KINGDOM OF CAMBODIA

NATION RELIGION KING

Ministry of Health

Fast Track Road Map for Improving Nutrition 2014 - 2020

National Nutrition Program
National Maternal and Child Health Center

Published: March 2014

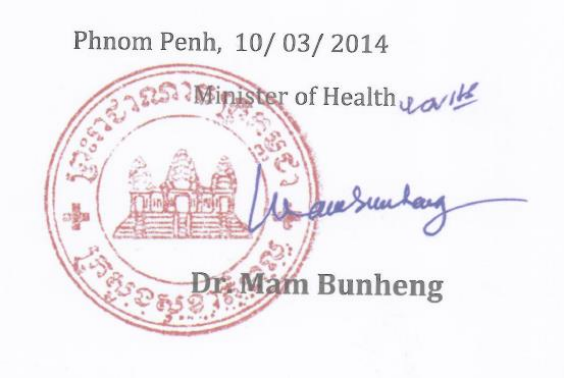
With Support from

Preface

With economic growth and development in the past decade, poverty has steadily declined from 47% of the population in 2003 to 20% in 2011. In tandem, during the same period, Cambodia made important progress towards improving the health of its women and children (CDHS 2005 & 2010). Unfortunately, at 40%, Cambodia has the 28th highest prevalence of stunted children in the world (CDHS 2010). An economic assessment estimated that malnutrition could cost 250 million to 400 million USD every year if nothing was done to prevent malnutrition in Cambodia (CARD/UNICEF/WFP 2013). Therefore investments to reduce malnutrition do not only serve nutrition goals. If malnutrition continues to depress economic activity at 1.5-2.5% of GDP, Cambodia's ambitious national objective of 7% annual GDP growth will be more difficult to achieve and sustain. Investment in nutrition is also an investment in achieving that national economic development goal.

This first Fast Track Road Map for Improving Nutrition 2014-2020 was developed by the National Nutrition Programme in close consultation and collaboration with various MoH departments /national programmes and development partners. The Nutrition Road Map will support the National Nutrition Strategy to ensure that the key interventions are implemented at a significant scale to ensure that malnutrition will be reduced and also prevented. This document is focusing on scaling up the core package of nutrition-specific interventions during the 1,000-days window of opportunity and beyond as demonstrated by national and international evidences. Optimal nutrition during this period of development is essential for a child's cognitive development and physical growth, benefitting the child, and society, for decades.

To have maximum impact and results, improving nutrition in Cambodia requires close cooperation and efficient coordination by a wide range of line ministries and government and non-government stakeholders so they can set priorities and take joint action. This Nutrition Road Map highlights the role of the Ministry of Health in areas related to nutrition.



Acknowledgement

The Ministry of Health wishes to thank all stakeholders for their valuable contribution of information to the Fast Track Road Map for Improving Nutrition 2014-2020.

Special acknowledgement is given to UNICEF, HKI, URC and IRD for their technical support in the development of the strategy. Particular acknowledgement is extended to Mr Sam Oeurn and Dr Laillou Arnaud from UNICEF Cambodia for their assistance in the development and finalization of this Fast Track Road Map.

Finally, we would like to thanks all members of the nutrition technical working group for their technical inputs.

List of Acronyms and Abbreviations

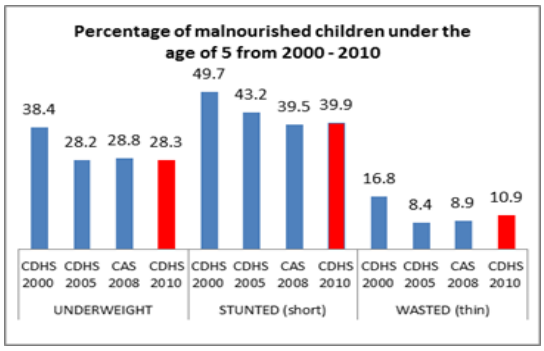
ANC	: Ante Natal Care
BFCI	: Baby Friendly Community Initiatives
BFHI	: Baby Friendly Hospital Initiatives
BMI	: Body Mass Index
CARD	: Council of Agriculture and Rural Development
CDHS	: Cambodia Demographic and Health Survey
CMDG	: Cambodian Millennium Development Goal
DP	: Development Partners
GDP	: Gross Domestic Product
GMP	: Growth Monitoring and Promotion
HC	: Health Centre
HR	: Human Resources
HMIS	: Health Management Information System
IFA	: Iron/Folic Acid
IYCF	: Infant and Young Child Feeding
MAM	: Moderate Acute Malnutrition
MIYCN	: Maternal, Infant and Young Child Nutrition
MNP	: Multiple Micronutrient Powders
MOH	: Ministry of Health
MPA	: Minimum Package of Activities
NGO	: Non-Governmental Organization
NNP	: National Nutrition Program
NNS	: National Nutrition Strategy
NWG	: Nutrition Working Group
OD	: Operational District
ORS	: Oral Rehydration Solution
PHD	: Provincial Health Department
SAM	: Severe Acute Malnutrition
UNICEF	: The United Nations Children's Fund
WHO	: World Health Organization
WIF	: Weekly Iron/Folic Acid

Table of Contents

Background

At 40%, Cambodia has the 28th highest prevalence of short (stunted) children in the world[1]. The 2010 Cambodia Demographic and Health Survey (CDHS) also showed that 28% of children are underweight. This is strong evidence that the nutritional status of children is not improving and may in fact be worsening. From 2005 to 2010, the percentage of children dangerously thin (wasted) crossed the International Phase Classification Emergency Threshold, increasing from 8.4% to **10.9%**. As a result, **the country is now among the 40 worst countries globally for child wasting[2] - with malnutrition implicated in more than 6,400 child deaths annually.**

Figure 1: Proportion of malnourished children under 5 (CDHS 2000-2010)



Cambodian women are also susceptible to malnutrition: nearly 60% of women between 15 and 49 are anemic and 20% too thin (CDHS 2010), conditions that increase the risks of complications during birth and leads to low birth weight babies. Moreover, 6% of women have a height of less than 145 cm, which indicates they were malnourished as children. These women are not only more likely to suffer pregnancy and birth complications (maternal mortality), but also likely to give birth to small children who are at increased risk themselves of being stunted.

