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CLIMATE CHANGE AND NUTRITION SECURITY

Message to the UNFCCC negotiators

The United Nations System Standing Committee on Nutrition (UNSCN) is the food and nutrition policy harmonization forum of the UN system. This UNSCN paper aims at providing negotiators involved in the United Nations Framework Convention on Climate Change (UNFCCC) with convincing, evidence-based and compelling arguments to address nutrition security into the climate change agenda.



Proposals to UNFCCC negotiators

Nutrition needs to be addressed by the Ad-Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA).

SHARED VISION - Climate change directly affects food and nutrition security of millions of people, undermining current efforts to address undernutrition, one of the world's most serious but least addressed socioeconomic and health problems. The shared vision section of the AWG-LCA should recognize this and indicate that joint comprehensive short and long-term approaches are needed to preserve and improve nutrition security while addressing climate change. Strategies to respond to climate change through adaptation, mitigation, finance, technology, and capacity-building, should properly take into account the impact of climate change on nutrition security.

ADAPTATION - Nutrition and food security need to be integrated in the enhanced action on adaptation. Nutrition security should be explicitly addressed in climate resilient development, national adaptation and disaster risk reduction plans in low and middle income countries (LMIC). A revitalized twin-track approach to ensure food and nutrition security could reduce vulnerability, build resilience and secure nutrition under a changing climate. Track one consists in the up-scaling of nutrition-specific interventions and safety nets. Track two consists in a multi-sectoral nutrition-sensitive approach to sustainable and climate-resilient agriculture, health and social protection schemes, risk reduction and risk management plans and climate resilient community-based development. It is essential to increase attention to and target the most vulnerable to suffer from undernutrition such as mothers and young children.

MITIGATION - Nutrition-sensitive climate change mitigation interventions are urgently required, to reduce current and future impacts of climate change on food and nutrition security. Mitigation actions can favour or compromise food and nutrition security in LMIC and thus should be designed carefully. Nutrition-sensitive mitigation strategies that bring co-benefits in terms of enhanced production of and access to food, should be further explored, tested and scaled up. Investments in research are essential to obtain further evidence to determine which mitigation actions have negative effect on nutrition security, why and identify alternative nutrition-sensitive solutions. The mitigation section of the AWG-LCA should mention that mitigation strategies with co-benefits on nutrition, health and the environment, such as sustainable food production and food consumption and waste reduction should be explored and encouraged.

FINANCE, TECHNOLOGY AND CAPACITY-BUILDING - Financial mechanisms are crucial to address climate change impacts on nutrition in LMIC. The finance section of the AWG-LCA should stress that support for adaptation and mitigation should protect and improve nutrition. Climate Funds and private investments that will finance climate change adaptation and mitigation in LMIC should be nutrition-sensitive, with national adaptation plans ensuring adequate budgetary allocations and actions to address nutrition problems. Climate Funds should finance mitigation strategies that bring co-benefits and enhance adaptive capacity for food and nutrition security and nutrition-sensitive technological innovation. It is necessary to strengthen the capacities of national governments to protect and enhance nutrition security under a changing climate, and to integrate nutrition into climate-resilient development and adaptation plans.

POLICY COHERENCE - It is necessary to develop coherent and coordinated nutrition-sensitive institutional and policy frameworks at local, national and international levels, to address the impacts of climate change on nutrition. Stakeholders involved in the climate change discussions should draw on support from the UNSCN and other related international institutions and initiatives, such as the Committee on World Food Security (CFS), and the Scaling Up Nutrition (SUN) movement. Mechanisms that ensure policy coherence between development, adaptation and mitigation objectives should be explored and implemented at all levels.

Introduction

Undernutrition remains one of the world's most serious but least addressed socioeconomic and health problems^{1,2,3}. The number of people suffering from hunger stood at 925 million in 2010 and maternal and child undernutrition remain pervasive^{2,4}. In developing countries nearly one-third of children are underweight or stunted^{1,3,4}. Undernutrition, including micronutrient deficiencies (also referred to as “hidden hunger”) is caused by inadequate dietary intake and disease which in turn stem from food insecurity, poor maternal and child care practices and inadequate access to clean drinking water and safe food, sanitation and quality health services. The human and socioeconomic costs of undernutrition are enormous, falling hardest on the poorest, especially on women and children^{1,3}. Undernutrition interacts with infectious disease, causing an estimated 3.5 million preventable maternal and child deaths annually^{3,4}. The resulting impacts in terms of lost national productivity and economic growth are huge, and the recent food and economic crises and economic downturn have magnified the challenge of hunger and undernutrition^{1,3,5}.

Climate change affects food and nutrition security and further undermines current efforts to reduce hunger and protect and promote nutrition^{6,7,8,9,10,11,12,13,14}. Additionally, undernutrition in turn undermines the resilience to shocks and the coping mechanisms of vulnerable populations, lessening their capacities to resist and adapt to the consequences of climate change.

