REPUBLIC OF MOZAMBIQUE

MULTISECTORAL ACTION PLAN FOR THE REDUCTION OF CHRONIC UNDERNUTRITION IN MOZAMBIQUE 2011 – 2015 (2020)

MAPUTO, SEPTEMBER 2010

TECHNICAL INFORMATION

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FOREWORD

Chronic undernutrition is recognized as an indicator of the quality of a country's human capital. In Mozambique, 44% of children suffer from chronic undernutrition. One in every two children under 5 years can not achieve its potential physical, mental and cognitive development.

The implications are immense, starting with the fact that chronic undernutrition is responsible for one third of deaths in children under five years in Mozambique. In addition to bringing a high cost to the country, the high incidence of chronic undernutrition compromises the achievement of many international commitments to socio-economic development in our country.

Our Government recognizes that chronic undernutrition is a serious public health problem, and therefore mobilised different sectors from the Government, civil society, private sector, development and cooperation partners in the National Seminar on Chronic Undernutrition, which took place in March 2010 and which resulted in the signging by all sectors of a declaration of commitment on the fight against undernutrition. Subsequently, the present Multisectoral Action Plan for the Reduction of Chronic Undernutrition in Mozambique 2011-2015(20) was developed and approved by the Council of Ministers in its 34th ordinary session of 28 September 2010.

This Plan contains a package of activities/interventions with priority and sectoral strategic objectives which, over a 10 year period, should contribute to reduce the prevalence of chronic undernutrition to 20%.

There is evidence that it is possible to reduce significantly chronic undernutrition in children under two years of age in a period of 10-20 years and to achieve this objective a strong commitment of the various government and non government sectors for the development of operational sectoral plans based on this Plan is urgent, as well as the allocation of the resources to enable the acceleration of the progress already achieved in this area.

Maputo, April 2011

The Prime Minister

Aires Aly

DECLARATION OF COMMITMENT

For an accelerated response for the prevention of chronic undernutrition in Mozambique

We, the Mozambican Government, United Nations agencies, development partners and members of the civil society and the private sector, meeting today, the 4th of March 2010, in the Joaquim Chissano Conference Centre at the National Seminar on Chronic Undernutrition, whose objective is to achieve a national consensus for a multisectoral action plan for the reduction of chronic undernutrition in Mozambique,

Recognizing that chronic undernutrition is the main nutrition problem affecting theMozambicanchildren and that its resolution requires a multisectoral approach,

Being aware of the fact that undernutrition is responsible for more than a third of infant mortality, thereby compromising reaching the Millennium Development Goals, and considering its negative impact on the socio-economic development of families, communities andthecountry as a whole,

Recalling and reaffirming the commitment made during the World Food Summit, held in Rome in 1996, in view of reducing the number of undernourished people by 50%, by the year 2015,

Recognizing that poverty reduction is a Government priority and that there is a strong link between poverty reduction, food and nutrition insecurity along with chronic undernutrition,

Taking into account the opportunities that present themselves, notably: thenational political engagement,the cost-effective evidence-based interventions, the global initiatives and the engagement of national and international partners,

Recognizing that the right to adequate food is a fundamental human right,

We strive and commit ourselves to:

- Contribute to the implementation of the actions to be defined in the overall multisectoral action plan for the reduction of chronic undernutrition;

- Develop advocacy and training suitable to raise awareness in the various sectors and in the public in general, about the problem of chronic undernutrition and to make the actions accessible to everyone, thus facilitating the access to information, thereby promoting behavior changes while taking into consideration the aspect of gender;

- Strengthen the technical assistance and structures for the implementation of the plan at all levels and in the various sectors linked to nutrition;
- Support the intersectoral coordination body in all its dimension, so that through functional and effective coordination mechanisms, actions to improve the nutritional status of women and children are implemented, ensuring complementarity and strengthening synergies between the different actors;

- Invest in information, knowledge management, surveillance systems, monitoring and evaluation of progress;

- Invest in and strengthen the training of human resources for the implementation of the multisectoral action plan for the reduction of chronic undernutrition; and

- Mobilize resources nationally and internationally to ensure the large-scale implementation of nutrition interventions and programs.

We, the Mozambican Government, United Nations agencies, development partners and members of the civil society and the private sector, by the above, we approve the content of this "**Declaration of commitment for an Accelerated Response for the Reduction of Chronic Undernutrition in Mozambique".**

Maputo, 4 March 2010.

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Ministro da Saúde

Soares Nhaca
Ministro da Agricultura

Manuel Chang
Ministro das Finanças

Zeferino Martins
Ministro da Educação

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Salimo Abdula
Presidente da Confederação das Associações Económicas de Moçambique
Representante do Sector Privado

Representante dos Parceiros de Desenvolvimento

LIST OF ABBREVIATIONS AND ACRONYMS

ACS Community Health Agent
AIDS Acquired Immunodeficiency Syndrome
APE Basic Health Agent (in a National Program implemented by the Government)
BDPA Sweet Orange Flesh Potato
BMI Body Mass Index
CMAM Community-based Management of Acute Malnutrition
CSB Corn Soy Blend
DHS Demographic and Health Survey
DPS Provincial Directorate of Health
ENI Essential Nutritional Interventions
ESAN Food and Nutrition Security Strategy
HBC Home-Based Care
HC Health Centre
HIV Human Immunodeficiency Virus
INE National Institute of Statistics
IPT Intermittent Presumptive Treatment (of Malaria)
ISCISA Higher Institute of Sciences of Health
JFFLS Junior Farmer Field and Life Schools
LNS Lancet Nutrition Series
MCH Maternal and Child Health
MDG Millennium Development Goal
M&E Monitoring and Evaluation
MIC Ministry of Industry and Commerce
MICS Multiple Indicator Cluster Survey
MINED Ministry of Education
MIMAS Ministry of Women and Social Action
MoH Ministry of Health
MOPH Ministry of Public Works and Housing
NGO Non-governmental Organization
OVC Orphans and Vulnerable Children
PARPA Poverty Reduction Strategy
PASAN Action Plan for Food and Nutrition Security
PASD Direct Social Support Program
PSA Food Subsidy Program
PSI Population Services International
RAI Impact Evaluation
RED Reaching Every District
SETSAN Technical Secretariat for Food and Nutrition Security
SNCS National Child's Health Week
SSR Sexual and Reproductive Health
STI Sexually Transmitted Infections
SWAp Sector Wide Approach
TOR Terms of Reference
UN United Nations
UNICEF United Nations Children's Fund
USD US Dollars
WFP World Food Program
WHO World Health Organization

EXECUTIVE SUMMARY

Forty-four percent of children in Mozambique are stunted or suffer from chronic undernutrition (MICS 2008). Chronic undernutrition develops in the period between conception and two years of age and cannot be reversed afterwards. This early growth deficiency increases infant and child mortality and decreases the cognitive function of those who survive. This condition hinders efforts to attain the Millenium Development Goals (MDGs) 1,2,3,4,5 and 6. In 2004, simply in terms of productivity loss, the cost of not preventing the above condition was estimated at USD 110 million per year.

The main immediate causes of chronic undernutrition in Mozambique are inadequate nutrient intake, high rates of infectious diseases and early pregnancy. Diets are monotonous, with micronutrient deficiencies affecting the majority of the population. Malaria and gastro-intestinal parasites affect half of the population.Half of women who receiveantenatal care have sexually transmitted diseases, while another half of them are adolescents. In addition, only 40% of infants under six months of age are exclusively breastfed.
The underlying causes of chronic undernutritionare food insecurity (especially with regards to limited access and use of nutritious food), poverty and inadequate practices, when it comes to care of adolescent girls, mothers and children, as well as insufficient access to health, water and sanitation services.
The basic causes of chronic undernutrition, apart from poverty, include low education levels and gender inequality,the latter being responsible for early marriages and pregnancies.

The Impact Evaluation-2009 of the PARPA II (2006-2009) carried out an in depth analysis of the chronic undernutrition situation in Mozambique and outlined recommendations to accelerate progress for its reduction within the country. First and foremost, the document concluded that chronic undernutrition needed to be eliminated urgently. For this reason, a high-level mission of the United Nations held a meeting with the Minister of Health and representatives from other ministries in October 2009 to discuss the nutrition situation in the country and to identify the next steps to be taken. At the meeting, it was agreed to organize a National Seminar with the objective of obtaining consensus on a Multisectoral Action Plan to fight chronic undernutrition within Mozambique. This Seminar was held in March 2010 and culminated with the signing of a Declaration of Commitment between the Mozambican Government, the development partners, the civil society and the private sector for an accelerated response for the prevention of chronic undernutrition in Mozambique.

The present Plan aims at reducing chronic undernutritionin children under 5 years of age from 44% in 2008 to 30% in 2015 and 20% in 2020. The Plan takes into account the factors limiting the capacity of the applicable government institutions that have the responsibility to implement it. It focuses on setting up a package of priority interventions which will complement the activities included in other relevant Plans and Strategies**,** such as the Food and Nutrition Security Strategy (ESAN II) and the Integrated Plan for the attainment of MDGs 4 and 5, which are already being implemented.

Key Points of the Action Plan
The Plan identifies seven strategic objectives, each with expected outcomes and activities.

STRATEGIC OBJECTIVE 1: To strengthen activities with impact on the nutritional status of adolescents.
Result 1.1.Controlled anaemia in adolescents (10-19 years) within and out of schools; Result 1.2. Reduced early pregnancy in adolescents (10-19 years);
Result 1.3.Strenghtened nutrition education in different education levels as part of school curriculum, includingliteracy curricula.

STRATEGIC OBJECTIVE 2: To strengthen interventions with impact on the health and nutrition of women of reproductive age before and during pregnancy and lactation.
Result 2.1. Reduced micronutrient deficiencies and anaemia before and during pregnancy and lactation;
Result 2.2. Controlled infections before and during pregnancy and lactation;
Result 2.3. Increased weight gain during pregnancy.

STRATEGIC OBJECTIVE 3: To strengthen nutrition activities for children in the first two years.
Result 3.1. Exclusively breastfed children in the first six months of life;
Result 3.2. Receipt of adequate complementary feeding for all children from 6 to 24 months;
Result 3.3. Reduced micronutrient deficiencies and anaemia in all children from 6 to 24 months of age.

STRATEGIC OBJECTIVE 4: To strengthen household-oriented activities to improve access and utilization of foods with a high nutritional value.
Result 4.1. Foods with a high nutritinal value produced locally and utilized by the poorest families;
Result 4.2.Strengthened capacity of households vulnerable to Food and Nutritional Insecurity for the adequate processing and storage of foods;
Result 4.3. Households vulnerable to Food and Nutrition Insecurity with access to support and social protection services to ensure sufficient and diversified foodsforpregnant and nursing mothers, adolescents and children between 6-24 months of age;
Result 4.4. Increased supply and consumption of fortified foodsin the communities, especially iodized salt;
Result 4.5. Ensured basic sanitation for the poorest households with adolescent girls, pregnant and nursing mothers and children under 2 years of age.

STRATEGIC OBJECTIVE 5:To strengthen the Human Resources capacity in the area of nutrition.
Result 5.1.Ensured optimal capacity of human resources responsible for nutrition at national, provincial and district levels;
Result 5.2. Ensured optimal capacity of professionals in the health, food security and education sectorson adequate food and nutrition.

STRATEGIC OBJECTIVE 6: To strengthen the national capacity for advocacy, coordination, management and progressive implementation of the Multisectoral Action Plan for the Reduction of Chronic Undernutrition.

Result 6.1. A multisectoral coordination groupestablished at the national level;
Result 6.2. An executive multisectoral group created to manage the implementation of the plan at the national level;
Result 6.3. An executive multisectoral group created to manage the monitoring and evaluation activities of the plan at the national level;
Result 6.4. An executive multisectoral group created to manage the advocacy and social mobilization activities for the reduction of chronic undernutrition at the national level;
Result 6.5. An advisory multisectoral coordination group capable of coordinating the plan's implementation and of advocating for the reduction of chronic undernutrition is established at the provincial and district levels;
Result 6.6. An executive group is created at the provincial and district levels and capable of managing the implementation of the plan and undertaking advocacy and social mobilization for the reduction of chronic undernutrition.

STRATEGIC OBJECTIVE 7: To strengthen the food and nutrition surveillance system.

Result 7.1. Adequate management of the Food and Nutrition Security activities at different levels (national, provincial and district);
Result 7.2. Improved and timely availability of disaggregated information on Food and Nutrition Security in the country.

The activities regarding objectives 5, 6 and 7 will be implemented at central or national level from the beginning of the operationalization of the Plan.The majority of the activities related to objectives 1, 2, 3, 4 will be implemented gradually in the selected districts until national coverage is reached.

CHAPTER 1

I. INTRODUCTION AND BACKGROUND

Chronic undernutrition manifests itself in growth faltering in the first years of life (low length/height-for-age or stunting) and is responsible for a third of the deaths in children under five years of age in Mozambique.[1]

In addition to being one of the main causes of child mortality, chronic undernutrition can bring irreversible damages to health during the whole life cycle, such as: stunting, which causes reduced working and physical capacity; a decrease in the cognitive function, resulting in poor school performance; and greater risks of degenerative diseases, such as diabetes and obesity.

Chronic undernutrition is recognized as the best indicator of the quality of human capital.[2] Besides the high cost for the nation, the high incidence of chronic undernutrition compromises the achievement of many of the international commitments on socio-economic development in Mozambique. The costs of chronic undernutrition have been estimated to be 110 million US dollars per year in 2004[3] and, this amount can be very short of its real costs. Some authors estimated that, in Mozambique, the productivity losses are in the order of 2-3% of the Gross Domestic Product[4] - between 300 and 500 million US dollars annually. If the problem of chronic undernutrition is not eradicated, it will make the attainment of the Millenium Development Goals (MDGs), particularly MDGs 1, 2,3,4,5 and 6, very difficult.

It is worth mentioning that Mozambique also took up the commitment of reducing the number of malnourished people to 50% by year 2015 during the World Food Summit which took place in Rome in 1996. However, commitments can often be jeopardised as a result of problems faced by the country.

A lack of satisfactory results related to the reduction of chronic undernutrition has implications, not only in compromising socio-economic development, but also in representing a failure of protection of human rights of Mozambicans, especially regarding the Right to Adequate Food and the Right to Health.

The Government of Mozambique recognizes that chronic undernutrition is the main nutrition problem in the country, as it was highlighted in the National Nutrition Meeting of the Ministry of Health in 2008. In the context of the evaluation of the Poverty Reduction Strategy (PARPA II), an analysis of the nutritional situation of children in Mozambique was carried out, with emphasis on chronic undernutrition. It was concluded that, due to the negative impact that stunting has on the potential for economic and human development, there should be an urgent action on a national scale for the reduction of chronic undernutrition. This should be defined as a significant priority in the Government's plans.

In October of 2009, a high-level mission of the United Nations met with the Minister of Health and representatives of other key ministries to discuss the situation of nutrition in Mozambique. In the meeting, it was agreed that a National Seminar should be held with the objective of reaching

consensus on the development of a multisectoral action plan for the fight against chronic undernutrition in Mozambique.

In preparation for the National Seminar, an analysis of the commitment and capacity in the area of nutrition in the country was undertaken, an exercise recommended by WHO for all countries with a high prevalence of stunting. Likewise, during the preparation of the present plan, a mapping of the interventions that contribute to the reduction of chronic undernutrition in Mozambique was conducted. The main conclusions of these analyses will be presented later in this chapter. These evaluations allowed to outline recommendations and specific interventions/actions that have direct and immediate impact on the reduction of chronic undernutrition.

In the weeks preceding the National Seminar, representatives of relevant sectors met several times to reach a consensus on the barriers for the reduction of chronic undernutrition, and to make recommendations for the future. These recommendations were in turn taken into account for the development of this Plan.

The National Seminar took place on March 3rd and 4th of 2010 and representatives of different Government sectors, civil society, institutions of Cooperation and private sector were present, as well as the Prime Minister and the Ministers of Health and Agriculture. The seminar resulted in the signing of a Declaration of Commitment between the Government of Mozambique, development partners, civil society and the private sector for an accelerated response for the reduction of chronic undernutrition in Mozambique.

At the National Seminar, consensus was reached in determining that the pillars of the interventions for the reduction of chronic undernutrition were: 1) Food and Nutrition Security, 2) care for women and children, 3) access to health, safe drinking water and environmental sanitation facilities, and 4) the human resources for nutrition. Above these pillars, as an "effect", were defined the institutional arrangement, coordination and leadership. It all includes the financing, advocacy, communication, monitoring and evaluation. Education and cost-effective interventions in communities were defined as the base of the intervention pillars. The current Plan takes into account these elements and presents them in an integrated way.

The Multisectoral Action Plan for the Reduction of Chronic Undernutrition is not limited to addressing the problem of chronic undernutrition and preventive measures, but also considers the factors that limit the capacity of the governmental institutions in their implementation. The Plan includes an analysis of the existing and required legal frameworks, the intersectoral collaboration and coordination, the financial and human resources, as well as the identification of gaps and future needs to guarantee the commitment and the capacity for the implementation of the Plan in a sustainable way.

The Plan aims the priority activities for the reduction of chronic undernutrition at different sectors, based on the assumptions that some activities that impact chronic undernutrition are included in different sectoral plans. And, also predicated out on the assumption that activities of the Food and Nutrition Security Strategy (ESAN II) and the Action Plan for Food and Nutrition Security (PASAN II) will be implemented in parallel to this Plan.

II. LANDSCAPE ANALYSIS

2.1 LEVELS, TRENDS AND MAIN CAUSES OF CHRONIC UNDERNUTRITION

2.1.1 WHAT IS CHRONIC UNDERNUTRITION?

Chronic undernutrition (stunting) is defined as low length/height-for-age and differs from acute undernutrition (wasting) defined as low weight-for-length/height. Acute undernutrition may appear at any time in life and can be recovered. Chronic undernutrition, on the other hand, results from untreated acute undernutrition in the period between conception and the first two years of life and cannot be recovered. Since this is a key phase in the development of a child's body, the damages caused cannot be reversed after the first two years of a child's life. In Mozambique as well as other countries in the world, a child's growth should be in line with WHO Growth Standards[5] and an adult's final height is affected by the height at age two[6]. Adults who were born with Low Birth Weight are on average 5 cm shorter than those born with normal weight[7]. Therefore, chronic undernutrition or stunting results from both maternal undernutrition before and during pregnancy and lactation, as well as from the first two years of a child's life, with half of the growth faltering taking place in utero and the other half after birth[8].

The increase in length of a foetus and a child between conception and the first two years of life is determined by two factors: 1) the growth of the foetus, which is largely defined during the first six months of pregnancy, and 2) the child's nutritional status during the first two years of life[9]. Studies undertaken in Guatemala have shown that the weight gain by a mother in the second trimester of pregnancy has a positive impact on a child's length at birth, while the weight gain during the last three months of pregnancy is important to achieve a satisfactory birth weight[10]. Tanner (1978) also has shown that the speed of length/height growth is higher during the fifth month of pregnancy and then reduces rapidly, whereas the speed of weight growth is higher during the eighth month of pregnancy and the first three months of life[11]. In this context, Tanner highlighted that while the growth of a foetus during the last months of pregnancy is more sensitive to a lack of energy or low quantity of food consumed by the mother, the growth during the first six months is more sensitive to deficiencies in the quality of food items or of micronutrients.

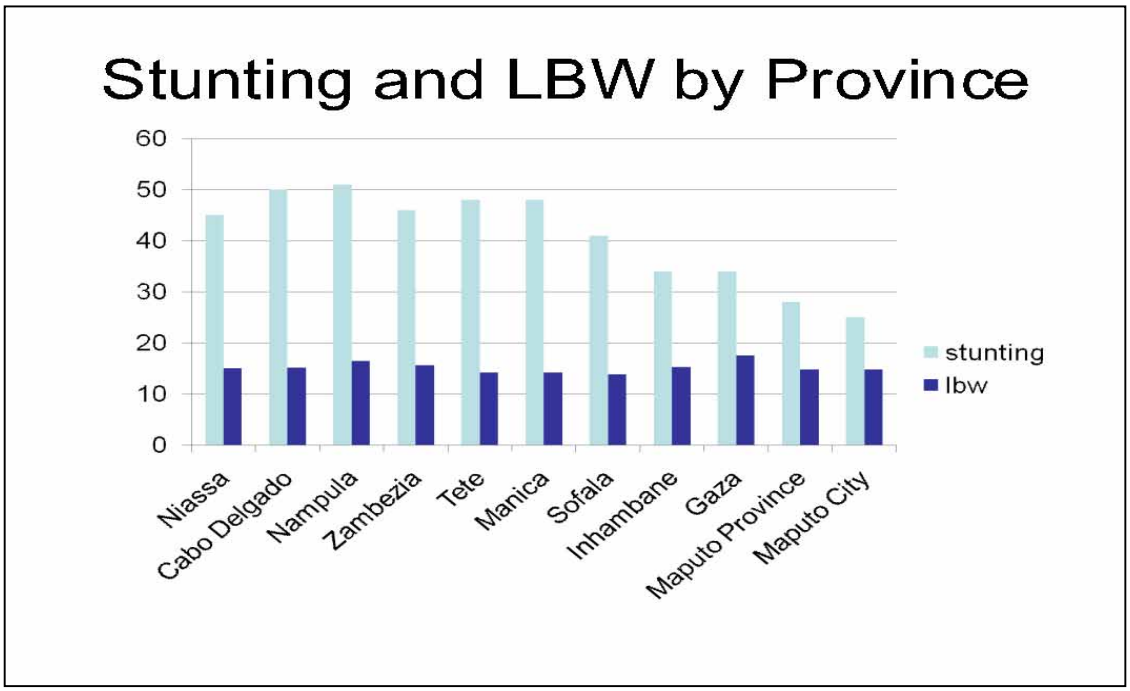
Chronic undernutrition can be eradicated quickly in children under two years of age. It is not a genetically inherited problem and all children have the same potential for growth[12]. Among Asian refugees in the United States of America, for instance, there was a 46% reduction in the stunting rates in children under two years of age between 1982 and 1989. In this short period, the height of Asian children under two years of age became the same as that of Latin-American descendents[13]. Many programs implemented in different countries have also shown that it is possible to reduce and even eliminate chronic undernutrition rapidly within a decade[14 15].

2.1.2 LEVELS AND TRENDS OF CHRONIC UNDERNUTRITION

Half of the Mozambican population suffers the consequences of chronic undernutrition and it is a cause for concern that this situation has not improved significantly in recent years. The prevalence of chronic undernutrition among pre-school children dropped from 48% in 2003 to 44% in 2008[16]. An incidence of stunting above 40% is a serious public health problem according to the World Health Organization (WHO) criteria. The provinces of Cabo Delgado and Nampula

have the highest rates in the country (> 50%), and Zambezia, Niassa, Tete and Manica have intermediate rates (> 45%). The provinces with the lowest rates (<40%) are Inhambane, Gaza, Maputo Province and Maputo City. Although the country has been experiencing a satisfactory economic growth during the last decade, the concerns about the lack of significant improvements in chronic undernutrition are considerable. This applies even in the highest wealth quintile, in which stunting prevalence is 27%. This implies that to reduce the high rates of chronic undernutrition, the Government needs to adopt measures that go beyond the eradication of absolute poverty.

According to the National Institute of Statistics, (INE), Low Birth Weight was 11.3% at the national level in 2008[17]. According to the last Multiple Indicator Cluster Survey (MICS), it was estimated that 15% of the newborns were of Low Birth Weight, taking into consideration that only 58% of newborns were weighed at birth. There is usually a strong linkage between stunting in children and low birth weight, such as when chronic undernutrition is high, Low Birth Weight (weight below 2.500 gr) is also high[18]. However, this linkage does not seem to exist in Mozambique at the provincial level when the 2008 MICS results are used, as shown in the Figure below. While chronic undernutrition is higher in the Northern provinces than in the Southern provinces, Low Birth Weight rates are similar across all the provinces.