Child malnutrition has serious long-term consequences for the health of the Cambodian population and for its economic development. Inadequate growth in the first few years of life not only affects child health and mortality but also leads to adverse health and economic consequences for the individual's entire life, and can even affect the next generation. This presents a heavy economic burden on Cambodia's health system in terms of child health outcomes and adult chronic disease and the rights of women and children to be healthy participants in society. It also hampers Cambodia's development, robbing the country of a healthy, cognitively developed population for generations to come. In 2013, it was estimated by CARD/UNICEF/WFP that Cambodia loses over $400 million in gross domestic product annually to malnutrition throughout the life cycle[3]. Micronutrient deficiencies (anemia, folic acid, vitamin A and zinc deficiency) suggesting deficit in the quality of the diet - represents a national burden of more than $200 million annually.

[1] UNICEF. 2009. State of the World's Children.

[2] 2011 Cambodia Country Paper for Bi-Regional Meeting on Scaling Up Nutrition

[3] Bagriansky J., Champal N., Pak K., Whitney S., Laillou A. 2014. Economic burden of malnutrition in Cambodia: more than half attributed to feeding behaviour and food quality. Phnom Penh Cambodia

According to the World Bank, scaling up core micronutrient interventions **to prevent deficiencies** would cost less than US$6 million per year[4].

The latest 2008 and 2013[5,6] lancet series strengthen the case for a continued focus on the critical 1,000 day period – from the start of woman's pregnancy until her child's second birthday. **Without a doubt, in order for Cambodia to substantively progress, and for women and children to enjoy their right to health, the country must scale up proven interventions** to prevent foetal growth restriction, stunting, wasting and micronutrient deficiencies and enhance young child feeding practices. In addition, new interventions need to be identified to improve the nutritional status of adolescent girls and women of reproductive age. **The goal, over the next 5 years and beyond, is to improve maternal and child nutrition.**

[4] Nutrition at a Glance- Cambodia. The world Bank: http://siteresources.worldbank.org/NUTRITION/Resources/281846-1271963823772/Cambodia.pdf

[5] Maternal and Child Undernutrition, Launched in London, UK, January 16, 2008, http://www.thelancet.com/series/maternal-and-child-undernutrition

[6] Maternal and Child Nutrition, Published June 6, 2013, http://www.thelancet.com/series/maternal-and-child-nutrition

Fast Track Road Map for Improving Nutrition 2014-2020

In general, Cambodia made important and laudable progress towards improving the health of its women and children. However, the 2010 Cambodia Demographic and Health Survey (CDHS) showed that in nutrition, with a few exceptions, Cambodia did not meet its 2010 CMDG targets and that existing efforts must be accelerated and new efforts scaled up rapidly if Cambodia is to achieve 2015 goals in nutrition.

Key Nutritional Characteristics	Baseline 2000	Status *	Target 2015 **	Analysis
% of women aged 15-49 years with anaemia	57.8 (CDHS)	44.4 (CDHS)	19 (CMDG)	Accelerated progress required
% of pregnant women age with anaemia	66.4 (CDHS)	52.7 (CDHS)	33 (HSP)	Accelerated progress required
% of children aged 6-59 months with anaemia	63.4 (CDHS)	55.1 (CDHS)	42 (NNS)	Accelerated progress required
% of children aged 0 – 59 months who are moderately or severely underweight (weight-for-age less than 2 standard deviations below normal)	38.5 (CDHS)	28.3 (CDHS)	19.2 (CMDG)	Accelerated progress required
% of children aged 0 – 59 months who are moderately or severely stunted (height-for-age less than 2 standard deviations below normal)	49.7 (CDHS)	39.9 (CDHS)	24.5 (CMDG)	Accelerated progress required
% of children aged 0 – 59 months who are moderately or severely wasted (weight-for-height less than 2 standard deviations below normal)	16.8 (CDHS)	10.9 (CDHS)	10.1 (CMDG)	On track but intervention need to be sustain to avoid any increase
Number of hospitals providing SAM treatment	-	29 (NNP)	39 (NNP)	Accelerated progress required
% of infants age 0-6 months exclusively breastfed	11.4 (CDHS)	73.5 (CDHS)	80% (NNP)	Achieved, gains need to be maintained
% of children 6-23 months breastfed who meet minimum IYCF standards	n/a	28% (CDHS)	32% (CDHS)	Accelerated progress required
% of children 6-23 months non-breastfed who meet minimum IYCF standards	n/a	5% (CDHS)	10% (CDHS)	Accelerated progress required
% of children aged 6-59 months receiving Vitamin A capsules	n/a	96 (HMIS)	90 (CMDG)	Achieved, gains need to be maintained
% of children 12-59 months receiving mebendazole every 6 months	n/a	92 (HMIS)	100 (HSP)	On track but need additional efforts
% of children with diarrhoea having received ORS + zinc	n/a	2.4 (CDHS)	85 (CDHS)	Accelerated progress required
Proportion of children with low birth weight (<2,500g at birth)	13.8 (CDHS)	11.4 (CDHS)	10 (NNS)	On track
% of pregnant women receiving daily tablets of iron/ folate during pregnancy and for 3 months postpartum	n/a	72 (HMIS)	90 (NNS)	Accelerated progress required
% of children age 6-23 months receiving multiple micronutrient powder in the last month	n/a	1.7 (CDHS)	15 (CDHS)	Accelerated progress required

Note: * CDHS: 2010 CDHS / HMIS: Health Management Information System (2012)
** CMDG: Cambodian Millennium Goal / HSP: Health Strategy Plan / NNS: National Nutrition Strategy / CDHS: see results from 2014 CDHS.

The Goal over the next 5 years and beyond, is to improve maternal and child nutrition, which will result in the reduction of Maternal Infant and Young Child under-nutrition.