This paper highlights how climate change further exacerbates the already unacceptably high levels of hunger and undernutrition and proposes policy directions to address the nutrition impact of climate change for consideration by the 16th Conference of the Parties (COP) to the UNFCCC. The current negotiation process offers opportunities to identify and address some of the actions needed. However, large efforts will be required beyond COP16, and nutrition should be part of future negotiations.

Nutrition insecurity A major consequence of climate change

Climate change will increase the risk of hunger and undernutrition over the next few decades^{6,15} and challenges the realization of the human rights for health and adequate food^{16,17}. Climate change will affect nutrition through different causal pathways that impact food security, sanitation, water and food safety, health, maternal and child health care practices and many socioeconomic factors^{6,7,8,9,10,11,12,13,14}.

With a likely change in the patterns of climate-related extreme events, such as heat waves, droughts, storms, heavy precipitation and floods¹⁸ and increased risks of disasters¹⁹, vulnerable communities and households will suffer serious setbacks in terms of food and nutrition security^{6,10,20}. The Intergovernmental Panel of Climate Change (IPCC) fourth assessment report (AR4) concluded that undernutrition linked to extreme climatic events may be one of the most important consequences of climate change due to the very large numbers of people that may be affected⁷.

Climate change negatively affects food availability, conservation, access and utilization and exacerbates socioeconomic risks and vulnerabilities. Climate change is

expected to further reduce food productivity and to make production even more erratic in regions where agricultural productivity is already low¹³. With local production declining and probable disruptions caused by climate hazards, income generating opportunities and purchasing power will decrease for vulnerable populations. At the same time, decreases in production could lead to price increases for staple crops of 25 to 150% by 2060¹³. According to the IPCC AR4, if current trends continue, it is estimated that 200–600 million more people will suffer from hunger by 2080²¹. Calorie availability in 2050 is likely to decline throughout the developing world resulting in an additional 24 million undernourished children, 21% more relative to a world with no climate change, almost half of which would be living in sub-Saharan Africa^{9,13}.

Climate change negatively affects nutrition through its impacts on health and viceversa. Climate change has an impact on water availability and quality, sanitation systems, food safety and on waterborne, foodborne, vectorborne and other infectious diseases^{7,22,23} which eventually both increase nutritional needs and reduce the absorption of nutrients and their utilization by the body. The impacts

of climate change on nutrition and health will further aggravate the effects of the HIV pandemic, reducing the workforce dedicated to agriculture and the food supply²⁴. This is a great concern considering that most of the populations affected by HIV depend on agriculture for their livelihoods²⁵. Climate change will also put further strain on the already heavy workload of women with negative impacts on their ability to provide proper care to infants and young children, heightening the risk of undernutrition^{26,27}.

The poorest and most vulnerable, including women, children and marginal communities are also at greatest risk to suffer from the potential impacts of climate change¹⁵. This is due to their high exposure to natural hazards, their direct dependence on climate-sensitive resources, and their limited capacity to adapt to and cope with climate change impacts¹⁵. Smallholder and subsistence farmers, pastoralists and artisanal fisherfolk in particular will suffer complex, localised impacts of climate change⁶.

Mitigation is critical to limit impact of climate change on food security and nutrition in low and middle income countries in the future. However, mitigation strategies should not increase food and nutrition insecurity. For example, biofuel production can have a negative impact on food production and nutrition¹⁰. Biofuel production requires large amounts of natural resources (arable land, water, labour, etc.) that might thus be diverted from the cultivation of food crops¹⁰. Food availability may subsequently be reduced, leading to shortages on markets and associated food price increases¹⁰. The realization of the right to food can be compromised both by inadequate climate change mitigation strategies²⁸ and by the failure to implement these strategies¹⁷. Sustainable and appropriate solutions need to be urgently explored, tested and implemented for climate change mitigation strategies that do not harm food and nutrition security.

Ensuring nutrition security in a changing climate

A combination of action on climate change adaptation and mitigation supported by research and technological development can reduce the threats to food and nutrition security¹⁰.

A revitalized twin-track approach has been proposed to address the impacts of climate change on food and nutrition security^{10,20}. Track one consists of direct and immediate nutrition interventions and safety nets. Track two consists of a broader multi-sectoral approach, which mainly involves sustainable and climate resilient agriculture and rural development, health and social protection schemes, risk reduction and management plans and community approaches addressing the most vulnerable among others^{10,15,20}.



Since the effects of climate change all are extremely location specific, international and national stakeholders should work to ensure that technical, financial, and capacity-building support reaches local communities⁹. They should promote community-based and needs-driven approaches, and encourage community participation in national planning processes.