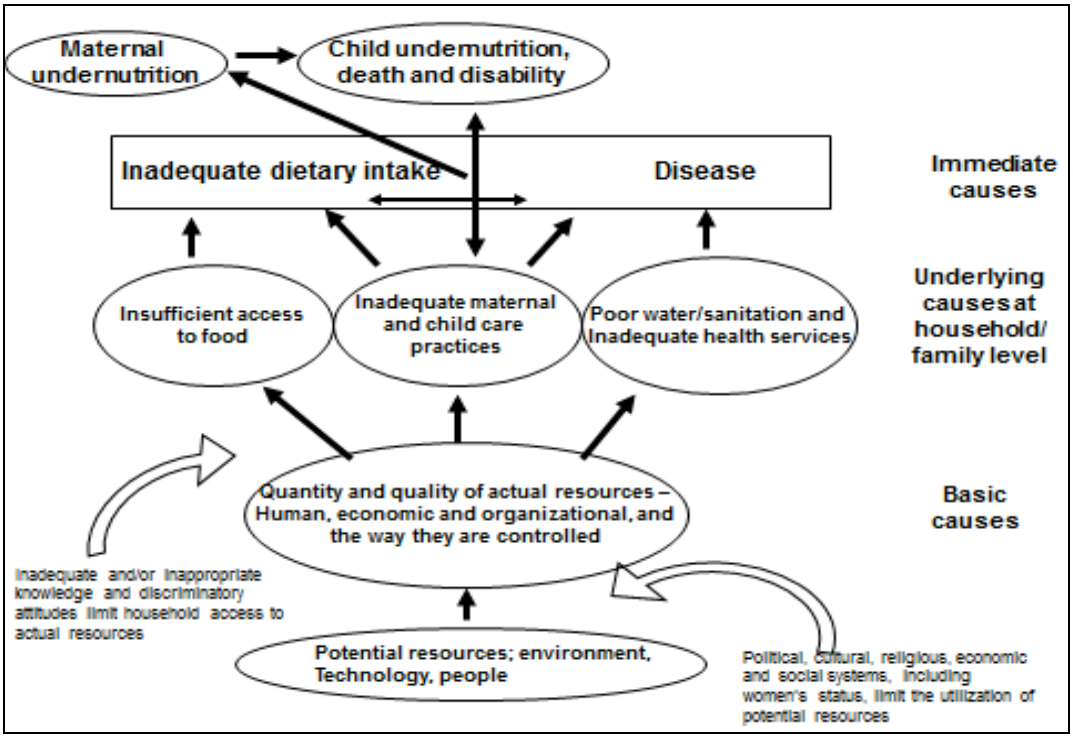


This paradox can be explained in various ways: the causality for Low Birth Weight and/or chronic undernutrition varies from province to province. Low Birth Weight may result from intra-uterine growth retardation or from prematurity. Results from a longitudinal study of pregnant women in Maputo, for example, found a Low Birth Weight frequency of 16.2%, of which 15.4% were premature and only 9.7% were small for gestational age[19]. Prematurity is the main cause of neonatal mortality in Mozambique[20]. The causes for prematurity are related to infections[21], early pregnancy[22], deficiencies of micronutrients like iron[23], while the causes for intra-uterine growth retardation are related to lack of macronutrients.

In short, it can be concluded that chronic undernutrition affects half of the population in Mozambique and that the levels are higher in the Northern provinces than in the Southern provinces. The Low Birth Weight rates are also high in Mozambique, with similar levels in all provinces. The lack of a strong linkage between Low Birth Weight and chronic undernutrition at the provincial level suggests that the linkage between the food and health conditions of the mother and chronic undernutrition in children are not the same in all provinces.

2.1.3. THE MAIN CAUSES OF CHRONIC UNDERNUTRITION

The causes of undernutrition, both in the mother and child, operate at different levels, including the immediate causes at the individual level and the underlying causes at the household and community level, as shown in the figure below, based on a conceptual framework originally developed by UNICEF.



As chronic undernutrition results from growth faltering, which occurs between conception and the first two years of age, an analysis of the causality of chronic undernutrition should consider the mother's nutritional status prior to and during pregnancy, as well as that of the child during the first two years of life. At the immediate level, undernutrition can be caused as much by the inadequate intake of food as by the occurrence of infections.

At the underlying level, three kinds of causes exist, namely: food insecurity; lack of hygiene, health services and environmental sanitation; and inadequate maternal and child care. Each of the underlying causes is essential, but it is not sufficient by itself. Food security is an important element to ensure good nutritional status and is defined as physical and economic access to sufficient food in terms of quality and quantity, and which are socially and culturally acceptable.

Nutritional security is the result of good health, a healthy environment and good caring practices for mothers and children. In the household context, there may be food security without family members having nutritional security. Therefore, food security is a necessary condition but not sufficient for nutrition security. Basis causes are related to society as a whole and reflect available potential resources such as natural, technological and human resources as well as the political structure and cultural identity.

2.1.3.1. THE IMMEDIATE CAUSES

The inadequate intake of nutrients is a serious problem in Mozambique. There are no nationally representative studies on the adequacy of nutrient intake by the Mozambican people. However, the consumption of food quantity, or calorie intake, seems to be satisfactory, since, according to the DHS 2003, only 9% of mothers had excessive thinness (a body mass index (BMI) of less than 18.5 kg/m^2), indicating acute undernutrition, 12% were above average weight (BMI > 25 kg/m^2), indicating a likely predisposition to obesity. On the other hand, according to the MICS 2008, only 4% of preschool children showed acute undernutrition (insufficient weight for height), a percentage that lies within the limits considered normal by WHO.

The quality of diet is a problem in Mozambique and the micronutrient intake is low. Anaemia is a widespread nutritional deficiency in Mozambique, it is a condition partially caused by iron deficiency but many times associated with parasite infections that cause blood loss. This disease is also caused by a deficiency of other nutrients such as folic acid and vitamin A[24]. The only representative survey about maternal anaemia in Mozambique shows that the prevalence of vitamin A deficiency and anaemia in mothers of children under 5 years was 11% and 48% respectively[25]. Studies in the literature of groups of women from different geographical areas suggest that 40 to 50% of women of childbearing age are anaemic[26 27]. In 2002, approximately 74% of children under 5 years of age in Mozambique were anaemic, with higher prevalence and severity in children under 24 months. The same study shows that 69% of children (6 to 59 months) had vitamin A deficiency; 14% of these had severe deficiency and 55% moderate deficiency[28]. There is also evidence that indicates that the quality of the diet of mothers and their children is poor in several provinces of the country [29] and that a large proportion of the population does not have a diversified diet. Although the diet provides the necessary energy, it is low in fats and protein, as well as in micronutrients such as iron[30]. Iodine deficiency is endemic in the country, and it is estimated that 30% of women of reproductive age and more than half of school-age population (68%) suffer from iodine deficiency[31].

With regards to the quality of diet, a study conducted in Zambézia Province showed that the quality of the diet of mothers and that of their children is poor[32] and, a large proportion of the population does not have a diversified diet. Although the diet provides the necessary energy, it is low in fats and protein, as well as micronutrients such as iron[33]. The same study measured the diversity of the diet of 245 children between 2-5 years of age, who had not received any kind of intervention. An excellent dietary diversity was defined as one containing nine food groups. The results of the study showed that the average number of food groups consumed by children was 3.4 (out of nine food groups), which is extremely low [34].

New evidence suggests that if the quality of the mother's diet was improved during pregnancy, there could be a beneficial effect on birth weight. In India, the consumption of foods rich in micronutrients (dairy, vegetables, green leaves and fruits) during pregnancy and folate levels in

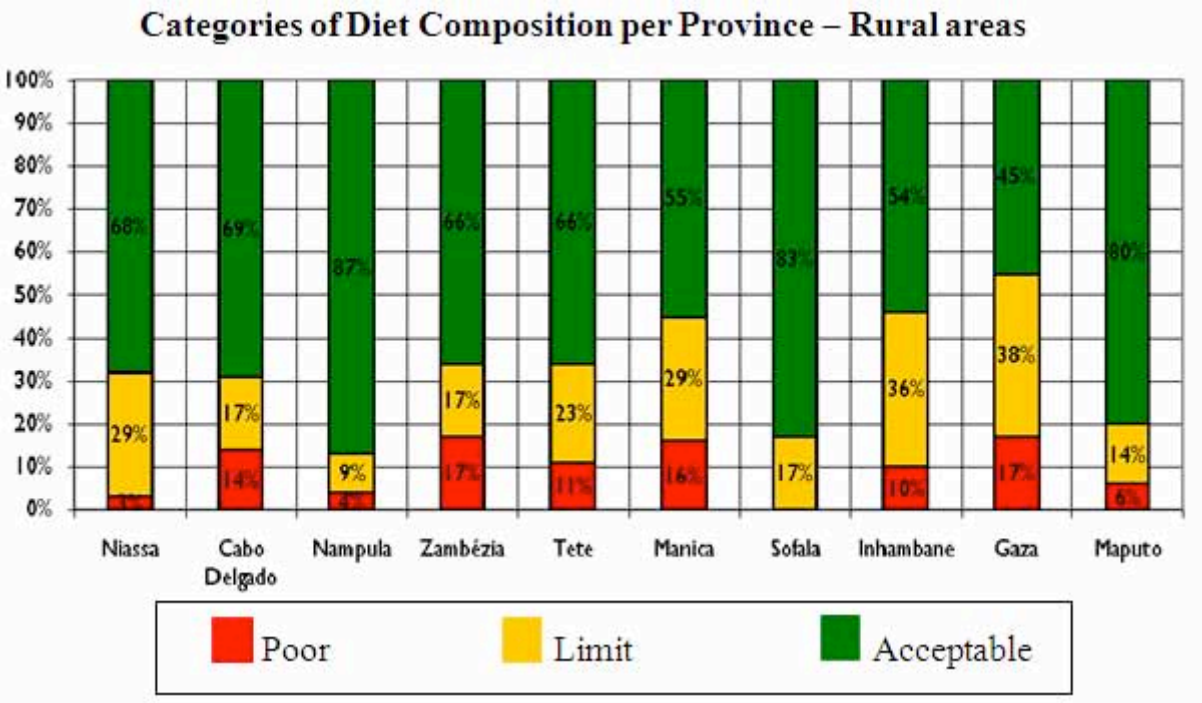
red blood cells at 7 months of pregnancy were associated with the size of the child at birth, even though there was no association with the adequacy of energy or protein intake[35]. The use of iodized salt in Asian countries is associated with an increase in birth weight and increased weight in older children[36]. In Indonesia, the lack of iodized salt use is associated with a high prevalence of undernutrition and mortality in children under 5 years[37]. A study in Vietnam found that the use of multimicronutrient supplements, instead of iron and folic acid, during pregnancy led to an increase of 100g in the average birth weight and a 30% reduction in the stunting rates in children at two years of age [38].

The infections that cause undernutrition at the immediate individual level also affect the vast majority of the population and can be the cause of chronic undernutrition in Mozambique. Among the relevant target groups for chronic undernutrition, it was estimated that in 2010, 16% of women of reproductive age (15-49 years) were seropositive for HIV/AIDS[39]. Several studies show that half of the pregnant women attending antenatal consultations have sexually transmitted infections (STIs)[40]. The prevalence of syphilis is between 5 and 15%[41]. According to the Ministry of Health[42], malaria is the main reason for attending outpatient consultations (44%) and for pediatric hospitalisations (57%). A nationwide study found a prevalence of 58.9% of malaria in children[43]. The prevalence of fever in children under five years, which is used as a proxy for determining the incidence of malaria, was 24% at the national level, according to the MICS 2008[44]. Gastrointestinal parasites also affect half of the population, with 47% having *schistosoma haematobium* and 53% having soil-transmitted *helminthiasis*[45]. It is possible that the incidence of all these diseases increases chronic undernutrition in Mozambique[46].

More than half of the population suffers from, at least, one of the immediate causes of undernutrition, and it is assumed that the inadequate nutrient intake and/or the infections represent one of the main causes of undernutrition. This is worrisome because there is a synergy between infection and the inadequate nutrient intake, due to the fact that the combined effect of two is even greater[47].

2.1.3.2. THE UNDERLYING CAUSES

Food security at the household level seems to have shown significant improvements over the last decade. In last the two decades, staple food production and availability, particularly maize, cassava and beans increased considerably, leading to a reduction of foreign food aid. However, the quality of the diet remains extremely poor. The calculation of the food consumption index indicates that food consumption and dietary diversification are inadequate in 31% of households in rural areas and 23% of peri-urban areas. There are differences in the composition of the diet in the North, Centre and South of the country as shown in the figure below[48].



The adequacy of the diet is worse in Gaza, Manica and Inhambane (<45% of households with an inadequate diet), and better in Maputo, Sofala and Nampula (<20% of households with an inadequate diet). However, the adequacy of consumption at the household level has little relation with chronic undernutrition, which has the highest rates in the provinces with a higher food consumption like, for example, Cabo Delgado and Nampula. It is important to mention that a higher food consumption may refer to a larger consumption of calories and not necessarily a diversified diet. More importantly, the household consumption does not necessarily reflect the consumption of children under 5 years. This is because inappropriate dietary practices and lack of knowledge from caregivers lead to inadequate child's diet, even when the rest of the family has an adequate diet.

About 70% of the Mozambican population lives in rural areas and agriculture is the main source of income[49]. Most of the agricultural production is achieved by families, and utilizes 97% of the 5 million hectares currently cultivated. In Mozambique, agriculture is still characterized by a poor use of improved technologies. Indeed, only 5% of the producers, of the 3.3 million existing agricultural operations in the country, use improved seeds and fertilizers. The use of animal traction is about 12%. With more investment in the agricultural sector, the perspectives for improving food production are quite promising.

Even if the perspectives to reduce food insecurity are good at the national level, the majority of the population continues to have a very low diversified diet. In spite of providing the necessary energy, the diet is poor in fats, proteins and micronutrients. It is estimated that still 35% of households are in a situation of chronic food insecurity, which means that a part of the population is very vulnerable to natural shocks[50]. Pockets of moderate food insecurity exist periodically in different parts of Mozambique with some areas periodically affected by floods and others by droughts. Therefore, about half a million inhabitants are affected by these natural disasters and need humanitarian aid.

Child caring practices seem to be another underlying cause that contributes to chronic undernutrition. Feeding practices of children during the first two years of life are still far from ideal. According to the MICS 2008, about two thirds of newborns were **breastfed** within the recommended period (in the first hour after birth) and about 90% were breastfed in the first day of life. However, only 37% benefited from exclusive breastfeeding during the first six months of life, as recommended by the WHO. The duration of breastfeeding reduced from a median of 22 months in 2003 to 18 months in 2008 (19 months rural areas and 18 in the urban areas), which is far below from the recommendation of 24 months or more. Regarding **complementary feeding**, the MICS results showed that 64% of children between 6-8 months had received at least two meals per day and only 37% of children between 9-11 months had received at least three meals per day. This is the minimum required daily frequency; however, the recommendations for an ideal scenario in Mozambique indicate that children from 6-9 months need at least three meals and two snacks during the day in addition to breastfeeding.

Only 47% of children, who had had diarrhea, had received oral rehydration therapy and had continued to eat normally. Hygiene during the preparation of complementary food is still suboptimal and it is necessary that this component of personal hygiene be reinforced in education.

Care for mothers is also below what is desired because more than half of all women get married before the age of 18 (with 60% in rural areas)[51]. Figures from 2003 DHS showed that about 40% of women started having children before the age of 19. Pregnancy in girls under 18 years of age is a major health risks for both mother and the child that is born[52]. In these cases, complications during delivery are likely to occur as well as a risk of premature birth. Babies born to mothers who are less than 18 years old are, on average, 200gr lighter at birth, since the mother's growth is prioritized over that of the foetus[53]. As a result of early pregnancy, this competition between the foetus' growth and the mother's growth is an immediate cause of chronic undernutrition. The fact that girls marry and have children before 18 years of age represents a violation of children's rights and of the Convention of Elimination of all forms of Discrimination Against Women. There is evidence that short birth intervals are associated with chronic undernutrition[54]. It is likely that early pregnancy and short intervals between pregnancies are a cause of chronic undernutrition in Mozambique.

Access to health and sanitation services has been improving, but it is important that emphasis be given to actions aimed at extending the coverage in the country. The coverage of health services increased from 45% in 2003 to 54% in 2007, but only 36% of the population have access to health care services less than 30 minutes away from their houses. According to figures from the MICS 2008, the percentage of births that is assisted by qualified health staff has increased, moving from 44% in 1993 to 48% in 1997 and 55% in 2008. However, access to water and sanitation continues to be a serious problem. Less than half (48%) of all households had **access to clean drinking water** in 2008, with only 34% of rural households compared to 77% of urban households. The major concern is that only 19% of households in the country have access to **safe sanitation**, with 34% of urban families compared to only 6% of rural families. The majority of the population still defecates in the open air.

It is fair to conclude about the underlying causes that although the food security situation has improved over the last ten years, the quality of the diet remains precarious. The care for mothers and children also remains inadequate, with early pregnancy, lack of exclusive breastfeeding in the first six months and inappropriate complementary feeding as the main problems. Early pregnancy causes competition between the mother's growth and the foetus' growth, resulting automatically in an immediate cause of undernutrition. Despite improved access to health services, access to clean water and sanitation is still worrisome.

2.1.3.3. THE BASIC CAUSES

Among the **basic causes,** poverty carries a large weight, in spite of the fact that it has been reduced considerably in recent years. The percentage of Mozambicans living below the poverty line was reduced from 69% between 1996/97 to 54% between 2002/03 and it is projected that it will be at 45% by years 2009/10. However, it is important to point out that, for several years, the minimum wage has not sufficed to allow purchase of the basic food basket. This factor alone makes access to food and a balanced diet difficult. Changes in the cost of the basic food basket are related to the variation in prices of some of the products included in the basket. The negative impact of these price variations inevitably leads to changes in food practices and ultimately in the consumption of food with a lower nutritional value.

The lack of access to education is another important factor that does not contribute to the reduction of chronic undernutrition in Mozambique. Education levels are still low despite significant improvements over the last two decades. Enrolment in elementary school reached 95.5% nationwide, a significant increase compared to that of year 2003 (69.4%). According to the most recent data, adult literacy increased from 46.4% in 2003 to 48.1% in 2005. When comparing literacy rates by gender, women's rate is 33.3% and men's rate is 66.7%. Cultural beliefs and traditions also play a role in the basic causes, with some possibly having positive contributions and others negative ones. Among the negative traditions, perhaps the most important for chronic undernutrition is early marriages. Although prohibited by law (Article 30 of the Family Law condemns marriage before 18 years of age), early marriages continue to be widespread in rural areas where girls are forced out of schools because of marriage. More than half of women are married before the age of 18, with 60% of them in rural areas[55]. Once they are married, their husbands usually do not allow them to go back to school. The early marriage rate is high. In 2004, 21% of girls had been married at the age of fifteen, causing an increased number of early pregnancies (24% of women between 15 and 19 years of age already have two children). Women from the latter group represent 13.4% of all pregnant women. Most of these pregnancies are unwanted[56].

Several studies carried out in Mozambique analyzed the determinants influencing the most chronic undernutrition. The major causes are related to the mother's education level and child caring practices; to socio-economic factors like the mother's employment; to the quality of water and sanitation; and to the quality of health services. A similar analysis was carried out with the MICS 2008 data. It was also noted that maternal education, the quality of water and sanitation and the duration of breastfeeding were the factors that had contributed to chronic undernutrition in children under five years. These studies with statistical associations do not prove causality, but these show evidence of a certain influence, as shown in Brazil. There, the prevalence of chronic undernutrition in children under five decreased from 37% in 1974 to

7% in 2006. Two thirds of the decline can be attributed to four factors: improved access to the continuum of care for maternal and child nutrition and health; improved access to education and information for girls and women; improved coverage of sanitation services and water supply; and improvements in household purchasing power[57].

In summary, we can conclude that, of the basic causes of chronic undernutrition, poverty, lack of education and gender problems are among the most important ones.

Resolving the immediate causes of chronic undernutrition in the entire population requires a large effort, but it can lead to relatively fast results. Addressing the basic and underlying causes is more sustainable, but it can take several decades before to see results. Thus, resolving the immediate and underlying causes for pregnant mothers and children under two years of age is of the utmost urgency. Not acting in the short term ends up costing more in the long run than the costs of implementing the necessary interventions. The ideal is to take both measures simultaneously, addressing both the immediate and the underlying causes concurrently.

III. CURRENT SITUATION AND INTERVENTION COVERAGE

This part was developed from a mapping of the interventions with impact in the reduction of chronic undernutrition in Mozambique. The activities (and their geographic coverage) that are being implemented by the different sectors in the area of nutrition and other related areas, including activities from national and international NGOs and multilateral organizations were identified. The collected information covers existing activities from January 2009 to May 2010.

3.1 INTERVENTIONS IN THE KEY SECTORS

3.1.1. HEALTH SECTOR

Coverage of the access to health services

A significant challenge for the reduction of chronic undernutrition in Mozambique is the poor access of the Mozambican population to the health services. As previously discussed, only 36% of the population have access to health care in a 30-minute radius from their homes. In some districts, each health centre desserves between 15,000 and 20,000 people. This happens more often in Nampula and Zambezia, where the majority of the districts have only 1 health centre per 10,000 to 15,000 inhabitants. In other districts, there is only 1 health centre for 20,000 inhabitants. Serious difficulties in access to health care are incurred in Tete, Cabo Delgado and Inhambane, where some districts have 1 health centre for about 5,000 to 10,000 inhabitants [see map 1].

Nutrition education

It is part of the health centres' protocol to provide nutrition education to pregnant and lactating women, including education about exclusive breastfeeding, complementary feeding, a balanced diet, along with good practices for personal and food hygiene. The promotion of exclusive breastfeeding during the first six months of life is a key intervention to reduce chronic undernutrition. In 2009, the Ministry of Health, in collaboration with partners, initiated the

implementation of a Communication and Social Mobilization Plan for the Promotion, Protection and Support to Breastfeeding in Mozambique.

The Ministry of Health and several NGOs provide activities related to nutrition education involving different models, based on the positive influence that mothers have on behaviour change in communities, depending on the location and organization. Those are called “mother groups” “lead mothers”, “support group”, “animators” or “model mothers”. The creation of these groups involves training mothers with children under 5 in basic nutrition principles (food security and nutrition education) and in good practices, so that they can later transmit their knowledge to other mothers in the community. There is evidence of impact of this activity in the reduction of the chronic undernutrition [See Good Practice 1]. Another activity that has a positive impact is the use of community theater. It has a direct influence on behaviour change in communities through communication of messages on good practices about hygiene, nutrition and sexual and reproductive health [See Good Practice 2].

Intervention coverage

Although no body of data exists to evaluate the impact of the activities in past years, the MICS 2008 shows that the percentage of children under 6 months of age who were exclusive breastfed increased from 30% in 2003 to 37% in 2008. The rates are the lowest in the provinces of Tete (24%), Cabo Delgado (18.2%) and Manica (34%) [See MAP 10].

Between 2007 and 2009, the MoH undertook several activities to promote the consumption of food with a high nutritional value. As shown in table 3 in the annex, the number of presentations and food preparation demonstrations increased in most of the provinces between 2007 and 2009. However, according to the MoH 2009 Annual Report, there were significant discrepancies between the provinces with regards to the number of food preparation demonstrations and presentations performed [See table 3].

Presence of organizations with nutrition education activities

The larger presence of organizations with nutrition education activities is found in the provinces of Nampula, Zambezia, Manica and Sofala, where many districts have between 3 and 4 organizations. In Maputo, Inhambane, Gaza and Tete, many districts have between 1 and 2 organizations developing this type of activities, and 3 districts in Gaza do not have any such activity. The most serious weakness of this activity is found in Niassa and Cabo Delgado where few districts implement this type of activities [See MAP 2].

Food and nutritional supplements

The MoH provides nutritional supplements for children identified with acute undernutrition through the Nutritional Rehabilitation Programme (PRN). Almost all districts use Ready-to-Use Terapeutic Food (called Plumpy Nut) as the therapeutic supplement for the treatment of severe acute malnutrition. The MoH, with the support of WFP and UNICEF, provides CSB as the food supplement for the treatment of moderate acute undernutrition. However, this food supplementation program only covers the provinces of Tete, Manica, Sofala, Gaza, Inhambane and Maputo. Comparing numbers between 2008 and 2009, there was an increase in number of screened children and therefore an increase in number of moderate acute undernutrition cases [See table 5]. In 2010, the MoH, WFP and UNICEF renewed the agreement to extend the

program to all provinces, raising the number of districts covered from 64 to 88. Other activities related to the PRN and supported by local NGOs, have shown evidence of a positive impact in this area. In the Community-based Management of Acute Malnutrition (CMAM) program in Nampula, health services make use of Community Health Workers (ACS) to assess acute undernutrition in children and pregnant and lactating mothers in communities and refer applicable cases to the health centres. Additionally, the ACS provides nutrition education and home visits. The results of this latter program show a reduction in child mortality [See Good Practice 3].

WFP also has a nutrition support program for pregnant and lactating women suffering from moderate undernutrition. This program supports around 8000 women per year.

Presence of organizations with activities related to food and nutritional supplements

The highest presence of organizations and partners supporting the government in the area of food and nutritional supplement is in Sofala with 3 to 4 organizations in each district, and Gaza and Inhambane with between 1 and 4 organizations in each district. In Manica, Maputo and Tete, many districts have 1 the 2 organizations, while in Nampula and Zambezia, there are only a few districts with activities related to food supplements. The major lack of implementation of these activities is found in Cabo Delgado and Niassa where none of the districts has food supplementation interventions [See MAP 3].

