

6 July 2013

*An Evidence-Based Policy Brief*

# Problem of malnutrition in Sudan and suggested solutions

## Executive Summary



### Included:

- *Description & magnitude of the problem of Malnutrition*
- *Viable options for addressing this problem*
- *Strategies for implementing these options*



### Not included: recommendations

*This policy brief does not make recommendations regarding which policy option to choose*



### Who is this policy brief for?

Policymakers, their support staff, and other stakeholders with an interest in the problem addressed by this policy brief

### Why was this policy brief prepared?

To **inform deliberations** about policies and programs addressing Malnutrition by **summarizing the best available evidence** about the problem and viable solutions

### What is an evidence-based policy brief?

Evidence-based policy briefs bring together **global research evidence** (from systematic reviews\*) and **local evidence** to inform deliberations about Nutrition policies and programs

**\*Systematic Review:** A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from this research

### Full Report

The evidence summarised in this Executive Summary is described in more detail in the [Full Report](#)

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All the authors contributed to the drafting and revising of the policy brief

## **Acknowledgment**

This report has been made as initiative from the federal ministry of health (FMOH) to promote malnutrition prevention and management. We would like to thank the Dr Isam Eldin Abdalla FMOH undersecretary for highlighting the issue of malnutrition as national priority and for his communication with other ministries for nomination of a Multi-sectoral national taskforce for this issue. Special thanks go to Dr Talal El Fadil Director General of Basic Primary Care General Directorate for leading the Multi-sectoral national taskforce developed for this problem analysis and for meetings chairing, Dr Louran Ali for guiding the groups discussion, problem analysis and report drafting, Dr Salwa Sorkati for the overall work facilitation and support, other member of taskforce for information sharing and participation in taskforce meetings mainly: Abd Elgadir Ibrahim from Zakat Fund, Dr Nazik Nur Elhuda from the Public Health Institute.

Gratitude is extended to Professor Mabyou Mustafa University of Africa and Chair of Sudanese paediatric Association, Professor Mohamed Zein, Nutrition Centre, Ahfad University for Women for their participation in the brainstorming discussions and report review. We are thankful to Mr James Kingori Nutrition Specialist UNICEF MENA regional office for his contributions in the taskforce final meetings and report finalization and review. Authors are thankful to the following people input and feedback as part of the peer review process: Professor Zein Elabdeen Karar and Professor Ali Arabi, Ms Pushpa Acharya, Ms Emily Mates. Also, thanks to Professor Abdalla Elkhawad for editing the brief.

## **Suggested citation**

Ali, L., Mahgoub, T., Makkawi, T., Mahmoud, I., Adam, M., Tahir, H., Mohamed, I., Elmardi, S., Elidrisi, I., Elnair, E., Hassan, W., Elaziz, F., Elsheikh, B., Sorkti, S., Ali, A., Nile, J.,

# Key messages

## *The problem:*

Two million children below five years out of six million suffer from irreversible chronic malnutrition (stunting) annually in Sudan. This condition leads to children's low brain development, poor school performance and finally less productivity at individual level. Stunting therefore, has lasting effects into adult life, income potential and may generally undermine national productivity and development. This makes stunting as one of the most challenging nutrition issue in Sudan. Some of the factors associated with stunting in Sudan include

- Ⓟ Inadequate food intake for children & mothers at the critical period of growth & life cycle.
- Ⓟ High incidence of communicable diseases among children particularly diarrhoea, measles, pneumonia and malaria.
- Ⓟ Inadequate maternal and child care associated with mothers' fatigue due to their daily chores, lack of access to quality health, delegation of child care to siblings, etc
- Ⓟ Inadequate basic services necessarily for optimal growth particularly water availability and quality, optimal hygiene and sanitation condition and health services
- Ⓟ Socio-cultural issues and related knowledge limitation on optimal growth promotion (infant feeding, dietary habits, health seeking behaviour for mothers and caretakers.
- Ⓟ Challenges related to infrastructure, social support system's coverage and instability in safety net measures, employment opportunity, health and nutrition systems, response coordination, etc
- Ⓟ Insecurity, instability and massive population movement.

## *Policy options:*

Option 1: Community behaviour change and social mobilization:

Option 2: -Improve food security and livelihood

Option 3: Scale up maternal and child health interventions and services

Option 4: High level multi-sectorial coordination

## *Implementation barriers:*

- Ⓟ Community participation and contact with the existing different national cultures
- Ⓟ Health providers education, skills and service provision practices
- Ⓟ Integration of mother and child services and coordination with other related services
- Ⓟ Limited multi-sectoral policies, regulations and resources for nutrition

## *Implementation strategies:*

- Ⓟ Community leadership and evidence based strategies
- Ⓟ Training programs for all professionals and medical schools curriculum revision
- Ⓟ Advocacy and coordination among sectors
- Ⓟ Multi-sectoral policies, regulation & joining of Sudan to international nutrition initiatives