ADAPTATION: DIRECT NUTRITION INTERVENTIONS AND MULTI-SECTORAL APPROACHES

Direct nutrition interventions to build resilience to climate change impacts

Direct nutrition interventions can contribute to reducing vulnerability and building resilience to climate change consequences. The 2008 Lancet series on efficacious nutrition interventions and a 2009 World Bank study on the programmatic feasibility and cost-effectiveness of these interventions lead to the identification of a package of highly cost-effective interventions, concentrating on the window of opportunity^a for children under two years of age but including some components with broader benefits, including for maternal undernutrition^{1,29}. These high-return interventions would improve family nutrition practices and supplement foods and micronutrients provided by families, whether through market purchases or through home production³. These evidence-based direct interventions to

a. From pregnancy to two years old; when children are reached during the critical period between conception and 2 years of age, the irreversible and intergenerational effects of undernutrition can be hindered.

prevent and treat undernutrition include:

- Promotion of good nutrition and hygiene practices, such as breastfeeding, complementary feeding for infants beyond six months of age, improved hygiene practices including handwashing, and deworming programs;
- Micronutrient supplementation for young children and their mothers (e.g. periodic Vitamin A supplements and therapeutic zinc supplements for diarrhoea management);
- Provision of micronutrients through food fortification for all (e.g. salt iodization; iron fortification, etc.);
- Therapeutic feeding for malnourished children with special foods, including the prevention or treatment for moderate undernutrition and the treatment of severe undernutrition (“severe acute malnutrition”) with ready-to-use therapeutic foods (RUTF)^{1,3}.

Sustainable, climate-resilient and nutrition-sensitive agricultural development

Agriculture is fundamental to reducing global hunger and, along with the health and care-based approaches, is integral to improving nutrition outcomes worldwide¹⁴. Climate change instils greater urgency to find more sustainable, resilient and efficient ways of producing, trading, distributing and consuming food. Producing more food does not necessarily lead to a better access to food or to an improved nutritional status of those who need it most³⁰. In Kenya and in the Philippines, for example, the adoption of cash crops expanded food supply and doubled the household incomes of small farmers, but 2006 studies showed that children’s energy intake increased only from 4 to 7 percent, and that child undernutrition was little changed³¹.

Climate-resilient agriculture should be nutrition-friendly and health-promoting, as part of a broader nutrition-sensitive agricultural development framework. Agriculture can sustainably contribute to improving dietary diversity and nutrition by supporting, among others¹⁴:

- Agricultural extension services promoting better crop diversity and biodiversity for improved nutrition;
- Integrated agro-forestry systems that reduce deforestation and promote the sustainable exploitation of nutrient-rich non-wood forest products, in particular in areas with traditional agro-forestry knowledge;
- Integrated farming systems exploiting the synergies of horticulture, aquaculture and small livestock rearing to reduce waste and expenses on agricultural inputs and increase food production diversity;
- Improved household food production and livelihoods (i.e. diversification of household food production for self-consumption, to improve the nutritional quality of the family diet).

In addition, education, communication for development and social marketing strategies that strengthen local food systems and promote cultivation and consumption of local micronutrient-rich foods; research and development programmes for the breeding of selected crops and livestock with enhanced nutritional quality; and improved post-harvest management (food storage, transformation, handling and processing) to reduce losses in terms of quantity and nutrients content also contribute to nutrition security¹⁴.

Agricultural policies must go beyond staples and increase the availability and affordability of a diverse range of nutritious food (vegetables, fruits, animal and dairy products, small fish, under-utilized nutrient-rich indigenous foods, etc.). Agricultural policies should be pro-poor by enhancing and sustaining people’s ability to procure and use the amount and variety of food required to be active and healthy. Policies must also be gender-sensitive: the majority of small-scale farmers are women, who are balancing their childcare responsibilities and farming every day. Particular attention should be given to strategies reducing workload of women taking into account the repercussions on the nutrition and care of children³². Agricultural investment in sustainable, climate-resilient, gender-sensitive and nutrition-sensitive development can contribute to reducing undernutrition among children under five years of age. The International Assessment of Agricultural Knowledge, Science and Technology for Development report (IAASTD) recommended to reverse top-down transfers of technology and replace them with bottom-up, participatory, farmer-oriented innovations³³.

Access to maternal and child health care, safe water and sanitation systems and adequate, safe food

There is a need for additional investment and planning to address the new challenges posed by climate change to health related issues¹². Maternal and child health care need to be implemented successfully and to provide near-universal coverage. Other important actions for minimizing health impacts from climate change include: strengthening of public health systems and basic clinical care systems including the availability of essential drugs; enhancing local capacities to address public health emergencies; strengthening surveillance systems of infectious disease; improving the use of early warning systems by the health sector; addressing known environmental risk factors and water-related diseases; integrating nutrition and hygiene education in interventions for the treatment of severe malnutrition, diarrhoeal illness and other common childhood illnesses; and strengthening surveillance and control of food hazards and foodborne disease by food control and health authorities^{12,22,34}. Greater emphasis needs to be placed on protecting the health of particularly vulnerable groups, more particularly young children,

pregnant and lactating women. The critical role of the nutritional status of adolescent girls and of women prior to conception and interpregnancy intervals needs to be specifically addressed and has rarely been mentioned. Rural communities and urban areas with high levels of maternal and child undernutrition, as well as communities with high infectious disease burdens from malaria, tuberculosis and HIV deserve specific attention.