Supplementation with micronutrients and deworming

In the context of the prevention of micronutrient deficiencies, the MoH manages micronutrient supplementation programs and a deworming program, whose target groups are pregnant and lactating women and children under 5 years. The deworming program also includes children and adolescents who are dewormed in schools. To increase the coverage of these interventions and other child survival activities, the MoH initiated the National Child's Health Week (SNSC) in 2008, and in 2010, a maternal component was included. Through these weeks, the MoH has managed to reach acceptable coverage in terms of vitamin A supplementation and in the deworming of children under 5 years of age.

Table 6 in the annex shows that in 2009, the coverage of vitamin A for children aged 6-59 months was above 90% in all provinces. From 2008 to 2009, the coverage increased in the provinces of Inhambane, Gaza, Cabo Delgado and Maputo City, while in Niassa, Nampula and Sofala a reduction in the coverage was observed. The worst of that were in the provinces of Nampula and Sofala [See MAP 9].

Deworming reached 2,849,437 children between 12 and 59 months, out of a total of 2,976,954 elegible children, which indicates a coverage of 92% (MoH Annual Report 2009). The provinces of Manica, Inhambane and Zambézia showed a higher number of dewormed children, all with a coverage of 100%. As shown in table 6 in the annex, the number of dewormed children increased between 2008 and 2009 in the provinces Zambézia, Gaza, Inhambane and Maputo City, while there was a reduction in the provinces of Cabo Delgado, Niassa, Nampula, Tete, Sofala and Maputo. The most serious reductions were in Nampula (75.2%), Niassa (86.9%) and Tete (88.3%). The provincial reports of year 2009 indicate that this difference might have been by the stock of deworming medicines running out.

According to the same 2009 MoH provincial reports, deworming for pregnant women also had a low coverage in the provinces. Table 7 in the annex shows that the provinces of Zambézia and Manica had a coverage of just above 40%, while Niassa, Cabo Delgado, and Inhambane had a coverage of below 30% [See Table 7 in annex].

Presence of organizations with activities related to micronutrient deficiencies

The major presence of the organizations and partners that support the Government in the activities of micronutrient supplements and deworming are located in the provinces of Nampula and Zambézia with about 3 to 6 organizations per district. There is only a minor presence of organizations with these activities in Sofala, Manica, and Gaza (with 1 to 4 organizations per district).

3.1.2. EDUCATION SECTOR

Among existing programs that are oriented to school health, some may have an impact on the reduction of chronic undernutrition, with emphasis on: school feeding, school gardening, nutrition education and promotion of reproductive and sexual health.

School Feeding

The School Feeding Program is a program of the Ministry of Education (MINED) and it is being implemented with the support of WFP and JAM. The School Feeding Program contributes to the reduction of chronic undernutrition by providing a meal with nutritious food and covering the daily recommended needs. An objective is to ensure that girls do not leave school, thereby, preventing pregnancies and early marriages [See Good Practice 4]. The total coverage of the School Feeding Program is of 841 schools which include 421,034 students, corresponding to 10,72% of the total of students in the country [See MAP 4].

School feeding is being implemented in every province. In Gaza and Sofala, almost 90% of districts are covered by this activity. In Inhambane, Maputo, Niassa, Manica and Nampula, the program is being implemented in half of the districts, whereas the program is implemented in only very few districts in Tete and Cabo Delgado.

In 2009, MINED and WFP agreed upon a pilot transfer of accountability for food distribution to the Provincial Directorate of Education and Culture in Nampula and Niassa provinces. In 2010, the second stage of implementation was still ongoing.

Nutrition Education

According to school curriculum, teachers must teach elementary and secondary schools students about nutrition, foods with high nutritional value and personal and food hygiene. However, interviews with experienced MINED representatives revealed that many teachers do not address nutrition-related issues in a systematic manner, because nutrition is not a specific discipline; it must be addressed as a cross-cutting issue.

School Gardening

School gardening programs aim at teaching students how to make a garden to ensure a diversified diet. FAO is implementing a special project related to school gardening called “Celeiros da Vida”

or *Junior Farmer Field and Life Schools* (JFFLS). This project has a curriculum that lasts 11 months and conveys knowledge about good practices in agriculture, health, hygiene and nutrition. JFFLS is being implemented by FAO in collaboration with MINAG, MEC, MIMAS and JAM and covers all Manica districts and half of Sofala districts [See MAP 5].

Prevention of Early Pregnancy

Early pregnancy is a major cause of chronic undernutrition. Since 1999, the Geração Biz (Business Generation) Program (PGB) has been implemented and extended gradually to secondary schools in all provinces with the objective of promoting good sexual and reproductive health practices. Key components of PGB are peer education, condom distribution in counselling centres in secondary schools, along with the creation of youth-friendly health services (Serviços de Saúde Amigos de Adolescentes e Jovens - SAAJ). The basic principle of these services is to raise awareness of young people about salubrious sexual and reproductive health practices, thereby contributing to the prevention of early pregnancy and HIV. [See Good Practice 5].

3.1.3. SOCIAL SERVICES SECTOR

The Food Subsidy Program (Programa Subsídio de Alimentos - PSA) of the Ministry of Women and Social Action (MIMAS) distributes food to vulnerable people in all provinces. Target group are the elderly without the ability to work, chronically sick people and pregnant women with undernutrition. It is specifically through its support of pregnant women that the program can contribute to the reduction of chronic undernutrition.

Intervention coverage

In 2009, PSA reached 143,455 households, and a total of 287,454 individuals. As shown in table 10 in the annex, coverage is still very low across the country and it does not reflect inequalities between northern and southern regions, as far as chronic undernutrition is concerned.

The Direct Social Support Program (Programa de Apoio Social Directo - PASD) of MIMAS is another social support program that consists of cash transfer to the most vulnerable households and people in extreme poverty. The number of PASD beneficiaries increased from 7,173 in 2005 to 24,242 in 2009.

Presence of organizations with food subsidies activities

WFP is supporting the Government in providing food support to Orphans and Vulnerable Children (OVC) in the provinces of Tete, Manica, Sofala, Inhambane, Gaza and Maputo, having distributed food to 36,375 beneficiaries in the first trimester of 2010. Regarding home-based care (HBC), WFP is providing food and nutritional support, in partnership with local NGOs to chronically sick people as a consequence of HIV/AIDS. During the first trimester of 2010, WFP distributed food to 68,405 individuals.

The impact of these interventions is reflected in the improved diversified diet of the households benefiting from HBC and OVC programs. For the beneficiaries, food assistance is the most important source of income for the two regions, contributing for 31% in the Centre region and 25% in the South region.

3.1.4. AGRICULTURE SECTOR

Promotion of agricultural production of food of high nutritional value

In order to ensure food availability and access to households in Mozambique, the Ministry of Agriculture has been promoting increased production of nutritious foods through the implementation of several key national programs. These are aimed at diversifying food consumption, namely maize, rice, flour, cassava, peanuts, potatoes, soya, beans, poultry and fish. These programs are being implemented intensively and incrementally, through the use of improved production technologies such as animal traction, irrigation, fertilizers, certified seeds, agriculture extension and monitoring of animal health. With regards to the promotion of nutritious foods, MINAG is implementing the Rural Extension Program (Programa de Extenção Rural), whose objective is to educate small farmers across the country as to grow crops including those with high nutritional value.

Results of the sweet orange flesh potato (BDPA) production project implemented in Zambezia until 2005, with the participation of the Department of Nutrition at the Ministry of Health, World Vision, Helen Keller International and IIAM/MINAG indicated a need to continue promoting and expanding production of BDPA. Orange flesh sweet potato is seen as a key component to fight undernutrition because it is a good source of pro-vitamin A and energy. It also grows easily, is considered as a women-controlled crop, and is a classical crop for food security. The production of sweet potato is low-intensity labor in comparison to other staple crops and it can be grown during a long period of time without any significant loss in terms of income. In addition, many farmers already cultivate the sweet white flesh potato (41% of rural households). The key assumption is that adequate consumption of complementary food based on the use of BDPA among children above 6 months and sweet potato leaves and roots in adults will result in a significantly improved diversified diet.

Intervention coverage

As shown in table 11 in the annex, the rural extension program supports 378,000 small farmers across the country. This represents only 1 to 5% of total rural population. The highest coverage is in Niassa (4%) and the lowest coverage is in Nampula (1.4%), Cabo Delgado (1.4%) and Maputo City (1.3%) (Actividades de Extensão Agrária, MINAG, 2009).

Presence of organizations promoting agricultural production of nutritious food

Many organizations have activities related to the promotion of production of high nutritional value food. Some of these activities are related to promotion, capacity-building and creation of associations of small farmers for marketing and income-generating through the production of nutritious foods.

The highest presence of organizations promoting production of highly nutritious food is observed in Nampula, Inhambane, Gaza and Zambézia, where the majority of the districts has at least one organization that work with this activity. In the province of Sofala, half of the districts have this activity. In Maputo, Tete, Niassa, Cabo Delgado and Manica, this activity is non-existent [See MAP 7].

3.1.5. INDUSTRY AND COMMERCE SECTOR

In the sector of industry and commerce, contribution for the reduction of chronic undernutrition is achieved through food industries. In Mozambique, the only intervention in this area is the National Program for Salt Iodization (*Programa Nacional de Iodização do Sal*) to reduce iodine deficiency.

This program results from cooperation between the Ministry of Health and the Ministry of Industry and Commerce (MIC), the Associations of Salt Producers *(Associações de Produtores de Sal*), the civil society, UNICEF and Population Services International (PSI). According to MICS 2008, the use of iodized salt was only found in 58% of households, and only 25% of this salt was of sufficient quality in terms of iodization. Insufficient consumption of iodized salt is more widespread in the provinces of Nampula and Cabo Delgado, where only 30% of households use iodated salt (MICS 2008) [See MAP 8].

With regards to the promotion, protection and support of Exclusive Breastfeeding, in 2008, the Code of Marketing of Breast-Milk Substitutes was introduced. To ensure monitoring and implementation of the Code, in 2008-2009, the MoH trained about 90 monitors in all provinces, and also started training district monitors in the provinces of Niassa, Inhambane and Cabo Delgado.

3.1.6. PUBLIC WORKS AND HOUSING SECTOR

Improving access to clean water and sanitation and optimizing hygiene practices contribute to the reduction of chronic undernutrition by avoiding food contamination, increasing nutritional quality, and preventing infectious diseases.

In 2009, 1,112 boreholes were dug and 903 others were refitted thereby providing water for 1,069,000 people. In the same year, 16,406 latrines were built to serve 82,030 people (Annual Report of the Ministry of Public Works and Housing – MOHP de 2009). Apart from the interventions carried out to improve the infrastructure, actions to educate and mobilize communities towards adopting optimal hygiene practices were implemented. Several organizations implement such related projects in the communities. UNICEF, IRD, Africare and World Vision are organizations that mobilize and provide capacitation for community members and leaders. Their most significant challenge is in terms of supply and latrines to stop the practice of defecating in the open air. Some use methodologies that have proven most effective (Ver Good Practice 7]. These organizations, tasked with the role of collecting funds for building or refitting boreholes and buying water tank, support many communities in training, refitting, or strengthening water and sanitation committees.

Intervention coverage

Nationally, there was an increase in the coverage rate for access to water from 52% in 2008 to 54% in 2009 (Annual Report of MOPH 2009). Table 12 in the annex shows that the provinces of Zambézia, Nampula and Tete had the lowest coverage rate with 39.9%, 40.5% and 52.4% respectively. The provinces of Niassa (90.5%) and Maputo (80.4%) show the highest rates. MICS 2008 confirms these statistics which show conclusively that coverage is on the increase and that the percentage of people who use clean water for consumption increased from 36% in 2004 to 43% in 2008 nationally.

With regards to the access to latrines and sanitation, the national coverage increased from 38% in 2008 to 40% in 2009. In the same year, the provinces of Nampula, Zambézia and Sofala achieved the lowest coverage, while Manica, Maputo and Inhambane present the highest coverage, as shown in table 6 in the annex.

Despite the coverage levels shown above in the MOPH report, MICS 2008 indicates that, in some provinces, the percentage of the population that uses sanitation services to defecate is

extremely low, especially in the provinces of Cabo Delgado (5.6%), Zambézia (7.6%) and Tete (3.4%).

Presence of organizations promoting good hygiene practices and access to water and sanitation

The major presence of organizations that promote hygiene and access to clean water and sanitation are found in Zambézia, where the majority of districts have between 3 and 4 organizations implementing this type of activity. A moderate presence of organizations are found in the provinces of Nampula and Sofala, where a little less than half the districts have 3 and 4 organizations. The lowest presence is found in Inhambane, Cabo Delgado, Gaza and Niassa, where many districts have none.

Generally, the weakest presence and coverage of the activities that contribute to reduce chronic undernutrition are located in the north of the country, especially in Cabo Delgado, Tete, Nampula and Manica. Intervention coverage in the provinces does not reflect the inequalities in prevalence of chronic undernutrition in the country. As a result, the existing interventions do not contribute to resolve this problem in a systematic manner.

In front of what was exposed, it is suggested that the provinces to be prioritized in the implementation plan of the activities and interventions to reduce chronic undernutrition should be: Cabo Delgado, Nampula, Tete, Zambézia and Manica.

3.2. MANAGEMENT

3.2.1. PLANNING AND FUNDING MECHANISMS

The existence of clearly defined strategies, action plans and duly translated implementation protocols for all players at all levels are absolutely fundamental to the effort for reducing chronic undernutrition. The action plans need to be readily accessible and comprehensible, so that everyone can clearly understand their role and the potential impact of their work.
In various sectors, several strategic action plans and implementation protocols exist. One of the main existing plans is the Action Plan on Food and Nutrition Security (PASAN), connected to ESAN II. In the health sector, strategic plans follow the national health policy. The action plans in the area of nutrition are primarily driven by the 2004 Nutritional Development Strategy.

As indicated in the report's analysis of the situation of commitment and capacity in the area of nutrition in the country, there is an absence of a limited availability of and/or access to policy or strategy documents for the national, provincial and district levels. Among the respondents representing the three regions of the country (South, Central and North represented by Gaza, Manica and Nampula respectively) it was noted that, of the various sectors at the district level, only the provincial director of Agriculture of the province of Gaza identified the Action Plan on Food and Nutrition Security (PASAN), as the policy that supports actions in nutrition. The lack of knowledge about existing policies in the health sector, particularly in the area of nutrition, makes the success of its actions difficult. On the other hand, the updating of policies, training manuals, standards and protocols is a time-consuming process, thus delaying its implementation.

There is a lack of knowledge at all levels about the budget allocated to actions in nutrition and little is known about the origin of funds (external and internal sources) allocated specifically to

the area of nutrition, either from the Government or the partners. This lack of knowledge makes the planning of interventions in nutrition most challenging. The absence of clearly budgeted plans makes it difficult to obtain financial support from partners, since activities in nutrition are often integrated into other programs. It should be noted that, the resources allocated directly or indirectly for actions in the area of nutrition have grown substantially, and this is mainly due to the HIV/AIDS pandemic. The resources however have not been sufficient to meet the demand of existing activities. With the agriculture sector, specific funds are allocated for activities in nutrition. Generally, there is a shortage of financial resources for activities in nutrition training. This plan will address the budget for the interventions of the various sectors.

3.2.2. COORDINATION MECHANISMS

The existence of a Technical Secretariat for Food and Nutrition Security (SETSAN), created in 1998, as a multisectoral technical body to coordinate actions in the area of food and nutrition security at central level and with focal points at the provincial level, is a good opportunity for coordination. SETSAN also acts as secretariat for the Economic Council and the provincial governments in relation to food and nutrition security. Although SETSAN should be the multisectoral coordination body for food and nutrition security actions and policies in the country, it was originally created to be a body with high visibility and relevance. It does not have, however, sufficient autonomy to confront the challenges of multisectoral coordination, nor to implement, evaluate and monitor the PASAN. This was reflected in interviews conducted at district and provincial levels. They indicated that SETSAN has faced many challenges, such as a lack of budget to ensure an optimal multisectoral coordination of the actions in nutrition. It also lack trained staff to coordinate the activities related to food and nutrition security. Most sectors of the Government, at all levels, do not recognize the importance of integration and multisectorality for the inclusion of nutrition as a key issue in the different sectors. According to them, the role of SETSAN as a coordination body is still weak, so is the integration and connection between food security, health and nutrition at provincial, district and community levels.

During the field interviews, it was noted that provincial health authorities have difficulties not only to coordinate purely nutritional activities among the various institutions and organisations or to incorporate them into other activities such as food security, but also to include them into the programs of other government sectors, such as the education programs and the women and social services programs. The translation of strategic documents into operational plans with defined concrete actions to achieve objectives, and clear goals for implementers is very weak. Generally, the nutrition component is weakly reflected in district and sectoral plans. There is a clear lack of sharing of policies and strategies between sectors, which results in weak coordination and integration.

3.2.3. HUMAN RESOURCES AND TECHNICAL SKILLS

The lack of human resources to implement nutrition programs in Mozambique constitutes one of the main constraints to success in nutrition interventions. The report of the landscape analysis that was conducted to understand how to strengthen commitment and capacity of stakeholder at all levels highlighted a shortage of staff trained in nutrition at different government levels to ensure coordination, planning, implementation, supervision, monitoring, and evaluation of programs[58]. This situation in nutrition is a worldwide problem, therefore, there is no specific incentive for increasing the number of trained people in this area[59]. In 2002, a proposal was to

have five nutrition Master's degree holders at the national level to develop the activities in management, planning, advocacy, training, monitoring and evaluation. At the same time, there was another proposal to have 2 people trained in nutrition and public health in each province to promote advocacy, monitoring and training of staff at the district level.

The Nutritional Development Plan explains that at the end of December 2003, 32 people had been employed in the area of Nutrition in the National Health System: 2 Nutritionists (of high level), 2 Master's degree Biologists with limited training in Nutrition (all of them assigned to the Department of Nutrition at MoH), 26 Technicians in Nutrition (at intermediate level), and 2 Nutrition Agents[60]. The Plan estimates that 274 Technicians in Dietetics and Nutrition will be required all over the country. To maintain a satisfactory pool of qualified individuals, 270 Technicians should be trained by 2014. From year 2003 to 2009, the number of Technicians was increased to a total of 90. This is a very low rate of growth for a six-year period. Since year 2005,when the course of Nutrition Agents (working at the community level) ended, no more additional courses to trained Nutrition Agents or Technicians were given. The current qualified Nutritionists in the National Health System were trained abroad.

The country has employed one Technician in Nutrition in each Central Hospital. This number does not meet the needs according to the Nutritional Development Plan. The ideal complement would be 3 Technicians in Nutrition and Dietetics in each Central Hospital. Not all Provincial Directorate of Health currently employ a minimum of one Technician in Nutrition – a long way from the three to five expected by the end of year 2009. At the Central Level, four Technicians in Nutrition and Dietetics are employed; this represents 80% of the expected goal. It is important to highlight that this analysis does not include the need for Technicians in hospital for feeding services. As for the Rural and General Hospitals, according to the strategy, the average should be one Technician per hospital. Actually, the country only has 18 Technicians in Rural and General Hospitals.

At present, the revision of the curriculum for the course of Technicians in nutrition is underway to improve the skills of these professionals in responding to the main problems in the country. In addition, a higher-level course in nutrition is being offered at University Lúrio in Nampula. In 2009, a degree course in nutrition was launched at ISCSM (Higher Institute of Health Sciences in Maputo). Although a step in the right direction, it is worrisome that the 2008-2015 National Plan for the Development of Human Resources for Health does not mention a lack of professionals in the field of nutrition.

The report of the landscape analysis revealed that the majority of the staff employed in the health system has an erroneous perception about the problem of chronic undernutrition. This suggests that there is a tremendous need for training of technical personnel, not only in the health sector, but also in education and agriculture. Most of the people working in the field of food security also have an erroneous perception on this topic. They do not understand that nutrition is not part of food security, but rather that food security is only a component of nutrition. The preventive actions of nutrition and the importance of its integration in the maternal and child care, with a life cycle perspective, is not understood by everyone. Only a few are aware of the importance of these actions.

Basic Health Agents (APEs)

The National Program of APEs is a program implemented at the community level. It has been developed to improve the population's access to basic health services. Several tasks of the APE can contribute to reduce chronic undernutrition, namely: nutrition education; community education on the importance of personal and community hygiene along with the removal of community garbage, including that of domestic animals; community education regarding the protection of water sources and the quality control of drinking water consumed by households; construction and promotion of adequate use of latrines; population's education on the importance of hand-washing after using the latrine, and before preparing food, eating meals and feeding children; diffusion of key messages on the prevention and control of malaria, tuberculosis, leprosy, diarrhoeic diseases, HIV infection and other sexually transmitted diseases; education of community groups on optimal breastfeeding and weaning practices; parents' education on the importance of good nutrition and on birth spacing for children's growth and healthy development, emphasizing the importance of adopting methods of family planning; parents' counselling to take their children to health units for regular growth monitoring.

The MoH believes that a successful implementation of the revitalized program of APEs could allow for the extension of up to 20% of the present coverage of health care provided to the Mozambican population by the National Health System.

CHAPTER 2

I. MULTISECTORAL ACTION PLAN FOR THE REDUCTION OF CHRONIC UNDERNUTRITION

The general objective, goals, strategic objectives and expected outcomes of the plan were designed taking into account the landscape analysis. Gaps were identified and priorities defined, in accordance with the policies, strategies and government plans (from Health, Education, Agriculture, Woman and Social Services, Public Works and Housing, and Industry and Trade sectors). In the Government's 2010-2014 five-year Program, the proposal of the development of a " Multi-sectorial Action Plan for the Reduction of Chronic Undernutrition " is included in the Health sector as a priority action for the maternal and child health area, while Nutrition and Food Security is considered a "Transversal Topic"

The present plan also takes into account the most recent recommendations at the international level on how to accelerate the reduction of infant and maternal undernutrition. These are contained in the strategic document of the World Bank "Repositioning Nutrition as Central to Development" published in 2006[61] and other documents[62] based on the "Lancet Nutrition Series" (LNS)[63] published in 2008. If the package of Essential Nutritional Interventions (ENI) of LNS were implemented effectively and on a large scale, for the period from conception to age 2 of the child, infant mortality would be reduced in the short run by about 25%. Maternal mortality would also be reduced by 20% along with chronic undernutrition in children by 30%. The international recommendation suggests that the ENI package should be adapted to the local conditions and incorporated into the national plans of poverty reduction, through different sectors. Efforts should be directed to strengthen food security, to set up social protection networks (including conditional cash transfers). Additional efforts should aim to strengthen health services, especially those that seek to ensure continuous health care for the mother, newborn and child, through community-based activities. Tasks that seek reducing early pregnancies are an additional aspect added to the ENI package for chronic undernutrition. There is no solid scientific evidence of double-blinded studies that demonstrate that a reduction in chronic undernutrition can be achieved through decreasing early pregnancies. However, common sense suggests that early pregnancies play an important role in the causality of chronic undernutrition in Mozambique. In addition, the ENI package for Mozambique contains activities related to the production of foods with high nutritional value and activities for the promotion of safe sanitation. This package will be explained in details in annex 1.

To a large extent, the success of this Multisectorial Action Plan for the Reduction of Chronic Undernutrition depends on other plans, that will be implemented at the national level. Examples of those important plans are the Plan to fight HIV/AIDS and the Malaria Plan, which contain ENI package interventions for undernutrition, and other sectorial plans, such as the Agriculture, Education and Social Services ones. However, if the interventions included in these different plans are not properly coordinated and implemented, the impact of the Multisectorial Action Plan might be undermined. It is also important to highlight that the Multisectoral Action Plan does not include the activities related to the treatment of acute undernutrition, since these are included in the Integrated Plan to Achieve MDGs 4 and 5 together with other ENI package activities[64] (more specifically in the Package E (page 52), for example, the promotion of maternal breastfeeding

and the supply of iron and folic acid supplements for pregnant women). However, the present plan recommends a different way of implementing the interventions, using the delivery of interventions through community-based activities. This has implications for the Strategic Objective 3 of the Integrated Plan to Achieve MDGs 4 and 5, which deals with strengthening communities' capacity to improve health of various target groups: maternal, neonatal, infant, school-age and adolescent populations.

The present plan is not conclusive and fully comprehensive. Revisions will be done based on new scientific findings and lessons learned from the field, especially for activities that are new in the country.

1.1. GENERAL OBJECTIVE

To accelerate the reduction of chronic undernutrition in children under 5 years of age from 44% in 2008 to 30% in 2015 and 20% in 2020[65], contributing to the reduction of infant morbidity-mortality and ensuring the development of a healthy and active society.