The Nutrition Road Map will contribute towards attaining its long-term and mid-term goal by achieving two major outcomes:

I. Scale-up optimal use of nutrition-specific interventions, ultimately leading to improved maternal and child nutritional status and outcomes

II. Remove barriers to efficiently implement nutrition 'specific' services and improve maternal and child nutritional status

Through 8 major components:

Core Components:

1) **Component 1:** Nutrition Counseling of pregnant women: Promote nutrition during Ante natal care and related counseling

2) **Component 2:** Micronutrient supplementation of pregnant and lactating women: Sustain and Improve micronutrient supplementation and deworming

3) **Component 3:** Treatment of severely wasted children: Expand the management and treatment of severe acute malnutrition (SAM) nationwide

4) **Component 4:** Micronutrient supplementation of young children for prevention and treatment strategies: Scaling-up current distribution of MNP, vitamin A, deworming and zinc supplementation to children

5) **Component 5:** Behavior Change communication focused on 1,000-day window of opportunity[7]: Improve and accelerate the national campaign on exclusive breastfeeding and complementary feeding campaign

Enabling Environment Components:

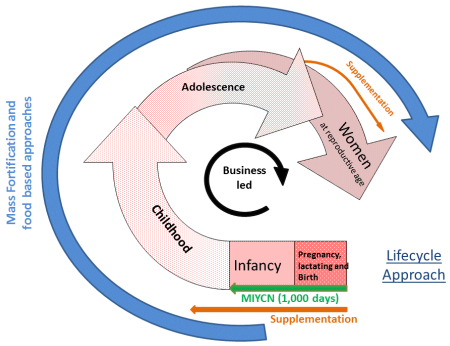
6) **Component 6:** Removing financial and HR barriers to scale up efficient nutrition-specific interventions

7) **Component 7:** Leverage support through other ministries and initiatives

8) **Component 8:** Improve nutrition data through existing Information System

[7] Evidence demonstrates that during the 1,000-day period – from the start of a woman's pregnancy until her child's second birthday – offers a unique window of opportunity to meet a child's nutritional, growth and development requirements, to shape healthier and more prosperous futures.

I. Scale-up optimal use of nutrition-specific interventions, ultimately leading to improved maternal and child nutritional status and outcomes



The Nutrition Road Map takes a lifecycle approach to achieve a significant impact during the 1,000-days window of opportunity, with investments in maternal, infant and young child nutrition as well as during adolescence to prepare young women for becoming mothers themselves. The right nutrition during this period of development can have a profound impact on a child's cognitive development and physical growth. For children under the age of two years, and during foetal development, the consequences of under-nutrition are particularly severe and often irreversible, including frequent and severe childhood illnesses, stunted growth, developmental delays, and death.

This Nutrition road map is focusing on scaling up the core package of nutrition-specific interventions during the 1,000-days window of opportunity as demonstrated by the evidence-based 2008 and 2013 Lancet Series for Maternal and Child Malnutrition (see figure below) and already initiated during the National Nutrition Strategy 2009-2015. In addition, new innovative nutrition-specific interventions, which are tailored specifically to the Cambodian context, will be developed and tested to improve the current strategies for the treatment and the prevention of severe malnutrition.

Lifecycle approach and core nutrition package

Maternal and new born outcomes

- Weekly iron folate supplementation
- Periconceptual folic acid supplementation of fortification*
- Iron and folic acid or multiple micronutrient supplementation of pregnant and lactating women
- Calcium supplementation of pregnant women*
- Deworming of pregnant women
- Intermittent preventative treatment and promotion of insecticide-treated bed-nets for pregnant women in high malaria areas
- Delayed cord clamping*
- Nutrition counseling for improved dietary intake, and proper weight gain during pregnancy
- Pregnancy spacing
- Universal iodization
- Iron fortification of condiments or staple foods
- Vitamin A fortification of staple foods

*: not already implemented in Cambodia

Infants and children

Infants (<6mo) and mother

- Counseling and lay support on exclusive breastfeeding through community based and facility based contacts
- Insecticide treated bed-nets used by mothers in high malaria areas
- Baby friendly hospital initiative
- Control of the marketing of breast milk substitutes
- Iron and folate supplementation for lactating mothers

Infants and children (6-59.9 months)

- Behaviour change communication for improved complementary feeding and continuation of breastfeeding until 24 months
- Distribution or social marketing of multiple micronutrient powders for home fortification of complementary foods
- Zinc supplementation as part of diarrhea treatment
- Vitamin A supplementation of children 6-59 months
- Deworming of children 6-59 months
- Insecticide treated bed-nets for children <24 months in high malaria areas
- Provision of regular growth monitoring in health facilities in order to screen acute malnutrition
- Treatment of severe acute malnutrition – facility and community based
- Nutrition counseling for the adequate care of sick children
- Vitamin A supplementation as part of treatment for childhood illness
- Consumption of iodized salt or alternatives
- Mass fortification of staple foods
- Vitamin A fortification of condiments or staple foods

These interventions take a lifecycle approach to achieve long-lasting impact during the 1,000-days window of opportunity, focusing on ***i) maternal and new born outcomes, ii) infants and children nutrition***. Optimal nutrition during this period of development is essential for a child's cognitive development and physical growth, benefitting the child, and society, for decades.

i. Maternal and new born outcomes

Improvement in child nutrition is closely linked to nutritional status of mothers. For women the current set of interventions is not sufficient to reduce maternal malnutrition and prevent low birth weight. Expansion of existing strategies and the addition of new strategies are needed to improve nutrition during and before pregnancy. To ensure correct nutritional status, the road map for maternal nutrition will focus on two components:

1) **Component 1:** ***Nutrition Counseling***: Promote nutrition during antenatal care and related counselling
2) **Component 2:** ***Micronutrient supplementation***: Sustain and Improve micronutrient supplementation and deworming

COMPONENT 1: Nutrition Counselling: Promote nutrition during antenatal care and related counselling

Education is an important component of prenatal care, particularly for women who are pregnant for the first time. Information about physiological changes that occur during pregnancy and preparation for the birthing process are key themes around which to discuss care issues and choices such as breastfeeding. According to the 2010 CDHS, over 90% (n=6472; 95% CI 88—91) of women who had a live birth in the 5 years before the survey had at least one antenatal visit during the pregnancy and 59% (n=6472; 95% CI 57—62%) had the WHO-recommended four or more visits[8].Four out of five women attending antenatal care report they received nutrition counseling. Through proper antenatal care (ANC) women will receive key basic nutritional message that could be essential to their well-being and that of their babies. The key basic health services include13 counseling messages as described in the "MPA Module Nutrition 10"[9]. These MPA 10 activities include most of the 2008/2013 Lancet recommendation: i) Daily IFA supplementation, ii) deworming of pregnant women, iii) nutrition counselling for improved dietary intake, iv) pregnancy spacing and v) universal iodization of salt.

