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Food and Nutrition Security in West-Africa: Opportunities and Challenges

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11th ECOWAS Nutrition Forum Food and Nutrition Security in West Africa: Opportunities and Challenges



Jeanetta K. Jonhson, Deputy Director-General West African Health Organization (WAHO)

The West African Health Organization (WAHO) is the Health Agency of the Commission of The Economic Community of West African States (ECOWAS). As such, WAHO seeks to harmonize policies aimed at providing a high standard of health to West African communities, within the framework of the Millennium Development Goals (MDGs). A key activity is the coordination of the multisectoral nutrition networks and related activities, in Member States. The ECOWAS Nutrition Forum has been meeting since 1995. This biennial meeting, established in 2004, brings together nutrition stakeholders from 15 member states of ECOWAS, as well as stakeholders from the UN system, international organizations and an increasing number of NGOs, the Civil Society and local associations.

Fighting against malnutrition is not just a matter of public health. Within the framework of MDG1, the battle to protect and improve people's nutritional status (and in particular of children under five years old) is an essential component of the wider range of efforts aiming at improving the socio-economic conditions of populations, especially the most vulnerable groups. Nutrition is a key area in which no stakeholder can, alone, achieve significant progress. This calls for a multisectoral approach in the policies, strategies and interventions supporting and enhancing food security and nutrition, involving, in particular, the health and agriculture sectors.

Malnutrition is a major problem in West Africa and reflects a complex situation. WAHO supports multisectoral approaches involving all stakeholders, to provide practitioners with baseline data and communities with best practices to overcome malnutrition, be it over- or under-nutrition.

At the last Assembly of Health Ministers of WAHO member countries, the Standing Committee on Nutrition (SCN) of the UN System shared with those Ministers the Landscape Analysis, an initiative aimed at monitoring maternal and child malnutrition. WAHO supports this initiative, and will provide its contribution where necessary to ensure its implementation.

The choice of the theme for this forum "*Food and nutrition security in West Africa: opportunities and challenges*", was made at the 10th Nutrition forum in Mindelo, Cape Verde in September 2006. In the present context of rising food prices and increased food insecurity, I would like to compliment the WAHO network on its ability to act as a barometer of the regional situation and on its being proactive. The dangers linked to the correlation of poverty, globalization and adoption of western dietary patterns had indeed already been highlighted at the time.

In a globalizing world, the international community is facing many emerging issues, from climate change, demand for biofuels, increased rate of poverty and demographic growth, to the recent and dramatic financial crisis. It is urgent that we change paradigm and analyze these current issues from a nutrition perspective, re-focusing on the basics of human nutrition, starting from the operational research on traditional foods and local biodiversity. There is also a need to place food and nutrition at the centre of development policies, by supporting awareness-raising and capacity-building within civil society and national institutions, bearing in mind that sustainable solutions can only be multisectoral, and require that the lead needs to be taken jointly by the agriculture and health sectors. The 11th ECOWAS Nutrition Forum has decided that "finance and planning of nutrition policies and programmes", including the appropriate mix in resource allocation, will be the topic of the 12th Forum to be held in 2010 in Abidjan (Côte d'Ivoire) and we are looking forward to working together on these issues in the coming months.

WAHO reiterates its acknowledgments to all partners – the UN System, the NGOs, the bilateral and multilateral agencies, the ECOWAS Commission and Parliament, Civil Society and all Member States - for their contribution to the success of the 11th ECOWAS Nutrition Forum and for their support to the future editions of this networking appointment for West Africa.

Soaring food prices, climate change and bioenergy: new challenges for food security and nutrition

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Far from moving towards target 1.c. of the Millennium Development Goal 1 (*Halve the proportion of people who suffer from hunger by 2015*), as indicated by the prevalence of underweight children under-five years of age, it is expected that in 2015 the number of malnourished people in Sub-Saharan Africa will be superior to that of 1990 (FAO/IFPRI 2008). Extreme poverty in the region has actually increased since the 90s.

In the last two years, new challenges, such as the effects of climate change, increased biofuel production and - more recently - the drastic rise in food prices have emerged in the forefront of the development agenda.

The food prices crisis

Prices in key wholesale markets have been increasing due to a combination of seasonal scarcity of local coarse grain and increased prices for imported grain. The prices of imported rice have increased by more than 50% in West Africa (see table 1) (FEWSNET 2008).

Net food buyers in both urban and rural areas are the most affected by the increase in prices, particularly the poorest households among them, who spend most of their income on food (50-80%).

Households attempt to weather this crisis in a variety of ways, depending on the local situation and their own food system. The first strategy is to "tighten one's belt", cutting down on foods considered less essential and consuming foods of lower quality, thereby reducing dietary diversity and food safety, with immediate consequences in terms of micronutrient intake and possible food contamination. Women of child bearing age and small children are the first affected, with implications on immediate morbidity and longer term human and economic development (FAO/WFP, 2008).

High food prices also lead poor households to cut down on other expenses, such as health, education or housing which further undermines nutrition. In Burkina Faso, food expenditures which accounted for roughly 50% to 60% of the household budget in June 2007 are now estimated at 75% of the budget, to the detriment of health and school expenditures (FEWSNET 2008).

In a second stage, people borrow to buy the food they need and those already indebted are eventually forced to sell assets to repay their debts, thereby embarking a spiral of decapitalisation. In the absence of safety net policies that can help preserve assets, low-income people may have to sacrifice long term sustainable livelihoods to maintain short term consumption. In a rapid survey conducted on the impact of rising food prices in Niger¹, 37% of the households interviewed reported going into debt (FEWSNET 2008).

High food prices also have an impact on the economy, generating new impediments to regional market integration, and jeopardising long term food security and nutrition in the region. For instance, the strong historic market links between Mali and Burkina Faso towards west Niger have been broken due to the food crisis and to political restrictions on trade.

In order to address this complex issue of rising food prices and to strengthen the livelihoods of vulnerable households, it is important to analyse the causes of the crisis. The immediate mechanisms that lead to the increase of food prices are well known, but result themselves from underlying structural causes which include:

- the rising food demand in emerging countries, combined with a shift in food consumption patterns (in particular: increased demand for meat, and therefore increased demand for the cereals needed to feed live-

Table 1: price increases for staple commodities in West-Africa, 2002-2008

Basin	Market	City	Country	Staple	Price in July 2008 (FCFA/kg)	Average July 2002/2007	Percentage Increase
Western Basin	Tilène	Dakar	Senegal	Rice	467	219	113%
	Madina	Conakry	Guinea	Rice	360	290	24%
	n/a	Nouakchott	Mauritania	Rice	434	259	67%
	Bandim	Bissau	Guinea-Bissau	Rice	450	250 (2007)	80%
Central Basin	Sankarya	Ouaga	Burkina Faso	Maize	188	178	5%
	Niaréla	Bamako	Mali	Maize	200	152	24%
	Adjamé	Abidjan	Côte d'Ivoire	Rice	375	n/a	n/a
Eastern Basin	Katakou	Niamey	Niger	Millet	260	157	65%
	n/a	Malanville	Benin	Maize	275	151	82%
	Dawanu	Kano	Nigeria	Maize	285	153	86%

Source: FEWSNET (2008)

1. Système d'Information sur les Marchés Alimentaires du Niger (SIMA), WFP, FEWS NET, Système d'Alerte Précoce du Niger (SAP), Comité permanent Inter-Etats de Lutte contre la Sécheresse au Sahel (CILSS), FAO, UNICEF, UNDP and Catholic Relief

stock);

- the increase in the prices of imported commodities, which percolates through the market system, as relatively cheaper stocks run out in local markets and new and more costly supplies are imported;
- the usual seasonal increases in grain prices;
- climate change, which contributes to more variable weather, more frequent and intense extreme weather events such as droughts and floods, and therefore increased production risks for farmers;
- rising prices of fossil fuel, which inflate agricultural production and marketing costs and contribute to increased demand for alternative sources of energy, such as biofuel;
- the increasing production of, and demand for biofuel, which is considered to be responsible for 30% of the rise of food prices between 2000 and 2007 (FAO/IFPRI 2008);
- speculation.

Malnutrition existed before the current food crisis. As of 2004, 848 million people in the world (over 60% of whom live in Sub-Saharan Africa or in South Asia) had insufficient caloric intake. This figure rose to 923 million by 2007, as a direct result of rising food prices. 178 million preschoolers (one in every three) in developing countries are stunted, due to chronic undernutrition and poor quality diets, and at severe risk of permanent damage to their physical growth and cognitive development.

Poverty is closely associated with malnutrition. Figures show that the one billion people who live in extreme poverty generally also consume fewer than their minimum requirements of 2100 calories per day (FAO/IFPRI, 2008). Poverty translates into insufficient access to food, in both quantity and quality, due to cash constraints as well as difficulties to access natural resources to produce this food, such as land or water. The present crisis constitutes an aggravating factor for poor households, rather than the only determinant of their food insecurity. Health infections further compound the situation as diseases such as malaria or persistent diarrhoea can prevent absorption of adequate food and/or nutrients and contribute to poverty through labour loss and health and care costs. Likewise, living in poverty greatly increases susceptibility to poor health, as low income people often cannot access preventive health services, live in unhealthy environments and have limited access to adequate information.

Broader factors – political, economic and agricultural – also determine the current food crisis. The lack of investment in agriculture of the past 20 years, prompted by low food prices, as well as insufficient agricultural productivity and diversity, contributed to make some countries dependent on overseas' imports and food aid, and thereby vulnerable to any increase of world food prices. It also resulted in a reduced diversity of foods consumed and is thereby an indirect cause of prevailing micronutrient deficiencies.

The complexity of the issue therefore requires an integrated response at all levels.

In order to establish well targeted and sustainable policies, it is essential to identify the most vulnerable households, particularly in countries where inequalities of income are high, and where major geographic disparities exist. Since constraints and opportunities will depend on people's livelihoods and socio-economic environment, vulnerable households should be clustered according to livelihoods, and a rapid analysis of coping mechanisms and causes of malnutrition should be carried out for each group.

The causes of malnutrition are classically clustered into food, health and care constraints. Specific problems such as inefficient health systems or high prevalence of infectious diseases will need to be addressed alongside agricultural issues through multidisciplinary groups.

