VAC, the demand for VAC and the health care system in general.

Postpartum women are also an important target group for VAC supplementation. The barriers for reaching women are similar to those for reaching children. An additional challenge is that often times women do not deliver at a health facility and neither are most births attended by trained health personnel. Because of this, the opportunities for postpartum women to receive a VAC are limited. Another main barrier is that VAC has to be given within 8 weeks after birth and is therefore not suitable for a twice yearly campaign, it has to be available on a continuous basis.

In order to address this problem, it is important not only to address the problems described above but also to improve access to VAC for postpartum women by making VAC available each time outreach staff travel to communities. As part of the training, health center staff will know that

during a child's first immunizations, but only when they take place within the first 8 weeks of birth, the mother should also receive one dose⁹ of 200,000 IU of vitamin A to be taken at least 24 hours apart.

The immunization outreach program can be a good strategy for reducing the risk of VADD among Cambodian children, because it is one of the very few programs that is designed to reach all communities throughout the country on a regular basis. However, the coverage of the immunization outreach program was relatively low in all 10 provinces included in the CNMS, and although receipt of VAC was higher when immunization coverage was higher, VAC coverage was consistently lower than immunization coverage.

In order to improve VAC distribution coverage to postpartum women, better coordination between the health center outreach teams, the traditional birth attendants (TBAs) and village health

volunteers (VHVs) (who are closest to the community) must happen. An efficient system of identification of postpartum women within villages, and distribution of VAC to those women within eight weeks after delivery, is important for the mothers' health as well as for the health of her newborn.

Dietary Diversification

Improving dietary intake of high-risk groups requires an adequate, affordable, and diverse supply of food sources of vitamin A throughout the year, and their sufficient consumption, especially by those highest at risk. A first-line dietary intervention to protect infants and young children from VADD is prolonged breastfeeding with proper complementary feeding. Vitamin A-rich foods such as soft red, orange, yellow fruits and vegetables, dark green leaves, eggs, and fish with liver, should be provided during the weaning period.¹⁰

In Cambodia, many foods rich in vitamin A and other micronutrients are too expensive for the majority of the population. However, making these foods available at the homestead can result in improved intake. Various small-scale homestead food production programs are underway throughout the country. While most do not specifically address VADD, the HKI program does. HKI has successfully implemented a small-scale homestead food production program in several districts of seven provinces and one urban slum area of Phnom Penh since 1998. The program, modeled after the HKI homestead food production program in Bangladesh, consists of providing essential technical and managerial support to NGOs, which adopt/expand the homestead food production as part of their packet of activities. In this way, HKI has been able to improve homestead food production practices such as year-round production of a wider variety of nutrient-rich fruits and vegetables, increase consumption of vitamin A-rich foods, increase income and improve empowerment of women. All of this has been done in a very effective and sustainable way and at relatively low-cost (USD 5 per household during their first year in the

program and less thereafter). Data from this program in Cambodia show that availability/access to vitamin A-rich foods is a limiting factor to consumption. When availability is increased, consumption is also increased. Monitoring data show that the frequency of consumption of vegetables per week has increased in children 12-59 months of age, since program start-up. And, more than 90% of income generated from household gardens is used to purchase other high-quality foods.

Nutrition education is also an important component of programs aimed at improving dietary intake of vitamin A. By having foods available locally, there is greater likelihood that they can/will be consumed. However, data from a qualitative study conducted by HKI in 1997 showed that there are many food taboos, especially for young infants during the weaning period.¹¹ It is for mothers of infants (under one year of age) where nutrition education can play an important role. Many NGOs and other agencies are providing nutrition education as part of their on-going activities in agriculture (home gardening, animal raising) and in other sectors as well (health). Although most do not conduct extensive nutritional assessments of their target population, qualitative assessments are common. NGOs expressed that these qualitative assessments show that by increasing people's knowledge of proper feeding practices, people experience improvements in their general well being and level of energy.

Fortification

Fortifying foods with vitamin A and other micronutrients has also been shown to be an effective and sustainable way to increase the intake of essential vitamins and minerals for special sub-groups of the population (e.g. infant foods and fortified oil for household members). The first step is to identify potential foods that can be fortified and a viable food industry. Currently, in Cambodia, there are no initiatives to fortify foods with vitamin A or multiple nutrients. However, UNICEF, in collaboration with the RGC is investigating this possibility. Because Cambodia

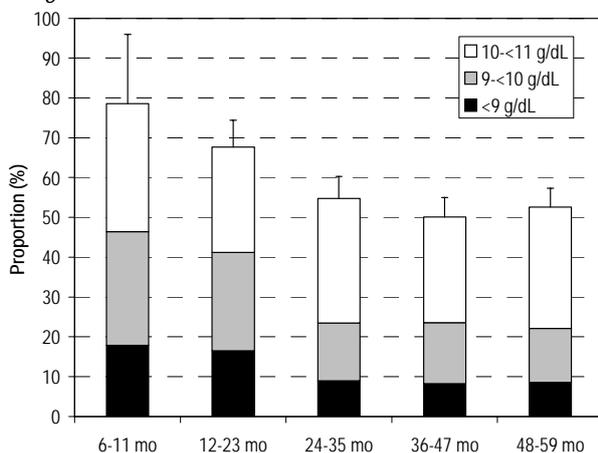
relies heavily on neighboring countries for processed foods, regional initiatives will be required. However, in the short- to medium-term, fortified foods (apart from iodized salt) will most likely still be inaccessible to many rural Cambodians.

Iron Deficiency Anemia

Iron deficiency is the major cause of anemia and a serious public health problem. It is a result of the amount of dietary iron absorbed being insufficient to meet iron requirements. Iron deficiency has been shown to increase the risk of morbidity and mortality. Among children, iron deficiency anemia (IDA) is associated with impaired cognitive and motor development and growth, lower school performance and, increased morbidity from infectious diseases. It is also a major cause of morbidity and mortality among pregnant women, and greatly reduces work productivity. Iron deficiency anemia can affect the entire population; however, those most at risk include low birth-weight infants, infants, pregnant women and their fetus.

Figure 4. Prevalence of anemia among preschool-aged children in rural Cambodia, distinguishing different levels of Hb, by age group. (n=1762)

Bars indicate 95% Confidence Interval (CI) corrected for design effect.



Prevalence

Children. Results from the CNMS reveal alarmingly high rates of anemia among preschool-aged children. Overall, 54% of children under five years of age were found to be anemic (hemoglobin concentration, Hb, <11 g/dL).

Figure 4 shows the prevalence of anemia, distinguishing different levels of severity (indicated by Hb level), for different age groups. Anemia prevalence among children 6-11 months of age was 79% and nearly 20% had a Hb <9 g/dL. This level of severity more or less persisted into the second year of life and then declined after 24 months of age but was still very high.

Figure 5 shows that although there were differences in the prevalence of anemia among provinces, the problem exists everywhere. The prevalence of anemia, including more severe anemia, was highest in Rattanakiri and Otar Meanchey. In Rattanakiri, the prevalence of malaria infestation among children was found to be more than 40%, which may explain part of the anemia found. In the other provinces surveyed, prevalence of malaria infestation was much lower, with <10% in Preah Vihear and <5% in all others. In provinces where the prevalence of malaria is low, iron deficiency is the main cause of anemia.

Figure 5. Prevalence of anemia among children aged 6-59 months, distinguishing different levels of Hb, by province. (n=1762)

Bars indicate 95% CI corrected for design effect.

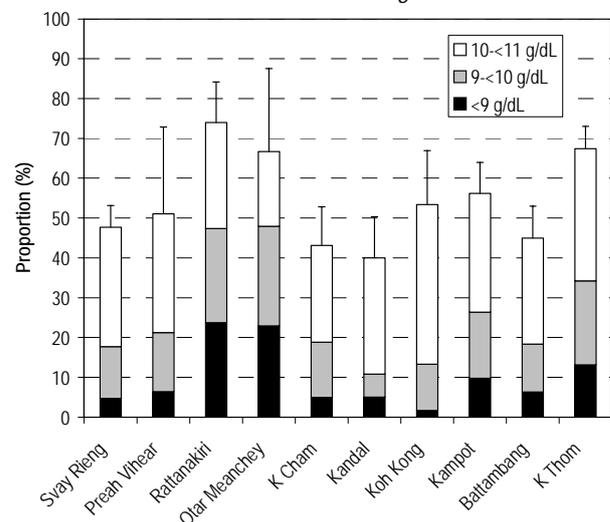
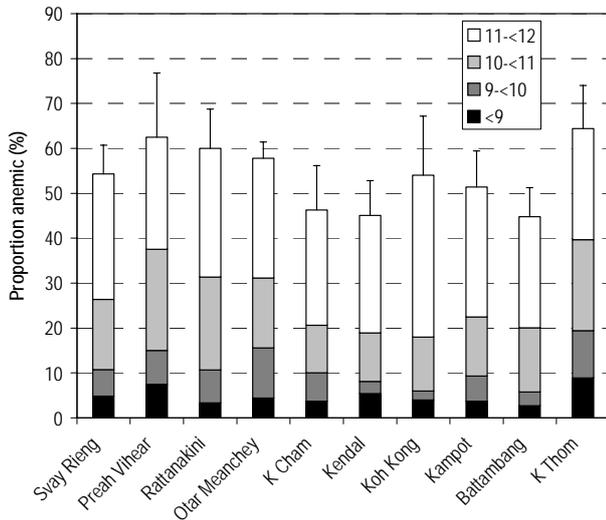


Figure 6. Prevalence of anemia among mothers, by province, distinguishing different levels of Hb (g/dL). (n=1,545)
Bars indicate 95% Confidence Interval (CI) corrected for design effect.



Women. Anemia is also a problem among women of reproductive age. In non-pregnant women anemia prevalence ranged from 45-65%. The prevalence of anemia was highest in Rattanakiri, Preah Vihear and Kampong Thom. In all three of these provinces malaria is also a problem, suggesting that it could also be contributing to the high rates of anemia. However, anemia rates are also high in other provinces as well. Among pregnant women, anemia prevalence ranged from 50-80% and the provinces with the highest prevalence were Rattanakiri, Kampot and Kampong Thom. **Figure 6** shows prevalence of anemia among mothers by province, distinguishing different levels of Hb. It can be seen that severe anemia (Hb <9 g/dL) is prevalent across provinces.

Causes of iron deficiency anemia

Iron deficiency anemia is largely caused by the following factors: poor bioavailability of consumed iron, insufficient intake in relation to need, increased requirements at certain stages in the life cycle (pregnancy, early childhood and adolescent growth) and blood loss through menstruation, child birth, and worm infestation. In addition, chronic diarrhea, malaria and HIV can contribute to anemia.¹²

In Cambodia, socio-economic status and malaria (in some provinces) are factors contributing to anemia. As described previously, in Cambodia there are poor infant and child feeding practices. Complementary foods are often of poor quality and rarely contain sufficient iron. In addition, methods to increase the bioavailability of iron-rich foods and meals, both from plant and animal sources, are not known by most people. Animal foods are the best sources of iron and other micronutrients, and these foods are expensive, therefore less accessible to many. Thus, very early in life a child is already anemic. Insufficient intake is not only the case for infants and children but also for other segments of the population throughout the lifecycle. While pregnant women have increased needs for iron, they most often begin pregnancy with low iron stores, making them even more anemic during pregnancy and increasing their risks of pregnancy-related complications and risk to have a low birth weight infant.

In some parts of Cambodia, especially the heavily forested areas, malaria is also a problem. Malaria parasitemia is a contributing factor to anemia. However, while it is a contributing factor, because the prevalence of anemia is so high due to a low intake of iron-rich foods, most of the anemia is caused by iron deficiency.¹³ In addition, hookworm could play a role in anemia. In a study of school-aged children conducted by GTZ, hookworm infestation was associated with anemia.¹⁴

Strategies to address iron deficiency anemia

The main strategies for addressing the problem of iron deficiency anemia are supplementation to high risk groups (preschool-aged children, school-aged children and pregnant women), dietary diversification and improvement of iron bioavailability through diet, fortification, and parasitic disease control.

Supplementation

Iron supplementation, which involves the provision of iron in capsule, tablet or elixir form

is the most common strategy for the control of iron deficiency anemia. Currently, the MOH has a strategy of provision of 90 iron/folate supplements each containing 187mg of ferrous sulfate (60mg elemental iron) and 3.5mg of folic acid to pregnant women. However, results from the Cambodia Demographic and Health (CDHS) show that less than 38% of women (urban and rural) received any antenatal care from any trained personnel. Furthermore, the CNMS found that 88% of women during their last pregnancy were never given or never bought iron tablets. Thus, only a very small proportion of pregnant women take iron and, most likely few, if any, take the entire recommended 90 tablets provided by the MOH. Often times health center staff do not give enough tablets to women. Another problem associated with the iron/folate supplements is compliance. When women do receive their supplements, they often do not comply in taking all of the 90 tablets. Reasons for this are because women are rarely advised on how to take the supplement (which time of day, and with a meal to reduce side effects) and they are usually not informed that they are likely to experience side-effects, which are unpleasant but not harmful. This results in women taking only a fraction of the supplements compared to what they should take.

A pilot project is underway to supplement female garment factory workers, aged 15-49 years, with a weekly dose of iron (187mg of ferrous sulfate and 3.5mg of folic acid). This pilot project is being implemented by the RGC and supported by WHO. The MOH and WHO also have recently launched another iron supplementation pilot project for adolescent girls over 12 years old, in secondary schools of some districts in Kampong Speu, and for women of reproductive age. The same weekly iron supplement, as described above, is being distributed through a peer sellers system. Leaders (female) in each school are selected to receive training on the specifics of the pilot project, their role in the distribution of the iron/folate supplement on a monthly basis, and will be trained about anemia and iron. A mass education campaign will be conducted at the launch of the project and on a monthly basis thereafter around the time the supplement is distributed. The

supplement is to be sold at a very low cost (300-400 Riels/packet of four pills)¹⁵ by the sellers, where 100 Riel goes to the seller and the rest goes into a revolving fund for community health emergencies or activities.

However, no programs exist for iron supplementation to preschool-aged children, which is a group at high risk of iron deficiency. Because rates of anemia among underfives in Cambodia are very high, and because it will not be possible to increase iron intake adequately through the diet in the short run, there is an urgent need to explore whether iron supplements can be effectively delivered to reduce anemia among this high-risk group. However, since very little work has been done worldwide with iron supplementation among preschool-aged children, there is little information available on effective strategies, programs, or lessons to be learned from countries facing a similar problem. There is thus an urgent need, both for Cambodia as well as for other countries, to explore possible delivery mechanisms for this age group in particular, through pilot projects to study the most efficient delivery channels and mechanisms to be applied for the future for this age group.

Dietary Diversification

Dietary diversification is primarily a strategy for improving either the amount of iron-rich food consumed or its bioavailability. While dietary changes alone, without fortified foods, cannot bridge the gap between current intake and the high needs for iron, especially for pregnant women and young children, it is worth closing part of the gap by using strategies such as homestead food production to improve iron-rich food consumption. As in the case with vitamin A, iron-rich foods are often too expensive. By making foods available at the household level, through homestead food production activities, this can help contribute to alleviating the problem. More specifically, the production of poultry, meat and fish, and using culturally acceptable and practical strategies to improve the bioavailability of iron from staples and commonly consumed foods, together with nutrition education, can

result in improved consumption of iron-rich foods and absorption of iron by the body.¹⁶ In Cambodia, the strong food taboos especially for infants in the weaning period and pregnant women, put these groups at even higher risk of iron deficiency. Consequently, any dietary diversification initiative should take these factors into consideration and aim to change food consumption behaviors in order to address the problem of IDA.

Fortification

There are currently no programs in Cambodia to fortify foods with iron. However, the feasibility of fortifying fish sauce and/or wheat flour is being examined. A UNICEF consultant report is currently being written.

Parasitic Disease Control

Parasitic disease control is an important complement to other strategies to combat anemia, especially in a country like Cambodia where hookworm and malaria are endemic in certain areas. The National Malaria Center, in conjunction with WHO and various NGOs, is currently implementing periodic de-worming and providing insecticide-treated bednets to populations in malaria-endemic areas.

Iodine Deficiency Disorders

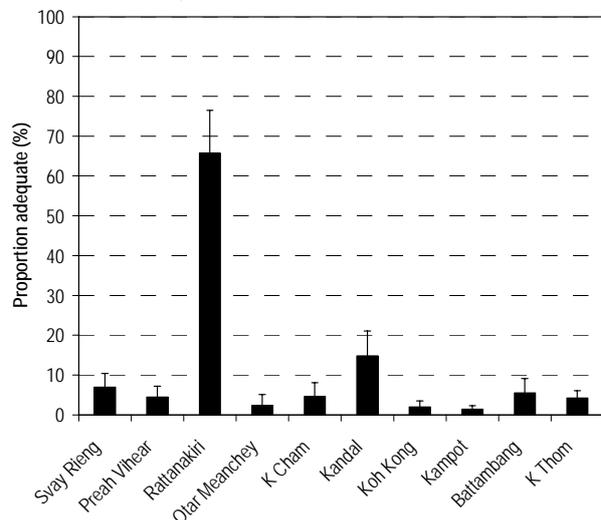
Failure to consume adequate amounts of iodine through the diet can result in iodine deficiency disorders (IDD). It affects human health in many ways. It may cause a variety of problems including mental and growth retardation (may lead to cretinism), lethargy, increased childhood mortality, reproductive failure, miscarriage and stillbirths.¹⁷ The most noticeable physical sign of IDD is an enlarged thyroid gland, which results in what is known as goiter. The most vulnerable groups are pregnant women and their fetuses, and preschool and school aged children. The most devastating consequences of IDD are on the developing human brain, as neural cells multiply mainly in utero and in the first two years of life.