The implementation of the present plan will continue towards contribute towards the attainment of the MDGs 1, 2, 3, 4, 5 and 6 and for the progressive attainment of economic, social and cultural human rights, especially the right to food and health.

1.2. GOALS FOR EACH TARGET GROUP

The target groups include adolescent girls (10-19), women of reproductive age before and during pregnancy and lactation, and children in the first two years of life.

These groups should be prioritized as they represent the "window of opportunity ", where chronic undernutrition develops and can be reversed.

The plan specifically selected these age groups for it intends to give priority to the immediate causes of chronic undernutrition. This is the only way to obtain a rapid response compared to a response taking longer as when intervening on the underlying causes. Moreover, the Multisectoral Action Plan assumes that other strategies addressing underlying and basic causes of chronic undernutrition at family, community and social levels are being implemented.

Adolescents

- Reduce anaemia rates in adolescents in and out of school from (estimated) 40% in 2010 to 20% in 2015 and 10% in 2020.

Pregnant and nursing women

- Reduce rates of anaemia during pregnancy from 53% in 2002 to 30% in 2015 and 15% in 2020.
- 30% increase in the number of women who gain 5kg during pregnancy in 2015 and 2020 (baseline to be assessed).
- Reduce iodine deficiency in pregnant women from 68% in 2004 to 35% in 2015 and 15% in 2020.

- Increase coverage rates of preventive postpartum administration of vitamin A from 60% in 2010 to 70% in 2015 and 90% in 2020.

Women of Reproductive Age

- Reduce rates of anaemia in women of reproductive age from 56% in 2010 to 30% in 2015 and 15% in 2020.

Children under 5 years of age, with emphasis on children under 2 years of age[66]

- Reduce Low Birth Weight from 15% in 2008 (MICS) to 10% in 2015 and 5% in 2020.
- Reduce the prevalence of chronic undernutrition in children under two years from 37.4% in 2008 (MICS) to 27% in 2015 and 17% in 2020.
- Increase the rates of exclusive breastfeeding in infants under six months from 37% in 2008 (MICS) to 60% in 2015 and 70% in 2020.
- Increase the rate of children aged 9-11 months who received at least three meals of complementary food during the day, from 37% in 2008 (MICS) to 52% in 2015 and 67% in 2010.
- Reduce the prevalence of anaemia in children from 74% in 2002 to 30% in 2015 and 15% in 2020.

1.3. STRATEGIC OBJECTIVES, EXPECTED RESULTS AND MAIN INTERVENTIONS

1.3.1. STRATEGIC OBJECTIVES AND EXPECTED RESULTS

STRATEGIC OBJECTIVE 1: To strengthen activities with impact on the nutritional status of adolescents.

Result 1.1.Controlled anaemia in adolescents (10-19 years) within and out of schools;
Result 1.2. Reduced early pregnancy in adolescents (10-19 years);
Result 1.3.Strenghtened nutrition education in different education levels as part of school curriculum, includingliteracy curricula.

STRATEGIC OBJECTIVE 2: To strengthen interventions with impact on the health and nutrition of women of reproductive age before and during pregnancy and lactation.

Result 2.1. Reduced micronutrient deficiencies and anaemia before and during pregnancy and lactation;
Result 2.2. Controlled infections before and during pregnancy and lactation;
Result 2.3. Increased weight gain during pregnancy.

STRATEGIC OBJECTIVE 3: To strengthen nutrition activities for children in the first two years.

Result 3.1. Exclusively breastfed children in the first six months of life;
Result 3.2. Receipt of adequate complementary feeding for all children from 6 to 24 months;
Result 3.3. Reduced micronutrient deficiencies and anaemia in all children from 6 to 24 months of age.

STRATEGIC OBJECTIVE 4: To strengthen household-oriented activities to improve access and utilization of foods with a high nutritional value.

Result 4.1. Foods with a high nutritinal value produced locally and utilized by the poorest families;

Result 4.2.Strengthened capacity of households vulnerable to Food and Nutritional Insecurity for the adequate processing and storage of foods;
Result 4.3. Households vulnerable to Food and Nutrition Insecurity with access to support and social protection services to ensure sufficient and diversified foodsforpregnant and nursing mothers, adolescents and children between 6-24 months of age;
Result 4.4. Increased supply and consumption of fortified foodsin the communities, especially iodized salt;
Result 4.5. Ensured basic sanitation for the poorest households with adolescent girls, pregnant and nursing mothers and children under 2 years of age.

STRATEGIC OBJECTIVE 5:To strengthen the Human Resources capacity in the area of nutrition.
Result 5.1.Ensured optimal capacity of human resources responsible for nutrition at national, provincial and district levels;
Result 5.2. Ensured optimal capacity of professionals in the health, food security and education sectorson adequate food and nutrition.

STRATEGIC OBJECTIVE 6: To strengthen the national capacity for advocacy, coordination, management and progressive implementation of the Multisectoral Action Plan for the Reduction of Chronic Undernutrition.
Result 6.1. A multisectoral coordination groupestablished at the national level;
Result 6.2. An executive multisectoral group created to manage the implementation of the plan at the national level;
Result 6.3. An executive multisectoral group created to manage the monitoring and evaluation activities of the plan at the national level;
Result 6.4. An executive multisectoral group created to manage the advocacy and social mobilization activities for the reduction of chronic undernutrition at the national level;
Result 6.5. An advisory multisectoral coordination group capable of coordinating the plan's implementation and of advocating for the reduction of chronic undernutrition is established at the provincial and district levels;
Result 6.6. An executive group is created at the provincial and district levels and capable of managing the implementation of the plan and undertaking advocacy and social mobilization for the reduction of chronic undernutrition.

STRATEGIC OBJECTIVE 7: To strengthen the food and nutrition surveillance system.
Result 7.1. Adequate management of the Food and Nutrition Security activities at different levels (national, provincial and district);
Result 7.2. Improved and timely availability of disaggregated information on Food and Nutrition Security in the country.

II. ACTIVITY PLAN

STRATEGIC OBJECTIVE 1: To strengthen activities with impact on the nutritional status of adolescent (10-19 years old).

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	RESPONSIBLE INSTITUTIONS	INPUTS
Result 1.1. Controlled anaemia in adolescents (10-19 years) within and out of schools				
Adolescent girls supplemented with folic acid and iron	Carry out supervision of supplementation of adolescent girls with iron and folic acid during the school year	% of adolescent girls supplemented in schools % of students dewormed in schools % of students with knowledge on anaemia and nutrition	MOH MEC	Availability of folic acid/iron Availability of anti-helmintics Trained teachers on nutrition and anaemia IEC material available Health professionals available for technical support
Adolescents periodically dewormed	Carry out supervised deworming of adolescents every six months		MOH	
Raise awareness on anaemia in adolescents	Awareness raised in students on the dangers of anaemia, its causes, relation to chronic undernutrition, maternal mortality and cognitive function		MEC	
Adolescent boys and girls in and out of schools treated periodically	Train adolescents in schools to help identify adolescents (out of school) in their communities and carry out peer education and to function as link between health services and the community	% of adolescents trained % of adolescents trained to carry out peer community mobilization	MEC MOH MJD	Availability of MOH staff and materials for out-of-school social mobilization

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	RESPONSIBLE INSTITUTIONS	INPUTS
	Provide supplements, deworm and raise awareness in out-of-school adolescents through health centres, SAAJs and mobile brigades			
Result 1.2. Reduced early pregnancy among adolescents (10-19 years old)				
Use of any pregnancy prevention method by adolescent girls (10-19 years old)	Provide counselling (including on the risks of early pregnancy) and contraceptive methods to adolescents through Health Centres, SAAJs and APEs	% of adolescent boys counselled and using any contraceptive method % of adolescent girls counselled and using any contraceptive method % of adolescent girls with early pregnancy and who were counselled	MOH	Contraceptive methods available All APEs and health providers trained on contraceptive methods Adolescents use health centres and SAAJs regularly
Early marriages among adolescent girls reduced	Education campaigns for the general public (Women's day, Mother's day, etc.) to raise public awareness on the negative implications of early marriages Mobilize local leadership through advocacy sessions during district and provincial assemblies so that they support raising people's awareness on the problem of early marriages	% of campaigns carried out % of adolescent girls <18 years old married	MIMAS MJD	Political commitment to deal with these violations of the conventions (CEDAW and CRC)

Result 1.3. Strengthened nutrition education in different education levels as part of the curriculum, including literacy curricula				
Adolescents trained on nutrition	Include the topics of health and nutrition education in school curricula Develop materials for teachers and students Train trainers and teachers via training institutions	Education materials developed and made available in the health centres % of trained teachers % of adolescents who understand nutrition-related issues	MINED MINAG MOH	Possibility to change education curricula Capacity to train trainers in nutrition
Schools implement nutrition education encouraging the establishment of school gardens	Adolescents trained to grow and take care of part of a school garden during several weeks Adolescents trained on the nutritional value of vegetables and their importance, especially for pregnant and lactating women, and for the prevention of chronic undernutrition	% of schools with gardens % schools using products from their gardens in school meals		Teachers trained in the development of school gardens and the nutritional value of foods Ensure that the conditions for food preparation of students' meals are available in schools

STRATEGIC OBJECTIVE 2: To strengthen interventions with impact on the health and nutrition of women of reproductive age before and during pregnancy and lactation.

KEY OUTPUTS	INTERVENTION /ACTIVITY	INDICATORS	RESPONSIBLE INSTITUTIONS	INPUTS
Result 2.1. Reduced micronutrient deficiencies and anaemia before and during pregnancy and lactation				
Every woman takes a minimum of 180 capsules of multimicronutrients during pregnancy and 90 capsules after delivery	Supplement pregnant women with multimicronutrient capsules (180) and post-pregnancy (90) through health services Active search in communities to identify women at the beginning of pregnancy and refer them for prenatal care Weekly delivery of multimicronutrient capsules to pregnant women by APEs Raise pregnant women's awareness through APEs to take of multimicronutrient capsules on a regular basis	% of pregnant women receiving multimicronutrient capsules during pregnancy % of pregnant women taking multimicronutrient capsules during pregnancy % of pregnant women with anaemia Haemoglobin (Hg) in pregnant women receiving ante-natal control	MOH	Equipment to measure Hg in all Health Centres All APEs trained in anaemia control All nurses trained on the dangers of anaemia and how to control it

All post-partum women take one vitamin A capsule	Undertake Vitamin A supplementation for post-partum women, including women who had a home or institutional delivery	% of post-partum women receiving vitamin A supplement	MOH	All nurses trained on the importance of vitamin A supplementation to women
Birth spacing is > 2 years	Provide counselling and contraceptive methods in health units for control of birth spacing, during 2 years after the first delivery	% of women who did not get pregnant during the 2 years following the first delivery Haemoglobin in non-pregnant women of reproductive age	MOH	Health staff trained in counselling on birth spacing The couple agrees and decides to increase the interval between one pregnancy and the other
Result 2.2. Controlled infections before and during pregnancy and lactation				
All women take multimicronutrient supplements and take necessary measures to control infections that cause anaemia	Deworm pregnant women in health units and through APEs Provide Intermittent Presumptive Treatment (IPT) of malaria during pregnancy Distribute mosquito nets treated with long-lasting insecticides and promote their use	% of pregnant women dewormed % of pregnant women attending prenatal care % of pregnant women in antenatal care with infections (STI, intestinal parasites, HIV) receiving treatment	MOH	Health staff trained to diagnose and treat infections in pregnant women Health staff and APEs trained to deworm pregnant women

	Treat HIV/AIDS women with antiretroviral therapy (ART)	% of pregnant women in antenatal care who receive IPT for Malaria % of pregnant women using mosquito nets treated with long-lasting insecticides		
	Treat sexually transmitted infections (STI), when necessary			
Result 2.3. Increased weight gain during pregnancy				
Pregnant women properly counselled about attending antinatal care and about supplementation if needed	Control weight gain during pregnancy in antenatal care through the recording of weight gain in a form (antenatal form) and counsel on adequate weight gain	% of staff trained to control and provide counselling on weight gain for pregnant women % of health centers providing control of weight gain for pregnant women	MOH	Health centres equipped and trained to promote weight gain during pregnancy (have scales and cards)
	Provide food supplement to all pregnant women for 6 months in selected districts	% of pregnant women receiving food supplement in selected districts	MOH MIMAS	Mechanism to provide food supplement put in place

STRATEGIC OBJECTIVE 3: To strengthen nutrition activities for children in the first two years of life.

KEY OUTPUTS	INTERVENTION/ACTIVITIES	RESPONSIBLE INSTITUTIONS	INDICATORS	INPUTS
Result 3.1. Exclusive breastfed children in the first six months of life				
Health centres and communities awared, equipped and capacitated to promote and support exclusive breastfeeding during the first six months after birth	Train midwifes including traditional midwifes to support exclusive breastfeeding during the first six months after birth	MOH	% of midwifes trained on exclusive breastfeeding	Human resources trained in supporting exclusive breastfeeding Courses in place on breastfeeding for other health staff Trainers in place to train mothers' groups, APEs and community leaders
	Distribute materials for information, education and communication on the importance of exclusive breastfeeding for the first six months		% of midwifes trained to provide adequate support to ensure that mothers exclusive breastfeed their infants	
	APEs support mothers to ensure exclusive breastfeeding of the newborn		% of community leaders trained on exclusive breastfeeding	
	Create community mothers' groups to support mothers with children under 6 months to ensure exclusive breastfeeding in first six months after birth		% of community leaders that mobilize and support mothers to ensure exclusive breastfeeding % of supported mothers % of children under 6 months benefiting from exclusive breastfeeding	
Labels of follow-up formulas, pacifiers, and feeding-bottles sold within the country are in compliance with the Code of Marketing of Breast-milk Substitutes Absence of promotion of infant formula materials in health	Undertake systematic and regular monitoring of the Code of Marketing of Breast-milk Substitutes	MOH MIC Civil Society	% of violations of the Code documented	Punishment to violators of the Code NGOs and other civil society members monitor the Code under government supervision
	Ensure that fines are charged to violators of the Code		% of violations of the Code penalized	

units and the overall society				
Result 3.2. Receipt of adequate complementary feeding for all children from 6 to 24 months				
All children aged 6 to 24 months are growing optimally according to growth charts	Strengthening of nutrition counselling capacity in child health services, including preparation of complementary food using local foods Provide quaterly fortified nutritive supplements to all children between 6-59 months of age Provide biannually vitamin A supplements to all children between 6-59 months of age in health services through APEs and mobile brigades Deworm annually all children between 11-59 months in health services through APEs and mobile brigades	MOH MIMAS	% of children between 6-24 months with insufficient growth or below the red line in the growth charts % of children with stunting % of children with wasting % of children aged between 6-24 months who received nutritional supplementation % of children aged 6-59 months who received 2 doses of vitamin A % of children aged 12-59 months dewormed	Health units equipped and enabled to promote adequate complementary feeding of children 6 to 24 months Set up of mechanisms to provide nutrition supplementation to children

STRATEGIC OBJECTIVE 4: To strengthen household-oriented activities to improve access and utilization of foods with a high nutritional value.

KEY OUTPUTS	INTERVENTION/ACTIVITY	RESPONSIBLE INSTITUTIONS	INDICATORS	INPUTS
Result 4.1. Foods with a high nutritional value produced locally and utilized by the poorest families				
Increase in production and consumption of local nutritious foods	Carry out research on the nutritional value of agriculture products (including wild foods) and promotion of foods with high nutritional value Promote the production of foods with a high nutritional value through the agriculture extension system Promote nutrition education and food preparation demonstrations (including food processing) as part of the agriculture extension system	MINAG MOH	Number of foods with high nutritional value identified % of households utilizing foods identified with a high nutritional value on a regular basis % of communities benefiting from nutrition education and demonstrations of food preparation % of households participating in training activities and changing their food habits	The agriculture extension system has the capacity to carry out more activities Existence of training materials and human resources with the capacity to train extensionists
Result 4.2: Strengthened capacity of households vulnerable to Food and Nutrition Insecurity for the appropriate processing and storage of foods.				
Households vulnerable to nutrition and food insecurity trained to improve food processing, storage and utilization	Build the capacity of households' members on improved practices of food processing and storage, including hygiene and food security	MOH MINAG	% of capacity building courses undertaken % of households vulnerable to nutrition and food insecurity that	The agriculture extension systms has the capacity to carry out more activities

	Improved food storage conditions		attended courses % of households vulnerable to nutrition and food insecurity that attended courses and improved food processing and conservation	Existence of training materials and human resources with the capacity to train extensionists
Result 4.3. Households vulnerable to Food and Nutrition Insecurity with access to support social protection services to ensure sufficient and diversified foods for pregnant, lactating women, adolescents and children between 6-24 months of age				
Improved food and nutrition security of the most vulnerable households	Provide income transfer (cash) to the poorest households with adolescents, children or pregnant and lactating women	MIMAS	% of households that benefited from income transfer % of female adolescents vulnerable to food and nutrition insecurity who consumed meat during pregnancy and lactation on a regular basis	Financial resources available
	Provide financial support for small animal breeding to low income households with female adolescents in order to increase spacing between pregnancies and ensure that adolescents do not get pregnant during the adolescence period			
	Provide subsidies necessary for animal breeding (cages, eggs, hens, chick feed, among others) to adolescents with children			
	Provide technical assistance for animal breeding			

Result 4.4. Increased supply and consumption of fortified foods in the communities, especially iodized salt				
Community mobilized to consume iodized salt regularly	Test home salt by APEs for pregnant and lactating women to check whether salt is iodized Test salt consumed by students in schools Advocate with community leaders for them to support the promotion of iodized salt in the communities	MOH MEC	% of households consuming iodized salt	APEs available for testing and promoting iodized salt Salt testing *kits* available Teachers trained in the importance of iodized salt
Increase of the availability of good quality iodized salt in the market	Increase salt regulation in the market and industries, including penalties in case of infringements Support to producers to ensure salt is iodized	MOH MIC	% of adequate iodized salt available in the market (formal and informal)	Supervision of salt in the market and mechanisms to punish infringers
Availability of fortified foods with essential micronutrients in the market	Create a technical group and a National Fortification Committee to coordinate and develop strategic documents, select foods to be fortified and micronutrients to be added, and develop norms and standards for fortification Support millers and other selected food producers Establish regulation methods for food fortification processes in Mozambique	MIC MOH	Regulation and standards on food fortification developed % of processing Industries/Companies that fortified selected foods and comply with the regulation and standards developed	Political commitment Technical capacity to elaborate regulation Technical capacity to support industries in the food fortification process
Result 4.5. Ensured basic sanitation for poorest households with adolescent girls, pregnant and nursing mothers, and children under 2 years				
Increase use of latrines and hand-washing after their utilization by female adolescents, and pregnant and lactating women	Community mobilization for construction of latrine and their adequate utilization Promotion of good hygiene practices through lectures and theatres on personal hygiene	MOPH MOH	% of households with latrines % of households that have latrines and wash hands after their use	Existence of financial resources to support communities in latrine construction

STRATEGIC OBJECTIVE 5: To strengthen the Human Resources capacity in the area of nutrition.

KEY OUTPUTS	INTERVENTION/ACTIVITY	RESPONSIBLE INSTITUTIONS	INDICATORS	INPUTS
Result 5.1. Ensured optimal capacity of human resources responsible for nutrition at national, provincial and district levels				
Training materials and capacity methods developed Nutrition staff with the ability to adequately manage nutrition activities	Review Terms of Reference of the stakeholders responsible for nutrition in each sector at national, provincial and district levels	SETSAN MOH MEC	Training materials developed Capacity building methods developed Capacity building courses developed	Full time human resources with the capacity to develop indicated activities
	Design adequate curricula to train nutrition staff at national, provincial and district levels			
	Develop training materials and capacity building methods for national, provincial and district staff			
	Identify and contract teachers to train in capacity building courses			
	Carry out capacity building courses at every level			
Result 5.2. Ensured optimal capacity of professionals in the health, food security and education sectors on food and nutrition				
Training materials and capacity building methods developed Staff from the sectors of health, food security and education enabled to carry out counselling and nutrition activities	Develop training materials and capacity building methods in nutrition services for health, food security and education staff at provincial and district levels	SETSAN MOH MEC MINAG/MIC	Training materials developed Capacity building methods developed % of capacity building courses performed % of health, food security and education staff trained	Existence of full time human resources with the capacity to develop indicated activities Existence of trainers to train nurses and midwives Sufficient training materials available
	Design curricula for on-the-job training for health, food security and education sectors staff			
	Provide on-the-job training courses on nutrition to health, food security and education sectors staff			
	Carry out on-the-job capacity building training for nurses and midwifes in Health Units			

STRATEGIC OBJECTIVE 6: To strengthen the national capacity for advocacy, coordination, management and progressive implementation of the Multisectoral Action Plan for the Reduction of Chronic Undernutrition.

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	INPUTS
Result 6.1. A multisectorial coordination group established at the national level			
National coordination group created	Create TORs for a national Multisectorial advisory committee to manage the implementation of the plan	Coordination group created and functional	Political commitment in place
	Submit TORs for the composition of the group with defined roles and powers for approval by Decree		
	Ensure funding for the group		
Result 6.2. An executive multisectorial group created to manage the implementation of the plan at the national level			
Management group created with at least 1 focal point in each institution	Create intersectorial subgroup for the management of the implementation of the plan with defined tasks at national, provincial and district levels	Executive group created and functional	Political commitment in place
At least 80% of the Plan funded	Develop annual budgeted plan at all levels	Plan and budget developed % of funded plan	Internal resources or existence of donors to fund the plan Political commitment in place
	Mobilize funds at different levels for the implementation of the plan		
	Submit annual plan to the Ministry of Finance		
Increase of health, education and food security staff trained in nutrition	Develop human resources description to manage the implementation of the plan's activities at provincial and district levels	Human resources and capacity building plans developed and budgeted % of total budget mobilized for human resources plan	Existence of enabled human resources for the development of activities Political commitment in place
	Develop a capacity building plan for other staff in health, education and food security		
Result 6.3. An executive multisectorial group created to manage the monitoring and evaluation activities at the national level			
Functional M&E group	Create a multisectoral executive group to manage monitoring and evaluation activities	Group created	

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	INPUTS
Monitoring results and assessment studies of the published	Develop monitoring and evaluation plan for national, provincial and district levels	Monitoring and evaluation plan developed and budgeted Plan funded % of monitoring and evaluation reports % of quarterly/biannual/annual monitoring and evaluation reports	Existence of resources or donors to fund the plan Political commitment in place Existence of human resources capable of developing activities
	Carry out quarterly monitoring for districts, biannual monitoring for provinces and annual monitoring for a national review		
	Carry out quarterly district and biannual provincial supervisions		
	Carry out biannual provincial and annual national stocktaking, with plan review		
	Carry out mid-term evaluation every four months		
	Publish progress report on a regular basis		
Result 6.4. An executive multisectorial group created to manage the advocacy and social mobilization activities for the reduction of chronic undernutrition at the national level.			
Functional social mobilization and advocacy sub-group Partners, civil society and private sector collaborating for reduction of chronic undernutrition	Create a multisectoral executive group to manage social mobilization and advocacy activities	Group created Communication and advocacy plan developed and budgeted % of funded plan % of communication and advocacy plan carried out % of total budget for advocacy plan mobilized % of private sector partners and civil society engaged in advocacy and communication	Resources or existence of donors to fund the plan
	Develop and budget a communication and advocacy plan for national, provincial and district levels		
	Develop a network with the private sector and civil society to support the activities		
	Timely information and resource mobilization campaigns on the reduction of chronic undernutrition carried out at all levels		

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	INPUTS
		% of advocacy and communication activities carried out	

Result 6.5. An advisory multisectorial coordination group capable of coordinating the plan's implementation and of advocating for the reduction of chronic undernutrition is established at the provincial and district levels.			
Coordination group created at provincial and district levels	Create TOR for a multisectoral advisory group at provincial and district levels to coordinate the plan implementation Submit TOR for group composition with powers and roles defined for endorsement by Decree Ensure group funding	Coordination group created and functional	Political commitment in place
Result 6.6. An executive group is created at the provincial and district levels and capable of managing the implementation of the plan, and undertaking advocacy and social mobilization for the reduction of Chronic Undernutrition.			
Management group created with at least 1 focal point in each institution Publication of monitoring results and evaluation studies at provincial and district levels	Intersectorial subgroup created to manage implementation of the plan with defined tasks at provincial and district levels Group manages the implementation of the monitoring and evaluation plan at provincial and district levels Carry out quarterly district and biannual provincial monitoring	Functional executive group created Campaigns carried out % of capacity building courses developed Monitoring and evaluation plan developed and budgeted % of plan funded % of monitoring and evaluation reports	Political commitment in place Existence of resources or donors to fund the plan are Existence of human resources capable to develop the activities
Donors, partners, civil society and private sector collaborating for the reduction of chronic undernutrition	Manage advocacy and communication implementation plan at provincial and district levels	Communication and advocacy plan developed and budgeted	Resources are available to fund the pl

	Develop a network with the private sector to support the activities	% of plan funded	
	Carry out regularly information and resource mobilization campaigns at all levels for the reduction of chronic undernutrition	% of communication and advocacy plan achieved Communication plan for behavior change developed % of private sector and civil society engaged in advocacy and communication % of advocacy and communication	

STRATEGIC OBJECTIVE 7: To strengthen the food and nutrition surveillance system.