Social protection schemes that have proven effective in addressing undernutrition

Droughts or others climate-related shocks frequently force poor families to resort to negative coping strategies (for instance reduction of the quality, safety and quantity of their meals, reduction of the expenditures on health and education, sale of productive assets, etc.)¹⁵. These coping strategies generally increase the risk of undernutrition¹⁵, in the short- or medium-term and women and children are the first to be affected. Social protection programmes are powerful instruments to link risk reduction and immediate protection measures with efforts to build long-term resilience amongst the most vulnerable groups³⁵, more specifically young children and their mothers. Given the critical role that women play in the nutrition of children, transfers should be delivered through gender-sensitive mechanisms.

Short-term emergency or seasonal safety nets can avoid irreversible losses in human capital, reduce the incidence of negative coping mechanisms and protect the family's access to sufficient, nutritious and safe food. Food and cash-for-work programs prevent poor farmers from selling off their few productive assets during crises, thereby protecting development gains. Social cash transfers, generally delivered by governments on a permanent basis, can help poor families to reduce their vulnerability and may also directly influence nutritional status. Conditional cash transfer programmes in Colombia, Mexico and Nicaragua decreased stunting rates by 7, 10 and 5.5 percentage points respectively³⁶. Labour-based productive safety nets and pro-poor insurance schemes can allow poor farmers to protect their productive assets and to gain access to investment opportunities that they would otherwise miss. School-based approaches (school feeding programmes, school gardens, nutrition education, etc.) can support child nutrition through improved diets, food and nutrition education and provide a platform for addressing child health. When children are reached during the critical period between conception and 2 years of age, the irreversible and intergenerational effects of undernutrition can be hindered. Later in life, school-based approaches may support child nutrition through improved diets, food and nutrition education and provide a platform for addressing child health.

Empowerment and social participation within climate-resilient and nutrition-sensitive community-based development

Empowerment and social participation of women and other vulnerable groups is necessary throughout the decision-making, planning and implementing processes. Investments for community food and nutrition security should¹⁵:

- Target strengthened legal rights and equal access to resources for both women and men;
- Support responsive institutions grounded in the local context;
- Expand and improve livelihood options;
- Support gender dynamics, gender equality and girls' education;
- Enhance local capacities by building on local, indigenous and traditional knowledge with institutions at all levels; and
- Create a restored, diversified natural resource base and ensure that populations have the capacities and means for a sustainable management of their natural resources.

In addition to a rural focus, attention has to be given to urban and peri-urban areas. The food supply in urban and peri-urban areas can be put at stake by climate change hazards (for instance as a result of the destruction of crops or the interruptions of supply channels). These perturbations can have an important impact on the growing urban and peri-urban populations, in particular the poorest and most vulnerable living in precarious conditions in slums, with no access to social protection or safety nets. Young children, adolescent girls, and pregnant and nursing women in rural, urban and peri-urban areas should receive specific attention.

Nutrition-sensitive disaster risk reduction and management

With increasing risks of climate-related disasters, there is a need to better protect those who are already food and nutrition insecure by developing nutrition-sensitive disaster risk reduction strategies and risk management practices. There is a reservoir of important indigenous and traditional knowledge in hazard-prone communities. Policy-makers and practitioners should capitalize upon this existing knowledge and promote the positive local risk management and coping strategies. In line with the Hyogo Framework of Action (2005)³⁷, key areas would be: participatory, nutrition-focused risk assessments and risk reduction plans; effective nutrition surveillance and early warning systems, coupled with early response mechanisms; disaster preparedness for effective response to adverse hazard events and capacity to address nutrition emergencies; contingency planning

and stockpiling emergency nutrition supplies; building resilience of food and nutrition insecure communities to disasters. The potential of innovative micro-insurance schemes targeting food and nutrition insecure households should be further explored. Quality climate risk and early warning information should be accessible to communities (with a special focus on women), to decision-makers and to humanitarian stakeholders at all levels. These stakeholders should improve their ability to prepare for and respond to disasters and food and nutrition crises, should be ready to cope with increased demand for support. Innovative examples of climate risk management have already been developed, and could be scaled up and replicated. One example is the Livelihoods, Early Assessment and Protection (LEAP) software application developed in Ethiopia, which allows users to quantify and index the drought and excessive rainfall risk in a particular administrative unit³⁸. The software monitors this risk and guides early emergency responses and the scaling up of the Ethiopian Productive Safety Net Programme (PSNP)³⁸.

MITIGATION: NUTRITION-SENSITIVE CLIMATE CHANGE MITIGATION MEASURES

Climate change mitigation measures need to be put in place urgently in all the sectors, in order to reduce the impacts of climate change on food and nutrition security. The agriculture sector substantially contributes to greenhouse-gas emissions worldwide and therefore offers a significant potential for mitigation^{39,40}. Mitigation strategies in the agriculture sector should be pro-poor and sustainable while avoiding compromising food and nutrition security^{10,20,41}. Many mitigation opportunities in this sector can enhance the adaptive capacity and sustainability of systems contributing to development⁴¹.