Key interventions:

Even if 90% of health centres were trained in the Minimum Package of Activities 10 (Nutrition), it is recognized that there is a need to improve the quality of these services and include new technology:

[8] Wenjuan Wang .The continuum of care for maternal and newborn health in Cambodia: where are the gaps and why? A population-based study. The Lancet - 17 June 2013 (Vol. 381, Page S145). DOI: 10.1016/ S0140-6736(13)61399-9

[9] National Nutrition Program. MPA Module Nutrition, participant manual. March 2009. Phnom Penh, Cambodia

- Support rural and poor community to access to at least 4 antenatal care visits, starting as early in pregnancy as possible.
- Improve nutrition counseling on how to increase energy intakes from 340 to 450 Kcal/day[10] in the second and third trimesters and micronutrient throughout pregnancy and lactation (basic energy requirement for adult, approx. 2,200 Kcal).
- Include weight monitoring of pregnant women: most guidelines recommend that pregnant women with a normal body mass index gain 11.5 to 16 kg[11,12], for low BMI between 12.5 to 18 kg[17,18] and for obese women 7 to 11.5 kg[17,18] during pregnancy. Observational studies have found that antenatal weight gains below the recommended range are associated with low birth weight and preterm birth.
- Include delayed cord clamping awareness at the health facilities level: Changing the timing of cord clamping and cutting from immediately after delivery of the baby to 2–3 minutes after delivery of the baby improves the iron status of the infant[13], providing up to 1/3 of the iron requirements for the first months.

Research:

- Study effective interventions to increase energy intake during pregnancy and to impact birth weight

Monitoring Indicators:

Update HMIS and registers to include monitoring of appropriate weight gain during pregnancy at each ANC visits.

Coordination and monitoring:

The Maternal Child Health Nutrition Center will coordinate the improvement of the different modules and of the Health Monitoring System to capture the new interventions. PHDs and ODs will lead at provincial, district and HC level the implementation.

The NGOs and DPs through the Nutrition Working Group will provide support to train the different health center and hospital on the new modules and refresh their knowledge.

---

[10] Picciano MF. Pregnancy and lactation: physiological adjustments, nutrition requirements and the role of dietary supplements. J Nutr 2003;133:1997S-2002S

[11] American Academy of Pediatrics, American College of Obstetricians and Gynecologists. Guidelines for perinatal care. 5th ed. Elk Grove Village, III: American Academy of Pediatrics, and Washington, D.C.: American College of Obstetricians and Gynecologists, 2002.

[12] Institute of Medicine. Subcommittee on Nutritional Status and Weight Gain during Pregnancy; subcommittee on Dietary Intake and Nutrient Supplements during Pregnancy. U.S. Health Resources and Services Administration. Nutrition during pregnancy: part I, weight gain; part II: nutrient supplements. Washington, D.C.: National Academy Press, 1990.

[13] Abalos E. Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes: RHL commentary (last revised: 2 March 2009). The WHO Reproductive Health Library; Geneva: World Health Organization.

***COMPONENT 2**: **Micronutrient Supplementation:** Sustain and Improve micronutrient supplementation and deworming*

> ***2013 UNICEF***: "Women who do not receive supplementation are 1.27 times more likely to be anemic, when compared to women who do receive supplementation."
>
> **Secondary Analysis of 2010 Cambodia Demographic and Health Survey – Nutrition**

As Highlighted in 2010 by Christian and colleagues[14], pregnant women are particularly vulnerable to vitamin and mineral deficiencies because of the increase in metabolic demands to meet fetal requirements for growth and development. Therefore in settings where anemia in pregnant women is a severe public health problem such as in Cambodia (40% or higher), a daily supplementation of vitamins and minerals for women is recommended:

- ***Daily iron and folic acid supplementation***: Coverage of Iron and Folic acid supplementation for pregnant women has increased over the last five years, with 72% of women now receiving and taking the current recommend regime of 90 tablets during pregnancy. However, to lower anemia rates in populations with a severe problem of anemia, the World Health Organization recommendations call for 180 days of supplementation during pregnancy and three additional months of supplementation postpartum.

- ***Weekly iron and folic acid (WIF) supplementation of non-pregnant women***: Weekly iron folic acid (WIF) supplementation is provided through the public health sector to non-pregnant women aged 15 to 49 years. Currently, targeting of low socio-economic status is included in policy (National Nutrition Programme), but the intervention is implemented universally in selected provinces; in some areas WIF has been distributed via garment factories. Four per cent of women of reproductive age report taking WIF supplements (CDHS 2010). There is a large variation by province and it appears that the intervention is implemented in three areas: Pursat, Svay Rieng and Kampot/Kep.

Iron and Folic acid supplementation and deworming for pregnant women appears to benefit birth weight especially when started early in pregnancy. Therefore, early detection of pregnancy and start of health clinic visits is important to improve the effectiveness of this intervention.

Recently other supplementations have been recommended at the international level, such as calcium supplementation but evidence is still limited and need additional research. ***Calcium supplementation*** has the potential to reduce adverse gestational outcomes, in particular by decreasing the risk of developing hypertensive disorders during pregnancy, which are associated with a significant number of maternal deaths and considerable risk of preterm birth, the leading causes of early neonatal and infant mortality[15].

---

[14] Christian P. Micronutrients, birth weight and survival. Annual Review of Nutrition, 2010, 30:83-104

[15] WHO. Guideline: Calcium supplementation in pregnant women. Geneva, World Health Organization, 2013.

Key interventions:

Due to under-resourced interventions both by government and donors, the actual road-map will focus on (following the national implementation strategy[16]):

- Increase coverage and improve compliance of daily IFA supplementation: i) from 90 tablets to 180 tablets during pregnancy to follow WHO guidelines[17] and ii) From 42 tablets to 90 tablets during postpartum as shown in several studies[18].
- Promote early start of daily IFA supplementation during pregnancy
- Increase coverage of deworming during pregnancy
- Increase coverage of WIF through national campaign and develop partnership to ensure availability of WIF tablets at poor community level through government distribution and/or social marketing

Research:

- Test the impact of calcium supplementation on low birth weight/pre-clampsia to support national guidelines
- Study the effective use of the supplements distributed through existing channel

Monitoring Indicators:

	2014	2015	2016	2017	2018	2019	2020	sources
% of women aged 15-49 years with anemia	38%	-	-	-	-	28%	-	CDHS
% of pregnant women age with anemia	48%	-	44%	-	-	38%	-	CDHS & HMIS
% of pregnant women receiving the appropriate number of tablets of iron/ folate during pregnancy	90%*	80%**	83%	86%	89%	92%	95%	CDHS & HMIS
% of women who received deworming medication during pregnancy of last birth	53%	55%	57%	59%	61%	63%	65%	CDHS & HMIS

* Before 2015, 90 tablets should be considered as appropriate
** From 2015, 180 tablets should be considered as appropriate

[16] MOH. National Policy and Guidelines for Micronutrient supplementation to prevent and control deficiencies in Cambodia. National Nutrition Programme. June 2012