KEY OUTPUTS	INTERVENTION ACTIVITY	INDICATORS	INPUTS
Result 7.1. Adequate management of the Food and Nutrition Security activities at different levels (national, provincial and district)			
Create a food and nutrition surveillance system that provides reliable information on Nutrition and Food Security on a timely regular basis	Extend nutrition surveillance sentinel posts to all districts and Health Units that monitor growth Strengthen, at all levels, the capacity to collect, analyze and report food security and nutrition data, ensuring its use for policy/strategy and program design	Review performed % of staff trained to collect, analyze and report nutrition and food security data by province/district % of regular reports generated by MOH or SETSAN	Resources for undertaking activities
Result 7.2. Improved and timely availability of disaggregated information on Food and Nutrition Security in the country			
Regular and timely information on nutrition and food security available at all levels	Create a national database for Nutrition and Food Security Identify\create a *website* to facilitate information on nutrition and food security flow	Functional nutrition and food security database and information shared among different stakeholders Number of indicators included in database	Resources for undertaking activities

III. STAGES FOR PLAN DEVELOPMENT

Activities linked to Strategic Objectives 5, 6 and 7 are primary activities to develop and aim at: 1) strengthen human resources capacity in nutrition and education of the population on chronic undernutrition; 2) Strengthen national capacity for advocacy, coordination, management and progressive implementation of the Multisectorial Action Plan for the Reduction of Chronic Undernutrition; and 3) Strengthen the food and nutrition surveillance system.

Immediate interventions at the individual level are the first priority in the Strategic Objectives 1, 2 and 3. These interventions will expedite the reduction of chronic undernutrition in the short-term. Second priority interventions are contained in Strategic Objective 4 and will probably take longer to be implemented because they require research to sort out their implementation.

This Multisectorial Action Plan for the Reduction of Chronic Undernutrition intends to follow the Integrated Plan for Achieving MDGs 4 and 5. The Reaching Every District (RED) strategy is a way of improving provision of health services with the objective of improving the efficiency of resources utilization and targeting hard to reach populations with a basic package of interventions for women, children and adolescents[67]. The provinces and districts with most children with chronic undernutrition will be prioritized.

IV. HUMAN RESOURCES

Based on numerous assessments undertaken, capacity building courses need to be developed to cover all system levels. A Master's degree is a must for the country action leaders. On-the-job training for health, agriculture and education staff working on nutrition and food must also become available. Given the number of people to be qualified in such a short period of time, capacity building materials and methods available for out-of-department training must be designed. These capacity building courses should primarily be undertaken in places where the participants live and work in order to reduce costs. This strategy would somehow negate the problems connected with students not returning to their home countries after conclusion of their studies abroad.

Capacity building packages on nutrition security would be based on the "Nutrition Essentials" manual[68], used by MOH to develop the Basic Nutrition Package (Pacote Nutricional Básico -PNB). This manual is a guide for health services managers developed by BASICS in collaboration with UNICEF and WHO. However, it needs to be updated and adapted to reflect the latest Essential Nutrition Interventions (ENI) particularly those that should be adapted to Mozambique context.

Materials based on this content could be used to support health services capacity building at district levels to enable development of a nutrition security plan at the district level. It could include appropriate nutrition interventions for mothers and children's health services, thereby ensuring continued health care services from birth to the age of 2 (i.e. through health units, time extension for mobile brigades and through community-based services developed by APEs). Each ENI should include protocols and methods to develop and implement social mobilization and communication plans and perform supervision and monitoring at district level.

Considering the requirements needed for the implementation of the plan, it is paramount to astutely define the training curricula, a relevant part of which is the design of conceptual frameworks[70] to identify and design nutrition practices needed in public health in Mozambique. This will facilitate the training and development of the needed work force. All these activities require three abilities in Nutrition and Public Health: 1) frontline people (they may not be all "nutritionists"); 2) managers/supervisors (some from the heath sectors); 3) specialists (many from the highest system level). Specific abilities should be agreed upon and adequate curricula developed at each level.

V. MONITORING & EVALUATION

5.1 OBJECTIVE AND EXPECTED RESULTS FROM MONITORING & EVALUATION PROCESS

The monitoring and Evaluation Plan (M&E Plan) aims at providing consistent and reliable information on the progress of the implementation of the Action Plan for the reduction of chronic undernutrition. Since this is a multisectoral plan and it depends on the implementation of many other plans, especially the integrated Plan for Attaining the Millennium Development Goals 4 and 5, the M&E plan includes data collection on the progress of a number of plans from the health sector and other sectors.

Specific objectives of the M&E plan for the Action Plan are: 1) to guide data collection, processing and analysis of selected indicators; 2) to monitor activities implementation in accordance with the operational plan to ensure reporting and accountability as well as timely resolution of problems that may occur during the implementation; 3) to provide feedback to those who implement and manage the plan to ensure they have timely information for decision-taking; 4) to document regularly the results achieved against the targets; 5) to serve as guide for national authorities and partners on the response of programs and services under implementation aimed at accelerating the reduction of chronic undernutrition; 6) to promote evaluation and research activities aimed at improving performance of The Multisectorial Action Plan for the Reduction of Chronic Undernutrition.

The monitoring process shall follow up strategies and activities to identify progress achieved based on the targets set, and provide managers with the opportunity to identify, clarify and respond to needs emerging during the implementation processes. The evaluation process should help determine the importance, efficiency, effectiveness and sustainability of the Action Plan interventions, as well, it should assist in identifying future policies, strategies and interventions.

The key tasks and activities for this M&E plan are: 1) advocacy for setting standards of M&E methods and indicators for actions on Nutrition and Food Security; 2) design and simplification of M&E processes in Food Security and Nutrition, ensuring coordination with the Department of Nutrition of MOH and SETSAN in MINAG and, among others, in order to ensure systemic, effective and quality data collection and analysis 3) promotion of the undertaking of studies and evaluations of these multisectoral activities; 4) dissemination of progress reports on a regular basis.

At the beginning of the implementation, nutritionists/nutrition technicians and other staff managing nutrition programs at district level, need to be trained following the ENI capacity building package. In a parallel way, nutritionists and biologists at national level and nutrition staff at provincial level should attend or study for Diploma/Bachelor/Master's degree by correspondence. On-the-job training capacity building of ENI for staff at district level can be developed in partnership with an external group. Managers at district and provincial levels should also being trained. Capacity building for 270 staff members in nutrition could be carried out in sets of 30 trained/year.

5.2. MONITORING AND EVALUATION MECHANISMS AND INFORMATION SOURCES

No specific new mechanisms will be created for effecting the M&E plan; the plan monitoring should be based on existing systems such as quarterly analysis of collected data through SIS, supervision and regular provincial reports and analyses on the implementation of Maternal Health Programs, EPI, Nutrition, Malaria and HIV/AIDS, in MOH, SETSAN in MINAG, school feeding from the Ministry of Education. Other inputs from reports /minutes of meetings/ trainings will be considered.

M&E will be defined based on the results that link the Objectives of the Integrated Plan to Strategic Objectives and their Results. Indicators of impact, results, outcomes, and processes will be defined. These findings will be the product of joint effort and only after consultation with all other stakeholders in all sectors. This activity should be undertaken at the initial stage of the Action Plan implementation to ensure all stakeholders agree on and contribute to the design of the M&E plan.

Verification Means: for Impact Indicators at national level, Demographic and Health Surveys and/or MICS will be used to measure changes in chronic undernutrition as well in intervention coverage. Special attention will be given to the measurement of height/length. Since it is relatively easy to measure length in children under 2 years incorrectly; it is essential that all people taking anthropometric measurements be adequately trained through a standard protocol. This protocol will enforce the precision of measurements. For this, a national team will be set up, with members from each province to ensure overall standardization and appropriate training of people at district level, on how to measure length.

Since one of the Action Plan Strategic Objective is to establish a nutrition and food surveillance system, the M&E plan will focus on evaluating the interventions. Priority will be given to the evaluations for collecting the best scientific evidence ofintervention impact[1] [2], through rigorous effectiveness testing.[3] [4].

[1] Habicht JP, Victora CG, Vaughan JP. 1999 Evaluation designs for adequacy, plausibility and probability of public health programme performance and impact. Int J Epidemiol. 28(1):10-8.

[2] Victora CG, Habicht JP, Bryce J. 2004 Evidence-based public health: moving beyond randomized trials. Am J Public Health. 94(3):400-5.

[3] Shekar M, et al, Delivery sciences in nutrition. 2008. The Lancet, 371, 9626: 1751

[4] Heikens GT, Amadi BC, Manary M, Rollins N, Tomkins A. Nutrition interventions needed to improve operational capacity. Lancet. 2008 371(9608):181-2.

MONITORING & EVALUATION PLAN – INDICATORS

STRATEGIC OBJECTIVE 1: To strengthen activities with impact on the nutritional status of adolescents (10-19 years old).

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Result 1.1. Anaemia controlled among adolescents (10-19 years old) within and out of schools					
Adolescent girls supplemented with iron and folic acid	Carry out supervision of supplementation of adolescent girls in schools with iron and folic acid during the school year	% of adolescent girls supplemented in schools % of students dewormed in schools % of students with knowledge on anaemia and nutrition	Anaemia in adolescents reduced in 50% in 2015 and more than 50% in 2020 100% of secondary schools covered in the first year and every year successively	In the first year, a baseline study will be carried out at provincial level on the prevalence of anaemia among adolescents and their awareness level on this problem. The study will be repeated every four years. Quarterly teachers reports in collaboration with Provincial and District Health Directorates Annual meetings at provincial level	These activities are largely planned in the Package and Integrate Plan for the Attainment of the Millennium Development Goals 4 and 5 However, anaemia is missing as an impact indicator. Anaemia study should be done as part of MICS and/or DHS
Adolescents periodically dewormed	Carry out supervised deworming of adolescentsevery six months				
Adolescents trained in anaemia	Awareness raised in students on the dangers of anaemia, its causes, relation to chronic undernutrition, maternal mortality and cognitive function				
Out of school adolescents treated timely	Train adolescents in schools to help identify out-of-school adolescents in their communities and carry out peer education and function as link between health services and the community	% of adolescents trained % of adolescents trained to carry out peer community mobilization	Number of Health Units with SAAJ increased to 260 in 2010 to 500 in 2015 and defined in 2020	Food Security and Nutrition program reports	
	Provide supplements, deworm and raise awareness in out-of-school adolescents through Health Units, SAAJs and mobile brigades				
Result 1.2. Early pregnancy reduced among adolescents (10-19 years old)					
Use of any pregnancy prevention method by adolescent girls (10-	Provide counselling (including on the risks of early pregnancy) and contraceptive methods to	% of adolescent boys counselled and using	Number of health units with SAAJ is	Reports of SEA programs	

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
19 years old)	adolescents through Health Units, SAAJs and APEs	any contraceptive method % of adolescent girls and using any contraceptive method % of adolescents with early pregnancy and who were counselled	increased from 260 in 2010 to 500 in 2015 and to be defined in 2020 By 2015, 60% of adolescent girls using any contraceptive method and 85% in 2020		
Early marriages among adolescent girls reduced	Education campaigns for the general public (women's day, mother's day, etc.) to raise public awareness on the negative implications of early marriage Mobilize local leadership through advocacy in provincial and district assembly sessions to support awareness among people on the problems of early marriage	% of campaigns carried out % of girls <18 years old married	At least 1 campaign/year At least 1 local leader addressing this issue in community meetings/year	Government reports	
Result 1.3. Strengthened nutrition education in different education levels as part of the curriculum, including literacy curricula					
Adolescents trained on nutrition	Include the topics of health and nutrition education in school curricula Develop materials for teachers and students Train trainers and teachers through education institutions	Education materials developed and available in health units % of trained teachers % of adolescents who understand nutrition related issues	Education materials developed in the first year 50 teachers trained every year in every province in the first five years	SEA program reports	

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Schools implement nutrition education encouraging the establishment of school gardens	Adolescents trained to grow and take care of a part of a school garden during several weeks Adolescents trained on the nutritional value of vegetables and their importance, especially for pregnant and lactating women, and for the prevention of chronic undernutrition	% of schools with gardens % of schools using school garden products in school meals	50 schools/year receive needed technical support and materials for school gardening		

STRATEGIC OBJECTIVE 2: To strengthen interventions with impact on the health and nutrition of women of reproductive are before and during pregnancy and during lactation

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGET	INFORMATION SOURCE	NOTES AND REMARKS
Result 2.1. Reduced anaemia and micronutrient deficiencies before and during pregnancy and lactation					
Every woman takes a minimum of 180 capsules of multimicronutrients during pregnancy and 90 capsules after delivery	Supplement women with multimicronutrients capsules during pregnancy (180) and post partum (90) through health services Active search in communities by APEs to identify women at early stages of pregnancy and refer them to prenatal consultation Weekly delivery of capsules of micronutrients to pregnant women by APEs Sensitize pregnant women through APEs to take capsules of micronutrients reularly	% of pregnant women receiving multimicronutrient capsules during pregnancy % of pregnant women taking multimicronutrient capsules during pregnancy % of pregnant women with anaemia Haemoglobin (Hg) in pregnant women receiving antenatal control	50% of women receive multimicronutrient capsules during pregnancy in the first year instead of iron, folate, and 100% in the second year 100 % of pregnant women receiving supplementation take a minimum of 90 multimicronutrient supplements during pregnancy 70% of post-delivery women receive vitamin A supplementation in 2015 and 90% in 2020 % of pregnant women with anaemia reduced to 30% in 2015 and 15% in 2020 100% of pregnant women in prenatal consultation taking Hg analysis	A baseline study on anaemia prevalence carried out in both pregnant and non pregnant women including question on whether they took iron, folate, multimicronutrients, and/or vitamin A. This will be done at the provincial level in the first year with a repetition every four years. SIS Nutrition Programs	These activities are largely planned in the Package and Integrated Plan for Attainment of the Millennium Development Goals 4 and 5. Multimicronutrients should replace iron, and folate supplements However, anaemia is missing as impact indicator Anaemia survey should be undertaken as part of MICS and/or DHS

All post-delivery women take one vitamin A capsule	Undertake vitamin A supplementation for post-partum women, including women who had home or institutional delivery	% of post-partum women receiving vitamin A supplements	80% post-partum women	SIS Nutrition Program	
Birth spacing is more than 2 years	Provide counselling and contraceptive methods in health units for control of birth spacing, during 2 years after the first delivery	% of women who did not get pregnant during the 2 years following the first delivery Hg in non pregnant women of reproductive age	MOH		
Result 2.2. Infections controlled prior and during pregnancy and lactation					
All mothers take multimicronutrient supplements and take necessary measures to control infections that cause anaemia	Deworming pregnant women in health units and through APEs Provide Intermittent Preventive Treatment (IPT) of malaria during pregnancy Distribute mosquito nets treated with long-lasting insecticides and promote their utilization Antiretroviral treatment (ART) for women living with HIV/AIDS Treat Sexually Transmitted Infections if needed	% of pregnant women dewormed % of pregnant women attending antenatal care % of pregnant women in antenatal care with infections (STI, intestinal parasites, HIV) receiving treatment % of pregnant women in antenatal care receiving IPT of malaria % of pregnant women		DHS/MICS SIS	All these activities and interventions are covered by the action plans for malaria and HIV

		using mosquito nets treated with long-lasting insecticides			
Result 2.3. Increased weight gain during pregnancy increased					
Pregnant women adequately counselled about attending antenatal care and about supplementation if needed	Control weight gain during pregnancy, in antenatal care through the recording of weight gain in a form and counsel on adequate weight gain	% of staff trained with the ability to control and counsel on weight gain for pregnant women % Health Units controlling weight gain among pregnant women	20% of districts in all provinces in the first year and 20%/year up to 100% 20% of midwives trained every year with a weekly course All midwives trained		
	Provide food supplements to all pregnant women for 6 months in the selected districts (initially, 2 districts will be covered in the provinces with the highest low birthweight).	% of pregnant women receiving food in the selected districts	All women supplemented		

STRATEGIC OBJECTIVE 3: To strengthen nutrition activities for children in the first two years of life.

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Result 3.1. Exclusive breastfed infants in the first six months of life					
Health units and communities awared, equipped and capacitated to promote and support exclusive breastfeeding during the first 6 months after birth	Train midwives including traditional midwives on how to support a mother to ensure exclusive breastfeeding during the first six months	% of mothers trained on exclusive breastfeeding % of midwives trained providing adequate support to ensure exclusive breastfeeding among mothers % of community leaders trained in exclusive breastfeeding % of community leaders mobilizing and supporting mothers to ensure exclusive breastfeeding % of existing groups of support mothers % of < 6 months of age children exclusively breastfed	20% of districts in all provinces in the first year and 20%/year up to completion of 100% 20% of midwives trained every year with a one week course All midwives trained with a one week course	Program report DHS/MICS	
	Distribute materials for information, education and communication on the importance of exclusive breastfeeding for the first six months				
	APEs support mothers to ensure exclusive breastfeeding of the newborn				
	Set up community mothers groups to support mothers with children under 6 months of age to practice exclusive breastfeeding				

Labels of follow-up formulas, feeding-bottles sold within the country are in compliance with the Code of Marketing of Breast-milk Substitutes Absence of of infant formula promotion materials in the health units and the overall society	Undertake regular and systematic monitoring of the Code of Marketing of Breast-milk substitutes	% of infringements to the Code documented % infringements to the Code penalized	Annual inspections at 20% of the health units in every province/year	Program report	
Result 3.2. Receipt of adequate complementary feeding for all children from 6 to 24 months					
All children aged 6 to 24 months are growing optimally according to growth charts	Strengthening of nutritional counselling capacity in child health services, including preparation of complementary food using local foods Provide quarterly fortified nutritive supplements to all children from 6 to 24 years of age Provide biannually vitamin A supplements to all children between 6-59 months of age in health services through APEs and mobile brigades Deworm biannually all children between 11-59 months of age in health services through APEs and mobile brigades	% of children between 6-24 months of age with insufficient growth or below the red line in the growth chart % of children with wasting % of children with stunting % of children between 6-24 months who received nutrition supplements % of children between 6-59 months of age who received 2 doses of vitamin A % of children between 12-59 months deformed	All children All children All children in selected districts	Nutrition program report DHS/MICS Evaluation studies in selected districts with baseline and repeated on annual basis In the second year, start with pilote intervention in 2 districts in 3 provinces and compare them with districts with supplements	

STRATEGIC OBJECTIVE 4: To strengthen household-oriented activities to improve access and utilization of foods with a high nutritional value.

KEY PRODUCTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Result 4.1. Foods with a high nutritional value are produced locally and utilized by the poorest families.					
Increase in production and consumption of local nutritious foods	Carry out research on the nutritional value of agriculture products (including wild foods) and promote those foods with high nutritional value Promote the production of foods with a high nutritional value through the agriculture extension system Promote nutrition education and food preparation demonstrations (including food processing) as part of agriculture extension system	Number of high nutritional value foods identified % of households utilizing on a regular basis foods identified with high nutritional value % of communities benefiting from nutrition education activities and food preparation % of households participating in education activities and changed their food habits	A study in each district to determine foods to be promoted Train extensionists from 30 districts to promote production, preparation and storage of these foods	Program report and annual meeting reports to review progress Initial and final surveys to assess changes in food production and consumption by poor households	
Result 4.2: Strengthened capacity of families vulnerable to Food and Nutritional Insecurity (InSAN) on appropriate food processing and storage					
Households vulnerable to nutrition and food insecurity trained to improve food processing, storage and utilization	Build the capacity of households members on improved practices of food processing and storage, including hygiene and food security	% of capacity building courses undertaken % of households vulnerable to nutrition and food insecurity that	Extensionists trained in 20 districts by province, every year for five years	Program report	

KEY PRODUCTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
	Improve food storage conditions	attended the course % of households vulnerable to nutrition and food insecurity that participated in the course to improve food processing and storage	20 community meetings in every district/year		
Result 4.3. Households vulnerable to nutrition and food insecurity with access to support and social protection services to ensure sufficient and diversified foods for pregnant and lactating women, adolescents and children between 6-24 months of age					
Improved nutrition and food security of the most vulnerable households	Provide income transfer (cash) to the poorest households with adolescents, children or pregnant and lactating mothers	% of households benefiting from income transfer % of female adolescents vulnerable to nutrition and food insecurity consuming animal products on a regular basis during pregnancy and lactation	MIMAS, MINAG and MOH staff from 30 districts trained so that MIMAS provides funding to the households selected by MINAG with the condition to do birth control along with MOH All low income households with female adolescents receive incentives and technical assistance	Program reports	
	Provide financial support for small animal breeding to low income households with female adolescents in order to reduce spacing between pregnancies and ensure that adolescents do not get pregnant during the adolescence period				
	Provide subsidies necessary for animal breeding (cages, eggs, hens, chick feed, among others to adolescents with children with needed to grow small animals				
	Provide technical assistance for small animal breeding				

Result 4.4. Increased supply and consumption of fortified foods in the communities, especially iodized salt					
Communities mobilized to regularly consume iodized salt	Test home salt by APEs for pregnant and lactating women to check whether salt is iodized Test salt consumed by students in schools Advocacy with community leaders to support promotion of iodated salt in communities	% of households that consume iodized salt	Build the capacity of all Health Units in all 20 districts to undertake the work in year 1 80% of houses in the covered districts use adequately iodized salt	Baseline survey in targeted districts annually Program report	
Increase availability of good quality iodized salt in the market	Increase salt regulation in the market and factories, including inspections with penalties in case of infringements Support producers to ensure salt is iodated	% of available salt in the market (formal or informal) adequately iodated	Salt in the market tested in every district on a monthly basis All infringers penalized	Program report	
Foods fortified with essential micronutrients available in the market	Create a technical group and a National Fortification Committee to coordinate and develop strategic documents, select foods to be fortified and micronutrients to be added, and develop norms and standards for fortification Support millers and other selected food producers Establish regulation methods for food fortification processes in Mozambique	Regulation and standards for food fortification set up % of selected food processing Industries/Factories that fortify in compliance with the standards set out	20% in year 1, 50% in year 2 and 100% in year 3 of production	Program report	
Result 4.5. Ensured basic sanitation for the poorest households with adolescent girls, pregnant and nursing mothers, and children under 2 years of age					
Increase use of latrine and hand-washing after their	Community mobilization for construction of latrines and their adequate utilization	% of household with latrines	Implement in 100% of the 260	Baseline survey and program report	

utilization by female adolescents, and pregnant and lactating women	Promotion of good hygiene practices through lectures and theatres on personal hygiene Provision of support materials for building of latrines	% of household that have latrines and wash hands after their utilization	health units with SAAJ and increase to 500 in 2015 and to be defined in 2020		

STRATEGIC OBJECTIVE 5. To strengthen Human Resources capacity in the area of nutrition.

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Result 5.1. Ensured optimal capacity of Human Resources responsible for nutrition at national, provincial and district levels					
Develop training materials and capacity building methods Nutrition staff with the capacity to manage adequately nutrition activities	Review Terms of Reference of staff responsible for nutrition in every national, provincial and district sector	Training materials developed Capacity building methods developed Capacity building courses undertaken	100% in year 1	Program reports	
	Design adequate curricula to train staff responsible for nutrition at national, provincial and distil levels				
	Develop training materials and capacity building methods for national, provincial and district staff				
	Identify teachers to lecture capacity building courses				
	Undertake capacity building courses in nutrition				
Result 5.2. Ensured optimal capacity of professionals in the health, food security and education sectors in food and nutrition					
Develop training materials and capacity building methods Professionals working in health, food security and education with the ability to undertake counselling and nutrition activities	Develop training materials and on-the-job training capacity building methods on nutrition for provincial and district staff working in health, food security and education sectors	Training material developed Capacity building methods created % of capacity building courses undertaken % of health, food security and education staff trained	100% in year 1	Program report	
	Design on-the-job training capacity building curricula for health, food security and education sectors professionals				
	Undertake on-the-job training courses on nutrition for professionals working in health, food security and education sectors				
	Carry out on-the-job training on nutrition for nurses and midwives in the health units				

STRATEGIC OBJECTIVE 7: To strengthen the food and nutrition surveillance system.