# Executive summary

## *The problem*

Since the last century, Sudan keeps suffering from a silent killer and major destroyer for its development and human resources inhibitor in a form of static acute and chronic malnutrition rates which is affecting the children under five years of age; the most vulnerable age groups of the population and the same time the most promising future for the nation if they got the right care at that sensitive period of their lives. It is important to mention that the chronic malnutrition if not prevented within the first two years of child life it becomes irreversible condition. The first reports in the status of the country regarding malnutrition in 1987 had reported 32% of children are stunted which is more or less similar to the current 35% level of stunting. Furthermore, Sudan has global acute malnutrition rate of 16.4%, severe acute malnutrition of 5.3% and (SHHS, 2010). It is estimated that close to 500,000 children aged less than 5 years suffer from severe acute malnutrition while close to 2 million children are stunted annually. In summary, Sudan is confronted with the fact that almost one third of the current youth will not able to contribute to the nations' development due to the chronic malnutrition that affected them during the childhood period.

Malnutrition in Sudan is a manifestation of multi factors contributing directly or indirectly to the problem. The factors are related to; low health status and health services coverage, adequate and quality water availability, food insecurity, limited safety nets expansion, poor economic and education status at all levels. Impact of these factors is significant despite the efforts from their respective sectors in term of policies existence and implementation strategies. There is huge gap between the actual coverage of the basic services and the actual needs for the targeted population. The fragmentation in policies, strategies and services provision limited the positive impact of sectors interventions.

## *Policy Options*

With regard to malnutrition prevention and management, this report identifies four options. These options are complementary to each other and acts at different levels and among different sectors to deal with the different factors behind the problem of malnutrition in Sudan.

### **Option 1: Community behaviour change and social mobilization:**

This option focuses on raising awareness to improve dietary practice, food preparation and intake. Community involvement is necessary for nutrition status improvement. Actors working with communities are important stakeholders for this option's implementation. This option is feasible, cost effective but, needs innovation and coordination.

### **Option 2: Improve food security and livelihood**

This option focuses on improving the underlying determinants of nutrition; adequate food access and social protection programs. Agriculture plays a major role in nutrition and vis-a-versa so that investment in one will improve the other. Expansion of social protection programs is key for improving income, access and link with services and targeting of the vulnerable.

### **Option 3: Scale up maternal and child health interventions and services**

This option focuses on maintenance and expansion of some cost effective interventions of the on-going acute malnutrition (prevention and management) services. Introduction of new

services that is important for prevention of chronic and acute malnutrition. Furthermore, this option addresses the issue of convergence and integration of services directed towards child and mother health and eventual improvement of nutrition status for both.

#### **Option 4: High level multi-sectorial coordination**

Nutrition is multi-dimensional problem that needs multi-sectoral approach. Multi-sectoral action can strengthen nutrition outcome through accelerating action on determinant of malnutrition like water and hygiene, health services, food security or through redirection of other sectors' programmes to improve nutrition. Such programs might be larger in scale such as social safety net programmes. Multi-sectoral approach is good for policy coherence through drawing wider attention to policies and strategies, introduction of new concepts and monitoring frameworks.

#### ***Implementation barriers and strategies:***

Implementation of these options requires delivery of a package of interventions and to deal with either existing or future anticipated challenges in the process execution. All these options adoption encounter 1 different barriers at community, institutional and service delivery systems and at policy levels as follow:

1. Community involvement and contact and the diversity of Sudanese communities culture are critical challenge for changing the incorrect habits and practices among the community towards maternal and child nutrition
2. Health providers education and skills doesn't support appropriate patients education, maternal and child health as interrelated components to improve nutrition and to achieve health
3. Lack of integration of health care services and synergy among governmental and nongovernmental sectors involved in nutrition and food security is major barrier for scalling sectors efforts to improve nutrition.
4. Inexist of strong national regulations and multi-sectoral policies as well as costs of services maintenance and expansion form major barriers to nutrition prevention and treatment strategies.

The overall strategies to deal with the above-mentioned barriers are:

- ⌚ Community leadership by using different community awareness tools that are based on evidence and pre-implementation analysis is important for making change in community awarens and perception about nutrition.
- ⌚ Development of training materials targeting different professions at different level of the system, revision of medical schools curriculum and team building are important to improve health providers' perfomance.
- ⌚ Advocacy, orientation programs and development of coordination tools are important for expreince and information sharing and joint working
- ⌚ Development of multi-sectoral policies and regulation and participation of the country in international initiative is good for resource mobilization and its better allocation

# The main report

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# Preface

## **The purpose of this report**

The purpose of this report is to inform deliberations amongst policy makers and stakeholders about the problems of malnutrition in Sudan. This report summarizes the best available evidence regarding the promotion of nutrition across various sectors, as well as countries.