IDD not only affects the individual, it also has negative effects on the development process of a society in general. In places where there are long-term severe IDD problems, this may delay social and economic development; children and adults in the community may become slower mentally and less energetic, which may make it difficult to motivate them to participate in development activities.

Prevalence

The 1997 national goiter prevalence rate among 8-12 year olds was found to be approximately 12%, with some areas having goiter rates as high as 45%.¹⁸ Consumption of adequate levels of iodized salt, the most common and cost-effective way to address the problem of IDD, are low. The CNMS measured whether households had adequate iodized salt (≥ 25 ppm) or not. In all survey provinces, less than 10% of households had adequate levels of iodized salt except for Kandal and Rattanakiri (**Figure 7**). The proportion of households with adequate salt in Kandal was about 15%; it could be higher in Kandal because of the proximity to Phnom Penh, where iodized salt is more accessible. Rattanakiri has the highest proportion of households with adequate iodized salt (65.6%) and this is because the salt in Rattanakiri is from Vietnam and Laos, which is mostly all iodized.

Figure 7. Proportion of households with adequately iodized salt (≥ 25 ppm), by province. (n=14,861)



Causes of iodine deficiency disorders

IDD is caused by a lack of iodine in the diet. Goiter and cretinism is most common in areas where there is little iodine in the soil, water or foods (crops and domestic animals). These problems are also common in areas with high amounts of rainfall, which leads to naturally occurring iodine to be leached from the soil and in river basin areas where there is high erosion. This is the case for many areas in Cambodia, especially those along major rivers such as the Mekong river basin, which gets flooded on an annual basis. Presently, in Cambodia, only a dozen small-scale industries are fortifying salt with iodine. However, the proportion of the population that has access to iodized salt is very small and therefore most of the population is still at risk of IDD.

Strategies to address iodine deficiency disorders

Strategies to address the problem of IDD include supplementation with iodized oil capsules and salt fortification.

Supplementation

Supplementation with oral iodized oil capsules is not an MOH policy or national program. However, in late 2000 through May 2001, the MOH distributed iodized oil capsules to areas that were identified as having high goiter rates and that are most at risk of IDD. These areas are mainly concentrated in the northeast part of the country namely in the Provinces of Rattanakiri, Mondulkiri, Stung Treng, Kratie and in one district of Siem Reap. The distribution of iodized oil capsules was performed through measles campaign activities and reached up to 76,000 women of reproductive age. Otherwise, capsules are not available through the health centers. For women of childbearing age, the recommended dosage, as per WHO, for one oral iodized oil capsule is 480 mg (1.0 mL) of iodine every 12-18 months. The distribution campaign, done in the 5 provinces mentioned above, was conducted as an “emergency effort” and may or may not be considered again by the MOH in the future.

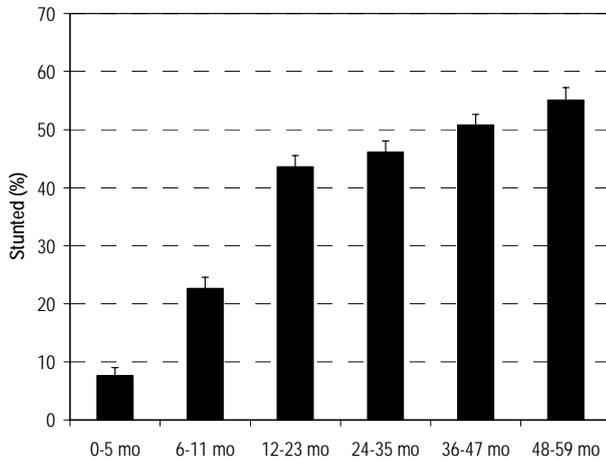
Fortification

Fortification of salt with iodine is a proven cost-effective strategy to address IDD. In Cambodia, salt iodization efforts have been on-going since the early 1990's. Plans for a national program to reach Universal Salt Iodization by the end of 1998 were pursued with the support of UNICEF. However, to this date, several operational problems have contributed to the failure in achieving this objective. While iodized salt from imports (Vietnam and Laos) and from small-scale production plants in Phnom Penh is starting to reach remote areas, availability at household level remains low. Where iodized salt may be available, cost remains higher than non-iodized salt and thus poor households will tend to purchase the cheaper product. Knowledge of the general population about IDD and the benefits of iodized salt is low and this could also be a reason why households do not purchase iodized salt. However, in Rattanakiri, where most of the salt is iodized due to imports from Vietnam and Laos, household consumption of iodized salt is highest, even without social mobilization. Thus, making the product available, where few or no other choice is available, could be one strategy to improve consumption of iodized salt. For this, legislation requiring that all salt for human consumption be iodized needs to be put in place. Meanwhile, in order to increase awareness about IDD and demand for iodized salt, the Nutrition Unit/MOH, in cooperation with the National Sub-Committee for IDD, have been involved in training, education and promotion of the use of iodized salt in select provinces where goiter prevalence is high. These efforts have focused on improving the knowledge, attitude and practices of health staff about IDD and its prevention.

Malnutrition

The term ‘malnutrition’ is used here to refer to the syndrome of inadequate intake of protein, energy, and micronutrients, combined with frequent infections, that result in poor growth and small body size. The term protein-energy malnutrition (PEM) is still widely used today but

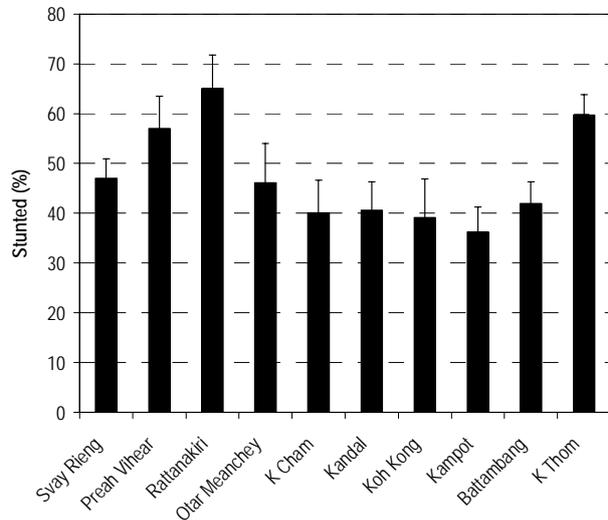
Figure 8. Prevalence of stunting among children, by child age (n= 19,556)



the shift to ‘malnutrition’ occurred as scientific evidence began accumulating that the high rates of stunting could not be overcome by providing more protein and energy from more of the same foods. Rather, certain micronutrients were identified as playing a key role in linear growth and infection. Specifically, vitamin A and iron, and more recently zinc, have been suggested as key nutrients for growth.¹⁹

Malnutrition is a problem that affects large sections of the population in the developing world. There are multiple causes of malnutrition, which are intertwined and contextual. The problem of malnutrition often starts very early on in life. Consequences of malnutrition on individuals and societies are devastating, long-lasting and often irreversible. Children who are malnourished suffer more severe episodes of infectious diseases, and more frequently, than those who are well-nourished. Their growth is impaired which contributes to delayed motor and intellectual development. If the malnutrition continues later on in life (even mild or moderate), damage may be irreversible, which results in weak and less productive adults, with decreased learning capabilities and worse reproductive outcomes. Also, malnutrition can have negative effects, not only on those afflicted, but also on their offspring. All of these consequences can have a negative impact on the social and economic development of a society, especially if the problem of malnutrition affects large segments of the population.

Figure 9. Prevalence of stunting among children aged 12-23 months, by province. (n = 3,954)



Prevalence

Children. Indicators for nutritional status of children include height-for-age (stunting), weight-for-height (wasting) and weight-for-age (underweight). Stunting reflects long-term, cumulative effects of inadequate nutrition and health. Wasting represents the failure to receive adequate nutrition during the period immediately before the assessment or recent episodes of illness. Being underweight could mean that the child is stunted, wasted or both.

Figure 8 shows child stunting by age. By the second year of life, nearly half of Cambodian children are already malnourished (demonstrated by stunting rates). **Figure 9** shows stunting among 12-23 month olds by province. Preah Vihear, Rattanakiri and Kampong Thom all have stunting prevalence rates over 50%. However, other provinces also have high prevalence rates with stunting being over 35%. A similar pattern is seen for underweight by age and province. These findings show that there is both short- and long-term food shortages and also food is of poor quality. Other findings from the CNMS show that illness, including diarrhea is also a contributing factor to malnutrition.

Women. The Body Mass Index (BMI) indicator was used to determine a woman’s nutritional status. The index uses both weight and height and

provides a measure of “thinness”. **Figure 10** shows wasting (i.e BMI <18.5 kg/m²) among mothers by province. The percentage of women with low BMI ranges from about 13 – 25%. Contributing factors to maternal malnutrition are poverty, limited food availability, poor dietary quality and low meal frequency.

Causes of malnutrition

Malnutrition is an outcome of various biological and social processes for which three types of causes have been identified, the immediate, the underlying and the basic causes. The immediate causes of malnutrition relate to poor diet and to illness. These are themselves caused by the underlying factors, which are associated with family accessibility to food, maternal and child caring practices, access to health services and hygiene and sanitation. These underlying factors are affected by basic factors which include the socioeconomic and political situation within which families live (**Figure 11**).

In Cambodia, as in many developing countries, poor infant and child feeding practices put infants at risk of malnutrition very early on in life. While breastfeeding is very common – nearly all women are still breastfeeding their child at 12 months of age and almost 50% are still breastfeeding their 24 months old child (**Figure 12**, p14) – few women initiate exclusive breastfeeding and those that do, start complementary foods early (before 6 months of age). The CDHS found that only 18% of children less than two months of age were exclusively breastfed in the 24 hours prior to the interview. This will most likely result in poor nutrient intake since complementary foods are poor in energy and nutrients, and feeding frequency is low at only 2-3 times per day. These infants are also at increased risk of infection.

Figure 10. Wasting among mothers (BMI <18.5 kg/m²). (n= 13,440)

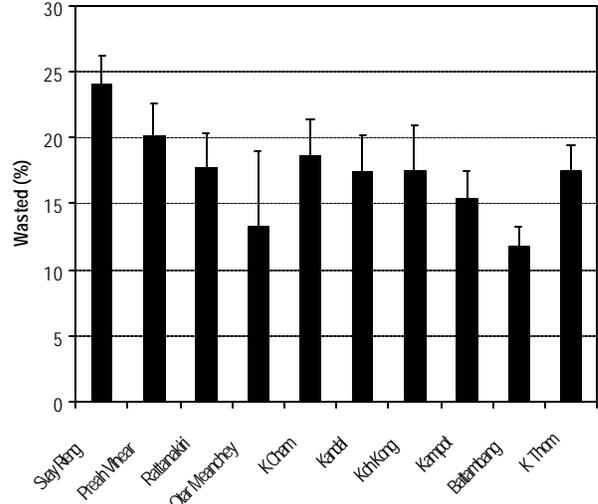


Figure 11. UNICEF conceptual framework for malnutrition. Source: UNICEF. State of the World’s Children 1998. Oxford: Oxford University Press, 1998.

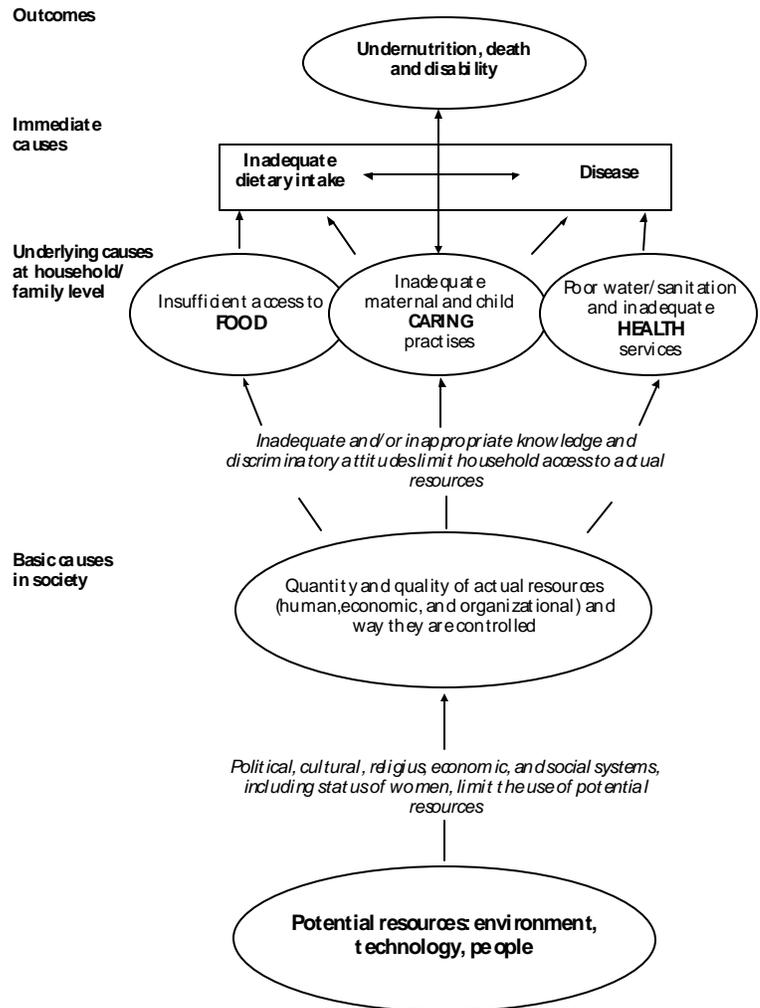
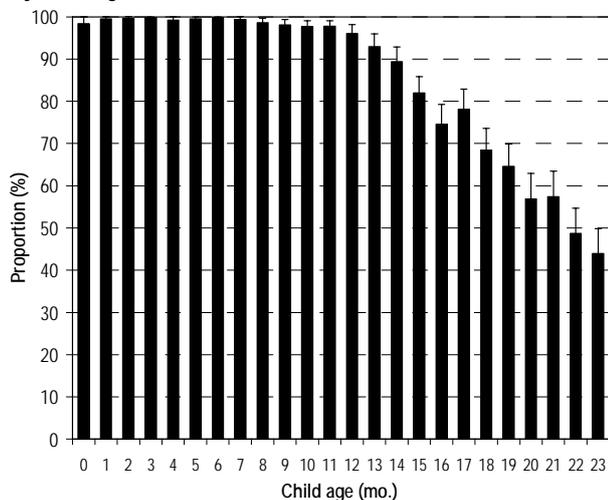


Figure 12. Proportion of children currently breastfeeding, by child age. (n=9,483)



Family access to food is also often a problem. The number of households that are food insecure is high in some geographic areas, especially during the rainy season, when flooding is common in many parts of the country, and where entire crops are often destroyed.

Strategies to address malnutrition

Over the past quarter of a century, various strategies have been used to alleviate the problem of malnutrition in developing countries. Because problems relating to malnutrition are very strongly context specific, any nutrition program should be tailored to the particular problems, level of knowledge of the target group, cultural conditions, resource availability and constraints of a given target group.²⁰ In addition, by tailoring a program to a specific environment and context, the chances of making this intervention sustainable are greatly increased. Efforts concentrated on alleviating malnutrition must be done in conjunction with programs to reduce the prevalence of common infectious and parasitic diseases within the population, as these also contribute to the “vicious” cycle of malnutrition and infection. Finally, household and individual food security needs to be addressed. One way to do this is through homestead food production programs. HKI’s experience has shown that improving household production of fruits and vegetables leads to increases in consumption of

these food items and contributes to income generation; this income is then used to purchase high-quality food items.

While better access to food items is essential, nutrition education is also important, especially for mothers of young children (less than 12 months of age) for whom food taboos are strong in Cambodia. Nutrition education can be addressed alongside growth monitoring. After plotting a child’s growth, the health worker can discuss possible ways for preventing or further slowing down the child’s growth. Growth monitoring also makes the mother more aware of how her child is doing. Because of the importance of growth monitoring as a “tool” to provide nutrition education/counseling, this is part of the Integrated Management of Childhood Illnesses (IMCI) package that is currently being piloted in two operational districts in Cambodia. The “Feeding Recommendations During Sickness and Health” of the IMCI guidelines was developed by HKI.

Programs to address malnutrition also need to ensure that high risk groups, especially pregnant women and children, receive sufficient micronutrients. This can be through foods, as described above, but also through supplements and/or fortification. Currently trials are underway for supplementation of pregnant women and children with a multiple micronutrient supplement. There is increasing evidence that multiple micronutrient supplements have numerous benefits for pregnancy outcomes, more so than those seen with only iron/folic acid supplementation, and on child growth and development. More research is being conducted to examine this and UNICEF, WHO and Helen Keller International/Indonesia, among others, are at the forefront of this research.

Thus, integrated approaches targeted to populations most at risk of suffering from malnutrition, pregnant women and children under the age of three, are necessary in order to overcome the devastating consequences of malnutrition on individuals and on society as a whole.