KEY OUTPUTS	INTERVENTION/ACTIVITY	INDICATORS	TARGETS	INFORMATION SOURCE	NOTES AND REMARKS
Result 7.1. Adequate management of the Nutrition and Food Security surveillance system at different levels (national, provincial and district).					
Create a food and nutrition surveillance system that provides reliable and timely information on Nutrition and Food Security on a regular basis	Extend nutrition survey sentinel posts to all districts and all health units that control growth Strengthen at all levels the capacity to collect, analyze and report Food Security and Nutrition data, ensuring its use for policy/strategy and policy design	Review carried out % of people trained on nutrition and food security data collection, analysis and reporting by province/district % of regular reports generated by MOH or SETSAN	Resources to carry out activitie	100% in year 1	Program reports
Result 7.2. Improved and timely availability of disaggretated information on Food and Nutrition Security in the country					
Regular and timely availability of information on Nutrition and Food Security at all levels and for all stakeholders	Create a national database for Nutrition and Security Identify\Create a *website* to facilitate communication of information on Nutrition and Food Security	Functional database on Nutrition and Food Security created and information shared among different stakeholders Number of indicators included in the database	Resources to carry out activities	100% in year 1	Program reports

ANNEXES

Annex 1. Essential Nutritional Interventions Package (ENI) of the "Lancet Nutrition Series" and its implementation strategies to ensure "follow-up care" from conception to 2 years of age

The Essential Nutritional Interventions Package is divided in three parts. The first part refers to the interventions with sufficient evidence to be implemented in all regions with problems of maternal and child undernutrition. The second part refers to the interventions that can be effective depending on local conditions. The third part outlines interventions that are not part of the Essential Nutritional Interventions Package of the *Lancet Nutrition Series*; however, those are recommended to be included in Mozambique.

1. INTERVENTIONS WITH SUFFICIENT EVIDENCES FOR NATIONWIDE IMPLEMENTATION		
Intervention	**Coverage in Mozambique**	**Source**
Pregnant and post-partum women		
Supplementation with iron and folic acid	No data	
Supplementation with multiple micronutrients	X	
Regular consumption of iodized salt	58%	MICS2008
Supplementation with calcium	X	
Intervention leading to reduction of smoking	X	
Newborns		
Promotion and support of breastfeeding (individual and group counselling)	63% in the 1st hour 88% in the first days	MICS2008
Children (infants and children)		
Promotion of exclusive breastfeeding in the first 6 months (individual and group counselling)	37%	MICS2008
Promotion and support of adequate complementary feeding (at least 3 complementary meals between 9 and 11 months)	37%	MICS2008
Treatment of diarrhoea with zinc	To be initiated	
Supplement with vitamin A	72%	MICS2008
Regular consumption of iodized salt	58%	MICS2008
Interventions promoting hygiene and hand-washing	On-going	
Treatment of acute malnutrition	On-going	

Intervention	Coverage in Mozambique	Source
Pregnant and post-partum women		
Supplement women with foods balanced with protein and energy*	Not yet a routine	
Deworming of pregnant women	37%	MOH 2009
Intermittent Preventive Treatment of Malaria (IPT) during pregnancy **	54.6%	MOH 2009
Distribution of insecticide-treated mosquito nets **	30.7%	MICS 2008
Newborns		
Post-partum supplementation with vitamin A	75.8%	MOH 2009
Delay in ligature of umbilical cord	Not yet a routine	
Infants and young children		
Promotion of adequate complementary food (at least 3 meals between 9 and 11 months) with distribution of food supplements or "conditional cash transfer " ***	X	
Deworming	95%	MOH 2009
Fortification programs or supplementation with iron	X	
Distribution of insecticide-treated mosquito nets **	22.8%	MICS2008
3. SPECIFIC INTERVENTION FOR MOZAMBIQUE		
Adolescents		
Birth control among adolescents	44% of adolescents are mothers	MICS2008
Anaemia control	X	
Strengthening nutrition education in schools	X	
Population		
Increase the production and utilization of foods with a high nutritious value	X	
Increase the ability of poor households in local food processing and storage	X	
Ensure basic sanitation among poor households with adolescent girls, pregnant and lactating women or children under 2 years old	X	

X – Non-existent in Mozambique
*Recommendation from WHO for populations in which 15% of babies are born with low birth weight or 20% of women of reproductive age have a Body Mass Index above 18.5 Kg/m^2.
** For populations where malaria is endemic.
*** For populations with food insecurity.

The most effective interventions are the preventive ones. To ensure their efficiency, a high coverage must be achieved (> 80% of target population). Examples of the presentive interventions are breastfeeding support and supplementation with micronutrients and iron/folic acid.

Higher coverage can be achieved through intervention extensions to communities, i.e., services should go to the communities and it should not be the communities that need to go to the services.

The figure below shows three service provision models 1) health unit-based, 2) taken to communities on a regular basis, and 3) community-based[i].

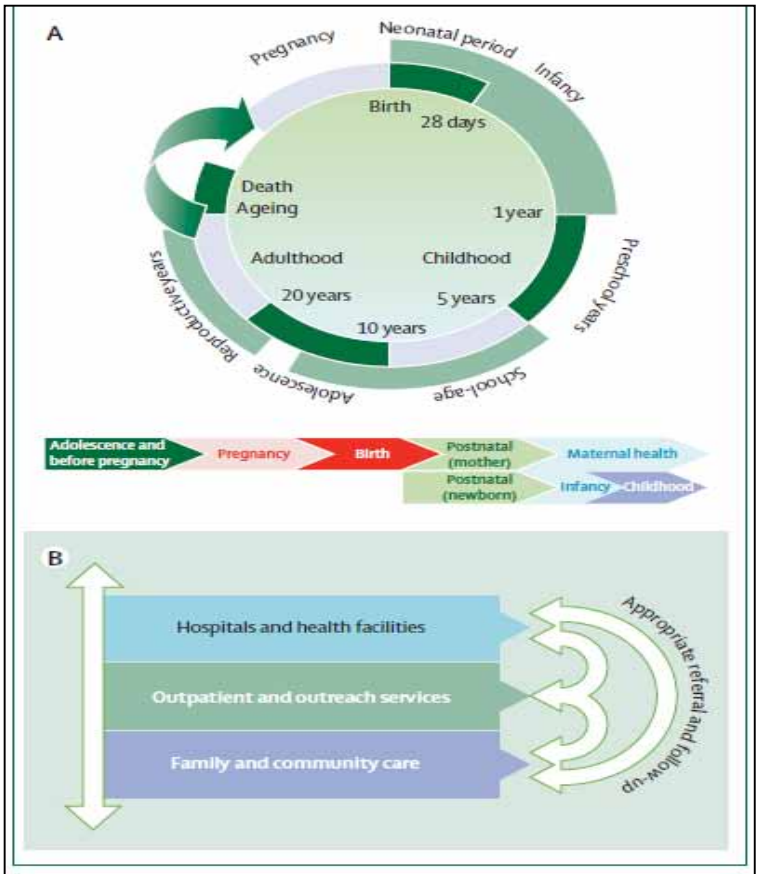


Figure 1: **Continuum of care**
Connecting care during the lifecycle (A) and at places of caregiving (B). Adapted from Partnership for Maternal, Newborn and Child Health, with permission.[45]

Among the interventions recommended for Mozambique, many are being implemented through other programs. Therefore, the focus should be on those that are not implemented and that are paramount to preventing chronic undernutrition.

Experiences from other countries suggest that it would be most beneficial if Mozambique could use multiple micronutrients for women supplementation during pregnancy instead of simply using iron and folic acid. Even though a recommendation exists for their use in

emergency[73], a high coverage of this kind of supplementation is a challenge that can be addressed through regular visits by Community Health Workers to pregnant women[74]. These community-based actions need to be integrated with the treatment of infections in health units[75]. It is believed that through this, supplementation with multiple micronutrients will ensure an increase in birth weight and improve significantly the mother's nutritional status. It will also reduce maternal anaemia compared with women utilizing supplement with only iron and folic acid[76].

However, the use of multimicronutrients may be discouraged in some situations, for example, among very young primiparous mothers. In these women, the risk of neonatal mortality seems to be increased, although it was not statistically significant[77]. For those especially, delivery needs to be carefully monitored for reducing risk through the improvement of delivery care. In Indonesia, it has been demonstrated that supplementation with multiple micronutrients reduced early infant mortality (breastfed up to 90 days) by 18% in comparison with iron and folic acid[78]. Increasing utilization of *Skilled Birth Attendants* (SBA) during birth has reduced early child mortality by 30%, regardless of the micronutrient supplementation impact[79]. Therefore, early child mortality could be reduced by 50% if women would take multiple micronutrient supplements on a regular basis and use SBA during delivery.

Food supplement during pregnancy need to be provided to all mothers in all districts with a prevalence of low birth weight above 15%.

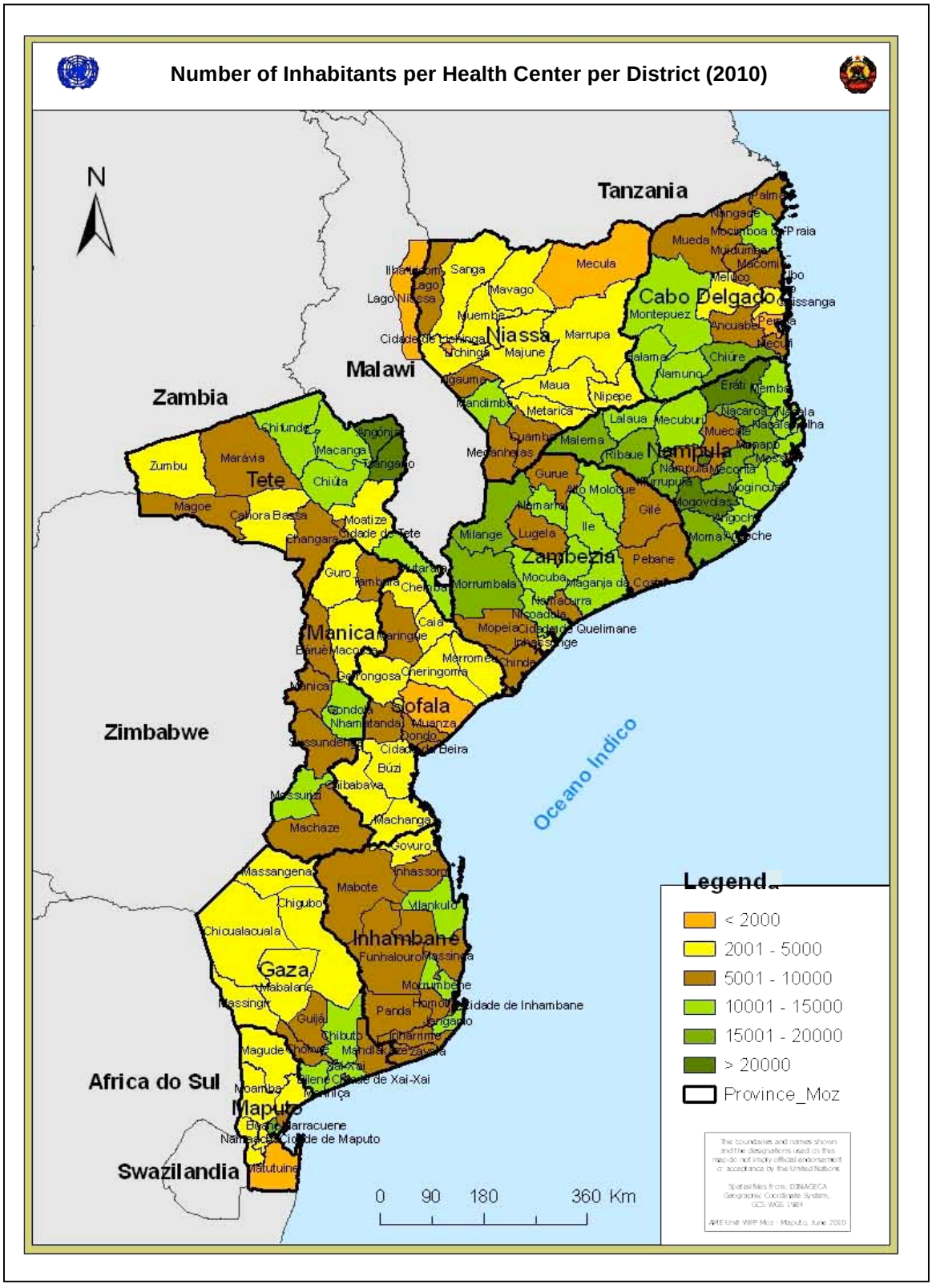
In addition, the provision of food supplements to children between 6 and 24 months is more effective if they are provided to all children instead of only the undernourished[80]. These interventions need to be implemented in districts with major food insecurity problems. Therefore, it is suggested that they also be implemented in districts with a prevalence of low birth weight above 15%, i.e., using the same criterion as that for maternal supplementation.

At the initial stage, a food supplement that can be used is the CSB (Corn Soy Blend) supplement that is rich in energy and fortified with micronutrients. In other parts of the world, other similar products are appearing. Some supplements based on fortified lipids have shown excellent results in the reduction of low birth weight. However, these along with others, need to be considered and tested before they are used[81.]

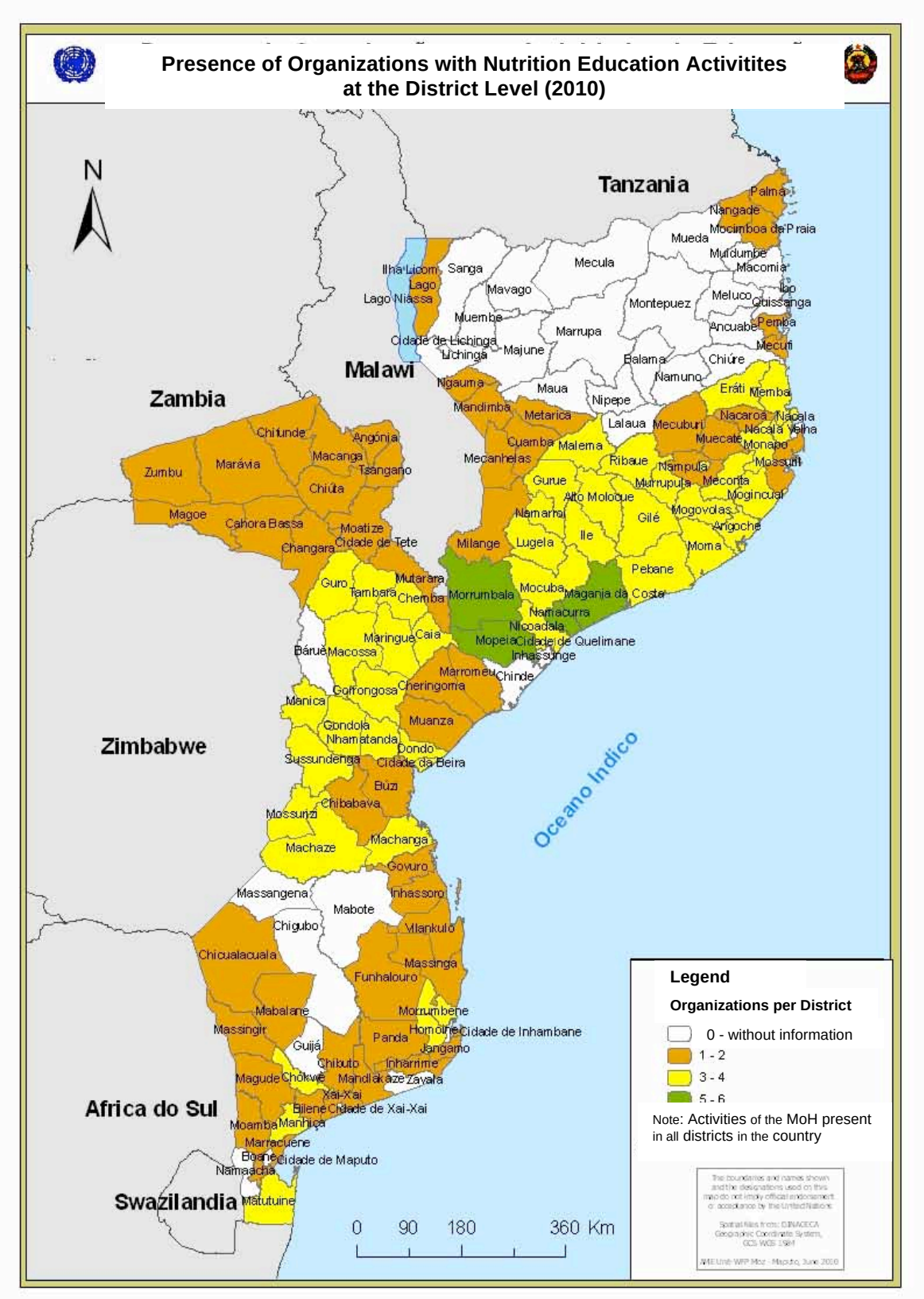
To wrap up, it would be safe and beneficial to say that, all interventions should be undertaken as a package of continued care - from conception to 2 years of age without exceptions.

Annex 2. MAPS AND TABLES OF EXISTING INTERVENTIONS

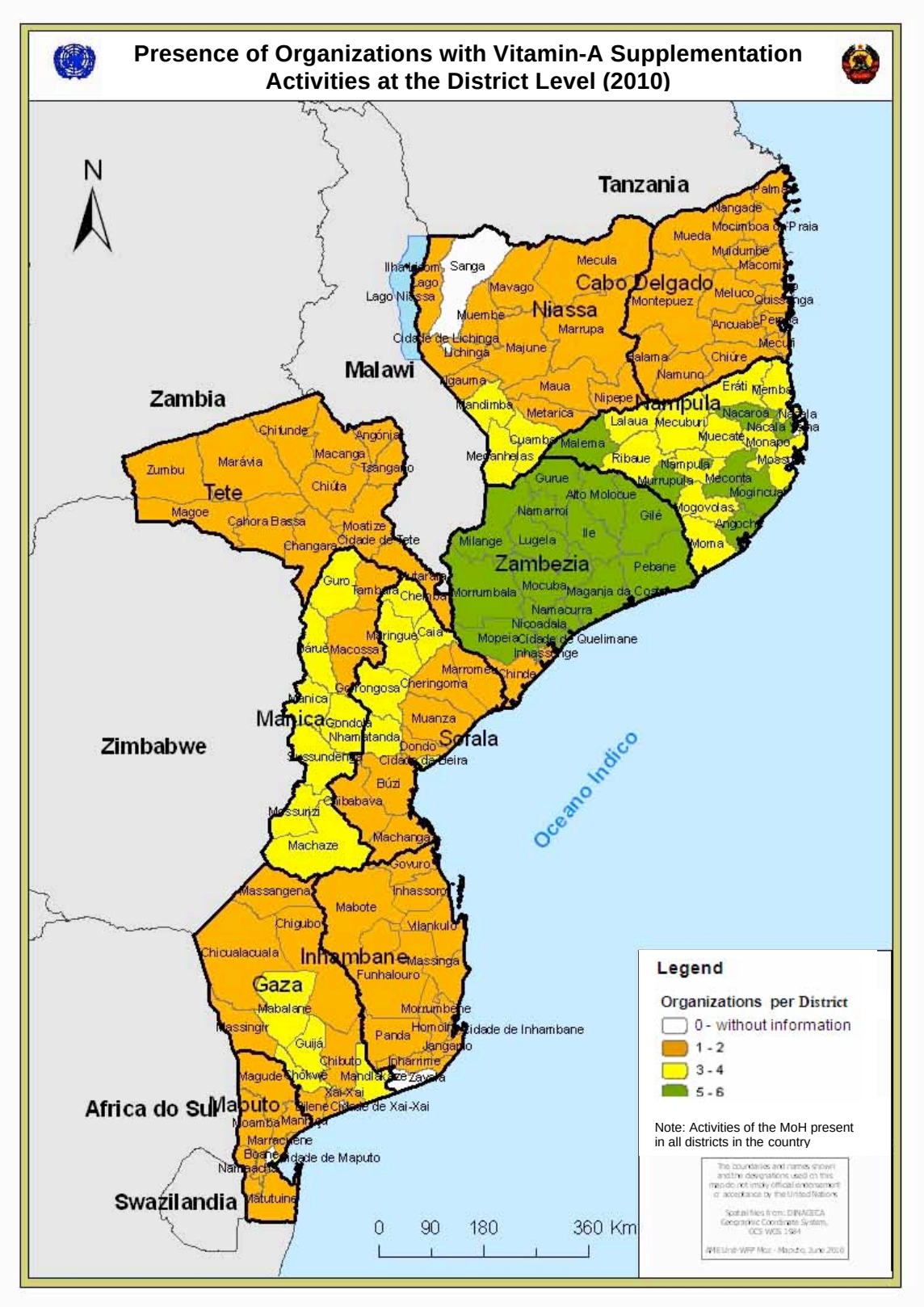
MAP 1


Number of Inhabitants per Health Center per District (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Niassa
Cabo Delgado
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
Legend
< 2000
2001 - 5000
5001 - 10000
10001 - 15000
15001 - 20000
> 20000
Province_Moz
0 90 180 360 Km

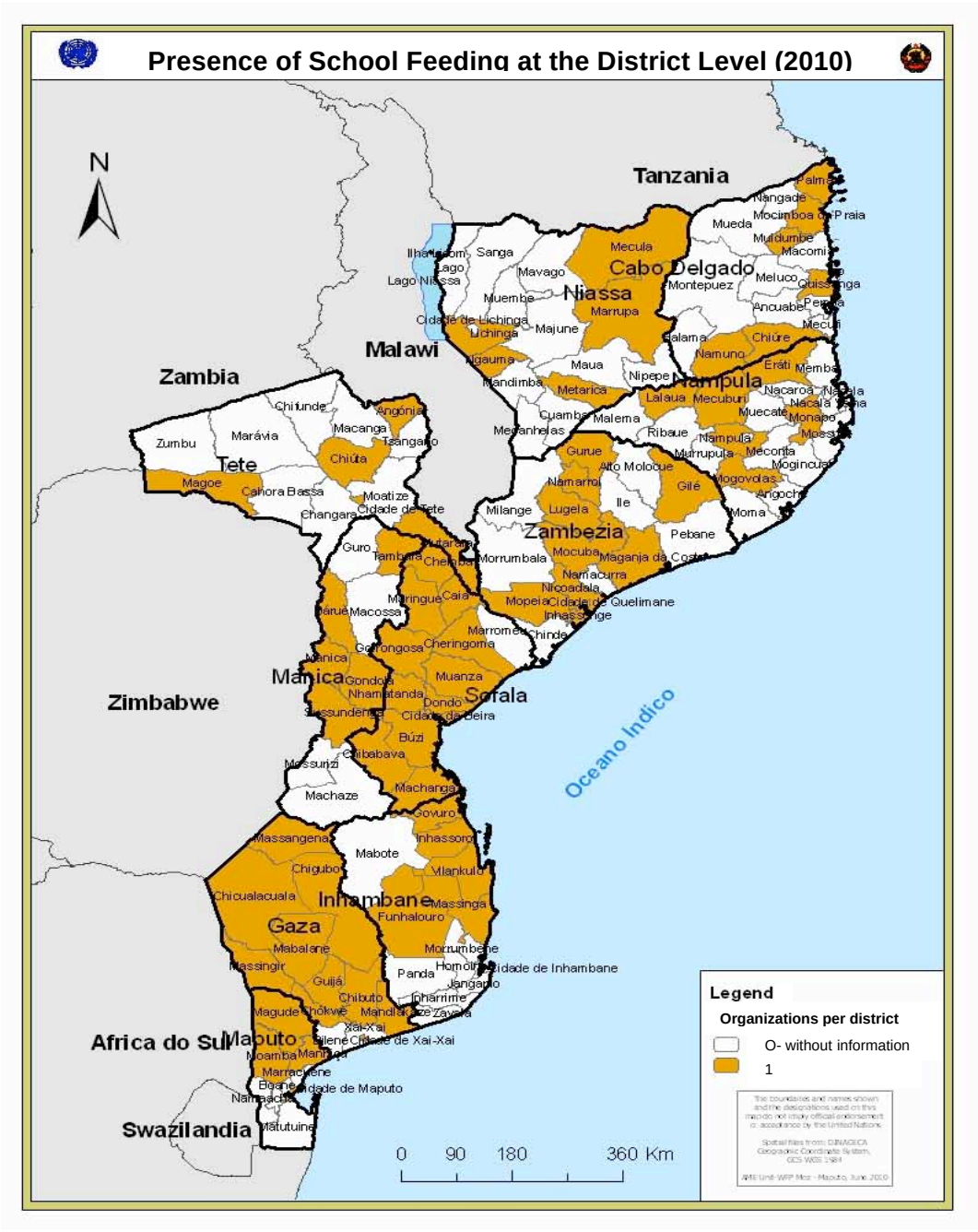
MAP 2


Presence of Organizations with Nutrition Education Activitites
at the District Level (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Palma
Nangade
Mocimboa da Praia
Mueda
Mecula
Muidumbe
Macomia
Ilha Licom
Sanga
Lago
Lago Niassa
Mavago
Montepuez
Meluco
Ibo
Quissanga
Muembe
Marrupa
Ancuabe
Pemba
Mecufi
Cidade de Lichinga
Lichinga
Majune
Balama
Chiúre
Namuno
Ngauma
Maua
Nipepe
Eráti
Memba
Mandimba
Metarica
Lalaua
Mecuburi
Nacaroa
Nacala
Nacala Velha
Chitunde
Angónia
Cuamba
Malema
Muecate
Monapo
Macanga
Marávia
Mecanhelas
Ribaue
Nampula
Mossuril
Zumbu
Tsangano
Gurue
Murrupula
Meconta
Chiúta
Alto Molocue
Mogincual
Magoe
Cahora Bassa
Namarroi
Gilé
Mogovolas
Moatize
Ile
Angoche
Changara
Cidade de Tete
Milange
Lugela
Moma
Pebane
Guro
Mutarara
Tambara
Chemba
Morrumbala
Mocuba
Maganja da Costa
Namacurra
Nicoadala
Maringue
Caia
Mopeia
Cidade de Quelimane
Bárue
Macossa
Inhassunge
Marromeu
Chinde
Gorongosa
Cheringoma
Manica
Muanza
Gondola
Nhamatanda
Dondo
Sussundenga
Cidade da Beira
Búzi
Chibabava
Mossurize
Machanga
Machaze
Govuro
Massangena
Inhassoro
Mabote
Chigubo
Vilankulo
Chicualacuala
Massinga
Funhalouro
Mabalane
Morrumbene
Massingir
Homoine
Cidade de Inhambane
Panda
Guijá
Jangamo
Chibuto
Inharrime
Magude
Chókwè
Mandlakaze
Zavala
Xai-Xai
Bilene
Cidade de Xai-Xai
Moamba
Manhiça
Marracuene
Boane
Cidade de Maputo
Namaacha
Matutuine
0
90
180
360 Km
Legend
Organizations per District
0 - without information
1 - 2
3 - 4
5 - 6
Note: Activities of the MoH present in all districts in the country