As far as agriculture is concerned, more resilient food systems need to be promoted. The present commodity-based, market and export-oriented "value chain" approach needs to be complemented by integrated and risk-adverse local approaches based on the sustainable management of natural resources and retrieval of relevant indigenous knowledge and culture. Such approaches would privilege local production, including production of staples, and year-round supply of local markets. They would also contribute to diversify diets through increased access to and consumption of fresh foods, shorten the producer-consumer chain - thereby reducing transport and storage costs - and increase resilience to external shocks. Healthier and cheaper local foods would thus contribute to more sustainable and adequate diets. The promotion of local food systems would require combined investments in research, education and training, as well as policy support to small-scale farmers. Accurate agricultural and ecosystems' expertise will provide the necessary backup for developing coherent and specific strategies. Consumers will need to be aware of the nutritional value of local food products and familiar with food preparation techniques which preserve micronutrients.

Such strategies should involve all stakeholders, from local actors, experts and authorities to international

ones. This will require capacity-building within communities, with a focus on entitlement and human rights, including the right to food. Community commitment in undertaking locally relevant activities is indeed essential to tackle malnutrition. Low income households should be seen as practitioners and not only as beneficiaries, and government and civil society should be seen as key partners.

However, authorities also need to be actively involved and challenges to integrate nutrition in policies are still persisting. It is mainly due to a poor understanding of the prevalence and causes of malnutrition, to low political demand for action against malnutrition – the malnourished often being politically weak – and the intersectoral nature of nutrition, that requires a complicated coordination across multiple ministerial lines and a critical individual leadership (Benson 2008).

A twin-track approach is therefore needed: consumers and malnourished people should be informed about their rights, and advocacy campaigns should be targeted at political leaders and authorities, both at a national and international scale. For that purpose, gathering strong evidence and persuasive spokespersons is necessary to manage tensions between the local and the international level and to address the global and structural issue of food security and nutrition.

Climate change: a long-term challenge to nutrition that needs impending responses

Sub-Saharan Africa will be the region most adversely affected by climate change: up to 250 million people are expected to be affected by water stress, and food production will be severely compromised if no strategy of adaptation is adopted.

The most vulnerable people will - as usual - suffer earliest and most. Poor families with chronically malnourished children are the first to suffer in both man-made and natural disasters. Climate change is expected to make natural disasters more frequent and intense, and may lead to more frequent and violent conflicts².

Climate change will aggravate – and is already aggravating – food insecurity and malnutrition. Pathways to malnutrition consist in a higher frequency of droughts and water scarcity, diminishing dietary diversity, reducing food consumption and leading to water contamination and higher exposure to infectious diseases as well as population displacement associated with impoverishment and changes in consumption habits.

Climate change is a global issue and affects many different sectors.

It will have long-term impacts on agriculture, economy and politics. Agriculture output in developing countries is expected to decline by 10-20% by 2080 because of a decrease of yields, which could increase dependency on food imports if no significant investment in agriculture and research on local food production is made. Political and economic stability could also be endangered by population displacements following environmental disasters. Climate change can accelerate migrations to urban slums, with a potentially negative impact on nutritional status and poverty, and increase the risk of violent conflicts such as that in Darfur, Sudan. The UN projects that there will be up to 50 million people escaping the effects of environmental deterioration by 2020 (FAO/IFPRI 2008).

Climate change will affect health, in a variety of ways:

- increased deaths, disease and injury due to the higher frequency of natural disasters;
- increased burden of diarrhoeal diseases;
- altered spatial distribution of some infectious disease vectors;
- food insecurity and malnutrition.

Climate change adaptation strategies for food security should therefore be planned and included in sustainable development and disaster risk management programmes, while agriculture, food and nutrition issues need to be placed high on national and international climate change agendas.

Adaptation strategies will require a focus on infrastructure development and capacity building of communities and institutions. Mitigation and emergency measures tackling the consequences of natural disasters should include specific attention to long-term disaster reduction and anticipate needs for adaptation. Accurate assessments of the specific impacts of climate change, region by region, will therefore be needed as well as extension and intensification of existing risk-management strategies and mechanisms. The results of these assessments should be made available and understandable to any citizen who could be affected.

Once again, success will depend on the emergence of an integrated approach involving everyone and every sector and aimed at empowering people.

2. Ismael Thiam, PPT presentation at the ECOWAS 11th Forum on Nutrition, September 2008: Freetown.

Bioenergy and nutrition – opportunities and constraints

The issue of bioenergy provides an additional facet to the already complex food security and nutrition picture. Biofuels such as ethanol and biodiesel are seen as an attractive alternative energy source, and an opportunity for small-scale farmers to grow crops on degraded or marginal lands and benefit from the rise in energy prices. Moreover biofuel production is labour intensive and can therefore offer new job opportunities.

However, these assumptions need to be supported by a clear assessment involving civil society and looking at the consequences on the most vulnerable – in particular in terms of food security and nutrition. There is indeed a risk that biofuel production actually contributes to aggravate the already worrying situation.

The benefits from bioenergy production are unlikely to be widespread and indiscriminating. In most countries, female farmers have less access than men to land, water, credit, inputs and services. Yet the role of women for a harmonious development of agriculture and in nutrition is crucial, as constantly demonstrated in recent assessments and publications³.

Energy crop production requires fertilizers and transport facilities. The rise of prices of fertilizers and of transport costs can encourage the concentration of the energy crops production sector and thereby exclude small-scale farmers from the associated advantages.

Biofuels may have negative nutrition impacts through reduced food availability and associated price effects if lands previously dedicated to food crops are turned into energy crops production, but also through effects on health and sanitation and increased greenhouse gas emissions. Government should make sure that the so called “idle lands” are not in fact devoted to food production or important to the livelihoods of local and indigenous people.

The production of energy crops can also compete with food production by monopolising some critical resources such as water, preventing the surrounding small-scale farmers from having access to these resources.

As shown in figure 1, the impact of bioenergy on malnutrition will depend on the scale of expansion of bioenergy production, which is finite. A doubling of current and planned production (the “drastic expansion” scenario) would mean very significant increases in child malnutrition in Sub-Saharan Africa and South Asia, which are already the centre of gravity of preschoolers’ undernutrition. The question remains as to the appropriateness of energy crops as a valid and realistic alternative for the future.

It is therefore important that every country and every actor gets accurate and neutral expertise and that every bioenergy project be systematically assessed for its potential impact on food security and nutrition.

Once again, the issue of bioenergy should be assessed and debated among multidisciplinary and multistakeholder groups, including experts, politicians and representatives of civil society, in order to make sure that it contributes to sustainable development and does not jeopardise food security. The ECOWAS Commission for Agriculture, Environment and Sanitation has clearly a central role to play in the sub-regional process.

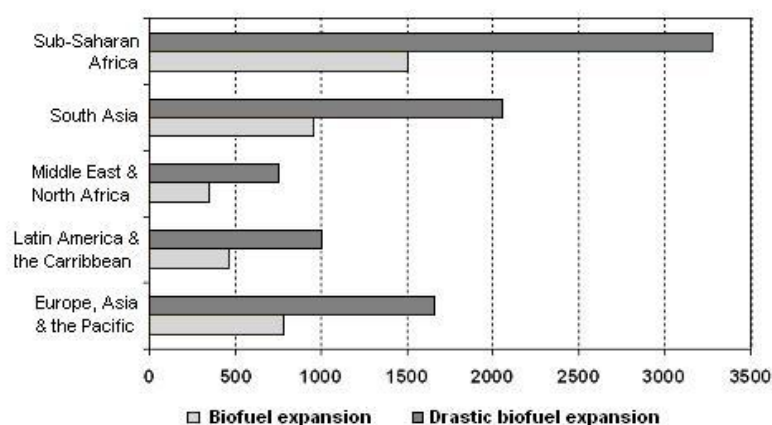
Concluding remarks

The topics of high food prices, climate change and bioenergy should be addressed within a common food security and nutrition framework including both structural and conjunctural issues and looking at the articulation of global and local processes.

It is urgent to question the assertions underlying the present economic model and to revisit the world food production and distribution system. Global, regional and national macroeconomic policies should be systematically associated with the analysis and monitoring of their possible impact on the most vulnerable.

It is urgent to return to people-centred strategies and policies and to revisit the food and agriculture policies and programmes from a community nutrition entry point. The MDG process, the adoption of the ‘Voluntary

Figure 1: Increase in numbers of preschool malnourished children ('000) in 2020 compared to base year 1997, in two scenarios of biofuel expansion



Source: IFPRI IMPACT Model projections

3. for example : sourcebook developed by IFAD, FAO and World Bank – “Gender in Agriculture”

Guidelines to support the progressive realization of the right to adequate food in the context of national food security'⁴, and the increased attention given to risk management provide a unique window of opportunity.

Emphasis should shift to local development as the most effective approach to:

- protect and improve livelihoods of vulnerable population groups;
- shorten food chains and ensure local availability of healthy and affordable foods;
- manage natural resources in a sustainable way.

Priority should be given to geographical areas most likely to be affected by climate change

In Sub-Saharan Africa, small-scale farmers produce more than 90% of food crops, but are still among the first to be affected by the present food crises. They often have difficulties in selling their products because of biases in markets and cities' preferences for imported food – which at the same time make cities more vulnerable to trade and production shocks. Small-scale food producers also have less capacity to react to global issues such as climate change and their negotiating power is limited, especially in the absence of strong and representative organisations of smallholders.

Coordinated and demand-driven interventions are needed to empower both producers and consumers and enable them to face these new challenges. Local institutions, including NGOs and civil society organisations, will have the lead role to play in such an approach and capacity-building, including joint training-cum-planning workshops, should be given high priority.

In West Africa, it is urgent to accelerate synergies between the different development sectors in partnership with CILSS⁵ In the agriculture sector, priority should be given to involving and supporting small-scale producer organisations to make the best use of local biodiversity; and to policy harmonization, including taxation and tariffs, within the ECOWAS Regional Agriculture Programme (ECOWAP). The contribution of the Network of Peasant organizations and Producers in West Africa (Réseau des organisations paysannes et des producteurs de l'Afrique de l'Ouest – ROPPA) will therefore be critical.

A regional and sustainable solution of the food crisis will depend largely on the setting-up of multisectoral platforms at country level to support policy change, advocacy, and programme implementation.

References

Benson, T. 2008. *Improving Nutrition as a Development Priority: Addressing Undernutrition in National Policy Processes in Sub-Saharan Africa*. IFPRI Research Report No. 156: Washington, DC.

<http://www.reliefweb.int/rw/lib.nsf/db900SID/PANA-7DWCYE?OpenDocument>

FAO/IFPRI (2008). *Impact of Climate Change and Bioenergy on Nutrition*. Cohen M., Tirado C., Aberman N-L., Thompson B, IFPRI-FAO publication: Rome. <http://www.fao.org/docrep/010/ai799e/ai799e00.HTM>

FAO/WFP (2008). *Increased Food Prices – Interventions required to prevent deterioration of health and nutritional status*. Issue Brief, May 2008: Rome.