III Nutrition and Infectious Diseases

Poorly nourished people are more susceptible to infectious diseases than well-nourished people. Poor nutrition, or selective nutrient deficiencies, does not simply suppress immune function but causes dysregulation of a normally coordinated host response to infections. This leads to the development of an ineffective response. In addition, some evidence indicates that undernutrition may enhance the severity of infections. At the same time, infections affect nutritional status by reducing dietary intake and nutrient absorption, and by increasing the utilization and excretion of protein and micronutrients. This is part of the “vicious cycle” of malnutrition and infection. Recent observations indicate more than ever that nutritional status is a predominant factor determining immune competence and plays a central role in infectious disease outcome.²¹

In Cambodia, infection with human immunodeficiency virus (HIV), tuberculosis (TB), and malaria, are serious public health problems. Malnutrition may play a role in worsening the health and nutrition situation of HIV infected individuals and may contribute to the development and/or worsening of TB. Micronutrient interventions can help to strengthen the immune system and reduce the severity and impact of opportunistic infections in people living with HIV/AIDS (acquired immunodeficiency syndrome) and TB. In addition, nutrition plays a strong role in modulating malaria morbidity and mortality.

Human Immunodeficiency Virus Infection

HIV/AIDS is the single leading infectious cause of death in developing countries. In Cambodia the HIV Sentinel Surveillance Project indicated that approximately 169,000 adults aged 15-49 are living with HIV.²² As expected, the highest prevalence of HIV was seen amongst commercial sex workers (31.1%) and frequent clients. In response to this, the national AIDS prevention program has focused primarily on reducing sex-worker-client transmission through education and condom use. However, increasing numbers of HIV/AIDS cases are being seen in non-sex worker women and infants. The women, generally infected through their husbands or partners, have fewer options to protect themselves. If they become pregnant, their child faces the risk factors associated with a severely ill mother; these include poor fetal development, low birth weight, and once born, poor caring practices. The child also faces the risk of becoming HIV+. In order to prevent or slow the progression of HIV in these non-sex worker women, development of programmatically effective interventions are needed to complement the current HIV/AIDS prevention strategies.

Potential role of specific micronutrients in HIV/AIDS

Several studies over the last 5 years indicate that certain, but not all, micronutrient deficiencies may compromise host immunity to HIV and associated infections, and hasten the clinical progression of HIV/AIDS. More specifically, deficiencies in vitamin A, zinc, B12, vitamin E, and selenium have been associated with greater morbidity in HIV+ persons and/or increased mother-to-child transmission.²³ Clinical trials involving supplementation of HIV+ individuals with vitamin A, zinc, and vitamin E have been associated with reduced infectious disease morbidity or improved immunological status,²⁴ and a large-scale trial in Tanzania indicated that prenatal multiple micronutrient supplements reduced low-birth weight and fetal death by nearly half in HIV+ women.²⁵ In Cambodia deficiencies in vitamin A and other micronutrients are widespread amongst adult women as indicated in the recent countrywide survey conducted by HKI in collaboration with the Cambodian government.²⁶ Although multivitamins are advocated by several HIV care facilities in Cambodia, their distribution is not systematic or widespread and, most importantly, the formulations generally lack those nutrients most strongly associated with reduced HIV burden.

There are different nutrition-relevant actions aimed at preventing and/or mitigating HIV/AIDS impacts.²⁷ For people living with HIV/AIDS, nutritional care and support is critically important in preventing, or forestalling nutritional depletion. This could include improving quantity and quality of the diet, building or replenishing body stores of micronutrients, and speeding recuperation from HIV-related infections. Nutritional support can target communities with the objective of preventing and/or mitigating impacts through reducing the interactions of HIV/AIDS with malnutrition. Any nutrition intervention should take into consideration the three main preconditions of good nutrition, i.e. food security, health and environment services, and care. Such programs could include nutrition counseling in health facilities, community settings or at home to change dietary habits. This should be in conjunction with homestead food production activities so that foods and additional income are more readily available at the household level. Programs addressing breastfeeding promotion and complementary feeding will need to further emphasize the dissemination of clear information to policy makers, health providers, and communities about mother-to-child transmission facts, including risks and benefits of breastfeeding as well as all aspects associated with a decision not to breastfeed. Support for breastfeeding women will need to be established, through Mothers Groups or other support means.

Tuberculosis

Tuberculosis remains one of the most deadly health problems in East Asia, causing more deaths than any other infectious disease, including AIDS. In Cambodia, TB is a serious public health problem. Sixty four percent (64%), or more than 7 million people, are infected with *M. Tuberculosis*. Incidence of all forms of TB is 539 per 100,000 per year, the death rate due to TB is 90 per 100,000 per year²⁸ and, co-existence of HIV and TB is high. Data from the HIV/AIDS Sentinel Surveillance show that approximately 6% of TB patients are infected with HIV.²⁹ People living

with HIV are 20 to 30 times more at risk for contracting tuberculosis. Globally, it is estimated that one third of the increase in incidence of TB in the last five years is attributable to HIV and, TB is the leading cause of death among people who are HIV positive. While data is not available, local authorities suggest that this is also true in Cambodia. Common conditions associated with the risk of developing active TB are diseases associated with immunosuppression such as HIV infection, measles and malnutrition. Host nutritional status may influence the risk of an infected individual developing active tuberculosis.

Role of specific micronutrients in tuberculosis

The association between malnutrition and TB is well known, especially among adults. Although it was found that children with severe protein energy malnutrition are at a higher risk of developing TB, less is known about the nutritional status of children with TB.³⁰ Clinic-based studies using different indicators of vitamin A status suggest that vitamin A deficiency is not uncommon among adults and children living with tuberculosis. And, it has been postulated that vitamin D deficiency is associated with tuberculosis. Other studies suggest that deficiencies in iron, B12, and zinc could compromise immune response. The CNMS found that in Cambodia deficiencies in vitamin A and other micronutrients are widespread amongst adult women and children. At the same time, in Cambodia, nutritional rehabilitation is not considered in the control/treatment strategy for TB patients, except for some patients that may be recipients of a package of goods from the United Nations World Food Programme (WFP) which consists of rice, canned fish, cooking oil and corn soy blend (CSB).

Malaria

Malaria is a widespread parasitic disease and remains a major cause of morbidity, anemia, and mortality worldwide. It has long been

acknowledged that populations residing in malarious areas generally live under conditions leading to poor nutritional status. The groups at highest risk for the adverse effects of malaria, children and pregnant women, are also most affected by poor nutrition.³¹ In Cambodia, malaria remains one of the primary causes of morbidity and mortality and is mostly found in the hilly, forested areas bordering Thailand, Laos and Vietnam. In 2001, there were 50,284 confirmed cases of malaria (4.2 per 1000 population); in high-risk provinces the range was 31/1000 to 132/1000. Overall, there were 412 recorded deaths; the case fatality rate for severe cases was 9.2% and it was as high as 33.33% in Svay Rieng.³² An estimated 3,636,303 persons are considered at risk for contracting malaria.

Currently, malaria control in Cambodia and in the whole South-East Asia Region generally focuses on the early treatment of clinical malaria. However, the emergence of multi-drug resistant strains has stimulated the search for alternative methods of malaria control and prevention. Mosquito bed nets, impregnated every 6-12 months with pyrethroid insecticides are an effective (and cost-effective) intervention. When used regularly, insecticide-treated nets (ITNs) were very effective in reducing morbidity and mortality. A meta-analysis of trials using ITNs showed overall reductions in malaria morbidity by 48% and mortality by 20-40%.³³ At the present time there are a number of projects in Cambodia involving the distribution and sale of ITNs. These services are being provided through NGOs, and the National Malaria Control Programme with support from the EU and WHO.

Role of specific micronutrients in malaria

Nutrition plays a strong role in modulating malaria morbidity and mortality. A placebo-controlled study in preschool-aged children in Papua New Guinea showed that zinc supplementation reduced by 38% the frequency of health center attendance owing to *P. falciparum* malaria. And, that zinc was even more protective against heavy malaria infections.³⁴ In another study in Papua New Guinea, it was shown that

vitamin A supplementation reduced the frequency of *P. falciparum* episodes by 30% in preschool-aged children.³⁵ The observation that selective nutrient supplementation with vitamin A or zinc can substantially lower malaria attack rates suggest that targeted micronutrient supplementation interventions can serve as useful adjuncts to malaria-control programs. At US \$0.12 for 1-yr supply, vitamin A supplementation for children under five years of age, and especially for children one to three years of age, would rank among the more cost-effective interventions for malaria.³⁶

In Asia and Africa, a significant reduction in morbidity and mortality has been achieved through vitamin A supplementation. Similarly, there is sufficient evidence that suggest a considerable reduction in malaria morbidity and mortality among children protected by insecticide treated nets. Both interventions are proven to be cost effective and both target children under five. In addition, the delivery mechanisms may be complementary, with the scheduling of net retreatment and vitamin A capsule distribution traditionally being approximately every six months. Malaria and vitamin A deficiencies are often found in the same populations. In Cambodia, both ITN distribution and vitamin A capsule distribution are being conducted. However, these programs are not in tandem and there is a need to maximize health benefits by delivering them both effectively and efficiently. Furthermore, delivery of other micronutrients through the bednet distribution program should be investigated, especially since this synergistic approach to disease control could maximize resources and have the greatest impact.

IV. Inventory of Nutrition Interventions in Cambodia

The main objectives in conducting this nutrition sector review were to better understand current nutrition programming in Cambodia—to assess what is being done, where, and by whom and based on that, identify the programmatic gaps, and prioritize areas of need for future actions in the field of nutrition. This was done by documenting, describing and analyzing the different nutrition interventions underway in Cambodia. A total of 58 organizations were interviewed in order to identify their objectives and activities in nutrition program/s, their target groups and geographical areas. A summary of the interventions that each organization is conducting is presented in the table in Appendix II. This was then used to identify gaps and priorities in programming, in accordance with government objectives.

Summary of government objectives & strategies in nutrition

The National Council for Nutrition (NCN), housed in the Ministry of Planning, was established in early 1998. Various government ministries (including the MOH), UN agencies and NGOs are members of the NCN. The NCN is responsible for nutrition policy, monitoring and evaluation of nutrition programs, coordination with line ministries and research. It is the inter-ministerial coordinating body for activities in nutrition. To date, little of the proposed activities of NCN have been realized. Coordination has been limited, and funding for the secretariat is practically non-existent. However, recently, the NCN finalized a draft “Nutrition Investment Plan 2002-2007” (6 February 2002, Final Draft) and is seeking donors to assist with financial support. The objectives and strategies of this plan, which follow MOH nutrition objectives, are outlined below:

Objectives

- To reduce the levels of malnutrition in children under 5 years of age by 20% from the current level of 45% (underweight);
- To virtually eliminate deficiencies of iodine and vitamin A over five years;
- To reduce by 20% the current levels of anemia in children under 5 (63%, CDHS), children under two (70%, CNMS – HKI), women of childbearing age (57%) and pregnant women (77%), joint WFP/UNICEF baseline survey conducted in 1998;
- To increase coverage of antenatal care (ANC) so that weight gain during pregnancy can be monitored and to increase by 20% the number of women gaining 9 kg or more during gestation;
- To reduce levels of low birth weight from the current estimated 20%, to 15% in 5 years;
- To reduce the levels of malnutrition of women of reproductive age from 20% to 15 % as measured by BMI <18.5 kg/m².

Strategies directly related to actions in nutrition

The overall strategy, as outlined in the Nutrition Investment Plan (2002-2007) should be a community-based approach emphasizing actions at the commune and household level with supportive national level approaches. The Plan suggests that inputs should be directed to existing programs, and working community mobilization schemes, such as those from Seth Koma (UNICEF), other UN programs and many NGOs. The strategy favors expansion and scaling-up of these existing community-based projects and other activities, specifically the following:

- Locally, the focus should remain at the underlying and basic causes of malnutrition. It should take into consideration caring practices of children and women, household food security (access to food), health, sanitation, family planning, pre-natal care, income generation, education and literacy for women.
- As relates to micronutrients, vertical programs for IDA, VADD, and IDD will be the focus. Programs will be responsible for technical support to improve community education, and

knowledge and use of fortified foods and micronutrient supplements.

- Nutrition training and capacity building is essential. The greatest need is the short-term training to central and mid-level technical cadres in public health nutrition, breastfeeding, appropriate complementary feeding practices, growth monitoring promotion, and micronutrient deficiencies. Their role as trainers for volunteers and community leaders needs to be strengthened to match the pace of the rapidly growing demand for community-based programs.
- Development of a national sentinel surveillance system to capture nutrition trends over the years by using the CDHS 2000 as the baseline information to follow-up trends.

Description of nutrition-related interventions

Based on interviews for this review, the main nutrition interventions can be grouped as follows:

Nutrition education: The program attempts, through various education sessions/training and activities, to improve the knowledge of the target population on one or many aspects/topics of nutrition.

Food supplementation: Foods such as rice, oil, sugar, fish, or nutrient- and energy-dense blends (eg: corn-soya blend (CSB)), are distributed to the most vulnerable target groups, or, distribution occurs following emergency response to natural disasters such as flooding.

Vitamin/Mineral distribution: The program aims to alleviate micronutrient deficiencies by distributing vitamin and/or mineral supplements to the target group (eg: iron/folate supplements to women of childbearing age).

Growth monitoring: The program conducts, on a regular basis, weighing sessions for children

under the age of 5 years to monitor the progress in child growth. In some cases, individual child growth is pooled to form a community picture of the nutrition situation.

Breastfeeding promotion: The program promotes the National Breastfeeding Policy through education/training sessions. This includes promotion of— initiation of breastfeeding within the first hour following birth (colostrum), exclusive breastfeeding up to six months of age, timely introduction of complementary foods, etc.

Nutritional assessment: The program conducts regular nutritional assessment to measure progress in the nutritional status of the target group and changes in their food related practices.

Homestead food production: The program involves the promotion of home gardening, especially for production of nutrient-rich fruits and vegetables; animal raising may/may not be a component. These activities contribute to household food security by making foods available for consumption and for sale. The sale of these items generates additional income that is most often used to purchase other food items.

Summary of findings of nutrition interventions in Cambodia

In general, there are many programs and activities with nutrition-relevant components; however, their scope and scale is often limited. There is a lack of coordination among programs and between organizations, and nutrition is often not addressed explicitly as an outcome. It is most often a small part of much larger programs with a focus other than nutrition. There are some exceptions to this as some large-scale integrated programs have explicit nutrition goals and cover larger geographical areas. The major organizations, working in one or more districts of five to nine provinces, include the MOH, UNICEF, WHO, WFP, HKI, and WV-C. Other important contributors are those agencies working in one to five districts of one to three provinces and these include, ADRA, CARE, FAO, GTZ,

HU, LWS, PFD, RACHA, SC-A, and SC-F. Following is an overview of the main nutrition interventions being conducted in Cambodia, and to what extent the interventions are being addressed.

Nutrition education

All organizations included in this review have nutrition education as an integral part of their program/s, regardless of program size. Although all organizations are performing nutrition education in one form or another, the majority are small organizations working within a small geographical area. For half of these smaller organizations, the nutrition education activities include very basic nutrition concepts (food groups, foods rich in vitamin A and iron, etc.) because nutrition is a minor objective of their larger homestead food production program. As mentioned by many organizations, the level of knowledge of the population about nutrition is very low and therefore any type of nutrition education was expressed to be a step forward.

The main organizations conducting nutrition education have much larger-scale programs that have more explicit nutrition objectives, focusing on the reduction of micronutrient deficiencies and/or malnutrition. Such programs include breastfeeding promotion and the timely introduction of complementary foods, homestead food production, national programs such as VAC distribution, and others. These programs cover larger geographical areas and may or may not be through government systems. If they are, they include work at different levels (national, provincial, etc.). Otherwise, most programs have a community-based component that often times involve village health volunteers (VHVs) and other volunteers. These organizations include the MOH, UNICEF, WHO, WFP, FAO, HKI and HKI partner NGOs (ADRA, CCK, KWCD, PFD, VSG, WOSO), SC-A, SC-F, WV-C.

The majority of agencies interviewed mentioned that they use some, or all, nutrition education materials developed by Helen Keller International. These include the HKI Nutrition

Reference Manual, posters, leaflets, songs, training curricula for growth monitoring, etc. At the same time, many have requested technical assistance from HKI for training their staff in basic nutrition and have also sought guidance for monitoring of their nutrition programs. HKI has provided this training to its' partner NGOs; however, due to limited resources, HKI has not been able to provide the technical assistance to all NGOs as requested. In addition, agencies felt that additional nutrition education materials should be developed and requests for this have been made to HKI by various NGOs, UNICEF, WFP, and various government ministries, including health and rural development

Food supplementation

The main agency conducting food supplementation is WFP. Based on findings from the 1998 UNICEF/WFP baseline survey showing high rates of malnutrition, WFP mobilized resources for a supplementary feeding program. This was viewed, at the time, as emergency relief and was launched in 2000 with 7 NGO partners (ADRA, LWS, CARE, ANS, WVI, CARITAS, PFD) in one to two districts of 6 provinces. It now covers 28 health centers, has been going on for 18 months, and is being conducted by health center staff with assistance of village volunteers. Partner NGOs provide technical support and governmental agencies conduct routine monitoring. Supplementary food is provided by WFP in the form of corn-soya blend (CSB), which is fortified with vitamins and minerals. The target groups are children 6-59 months, pregnant women (2nd and 3rd trimester) and lactating women up to six months postpartum. Children receive a monthly ration of 6kg of CSB, while pregnant and lactating women receive 3kg. WFP also provides vitamin A fortified oil (0.3 kg to households) and sugar (0.75kg to children). This activity is happening on a monthly basis, where growth monitoring and nutrition education sessions are conducted.