[17] WHO. Guideline: Daily iron and folic acid supplementation in pregnant women. Geneva, World Health Organization, 2012. http://apps.who.int/iris/bitstream/10665/77770/1/9789241501996_eng.pdf

[18] The consequences of iron deficiency and anemia during the postpartum period (six weeks after child birth) can be serious and have long-term health implications for the mother and her child. Intermittent iron and folic acid supplementation is recommended by WHO as a public health intervention for menstruating women living in settings where anemia is highly prevalent. In the postpartum period, iron supplementation, either alone or in combination with folic acid, may reduce the risk of anemia by improving the iron status of the mother. (http://www.who.int/elena/titles/iron_postpartum/en/index.html)

Coordination and monitoring:

The National Nutrition Program (NNP) will coordinate, monitor and evaluate the distribution of the daily IFA and any other supplementation implemented by DPs and NGOs. PHDs and ODs will lead at provincial, district and HC level the implementation.

To ensure an efficient implementation, NNP will develop i) a national plan to prevent micronutrient deficiencies among women (interventions, budget and target: supplementation and fortification) to ensure efficient use of national and provincial budget; and ii) new policies and strategies for prevention of low birth weight and maternal anemia based on international evidence and guidance, or through domestic research on multiple micronutrient supplementation and targeted macronutrient supplementation during pregnancy.

The NGOs and DPs through the Nutrition Working Group will provide monitoring and evaluation support to evaluate the effectiveness of the supplementation and provide new evidence for policy guidance.

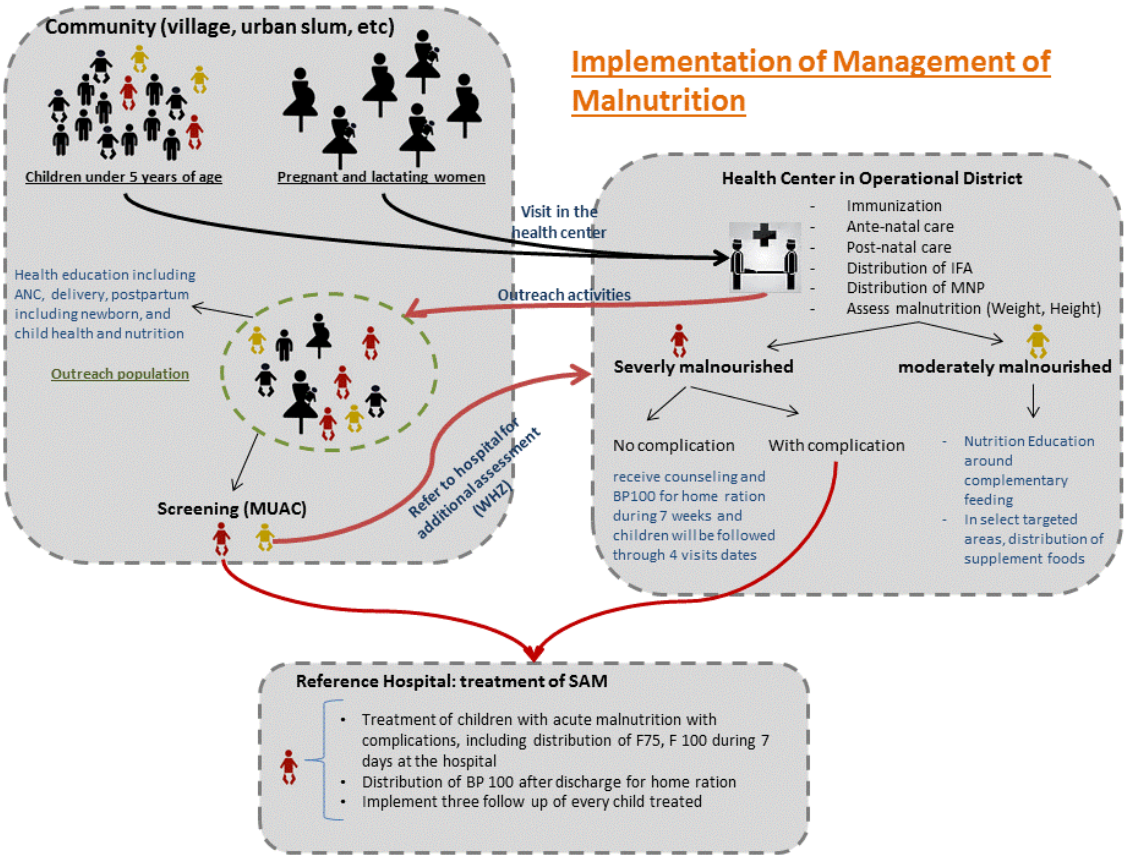
ii. Infant and children

While Cambodia has made huge progress in improving child and maternal health outcomes, there is a substantial gap between outcomes for the richest and the poorest quintiles. Child mortality of the poorest is three times higher than for the richest quintile. This gap has not closed between 2005 and 2010 according to Cambodia Demographic and Health Survey (CDHS) data, though the middle three quintiles are catching up. Unfortunately, Cambodia is now off-track for MDG and National Strategic Development Plan targets for child nutrition. To ensure optimal feeding practices and access to treatment of severe acute malnutrition, the road map for child nutrition will focus on three components:

3) **Component 3:** ***Treatment of severely wasted children***: Expand the management and treatment of acute malnutrition nationwide
4) **Component 4:** ***Micronutrient supplementation for prevention and treatment strategies:*** Scaling-up current distribution of MNP, vitamin A deworming and zinc supplementation to children
5) **Component 5:** ***Behavior Change communication focused on 1,000-day window of opportunity***: Improve and accelerate the national campaign on exclusive breastfeeding and complementary feeding campaign

COMPONENT 3: *Treatment of severely wasted children: Expand the management and treatment of acute malnutrition nationwide*

Building on nearly a decade of previous work, this strategy seeks to achieve sustainable, nationwide scale-up of malnutrition treatment, resources will be used to generate evidence, training, strengthening national SAM data management for program planning and evaluation and for proposing designs that will enable the government to effectively manage nationwide implementation (as it is described in the following diagram).