FEWSNET (2008). *FOOD SECURITY IN WEST AFRICA: Lean season markets and hazards update - August 2008*. – joint paper FAO/WFP/CRS/CILSS/FEWSNET. [http://www.reliefweb.int/rw/RWFiles2008.nsf/FilesByRWDocUnidFilename/YSAR-7JESPN-full_report.pdf/\\$File/full_report.pdf](http://www.reliefweb.int/rw/RWFiles2008.nsf/FilesByRWDocUnidFilename/YSAR-7JESPN-full_report.pdf/$File/full_report.pdf)

4. http://www.fao.org/righttofood/en/highlight_51596en.html

5. Comité permanent Inter-Etats pour la Lutte contre la Sécheresse au Sahel – CILSS (Permanent Inter-State Committee for Drought Control in the Sahel).

Collaborating on nutrition and food security: Implications for the health and agriculture sectors

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Are food security concepts and programmes related to nutrition concepts and programmes?

Food prices, food insecurity, malnutrition – expectations of coordination

In the era of higher global food prices with fluctuations in prices expected for years to come, policymakers trying to plan are asking how bad the implications will be. They know high global prices will occur in addition to the more typical crises of high prices from poor local harvests. If unchecked, they envision a progression of high food prices leading to food insecurity¹, and in turn to malnutrition². That is, they want to know whether higher prices will cause people living in poverty to be unable to pay for food, and whether this will make more of them food insecure. Then, as food insecurity increases, and people eat less for a long while, they want to know whether more of them will become malnourished. Policymakers expect that the relationships between food prices, food insecurity, and malnutrition are understood and that these seemingly straightforward questions can be answered. Answering these questions is a less than straightforward process, however, because the food security and nutrition concepts span multiple sectors that typically do not coordinate their efforts. The New Partnership for Africa's Development (NEPAD) is making great strides in its Comprehensive African Agriculture Development Programme (CAADP) by calling for attention to food insecurity in terms of both agriculture (food supply) and nutrition (hunger and malnutrition), but will also need to continue to forge the intersectoral collaboration to implement its programme (NEPAD 2008). In this paper, we discuss the collaboration needed between the food security efforts of the agriculture sector and the nutrition efforts of the health sector that would allow them to answer key parts of these questions³.

In most developing countries, the responsibility for food security is vested in a Ministry of Agriculture because agricultural productivity and marketing opportunities are very important to the food security of smallholder agriculturists who consume food they grow and earn income from the crops they sell, and who are the majority of households in many African countries. In those same countries, the responsibility for nutrition is usually vested in a Ministry of Health. There is an obvious relationship between agricultural productivity and marketing, and nutrition: high quality food produced by those working in agriculture is necessary for nutritional well-being, along with preventive and curative health services and the practice of optimal behaviours such as the exclusive breastfeeding of newborns. Despite this obvious relationship, Ministries of Agriculture often emphasize food production for export or commercial use, more than focusing on the nourishment of the vulnerable groups of the population. For their part, Ministries of Health emphasize preventing the illnesses that contribute to malnutrition, e.g. diarrhoeal diseases and malaria, more than focusing on improving inadequate food intakes that also contribute to it. Although actors from these two sectors do not typically collaborate closely, the key to addressing implications of the current food price crisis and preventing future ones lie with intersectoral coordination to bridge the gap between food security programmes in the agriculture sector and nutrition programmes in the health sector.

We will look at the conceptual elements of the collaboration between the agriculture sector and the nutrition part of the health sector, and at the institutional constraints to collaboration. We will then make recommendations for the enhancement of intersectoral collaboration and for awareness-raising among policymakers about the relationship between food insecurity and malnutrition, and ways to address both.

Conceptual elements of agriculture-nutrition synergy

The basic concept of synergy between agriculture and nutrition is simple. As shown in Figure 1 (Johnson-Welch et al. 2005), agriculture involves producing food and/or generating income from food. Nutrition involves health care, including illness prevention and cure, and dietary intake to maintain nutrition status and health.

As shown in Figure 1, food is the common element and potential link between agriculture and nutrition. However, food is not portrayed conceptually with either, symbolizing the missed opportunities to reduce both food insecurity and malnutrition across the agriculture and health sectors. To begin filling the gap, the conceptual

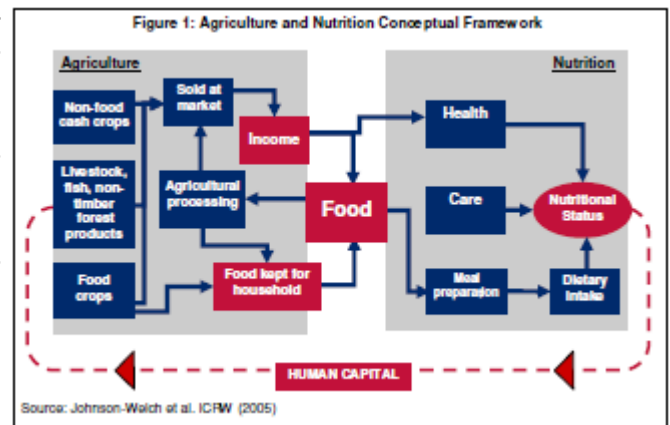
1. Food security is defined as existing 'when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and health life' (WFS, 1996.).

2. "Malnutrition" in this document refers to undernutrition, and does not include considerations of overweight and chronic disease

3. Although food security units are usually located within agriculture ministries, it should be noted that ensuring food security for the larger population requires livelihood inputs that may fall outside of agricultural programmes, e.g., food security programmes for the urban poor and the rural landless.

link could be forged around the point that food being harvested, an output of agriculture, becomes food being consumed, an input to good nutrition and health. One starting point for a collaborative discussion, therefore, could be a sharing of views between nutritionists and agriculturalists on preferred foods adequate for a good dietary intake and foods that can be produced and brought to market.

Always shown in Figure 1, the relationship between agriculture and nutrition is a cycle: the food generated from agriculture ensures good nutrition, and good nutrition builds human capital that becomes a nation's labour force for agriculture and other productive activities. Nutritional status itself, therefore, is a product of nutrition and health programmes as well as an input into agricultural productivity, which fortifies a nation's economic growth.



If the gap between nutrition and agriculture were narrowed, nutrition indicators could be more broadly understood and utilized. For example, malnutrition that existed before a food crisis (prevalence) could be considered a leading indicator of vulnerability to food crisis and food insecurity, in addition to an increase in malnutrition (incidence) being considered a lag indicator of the severity of a food crisis. Evidence for using malnutrition prevalence data as a leading indicator of food insecurity is shown in Figure 2. The first map shows degrees of underweight in children less than 3 years old based on data collected by the Demographic and Health Surveys (DHS) for countries in Africa. These data were collected between 2000 and 2007 and reflect prevalence of malnutrition over time. The second map shows degrees of food insecurity based on data consolidated by the Famine Early Warning Systems Network (FEWSNET) for countries in Africa. These data were collected recently and reflect the current food security situation. What emerges is that a higher degree of recent food insecurity occurs in countries that already had the highest prevalence of malnutrition. Thus, a high prevalence of malnutrition can be an indicator for increased vulnerability to food insecurity.

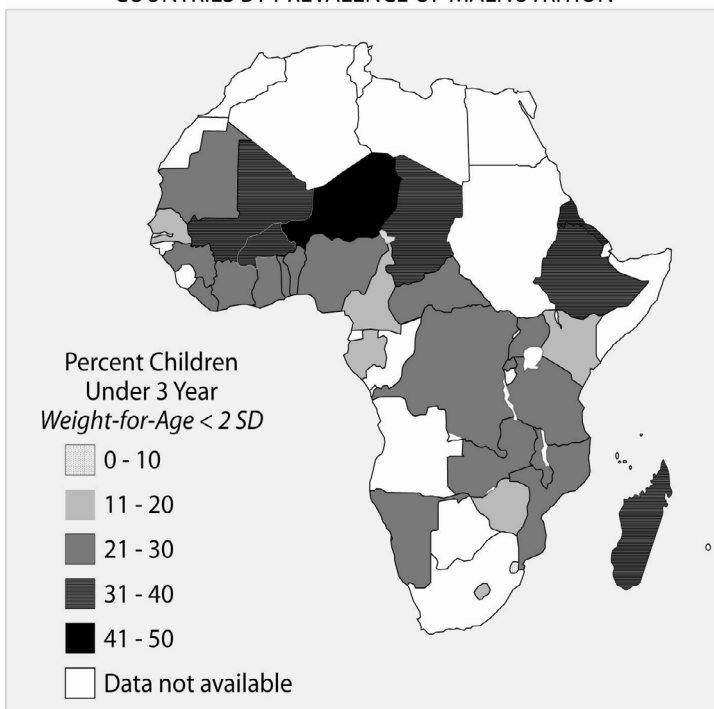
It is also important conceptually to recognize that food insecurity and malnutrition can exist separately or co-exist, depending on access to food, health services and adequate caring practices, especially for children from 0 to 2 years old and women of child-bearing age. Food insecurity and malnutrition are depicted separately and overlapping in Figure 3, along with brief definitions of the concepts (Benson 2008).

Institutional constraints to intersectoral collaboration on nutrition

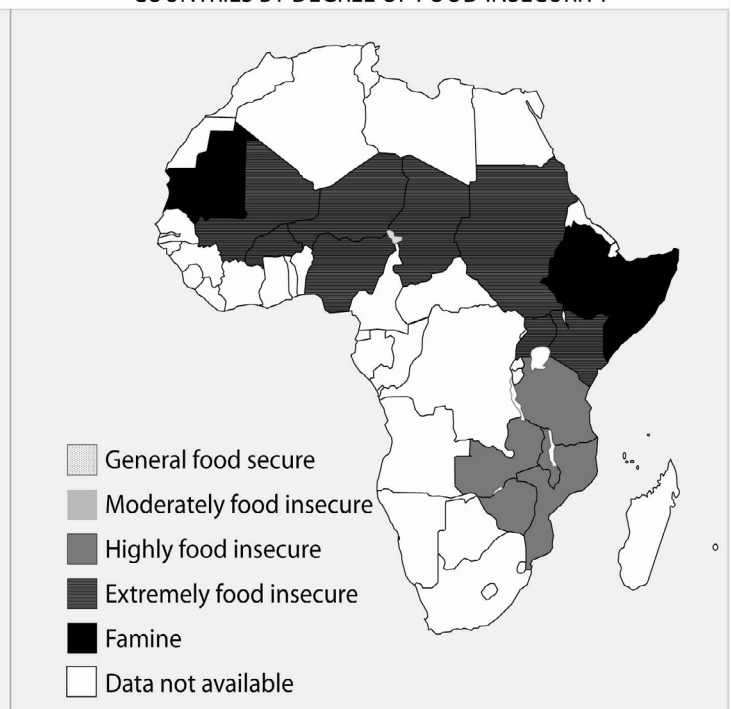
In general,

sectors are **Figure 2: Malnutrition as a Leading Indicator of Vulnerability to Food Insecurity**

COUNTRIES BY PREVALENCE OF MALNUTRITION



COUNTRIES BY DEGREE OF FOOD INSECURITY



Source: Data from USAID's Demographic and Health Surveys (DHS) 2000-2007 (www.measuredhs.com)

Source: Data from USAID's FEWS NET July-September 2008 (www.fews.net, referenced September 2008)

created for practical reasons, to separate government issues and tasks, thus managing solutions in the many complementary areas for which a government is responsible. Each sector defines its objectives, sector functions, and performance indicators. The primary objective in the agricultural sector, for example, tends to be optimizing agricultural productivity and income generation, whereas the health sector tends to provide health and nutrition services to cure or prevent illnesses and conditions such as poor nutritional status. Ministries and departments draw their staff from different fields, which have their own methods of professional training.