HKI was invited by WFP to develop the training curriculum for growth monitoring and to then provide the training to WFP partner NGOs. This

curriculum will now also be used to update Module 10 in the MOH “Minimum Package of Activities”. At the same time, because of HKI’s demonstrated expertise in nutrition surveys/surveillance in Cambodia and other countries in the Asia-Pacific Region, WFP was interested in having HKI conduct the monitoring of the food supplementation program, in partnership with the RGC. However, due to limited funding, this was not possible.

Other organizations, such as SC-A, SC-F and GTZ are also conducting food supplementation activities within a whole district of one province. The remaining organizations (approximately 9) are conducting food supplementation on a much smaller scale— a couple of communes and a few villages in one province. They are providing one, or a few, of the following food items - rice, fish, soy milk, oil, sugar, milk formula.

Vitamin/Mineral distribution

Currently, there are two main national vitamin/mineral distribution programs. These are the MOH national vitamin A capsule distribution program targeting under fives and postpartum women, and, the MOH “Safe Motherhood” initiative which includes the provision of iron/folate to pregnant women (90 tablets/woman per pregnancy).

The main agency currently working with the national VAC distribution program is HKI. To try to improve VAC coverage, HKI is working with the MOH on a pilot project in three operational districts, in three different provinces. The pilot aims to improve VAC coverage by providing technical and logistical support to the MOH, health center staff, VHVs and partner NGO’s staff working in these pilot ODs. Efforts have focused on development of training curricula for health center staff and VHVs, provision of training to provincial and operational district-level staff, development of mass media materials (posters, stickers, TV and radio spots, etc). The efforts include a strong monitoring and evaluation component so that lessons learned can then be applied to other operational districts. UNICEF has

provided financial assistance in the past. Funding for VAC activities have been erratic, thus making it difficult for the national program to implement activities, especially since the MOH budget for this activity is limited. Program enhancement is required and for this, additional funds are also needed.

The provision of iron/folate to pregnant women conducted through the health system is not functioning very well. The MOH would like to improve coverage of iron/folate to pregnant women; however, those interviewed mentioned that there are limited resources to focus on this. Other target groups being addressed by the MOH are non-pregnant female garment factory workers of reproductive age and school girls 12 years and older (as described earlier). This project is being done with support from WHO. The garment factory pilot project provides a weekly iron/folate tablet to target women in seven factories near Phnom Penh. The school girls component will also provide weekly iron/folate supplements and will be done in collaboration with UNICEF in 2 districts of Kampong Speu Province. This is described more fully under the section: Strategies to address iron deficiency anemia.

Other international organizations that conduct vitamin/mineral distribution (vitamin A, iron/folate) on a fairly large scale (a few districts of a few provinces) are UNICEF, RACHA, ADRA, WV-C, GTZ-IFSP and SC-F. Finally, about 12 more organizations conduct vitamin/mineral distribution activities on a smaller scale within target communes and villages.

Members from the National Micronutrient Working Group expressed that resources for vitamin/mineral supplementation are limited. There are gaps in current activities addressing VAC supplementation among preschool children and postpartum women and in iron/folate supplementation among pregnant women. At the same time, no efforts address the urgent need of supplementing preschool children with iron/folate supplements.

Growth monitoring

Growth monitoring is being performed by 22 out of 58 organizations, as part of their nutrition program. The MOH in collaboration with the WHO is currently reviewing and updating its national training module for nutrition and growth monitoring. The main goals are to standardize the approaches used for growth monitoring, to explain the use of the new growth cards, and to improve the training of health workers for the future. The training curriculum developed by HKI for the WFP supplementary feeding program (see above) is being used to update the national training module. Once the module is completed, a training session on growth monitoring for health center staff will be conducted in the provinces of Kampong Cham, Kampong Chhnang and Svay Rieng.

Results from interviews show that only international organizations conduct growth monitoring activities. No local NGOs were found to include this activity as part of their nutrition program. WFP as well as UNICEF, with the MOH, have the largest geographical coverage for this activity where they cover a few districts of 6 provinces. In other areas, the MOH has yet to implement growth monitoring activities—in fact, few health centers even have weighing scales. While most organizations value the importance of conducting growth monitoring on a regular basis for children under five years of age, few were found to have a component that includes rehabilitation of malnourished children. Due to the lack of knowledge of health workers and volunteers, and the lack of national protocol/guidelines to follow once malnutrition is detected, often only basic nutrition and health counseling (increasing consumption of nutrient-rich foods, preparing proper complementary foods, hygiene and sanitation practices) is provided to malnourished children. The more severe cases of malnutrition are referred to the nearest hospital, where often times health staff cannot manage the cases.

Breastfeeding promotion

Nearly half the organizations interviewed include breastfeeding promotion in their nutrition program. The extent of the promotion and its content depends on the objectives of the nutrition program. Currently, the MOH has a National Breastfeeding Program, which aims to promote and protect infant and child feeding practices. At the onset of the program in early 2000, a Breastfeeding Technical Working Group was formed what is composed of major agencies in nutrition and breastfeeding in Cambodia: the MOH, UNICEF, WHO, RACHA, WV-C, and HKI. A National Infant Feeding Policy has been developed to serve as the protocol/guidelines for the promotion of proper infant feeding practices and a policy on infant feeding and HIV has also been developed. The National Breastfeeding Program has also provided training to health workers, midwives, nurses and doctors through the Regional Training Centers in Battambang, Kampong Speu, Kampot and Svey Rieng as well as in Phnom Penh. A few organizations, such as WHO, UNICEF, RACHA, WFP, HKI and WV-C are covering large areas with their nutrition programs, which include breastfeeding promotion. The programs from these organizations cover one or more districts within 3-8 provinces. RACHA is piloting a “Wat Grannies” program where elderly women monks are involved in breastfeeding promotion. This has been successful within the RACHA program areas and should be tested elsewhere. Other organizations that conduct breastfeeding promotion activities work on a smaller scale—within one district of one province or within a few communes and villages in one district of one or two provinces. The main topics which are promoted in this activity are: initiation of breastfeeding within 1 hour after delivery (provide colostrum), exclusive breastfeeding up to around six months of age and timely introduction of nutrient-rich complementary foods.

Interviews showed that not all organizations promote the same breastfeeding messages to their target population. Some organizations were unaware of the guidelines recommended by the

National Infant Feeding Policy. Also, almost no agencies are addressing the issue of breastfeeding and HIV/AIDS (or mother-to-child transmission). Training on breastfeeding by the various organizations is most often given to TBAs, VHV's, other volunteers, nurses and health center (HC) staff in order to disseminate breastfeeding messages at the community level, which was found to be most often done through mother's groups and/or household visits.

Nutritional assessment

Nutritional assessment is most often conducted by the main organizations working in the area of nutrition in Cambodia; these are the RGC (MOH and Ministry of Planning), UNICEF, WFP, and HKI. WHO has also done some assessment on a smaller-scale. For these organizations, nutritional assessment is done mainly to measure the progress and the impact of specific programs conducted. In 1998, UNICEF and WFP conducted a baseline survey and a follow-up survey was conducted in 2000 to measure their program impacts. In 2000, HKI, in partnership with the RGC, conducted a national micronutrient survey and assessment of the national VAC distribution program and iron supplementation activities. Results from the survey and assessment were subsequently used to design the current VAC pilot project (described previously) and is also being used for advocacy for additional resources in nutrition. In addition, the micronutrient survey will also be a good baseline for future such surveys. HKI/Cambodia hosted a Micronutrient Workshop in 2001, where preliminary results from the CNMS were launched. In addition, regular Nutrition Bulletins are published to raise awareness about the nutritional situation in Cambodia. These bulletins are widely distributed to governmental agencies, donors, UN agencies, NGOs and others working in the field of nutrition.

To date, nutritional assessment has mostly been done through baseline and follow-up surveys. However, ongoing nutritional assessment or regular surveillance is not presently conducted. One of the objectives of the Nutrition Investment Plan of the RGC (2002-2007) is to develop a

sentinel surveillance system for nutrition trends within the 5 years of the Plan. HKI is the main organization in Cambodia that has the technical expertise to assist the RGC to set up nutritional surveillance. In the Asia-Pacific Region, HKI has established extensive surveillance systems in Bangladesh and Indonesia, that provide quality data that governmental and non-governmental organizations can use for program planning.

Many other organizations (14) interviewed for this nutrition sector review conduct some form of nutritional assessment within their smaller scale projects. The assessments range from gathering information on rates of night blindness and consumption of vitamin A-rich foods to measuring rates of anemia within a certain target group. However, these activities are localized and small-scale.

Homestead food production

Homestead food production activities are being conducted by over 50% of NGOs interviewed. The main objective of homestead food production activities is almost always to improve household food security. Other objectives are to increase consumption of nutrient-rich foods and to generate income. The table in Appendix II shows that most small organizations conducting homestead food production programs generally only conduct one other nutrition activity, namely nutrition education. However, larger organizations are conducting various nutrition activities in addition to homestead food production. These include HKI and its' partner NGOs (ADRA, CCK, KWCD, PFD, WOSO, VSG), FAO, WV-C, CARE, UNICEF and GTZ-IFSP. Other smaller organizations (20) are also conducting homestead food production activities, but these programs are often small-scale and scattered in pockets of Cambodia. One of the more sustainable strategies for homestead food production activities is the HKI program. The model used is based on the successful program being implemented by HKI/Bangladesh. This model focuses on developing a system at the community-level whereby inputs, such as seeds, seedlings and saplings, are made available year-round for households to access.

Capacity building is a key component; training and follow-up technical support is provided to partner NGO staff, provincial departments of agriculture and community members. Many NGOs have requested technical assistance/training for homestead food production activities; but HKI has not been able to provide support because of limited resources.

In general, there is no geographical coordination for homestead food production. It was also found that homestead food production activities do not have a common objective. Strategies vary by agency and there is no government department involved with standardizing guidelines for homestead food production initiatives.

Other findings

Organizations that work in the field of HIV/AIDS, and include some form of nutrition activities within their program, were also contacted and interviewed. Only a few such organizations are operating in Cambodia. The main ones, in terms of program scope and geographical coverage, are KHANA, CARITAS, WV-C, CARE, and Maryknoll. The nutrition activities integrated within the HIV/AIDS programs of these organizations were found to be basic and quite similar between organizations. These activities are: multi-vitamin supplementation as part of the packet of medicine that organizations usually provide to their target group, food supplementation such as rice, canned fish, and some vegetables and, some basic nutrition education along with health and hygiene education.

Most organizations working in the field of HIV/AIDS mentioned that they find nutrition a very important component of their program because people living with HIV/AIDS have a better quality of life if they are well-nourished. However, all organizations mentioned the low level of knowledge of their staff about HIV/AIDS and nutrition and the lack of information available regarding this. Most organizations showed interest in learning more about the relationship between HIV/AIDS and nutrition and how this

could potentially help improve the status of their target groups. Also, it was mentioned that households living with HIV+ persons faced more problems with food security and thus, it would be important to set up homestead food production programs targeting communities at high risk for HIV, so that families could become more self sufficient.

Main constraints in conducting nutrition activities

Many organizations face the same types of constraints in their efforts to conduct nutrition activities. These include limited human, material and financial resources. This limits the scope and geographic focus of nutrition-related activities. Another constraint that was expressed by many is the low level of education, and the lack of knowledge of target populations about health/nutrition-related topics. Agencies find it challenging and time consuming to attempt to overcome this constraint to achieving behavior change, especially because of the strong traditional beliefs people have towards food-related practices. The lack of training opportunities in nutrition for health staff of NGOs and for government staff is another major constraint mentioned. This low level in staff knowledge was reported as an obstacle that results in reduced capacity to conduct extensive training and expand nutrition interventions at the community level.

V Gaps and Priorities for Future Programming in Nutrition

This table describes the gaps and priorities as identified in this review according to the activities presently conducted by organizations that were interviewed, and in relation to the nutrition objectives, and the priority sectors, of the MOH/RGC.

NUTRITIONAL ISSUES	GAPS	PRIORITIES
Vitamin A Deficiency (VAD)	<ul style="list-style-type: none"> - Poor VAC coverage among all target groups: underfives and postpartum women - Poor coordination between different levels of the MOH relating to VAC distribution program - Lack of a system for supervision, monitoring and evaluation of the VAC program activities - VAC supply erratic - Low level of knowledge among health workers about the VAC Policy - Poor knowledge among health workers and community members in relation to the benefits of vitamin A, and VAC distribution - Lack of knowledge among NGO staff about the VAC Policy - Lack of resources/poor distribution of resources to support efficient VAC distribution through outreach activities (limited budget) - Small-scale (sporadic coverage) homestead food production programs - Lack of sustainable approaches to homestead food production activities - Lack of nutrition education materials for national distribution - No fortified foods available at the community-level 	<p>Short-term:</p> <ul style="list-style-type: none"> - Improve VAC supplementation coverage across the country - Support training for health center staff and VHVs - Support health center outreach activities - Provide support for activities, including a feedback system, supervision and education to the HC staff and VHVs in relation to vitamin A and VAC distribution - Support community mobilization efforts by production of mass media-type materials - Improve coordination efforts through the National Micronutrient Working Group <p>Medium-term:</p> <ul style="list-style-type: none"> - Improve access to vitamin A rich food by such initiatives as homestead food production (animal and plant foods) - Nutrition education for improved feeding practices <p>Long-term:</p> <ul style="list-style-type: none"> - Food fortification with vitamin A
Iron Deficiency Anemia (IDA)	<ul style="list-style-type: none"> - Very few interventions to address IDA in target groups most at risk (pregnant women, preschool-aged children and school-aged children) - Poor knowledge of health workers and the general population on the signs and consequences of IDA and its prevention - Lack of knowledge among health workers and the population about the National Safe Motherhood Policy on distribution of iron supplements to all pregnant women (90 iron/folate tablets during pregnancy) - Lack of a National Policy on IDA (treatment and prevention) - Lack of promotion of iron-rich food consumption and iron absorption enhancers (vitamin C rich food, protein-rich foods) - Few efforts focused on parasitic disease control - Lack of fortification initiatives 	<p>Short-term:</p> <ul style="list-style-type: none"> - Immediate interventions in the form of pilot projects, to find the best ways to address the severe problems of IDA by providing iron supplements and education to high risk groups (particularly pregnant women and young children) - Mass education campaigns about the causes, consequences and prevention of IDA. This should be linked with pilot programs - Control of parasite infestation in children and pregnant women by mass distribution of anti-parasite medicines - In malaria endemic regions, ensure widespread coverage of impregnated bednets and system for re-impregnation <p>Medium-term:</p> <ul style="list-style-type: none"> - Development of a National Policy on IDA to support field efforts and based on pilots recommended above - Expansion of homestead food production programs (especially animal foods) - Development and implementation of a nutrition education strategy <p>Long-term:</p> <ul style="list-style-type: none"> - Fortification of food items with iron - Environmental sanitation initiatives

Infectious Diseases

- The relationship between micronutrient status and morbidity and mortality during HIV infection is not well-known
- It is unknown whether nutritional interventions (supplementation, dietary education, fortification) will improve morbidity and mortality during HIV infection
- Lack of information on whether nutritional interventions will help prevent individuals infected with TB from developing active disease
- No information on whether micronutrient supplementation could affect clinical outcomes of individuals with co-infection (TB and HIV)
- Lack of information for health center staff, NGOs staff, and others on mother-to-child transmission of HIV
- No integration of micronutrient supplementation with malaria control programs
- Lack of programs addressing food security issues for households with HIV+ persons

Short-term:

- Conduct sound operations research related to relationships between HIV and nutrition and TB and nutrition
- Develop strategy for the delivery of vitamin A with bednet distribution
- Examine possible deliver strategies for other micronutrients through the bednet distribution program
- Develop training package for health center staff, NGO staff and others on mother-to-child transmission of HIV, taking into consideration the most suitable option for women in different situations (urban vs. rural, socio-economic status, etc)

Medium-term:

- Modify/develop programs based on operations research recommended in short-term priorities
- Development of homestead food production program targeting communities at high risk for HIV

VI Recommendations

As can be seen from the overview presented herein, there are many gaps in the area of nutrition programming in Cambodia. At the same time, there are many priorities in nutrition that need to be addressed if reductions in maternal and child morbidity and mortality are to be realized. Programs that are likely to have the most significant impact on reducing malnutrition are those that are targeted at the populations for which inadequate nutrition has its largest effects, namely pregnant women and children under 3 years of age. It is in these populations and during these ages that nutritional interventions have the greatest potential for benefit.

In general, programs to improve the nutritional situation of women and children must start early on in the lifecycle. Pregnant women must receive adequate dietary intake during pregnancy (and even pre-pregnancy) in order for her fetus to grow and develop properly. This is difficult to achieve, even in more industrialized countries and thus, supplementation with iron/folate should be a priority and with multiple micronutrients in the future. At the same time, dietary diversification should be promoted through homestead food production programs and nutrition education. These types of programs can make micronutrient-rich foods more accessible to the household and thus have the potential for improving dietary intake.

Promotion of exclusive breastfeeding up until around six months of age with appropriate (high quality) complementary feeding thereafter will be important. Supplementation with vitamin A, iron, and in the future multiple micronutrients is also very important for preschool-aged children. Vitamin/mineral supplementation for children is also common or recommended in industrialized countries, even when children have better dietary intakes. School-aged children and especially adolescent girls are also vulnerable, and programs to address their needs should not be neglected. These girls are the future mothers and their nutritional status pre-pregnancy is an important determinant of pregnancy outcome. Iron supplements for school children could be one important intervention. Thus, nutrition throughout

the lifecycle is important for the overall well being of the individual and future generations.