Key interventions:

A critical first step is routine screening for acute malnutrition by healthcare practitioners to save children's lives and to ensure optimum care. Growth monitoring (weight and height) and MUAC screening for acute malnutrition in young children is not being consistently implemented. With such high levels of malnutrition in young children and limited preventive nutrition care and services, childhood malnutrition is not currently seen as an important wellbeing issue by the general public, limiting the effectiveness of current programs. But childhood malnutrition is an important public health concern in Cambodia that needs to be addressed urgently. MOH will work to improve the screening, information sharing (provide feedback to the health centres and community where the children have been referred and the progress of the treatment and/or follow-up visits) and treatment of malnourished children through the Ministry of Health structure (hospital, health centres and village health volunteers) with the following activities (see national guideline for implementation[19]):

- Improve nutrition counseling, ANC visits in rural area and urban poor area (see component 1)
- During Post natal care services, Improve and continue mass monitoring until clear guidelines on routine growth monitoring and promotion (GMP) are developed to screen acute malnourished children:

[19] National Nutrition Programme. National Interim Guidelines for the Management of Acute Malnutrition. 2011. Phnom Penh Cambodia. (http://camnut.weebly.com/policy--guidelines.html)

- Building the capacity of health centers and hospitals to screen systematically children attending a health consultations (may it be preventive or curative[20]), to identify severely acutely malnourished cases, and refer them for treatment to the adequate facilities
- Improving post-natal nutrition counseling tailored to the child growth pattern
- Developing guidelines for routine GMP at health facility and community level to replace mass screening: through health facility by i) building the capacity of health centers and hospitals to screen systematically children attending health consultations (may it be preventive or curative[21]), to identify severely acutely malnourished cases, and refer them for treatment to the adequate facilities; and ii) Improving post-natal nutrition counseling tailored to the child growth pattern. Or through community by i) systematically monitor growth to detect SAM cases and population at risk.

- Procurement of therapeutic food for use in hospital and at community level through government budget and contribution from development partners.
- Implement systematic follow-up visits of children under treatment to ensure provision of adequate care at community level, detect medical issues and prevent defaulting
- Increase the number of ODs where severe acute malnourished children are treated
- Increase the number of acute malnourished children receiving community-based treatment
- Increase direct financial support to caretakers of children hospitalized by the health equity funds process or community cash transfer.

Research:

- Assess the recovery rate within SAM and improve the percentage of cured children
- Develop specific local products for the treatment of SAM and MAM which are widely accepted by Cambodians
- Develop tools to improve detection of SAM and MAM at the community level

Monitoring Indicators:

[20] Expanded Program of Immunization (EPI) visits, Integrated Management of Childhood Illness (IMCI) visits, HIV treatment, etc.

[21] Expanded Program of Immunization (EPI) visits, Integrated Management of Childhood Illness (IMCI) visits, HIV treatment, etc.

	2014	2015	2016	2017	2018	2019	2020	sources
Number of hospitals providing SAM treatment	34	39	40	40	40	40	40	HMIS
% of children < 5 years assessed for acute malnutrition at OPD/IMCI services	50%	55%	60%	65%	70%	75%	80%	HMIS
Number of children with SAM receiving complete treatment (IPD and OPD) according to guideline*	2,500	3,000	9,000	15,000	20,000	22,000	25,000	HMIS

*number of children SAM in 2010: 41,000

Coordination and monitoring:

The National Nutrition Program will coordinate, monitor and evaluate the treatment, cure rate, follow-up visit and distribution of nutrition commodities implemented by referral hospitals, DPs and NGOs. PHDs and ODs will lead at provincial, district and HC level the implementation of the treatment of SAM.

COMPONENT 4: *Micronutrient supplementation for prevention and treatment strategies: Scaling-up current distribution of MNP, vitamin A deworming and zinc supplementation to children*

As recommended by the latest 2013 series, vitamin A supplementation has been implemented over a decade and is now widely distributed. Other initiatives have been implemented recently and need more attention. For example, in 2010, WHO and UNICEF issued a joint statement recommended zinc treatment for 10-14 days, in addition to low-osmolality ORS as an adjunct therapy, to reduce the duration and severity of diarrhoea episodes and the likelihood of subsequent infections in the 2 to 3 months following treatment. Unfortunately in 2010, only 2.4% of children with diarrhoea received ORS and zinc supplementation.

> ***2011 WHO statement***: "Home fortification of foods with micronutrient powders is strongly recommended to improve iron status and reduce anemia"
>
> **Use of MNP for home fortification of foods consumed by infants and children 6-23 months of age.**

In addition, in the 2010 Cambodian Demographic Health Survey (CDHS), only 24% of children aged 6-23 months met the minimum standard for all three Infant and Young Child Feeding (IYCF) practices. The main problem is lack of dietary diversity, with only 37% of children consuming the minimum number of food groups recommended for this age range, and only 42% of infants aged 6-8 months having consumed animal products in the last 24 hours. Following the effective trial in Svay Rieng province in

2008, implementation of MNP distribution of 270 sachets between the age of 6-23 months through the health centre began in Svay Rieng and in Kampong Speu provinces since 2010 and has now been expanded to other provinces. However, besides micronutrient intakes, macronutrient intake (energy, protein, essential fatty acids) needs to be increased also through high-quality, affordable complementary foods (see component 5)

Key interventions:

Through this Nutrition Road Map, MOH support will facilitate the scale-up of supplementation programs (following the national implementation strategy[22]) by:

- Maintaining government effort on vitamin A supplementation focusing on children 6-59 months[23] and follow future WHO recommendation for neonatal children[24].
- Maintaining deworming tablet of children from 12-59 months of age.
- Continued support for the supply of MNP through government funds and developing partner's contribution to expand coverage.
- Revision of the national guidelines on supplementation to reflect the recent international guidelines on MNP edited in 2012 by reducing the distribution from 270 sachets to 180 sachets[25] between 6 to 23 months of age.
- Increase the coverage of zinc supplementation with ORS for diarrhea treatment[26,27].

Research:

- Study the effective use of the supplements distributed through existing channels
- Evaluate the micronutrient status of children

Monitoring Indicators:

[22] MOH. National Policy and Guidelines for Micronutrient supplementation to prevent and control deficiencies in Cambodia. National Nutrition Programme. June 2012

[23] WHO. Guidelines: Vitamin A supplementation for infants and children 6-59 months of age. Geneva, World Health Organization, 2011: http://www.who.int/nutrition/publications/micronutrients/guidelines/vas_6to59_months/en/index.html

[24] http://www.who.int/elena/titles/vitamina_neonatal/en/index.html

[25] WHO. Guideline: Use of multiple micronutrient powders for home fortification of foods consumed by infants and children 6–23 months of age. Geneva, World Health Organization, 2011. (http://whqlibdoc.who.int/publications/2011/9789241502047_eng.pdf)

[26] Lazzerini M, Ronfani L. Oral zinc for treating diarrhoea in children. Cochrane Database of Systematic Reviews 2013, Issue 1. Art. No.: CD005436. DOI: 10.1002/14651858.CD005436.pub4.