The report has been prepared as a background document to be discussed at meetings of all those involved in nutrition; policy makers, service providers and support staff. Furthermore, the report is intended to engage stakeholders in discussions of how to expand, scale-up and integrate ongoing interventions related to food and nutrition.

## **How is this report structured?**

This policy brief has a list of key messages, an executive summary, and a full report to present policy-relevant research evidence about nutrition. Although the report entails some thorough information, the key messages and summary are displayed in a self-informative format.

## **How was this report prepared?**

This policy brief brings together both international and national evidence, to inform deliberations of how to optimize nutrition status in Sudan. Relevant evidence has been used to describe the problem and to identify options that can address it. Further synthesis of the evidence was conducted, to provide an overview of the impact of various options, potential barriers when applying such options, and of implementation strategies to overcome the identified barriers. Information was collected from systematic reviews, original research studies and other relevant reports and documents.

## **Limitation of this report**

This policy brief has been based upon available systematic reviews and international research studies. Where there was insufficient information from these sources, other relevant research studies and international reports were used; collected either through focussed searches or advice from key contacts and experts.

Analysis of evidence entails judgement of its quality and relevance and hence whether to include or not. How the evidence was interpreted, summarized and reported was subject to personal influence. While all attempts were made to be as transparent as possible about subjective issues, it is likely that this report will reflect the opinions and judgements made either by the review authors or the team who developed this policy review.

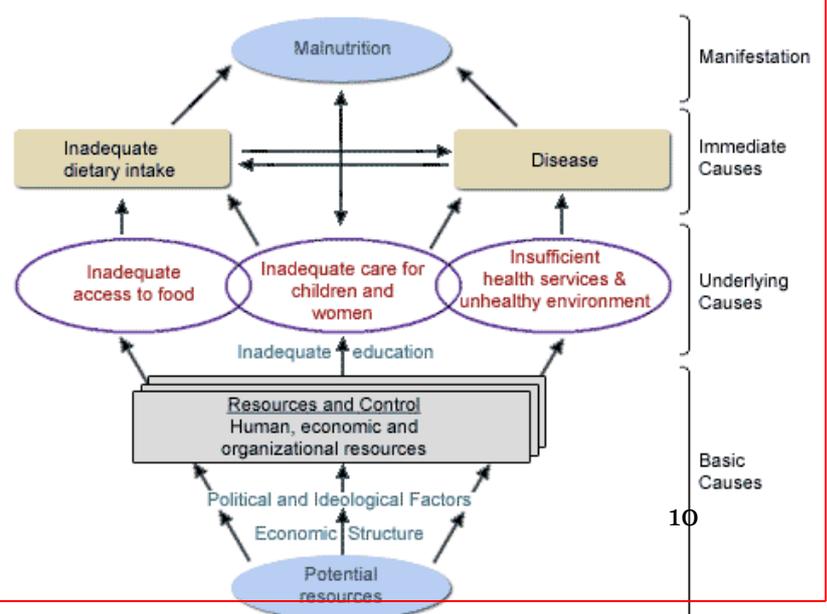
## The problem

Sudan's area covers over 1.8 million square kilometres of land, including desert, semi-arid, tropical and urban areas, with a population estimated at approximately 31 million people (5<sup>th</sup> Sudan Population Census, 2008). Sudan is a country of farmers, agro-pastoralists and pastoralists, the majority of whom rely on rain for both cultivation and pasture / grazing. As part of the Sahel belt, Sudan suffers from years of recurring droughts and poor harvests. The rainfall in 2011 was sub optimal in terms of timing and quantity, resulting in a 50 per cent of average harvest at the end of 2011 (FAO, 2012). However, in 2012 the rains were very good, resulting in an above average harvest and improved food security in conflict-free parts of the country. There is on-going insecurity affecting some states, which negatively impacts livelihoods and coping strategies. In South Kordofan, Blue Nile and Darfur regions, improvements in food security are predicted to be minimal due to on-going conflict and displacement (Sudan Food Security Outlook, 2012).

The succession of South Sudan from the Republic of Sudan in 2011 resulted in a reduction of 30 per cent of the government budget due to the loss of oil revenue (World Bank, 2011). Instability of the economy has seen double digit inflation, affecting prices of all basic commodities and causing a devaluation of the currency. This means that more families are falling into poverty and have decreased peoples' purchasing power - which resulted in a decline in household food purchase.

The above factors directly or indirectly undermine the population's well-being and their resilience to shock due to serious nutrition situation exists in Sudan. The country indicators show nutrition poor situation; the under-five mortality in Sudan stand at 78/1000 (2010 SHHS) while the maternal mortality rates are at 216/1000 and there is poor antenatal care practice. Only less than 30% of Sudan population use sanitation facilities while only 60.5% are drinking appropriately treated water. This increases the risk for diarrhoea and malnutrition. The measles vaccination coverage was about two third of the target group and 39% of the children had received the full immunization doses as per the 2010 SHHS. Given that malnutrition is estimated to underpin 45% of all the under-five mortality (Lancet, 2013), the risk for high child mortality in Sudan persists if the nutrition situation and the aggravating factors are not addressed.