Despite the complementarities inherent in dividing a government's work into parts so as to create a structure in which all the parts can be accomplished, the separation of tasks can also trigger competition among the sectors, especially for budget allocations and credit for accomplishments. So while synergies created through collaboration might be a good way to stretch resources as well as credit among sectors, the collaboration itself may be viewed initially as a threat (Benson 2008). Strong collaboration starts with an understanding of mutual benefits and potential synergies.

In the nutrition field, there are unique policy challenges that make collaboration difficult. Some key nutrition challenges are (Benson 2008):

- There is a poor understanding of the prevalence, causes and indicators of malnutrition outside the nutrition field.
- There is low political demand for action against malnutrition because:
 - ⇒ the malnourished are politically weak;
 - ⇒ nutrition care is provided primarily by women to their families and women are politically weak in many developing countries.
- No one sector takes primary responsibility for nutrition – while nutrition is usually housed in ministries of health, there are also conceptual links to the work of ministries of agriculture and sometimes nutrition “falls between the cracks” of these ministries.
- Individual leadership is important to avoid having nutrition objectives fall between the cracks of activities of the agriculture and health ministries, but such leadership is rarely well supported.

Conclusions and recommendations

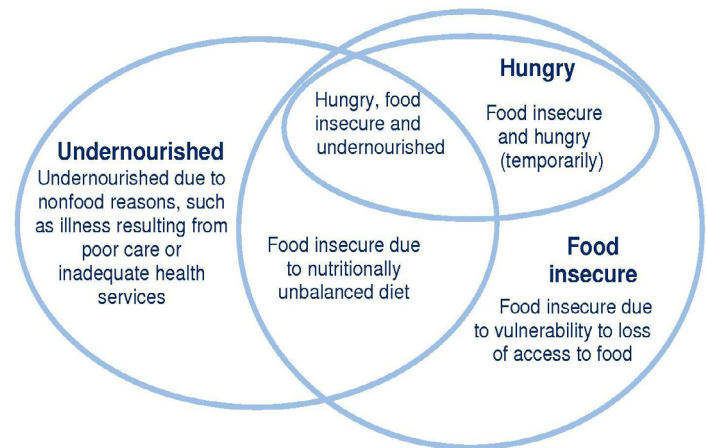
Policymakers at national, regional and international institutions expect that high food prices, if sustained, will cause food insecurity, which, in turn, can cause malnutrition. They seek information on the extent and conditions of these implications and their solutions, yet the relationship between high prices, food insecurity and malnutrition are not well enough understood to be able to advise well on the best strategies and actions to prevent or address them. Improving our understanding of the relationship will improve the advice which is given. The relationship between food prices, food insecurity and malnutrition spans multiple sectors, so inter-sectoral collaboration is crucial for progress in these areas. We recommend enhancing collaboration between food security efforts in the agricultural sector (because agriculture is the major source of food and income for most African households) and the nutrition efforts in the health sector.

While such collaboration is ultimately important at the national and local levels, technical support at regional and international levels is essential. We focus here on the West African region, where regional organizations have a long history, in the context of the food security theme of the 2008 ECOWAS Nutrition Forum. The West Africa Health Organisation (WAHO) is in a good position to participate in regional collaboration from the nutrition perspective of the health sector, the Comité Inter-Etats de Lutte Contre la Sécheresse au Sahel (CILSS) from the food security perspective of the agricultural sector, and ECOWAS is in a good position to support the collaboration throughout the region.

Recommendations

To reduce food insecurity and malnutrition through collaborative actions between agriculture and health sec-

Figure 3: Overlapping concepts of food insecurity, hunger and undernutrition



Source: Adapted from Benson (2008)

tors, the following basic recommendations are made to governments and regional and international organizations that provide technical support for planning and implementation (Benson, 2008):

Strategize how to build the collaboration

- Create a vision for successful agriculture-nutrition collaboration.
- Investigate how change occurs in each of the sectors.
- Identify incentives and constraints to collaboration.
- Develop incentives and find solutions to overcome the constraints.
- Choose a clear goal, objectives, and indicators of success.
- Monitor and evaluate progress and adjust the strategy accordingly.

Plan and implement change through the collaboration

- Identify and encourage spokespersons that are persuasive.
- Develop clear messages about food insecurity and malnutrition, including their causes, their costs, and their close relationship to other development outcomes.
- Find and promote clear options for solutions.
- Target messages to those who will make or influence decisions.
- Analyze and present strong evidence on the prevalence of food insecurity and malnutrition, and their solutions.
- Strengthen or form a national advocacy coalition on food security and nutrition.
- Choose and train staff with the skills needed to implement the recommendations.

Be ready to take action when opportunities present themselves and when they are created.

References

Benson, T. (2008). *Improving Nutrition as a Development Priority: Addressing Undernutrition in National Policy Processes in Sub-Saharan Africa*. Research Report 156. International Food Policy Research Institute (IFPRI): Washington, DC

www.ifpri.org/pubs/abstract/156/rr156.pdf

DHS. Demographic and Health Surveys: MEASURE DHS Home.

www.measuredhs.com

FEWSNET. United States Agency for International Development (USAID) Famine Early Warning System.

www.fews.net

Johnson-Welch, C., MacQuarrie, K. and Bunch, S. (2005). *A Leadership Strategy for Reducing Hunger and Malnutrition in Africa: The Agriculture-Nutrition Advantage*. International Center for Research on Women (ICRW): Washington, DC.

www.icrw.org/docs/2005_report_agnutrition.pdf

NEPAD (2008). *Comprehensive African Agriculture Development Programme (CAADP), Pillar III: Framework for African Food Security (FAFS) - Final Draft*. The New Partnership for Africa's Development (NEPAD). March 2008.

<http://acfs.ukzn.ac.za/Uploads/2a1af2bf-a727-4702-a7ec-639e4fe9ee54/FAFS%2012%20March%202008.pdf>

UN Millennium Project (2005). Halving hunger: It can be done. Task Force on Hunger Summary version. S. Pedro, M.S. Swaminathan, P. Dobie, N.Yuksel. United Nations Development Programme (UNDP): New York, USA.

www.unmillenniumproject.org/documents/HTF-SumVers_FINAL.pdf

WFS (1996). Rome Declaration on World Food Security and World Food Summit Plan of Action. www.fao.org/docrep/003/w3613e/w3613e00.HTM

Capacity development: challenges and opportunities

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Introduction

Leadership matters: strong capacities with poor leadership can cause an organization to stumble. On another hand, strong and positive leadership can bring about progress, even with low capacities.

During the 10th ECOWAS Nutrition Forum in Cape Verde, an overview was presented on the International Union of Nutritional Sciences (IUNS) and the *United Nations University (UNU)* initiatives following the 1996 Manila and 1999 Cape Town meetings (UNU 1997; ANLI, unpublished report). The present article provides an update on progress made from 2006 to 2008 and discusses the ten default principles for capacity development as introduced by Lopes and Theisoohn (Lopes & Theisoohn 2003). These principles may be helpful in structuring the discussion on sustainable capacity development initiatives.

Trainings for leadership development in Africa

The Africa Nutrition Leadership Programme (ANLP)¹ continues to be highly successful. The 7th edition will be held next year from the 11th to the 21st March 2009, and over 100 applications have been submitted so far. This high participation rate is probably partly due to the introduction of the on-line registration procedure. A steady increase of applications from francophone countries has also been noted. An international committee has selected 45 potential participants and these candidates are invited to submit a request for financial support to potential donors to fund their own participation, as the organizers have limited funds available to waive course fees.

Since the Xth ECOWAS Nutrition Forum, the 'Programme de Leadership African en Nutrition (PLAN)', the francophone version of the ANLP, was launched. Two editions already took place in Ouarzazate, Morocco, in 2007 (just prior to the [Federation of African Nutrition Societies](#) congress) and in Rabat, Morocco, in 2008. Participation in numbers and geographical spread to the first two editions was adequate but can be improved. The 2008 edition, for example, hosted 19 participants from ten countries, including two participants from Haiti. The 3rd PLAN edition will be held from the 21st to the 29th of June, 2009, in Marrakech, Morocco. Travel costs to and from the venue will have to be paid by participants, while the course itself is free. The success of this initiative relies on both organizers and participants.

Although the expression 'leadership training' became somewhat a buzzword after the International Congress on Nutrition, held in Durban, South Africa, in 2005, it is good to see that two annual courses in Africa provide sufficient capacities to train over 50-60 persons yearly. It is important that a strict selection process is maintained, MSc nutrition degrees and PhDs are not sufficient to be admitted to these courses. For both ANLP and PLAN, a selection committee evaluates the leadership potential of each applicant.

Plans are underway to develop follow-up activities for the alumni of these leadership courses. Interviews were held among the more than 30 alumni that attended the recently held African Nutritional Epidemiology Conference (ANEC) in Cairo, Egypt, to identify the precise needs for such follow-up activities (personal communication with Johann Jerling, course director of ANLP, Northwest University, Potchefstroom, South Africa).