The LMIC require a tailored support to address the challenge of investing more in agriculture and ensuring food and nutrition security for their populations, strengthening the resilience of their food production systems to climate change, whilst also reducing emissions from agriculture. Mitigation measures that bring co-benefits in terms of enhanced food production and access, nutrition and health in LMIC should be further tested and scaled up. These strategies include for instance agro-ecological food production systems, integrated agro-forestry and silvo-pastoral systems, or low-emission stove technology for burning local biomass fuels, which can reduce the risk of acute respiratory tract infections in young children^{10,40,42}. Mitigation strategies that aim to reducing the carbon footprint from the whole food sector through sustainable food production and food consumption and waste reduction should be explored and encouraged^{43,44,45}. Recognition that climate change mitigation strategies can have substantial benefits for food and nutrition security, health and climate

protection offers the possibility of policy choices that are potentially both cost effective and socially attractive.

FINANCES: FINANCING NUTRITION, A SOUND INVESTMENT FOR THE FUTURE

There is a need for additional investment to address the new challenges posed by climate change on food and nutrition security in low and middle income countries. Existing and emerging Climate Funds should be mobilized to support nutrition-focused adaptation actions and target in priority women and children in communities most at risk of undernutrition. National adaptation plans should ensure adequate budgetary allocations and incorporate the appropriate actions to address nutrition problems. Climate Funds and others private investments should support as well climate change mitigation measures that bring nutrition co-benefits. Better nutrition strengthens communities and local economies and contributes to the achievement of other development and adaptation objectives.

STRATEGIC CAPACITIES FOR POLICY DEVELOPMENT, INSTITUTIONAL ACCOUNTABILITY AND GOOD GOVERNANCE

A number of policy, institutional and governance issues have considerable influence on food and nutrition security. Reaching and sustaining food and nutrition security in a changing climate requires a multi-sectoral approach involving agriculture, health and social protection. There are also important links to education, water-supply and sanitation as well as to cross-cutting issues like gender equality, governance and state fragility. Nutrition outcomes are good impact indicators for each of these sectors.

The cross-sectoral nature of nutrition and the potential negative implications of climate change mitigation actions on nutrition call for increased policy coherence, institutional and cross-sectoral collaboration, at local, national and international levels. Mechanisms that ensure this policy coherence between development, adaptation and mitigation objectives should be explored and implemented at all levels. Effective cross-sectoral planning and solutions should be facilitated by joint efforts among communities and local stakeholders, governmental and public agencies, the United Nations agencies, civil society, private sector and academia, and by developing partnership mechanisms at all levels. It is necessary to strengthen the capacities of the various stakeholders involved in direct nutrition interventions, food production and access, social protection systems and also to improve their ability to prepare for and respond to disasters.

Many LMIC lack the adequate institutional framework and

human resources to implement nutrition-based agendas⁴⁶. Special efforts are needed to raise awareness on nutrition and climate change among decision-makers and policy-makers, to strengthen national capacities, to bridge the gaps between sectoral institutions. At international level, there is a need for nutrition policy coherence and cooperation to eradicate undernutrition in all its forms^{10,20} including both under and overnutrition. Stakeholders involved in the UNFCCC climate change discussions should draw on support from related international fora and initiatives, such as the

United Nations System Standing Committee on Nutrition (UNSCN), the Scaling Up Nutrition (SUN) movement, the Committee on World Food Security, the UN High Level Task Force on Global Food Security, the REACH partnership and the International Health Partnership. There is still a gap between affected communities and the national and multilateral debates. It will be necessary to better link the local-level voices, experiences and expertise to the national and international climate change agendas, for adaptation and mitigation to succeed.

Conclusion

Climate change directly affects food and nutrition security, undermining current efforts to address undernutrition, one of the world's most serious but least addressed socioeconomic and health problems. A combination of nutrition-sensitive adaptation and mitigation measures, nutrition-smart investments, increased policy coherence, and institutional and cross-sectoral collaboration can address the threats to food and nutrition security from climate change.

Nutrition-sensitive adaptation and mitigation measures should be integrated with development strategies and programmes. Changes in policies, institutions and governance will be needed to facilitate this intersectoral approach^{10,20}. Placing people and human rights at the centre of strategies to adapt to and diminish the effects of climate

change can enhance the development and implementation of climate-resilient policies. A rights-based approach engages the rural, peri-urban and urban stakeholders most vulnerable and affected by climate impacts as active participants in this process.

Comprehensive long-term cooperative actions in the frame of the UNFCCC are needed to formulate clear responses in order to protect and enhance nutrition from the effects of climate change. The UNFCCC negotiators have the opportunity and the responsibility to consider and address nutrition in the strategies defined in the frame of the Ad-Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA). Unless we urgently do so, it will not be possible to reduce hunger and undernutrition under a changing climate.