The nutrition situation in Sudan is characterized by chronically high levels of acute malnutrition (measured as global acute malnutrition, GAM) are 16.4%, consistently above the international 'emergency' thresholds of 15%. Severe Acute Malnutrition (SAM) rates are also worryingly high at 5.3% which translates into half a million children suffering from SAM. Put another way, at any point in time, 1 in 20 Sudanese children are severely malnourished, with a greatly increased risk of death. It is estimated that close to 500,000 children aged less than 5 years suffer from severe acute malnutrition while close to 2 million children are stunted annually (SHHS, 2010). However, malnutrition burden varies among states, Red Sea State has the highest rate with 54.1% stunting, 28% for GAM while Khartoum has the lowest rates (21.9% for stunting and 12.8% GAM). Stunting and other forms of under nutrition reduce a child's chance of survival, while also hindering optimal health and growth. In this regard,



stunting is currently the most challenging nutrition problem in Sudan. It has permanent negative effect that hampers child's growth, wellbeing and eventually nation productivity. Specific factors influencing nutrition status in Sudan have been identified by the UNICEF Conceptual Framework for Malnutrition (UNICEF, 1990). The framework identifies the various inter-related factors that determine the population's nutrition wellbeing to be broadly categorized as immediate, underlying and basic causes. In Sudan, **the immediate causes of malnutrition** are the inadequate dietary intake and disease. There are many indicators showing the high prevalence of these aggravating factors for malnutrition such as diarrheal diseases and malaria, low coverage of measles vaccination and food deprivation.

**For underlying causes of malnutrition;** there are many cultural practices that undermine nutrition well-being such as low rates of the exclusive and the continued breast feeding (almost 40% for both), limited dietary diversification either due to lack of food variety or limited knowledge, intra-household food distribution giving priority to men. In addition to, taboos, early marriage, negative perceptions on family planning still predominant among the Sudanese communities. Moreover, the high illiteracy levels among Sudanese women- that 50% of them are illiterate- is a key challenge to good nutrition practice. These cultural issues hinder positive behavioral practices needed to improve nutrition situation and maternal and childcare.

Access to basic services is another problem in Sudan. Although there are many efforts to expand the health, nutrition and sanitation services, still less than half of the population have access to the basic survival services which are in turn being provided in a fragmented manner. There is an ongoing national effort to promote integration of health care services however; this has not been reflected at the service provision sites.

**For the basic causes of malnutrition** (social political, economic and human resources); Sudan is country of high poverty where 46.5% of the population are below the poverty line with urban and rural as well as states variation (Poverty Reduction Strategic Paper, 2012). Sudan ranks number 171 out of 179 countries in International Human Development Index (UNDP, 2012). There are national policies and projects for poverty reduction and social protection but has its limitations. The health insurance is mainly targeting the formal sector and face difficulty in expansion among the poor due to the absence of clear national monetary pro-poor policies. Although, Zakat is a fund dedicated for the poor, it is of limited amount (<1% of total national expenditure) (PHC Policy Brief, 2012). The social protection project is a promising project, it includes direct cash payment and micro-financing but, it is not sustainable and impaired by lack of dedicated government support. Food security is major problem in Sudan; one out of three Sudanese suffer from food deprivation. Major factors behind that are; the weak country infrastructure in term of transportation, poor use of technology, insufficient market management, limited investment in agriculture that the share of agriculture in the financial sector allocations dropped from 33% in 1998 to only 8% in 2007 (ICARDA, 2012). In addition to the above mentioned issues, nutrition prevention strategies directed towards stunting is not yet presented among the national priorities for instance, in the national five years strategic plan for health 2012-2016 the presence of nutrition is very limited and presented only as Vitamin A supplementation indicators (JANS, 2013). The current nutrition policy focuses on treatment of acute malnutrition with minimum attention to prevention strategies and limited integrated approaches. It is also good in mortality reduction but not helpful for reversing of malnutrition status in Sudan neither the prevalence of stunting.

In view that, malnutrition is a manifestation of multiple factors and needs a multi sector approach to address it (Bhutta, et.al, 2008), equal attention and adequate resources should be given to the various determinants (causal factors of malnutrition) and the potential for synergy across the determinants should be exploited. Further, delivery of an integrated response in areas of high nutritional vulnerability is paramount in Sudan to improve the respective nutrition indicators of acute malnutrition in the short term and stunting in the medium / longer term.

It is important to denote that the global community now concurs that increasing investment in nutrition will accelerate progress on a range of Millennium Development Goals (MDG), especially MDGs 1 (poverty), 2 (education), and 4 and 5 (maternal and child health). Nutrition investments have the potential to augment GDP in developing countries by at least 2-3%. Investing \$1 in nutrition can result in a return of up to \$30 (World Bank, 2011).