To address these issues one needs to look at successful efforts within Cambodia and in other countries with a similar situation. Depending on the intervention, there will be a need to strengthen health system delivery, and also strengthen community-based initiatives. Efforts will require strong local and political commitment, clear policies and guidelines, and initiatives from governmental agencies, UN agencies and local and international NGOs. The following recommendations are made, based on findings from this nutrition sector review. They are organized as general recommendations and specific program recommendations. The specific recommendations are further broken down as those that could be addressed in the short-, medium- and longer-term, bearing in mind that because nutritional deficiencies often do not occur in isolation, addressing one will likely have an impact on others.

General recommendations

- a. Due to the heavy workload and budget constraints, some aspects of the national nutrition program, such as development of nutrition-related policies, strategic planning and supervision from the national level, have not received the attention needed. In addition, the Nutrition Unit/MOH is understaffed. While the National Nutrition Unit receives technical and financial support from some international organizations, additional support is required in order to build capacity of this Unit to implement its strategy.
 - additional qualified staff are required to work in the Nutrition Unit;
 - consideration should be given to sending key staff abroad for further training;
 - trainings in-country, by international organizations, could be organized to further enhance Nutrition Unit staff capacity;
 - the RGC should consider the development of a nutrition curriculum to be used at the

University of Phnom Penh for future qualified human resources in the field of nutrition.

- b. Health center staff knowledge about nutrition and MOH nutrition-related policies (e.g. vitamin A policy, breastfeeding policy and Safe Motherhood Initiative) is limited. Health center staff receive little training about nutrition, and continuing education is sporadic. In order to push nutrition programming forward, health center staff will need training and refresher training on different aspects of nutrition. Agencies working with health center staff should include training and refresher training on nutrition in their programs. However, trainings will eventually need to be institutionalized (see point #3 below).
- c. A one-time training for health center staff on topics such as the VAC program, iron supplementation, breastfeeding, etc. is not sufficient as there is a high staff turn-over at health centers. Thus, a system needs to be in place for trainings to be on-going (periodic). A group of trainers responsible for this activity at the provincial and operational district levels will need to be identified, as will initial trainers from the national level. Some nutrition curricula are already in place, but others need to be developed in line with the MOH Minimum Package of Activities.
- d. On-going program monitoring and supervision is required. Agencies, whether NGOs or governmental should set up, if not already present, a systematic monitoring system that will collect information to help improve program activities. This can be done through a surveillance system (described below).
- e. It is important for a nutritional surveillance system to be established. Surveillance can be used to map problems geographically and, it can map interventions that are being conducted. At the same time, data from the surveillance system can be used to assess the impact of program interventions. In addition, communicating findings from nutritional

surveillance can lead to mobilization of funds for nutrition programs, whether they are short-term disaster relief or longer-term initiatives.

- f. Because surveillance may not be nationally representative or representative at the provincial-level, periodic population-based nutrition surveys will need to be conducted every 10 years to evaluate progress of nutrition interventions. Results from these surveys will be important for national programming and priority setting.
- g. Because Cambodia is still recovering from many years of civil war, it is expected that external assistance to the health system will need to be provided for some time. Thus, external agencies should work in accordance with MOH or RGC policy in order that the transition can happen gradually and smoothly.
- h. The NCN needs to become more active in its' coordinating role and, support should be provided so that the new Cambodia Nutrition Investment Plan (2002 – 2007) can be realized.

Specific program recommendations

Vitamin A Deficiency

Strategies to address the problem of VAD include supplementation, dietary diversification and fortification. In the short-term, VAC coverage needs to be improved nationwide, in the medium-term, access to micronutrient-rich foods should be considered and in the longer-term fortification of foods with vitamin A should be addressed.

Short-term

- a. National scale-up of on-going pilot activities to improve VAC coverage among preschool-aged children and postpartum women should be done. Efforts need to continue to focus on strengthening the health care system by providing training to health center staff and support for outreach activities. At the same

time, demand creation for VAC needs to continue. Current efforts in this area need to be evaluated and recommendations need to be made for project scale-up.

- b. Shortage of VACs at the health center level is often a problem. This is particularly the case for the newer 100,000 IU dose of vitamin A for children 6-11 months of age. Better coordination between agencies working with the national VAC program needs to occur to ensure that adequate VACs are available. Stocks should be maintained at the operational district level to improve accessibility for mass distribution months (March and November) and for measles outbreaks.
- c. While there is a new policy for the provision of an 8000 Riels (approximately US\$2) per diem per health center staff per day for outreach activities, health center staff often do not know if they will receive the funds and if they do, it often comes many months after the outreach session. Also, health center staff frequently need to use some of this per diem for transport and/or lodging when traveling to villages far from the health center. Because of these limitations, staff may not be motivated to go out for outreach sessions. This needs to be explored through various channels including MEDICAM and UNICEF, together with the MOH. Meanwhile, agencies supporting health centers could help support outreach activities until the government system is in place.

Medium-term

- a. Dietary diversification is an important strategy for addressing VADD. Programs to increase the production and availability of micronutrient-rich foods, both animal and plants, should be expanded. And, monitoring of these activities should be an integral part of programs.
- b. Once foods are available, nutrition education can play an important role in improving intake. This is especially important during the stage when infants are being introduced

complementary foods and during pregnancy and lactation. Thus, homestead food production programs should have a nutrition education component.

- c. Nutrition education materials have been developed by Helen Keller International and are being used widely throughout Cambodia. An assessment of additional needs for nutrition education materials is required. Also, the sustainability of reproduction of materials must be looked into.
- d. NGO, and most MOH/Nutrition Unit staff, lack knowledge on basic nutrition. An agency, governmental or non-governmental, should be identified that can provide the training needed for staff to be able to carry out their programs.

Long-term

While efforts have begun to look at the possibilities of fortification of foods with vitamin A, this needs further exploration.

Iron Deficiency Anemia

Strategies to address the problem of IDA include supplementation, dietary diversification, fortification and parasitic disease control. In the short-term, supplementation efforts should be improved, or in the case of children, initiated, and, parasitic disease control efforts should be improved and/or expanded. At the same time, in the medium-term, dietary diversification, including homestead food production and nutrition education should be considered and in the longer-term, food fortification and environmental sanitation.

Short-term

- a. Programs to improve iron/folate supplementation to pregnant women need to be strengthened. Current delivery channels need to be examined and evaluated as does supply of iron/folate tablets to health centers. Training should be provided to health center staff about national policy on supplementation to pregnant

women and educational materials will need to be developed. In addition an educational “mass media type” marketing of iron supplements targeting pregnant women needs to be designed and implemented. However, because there are so few effective programs, it would be important to conduct a pilot that takes into account the many lessons learned in other places.

- b. Because many pregnant women do not attend the health center regularly for prenatal check-ups, it is important for health center staff to provide the recommended 90 tablets of iron/folate to the woman if/when she does show at the health center. Health center staff are reluctant to do so because they would prefer for women to return. However, staff need to receive training on this “Safe Motherhood” initiative and should be able to provide follow-up and support to pregnant women.
- c. Provision of iron supplements to children should be undertaken to prevent iron deficiency anemia in children. Because little has been done globally on this, a pilot project should be designed and piloted to examine different delivery systems of an iron supplement specially designed for preschool-aged children.
- d. Programs that provide iron supplements to school children should continue with improved coordination between the Ministry of Education and Health.
- e. Control of parasitic diseases (such as malaria and hookworm) is also important for the prevention and control of anemia. Efforts by the National Malaria Center and others in this field should be expanded and be better coordinated. In particular, regular mass deworming should be put in place and insecticide-treated bednet coverage should be expanded to all high-risk areas.

Medium-term

- a. Currently there is no national policy on iron supplementation or control of IDA, except for

pregnant women. The National Micronutrient Working Group needs to develop guidelines for anemia control and treatment so that health center staff, NGOs and other agencies working in this field can know what to do. This should be in line with the Integrated Management of Childhood Illness package that will be piloted shortly by the MOH, in collaboration with the WHO.

- b. Iron supplies should be re-examined. Currently there are sufficient stocks and in fact, there are so many supplements that often times they expire soon after delivery to the health centers. This is another reason why health center staff may not be giving pregnant women the 90 recommended tablets of iron/folate.
- c. Dietary diversification to improve intake or iron-rich foods is required. This could be done through homestead food production activities (described under VADD). But, the significance of animal foods is even more important in this case.
- d. Nutrition education materials describing iron absorption inhibitors and enhancers should be developed. These materials can be used by health center staff, NGO staff and others when conducting nutrition education activities and will be important for use with homestead food production activities.

Long-term

- a. While efforts have begun to look at the possibilities of fortification of foods with iron, this needs further exploration.
- b. Environmental sanitation and related education will be required in the longer-term to address the problem of hookworm, and schistosomiasis (in select areas). Water supply in remote areas is required and, educational materials about prevention of these diseases needs to be developed.

Iodine Deficiency Disorders

IDD can be controlled through salt iodization efforts. Additional attention is required so that iodized salt become more accessible to all Cambodians. These efforts should happen in the immediate future.

Short-term

- a. Universal salt iodization for human consumption needs to be realized. Legislation, long in the making, needs to be finalized and approved. Iodized salt production efforts need to continue and need to be expanded.
- b. While there is some distribution of iodized salt to the provinces, additional efforts are needed and expansion to all provinces is essential. For this, demand creation of the product at the provincial-level is required and this can be done through a social marketing campaign.
- c. The MOH should examine whether there is a need to continue to provide iodized oil capsules to women of reproductive age in high risk areas.

Medium-term

Once iodized salt reaches the provinces, efforts to make it available at the lower level are also required. Social marketing will also be useful at these levels as well, especially when non-iodized salt is also available on the market (since non-iodized salt is cheaper than iodized salt).

Malnutrition

Malnutrition is a result of a complexity of immediate and underlying causes. In the short-term, malnutrition strategies should focus on improving infant and child feeding practices as well as maternal nutrition. At the same time, efforts to control micronutrient deficiencies (described above) will also have an impact on malnutrition. Longer-term efforts should focus on nutritional surveillance and program evaluation.

Short-term

- a. Programs to improve breastfeeding practices and to improve the quality and timely introduction of appropriate foods for infants are needed. Technical assistance to the National Breastfeeding Program is required in order that program objectives are being met at the different levels. Programs will not only need to focus on strengthening health worker knowledge about breastfeeding, but also will need to focus on community-based initiatives to improve breastfeeding and complementary feeding practices. For these activities and for breastfeeding promotion in general, it will be important to have a women-centered approach to learn of constraints to breastfeeding and how best the woman can feed her child.
- b. Dietary diversification to improve dietary intake is required. This could be done through homestead food production activities (described under VADD). Accompanying nutrition education materials should be developed. Making foods available is required before mothers can learn more about improving quality of complementary foods.
- c. While there is a policy on HIV/AIDS and infant feeding, dissemination of information has hardly been conducted. Materials should be developed and counselors should be trained to be able to provide mothers who are HIV positive with information on possibilities for infant feeding.

Medium-term

Training programs for health center staff, NGO staff and others will need to be developed in a systematic way so that messages are consistent and in line with MOH policies. This should also include the use of the Child Health Card and the newly revised module on growth monitoring.

Long-term

After results of the trials on maternal and child supplementation with multiple micronutrients,

efforts should focus on determining whether supplementation with multiple micronutrients is a feasible option in Cambodia and then determine possible channels for distribution to these different target groups.

Infectious Diseases

Poorly nourished people are more susceptible to infectious diseases than well-nourished people and evidence indicates that undernutrition may enhance the severity of infections. Thus, it will be important in the short-term to focus on the potential role that micronutrients can play in progression of HIV and TB. This operations research will contribute to global knowledge on the subject and will be useful for adapting on-going programs. In the medium-term, programs should focus on food security issues for those communities at high-risk for HIV.

Short-term

- a. Due to the important role that multiple micronutrient supplements can play in reducing the progression of HIV and TB infections, especially in countries like Cambodia where the nutritional status of the population is poor, operations research should be conducted to examine the role of micronutrients in disease progression. HKI has the technical expertise, and experience, for such operations research.
- b. Efforts to coordinate vitamin A supplementation with bednet distribution programs should be considered. Any such efforts require the participation of the National Malaria Center, the National Micronutrient Technical Working Group and others working in this area (such as NGOs).
- c. Other micronutrients, besides vitamin A, can also play a role in reducing malaria morbidity and mortality. Thus, operations research to explore distribution mechanisms of other micronutrients with on-going activities should be considered.

- d. Because health center staff, NGO staff and others have little knowledge of Mother-To-Child-Transmission, a training program should be developed that is in line with government policy on infant feeding. An agency with expertise in nutrition should work with the MOH on such a training program, that would eventually be integrated with other MOH training programs. Special emphasis on appropriate counseling is necessary.

Medium-term

- a. Based on operations research examining micronutrients and HIV/AIDS and TB (see above), programs should be adapted accordingly.
- b. Food security programs targeting communities at high risk for HIV/AIDS should be initiated. Improving access to and consumption of micronutrient-rich foods would benefit the very poor and food insecure areas. An approach such as homestead food production (both plants and animal products) could be used, as this is a sustainable way to make nutrient-rich foods available at the household level, with minimum inputs.

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Appendix I. List of organizations interviewed

Local NGOs, in alphabetical order:

- Bantey Srei
- Buddhism for Development
- Cambodian Association for the Development of Economy Together (CADET)
- Cambodian Development and Relief Centre for the Poor (CERCP)
- Cambodian Health Education Development (CHED)
- Cambodian Women's Development Association (CWDA)
- Chamroeun Cheat Khmer (CCK)
- Chivith Thmey
- Community for Rural Development (CRD)
- Cooperation for a Sustainable Cambodian Society (CSCS)
- Khmer HIV/AIDS NGO Alliance (KHANA)
- Khmer Human Resources for Development Organizations (KHReDO)
- Khmer Rural Development Association (KRDA)
- Khmer Women's Cooperation for Development (KWCD)
- Kratie Women's Welfare Association (KWWA)
- Minority Organization for the Development of Economy (MODE)
- Rachana
- Sovann Phoum
- Village Support Group (VSG)
- Women's Service Organization (WOSO)

International NGOs, in alphabetical order:

- Action Against Hunger (AAH)
- Adventist Development and Relief Agency (ADRA)
- Asian Outreach Cambodia (AOC)
- Assemblies of God (AOG)
- Cooperation, Assistance, Relief Everywhere (CARE)
- CARITAS
- Christian Outreach Relief and Development (CORD)
- Church World Service (CWS)
- Coopération Internationale pour le Développement et la Solidarité Programme in Cambodia (CIDSE)
- Food for the Hungry International (FHI)
- GTZ – Integrated Food Security Program (IFSP)
- Handicap International (HI)
- HealthNet International (HNI)
- Health Unlimited (HU)
- Helen Keller International (HKI)
- International Cooperation Cambodia (ICC)
- International Volunteers of Yamagata (IVY)
- Lutheran World Service (LWS)
- Malteser Germany (MHD)
- Maryknoll
- Médecins du Monde (MDM)
- Partners for Development (PFD)
- Reproductive and Child Health Alliance (RACHA)
- Save the Children – Australia (SCA)
- Save the Children – France (SCF)
- Save the Children – UK (SCUK)
- SERVANTS
- 24-Hour Television Charity Committee – Cambodia
- World Relief – Cambodia (WR-C)
- World Vision – Cambodia (WV-C)
- ZOA Refugee Care

Government Organizations/Programs:

- National Breastfeeding Program – Ministry of Health
- National Centre for Health Promotion (NCHP), Ministry of Health
- National Nutrition Program, Ministry of Health

UN Organizations, in alphabetical order:

- Food and Agriculture Organization (FAO)
- UNICEF
- World Food Program (WFP)
- World Health Organization (WHO)

Appendix II. Summary Table – Organizational profile and interventions

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS	
				NE	FS	VMD	GM	BFP	NA	HFP		
1. Action Against Hunger (AAH) Year of establishment in Cambodia: 1989	Programs: Food Security Program – Focus on homestead food production, improvement of rice production, income generation, and increased consumption of nutrient-rich food. Four trainers conduct education with village volunteers via nutrition workshops, women's groups, and cooking practices. Donors: European Union	Province: Prey Vihear Districts: Chom Ksan and Kulen (24 villages, 600 families)	Family as a whole; for nutrition objectives – women and children	X							X	The program is expected to remain the same. No future plans yet as it is too early into this new program.
2. Adventist Development and Relief Agency (ADRA) Year of establishment in Cambodia: 1989	Programs: Support WFP's Supplemental Food Program (SNAP) – Involves support to HC staff to conduct monthly growth monitoring, food ration distribution for children under 5, pregnant/ lactating women, nutrition education. Child Survival Program – Strong nutrition component: improve nutritional status of children under 3 years; Improve BF and young child feeding practices; decrease anemia; includes the Hearth Program (to rehabilitate malnourished children); education on nutrition is done via Mother's Clubs, home gardening activities and Hearth Program. Donors: USAID, ADRA-Australia, VASS New Zealand, WFP	Province: Siem Reap, Kampong Thom District: Baray and Santuk OD in Kampong Thom; Angkor Choeung OD in Siem Reap province.	Women 15-49 y. old; U5 children	X	X	X	X	X	X	X	X	In the very near future, the Hearth Program will be implemented within the Child Survival Program (started in October 2001), in which they plan to train VHVs to support the program and disseminate information through the program.
3. Asian Outreach Cambodia (AOC) Year of establishment in Cambodia: 1993	Programs: Primary Health Care Teaching Program – Weekly mobile medical clinic where nutrition activities are performed. Informal education in groups, children's fun activities, growth monitoring sessions. Mothers of malnourished children receive counseling and a food supplement (soya milk); BF counseling is done and milk powder is distributed as a last resort if the mother cannot BF. Donors: Rattanak Foundation and individual donations	Province: Kandal District: Viet Haim	Women and children in general (about 500 people weekly)	X	X	X	X	X				No future plans.