Glossary

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life; **household food security** is the application of this concept to the family level, with individuals within households as the focus of concern^{14,47,48}.

Malnutrition is a broad term that refers to all forms of poor nutrition. Malnutrition is caused by a complex array of factors including dietary inadequacy (deficiencies, excesses or imbalances in energy, protein and micronutrients), infections and socio-cultural factors. Malnutrition includes undernutrition as well as overweight and obesity^{14,49}.

Nutrition security exists when food security is combined with a sanitary environment, adequate health services, and proper care and feeding practices to ensure a healthy life for all household members^{14,49}.

Undernutrition exists when insufficient food intake and repeated infections result in one or more of the following: underweight for age, short for age (stunted), thin for height (wasted), and functionally deficient in vitamins and/or minerals (micronutrient malnutrition)¹⁴.

About the UNSCN and this policy brief

The United Nations System Standing Committee on Nutrition (www.unscn.org) has the mandate to be a global point of convergence in harmonizing nutrition policies and activities and providing initiative in the development and harmonization of concepts, policies, strategies and programmes in response to the nutritional needs of countries. The UNSCN aims to enhance dialogue and linkages, and fostering joint nutrition action and partnerships between different stakeholders across health, food security, social protection, human rights and climate change constituencies among others, nurturing a social movement to improve nutrition and ensure nutrition security for all.

It is uncontroversial that climate change has an impact on nutrition and brings additional pressures for the already food insecure regions of the world. The absence of nutrition in the major climate change agendas is alarming, and makes clear that despite its importance, nutrition only

plays a subordinate role in the agriculture and food security discussions on climate change. The UNSCN is willing to promote the debate and strengthen the participation of nutrition on ongoing and future climate change discussions. Climate change has been an important topic of discussions of the UNSCN Working Group on Household Food Security.

Given the need to increase public and institutional attention to the negative impacts of climate change on Nutrition and the relevance of this area for the United Nations Framework Convention on Climate Change (UNFCCC), the UNSCN ad hoc Nutrition and Climate Change Working Group was created in 2010 with the aims of bringing a nutrition lens into climate change issues and increasing the participation of interested sectors, facilitating information exchange and supporting nutrition-focused climate-related policies and strategies. This paper is the result of the e-discussion by the members of this working group. See: www.unscn.org/en/nut-working/nutrition_and_climate_change.

UNSCN resources

UNSCN statement prepared for COP15:

<http://www.unscn.org/en/statements/>

UNSCN News 38 on Climate Change: Food and Nutrition Security Implications:

http://www.unscn.org/en/publications/scn_news/

UNSCN ad hoc Working Group on Climate Change and Nutrition:

http://www.unscn.org/en/nut-working/nutrition_and_climate_change/

UNSCN, 2010. Sixth report on the world nutrition situation:

<http://www.unscn.org/files/Publications/RWNS6/html/index.html/>

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References

1. Horton S., Shekar M., McDonald C., Mahal A., Brooks J.K. (2009). *Scaling Up Nutrition: What Will It Cost?* Washington DC: The World Bank.
2. Food and Agriculture Organization of the United Nations (2010). *The State of Food Insecurity in the World. Addressing food insecurity in protracted crises.* Rome: FAO.
3. Scaling Up Nutrition (SUN), 2010. *Scaling Up Nutrition: A Framework for Action.* Accessed online at: http://www.unscn.org/en/nut-working/scaling_up_nutrition_sun/sun_purpose.php on 10 November 2010.
4. Black, R.E., Allen, L.H., Bhutta, Z.A., de Onis, M., Mathers, C. & Rivera, J. (2008). Maternal and child undernutrition: Global and regional exposures and health consequences. *The Lancet* 371 (9608, January 19): 243-260.
5. Bloem M.W., Semba R.D. and Kraemer K. (2010) Castel Gandolfo Workshop: An Introduction to the Impact of Climate Change, the Economic Crisis, and the Increase in the Food Prices on Malnutrition. *Journal of Nutrition* 140: 1325–1355, 2010.
6. Easterling, W.E., P.K. Aggarwal, P. Batima, K.M. Brander, L. Erda, S.M. Howden, A. Kirilenko, J.Morton, J-F. Soussana, J. Schmidhuber & Tubiello, F.N. (2007). Food, Fibre and Forest Products. In M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson [eds], *Climate Change 2007: Impacts, Adaptation, and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 273-314). Cambridge and New York: Cambridge University Press.
7. Confalonieri, U., B. Menne, R. Akhtar, K.L. Ebi, M. Hauengue, R.S. Kovats, B. Revich & Woodward, A. (2007). Human Health. In M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson [eds], *Climate Change 2007: Impacts, Adaptation, and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (pp.391-431). Cambridge and New York: Cambridge University Press.
8. Costello A, Abbas M, Allen A, Ball A, Bell S, Bellamy R, Friel S, Groce N, Johnson A, Kett M, Lee M, Levy C, Maslin M, McCoy D, McGuire B, Montgomery H, Napier D, Pagel C, Patel J, Puppim de Oliveira JA, Redclift N, Rees H, Rogger D, Scott J, Stephenson J, Twigg J, Wolff J, Patterson C (2009) Managing the health effects of climate change. *The Lancet* 373: 1693–733.
9. Nelson GC, Rosegrant MW, Koo J, Robertson R, Sulser T, Zhu T, Ringler C, Msangi S, Palazzo A, Batka M, Magalhaes M, Valmonte-Santos R, Ewing M and Lee D (2009) *Climate Change Impact on Agriculture and Costs of Adaptation.* Washington, D.C.: International Food Policy Research Institute.
10. Food and Agriculture Organization of the United Nations (FAO) (2008). *Climate Change, Bioenergy and Nutrition.* FAO High Level Conference on Food Security and the Challenges of Climate Change and Bioenergy. Rome: FAO.
11. United Nations Children's Fund (UNICEF) (2007). *Climate Change and Children,* New York: UNICEF.
12. World Health Organization (2008). *Protecting Health from Climate Change.* Geneva: WHO.
13. Parry M., Evans A., Rosegrant M.W. and Wheeler T. (2009) *Climate Change and Hunger: responding to the Challenge.* Rome: WFP.
14. United Nations Standing Committee on Nutrition (2010). *6th Report on the World Nutrition Situation.* Geneva: UNSCN.
15. WFP et al., (2009). *Climate change, food security and hunger: Key messages for UNFCCC negotiators.* Technical Paper of the Inter-Agency Standing Committee (IASC) Task Force on Climate Change. Accessed online at: <http://www.humanitarianinfo.org/iasc/pageloader.aspx?page=content-subsidi-common-default&sb=76> on November 11th, 2010.
16. United Nations (2010). Resolution adopted by the Human Rights Council: The right to food. A/HRC/RES/13/4, UN General Assembly.
17. Caesens E., Rodríguez M.R., Figueroa-Irizarry I., Gillard T., Pershing-Foley Z. and Rosenblum P. (2009). *Climate Change and the Right to Food: A Comprehensive Study.* Publication Series on Ecology, Vol. 8. Columbia Law School Human Rights Institute, Heinrich-Böll-Stiftung.
18. Meehl, G.A., Stocker, T.F., Collins, W.D., Friedlingstein, P., Gaye, A.T., Gregory, J.M., Kitoh, A., Knutti, R., Murphy, J.M., Noda, A., Raper, S.C.B., Watterson, I.G., Weaver, A.J. & Zhao, Z.C. (2007). *Global Climate Projections.* In Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor & H.L. Miller [eds], *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate* (pp. 747-846). Cambridge and New York: Cambridge University Press.
19. United Nations International Strategy for Disaster Reduction (UNISDR) (2008). *Climate Change and Disaster Risk reduction: Briefing Note 01.* Geneva: UNISDR.
20. Tirado MC, Cohen MJ, Aberman N, Meerman J and B. Thompson. *Addressing the challenges of climate change and biofuel production for food and nutrition security 2010.* *Food Research International* 43 (2010) 1745–1765.
21. Yohe, G. W., Lasco, R. D., Ahmad, Q. K., Arnell, N. W., Cohen, S. J., Hope, C., et al. (2007). Perspectives on climate change and sustainability. In M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, & C. E. Hanson (Eds.), *Climate change 2007: Impacts, adaptation and vulnerability, contribution of working group ii to the fourth assessment report of the intergovernmental panel on climate change* (pp. 811–841). Cambridge and New York: Cambridge University Press.
22. Food and Agriculture Organization of the United Nations (2008). *Food Safety and Climate Change.* Rome: FAO
23. Tirado, M.C., Clarke, R., Jaykus L.A., McQuatters-Gollop, A., and J. M. Frank. 2010 *Climate Change and Food Safety: a review.* *Journal of Food Research International* 43 (2010) 1745–1765
24. UNEP and UNAIDS, 2008. *Climate change and AIDS - A joint working paper.* UNEP: Nairobi.
25. Gillespie, S. and Kadiyala, S. (2005). *HIV/AIDS and Food and Nutrition Security: From Evidence to Action.* Food Policy Review, No.