## **The Policy Options**

These policy options are selected based on careful appraisal of ongoing different sectors nutrition strategies and activities. The four policy options presented in this report act at different levels and sectors and complement each other; hence they propose elements for national multi-sectoral package for prevention and treatment of malnutrition.

### ***Option 1: Community behaviour change & Social mobilization***

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In order to reduce children malnutrition, it is essential that children get nutritious food including breast feeding for the less than 2 years, improved hygiene and adequate health care. Poverty and food insecurity can have a serious constrains in the accessibility to nutritious diet that have all the essential and adequate macro and micronutrients, necessary for the prevention of malnutrition in children. To solve this dilemma, options including changing behaviour to include specially formulated foods (fortified blended food, complementary food supplements, lipid-based nutrients etc) are key to improve food quality (De Pee, et.al, 2009). In a study conducted in China in 2012, surveying feeding practices among caregivers revealed that the studied children suffered conditions ranging from wasting, underweight up to stunting due to lack of feeding knowledge and practices of care givers and the study recommended that more health education programs to increase the care givers knowledge are necessary to improve the health of children in remote and poor areas (Zhou H, et.al, 2012).

In a multi-country study conducted in 2013 covering Ghana, South Africa and Afghanistan, high burden of malnutrition in older infants and young children was recorded. This study concluded that different communities require different approaches as far as nutrition interventions is concerned in order to influence policies addressing malnutrition, such as behaviour changes, cultural recognition of the special food for infants and food preparation methods (Pelto GH, et.al, 2012)

To enable children to grow normally, there are many parental care giving behaviours related to food that are essential to ensuring adequate nutritional intake. These behaviours include obtaining and selecting foods that meet nutritional requirements, preparing them safely and in a form that is appropriate for the child's age, and feeding them in a manner that encourages adequate intake. These are essential underpinnings of nutrition and health-giving behaviours, which in turn are the prerequisites for child health and well-being. Because care giving behaviours are the links between resources and knowledge, on one hand, and child

health on the other, programs that seek to improve child health and nutrition must, by definition, change care giving behaviours (Loechl C, 2002)

Changing health and nutrition behaviours in the community requires both input from individuals who possess knowledge and credibility and a receptive audience. A group that could be effective and who have a unique position in most communities such as the religious leaders and elderly women public committees, because they possess extraordinary credibility and influence by virtue of their association with their honoured religious traditions and positions in the community, would be a great help in changing communities behaviour towards their nutritional habits (Anshel and Smith, 2013)

The above issues need to be considered to positively influence behaviour and practice that would lead to better nutrition. This option's implementation is feasible only if there is on-going activities and intervention target behaviour changes within health sector but it needs further scaling up and improvement. There is also strong media sector but its involvement in promoting health is limited to some health issues and not nationalized. Education sector also could play vital role in this option implementation. Taking this approach in this option adoption will make it feasible and implementable. Also, it will promote equity and quality of health through reaching different communities using suitable tools.

## ***Policy option 2: Improve food security and livelihood***

Overall improvement in agricultural per capita income is more strongly associated with stunting reduction as it benefits the poor (Webb, 2011). Doubling the agricultural per capita income is associated with 21% decline in stunting. Furthermore, 15% reduction in stunting and 11% reduction of acute malnutrition is associated with doubling of GDP. The food supply chain framework is good in linking food production with food consumption and human nutrition (World Bank, 2010). It can be usefully considered in terms of the following pathways to achieve good nutrition:

### **1. Household production to improve quality food consumption**

It is essential to increase food security at Household levels as research on market gardens showed that small farm families can increase family income by approximately 30%. The production of staple foods leads mainly to greater access to and consumption of energy. Increased production of fruit, vegetables, and animal source foods leads to food diversification, increased consumption of iron and vitamins (Masset, 2012). Initiatives that improve the productivity of the food system on- and off-farm will increase incomes for those most in need (World Bank, 2007).

### **2. Income Oriented Production for Sale in Markets**

Income sources increases food availability and meals diversification which support nutrition improvement. The translation of increased income into better child nutrition, in turn, depends on a series of intra-household factors which include women's status, education, knowledge, health related practices, decision making power, income, and access to and use of health and sanitation services (UNICEF, 2011).

### **3. Empower Women Through income increase and education**

Women and girls are most vulnerable to food insecurity—benefit from home gardens to grow indigenous or local food plants. Multi country analysis showed that improvement of women status and education contributed by 50% to the reduction in child under weight during the years 1970-1995 (Smith, 2000). Among women empowerment activities increase women access and control on income and reduce labour and time constrains to avoid poor birth outcomes due to excessive maternal work during pregnancy (Rao, 2003). Diversification of income options through livelihood support programmes (micro-credit, employment creation,

etc) has the potential to enhance household food security as well as improving population's resilience to shock (inflation, crop failure, drought, etc).