NOTE: NE = Nutrition Education; FS = Food Supplements; VMD = Vitamin/Mineral Distribution; GM = Growth Monitoring; BFP = Breastfeeding Promotion; NA = Nutritional Assessment; HFP = Homestead Food Production

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS	
				NE	FS	VMD	GM	BFP	NA	HFP		
4. Assemblies of God (AOG) Year of establishment in Cambodia: 1990	<p>Programs: Community Health Education Program (CHE) – Health, hygiene and nutrition education is given by CHE Training Teams to members of VDCs who perform the training at the community level, using group discussions, practice, IEC materials such as images and pictures to stimulate discussions. Each community decides what they want to know in nutrition, health and other sectors of the CHE program. From one community to another the subjects may be different. Also through animal husbandry, home gardening and fruit tree planting activities, some nutrition education is given. Trainers also learn how to recognize and prevent malnutrition.</p> <p>Donors: AOG – Finland, USA, Philippines; Government of France and Finland.</p>	<p>Province: Kg. Speu, Kandal, Kg. Cham</p> <p>District: Cbaar Mon in Kg. Speu, Kieng Svay and Saang in Kandal, Dambae in Kg. Cham (18,338 people)</p>	Adults in general; women are more involved	X							X	Future plans are to continue to expand to more villages every year using the same approach and add more training lessons to the program in some villages as needed.
5. Banteay Srei Year of establishment in Cambodia: 1994	<p>Programs: Nutrition activities are conducted through the home gardening program. Objectives are to improve the nutritional status of the whole family and increase income. Activities consist of basic nutrition education and cooking demonstrations in groups or individual households, using IEC materials.</p> <p>Donors: CAFOD, AUSAID, NOVIB</p>	<p>Province: Siem Reap</p> <p>District: 3 (13 villages)</p>	Poor and vulnerable women (350 households)	X							X	They plan on keeping the same approaches for the future however they would like to expand their program to more villages and provide training to VHVs in home gardening and nutrition.

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS	
				NE	FS	VMD	GM	BFP	NA	HFP		
6. Buddhism for Development Year of establishment in Cambodia: 1993	Programs: Community Development Program - Health promotion activities through the mobile health unit: health and nutrition (child feeding practices, nutrient-rich foods, prevention of micronutrient deficiencies) information is disseminated using posters, engaging into discussions through monthly meetings for children's program, women's groups, household visits. The staff train VHVs and support them in conducting these activities. Donors: PACT, Enfants du Mekong	Province: Battambang District: Sangkai Commune: 7	Women of all ages, with a special emphasis on pregnant women	X							X	Plan to reinforce the nutrition education activities by using more and better IEC materials.
7. Cambodian Association for Development of Economy Together (CADET) Year of establishment in Cambodia: 1993	Programs: Food for Preschool Children and Nutrition Education – This program is implemented through the food security program – home gardening. Nutrition education activities occur via sessions organized by VDC members who are trained by CADET's staff. Basic nutrition information is disseminated using posters and flip charts Donors: CIDSE	Province: Takeo District: Prey Kabas Commune: Kampeng and Prey Phdao (6 villages)	Population in general with emphasis on women 15-49 and children (220 households)	X							X	No future plans for expansion or modifications to this program.

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS
				NE	FS	VMD	GM	BFP	NA	HFP	
8. Cooperation, Assistance, Relief, Everywhere (CARE) Year of establishment in Cambodia: 1991	<p>Programs: Support WFP's SNAP program in Bantey Meanchey province. Support HC staff, VHVs for monthly growth monitoring, CSB suppl. to U5 children, pregnant/lactating women, conduct nutrition education and other health activities.</p> <ul style="list-style-type: none"> - In all provinces, CARE provides assistance and strengthens HCs to improve service delivery at HC level and outreach activities - CARE conducts home gardening activities in all the provinces they are present. - HIV/AIDS program (Koh Kong, Bantey Meachey): food suppl. (rice, fish) to HIV+ people; multi-vitamin supplementation, or just iron and B complex vitamins; education on nutrition, hygiene and sanitation. <p>Donors: USAID, WFP</p>	<p>Province: Bantey Meanchey, Oddar Meanchey, Koh Kong, Pursat, Kampong Chhnang</p> <p>District: P. Net Preah in Bantey Meanchey; Somrong in Oddar Meanchey; Sre Ambel in Koh Kong; Sampov Meas and Bakan in Pursat; Kg. Chhnang in Kg. Chhnang.</p>	Pregnant/lactating women, children under 5	X	X		X	X		X	Plan to become involved in the near future in strengthening VAC distribution to children and postpartum women by supporting HC staff and volunteers (training, methods of reporting) at the HC and community levels.
9. CARITAS Year of establishment in Cambodia: 1990	<p>Programs: Supports WFP's SNAP (food supplemental program) – Assists HC staff and volunteers in monthly GM sessions, CSB ration distribution to U5 children, pregnant/lactating women, nutrition education and other health activities.</p> <p>Community Development Program – Income generation through home gardening; credit; agriculture; infrastructure; water, etc.; distribute multi-vitamin supplements, rice and meat through the HIV/AIDS Home Care Program, and also conduct basic health, hygiene and nutrition education for HIV/AIDS people and their family.</p> <p>Donors: Various CARITAS around the world, WFP</p>	<p>Province: Siem Reap</p> <p>District: Siem Reap (7 HCs)</p>	Emphasis on women and U5 children; community in general; people living with HIV/AIDS	X	X	X	X	X		X	Programs are expected to remain the same for the near future.

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS
				NE	FS	VMD	GM	BFP	NA	HFP	
<p>10. Cambodian Development and Relief Center for the Poor (CERCP)</p> <p>Year of establishment in Cambodia: 1995</p>	<p>Programs: Through their agriculture program, the goal is to improve knowledge of farmers about nutrition and how to grow nutrient-rich foods. Community representatives receive training on agriculture, how to choose appropriate nutrient-rich crops; supported by project staff they distribute seeds, conduct nutrition education in households and through credit groups.</p> <p>Donors: Partner NGO Sor Sor Trong</p>	<p>Province:Kampot</p> <p>District: Kampong Trach</p> <p>Commune: Kampong Trach Khang Khoeun</p> <p>Village: Koh Tachan</p>	<p>Women and poor families (40 families)</p>	X						X	<p>From the request of the district authorities, the nutrition education program will continue. Topics will cover: growing nutrient-rich vegetables in household garden, and nutrition for preschool-aged children in 20 villages of the districts of Kampong Trach and Dang Tong.</p>
<p>11. Cambodian Health Education Development (CHED)</p> <p>Year of establishment in Cambodia: 1995</p>	<p>Programs: The program is to improve the health of Cambodians by designing effective health education interventions, produce appropriate IEC materials, and train primary health care educators. This organization does not work directly in nutrition but is required from time to time to develop IEC materials in nutrition for various organizations.</p> <p>Donors: Information not available</p>	<p>Province: Battambang</p>	<p>Health workers, health care educators</p>	X							<p>No future plans for the program on IEC materials development in the field of nutrition.</p>
<p>12. Cambodian Women's Development Association (CWDA)</p> <p>Year of establishment in Cambodia: 1993</p>	<p>Programs: As part of their Credit Bank Program, some health and nutrition education is provided regularly during credit group meetings in villages. CWDA staff conduct the education sessions, which cover various topics of nutrition such as nutrient-rich food consumption, prevention of micronutrient deficiencies, and proper infant feeding practices. These educational sessions are conducted using posters, leaflets, open discussions, question and answer period, and problem solving.</p> <p>Donors: Information not available</p>	<p>Province: Phnom Penh area</p> <p>Commune: 20 (5-6 villages in each commune)</p>	<p>Poor women in the community; youth groups</p>	X							<p>No future plans for this program for now.</p>

ORGANIZATION	CURRENT INVOLVEMENT IN THE NUTRITION SECTOR & MAIN DONORS	GEOGRAPHIC REGION	TARGET POP.	NUTRITION INTERVENTIONS							FUTURE PLANS	
				NE	FS	VMD	GM	BFP	NA	HFP		
13. Chamroeun Cheat Khmer (CCK) Year of establishment in Cambodia: 1996	Programs: In their Primary Health Care Program, nutrition, VAD prevention and home gardening are promoted. Training is given to VHVs and village model garden farmers. Information is disseminated through educational sessions (posters, leaflets, discussion cards) and real food demonstrations. Nutritional assessment of the target groups is conducted regularly, supported by HKI. Donors: HKI and Oxfam	Province: Takeo District: Koh Andeth Communes: Rominh, Phlea Prochum, Prey Khla, Kra Pom, Chok, Borei Challusa (12 villages)	Pregnant and lactating women, mothers of U5 children	X						X		Plan to expand to four new villages in the future, and train the VHVs in these villages.
14. Chivith Thmey Year of establishment in Cambodia: 1993	Programs: Save the Poor Children Program – Promote health of poor families, orphans, disabled people and widows. Train VHVs and support them in disseminating info. through small discussion groups, schools, and house to house by using posters, leaflets and video shows. Conduct some nutrition activities within food security program, home gardening program. Donors: AusAID, APSO, CWS	Province: Battambang District: Banan, Bovel Communes: 3 Villages: 9	Poor families, women and children	X							X	Will expand the program to up to 200 families in order for them to improve their quality of life.
15. Christian Outreach Relief and Development (CORD) Year of establishment in Cambodia: 1992	Programs: Community Development Assistance Project – Health and nutrition education in primary schools for children (and for teachers). Education done using IEC materials and activities. Some nutrition education is being conducted within the home gardening program. Some food production and preservation is done in Prey Veng and basic nutrition education is part of this program. Through the Primary Health Care Program in Prey Veng, nutrition is part of the training and capacity building of health staff for maternal and child health. Donors: Tear Fund Holland and UK; ZOA Refugee Care.	Province: Kampong Speu, Prey Veng District: Baseth in Kg. Speu (23 villages); and Kamchey Mear in Prey Veng	Women 15-49; preschool and primary school aged children	X							X	Expand to 21 more villages in the near future because the program is successful. Plan to develop a Parent-Teacher association within their school program to sensitize parents to the importance of good nutrition for good school performance. Would like to develop a school food program and distribute VACs and iodized salt in addition. Plan to develop an animal husbandry program.

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				NE	FS	VMD	GM	BFP	NA	HFP		
16. Church World Service (CWS) Year of establishment in Cambodia: 1979	Programs: Through their home gardening program, established in 1997, they conduct nutrition and health education activities. Simple nutrition messages are disseminated by VHV's and HC staff (trained by CWS staff) through self-help groups, savings and credit groups and mother's groups. Donors: CWS New York, EED, Christian Aid, DIA, ECHO	Province: Kandal, Kampong Thom and Svey Rieng District: 1 in each of Kandal and Kg. Thom and 3 in Svey Rieng (36 villages)	Pregnant, lactating women and children	X							X	They want to conduct an evaluation of their nutrition and health activities to assess the impact of these activities and modify their approach as needed. They want to expand the promotion of home gardening to increase people's purchasing power for nutritious foods.
17. Community for Rural Development (CRD) Year of establishment in Cambodia: 2000	Programs: The nutrition activities are done via the Farming and Animal Husbandry Program (started Feb. 2001). The objectives are to raise animals and promote home gardening for income generation and increase nutrition knowledge. They train people house by house in farming techniques and they disseminate nutrition information at the same time, using posters, videos and food demonstrations. Donors: Local donors (Cambodia)	Province: Kampong Speu Commune: 1 (300 households)	Whole family but especially farmers who participate in the program	X							X	In the future, they plan to train the community to better understand the advantages of homestead food production and health education, so they can change their family situation positively.
18. Cooperation for a Sustainable Cambodian Society (CSCS) Year of establishment in Cambodia: 1999	Programs: Community-Based Education Program – Objectives are to increase awareness on proper nutrition practices, reduce micro-nutrient deficiencies, encourage BF, promote home gardening and seed distribution. Nutrition education activities are done by CSCS staff, health center staff and some members of women's groups, who receive nutrition training. Activities consist of a school program (5 minute blip/week on nutrition), discussions with school teachers, community leaders, women's groups, support VAC distribution through outreach activities and referrals to HCs, encourage pregnant women to receive ANC and demand iron tablets (90 tablets/pregnant woman) from HCs. Donors: UNICEF, CIDA	Province: Kampong Speu District: Basedth (21,288 families, 34 schools)	Population as a whole with an emphasis on women and children	X				X			X	The program is expected to remain the same as it has only very recently started.

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19. Coopération Internationale pour le Développement et la Solidarité Programme in Cambodia (CIDSE) Year of establishment in Cambodia: 1987	Programs: Integrated Community Development Program – Includes food security, credit, income generation, health education in which some nutrition education on basic concepts and food sanitation is performed as well as promotion of vegetable production and consumption. VHVs and TBAs are trained to disseminate this information. Donors: Information not available	Province: Kandal District: Muk Kampol Communes: 5 (17 villages)	All people in the target area; emphasis on women and children	X							X	Plan to conduct a needs assessment survey in the target area to focus interventions in the future.
20. Food and Agriculture Organization of the United Nations (FAO) Year of establishment in Cambodia: 1992	Programs: Empowerment of women through management of water resources, improved household food security, nutrition and health project (WIN). Training of National staff from the MOH, provincial level, O.D. staff, health center staff and farmers. The nutrition education is done through demonstration gardens, group sharing of experiences, practical activities to increase knowledge and consumption of foods rich in nutrients such as VAC and iron. Donors: The United Nations	Location: Samrong and Prey Kabas districts in Takeo Province; Mleach and Chum Kiri districts in Kampti Province; Pouk and Prasath Bakornng districts in Siem Reap Province. (10 villages, 30 household/village; 291 people)	Schools, farmers especially women	X							X	Plan to collaborate with WFP on the nutrition program; to improve the knowledge of government staff in the field of nutrition; to collaborate with WHO in the field of food hygiene and sanitation.
21. Food for the Hungry International (FHI) Year of establishment in Cambodia: 1992	Programs: Through the Child Development Program, nutrition activities are conducted. The community decides what they want to know about nutrition and health. Basic nutrition concepts (food groups, micronutrients, food hygiene) are taught in groups gathered in the community. Their goal is to fill the gaps that teachers do not fill in most schools regarding health and nutrition education. Donors: Canada, Germany and Japan (donations), USAID	Province: Kampti District: Chouk (1600 children)	School-aged children; community as a whole	X								Plan to increase the number of nutrition activities in the school program especially.

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<p>22. German Technical Cooperation-Integrated Food Security Program (GTZ – IFSP)</p> <p>Year of establishment in Cambodia: 1995 (GTZ Health Projects)</p>	<p>Programs: IFSP – Consists of 6 components: village infrastructure, agriculture and homestead food production, income generation, credit, community development and health. Within the health component nutrition plays a big role. School Health Program every 6 months: education, vitamins A and B complex are distributed, mebendazole for deworming, iron therapy if anemia is detected, anthropometric measurements for nutritional status. Provincial staff, HC staff and VHVs are trained to work together during monthly outreach activities to conduct growth monitoring, education sessions, provide ANC to pregnant women and nutrition education, etc. Distribute food to children during monthly nutrition activities, helps to attract mothers to participate in activities.</p> <p>Donors: GTZ</p>	<p>Province: Kampot</p> <p>District: Chum Kiri, Angkor Chey, Dang tung and Kampong Trach (90,000 people, cover 4 HCs)</p>	Children under 5, school-aged children and women of reproduct. age	X	X	X	X		X	X	The program is expected to remain the same in the future.
<p>23. Handicap International (HI)</p> <p>Year of establishment in Cambodia: 1982</p>	<p>Programs: Health and Nutrition Program – Support to WFP's SNAP (supplemental food program) for HC staff for monthly GM sessions, food ration distribution (CSB) for children, pregnant/lactating women, nutrition and health education, practice to prepare complementary food, BF promotion. VHVs also receive training to help in conducting these activities. These monthly activities also include vaccination and other health care to mothers and children, which are not part of the SNAP.</p> <p>Donors: Canadian Cooperation Office (CCO), RACHA, WFP</p>	<p>Province: Siem Reap</p> <p>District: Kralanh</p> <p>Commune: 11 (92 villages, 6 HCs)</p>	Pregnant/lactating women; children under 5	X	X		X	X			No future plans for this program.