[27] MOH. National Policy on the control of acute respiratory and diarrheal disease among children under the age of five. 2011. Phnom Penh.

	2014	2015	2016	2017	2018	2019	2020	sources
% of children aged 6-59 months receiving Vitamin A capsules	89%	90%	91%	92%	93%	94%	95%	HMIS & CDHS
% of children 12-59 months receiving mebendazole every 6 months	85%	88%	91%	93%	96%	99%	99%	CDHS & HMIS
% of children with diarrhoea having received ORT + zinc (%)	84%	85%	86%	87%	88%	89%	90%	CDHS & HMIS
Number of children receiving the adequate amount of MNP	25%	30%	35%	40%	45%	50%	55%	CDHS

Coordination and monitoring:

The National Nutrition Program will coordinate, monitor and evaluate the distribution of micronutrient powders. PHDs and ODs will lead the implementation at provincial, district and HC level.

The NGOs and DPs will provide support to reach the most vulnerable and evaluate the effectiveness of micronutrient supplementation and provide new evidence for policy guidance.

COMPONENT 5: *Behavior Change communication focused on 1,000-day window of opportunity: Improve and accelerate the national campaign on exclusive breastfeeding and complementary feeding campaign*

Cambodia has made good progress in equitable promotion of breastfeeding, with the rates of exclusive breastfeeding and of early initiation of breastfeeding both increasing significantly among all groups over the last decade. According to three national demographic and health surveys, exclusive breastfeeding up to 6 months of age grew from 11 per cent in 2000 to 60 per cent in 2005 to 74 per cent in 2010, while early initiation of breastfeeding increased from 11 per cent to 35 per cent to 65 per cent over the same time period. The drastic improvement in exclusive breastfeeding is well documented and was attributed to a large-scale communication campaign. Unfortunately Complementary feeding practices in Cambodia, or food given to infants and young children in addition to breast milk, has not meaningfully changed over the last decade. In recent years there has been increased marketing of formula to newly delivered mothers and

increased formula use in urban areas. In addition to causing problems early in life, this will also contribute to higher rates of chronic disease such as obesity and diabetes in the future.

A major barrier to the adoption of optimal IYCF practices and sustained demand for appropriate complementary foods is misunderstanding among consumers about appropriate practices and foods. People often receive incongruous, or conflicting, messages from the health system (government campaigns and clinic based counselling), commercial companbies and social marketing done by NGOs and Public Private Partnerships.

This initiative seeks to address this barrier i) by creating synergies between messages across sectors ii) by ensuring that social, behaviour change interventions and iii) by developing innovative food solutions. Those activities are designed based on formative research and consumer insights, and are harmonized with demand creation for products.

Key interventions:

Therefore to enforce the sub-decree 133 on marketing of products for infant and young child feeding, MOH, through the Maternal Child Health Nutrition Centre, will:

- Implement Sub decree 133 Joint Prakas on Markerting of product on IYCF by i) developing monitoring tools on the implementation of the Sub-Decree 133; ii) conducting monitoring studies in retails and health facilities in order to control the marketing of Products for Infant and Young Child Feeding; iii) restricting advertising and promotion of breast-milk substitutes; iv) regulating public and private sector health providers communications; v) restricting advertising and promotion by medical professionals of breast-milk substitutes and bottles; and vi) continuing Advocating against breast-milk substitute through large social media campaigns.
- Improve infant and young child feeding practices at health facilities and community levels through BFCI, BFHI approaches[28]
- Advocate for better baby care center at the workplace to ensure EBF until 6 months (the development of new guidelines on the duration of maternity leave (to at least six months as recommended for exclusive breastfeeding and international recommendations): without appropriate policies in place to protect mothers of children <2 years of age, work conditions may limit further improvement in breastfeeding- take out).

The food given to infants and young children **in addition to breast milk** has not meaningfully changed over the last decade. Building on the complementary feeding campaign that started in 2012 and the findings of the mid-line assessment now underway, this nutrition road map will support an integrated Social and Behaviour Change Communication campaign on complementary food and food supplements to communicate and promote optimum feeding practices for young children from 6 to 24 months that can be brought to scale nationally in a cost-effective and sustainable way. MOH will:

[28] MOH. Implementation Guidelines for Baby-Friendly Community Initiative (BFCI). 2009. Phnom Penh, Cambodia.

- Enhance and adapt the on-going complementary feeding campaign (see COMBI strategy[29]) according to new findings with the approval of the government to raise awareness in mothers, families, communities and health workers on the importance of complementary feeding, diet diversity (quantity and quality) including the use of supplements.

- Provide examples of accessible solutions: i) a home-made enriched porridge of the right consistency to children 6-24 months of age, ii) food supplements and iii) fortified complementary foods. Secondary objectives include ensuring appropriate frequency, quantity, and hygienic active feeding.
- Develop new mass media communication of the 1,000 days window and monitor its impact: supplementation, deworming, breastfeeding, complementary feeding, overweight and obesity prevention and innovative food supplement for pregnant and lactating women for example.
- Develop communication tools and broadcast them to achieve national coverage (billboards TV and radio spots throughout the years)

Monitoring Indicators:

	2014	2015	2016	2017	2018	2019	2020	sources
% of infants age 0-6 months exclusively breastfed	77%	-	-	-	-	85%	-	CDHS
% of health facilities in compliance with IYCF legislation	70%	73%	76%	79%	82%	85%	89%	HMIS
% of mothers who start breast-feeding newborn child within 1 hour of birth	70%	-	-	-	-	75%	-	CDHS
% of children aged 6-23 months who are breastfed	85%	-	-	-	-	87%	-	CDHS
% of children 6–23 months of age breastfed who receive a minimum IYCF standards	32%	-	-	-	-	50%	-	CDHS
% of children 6–23 months of age non-breastfed who receive a minimum IYCF standards	10%	-	-	-	-	33%	-	CDHS

[29] MOH. Campaign to promote complementary feeding in Cambodia: 2011-2013. 2011. Phnom Penh, Cambodia (http://camnut.weebly.com/uploads/2/0/3/8/20389289/2011compfeedingcommstrategy.pdf)

Coordination and monitoring:

The Ministry of Health will leverage funds to improve and continue the actual breast-feeding and complementary foods campaign and it will coordinate evidence generation on innovative accessible solution to improve complementary feeding through local public-private partnerships. PHDs and ODs will spread the messages at provincial, district and HC through community activities or mass media.