#### 4. Reduction in Real Food Prices Associated with Increased Agricultural Production

Food production increment has strong link with land cultivation which is important in the area that markets are less integrated. For net consumers, reduced food prices enable greater access to food and essential nutrients, resulting in better health and productivity for the general work force while also freeing additional household resources from food to other expenditures, including productive investments.

#### 5. Addressing Food Access through Comprehensive and Sustainability Plans

The comprehensive plan is a long range policy document that addresses a wide variety of interconnected social, environmental and economic topics; provides legal, political and logical rationale behind a community's development and settlement patterns. This plan enables communities to address these various issues.

#### 6. Conditional Cash Support Based Program

Its objective is to sustain service demand and increase service uptake, programs aim to reduce [poverty](#) by making [welfare programs](#) conditional upon the service receivers' actions. The government only transfers the money to persons who meet certain criteria. These criteria may include enrolling children into public schools as well as health and nutrition service uptake (e.g. growth monitoring, vaccination, etc).

This option advocates furthering expansion and strengthening of existing intervention to promote food availability and access. Its implementation is feasible but it needs further collaboration beyond one sector level address to food issue. Certain strategies look costly at the beginning but, in the long run it will retain resources and promote development in the country. This option strongly promotes equity and not only quality of health but well-being. Its major strength is that it is directed towards the poor and the needy. Implementation of this option needs sectoral dialogues, collaboration, coordination and conceptualization of these options of interventions as inter-related strategies towards one unified goal.

### ***Policy option 3: Scale up maternal and child health interventions and services***

Adequate nutrition in-utero and in the first 2 years of life is essential for the formation of human capital: raising of birth weights and nutrition recovery of undernourished infants are viewed as a cost-effective approaches to improving the human capital of countries.<sup>1</sup>

Many basic child health and nutrition interventions have been shown to decrease the child mortality. Many of these interventions are applied in Sudan while few remained not really applied or at least in need of scaling up at national level.

New efforts need to build on existing programs and systems. Fundamental directions for improving service delivery include availing of data, use of different delivery strategies (e.g. mobile services) as well as strengthening of the national health system as medium-to-long-term goal (Lancet, 2008).

An extensive review of interventions to address undernutrition in pregnant women and children identified 13 activities to be as the most efficacious actions for reducing undernutrition and nutrition-related mortality. The return on investment for these activities would be over 20% child deaths prevented; 400,000 fewer stunted children under the age of five years (a 20% reduction from current rates); and a remarkable halving of the prevalence of severe acute malnutrition. Out of these 13 interventions, Sudan is making considerable efforts in the areas of vitamin A supplementation and treatment of severe acute malnutrition and salt iodization but, their coverage is not adequate. For the rest of recommended interventions, there is a lot to be done in the areas of:

1. Breastfeeding promotion and support
2. Complementary feeding promotion
3. Hand washing with soap and promotion of hygiene behaviours
4. Deworming
5. Iron fortification on stable food
6. Prevention and treatment of moderate malnutrition in children 6-23 months of age
7. Iron folic acid supplementation for pregnant women in addition to
8. introduction of Therapeutic zinc supplements
9. Multiple micronutrients Powders and Supplementation with iodized oil capsules for pregnant women.

These interventions are included in the Scaling Up Nutrition (SUN) movement Framework which endorsed by over 100 international agencies, CSOs, universities, and bilateral organizations Reaffirmation of the above intervention is present in the 1000 days initiative (Thousand Days Report, 2011).

Considering that consequences of undernutrition are particularly severe, irreversible and have far reaching effect to an individual and to the nation in general, appropriate maternal care during and after pregnancy as well as care for newborn babies are crucial. Right nutrition during the first 1,000 day window can: (UNICEF, 2013)

- save more than one million lives each year;
- significantly reduce the human and economic burden of diseases such as tuberculosis, malaria and HIV/AIDS;
- reduce the risk for developing various non-communicable diseases and other chronic conditions later in life;
- improve an individual's educational achievement and earning potential
- Increase a country's GDP by at least 2-3 % annually.

This option advocates for integration of nutrition interventions within the other maternal and child health programs. It also calls for adoption of the 1000 days initiative as one of the effective global movement for tackling the chronic malnutrition and its prevention. This option is applicable as it goes with the Federal Ministry of Health efforts to promote service integration. Adoption of this notion in addressing child and maternal health is an opportunity for integrating and consolidating public, private and international donor's plans and fund. This option promotes service access, quality and efficient use of resources.