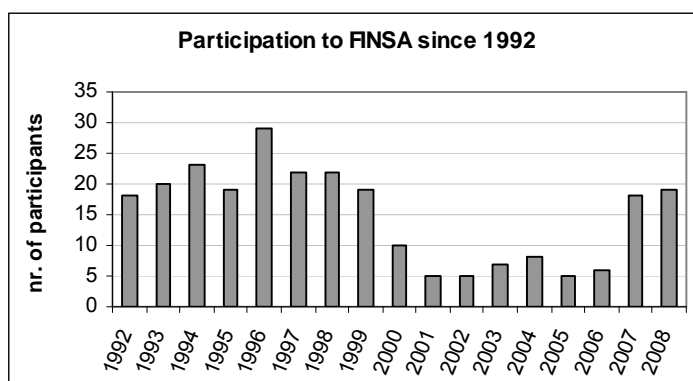
Sustainability of other UNU supported actions

Two other training activities benefit from financial support through UNU.

One is the MSc. Applied Human Nutrition Programme, part of the Applied Nutrition Project (ANP) of the University of Nairobi, Kenya, which has been active since the eighties and has formed an average of 30 students a year since, for a total of 225 graduates serving in many positions in East Africa.

The FINSA programme (Formation Internationale en Nutrition et Sciences Alimentaires) hosted since 2005 at the Université d'Abomey-Calavi, Benin, is a one-month course for practitioners that have completed their university and have some working experience. The course focuses on 'Food and nutrition security and development: the impact of the HIV/AIDS pan-

Figure 1: Participation in the FINSA-course from 1992 onwards



1. See www.africannutritionleadership.org

demic' and experienced an increase in subscriptions in 2007 and 2008. So far, participants from 18 African countries joined the course. Figure 1 illustrates the attendance to this course since 1992.

Potential participants from countries that are eligible for the Netherlands Fellowship Programme (FNP)² may apply, from 2009 onwards, for financial support to attend the FINSA course. The 18th edition will be held in August 2009. Hopefully the support of the Netherlands Fellowship Programme will increase the participation of several countries/organizations to this course and to a better utilization of this training opportunity.

Ten default principles for capacity development

In the discussions on capacity development, three levels are most often distinguished:

- the individual level: the training opportunities offered to individuals;
- the institutional level: how capacity development is planned and organized at the team level, be it an academic research group, a provincial nutrition unit or a national center;
- the organizational level: how capacity development is organized at the level of an organization as a whole, in both the private and the public sector, to prevent the lack of opportunities leading to the underutilization of trained and subsequent brain drain.

Within the UNU-FNP & Standing Committee on Nutrition (SCN) Network for Capacity Development in Nutrition in Central and Eastern Europe, the discussion on capacity development was linked to the '10 default principles for capacity development', as introduced by Lopes and Theisoohn (Lopes & Theisoohn, 2003; Pavlovic et al, in press). These principles can be of help to the participants of the Nutrition Forum to structure the discussion on capacity development within their own environment and at regional level:

1. **Don't rush:** capacity development is a long-term process. There are only few examples where external donors and African partners could work quietly for say three periods of five years on building and sustaining local capacities. The introduction of the Millennium Development Goals (MDGs) with 2015 as horizon offers the possibility to apply another timeframe.
2. **Respect the value system and foster self-esteem:** capacity development builds upon respect and self-esteem. It is essential to avoid conflict situations between the recipient and the donor and between external partners and the local elite. Countries in development must use the best knowledge available but the policy decisions must take place within the framework of their own development model.
3. **Scan locally and globally; reinvent locally:** there are no blueprints and knowledge cannot be transferred mechanically: it needs to be acquired. The ANLP and PLAN are good examples on how programmes for Africa could be modelled after a successful approach in Europe but with essential modifications to make the course viable for Africa. For Central & Eastern Europe, we succeeded in modifying existing postgraduate courses in such a way that EC-funded projects could run, in a very cost-effective way, special editions tailored to local needs in Central & Eastern Europe.
4. **Challenge mindsets and power differentials:** capacity development is not power neutral, and challenging mindsets and vested interests is difficult. Within the leadership programmes, important initiatives as the New Partnership for Africa's Development (NEPAD) and initiatives such as the Global Alliance for Improved Nutrition (GAIN) receive attention and established African scientists that have been at the helm for a considerable period of time get the floor through their 'personal history'.
5. **Think and act in terms of sustainable capacity outcomes:** capacity is at the core of development and must be a national priority. It's obvious that 'achieving a sustainable outcome' needs different approaches for a one-month training and for a four-year PhD programme. Still, for a four-year PhD programme completed outside the country of origin, as for a one-month course, the host and the recipient should make sure that contacts are maintained after the formal training has ended. Several projects funded by the European Commission and through the Wageningen University ensure that graduates, once back in their country of origin can continue their research work within challenging research and development networks involving also neighbouring countries³.

2. The Netherlands Fellowship Programme (www.nuffic.org) is the Netherlands' organization for international cooperation in higher education. ECOWAS' countries eligible for support are: Benin, Burkina Faso, Cape Verde, Ghana, Guinea Bissau, Côte d'Ivoire, Mali, Nigeria and Senegal. Participants from Rwanda, Burundi and Congo (DRC) are also eligible for support.

3. See for example:

www.instapa.org: 'Novel staple food-based strategies to improve micronutrient status for better health and development in sub-Saharan Africa', a new EC-funded project (2008-2013);

www.inref.wur.nl/uk/research+programmes: the TELFUN-project (Tailoring Food Sciences to Endogenous Patterns of Local Food Supply for Future Nutrition; 2006-2011) and the project From Natural Resources to Healthy People (2001-2008)

6. **Establish positive incentives:** motives and incentives need to be aligned with the objectives of capacity development. The continuation of the international collaboration as described under the 'default principle' 5 (here above) can also be seen as a positive incentive. Factors such as low remuneration and unclear promotion criteria can hamper the performance of public services. Donors often handout incentives in the form of salary supplements and travel allowances, but such practices drain the public service of capable staff.

7. **Integrate external outputs into national priorities, processes and systems:** external inputs need to correspond to real demand and be flexible enough to respond to national needs and agendas. Where national systems are not strong enough, they should be reformed and strengthened, not bypassed. Recipient countries should insist on the primacy of one single development framework. Within the ECOWAS community, Cape Verde can be seen as a good example of this.

8. **Build on existing capacities rather than creating new ones:** this implies the primary use of national expertise and strengthening of national institutions. It is not just a matter of getting the job done. FINSA for example was built on existing capacities in Benin.

9. **Stay engaged under difficult circumstances:** the weaker the capacity, the greater the needs. Low capacities are not an argument for withdrawal or for driving external agendas. Drawing from my personal experience, in 1991 – 1993 the banking systems had collapsed in Benin and we would by CFA's francs in The Netherlands, bring them to Lagos, Nigeria, by diplomatic channels and from there by car to the university of Cotonou, Benin.

10. **Remain accountable to ultimate beneficiaries:** accountability by national governments and by donors is of paramount importance.

Challenges and opportunities

For the members of the ECOWAS Nutrition Forum, the following challenges and opportunities may be identified:

- Ensure proper use for your country/organization that suitable candidates apply for one of the leadership initiatives.
- Support the ongoing training activities at the various levels. This might be a certificate training within your country, a certificate course as the one month FINSA course in Benin, or the regional possibilities to obtain MSc degrees in nutrition that exist in Ghana, Nigeria and Senegal. MSc training in Europe/US is rather costly and if part of the funds involved could be used to support ongoing programmes in Africa, a major step forward could be made.
- Use the '10 default principles' of capacity development wherever you can. The explanations/examples given above are just a minimal summary of the many aspects involved as given by the authors and mixed with some personal experiences.
- Even during in future ECOWAS Nutrition Forum, the '10 default principles' can be of use in discussing the (missing?) link between agriculture and health and in identifying the role different parties can play in achieving the MDG's.

References

ANLI (unpublished report). *Report consultation held in Cape Town, Rep. of South Africa, 22 – 25 June 1999*. Africa Nutrition Leadership Initiative.

Lopes C. and Theisohn T. (2003). *Ownership, leadership and transformation: can we do better for capacity development?* UNDP/Earthscan Publications Ltd., London.

Pavlovic M., Pepping F., Demes M., Biro L., Szabolcs P., Dimitrovska Z., Duleva V. (in press). Turning dilemmas into opportunities: a UNU/SCN capacity development network in public nutrition in central and Eastern Europe. *Public Health Nutrition Journal* (in press).

United Nations University (1997). Special issue on institution building for research and advanced training in food and nutrition in developing countries. *Food and Nutrition Bulletin* 1997, 18(2).

Implications of a resilient and sustainable small-holder food production system in West Africa on food security, nutrition and health of the population

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Introduction

An essential link exists between the nutritional needs of malnourished households and the diversity of accessible nutrient-rich foods that can meet these needs. This link lies with improved smallholders' food production. This remains a sustainable way to ensure food security, nutrition and health of West African populations. This paper examines the extent and effectiveness of policies and institutional responses to the global challenge of malnutrition to human development and well being, and the level of attention given to small-holders' food production, to the nutritional value of the foods they produce, and to the availability of these traditional foods as part of the solution to food, nutrition and health challenges of SSA.

In 2004, and again in 2008, some of the world's most distinguished economists were invited to prioritize a proffered list of solutions to the world's greatest challenges. Guided predominantly by considerations of economic costs and benefits, the respective panels picked malnutrition as one of the most pressing out of a list of 20 global challenges (Table 1). Known as the Copenhagen Consensus, the panels of experts have echoed global concerns that had been previously highlighted during the International Conference on Nutrition held by FAO and WHO in Rome, in December 1992. The World Declaration and Plan of Action for Nutrition emanating from this 1992 international conference recommended the promotion of dietary diversity and the use of locally available, nutrient-rich, indigenous and traditional foods as a vital strategy against food insecurity, malnutrition and disease.