7. Washington, DC: International Food Policy Research Institute.
26. Canadian International Development Agency (2002). Gender equality and climate change: why consider gender equality when taking action on climate change? Quebec: CIDA.
27. Crahay P., Mitchell A., Gomez A, Israël A-D, Salpeteur C., Mattinen H., Deret H., Lapegue J., Grosjean L., Ait Aissa M., Brown R., Hauenstein Swan S., Pietzsch S. and Dufour C., 2010. The Threats of Climate Change on Undernutrition — A Neglected Issue That Requires Further Analysis And Urgent Actions, in: UNSCN, 2010. UNSCN News 38 – Climate Change: Food and Nutrition Security Implications. Lavenham Press, United Kingdom.
28. Tirado MC, Cohen MJ, Aberman NL, Thompson B, 2009. Impacts on Nutrition of Climate Change and Bioenergy and Adaptation Strategies. In “The Global Food Crisis: Governance Challenges and Opportunities”. J. Clapp and Cohen M., editors. Wilfred Laurier University Press, Canada.
29. Bhutta Z.A., Ahmed T., Black R.E., Cousens S., Dewey K., Giugliani E., Haider B.A., Kirkwood B., Morris S.S., Sachdev H.P.S., Shekar M. (2008) What works? Interventions for maternal and child undernutrition and survival. *The Lancet* 2008; 371: 417–40.
30. Sheeran, J. (2010). How To End Hunger, Washington Quarterly, April 2010.
31. Hawkes, C., ed. and M. T. Ruel, eds., 2006. “Understanding the links between agriculture and health:,” 2020 vision focus 13, International Food Policy Research Institute (IFPRI).
32. Save The Children, 2009. Hungry for Change: An Eight-Step, Costed Plan of Action To Tackle Global Child Hunger. London: Save The Children.
33. IAASTD, 2008. International Assessment of Agricultural Knowledge, Science and Technology for Development. Synthesis Report. Washington.
34. World Health Organization, International Organization for Migration (IOM), World Vision (WV), United Nations High Commissioner for Refugees (UNHCR) and International Federation of Red Cross and Red Crescent Societies (IFRC) (2009). Protecting the health of vulnerable people from the humanitarian consequences of climate change and climate related disasters. Submission to the UNFCCC 6th session of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA 6). Bonn, June 1-12, 2009.
35. Davies, M. et al., (2008): Climate Change Adaptation, Disaster Risk Reduction and Social Protection: Complementary Roles in Agriculture and Rural Growth?, Institute of Development Studies, Brighton: UK.
36. Adato, M. and Hoddinott, J. (eds) Conditional cash transfers in Latin America: a magic bullet to reduce poverty? Washington, DC: IFPRI.
37. United Nations International Strategy for Disaster Reduction (2005). Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA). Geneva: UNISDR.
38. Hazell P., J. Anderson, N. Balzer, A. Hastrup Clemmensen, U. Hess and F. Rispoli (2010). Potential for scale and sustainability in weather index insurance for agriculture and rural livelihoods, Rome: International Fund for Agricultural Development and World Food Programme.
39. Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, S. Ogle, F. O’Mara, C. Rice, B. Scholes, O. Sirotenko, 2007: Agriculture. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
40. Food and Agriculture Organization of the United Nations (2006). Livestock’s long shadow: Environmental issues and options. The livestock, environment and development initiative (LEAD). Rome: FAO.
41. Consultative Group on International Agricultural Research (CGIAR) (2009). Climate, agriculture and food security: A strategy for change. CGIAR.
42. Wilkinson, P., Smith, K.R., Davies, M., Adair, H., Armstrong, B.G., Barrett, M., Bruce, N., Haines, A., Hamilton, I., Oreszczyn, T., Ridley, I., Tonne, C., and Z. Chalabi. 2009. Public health benefits of strategies to reduce greenhouse-gas emissions: household energy. *The Lancet* 2009; 374: 1917–29
43. EC, European group on ethics in science and new technologies, 2009. Ethics of modern developments in agricultural technologies. European Commission Opinion 24, Brussels, 17 December 2008.
44. Friel S., Dangour A.D., Garnett T., Lock K., Chalabi Z., Roberts I., Butler A., Butler C.D., Waage J., McMichael A.J., Haines A. (2009). Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture. *The Lancet*, 374: 2016–25.
45. United Nations Environmental Program (UNEP) (2010). Assessing the Environmental Impacts of Consumption and Production. Geneva: UNEP.
46. Benson, T. (2008). Improving Nutrition as a Development Priority: Addressing Undernutrition in National Policy Processes in Sub-Saharan Africa. Research Report No. 156. Washington, DC: International Food Policy Research Institute.
47. FAO (2002). The State of Food Insecurity in the World 2001. Rome: FAO.
48. FAO (2009). The State of Food Insecurity in the World 2009. Rome: FAO.
49. Shekar M (2006). Repositioning nutrition as central to development. Washington DC: World Bank.



United Nations
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Standing
Committee on
Nutrition

“Climate change directly affects food and nutrition security. It further undermines current efforts to reduce undernutrition which remains a serious challenge to the social, economic and health dimensions of people’s livelihoods. I welcome this UNSCN advocacy document for the COP 16.”

A handwritten signature in white ink, appearing to read 'D. Nabarro'.

David Nabarro,
*United Nations Secretary-General’s Special
Representative for Food Security and Nutrition*

“On behalf of the UNSCN, I appeal to the UNFCCC negotiators to consider nutrition security in the climate change agenda in a coordinated and multi-sectoral way and to act decisively to the challenges faced.”

A handwritten signature in white ink, appearing to read 'A. Müller'.

Alexander Müller,
*Chair, United Nations System Standing
Committee on Nutrition*

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