### ***Policy option 4: High level Multi Sectorial coordination***

Putting fighting malnutrition as a top priority is one of the smartest ways to allocate money to respond to ten of the world's biggest challenges (Copenhagen Consensus for Economists, 2012). Malnutrition needs a multi-sector approach to address it. (Bhutta, et.al, 2008) This policy option aims at establishing, maintaining and operationalizing a National Multi-sectoral Coordination body for Nutrition (NMCN). This body should be supported by the political and government system for tackling the nutrition challenge in Sudan. This body is formed by members from government line ministries, civil society, private sector and the UN involved directly or indirectly in enhancing the nutrition well-being of Sudan population and should be under the highest authority level of the government structure (Ministry of Cabinet or The President through The National Health Council). The government institutions

involved in coordination are those dealing with Health, Nutrition, Water Sanitation and Hygiene, Food Security and Livelihood, Governance, Infrastructure and Economic Recovery, Social welfare, Finance, Trade, Education, civil defense and judiciary. Parliamentarians, national nongovernmental and private sector bodies are key members in this body to deepen the social responsibility, voice and protect the needs of the nation. The NMCN is mandated to steer stakeholders' effort and use of resources in promoting nutrition at various levels and areas of interventions through:

- 1) Advocating for nutrition investment at policy and operational/ implementation level not as a lifesaving endeavor but as a prerequisite to national development
- 2) Fostering multi-sectorial collaboration of public and private institutions, civil society, UN agencies and the community in addressing nutrition problems affecting the whole community through information sharing, medium to long term multi sectorial policies, strategies and plans as well encouraging collaboration at international regional, national and local levels. (World Bank, 2006)
- 3) Coordinating nutrition related initiatives, monitor and evaluate the implementation of interventions, policy development, advocacy, actively engaging key stakeholders in setting and monitoring the goals and maintaining positive relationships in the nutrition fraternity. (Food Security Policy, 2012)
- 4) Developing nutrition specific and nutrition sensitive strategies and identify common indicators for monitoring and thresholds to trigger, adjust or halt nutrition response in order to maximize benefit on resources and input provided for nutrition response.

This proposed approach for addressing undernutrition have been demonstrated to make a difference in different countries like Ethiopia (through implementation of national plans), India (improving nutrition governance in reducing child stunting in Maharashtra), Peru (addressing inequalities), Rwanda (reducing stunting through consolidated nationwide action), Tanzania (institutionalizing vitamin A supplementation) and Vietnam (protecting breastfeeding through legislation) (UNICEF, 2013)

Establishing a national multi-sectoral body creates opportunities for Sudan to interact with other global initiatives. Sudan can benefit from additional support and networking opportunities. Globally there are initiatives targeting nutrition such as scaling up nutrition SUN and Renewed Efforts against Child Hunger (REACH) movements. Globally 34 countries have joined SUN movement with 22 of the countries coming from Africa, 3 of them being IGAD members like Sudan (Ethiopia, Kenya and Uganda). Ethiopia is a good example of a country that benefited from development of multi-sectoral coordination and join of SUN initiatives. The country developed a national nutrition program based on a national strategy for nutrition. The strategy helped in building agreement on priority interventions and targeting same groups by all stakeholders to reduce the underweight from 24% to 29%, the stunting from 57.4% to 44.2%, wasting from 12.4% to 12% between the year 2000 to 2010. It important to mention that SUN offers technical and financial support to countries in addressing malnutrition (FAO, 2012). REACH initiative, formed in 2008, aims to facilitate mechanisms in the coordination of the partners' support to national nutrition scale-up plans. REACH now has been joined by 12 countries 10 of which are from Africa including Ethiopia and Uganda. This option is feasible, not costly; it promotes equity, quality and efficiency in resources allocation, use and implementation. However, this option needs commitment at sectors and sub-sectors levels (REACH, 2012) and it requires political commitment for its achievement. This option is coinciding with proposal made from the Ministry of Agriculture regarding Development of National Council for Food Security however, the proposed body membership is limited to government bodies and focus on food issues only.

# **Barriers to options implementation**

Different potential implementation barriers to the options have been identified. These barriers and relevant strategies have been summarised and presented below in table no 1 below:

**Table no 1 Potential Barriers to Implementing the Options**

Categories	Option one		Option two		Option three		Option four	
	Barriers	strategies	Barriers	strategies	Barriers	strategies	Barriers	strategies
Patient/community	Reach of people in remote areas, nomadics, illiterates	Use of tools and methods that allow reaching these groups	N/A	N/A	Poverty	Option 3 and 4	N/A	N/A
	Sudan is a diverse country with different cultures, values and taboos.	Development of strategies based on pre-analysis						
	Weak community participation in health	Community leadership strategies						
Providers	Health providers lack patient education skills	Development of appropriate training materials targeting all professionals	N/A	N/A	Pre-service training segregate maternal, child and nutrition education	Integrated training programs, curriculums revision	N/A	N/A
	lack of training materials targeting other professionals							
Organization	Procuracy and weak linkages with other ministries & NGOs	Option 4, advocacy and orientation and training programs according to level and contribution of partners	Difficult to influence other sectors at national and state levels	Legislation, Advocacy programs	child & maternal interventions are not integrated	Integration policies/strategies	N/A	N/A
Health system	Related sectors (media, youth ...etc) are not oriented on nutrition issues		Costly option (agriculture & saftey nets)	Resource mobilization (SUN), option 4	Resources for expansion & maintinance	Redirection and efficient use of resources	Needs higher authority leadership and members hip	Advocacy & lobby Development of technical committees
			Unstable market regulations	enforcement of food legislations				
			existing activities are limited & uncoordinated	Option 4				