Table 1. Prioritizing solutions to global challenges – The Copenhagen Consensus

2004			2008		
Ranking	Challenge	Opportunity/ Solutions	Ranking	Challenge	Opportunity/ Solutions
1	Diseases	Control of HIV/AIDS	1	Malnutrition	Micronutrient supplementation for children (Vitamin A and Zinc)
2	Malnutrition	Providing Micronutrients	2	Trade	The Doha development agenda
3	Subsidies and Trade Barriers	Trade liberalization	3	Malnutrition	Micronutrient fortification (Iron & Salt iodization)
4	Diseases	Control of Malaria	4	Diseases	Expanded Immunization coverage for children
5	Malnutrition	Development of new Agric. Technologies	5	Malnutrition	Biofortification
6	Water and Sanitation	Small-scale Water technologies for Livelihoods	6	Malnutrition and Education	Deworming and other Nutrition Programmes at School
7	Water and Sanitation	Community-Managed Water Supplies and Sanitation	7	Education	Lowering the Price of Schooling
8	Water and Sanitation	Research on Water Productivity in Food Production	8	Women	Increase and Improve Girls Schooling
9	Governance and Corruption	Lowering the Cost of starting a new Business	9	Malnutrition	Community-based Nutrition Promotion
10	Migration	Lowering Barriers to Migration for Skilled Workers	10	Women	Provide Support for Women's Reproductive Role

Reducing iron deficiency anemia through dietary supplements was judged by the 2004 panel of experts to have an exceptionally high ratio of benefits to costs. They also ranked highly the development of new agricultural technologies appropriate for poor developing countries. The available documents from the 2004 Copenhagen Consensus, however, do not specify what "agricultural technologies" were recommended. Four years later, in 2008, malnutrition was still a major challenge according to the expert economists, and additional interventions in micronutrients' supplementation, food fortification, bio-fortification, and nutrition education were proposed as solutions. Agricultural improvements through research and development to enhance nutrient composition of staple foods (bio-fortification) was the closest the experts came to considering agriculture and

food production within the solutions to malnutrition. It is pertinent to note the provisory nature of these recommended solutions. The panel noted that improvements in developing country institutions (presumably including human capital and infrastructure) are of paramount importance. The lack of institutional capacity is a major factor that limits the effectiveness of interventions addressing malnutrition in poor developing countries. These countries have neither the required resources nor the infrastructure (physical, and at the policy level) to sustain micronutrient supplementation and food fortification programmes.

Supplementation interventions are relatively rapid to setup and can produce quick results, allowing for the impact to be discernable within a short period of time (Table 2). However, in Sub-Saharan Africa (SSA), constraints such as poorly functioning health infrastructure, poor transportation facilities to remote areas where the need is dire, unavailability of necessary equipment and supplies, and lack of adequately trained manpower compromise the delivery and impact of supplementation programmes (Schultink 1995; HKI/USAID/MdS 2005; Ekstrom et al. 1999; Smith 2001).

Table 2. Strategies more commonly applied against micronutrient malnutrition in developing countries

Strategy	Prognosis for the Short-term	Prognosis for Long-term Sustainability
Single or Multiple Nutrient Supplementation**	Effective/Relatively High Impact	Unsustainable and Unaffordable by Governments of poor Countries
Food Fortification (other than Salt Iodization)**	Limited Coverage of Populations at Risk, thus Limited Impact	Unaffordable by Governments of poor Countries with their existing Resources and Infrastructure
Dietary Diversification	Impact not easily discernable in the Short-term	Comparatively "doable" within available Resources of Governments of poor Countries more affordable to local populations culturally more acceptable to populations at risk Sustainable

** These Strategies focus on the immediate condition (disease state) and not the root cause of the problem.

On the food fortification front, the fortification of commonly consumed foods is considered a viable, cost-effective option for interventions addressing micronutrient malnutrition. The fortification of commonly consumed staples or of food components is easier to implement and has a wider coverage. In addition, the delivery of the fortified foods can be done via existing markets and food distribution channels. This does not require additional transport and delivery infrastructures. However, in SSA, the food processing industry is at its beginnings, and adequate legislations, food safety regulations and effective systems for quality control of both the fortification processes and the final products need to be further developed.

A decade ago, food fortification was not considered a frontline intervention approach because of the lack of infrastructural facilities and institutions in most SSA countries. Little has changed in the sub-continent; there is still a lack of centralized food processing operations as well as of appropriate processing technologies. Nonetheless, fortification is now being actively pursued with a focus on adapting existing technologies to local resources and needs. Unfortunately, the majority of the population at risk of iron and vitamin A deficiencies in the region do not have access to fortified food products, in spite of fast-spreading donor-supported maize flour fortification programmes at community level (Smith 2000). Poor households in Sub-Saharan Africa simply do not have the cash to purchase such fortified products, and their marginal status often makes it difficult for them to benefit from the free distributions of aid agencies. Food fortification thus has a limited and short term impact on local vulnerable populations, and may be unaffordable in many countries. An ideal situation would be the large-scale fortification of major local food staples, and increased availability of commonly used micronutrient-rich minor dietary components made possible through increased production and improved market access of these foods to the population at large and the at-risk populations in particular.

Bio-fortification was identified by the 2008 Copenhagen Consensus as a viable solution, once defined the obstacles to the wide use of dietary supplements and food fortification to fight malnutrition. Bio-fortification was ranked fifth among priority solutions to malnutrition, preceded by micronutrient supplements for children and micronutrient fortification (iron and salt iodization)¹. The availability of micronutrient-rich food staples could be increased through selection and breeding of, and genetic engineering for micronutrient-dense staples. Although biotechnology has been used to improve yields and disease resistance of some indigenous foods such as sorghum, millet and cowpeas, national agricultural research in the sub-continent has not focused on breeding for micronutrient density, in the past years. Bio-fortification represents a potentially powerful tool to

1. Copenhagen Consensus 2008 Results http://www.copenhagenconsensus.com/Admin/Public/Download.aspx?file=/Files/Filer/CC08/Presse%20%20result/CC08_results_FINAL.pdf

increase the concentrations of nutrients of public health concern in staple foods. However, in the context of developing countries with limited resources, efforts in bio-fortification should concentrate in areas where it offers clear advantages over other approaches, completing but not competing with other approaches or activities that provide proven and immediate relief to malnourished populations (Johns & Eyzaguirre 2007).

What priorities should then be considered in the package of interventions available to address this seemingly intractable problem of micronutrient malnutrition in the sub-continent and in West Africa in particular? Clearly, single or multiple micronutrients supplementation or food fortification cannot provide the range of nutrients and health-protecting non-nutrient bioactive compounds that a diversified diet provides. At issue is what should be the role of national governments in West Africa and other SSA countries in ensuring food and nutrition security for their population? The international community often provides assistance in the form of support to supplementation and food fortification programmes. These provide relatively quick results that fit the donor community's desire for discernable impacts and a high ratio of benefits to costs within a short period of time. We believe that these programmes, as effective as they are perceived to be, should be seen as short term strategies that complement national programmes to achieve sustainable food and nutrition security through the diversification of food production and of diets. The onus for national governments is to achieve dietary diversification and tackle micronutrient malnutrition by:

- strengthening and maintaining resilient traditional food systems which are the main suppliers of micronutrients and non-nutrient bioactive compounds to family diets.
- Mainstreaming the diverse products from these food systems, thus ensuring food availability and dietary diversity to the populations, and thereby providing a true and sustainable solution to food and nutrition insecurity in the West Africa sub-region and SSA in general.

Why are traditional food systems interesting?

For the architects of the Alliance for a Green Revolution for Africa – AGRA², there is a great urgency for Africa to raise agricultural productivity and increase food production in order to meet the Millennium Development Goals of reducing hunger and poverty and stemming the tide of micronutrient malnutrition. Experts at the Salzburg Global Seminar 2008 have opined that such a revolution needs to incorporate the principles of resilience, stability and environmental sustainability, and ensure that Africa's traditional food systems and rich agricultural biodiversity are appropriately exploited (Atta-krah et al. 2008). This argument stems from the fact that the earlier Asian Green Revolution relied traditionally on staples (rice and wheat), whose phenomenal production increases contributed to the success of the revolution. In contrast to Asia, Africa depends on a larger variety of staple food crops (millet, sorghum, maize, wheat, teff, fonio, plantain, yam, cassava, etc) which are supplied by the traditional food systems. A very large percentage of the African population depends on these food crops for their daily sustenance. Thus the resilience and sustainability of Africa's traditional food systems are pivotal to food and nutrition security in the continent. This view was upheld by recently convened conferences on the global food crisis (UN 2008; FAO 2008).

Most traditional small-hold subsistence food systems depend on a large variety of carbohydrate staple foods (Johns & Eyzaguirre 2006) but diets are typically balanced by the use of a variety of minor staple foods such as pulses, vegetables, fruits, food condiments and spices, as well as wild animal foods (Table 3). Bélanger and Johns (Bélanger & Johns 2008) rightly noted that wild and cultivated plant species used in daily diets make fundamental contributions to human nutrition and health, by securing food supplies and meeting energy and micronutrients' requirements. These foods with their specific nutrients and health-protecting bioactive compositional attributes, ensure dietary diversity which has been amply shown to improve nutritional status and reduce risks of diet-related diseases (Kant et al., 2000; Johnson et al., 1994; Albane, 1999; Kiokias & Golden, 2004; Gibson et al., 2000; Ckavrarty, 2000). Tontisirin et al. (Tontisirin et al., 2002) further argued that whole plant diets surpass supplementation strategies because they provide a variety of nutrients and non-nutrients which have synergistic benefits. Clearly traditional food systems make possible dietary diversity thus ensuring nutrient adequacy of daily diets among population groups. The antioxidants and other non-nutrient bioactive compounds that these traditional diets contain provide functional health benefits beyond the health effects assured by simple nutrient adequacy.

There is also ample evidence from published literature (Achinewhu et al., 1995; Adejumo & Awosanya, 2005; Eromosele et al., 1991; Glew et al., 1997; Grivetti & Ogle, 2000; Kengni et al., 2004; Nordiede et al., 1996; Smith et al., 2006; Smith, 1995; Smith, 2000) that foods from traditional small-holder production systems in SSA, and West Africa in particular, do indeed supply significant amounts of macro and micronutrients to daily diets and ensure households' food and nutrition security. However traditional food systems in West Africa, like in other developing parts of the world, are changing under the influence of globalization and market inte-

2. <http://www.agra-alliance.org>

Table 3. An overview of the importance of traditional food systems for nutrition and health in West Africa (based on information from published literature)