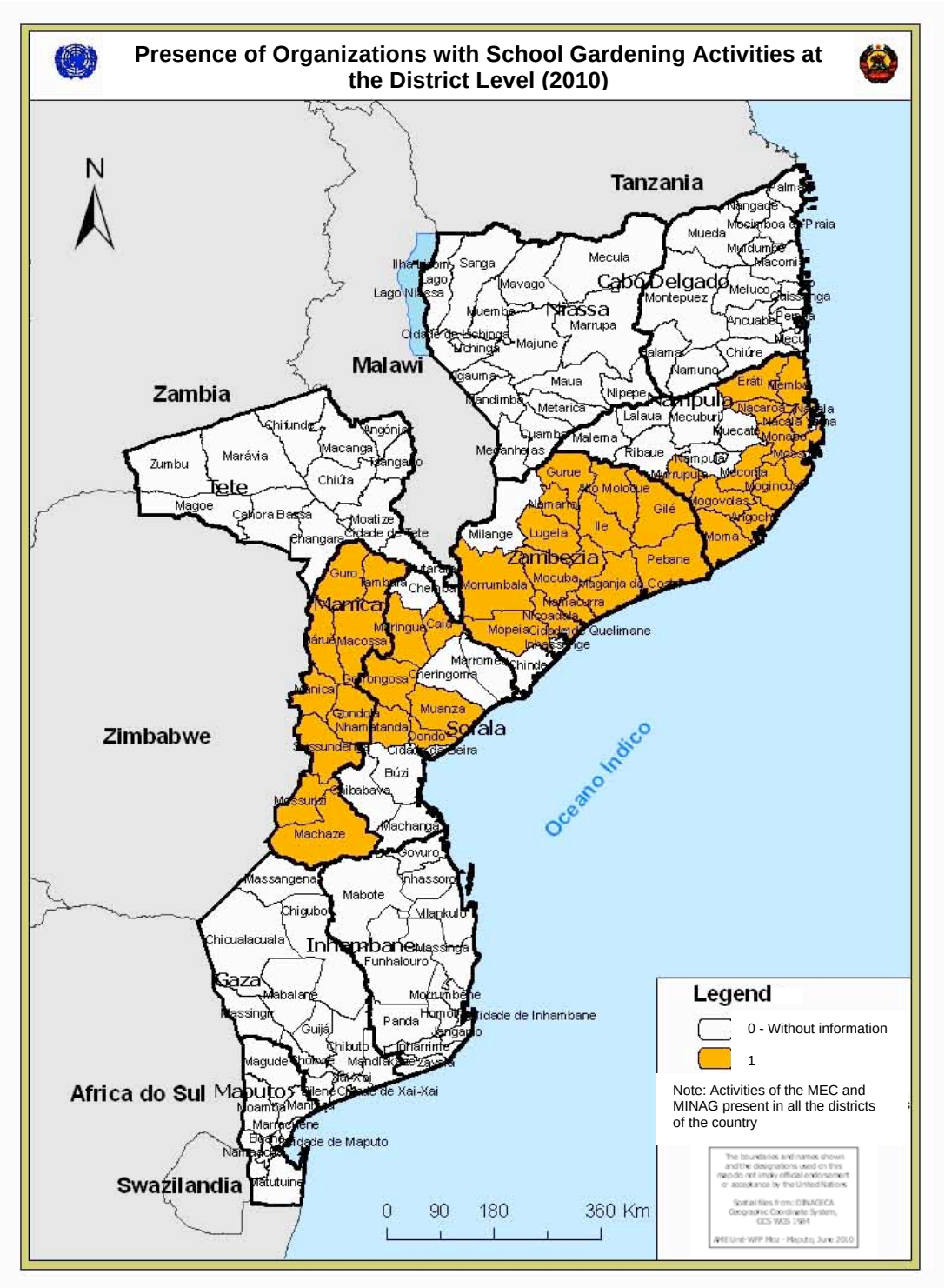
MAP 3


Presence of Organizations with Vitamin-A Supplementation Activities at the District Level (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Cabo Delgado
Niassa
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
Legend
Organizations per District
0 - without information
1 - 2
3 - 4
5 - 6
Note: Activities of the MoH present in all districts in the country
0 90 180 360 Km

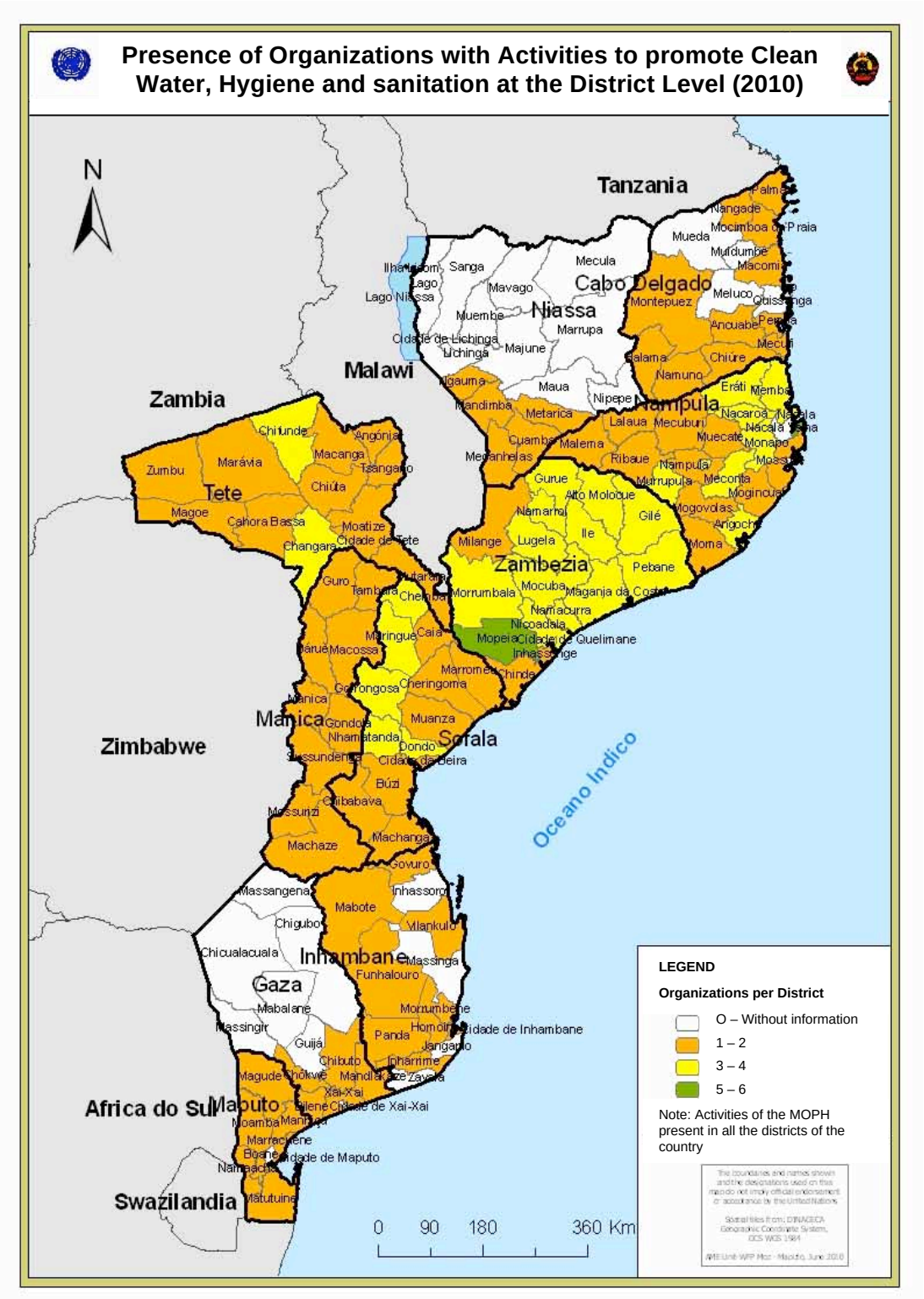
MAP 4


Presence of School Feeding at the District Level (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Cabo Delgado
Niassa
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
Cidade de Maputo
Cidade de Inhambane
Cidade de Xai-Xai
Legend
Organizations per district
O- without information
1
0 90 180 360 Km

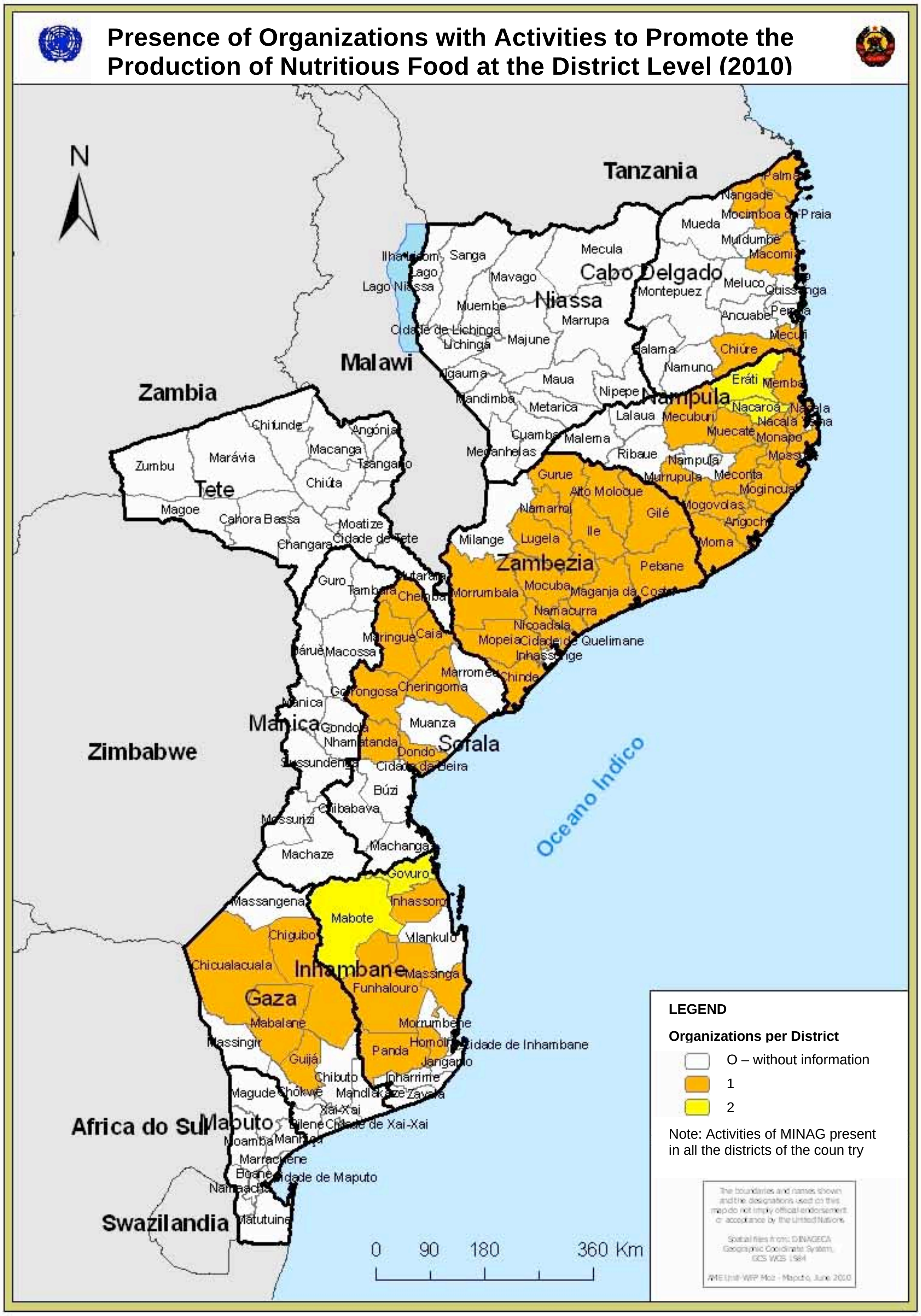
MAP 5


Presence of Organizations with School Gardening Activities at the District Level (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Cabo Delgado
Niassa
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
Legend
0 - Without information
1
Note: Activities of the MEC and MINAG present in all the districts of the country
0 90 180 360 Km

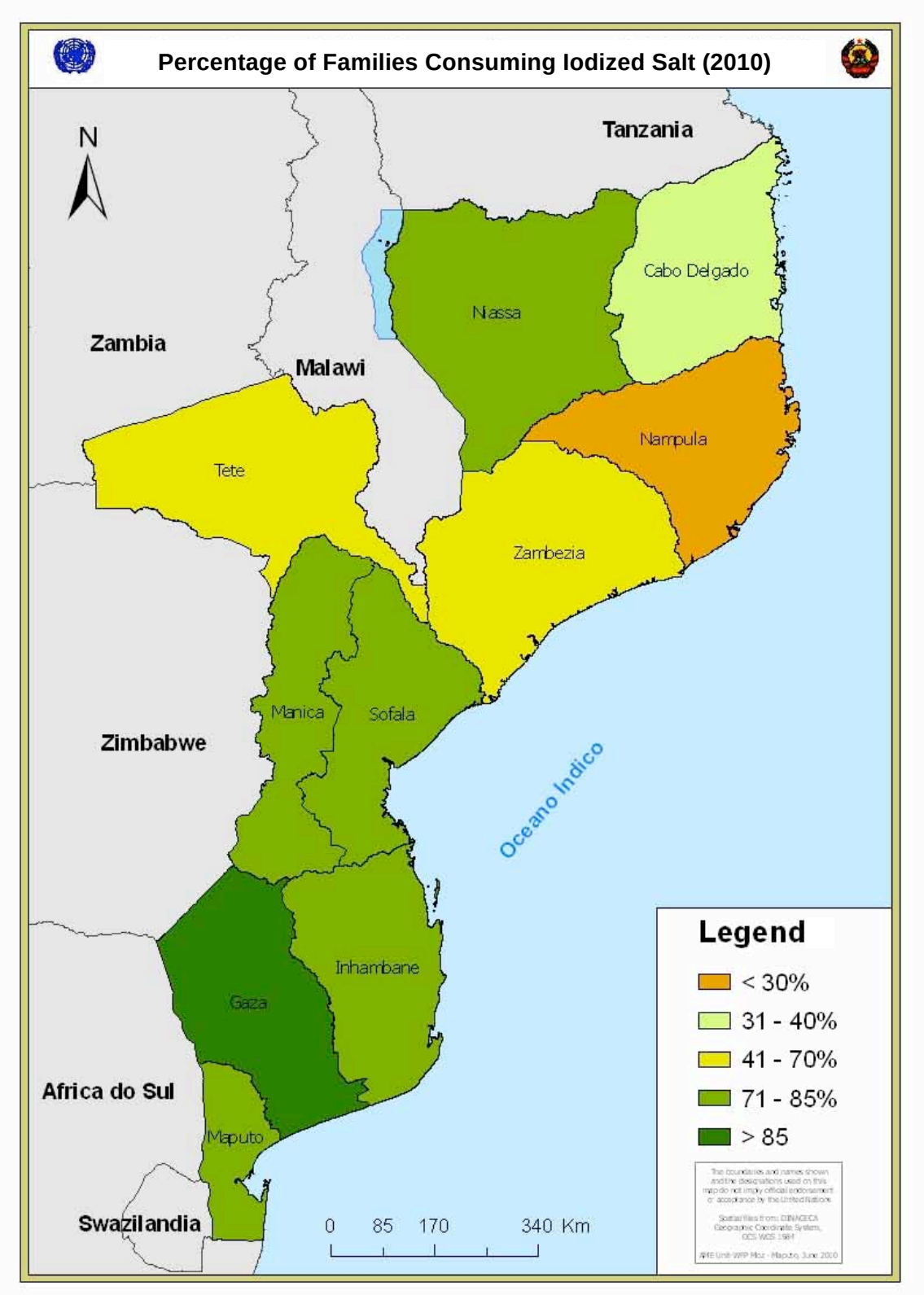
MAP 6


Presence of Organizations with Activities to promote Clean Water, Hygiene and sanitation at the District Level (2010)
N
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Oceano Indico
Cabo Delgado
Niassa
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
Cidade de Maputo
Cidade de Inhambane
0 90 180 360 Km
LEGEND
Organizations per District
O – Without information
1 – 2
3 – 4
5 – 6
Note: Activities of the MOPH present in all the districts of the country

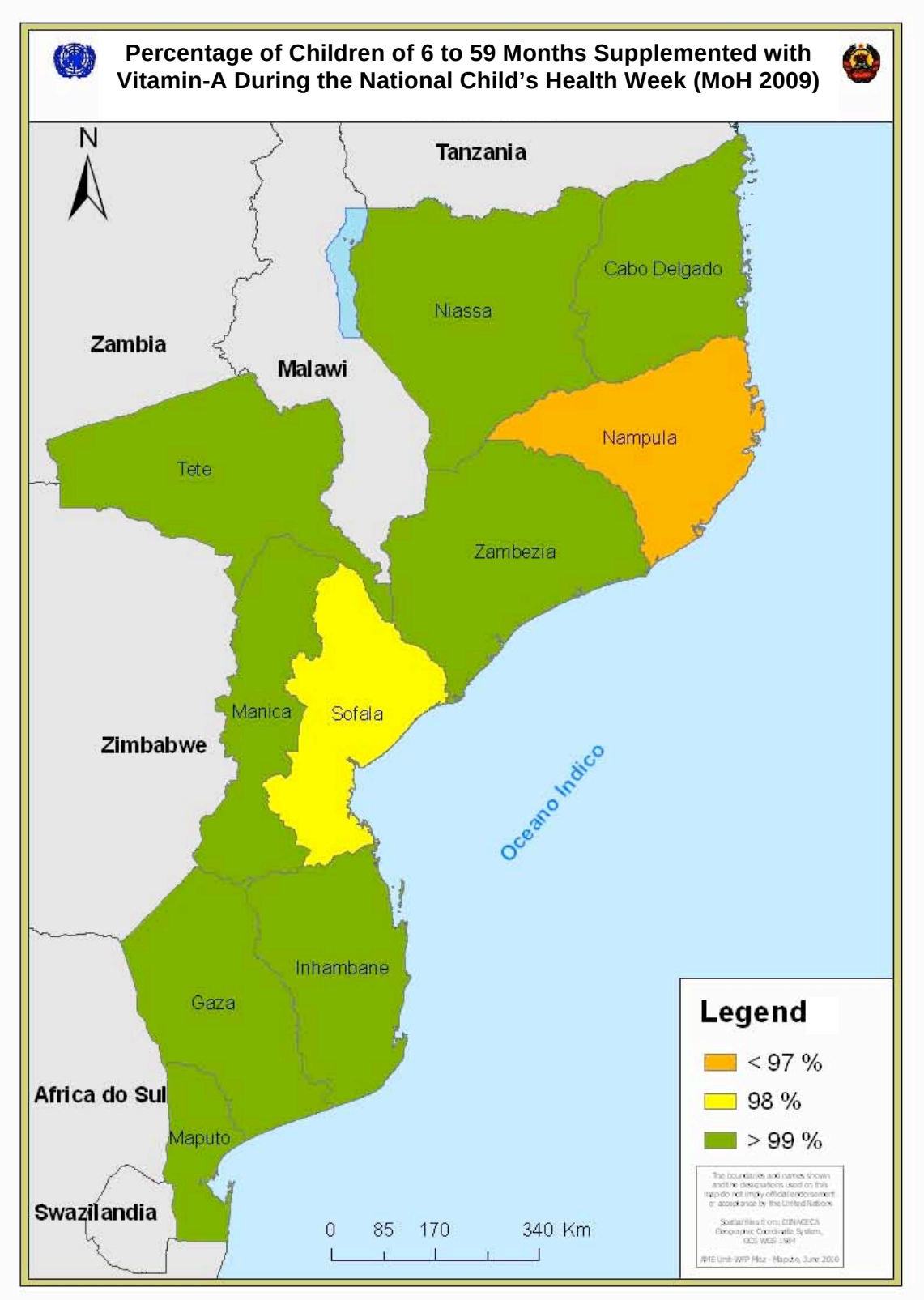
MAP 7


Presence of Organizations with Activities to Promote the Production of Nutritious Food at the District Level (2010)
LEGEND
Organizations per District
O – without information
1
2
Note: Activities of MINAG present in all the districts of the coun try
Oceano Indico
Tanzania
Malawi
Zambia
Zimbabwe
Africa do Sul
Swazilandia
Niassa
Cabo Delgado
Nampula
Zambezia
Tete
Manica
Sofala
Inhambane
Gaza
Maputo
0 90 180 360 Km