# Implementation considerations

There are many enabling factors that can support implementation of these brief options:

1. Strong government commitment to nutrition resulted in development of national bodies such the national nutrition program (Federal Ministry of Health), The National Food Security Commission (Ministry of Agriculture)
2. Existence of strong national safety net and social protection networks and programs among different ministries targeting women and child well-being
3. Existence of broad global nutrition supportive initiatives membered by different UN agencies and international agencies (SUN, REACH) that can promote national level commitment
4. Existence of successful food and cash voucher programs in some states to promote food security.

Overall implementation strategies that are needed to ensure better conceptualization to nutrition and implementation of this brief options are as follow:

- ⌚ Community leadership, evidence based programming and rights based approaches are key to ensure development of good quality intervention and its sustainability
- ⌚ Development of higher level coordination body membered by ministries, non-governmental bodies and donors to ensure coordination, harmonization and alignment of working partners to be reflected in complementary plans and actions, and geographical convergence to be reflected in the joint planning and unified conceptual frameworks and systematic monitoring and evaluation and accountability.
- ⌚ Membership of Sudan in SUN movement to link national efforts with international one, mobilize resources and support to nutrition issues from a multi sectorial prospective.
- ⌚ Information management: Integrate the existing information systems from all involved sectors (nutrition surveillance, health, Food security, social security etc) to be pooled in one data centre for joint reporting to support decision making and prioritization.
- ⌚ Address the prevention component of the 1000 days initiative including micronutrients, adequate and diverse food during and after pregnancy up to two years, and expand the initiative to cover the period up to 5 years of the child's age.
- ⌚ Change the concept of health system actors about nutrition as PHC services to be integrated in maternal and child health services and broaden to ensure more support to nutrition education and treatment
- ⌚ Increase resources allocated to agriculture and social protection sectors and improve the targeting criteria to ensure equity.
- ⌚ Deliberate convergence for the water hygiene and sanitation (WASH) services with nutrition services in areas of high nutrition vulnerability should be prioritized. Hygiene will be an essential part of the minimum package to be delivered aiming at prevention and treatment of malnutrition in Sudan. Nutrition and health service point will continue to be the entry point for community based WASH services in an effort to contribute to nutrition indicators. Common information and education materials for social mobilization and awareness with messages of nutrition and WASH among other complementary services will be promoted through (a) Mapping of existing and proposed nutrition centres in areas of high malnutrition rate to establish outreach services around these feeding centres (b) Nutrition vulnerability indicators alongside WASH vulnerability indicators will be used in the prioritization for response (c) integration of WASH and nutrition to achieve Open Defecation Free (ODF) communities in areas of high nutrition vulnerability.

- 🕒 Social protection programs should be oriented to include nutrition as criteria for selection of target groups for better prioritization, resource allocation, funding frequency and income control.
- 🕒 *Improve design and effectiveness of public works program to make effective social safety net through generating new short-term job opportunities for the poor and vulnerable and improving nutrition practices among participating households through behavioural change interventions.*
- 🕒 *Ensure gender equality as cross cutting theme in both nutrition sensitive and specific interventions to empower women and promote nutrition of affected communities.*

## Next steps

The objective behind development of this policy brief is to update the policy makers and stakeholders with most recent, relevant and strong policy evidence that can inform a process towards improving nutrition situation in the country. The intension is not to provide readymade options or advocate to an option against another or close off discussion. Actions are expected to follow the deliberation that the policy brief is intended to inform. This course of actions might include:

- 🕒 Reflection and feedback from the policy makers and stakeholder about the option/options presented in this policy brief.
- 🕒 Improving, refining or adjusting of the preferred option or options by the policy makers and stakeholders. This might include incorporation of some options components, remove or modification in some option/options.
- 🕒 The policy makers and stakeholders might go into further practical steps to implement the agreed upon option/options. This may include a multi-sectoral plan for nutrition which should build on the identified priority strategies, identifying critical activities, implementation modalities and milestones, resources and main stakeholders. For the sake of that, a national coordinating body with authority and accountability need to be established and assigned to lead the process of implementing the stakeholders' recommendations out of the content of this report. This team who will work on this assignment will be decided upon during the deliberation meeting and the time frame for this process also is supposed to be agreed upon by the policy makers and stakeholders.

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