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24. HealthNet International (HNI) Year of establishment in Cambodia: 1994	<p>Programs: - Nuns and Wat Grannies Program - Training is given to volunteers (Nuns and Grannies) by HNI and government health staff on BF and treatment for diarrhea with ORS. Volunteers go house to house to teach women about these subjects. HNI visit volunteers regularly for problem shooting sessions.</p> <p>- The Antenatal Care Program – includes nutrition education relating to anemia and its prevention in pregnancy. The training is given to feedback committees who conduct education with community members. Distribution of VAC to postpartum women and iron to pregnant women.</p> <p>Donors: RACHA</p>	<p>Province: Svey Rieng</p> <p>District: Romeas Hek (reaching parts of the 219 villages)</p>	Women 15-49 and their children	X		X		X	X		Try to work in nutrition at the referral hospital in Svey Rieng for malnourished children who need to be admitted at the hospital.
24 a. HealthNet International (HNI) Year of establishment in Cambodia: 1994	<p>Program: Support to the development of health services – Support WFP's SNAP Program (supplemental food program) in 2 HCs out of 5. Support HC staff in monthly growth monitoring of U5 children, Corn-Soya Blend (CSB) ration distribution to children and mothers, nutrition education and other health related activities. In the remaining HCs and villages around these HCs, general health and nutrition education is performed by VHVs who are supported by HNI staff and HC staff, practical cooking lessons are often done with target group.</p> <p>Donors: MSF – Australia, MSF – Switzerland, HNI - Dutch</p>	<p>Province: Kratie</p> <p>District: Kratie (support to 5 HCs) (28 villages for SNAP)</p>	Pregnant/lactating women, children under 5	X	X		X	X	X		The program is expected to remain the same.

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25. Health Unlimited (HU) Year of establishment in Cambodia: 1990	Programs: Community Health Program which includes some nutrition education via health activities; to enhance the capacity of villagers to improve their own health and the quality of health services. Donors: ECHO and DFID	Province: Preah Vihear District: Tbeng Meanchey, Sangkum Thmey, Koulen, and Chom Ksan (24 villages)	14,170 people in 24 villages, 4 health centers	X							Preah Vihear – Discuss with PHD about expanding the community health program to other villages via increased capacity of the PHD health education department, provincial MCH program and health centers.
25 a. Health Unlimited (HU) Year of establishment in Cambodia: 1990	Programs: Indigenous Women and Children's Health and Nutrition Project (Ratanakiri) – Assessment of nutritional and health status; preventive and curative services as MOH outreach guidelines; improvement of knowledge and practices in health and nutrition. Donors: ECHO	Province: Ratanakiri Districts: Oyadao, Lumphat, Andong Meas, Kun Mum and O'Chum. (150 villages, 49,000 people)	Women 15-49 y. old, U5 children	X		X	X	X	X		Ratanakiri – The project is for a 9-month period as a semi-emergency program. Hope to obtain more funds to extend it as a development program including identifying and developing food sources and diet diversification.

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<p>26. Helen Keller International (HKI)</p> <p>Year of establishment in Cambodia: 1992</p>	<p>Programs: Pilot program on VAC distribution (working with MOH) to improve VAC coverage by creating awareness and demand among households/communities through improving training of HC staff and VHVs, and providing supervision, logistics and other essential support activities to the VAC/EPI outreach program.</p> <ul style="list-style-type: none"> - Homestead Food Production (gardening, animal husbandry) – Aims to improve availability, access and consumption of micronutrient-rich foods. Works with 6 partner NGOs in 7 provinces. Technical assistance and training in nutrition education is provided to NGO staff and VHVs who disseminate information to community members. - Regular monitoring and evaluation, staff capacity building and IEC material development in nutrition are important components of HKI's programs. - Additional activities: HKI developed "Recommendations for feeding practices for the sick child" for WHO's IMCI Pilot Program; HKI is involved in national policy development for micronutrients (VA, iron, iodine); is part of the IEC Working Group; is involved in the development of the National Breastfeeding Policy; is part of the National Micronutrient Working Group. <p>Donors: USAID</p>	<p>Province: Takeo, Kampot, Kratie, Kampong Thom, Kampong Speu, Kampong Som, Battambang, Kandal and Phnom Penh.</p> <p>District: VAC Pilot Program - Chhlong of Kratie Province; Prey Kabas of Takeo Province; Kampot of Kampot Province.</p>	Pregnant/lactating women, U5 children	X		X		X	X	X		Plans for expansion of the VAC distribution program at the national level; expansion of the homestead food production program to more districts and provinces; plans to address the high IDA problem among children and pregnant women in Cambodia.

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<p>27. International Cooperation Cambodia (ICC)</p> <p>Year of establishment in Cambodia: 1991</p>	<p>Programs: Rattanakiri Integrated Development and Education (RIDE) – Health, nutrition and food security. Community members develop a plan for their own health and nutrition priorities, which are addressed by the project. Training is given to VHVs in basic health and nutrition and to TBAs in BF. Information is disseminated through discussion groups, women's groups, and cooking lessons. Growth monitoring sessions are done and counseling and follow-up is done with malnourished children. IEC materials are developed or adapted from other sources for these ethnic minority groups.</p> <p>Donors: SIDA, DFID</p>	<p>Province: Rattanakiri</p> <p>District: Tah Veng and Ochum</p>	<p>Whole population with emphasis on women and U5 children</p>	X			X				X	<p>- Videos on basic health and nutrition practices will be developed in the dialect used by the people of Rattanakiri, as this type of IEC is very popular and an effective educational tool among this group.</p> <p>- A new program will start in Mondolkiri and Kampong Cham which will include growth monitoring and food security.</p>
<p>28. International Volunteers of Yamagata (IVY)</p> <p>Year of establishment in Cambodia: 1997</p>	<p>Programs: The nutrition activities are conducted through the home gardening program. The IVY staff train the home gardening volunteers who in turn train the farmers in the program. The activities consist of basic nutrition education sessions with farmers and cooking demonstrations.</p> <p>Donors: Japanese Organizations</p>	<p>Province: Svey Rieng</p> <p>District: Svey Thram</p> <p>Commune: Chuteo</p>	<p>Women – the farmers and children's care takers</p>	X							X	<p>No future plans for expansion of current nutrition activities or a new nutrition program.</p>

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29. Khmer HIV/AIDS NGO Alliance (KHANA) Year of establishment in Cambodia: 1996	Programs: HIV/AIDS Home Care Project: This project is being implemented by partner NGOs in 3 provinces. It consists of home care, which is provided to people living with HIV/AIDS. The home-based kit is composed of HIV/AIDS medicine, referral to the nearest hospital, multi-vitamin supplements; they also provide some supplemental food (rice, vegetables), some nutrition, hygiene and sanitation education, and social and psychological support. They also conduct a community development program which aims at generating income for families affected by HIV/AIDS. Donors: USAID	Province: Battambang (2 ODs), Kampong Cham (2 ODs), and Siem Reap (1 HC)	Adults and children living with HIV/AIDS	X	X	X						No future plans for now for this program.
30. Khmer Human Resources for Development Organizations (KHReDO) Year of establishment in Cambodia: 1993	Programs: The nutrition activities are part of a program which includes clean water wells, poultry credit and fish ponds. The activities consist of educating the community about nutrition and increasing their intake of nutrient-rich food. Extra food is distributed to individuals with HIV/AIDS. Community Advisors are trained to conduct activities with the target group to raise their awareness. Donors: Information not available	Province: Kampong Chhnang District: Kampong Chhnang, Roleapa Ear, and Kampong Tralach Communes: 3	Children, pregnant women, poor and vulnerable people, and people with HIV/AIDS	X	X					X	No future plans	

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31. Khmer Rural Development Association (KRDA) Year of establishment in Cambodia: 1993	Programs: Home Gardening Program – Provision of health and nutrition education in the community – conduct nutrition and health education about mother and child health, how to establish a home garden, to increase nutrient-rich food consumption from the garden, and how to prepare nutritious complementary foods. The information is disseminated through project staff using posters and leaflets in group discussions, farmers' groups and household visits. Donors: Inter-Church Cooperation Organization (ICCO)	Province: Battambang District: Mong Resei Commune: 9 (52 villages; 1,336 families)	Female head of households, female and male farmers.	X							X	Plan to increase to number of families in the program a little each year, to increase the coverage and introduce new villages.
32. Khmer Women's Cooperation for Development (KWCD) Year of establishment in Cambodia: 1997	Programs: Nutrition Education Program within Homestead Food Production Program – Objectives: to improve knowledge of pregnant/lactating women and mothers of children under 5 y/ old on nutrition, reduce night blindness, malnutrition and other diseases. VHVs are trained in disseminating nutrition information. via IEC materials, songs, food demonstration and study tours to model gardens. Donors: Helen Keller International and Canada Fund	Province: Kandal, Sihanoukville District: 4 Communes: 7 Villages: 48 (3700 people)	Pregnant and lactating women, mother of U5 children and those who have a model garden.	X				X	X	X		Would like to expand this homestead food production program and nutrition education program to more villages in the near future. Would like to train more nutrition staff who are responsible only for nutrition.
33. Kratie Women's Welfare Association (KWWA) Year of establishment in Cambodia: 1993	Programs: Nutrition and health education (for primary health care): Provide nutrition and health education to women for better food and health care related practices. Encourage pregnant women to receive tetanus vaccine and to bring their children to immunization sessions, including to receive their VAC for U5 children. Through the use of posters, VHVs and other trainers, disseminate information to the community in discussion groups and house to house. Donors: Information not available	Province: Kratie District: Kratie Commune: Thmor Andeth, Kanthot, Ron Resei (5 villages, over 2000 women, over 1000 children)	Women with an emphasis on pregnant women, U5 children	X								Continue the program as it is, to encourage women to bring their children for immunization and provide nutrition and health education.

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<p>34. Lutheran World Service (LWS)</p> <p>Year of establishment in Cambodia: 1979</p>	<p>Programs: Support to WFP's SNAP (supplemental food program) for HC staff for monthly GM sessions, food ration distribution (CSB) for children, pregnant/lactating women, nutrition and health education , BF promotion. LWS staff (Community Development Workers) train VHVs and support them in conducting activities on a monthly basis through the SNAP program. Other community development activities are integrated into WFP's monthly food distribution program, namely home gardening promotion. A technical team supports those interested in starting a home garden.</p> <p>Donors: LWS member churches around the world, WFP</p>	<p>Province: Kampong Speu, Battambang</p> <p>District: Aoral and Phnom Sruoch in Kg. Speu (10,000 people); Bavel in Battambang (7000 people)</p>	<p>Women and children; community as a whole.</p>	X	X		X	X		X	<p>Plan to integrate nutrition activities and education within all other agriculture and community development programs in the other provinces they work in (Kandal and Takeo).</p>
<p>35. Malteser Germany (MHD)</p> <p>Year of establishment in Cambodia: 1999</p>	<p>Programs: Health promotion and curative program – They do not conduct specific nutrition activities. They support newly established infrastructure – new PHD, referral hospital, 3 government health centers, direct support to temporary health post (border with Thailand) for malaria and HIV/AIDS cases.</p> <p>- MHD recently conducted a health survey, which included some nutritional assessment (anemia, VA rich food consumption) and GMP. For the remaining of their program (about 6 months), they will conduct iron and B complex vitamin distribution to children and pregnant women and nutrition education, including cooking practices.</p> <p>Donors: ECHO</p>	<p>Province: Oddar Meanchey</p> <p>Districts: Samrong and Banteay Ampil (6 communes)</p>	<p>Population in general – (40,000) emphasis on mothers and children</p>	X		X	X		X		<p>Highly interested in nutritional issues so would like to do more in the near future, but all depends on funding.</p>

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36. Maryknoll Year of establishment in Cambodia: 1989	<p>Programs: Community Health and Education Program – Assist children to complete 6 grades of schooling. Increase awareness about basic health and nutrition and provide basic health care. Health clinic receives roughly 40 patients/week including mothers of children in the school program and pregnant women. Extra food to school children – soy milk in class and 10 kg of rice/month/child for their family. Through the clinic, pregnant women receive multi-vitamins, very poor families, and those with a HIV+ members receive rice, sometimes fish and oil in addition to vitamins.</p> <p>- Home Care HIV/AIDS Program - Seedling of Hope: provide support in groups to HIV+ people, education on hygiene and sanitation, distribute medicine and vitamin supplements, in addition to some money, which is mainly spent on food. (2 communes of Mean Chey district, Phnom Penh, reaching about 400 people).</p> <p>Donors: Maryknoll – US-based</p>	Province: Suburb of Phnom Penh District: Mean Chey	Boys and girls 8-12 years old, mothers of these children, pregnant women	X	X	X					Future plans are to address women's health issues through working with older girls enrolled in their education program.
37. Médecins du Monde (MDM) Year of establishment in Cambodia: 1992	<p>Programs: Primary Health Care Program – Reaching population via HCs, health posts, mobile clinics, and immunization campaigns. TBA training includes some nutrition lessons and BF practices. Training of staff on child health issues include nutrition and prevention of malnutrition and micronutrient deficiencies. Support is given to outreach teams during VA distribution</p> <p>Donors: ECHO</p>	Province: Mondolkiri District: Kaoh Neck, Kaoseima, Oreang, Pichrada, Sen Monorom	Children and pregnant women; health workers and TBAs	X		X					Plan to conduct a TOT at the end of February 2002 for all MDM staff (Health Coordinators) in the districts where they work, on the management of the sick child which will include many lessons in nutrition, especially those related to infant and child feeding practices and malnutrition.

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38. Minority Organization for the Development of Economy (MODE) Year of establishment in Cambodia: 1994	Programs: Their nutrition program aims at reducing micronutrient deficiencies in U5 children and pregnant women. This is done through training of VHVs: information sessions in groups, household visits, distribution of IEC materials and video shows. Donors: PACT and ICCO	Province: Kampong Thom District: San Dan Commune: 3 (10 villages)	Pregnant women and mothers of U5 children	X					X		Plan to expand the nutrition activities to 10 more villages in the 3 communes and reinforce and improve VHVs' knowledge in 10 previous villages.
39. National Breastfeeding Program, Ministry of Health (MOH) Year of establishment in Cambodia: 1999	Programs: Breastfeeding Technical Working Group supports the initiatives of the Program. A National Infant Feeding Policy has been developed to protect and promote infant feeding practices and standardize guidelines. TOTs on BF have been conducted in the 4 Regional Training Centers in the Provinces and the Technical School for Medical Care in Phnom Penh. Training is continuous for the 2 Hospitals planned to become Baby Friendly. Donors: UNICEF, WHO	National program – training has been done in Regional Training Centers of Battambang, Kampong Speu, Kampot and Svey Rieng Provinces, and in Phnom Penh.	Health workers, midwives, doctors, women 15-49, pregnant and lactating women	X					X		Future plans include conducting a TOT in Romea Hek and Kampong Trabek Districts of Svey Rieng and Kampong Chhnang Provinces, respectively. This TOT will train doctors involved with IMCI, who will in turn train the health center staff.
40. National Centre for Health Promotion (NCHP), Ministry of Health (MOH) Year of establishment in Cambodia: 1994	Programs: IEC development – collaborate with MCH, some NGOs and donors (AusAID) in developing IEC materials related to health and nutrition, as needed. Healthy City Program – Street food safety in 5 major markets of Phnom Penh. Campaigns are run to raise awareness among street vendors, health workers about food safety, by using T.V./radio spots, pamphlets, posters. Monitor and evaluate food safety in the city. Donors: WHO, AusAID	Nationwide	General population	X							If funds permit, may expand Health City Program to major cities around Cambodia, not just focus on Phnom Penh.

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<p>41. National Nutrition Program, Ministry of Health (MOH)</p> <p>Year of establishment of the program: 1993</p>	<p>Programs: - National Vitamin A Program – Support and provide training to MOH staff, HC staff, VHVs to improve knowledge and efficiency in VAC distribution in order to improve VAC coverage.</p> <p>- National BF Program – support planning, implementation and evaluation of program activities.</p> <p>- IDD Program – Training of HC staff on increasing awareness and treatment of IDD, training of VHVs in education on IDD, and distribution of subsidized iodized salt in some areas; IEC materials development; promote production of iodized salt; monitoring of program activities.</p> <p>- IDA Program – Routine supplementation of iron/folate for pregnant women via ANC (90 tablets/pregnant woman).; Pilot program on weekly iron/folate suppl. to women factory workers around Phnom Penh and secondary school girls (over 12 y. old) in 2 districts of Kg. Speu, including rural women of reproductive age.</p> <p>- Growth Monitoring Promotion (GMP) – Update and standardize the nutrition and GMP Module for training of HC staff; adapt module to new child health card.</p> <p>Donors: The MOH, WHO, UNICEF</p>	<p>Province: - VA Program – National level;</p> <p>- National BF Program – Battambang, Kg. Speu, Kampot and Svey Rieng Provinces, and in Phnom Penh.</p> <p>- IDD Program – 5 provinces;</p> <p>- IDA Program – National level for Safe Motherhood Program; Phnom Penh and Kg. Speu for distribution of iron/folate to women 15-49;</p> <p>- GMP – 1 district of Kg. Cham, Kg. Chhnang and Svay Rieng for training.</p>	<p>MOH staff at various levels; Pregnant/lactating women, mothers of children under 5 years.</p>	X		X	X	X	X			<p>- IDD Program: plan for 2002 to develop IEC materials, promote production of iodized salt, put monitoring system in place; plan to pilot a program: training of VHVs to disseminate information on IDD house by house and provide subsidies on iodized salt in 1 district of Kandal province.</p> <p>- GMP: Plan a training of all HC staff in 1 district of Kg. Cham and Kg. Chhnang on how to conduct proper GMP with new standards, and distribute scales to health centers which do not have any.</p>

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42. Partners for Development (PFD) Year of establishment in Cambodia: 1993	<p>Programs: - Child Survival Program: needs assessments are conducted to select priority nutrition interventions. This year the main subjects will relate to BF and complementary foods. The Hearth Program will be implemented within this Program.</p> <p>- Northeast Cambodia Community Development Program (NCCDP): general nutrition education is widely disseminated among the community.</p> <p>- Support WFP's SNAP supplementary feeding program (Kratie) – support HC staff and village volunteers during distribution of food rations (CSB) to U5 children and mothers, GM sessions, nutrition education and other health activities.</p> <p>- Home gardening and nutrition education program as partners with HKI (Kratie)</p> <p>- HKI's Partner in the Pilot Project on VAC distribution in Chhlong OD. Support for training of HC staff and VHVs, during preparation and distribution of VAC, and monitoring and evaluation.</p> <p>Donors: USAID and Allen Foundation, Helen Keller International, WFP</p>	<p>Province: Kratie, Stung Treng</p> <p>Districts: Kratie and Chhlong in Kratie Province - 21 villages, 67 schools Stung Treng - 25 villages</p>	Women 15-49 and U5 children	X	X	X	X	X	X	X	Expansion of NCCDP to 14 more villages in Stung Treng. They would also like to expand the Animal Husbandry Pilot Project in Chhlong O.D. The Hearth Program will be implemented starting early 2002 as a pilot project in some villages of Chhlong O.D., up to 30 villages.
43. Rachana Year of establishment in Cambodia: 1991	<p>Programs: Primary Health Care Program – nutrition activities consist of educational sessions conducted by VHVs, supported by the program staff and IEC materials. Cooking demonstrations are also done. Subjects such as nutrition during pregnancy, feeding colostrum and BF, complementary feeding, and growth monitoring are covered.</p> <p>Donors: Ter Desone (Head Office in Indonesia)</p>	<p>Province: Takeo</p> <p>District: Koh Andeth</p> <p>Commune: Sre Ronaong (17 villages)</p>	Women 15-49	X				X			The program is expected to remain the same in the near future.