Foods	Energy	Proteins	Macronutrient (Calcium)	Micronutrients	Micronutrient (Ascorbic acid)	Non-Nutrient Bioactive Compounds (Anti-oxidants)
Roots, tubers, Starchy Fruits	▲▲▲▲▲	▲	---	▲▲	▲	▲▲▲
Indigenous Cereals	▲▲▲▲	▲▲▲	▲▲	▲▲▲	---	▲▲▲▲
Indigenous Grain Legumes	▲▲▲	▲▲▲▲	▲	▲▲▲▲	---	▲▲
Indigenous Nuts and Oil Seeds	▲▲▲▲	▲▲▲	▲	▲▲▲	---	▲▲▲
Condiments, Spices, Sauce Thickeners	▲	▲▲▲	▲▲▲	▲▲▲▲	▲	▲▲▲
Indigenous Fruits	▲	▲	▲▲	▲▲▲	▲▲▲	▲▲▲
Indigenous Fruit /Leaf Vegetables, Mushrooms	Neg.	▲▲	▲▲▲	▲▲▲	▲▲	▲▲▲▲▲
Small game, Edible snails, Termites, Insects, Caterpillars	▲▲	▲▲▲▲▲	▲▲▲	▲▲▲	---	▲

gration. Food production systems are increasingly being simplified and this has had deleterious effects on diets in the sub-region. Furthermore, socioeconomic changes and the resulting evolution in contemporary food systems have also contributed largely to the phenomenon of dietary simplification. Market demands in conjunction with production and distribution costs now significantly influence what farmers grow in their fields (Bélanger & Johns 2008) and affects consumers' food choices. Changes in the food supply system in the continent, and in the West African sub-region in particular, are altering people's livelihoods and coping mechanisms. Traditional food crops are being replaced by high market-value crops such as rice, wheat, maize and their products. Eating preferences in the sub-region is for easy-to-cook rice and wheat products. This simplification of food production systems and of diets has profoundly changed the nature of malnutrition and disease in the continent, and West Africa in particular. The transition in from diversified diets that include several varieties of pulses, vegetables, fruits, food condiments and spices, to staple diets of rice, maize or wheat products devoid of micronutrients and health protecting non-nutrient bioactive components is reflected today in the high rates of micronutrient malnutrition and diet-related diseases (Mendez et al. 2005; Ojofeitimi et al. 1999; UNICEF 2008; UNICEF 2004; Yekeen et al. 2003). According to the Micronutrient Initiative, every year about 1,365,500 children are born mentally impaired in West Africa due to consequence of micronutrient deficiencies. Out of the 15 ECOWAS countries, 9 have rates of children under 6 years with sub-clinical vitamin A deficiency that range from 40 to 70%, iron deficiency anaemia in children under 5 years ranges from 57 to 86% and the total goitre rate is superior to 20% in 6 countries³ (MI/UNICEF 2004).

In spite of these changes in food production systems and household diets, foods from the traditional food systems are still present in family diets. This perhaps may partly explain the observation from a World Bank report that "Contrary to common perceptions, undernutrition prevalence rates in the populous South Asian countries—India, Bangladesh, Afghanistan, Pakistan—are much higher (38 to 51 percent) than those in Sub-Saharan Africa (26 percent)" (WB 2006). This observation suggests that in spite of urbanization, socioeconomic changes and globalization of food systems, populations in Africa are still "a heartbeat away" from their bio-diverse and rich traditional food culture. The use of traditional foods may have decreased significantly in households' diets but they still have positive effects (albeit limited) on households' nutritional status. The observation from the World Bank report also strengthens the current call to mobilize the biodiversity of traditional food systems for addressing food and nutrition insecurity in the continent and West Africa in particular.

What options for West Africa?

It is clear from the above discussion and from data presented in Table 3 that single/multiple micronutrient

3. N.B. these figures concern all ECOWAS countries (Benin, Burkina Faso, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo) except Cape Verde and Côte d'Ivoire.

supplementation or food fortification cannot provide the required range of nutrients and non-nutrient bioactive compounds that a diversified diet provides. West Africa and indeed Africa have the option of either eternally depending only on periodic micronutrient supplementation and limited food fortification to meet populations' dietary needs for micronutrients and health protecting bioactive compounds or mobilizing the diversity of foods readily available from the traditional food systems to meet these needs.

West Africa's agriculture is dominated by small-scale farmers whose food production depends on diversity in mixed-cropping/livestock farming. This production system still holds immense potential and remains largely underexploited. Atta-krah et al. explored two major pathways towards achieving food and nutrition security in Africa – a large scale intensification system such as was applied in Asia's Green Revolution or a diversified small-holder system (Atta-krah et al. 2008). The authors argued that for large-scale intensification system to succeed in Africa, certain basic requirements such as land suitability for irrigation, water for irrigation, infrastructure capable of delivering the necessary input at acceptable costs and provision of market-access to farmers, are imperative. However, the adoption of such large-scale intensification might focus attention on a few staple crops as was the case in the Asian Green Revolution. In such a scenario, the food system would need to be complemented by periodic infusions of micronutrients through supplementation and food fortification programmes that are currently donor-funded in many cases. The authors however opined that given Africa's topography, climate and variety of ecosystems, a second approach involving diversity-rich small-holder systems would be required in addition to limited large-scale intensification. The small-holder system, they argued, is more likely to succeed in ensuring sustainable increases in food availability by small-scale farmers and providing a significant measure of food and nutrition security.

The success of the Asian Green Revolution is partly attributed to the widespread adoption of a few improved crop varieties – rice and wheat. The result of this “success” on population's health is summed up by the World Bank's report previously quoted: while hunger has decreased in several Asian countries, the rates of undernutrition reflected in the numbers of underweight children are much higher than those in Sub-Saharan Africa. This is not surprising, as in SSA, it is the small-holder farmer-managed food varieties – staples, non-staples and minor food crops - that supply not only macronutrients, but also micronutrients and health-protective non-nutrient bioactive compounds (Table 3).

Dietary diversification is the key to tackling micronutrient malnutrition and diet-related chronic diseases. It requires diversity in agricultural production, leading to diversity in food systems. In West Africa, small-holder food production plays a pivotal role in national and regional programmes aimed at promoting diversification in household diets. National governments thus have a fundamental responsibility in ensuring the resilience and sustainability of small-holder food production systems. The production and availability of nutrient-rich traditional foods in the sub-region as in other parts of SSA is a sine-qua-non condition to address the region's food insecurity, micronutrient malnutrition and diet-related chronic diseases. Effective national programmes aimed at revitalizing the traditional food systems and at increasing the production of indigenous and traditional foods constitute a step towards the re-introduction of micronutrient-rich foods into contemporary food consumption habits.

However, an increase in food production by small-holder farmers would not necessarily translate into diversity in household diets. There are major challenges that have to be addressed. In their arguments for the mobilization of agricultural biodiversity for nutrition and health, Frison et al (Frison et al. 2006), quoting Johns and Sthapit, (Johns & Sthapit 2004) suggested an integrated model of activities that includes:

- sustainable agriculture by small-scale farmers;
- evaluation of compositional attributes and increased use of local food varieties;
- improved traditional culinary practices;
- nutrition education leading to increased community awareness of the immense nutrition and health attributes of foods in their traditional food systems;
- research on new and improved methods for processing and storage;
- enhanced distribution and marketing of these food resources.

Creating market access for these traditional foods has the potential to mainstream them and increase their use in family diets. Rearden et al. noted that availability, distribution and accessibility of certain exotic foods that are now part of the contemporary food system have had profound effects on consumers' diets and health (Rearden et al. 2007). There is therefore a need to strengthen local and regional markets for traditional foods through improvements in market chains or enabling the creation of market chains for traditional food crops and products.

One promising avenue proposed by Bioversity International to mainstream traditional foods and increase their use in diets is through increasing the marketability of those food crops that have been identified to be rich in nutrients and/or health protecting antioxidants. This can be achieved particularly through culturally acceptable improved processing and packaging methods. More research is required to identify a very large number of these nutrient-rich food crops. Appropriate processing and storage techniques need to be developed or improved in order to minimize post-harvest losses, thus increasing incomes of producers as well as increasing the area that can be covered by the food distribution network. Improved processing of traditional foods will also ensure their increased availability throughout the year and beyond the immediate growing areas.

In West Africa, the potential contribution of biodiversity within the traditional and healthy food systems has yet to be realized. This is perhaps due to the compartmentalization of roles and responsibilities within government sectors and organizations. There is a need to strengthen and integrate national and regional sectoral policies that have impact on the nutrition and health of populations in the sub-region. Haddad (Haddad 2000) highlighted the need to integrate nutrition and health considerations beyond those of food security into agriculture, livestock and related programmes. However, there is now increasing awareness of the impact of sectoral policies other than agriculture on the nutrition and health status of population groups. Thus the growing consensus that collaboration between sectors of governments, as well as between public and private sector organizations, in policy and practice is absolutely necessary in order to achieve the objective of adequate nutrition and positive health outcomes among all population groups.

Bioversity International in collaboration with the West African Health Organization (WAHO) pioneered and put into practice the concept of cross-sectoral collaboration in West Africa by organizing a policy advocacy workshop, involving director-level participants from ECOWAS governments' Ministries of Health and Agriculture, as well as representatives from private sector organizations (farmers and food processors). The initiative entitled "Partnerships for mobilizing the diversity in traditional food systems to ensure adequate nutrition and health within ECOWAS Member States" (Bioversity International/WAHO/FAO 2007) sought to convince the participants of the need to re-assess existing food and nutrition related policies, harmonize such policies and develop cross-sectoral strategies to effectively address food, nutrition and health problems in the sub-region. The workshop also sought to build the capacities of workshop participants for more effective policy formulation and programme implementation by increasing their awareness of the very close link between populations' undergoing a transition from traditional to modern/imported foods and the increasing prevalence rates of nutritional deficiencies and diet-related chronic diseases. At the end of the workshop, the participants agreed upon post-workshop collaborative action plans achievable at national and regional level. These are expected to inform and guide national and regional food and nutrition programmes development and implementation. The workshop is considered the first in a series of workshops and activities in the region that the organizers anticipate will catalyze closer ties between public and private sector institutions, and sectoral collaborations that have as a key objective and output target, positive nutrition and health outcomes of the population.

Conclusion

The approach described here aims at capitalizing on the diversity of traditional food systems in West Africa, in order to ensure food and nutrition security of populations groups. Supporting governments' to maintain resilient and sustainable small-holder food production systems seem natural and logical. However in a world increasingly devoted to quick-fixes and quickly measurable impact results, this approach has not been duly considered by international organizations and national governments alike. These, on the contrary, continue to search for elusive solutions to this seemingly intransigent problem of micronutrient malnutrition, now complicated by rising incidences of diet-related chronic diseases. This paper has attempted to explain why the onus of tackling the problems of food insecurity, malnutrition and diet-related chronic diseases among populations in the sub-region is on national governments, through the mobilisation of agricultural biodiversity within their respective food systems. The smallholders' food production system is part of a truly African Green Revolution in the West African context. Help from international donor organizations in the form of short-term nutrient supplementation and food fortification programmes are, and should be seen as complements to governments' robust food production programmes that target food and nutrition security for all citizens, as major outcomes of their agriculture, food and nutrition policies and programmes.

References

Achinewhu SC, Ogbonna CC, Hart AD (1995) Chemical composition of indigenous wild herbs, spices, fruits, nuts and leafy vegetables used as food. *Plant Foods Human Nutr* 48: 341-348.