The Oversight board led by MOH oversee the effective implementation of the Sub-Decree 133 and the joint Prakas. The Oversight Board will receive reports from International Organizations, Health Workers and the general public regarding the processing of complaints of violations of the Sub-decree and will mobilize resources and funding to support the implementation of Sub-Decree 133.

The Working group led by NNP assist the Oversight Board in monitoring the implementation and enforcement of the Sub-Decree and the Joint Prakas. It will i) monitor the implementation of Sub-Decree in public and private health facilities, in markets/shops; ii) receive, compile and report on complaints on violations and; iii) recommend appropriate actions and ensure investigations by line ministries.

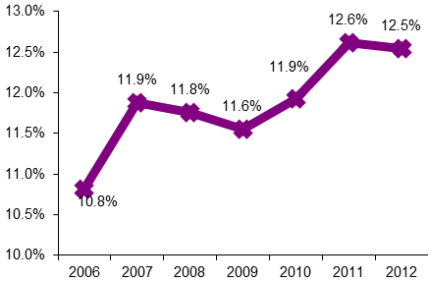
The NGOs and DPs will use official communication document to limit the mismatched messages.

II. Remove barriers to efficiently implement nutrition 'specific' services and improve maternal and child nutritional status

Interventions beyond the health sector are needed in order to address some of the underlying causes of malnutrition and barriers:

1) **Component 6:** Removing financial and Human Resources barriers to scale up efficient interventions
2) **Component 7:** Leverage support through other ministries and initiatives
3) **Component 8:** Improve Nutrition Information System

COMPONENT 6: *Removing financial and Human Resources barriers to scale up efficient interventions*



Health is one of the priority sectors for the Government of Cambodia and the NSDP calls for a target allocation to the health sector from the Government recurrent budget of 13%. Accordingly the health allocation has grown from 10.8% to 12.5% over the period 2006-2012. Regardless of the recent attention in the national policy dialogue and strategies, the nutrition agenda remains under-resourced both by the government and donors, constraining to the much needed scale-up of a life-cycle approach and more

particularly towards the 1,000days window (respectively 0.3% and less than 3% of the total health investment.

Key interventions:

- Remove financial barriers by:
    - Increasing the national nutrition budget and limit constraints on commodities
    - Based on decentralization and deconcentralization guideline, NMCHC in collaboration with commune council to assign key focal point for health to work on nutrition activities including budget allocation and planning for commune/ sangkat.
    - Increasing developing partners budget allocation for the core nutrition specific intervention
    - Creating long-term agreement with national media and TV to allow free air time for health and nutrition education

- Remove Human resources barriers by:
    - Strengthening capacities at national and subnational levels by improving school curriculum and pre-service training, by increasing the number of postgraduate degrees in nutrition, and by increasing the level and number of staff with primary responsibility for nutrition
    - Using nutrition experts from developing partners and NGOs to train graduate and post-graduate students

Coordination and monitoring:

The Ministry of Health will work with Ministry of Finance and education to coordinate those interventions.

COMPONENT 7: *Leverage support through other ministries and initiatives*

To have maximum impact and results, improving nutrition in Cambodia requires close cooperation and efficient coordination by a wide range of line ministries and government and non-government stakeholders so they can set priorities and take joint action.

Key interventions:

Large-scale food fortification has been recognized as one of the most cost effective interventions, in large part due to the close collaboration which is created between the public and private sectors and the sharing of costs[30] and benefits. Over the

[30] While the incremental cost of fortified foods is acceptable and invisible (range of 0.2 to 2 percent of the unfortified cost depending on the product), the expected price increase will be easily absorbed in overall inflation and market costs

coming years, this nutrition road map recognized the importance to expand the access and the use of fortified foods in Cambodia by:

- Providing technical expertise on the on-going efforts of salt, sauces and edible oil fortification to ensure maximum reach of quality fortified foods
- Supporting the enforcement of existing legislation on salt that makes iodization mandatory and future Prakas
- Increasing awareness of fortified products as part of a broader behaviour change campaign towards the 1,000 days window
- Developing new evidence for new fortified staples or condiment to prevent micronutrient deficiencies in Cambodia through studies and new policies.

The SUN Movement has the objective to increase people's access to affordable nutritious food and other determinants of nutritional status such as clean water, sanitation, healthcare, social protection and initiatives to empower women. Therefore MOH will work closely with CARD on the opportunity to join the Scaling Up Nutrition Movement and will support the different steps:

- Developing or revising national policies, strategies and plans of action to scale up nutrition that include both nutrition-specific interventions as well as nutrition-sensitive development strategies.
- Forming or strengthening a multi-stakeholder platform that includes relevant line ministries – across agriculture, health, education, social welfare, women's affairs and local government – and key partners including civil society, UN agencies, donors, the technical and research community and businesses.
- Undertaking regular stocktaking of in-country and partner capabilities in nutrition to clearly identify capacity gaps and set priorities for resource mobilization.

Research:

- Gathering evidence on micronutrient status of target populations in Cambodia in 2014 and 2019: there is a lack of policy development and planning based on evidence to improve the effectiveness of current interventions due to lack of data in Cambodia on micronutrient deficiency.

Coordination and monitoring:

The Ministry of Health will support those initiatives with the different line ministries, DPs and NGOs.

COMPONENT 8: *Improve Nutrition Data in Existing Health Information Systems*

Results-based M&E of the Fast Track Road Map for Improving Nutrition and the activities implemented under its umbrella are crucial requirement for effective dialogue on nutrition in Cambodia and for the further development of the future strategies.

National Nutrition Program in collaboration with Department of Planning and Health

Information and with the support of development partners to revise and add reporting system of the National Nutrition Program into the existing health information system as requested.

Key interventions:

Resources will be used to build the capacity of the Ministry of Health's nutrition data management system to improve programme planning and performance monitoring, while generating evidence on reporting systems and processes that will enable the government to effectively manage nationwide implementation:

- Streamline existing web-based monitoring tools to allow monthly collection of nutrition data
- Implement the newly designed web-tools in a pilot phase
- Integrate the nutrition data management system into the health monitoring information system

Coordination and monitoring:

The Ministry of Health in collaboration with DPs and NGOs to support those initiatives by providing supervision and monitoring actively.