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44. Reproductive and Child Health Alliance (RACHA) Year of establishment in Cambodia: 1996	Programs: - The Nuns and Wat Grannies Program – Training is given to volunteers by RACHA and government health staff on BF and treatment for dehydration with ORS. Volunteers go house to house, to teach women about these subjects. - The Antenatal Care Program – nutrition education related to anemia and its prevention during pregnancy. The training is given to feedback committees who conduct training with community members. They often distribute iron/folate supplements to pregnant women and those who are able to visit the health centre are encouraged to request their supplements. Donors: USAID	Province: Siem Reap, Pursat, Kampot District: O.D. of Siem Reap in Siem Reap Province Sompomeas O.D. of Pursat Province; Angkor Chey O.D. of Kampot Province	Pregnant and lactating women	X		X		X			They constantly expand the Nuns and Wat Grannies Program, by going from one HC catchment to the next. They plan to start a new TBA training program to teach about early BF initiation, exclusive BF, complementary foods and nutrition in pregnancy. Will develop a new program to increase awareness among midwives about moth-to-child transmission in HIV.
45. Save the Children – Australia (SCA) Year of establishment in Cambodia: 1989	Programs: - Malnutrition Monitoring & Supplementary Feeding Project (MMSF) – (April-Dec. 2001): Monitoring of nutritional status of children 9 mo.-5 years old after flood 2000. Done on monthly outreach sessions. Food distribution to families of children with height-for-weight of 80% or less, pregnant/lactating mothers and siblings also receive food. HC staff are trained and conduct activities. - Basic Health Services Project (BHS) – 1999-Dec. 2002: Nutrition education: infant feeding practices, weaning foods, micronutrients; 6 monthly VAC distribution to children 6-59 months and postpartum women (within 2 months after delivery). VHV's and TBAs are trained, do monthly outreach activities, supported by SCA staff. Donors: Save the children UK (MMSF Project); Asia Development Bank (BHS Project)	Province: Kampong Cham District: MMSF – Cheung Prey/ Batheay OD (154 villages); BHS – Cheung Prey/Batheay and Memot ODs (328 villages)	Mothers of children 9mo-5 yrs (MMSF); pregnant and lactating women (BHS)	X	X		X	X	X		For the BHS Project, future plans are to plant demonstration gardens at all health centers. Provide a nutrition manual to each health center and provide training in nutrition to health center staff.

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46. Save the Children – France (SC-France) Year of establishment in Cambodia: 1984	<p>Programs: MOH/ADB Basic Health Services Project – SC-F is doing “Contracting-In” – In charge of management and finances of the whole OD. Main activities of the project: integrated identification of malnourished children by mid-upper arm circumference and confirmed by weight/height (children <80% w/h receives ration card for food supplementation). this ration comes from WFP’s SNAP Program (Corn-Soy blend); six-monthly deworming and vitamin A supplementation for primary schools and out-of-school children; IEC campaigns on feeding practices using pagoda volunteers for peer education; assessment of household mechanisms during loss of harvest; formation of self-help groups to formulate appropriate responses to flood-related food shortages. Pagoda volunteers help to target the most vulnerable groups in the community, disseminate health/ nutrition information, and mobilize them for outreach activities.</p> <p>Donors: SC-UK, CIDA-Health and Nutrition Initiatives Fund</p>	Province: Takeo District: Kirivong OD (20 HCs, 213,000 people)	Pregnant/ lactating women, children under 5	X	X	X	X	X	X		Plan to include a school feeding program if this proposed activity is accepted by the Ministry of Education’s authorities in the OD of Kirivong.

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47. Save the Children – UK (SC-UK) Year of establishment in Cambodia: 1991	<p>Programs: - SC-UK's mandate is to respond to emergency situations anywhere in the country. During emergencies they provide some food and logistics supplies to target populations.</p> <p>- Life Opportunity Program in Kratie – Main objective is food security: includes homestead food production, agricultural techniques, primary health care with basic nutrition education.</p> <p>- Support to SC-France and SC-Australia in Kampong Cham through projects aiming to strengthen health services – SC-UK runs the nutrition approach of these two organizations: growth monitoring, anthropometrics, food supplement distribution and nutrition education.</p> <p>Donors: EU, Save the Children UK Head Office</p>	<p>Province: Kratie and Kampong Cham</p> <p>District: Kratie in Kratie Province (56 villages, 4000 families) Memot in Kg. Cham province</p>	Children under 18 years old	X	X		X				X	The program will remain the same for the near future.
48. SERVANTS Year of establishment in Cambodia: 1993	<p>Programs: Nutrition Program – Focus is on children under 5 years who are disabled and/or malnourished. A weekly clinic provides care to women and children. Food is distributed once/week (nutrient and energy dense mix), 1 packet/child/ week via the clinic. Malnourished kids are given milk formula (10-12 months) or soy milk (over 12 months). Food from WFP (rice, oil and fish) is given to destitute households with malnourished children. Home visits are done 2-3 times per week for severely malnourished cases and twice/ month for mildly malnourished cases. Lessons are taught to mothers (nutrition, ORS, hygiene) and they are encouraged to use low cost resources around their house. Treat about 40 malnourished children at any one time.</p> <p>Donors: Tear Fund Holland & UK</p>	<p>Province: Phnom Penh outskirts</p> <p>District: Mean Chey (80,000 people in the district but only targeting under 5 children)</p>	Children under the age of 5 years, women 15-49	X	X	X	X	X	X			Plan to start the implementation of the Hearth Program in the near future and zinc supplementation to children under the age of 5 years.

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49. Sovann Phoum Year of establishment in Cambodia: 1991	Programs: Social Assistance and Health Education Program: Support children from poor and vulnerable families; rehabilitate children with moderate malnutrition; train mothers to prepare nutritious food for their children. Growth monitoring sessions for children under 5 years; training to VHVs who disseminate nutrition information through posters and group discussions Donors: Save the Children France	Province: Outskirts of Phnom Penh District: Mean chey Communes: Stung Mean chey (7 villages) and Dangkor (6 villages)	Pregnant/lactating women, children under 5.	X			X				Plan to educate mothers through cooking demonstrations on methods of food preparation using nutrient-rich foods to feed young children.
50. 24-Hour Television Charity Committee – Cambodia Year of establishment in Cambodia: 1989	Programs: Supplemental Food Program – Address maternal and child health, food security through home gardening, water and sanitation. Nutrition education is done by VHVs who receive training by program staff, and consists of discussion groups, cooking demonstrations, mother's groups, monthly growth monitoring (malnourished children receive bean porridge, eggs, milk powder, and mother receives seeds for home garden). Follow-up of these children is done house by house. Donors: Private Japanese T.V. Company (run a yearly telethon that provides a stable source of funds for this organization)	Province: Kandal District: Kandal Stung Commune: Danrous (1300 households in 14 villages)	Mothers and children under 5	X	X		X			X	Future plans are to expand the nutrition approach to more villages.

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51. United Nations Children's Fund (UNICEF) Year of establishment in Cambodia: 1983	<p>Programs: Strategic and technical leadership for development of the National Nutrition Plan of Action.</p> <ul style="list-style-type: none"> - Set Koma Program (UNICEF's Community Development Project): Enhance the capacity of community through Village Development Committees (VDCs), civic organizations and NGOs. The Set Koma Program addresses the 3 main underlying determinants of nutritional status: household food security; care for children and women; and health water and sanitation. - UNICEF assists in interventions at the national level in areas such as micronutrient deficiencies, BF promotion and the Baby-Friendly Hospital Initiative. - UNICEF develops IEC materials for the various national programs (BF, VA, IDD, etc.) - UNICEF also assists in the National IDD program in the development of policy and planning for salt iodization and IEC materials. <p>Donors: UN organizations, various governments and donor agencies.</p>	Province: Set Koma Project – Kampong Speu, Kampong Thom, Prey Veng, Svay Rieng, Oddar Meanchey, Stung Treng. District: 18 Commune: 120 (1,130 villages)	Women and children under 5 yrs.	X		X	X	X	X	X		Plans in the near future are to address the alarming problem of iron deficiency anemia among children and pregnant women in Cambodia.
52. Village Support Group (VSG) Year of establishment in Cambodia: 1994	<p>Programs: Nutrition Education Program through Homestead Food Production Program – Objective is to reduce VADD, IDA and IDD via training and education and increased production and consumption of nutrient-rich food. VHV's receive training to disseminate information to target groups using IEC in mother's groups, with individuals, and population in general.</p> <p>Donors: Helen Keller International</p>	Province: Battambang Districts: Ek Phnom, Sang Kei, Tmor Kuol Villages: 13 (665 people)	Women 15-49 especially pregnant/lactating women, mothers of children under 5 y. old	X				X	X	X		Would like to provide technical training to beneficiaries on animal husbandry and provide them with credit scheme.

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53. Women Service Organization (WOSO) Year of establishment in Cambodia: 1993	Programs: Home Gardening and Animal Husbandry Program – nutrition activities consist of training VHVs in basic nutrition concepts and in prevention of vitamin A deficiency, to conduct education sessions through IEC materials, role plays, games and music. Nutritional assessment of the target groups is conducted regularly, supported by HKI. Donors: Helen Keller International, Save the Children France	Province: Kandal, Kampong Speu District: Kandal Stoeng in Kandal; Kang Pisei in Kampong Speu Communes: 7 (21 villages)	Pregnant women, U5 children, women 15-49	X					X	X	X	They plan to expand to 12 new villages in the near future and train VHVs to conduct nutrition activities.
54. World Food Program (WFP) Year of establishment in Cambodia: 1979	Programs: In general, WFP contributes to increase knowledge of food insecurity and nutritional issues, supports a variety of activities to address these; provides assistance to vulnerable groups (including during emergencies like floods) in the form of food aid which serves as a nutritional supplement for beneficiaries. - Supplementary Nutrition Action Program (SNAP) – HC staff implement the program with support from 7 partner NGOs in 6 provinces. The supplementary food is distributed to U5 children and pregnant/lactating women; this includes fortified CSB and vitamin A fortified oil and sugar. This occurs monthly with growth monitoring, nutrition education, and other health-related activities. - School Feeding Program – Primary schools in three provinces. Children receive a daily breakfast of rice, canned fish, oil and salt, sometimes vegetables if community can provide it Also every 6 months they conduct a deworming campaign in all participating schools. Donors: WFP Headquarters – Depends on donations	Province: SNAP - Battambang, Banteay Meanchey, Siem Reap, Kampong Thom, Kampong Speu and Kratie (28 Health Centers) (35,000 U5 children and 6500 pregnant/lactating women benefit each month) School Feeding Program – Takeo (130 schools), Kampot (45 schools) and Kampong Cham (35 schools) (Total=125,802 children)	Pregnant/lactating women, children under 5	X	X		X	X	X		Planning is underway for the development of a program to address nutritional problems of people living with HIV/AIDS in Cambodia by addressing food security, food aid and HIV/AIDS.	

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55. World Health Organization (WHO) Year of establishment in Cambodia: 1991	<p>Programs: WHO supports programs being implemented by the Nutrition Unit of the MOH.</p> <ul style="list-style-type: none"> - Women Iron/Folate Supplementation Pilot Project (WIF) – Prevention of anemia among women factory workers (18-45 years old) by distributing a monthly iron/folate supplement (4 pills/packet); also WIF (for schoolgirls) – same supplement sold by school peer leaders to girls over 12 yr. old in 4 secondary schools of Kampong Speu and to women of reproductive age in the community; ed. awareness raising in community and schools. - Growth Monitoring Program (GMP) – support to the Nutrition Unit for standardization of the training module on growth monitoring; TOT at the national level on principles of GM. - Support to the National Breastfeeding Program – planning, policy development, training. - Integrated Management of Childhood Illnesses (IMCI): Pilot Program under development. Implementation in 1 district of 2 provinces and will include major nutrition goals – growth monitoring, rehabilitation of malnourished children, education on infant/child feeding practices, guidelines for feeding of sick child. <p>Donors: WIF – Japanese govt.; GMP – SIDA; National BF Program – UNICEF</p>	<p>Location: WIF – Phnom Penh and Kampong Speu (2 districts, 139 villages);</p> <p>GMP - Kampong Cham O.D. (11 Health Centers) Kampong Cham Province</p>	Women 18-45, pregnant and lactating women, children	X		X	X	X	X		Plans for the near future for the WIF program are to develop a video as a social marketing tool for village level to inform people about anemia, benefits of iron/folate supplements and a balanced diet. Will develop approaches such as drama to reach more women; within the factories, they are difficult to reach since owners fear they will be distracted from their work and decrease their productivity.

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56. World Relief – Cambodia (WR-C) Year of establishment in Cambodia: 1992	Programs: Child Survival Program: Goals are to decrease morbidity and mortality rates among children, build capacity of MOH in delivering child survival services, strengthen TBAs and drug selling and delivery systems, diarrhea control, micronutrient deficiency prevention and BF promotion. Health staff train VHVs in conducting health and nutrition activities via discussion groups, house to house visits, cooking demonstrations, use of basic IEC materials. World Relief teams conduct puppet shows and drama. Support is given to HC staff and VHVs during VAC distribution months and outreach activities. Donors: USAID	Province: Kampong Cham District: Ponthea Kriek (Reach 50% of population)	Women 15-49 and children	X		X		X			Plans are to expand the program to cover the whole district starting in 2002 with a greater focus on nutrition by introducing the Hearth Program.

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57. World Vision – Cambodia (WV-C) Year of establishment in Cambodia: 1979	<p>Programs: Child Survival Project (Kandal) – support to local health services in delivery of a range of reproductive and child health interventions. Immunization, case management of illnesses, nutrition including BF promotion, vitamin A deficiency prevention (VAC distribution), feeding of sick children, complementary foods – MOH staff train HC staff and VHV's who conduct activities in HCs and outreach sessions (facilitated by WV staff).</p> <p>- Area Development Program (ADP; 6 provinces) – Community development program in general, with a health component. Includes home gardening, nutrition/health education, deworming, VAC distribution; special night blindness prevention program in Kampong Thom province.</p> <p>- HIV/AIDS Home Care Program – Provide medicine, multi-vitamins, nursing/basic treatment, health/nutrition and hygiene education, social support, community-based shelter for orphans (reach about 1000 adults, and about 600-1000 children).</p> <p>Donors: Donations from other World Vision offices, USAID, CIDA</p>	<p>Province: Battambang, Kampong Thom, Kandal, Takeo, Kampong Speu, Kampong Chhnang</p> <p>District: Child Survival Program: Kean Svay and Leuk Dek OD in Kandal province</p> <p>ADP: 1-9 HCs in 1-4 districts of each 6 province.</p> <p>HIV/AIDS Program: along National Road 1 – PP, Kandal, Prey Veng; National Road 2/3, and 4/5 – PP, Kandal, Kg. Speu, and Takeo.</p>	Community in general, for ADPs, mothers and children under 2 for CSP. Families affected by HIV/AIDS (children)	X	X	X			X	X	X	Plan to implement the Hearth Program in Kampong Thom or Kandal province. Would like to start integrating some successful approaches of the Child Survival Program into the ADPs to make the nutrition and health components more important in these programs.
58. ZOA Refugee Care Year of establishment in Cambodia: 1993	<p>Programs: Integrated relief programs and community reintegration programs-Basic health education program on hygiene and sanitation, preventable diseases and nutrition through the life cycle. Improve food security via home gardening, animal and fish raising.</p> <p>Donors: ECHO, ICCO</p>	<p>Province: Oddar Meanchey</p> <p>District: Samrong</p> <p>Commune: Bos Sbov, Kok Mon, Kok Kpoh (32 villages)</p>	Population in general. Emphasis on mothers, children, adolescents& teachers	X						X	Focus more on special groups in the community (pregnant women, infants), and work more closely with agriculture sector to ensure farmers improve their nutrition knowledge.	