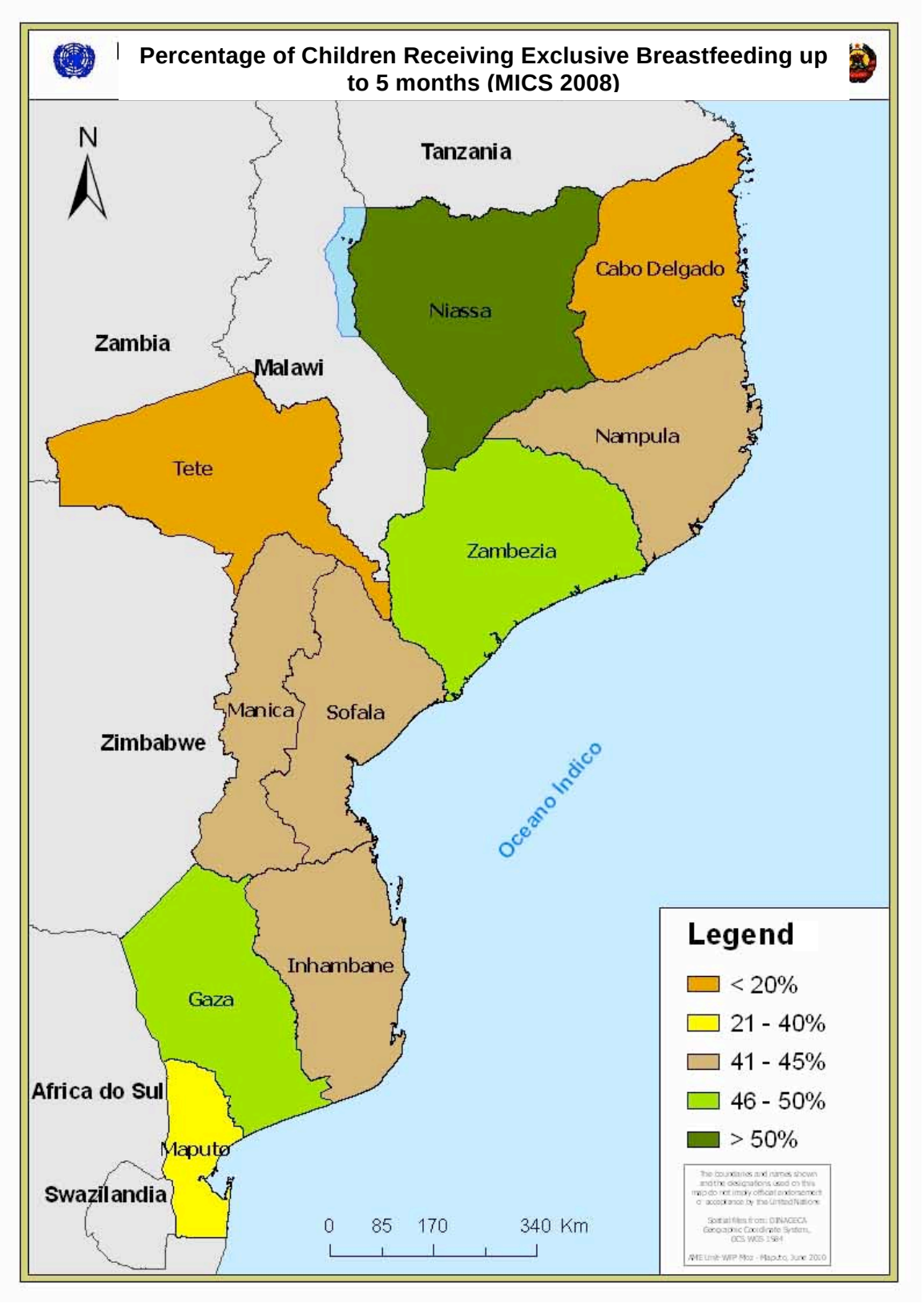
MAP 8


Percentage of Families Consuming Iodized Salt (2010)
N
Tanzania
Cabo Delgado
Niassa
Zambia
Malawi
Nampula
Tete
Zambezia
Manica
Sofala
Zimbabwe
Oceano Indico
Inhambane
Gaza
Africa do Sul
Maputo
Swazilandia
0 85 170 340 Km
Legend
< 30%
31 - 40%
41 - 70%
71 - 85%
> 85

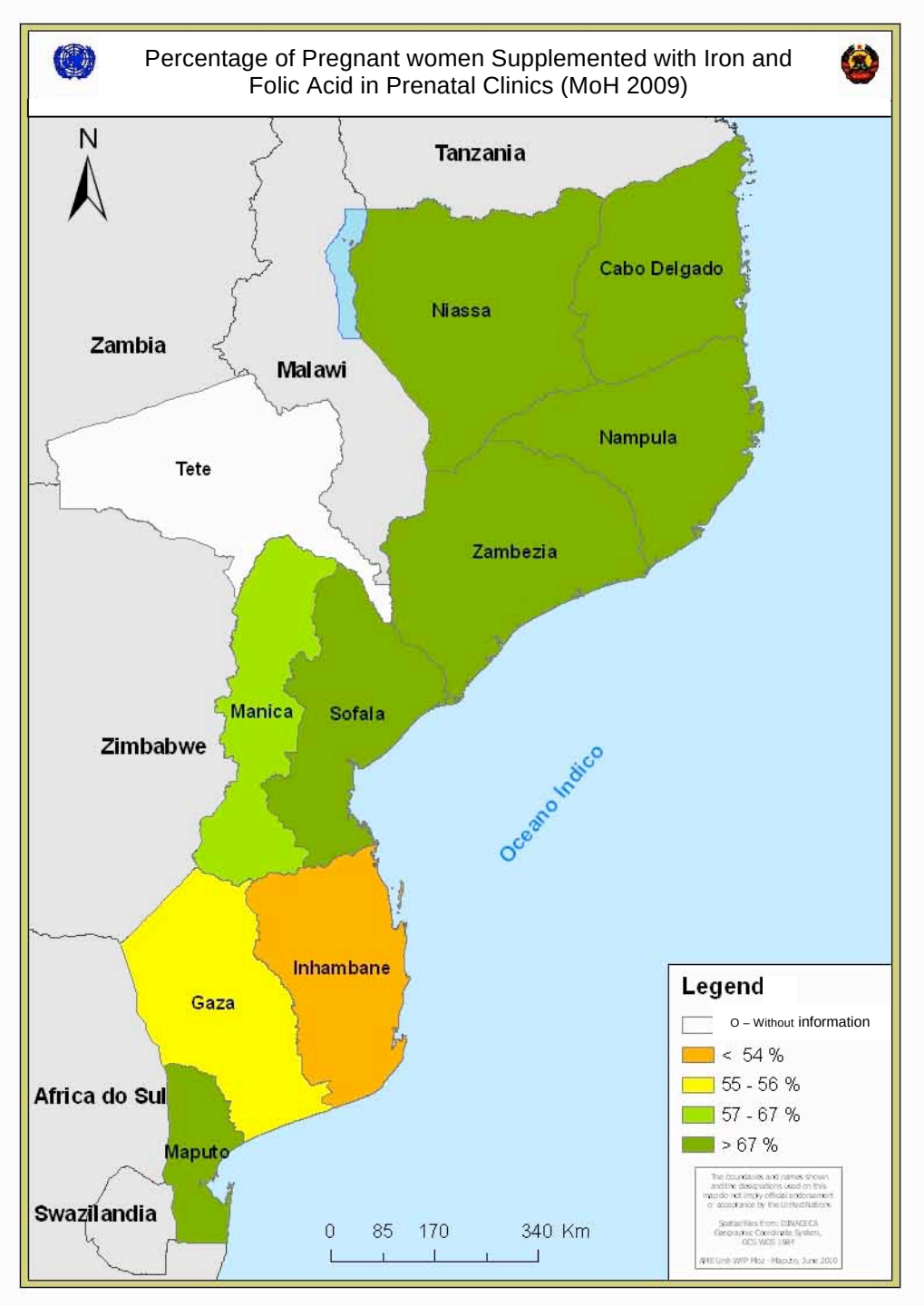
MAP 9


Percentage of Children of 6 to 59 Months Supplemented with Vitamin-A During the National Child's Health Week (MoH 2009)
N
Tanzania
Cabo Delgado
Niassa
Zambia
Malawi
Nampula
Tete
Zambezia
Manica
Sofala
Zimbabwe
Oceano Indico
Inhambane
Gaza
Africa do Sul
Maputo
Swazilandia
0 85 170 340 Km
Legend
< 97 %
98 %
> 99 %

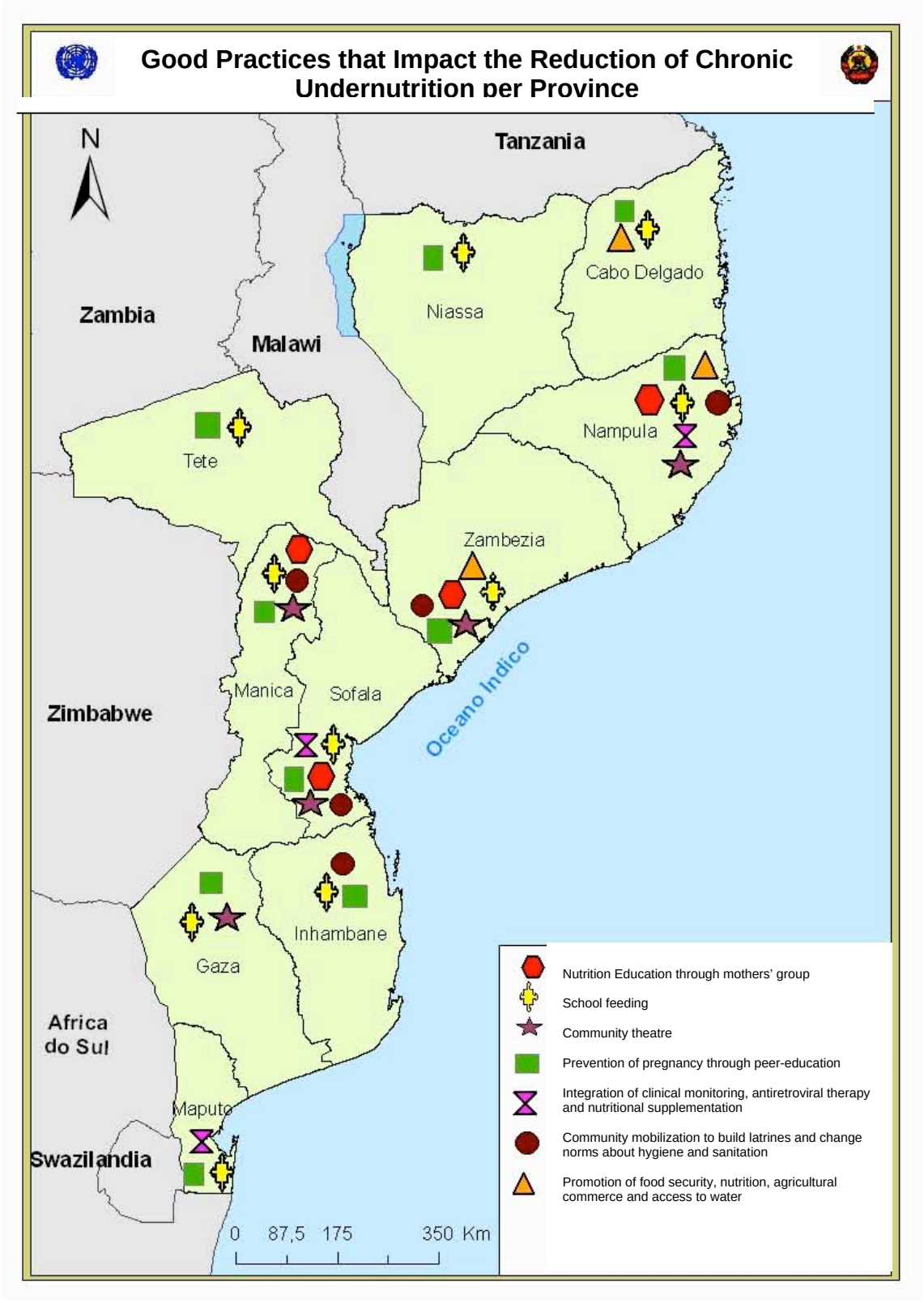
MAP 10


Percentage of Children Receiving Exclusive Breastfeeding up to 5 months (MICS 2008)
N
Tanzania
Cabo Delgado
Niassa
Zambia
Malawi
Nampula
Tete
Zambezia
Manica
Sofala
Zimbabwe
Oceano Indico
Inhambane
Gaza
Africa do Sul
Maputo
Swazilandia
0 85 170 340 Km
Legend
< 20%
21 - 40%
41 - 45%
46 - 50%
> 50%

MAP 11


Percentage of Pregnant women Supplemented with Iron and Folic Acid in Prenatal Clinics (MoH 2009)
N
Tanzania
Cabo Delgado
Niassa
Zambia
Malawi
Nampula
Tete
Zambezia
Manica
Sofala
Zimbabwe
Oceano Indico
Inhambane
Gaza
Africa do Sul
Maputo
Swazilandia
0 85 170 340 Km
Legend
O – Without information
< 54 %
55 - 56 %
57 - 67 %
> 67 %

MAP 12


Good Practices that Impact the Reduction of Chronic Undernutrition per Province
N
Tanzania
Zambia
Malawi
Niassa
Cabo Delgado
Nampula
Tete
Zambezia
Manica
Sofala
Zimbabwe
Oceano Indico
Inhambane
Gaza
Africa do Sul
Maputo
Swazilandia
0 87,5 175 350 Km
Nutrition Education through mothers' group
School feeding
Community theatre
Prevention of pregnancy through peer-education
Integration of clinical monitoring, antiretroviral therapy and nutritional supplementation
Community mobilization to build latrines and change norms about hygiene and sanitation
Promotion of food security, nutrition, agricultural commerce and access to water

TABLES

Table 1. Consultation coverage

Indicator	2008	2009
Prenatal consultation (Antenatal care)	100%	99%
Postnatal consultation	68%	59%
Family planning	11%	10%

Source: PSE 2009, MOH

Table 2: Evolution of National Coverage of Child Consultations (0-4 years old), 2008 and 2009

	2008			2009		
1st Consultation	Target group	1st Consultation Performed	Coverage	Target group	1st Consultation Performed	Coverage
0-11meses*	834,157	833,431	99.9%	867,783	920,842	100%
1-4 years old #	2,731,881	748,728	27.4%	2,842,003	633,252	22.3%

Source: Modulo Básico, MOH.

Table 3. Number of lessons and food preparation demonstration sessions between 2007 and 2009

Province	2007		2008		2009	
	Lectures undertaken	Nr of food preparation demonstrations	Lectures undertaken	Nr of food preparation demonstrations	Lectures undertaken	Nr of food preparation demonstrations
Maputo Cidade	-	-	-	-	515	212
Maputo Província	-	-	1643	381	1643	381
Gaza	453	-	564	46	2082	4681
Sofala	3473	482	7125	2315	12863	15233
Tete	15	5	12	3	274	62
Manica	-	-	72	72	723	15293
Cabo Delgado			26	13	39	96
Nampula	23	96	50	124	23	96
Zambézia			-	-	14027	2142
Total	3964	583	7849	2573	32189	38193

Source: Relatórios Anuais 2007, 2008, 2009, MOH

Table 4. Routine food supplementation in children <5 years with moderate acute undernutrition, 2008 and 2009.

Province	2008			2009		
	Screened children	Cases of moderate undernutrition	Children supplemented, with/ CSB	Screened children	Cases of moderate undernutrition	Children supplemented, with/ CSB
Tete	1,987	558	558	155,968	7,280	7,280
Manica	22,897	1,596	1,596	2,066	1,538	1,538
Sofala	197,103	4,115	4,115	7,907	1,432	1,432
Gaza	2,473	1,601	1,601	3,128	880	880
Maputo Província	9,969	242	242	14,337	390	504
Total	18,118	2,568	2,554	183,406	11,520	11,520

Source: Relatórios anuais 2008, 2009, MOH

Table 5. Vitamin A supplementation coverage for children between 6 and 59 months in the second phase of the National Child's Health Week, 2008 and 2009

Province	2008	2009
Niassa	100%	94.7%
Cabo Delgado	97.8%	100%
Nampula	100%	97.2%
Zambézia	100%	100%
Tete	100%	100%
Gaza	79.5%	100%
Sofala	98.7%	98.4%
Manica	100%	100%
Inhambane	86.8%	100%
Maputo Província	100%	100%
Maputo Cidade	84.8%	96.8%

Source: Relatório da SNSC, 2ª Fase 2008 e 2009, MOH.

Table 6. Deworming coverage in children from 12 to 59 months in the 2nd phase of the National Child's Health Week, 2008 and 2009

Province	2008	2009
Niassa	100%	86.9%
Cabo Delgado	98%	94.9%
Nampula	100%	75.2%
Zambézia	97%	100%
Tete	100%	88.3%
Gaza	82%	98%
Sofala	96%	91.7%
Manica	100%	100%
Inhambane	86%	100%
Maputo Província	100%	98.2%
Maputo Cidade	90%	94.7%

Source: Relatório da SNSC, 2ª Fase 2008 e 2009, MOH.

Table 7. Coverage of Routine deworming in pregnant women, 2009

Province	2009
Niassa	26%
Cabo Delgado	29%
Nampula	ND
Zambézia	48%
Tete	ND
Gaza	ND
Sofala	ND
Manica	41%
Inhambane	28%
Maputo Província	30%
Maputo Cidade	ND

Source: Provincial reports 2009, MOH.

Table 8. Coverage of food distribution by the Food Subsidy Program

Province	2009
Niassa	1%
Cabo Delgado	0.8%
Nampula	0.8%
Zambézia	0.3%
Tete	0.8%
Gaza	1.2%
Sofala	0.8%
Manica	1.2%
Inhambane	1.7%
Maputo Província	0.6%
Maputo Cidade	0.5%

Source: Annual Report 2009, INAS.

Table 9. Coverage of the Rural Extension Program

Province	2009
Niassa	4.4%
Cabo Delgado	1.4%
Nampula	1.4%
Zambézia	1.6%
Tete	2.2%
Gaza	1.4%
Sofala	3.2%
Manica	2.2%
Inhambane	1.4%
Maputo Província	2%
Maputo Cidade	1.3%

Source: Agricultural Extension Activities, DNEA, 2009, MINAG.

Table 10. Access to Water and Sanitation in 2009

Province	Access to and supply of clean water	Access to latrines and sanitation
Niassa	90%	38%
Cabo Delgado	59%	54%
Nampula	40%	30%
Zambézia	39%	25%
Tete	52%	43%
Gaza	67%	40%
Sofala	60%	35%
Manica	66%	56%
Inhambane	64%	92%
Maputo Província	80%	47%
Maputo Cidade	89%	79%

Source: Annual Reports, National Water Directorate, 2009, MOPH.

Annex 3: Existing Good Practices

Good practice 1: Nutrition education through care groups and lead mothers in the communities

Target group	Objective	Method and logic	Impact
Pregnant and lactating women	Training care groups to change practices of many mothers in respect to exclusive breastfeeding, hygiene practice and adequate feeding, identification and referral to Health Units when a child is sick	All mothers select lead mothers who will train community mothers through food preparation demonstration, lectures, home visits. One lead mothers makes 22 hours/month and reaches 12 mothers and visits them biweekly. Existence of 10 health promoters in every district and each will be responsible for training 80 to 100 volunteers. There are currently 3200 lead mothers who regularly visit 28.100 households with children below 5 years old in Nhamatanda, Gorongosa, Marromeu and Caia	In Nhamatanda, Gorongosa, Marromeu and Caia, moderate malnutrition has decreased to 25% and exclusive breastfeeding during the first 4 months has increased from 40% to 80% from 1997 to 2001. (World Relief: 2004) In Chókwe child mortality (children below 5 years old) has decreased to 62% from 2001 to 2004 through this activity (Edward et. Al. 2007, Trans. Roy. Soc. Trop. Med. Hyg. (2007)
Contribution to the action plan: Strategic objective 2,3	Lesson learned: mother practices change through intensive contact between lead mothers and community mothers as trust is created between them. The reason for a leader mother to carry on with her activity is the respect she has in the community and at home. This model can also be used to educate communities about the danger of aneamia and how it relates to chronic malnutrition and maternal mortality		Programs and stakeholders: MYAP: FH, ADRA, WV, Save the Children/Africare Other similar: CUAMM, Cruz Vermelha

Good practice 2: Community theater to promote sanitation, hygiene and good nutrition practices and to prevent malaria and HIV

Target group	Objectivoe	Method and logic	Impact
Pregnant and lactating mothers, households	Mobilization to go to Health Units, behavior change to prevent malaria and HIV and to promote good sanitation and hygiene practices	Demonstrations through theaters attract more people than conventional lectures. Use of local language and reference to local cultural practices help mobilize, raise awareness and promote behavior change sustainability	2/3 out of 3900 informants say that their health units attendance, participation in hygiene related challenges resolution and HIV prevention has increased after attending a community theater. Survey was undertaken in 2008 and assessed activities in Nampula, Zambézia, Gaza, Manica and Sofala.
Contribution to action plan: Strategic objective 1, 2, 3 and 4	Lesson learned: cultural identification of people and visualization of challenge resolution promotes community participation and illiterate people		Programs and source: Assessment of community theater activities (PTO/UNICEF 2009) CUAMM, FDC, Cruz Vermelho, Pathfinder

Good practice 3: Nutrition supplementation, weight evaluation, reference to Health Units and treatment of acute and moderate malnutrition

Target	Objective	Method and logic	Impact
Preganant and lactating women and children up to 5 years old	Reduce acute malnutrition among children aged between 6-59 months to below 10% and increase coverage of acute malnutrition treatment from 20% to 70%	Health services use ACS, APE and activists to assess acute malnutrition among children and pregnant and lactating mothers and refer those with arm circumference below 12.5 cm to Health Units. These provide nutrition education and home visits and refer them to health units where children are treated with Plumpy nut.	The project is in Ribáuè, Memba and Erati in Nampula. Among women and children that were referred to and joined the program, in 2009, 75% were treated. During 2009, 300 ACS were trained, of these71 healath workers, 110 community leader, 99 traditional healers and 171 primary scholl teachers
	Contribution to action plan: Strategic objective 2,3	Lesson learned: community model for treatement of acute malnutrition can be used for preventive treatment of chronic malnutrition in communities	Program and source: FINAL PROJECT REPORT FOR PCA AGREEMENT 2009. MISAU/Save the Children.

Good Practice 4: School feeding to improve nutrition status and performance and retention of students in schools

Target group	Objective	Method and logic	Impact
Children and teenagers	Improve nutrition status and ensure that children are learning and staying in school	Meal distribution to students in schools. Supplement with 100g of CSB that provides 75% of the daily recommended food	Through questionnaire with 144 teachers in 89 schools in Gaza, Sofala, Inhambane and Manica, 59% responding that meals improved effort and the majority responded that meals ensured that sudents go to school. The activity has 199.727 beneficiaries across all the country provinces
Contribution to the action plan: Strategic objective 1		Lessons learned: School feeding support improves performance and nutrition status and contributes to retention of students in schools	Programs and sources: School feeding: PMA/MEC/JAM WFP:2009 A Report from the Office of Evaluation 2009: JAMs Longitudinal Studies

Good practice 5: prevention of teenage pregnancy and HIV/AIDS (Generation Biz-PHB)

Target group	Objective	Method and logic	Impact
Teens	Delay sexual activity, promote the use of condoms and fidelity of partners, raising awareness about the rights of the girl	Allocation of condoms and counselling in schools through peer educators (activists) and SAAJ to raise the target group, as an alternative to counseling given by teachers and in health facilities	Evidence from a survey shows that the use of peer education has an impact on youth behavior; condom use during the first sexual contact increased from 35% to 60% between 2002 and 2005 in secondary schools with PHB. In 2 schools in Maputo, between 40 to 50% of students said they changed their sexual behavior using condoms consistently because of PHB. 4 million condoms and 300 thousand pamphlets were distributed in 2009
Contribution to the action plan: strategic objective 1	Lessons learned: the combination of peer education and condom distribution services in schools is effective because students identify with educators and access methods of prevention are facilitated. The same model can be used to inform about and control anaemia in schools		Programs and sources: PHB, Pathfinder, UNFPA WHO: From inception to large scale, 2009. C. Groes-Green, Sexual Health 2009

Good practice 6: Promotion of agriculture, nutrition and food security and access to water and sanitation (SANA)

Target	Objective	Method and logic	Impact
Preganat and lactating women, children and households	Train animators who refer sick people to health units, train others in construction of improved latrines, boreholes, improve hygiene practices, promote nutrition health and support associations producing high nutrition food and their marketing	Integration of nutrition and agriculture education, support to storage technologies to generate income and sustainability in high nutrition value food production ensuring diversified diet. `Animators` are trained to promote local based enriched porridges, good hygiene practices and exclusive breasfeeding	A preliminar assessment had demostrated that communities understand the linkage between nutrition, agriculture and sanitation. People undertstand that children nutritional status increases with better knowledge on food utilization, hygiene practices and diversified diet
Contribution to action plan: Strageic objective 1,2,3,4	Lesson learned: Hygiene and nutrition education combined with creation of agriculture associations creates an understanding and capacity to produce and prepare diversified melas with high nutrition value. The effect is major when people see their children improving		Programs and stakeholders: MYAP /2008-2011 Save the Children/ Africare; WV, ADRA and FH

Good practice 7: Community mobilization for construction of latrines and boreholes and to change hygiene and sanitation practices

Target group	Objectivoe	Method and logic	Impact
households	Establishment of good hygiene and sanitation practices and encouragement of communities to build and utilize latrines correctly	Demonstration of food contamination so that communities understand the consequences of poor hygiene and sanitation and act collectively. Include community leaders in community mobilization for construction of latrines and their demonstration . Communities granted an award when 100% of house have latrines	Demonstration showing the side effects of defecating out of latrines. Initiated in 173 communities from November to December. As a result more than 49.000 latrines were built with 250.000 beneficiaries. Award were granted to 34 communities for achieving a coverage of 100%
Contribution to action plan: Strategic objective 1,2,3,4		Lesson learned: the combination of risk demostrations, training of community leaders, awards for communities to build latrines prevents the practice of defecating out of latrines and mobilizes all the community to find sustainable solutions	Source: WSP: Evaluation of 'One Million Initiative' Programs and stakeholders: CLTS/ UNICEF Similar activity: ADRA/ Samaritans Purse SCIP: Pathfinder/ Care; SCIP : World Vision /IRD

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