Adejumo TO, Awosanya OB (2005) Proximate and mineral composition of four edible mushroom species from south-

- western Nigeria. *Afr J Biotech* 4(10): 1084-1088. <http://www.academicjournals.org/AJB/>
- Albane D (1999). Beta carotene and lung cancer: a case study. *Am J Clin Nutr* 69: 1345-1350.
- Atta-krah k, Baidu-Forsen JJ, Bellon MR, Hodgkin T, Cherfas J, Frison E (2008). *Environmental sustainability and biodiversity – Imperatives for a Green Revolution for Africa*. Salzburg Global Seminar. April 30 – May 2, 2008. The Institute of Development Studies and the Future Agriculture Consortium: Salzburg, Austria.\
- Bélangier J. and Johns J. (2008). Biological diversity, dietary diversity and eye health in developing country populations: Establishing the evidence base. September 2008. *Ecohealth* (3):244-56.
- Bioversity International/WAHO/FAO (2007) Partnerships for Mobilizing the Diversity in Traditional Food Systems to Ensure Adequate Nutrition and Health within ECOWAS Member State. A Regional Workshop for ECOWAS Member States, Ouagadougou, September 5-6, 2007. http://www.bioversityinternational.org/News_and_Events/Events/Past_Events/WAHO_workshop.asp
- Ckavravarty I (2000). Food-based strategies to control vitamin A deficiency. *Food Nutr Bull* 21:135-143.
- Ekstrom EM, Kavishe FP, Habicht J, Frongilla E, Rasmussen KM, Hemed L (1999) Adherence to iron supplementation during pregnancy in Tanzania: determinants and hematologic consequences. *Am J Clin Nutr* 64: 368-374
- Eromosele IC, Eromosele CO, Kuzhkuzha DM (1991) Evaluation of mineral elements and ascorbic acid contents in fruits of some wild plants. *Plant Foods Human Nutr* 41: 151-154.
- FAO (2008). Declaration of FAO High Level Conference. Increase resilience of present day food production systems to challenges posed by climate change, June 2008. www.fas.usda.gov/excredits/FoodAid/fao
- Frison EA, Smith IF, Johns T, Cherfas J, Eyzaguirre PB (2006) Agricultural biodiversity, nutrition and health: Making a difference to hunger and nutrition in the developing world. *Food Nutr Bull* 27: 167-179.
- Gibson RS, Hotz C, Temple L, Yeudall F, Mtitimuni B, Ferguson E (2000). Dietary strategies to combat deficiencies of iron, zinc and vitamin A in developing countries: development, implementation, monitoring and evaluation. *Food Nutr Bull* 21: 219-231.
- Glew RH, VanderJagt DT, Lockett C, Grivetti LE, Smith GC, Pastuszyn A, Millson M (1997) Amino acid, fatty acid and mineral composition of 24 indigenous plants of Burkina Faso. *J Food Comp Anal* 10(3) 205-217.
- Grivetti LE, Ogle BM (2000) Value of traditional foods in meeting macro- and micronutrient needs: the wild food connection. *Nutr Res* 13: 31-46.
- Haddad L. (2000) Improving human nutrition through agriculture: the role of international agricultural research. *SCN News* 20: 12-15.
- HKI/USAID/MdS (2005) Enquête rapide de couverture des journées locales de supplémentation en vitamine A au Sénégal. HKI/USAID/Ministère de la santé et de Prévention Médicale du Sénégal - Juillet/Août 2005. http://www.hki.org/research/pdf_zip_docs/Rapid_assess_VAS_SN_fr.pdf
- Johns T, Eyzaguirre PB (2006). Linking biodiversity, diet and health in policy and practice. *Proceedings of the Nutrition Society* 62: 182-189.
- Johns T, Eyzaguirre PB (2007) Biofortification, biodiversity and diet: a search for complimentary applications against poverty and malnutrition. *Food Policy* 32: 1-24.
- Johns T, Sthapit BR (2004) Biocultural diversity in the sustainability of developing country food systems. *Food Nutr Bull* 25:143-155.
- Johnson IT, Williamson G, Musk SRR (1994). Anticarcinogenic factors in plant foods: a new class of nutrients? *Nutr Res Rev* 7: 175-204.
- Kant AK, Schatzkin A, Graubard BI, Shairer C (2000). A prospective study of diet quality and mortality in women. *JAMA* 283:2109-2115.
- Kengni E, Mbofung CMF, Tchouanguép MF, Tchoundjeu Z (2004) The nutritional role of indigenous foods in mitigating the HIV/AIDS crisis in West and Central Africa. *International Forestry Review* 6(2) 149-160.
- Kiokias S, Golden MH (2004). Antioxidant properties of carotenoids in-vitro and in-vivo. *Food Rev Intern* 20: 99-121.
- Mendez MA, Monteiro CA, Popkin BM (2005) Overweight exceeds underweight among women in most developing countries. *Am J Clin Nutr* 81: 714-721.
- MI/UNICEF (2004) *Vitamin and Mineral Deficiency - A Global Damage Assessment Report*. The Micronutrient Initiative

and UNICEF: Ottawa, Canada. <http://www.micronutrient.org/English/View.asp?x=614>

Nordiede MB, Hotloy A, Folling M, Lied E, Oshaug A (1996) Nutrient composition and nutritional importance of green leaves and wild food resources in a agricultural district, Koutiala in southern Mali. *Intern J Food Sci Nutr* 47: 455-468.

States, Ouagadougou, September 5-6, 2007. http://www.bioversityinternational.org/News_and_Events/Events/Past_Events/WAHO_workshop.asp

Ojofeitimi EO, Adelekan DA, Adeoye A, Ogungbe TG, Imoru AO, Oduah EC (1999) Dietary and lifestyle patterns in the aetiology of cataracts in Nigerian patients. *Nutr Health* 13: 61-68.

Rearden T, Henson S, Gulati A (2007) Supermarkets and food consumption and safety in developing countries. Proc Intern Conf on Trade Health and Disease. McGill University, Montreal Canada. November 12-13.

Schultink W (1995) Iron deficiency alleviation in developing countries. *Nutra Res Rev* 9: 281-283.

Smith IF (1995) The case for indigenous West African food culture. UNESCO Breda Series # 9. UNESCO Breda: Dakar.

Smith IF (2000) *Food based approaches for improved micronutrient nutrition: A focus on Sub-Saharan Africa*. A study for the Scientific, Technical and Advisory Services Directorate, Policy Branch, Canadian International Development Agency (CIDA).

Smith IF (2000) Micronutrient interventions: options for Africa. *Food Nutr Bull* 21: 532-537.

Smith IF (2001) *Low compliance to oral supplements: A study on the role of side effects*. Micronutrient Initiative (MI). Ottawa, Canada.

Smith IF, Eyzaguirre PB, Eyog-Matig O, Johns T (2006) Managing biodiversity for food and nutrition security in West Africa: Building on indigenous knowledge for more sustainable livelihoods. *SCN News* 33: 22-26.

Tontisirin K, Nantel G, Bhattacharjee L (2002) Food-based strategies to meet the challenges of micronutrient malnutrition in the developing world. *Proc Nutr Soc* 61: 243-250.

UN (2008). Comprehensive framework for action - United Nations High Level Task Force on the Global Food Crisis. July 2008: New York, USA. <http://www.un.org/issues/food/taskforce/cfa.shtml>

UNICEF (2004). *Vitamin and Mineral Deficiency: A global damage assessment report*. UNICEF/Micronutrient Initiative. UNICEF: New York, USA. <http://www.micronutrient.org/CMFiles/PubLib/Report-67-VMD-A-Global-Damage-Assessment-Report1KSB-3242008-9634.pdf>

UNICEF (2008). State of the World's Children. UNICEF: New York www.unicef.org/sowc08/sowc08.pdf

WB (2006). *Repositioning nutrition as central to development. A strategy for large scale action*. World Bank: Washington DC. <http://siteresources.worldbank.org/NUTRITION/Resources/281846-1131636806329/NutritionStrategy.pdf>

Yekeen LA, Sanusi RA, Ketiku AO (2003) Prevalence of obesity and high level of cholesterol in hypertension. *Afr J Bio-med Res* 6: 129-132.

Réseau des Organisations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest (ROPPA) : Le Rôle des Organisations Paysannes

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ENGLISH ABSTRACT

The Network of Peasant organizations and Producers in West Africa (ROPPA) : The role of peasant organizations

The network of Peasant Organizations and Producers in West Africa (ROPPA) gathers organizations or consultation frameworks coming from 10 West African countries (Benin, Burkina Faso, the Ivory Coast, Gambia, Guinea, Guinea-Bissau, Mali, Niger, Senegal, and Togo) and aims at enlarging its circle to all West African countries. ROPPA's mission is to improve rural families' working conditions and to ensure that development policies put family farms, that are the bedrock of agrarian societies in African countries, at the heart of strategic approaches for agriculture and rural societies. In a context of globalization, sub-regional integration and decentralization in West Africa, ROPPA works to reinforce the peasant organizations were needed, to ensure they have adequate organization and political weight to be credible interlocutors of governments and support the development of coherent agricultural policies favourable to the majority of West African agricultural exploitations, that are de facto family farms. ROPPA also intervenes at regional level in the elaboration of the ECOWAS Agricultural Policy (ECOWAP), to support the integration of food and nutrition security issues into policies through programmes and projects reaching family farms, through the combination of food and nutrition education, promotion of local foods, both cultivated and wild, and adaptation of nutritious traditional recipes.

Présentation du ROPPA

Le Réseau des organisations paysannes et des producteurs de l'Afrique de l'Ouest (ROPPA), formellement fondé en juillet 2000, regroupe des organisations et des "cadres de concertation" de 10 pays d'Afrique de l'Ouest (Bénin, Burkina Faso, Côte d'Ivoire, Gambie, Guinée, Guinée-Bissau, Mali, Niger, Sénégal, Togo). Cette liste n'est toutefois pas fermée et l'ambition, à moyen terme, est d'accueillir des organisations paysannes de l'ensemble des pays de la CEDEAO.

Le ROPPA part de l'exploitation familiale comme base d'une approche stratégique pour l'agriculture et le monde rural. Pour les organisations paysannes, la famille rurale est le socle des sociétés agraires dans les pays africains, un concept rarement pris en compte à sa juste valeur par les politiques de développement. Le ROPPA veut promouvoir l'amélioration des conditions d'exercice des familles rurales, dont les activités ne se restreignent pas à l'agriculture.

Le contexte socio-économique qui conditionne les activités des exploitations familiales et des organisations paysannes a été caractérisé, depuis 1998, par **trois éléments majeurs** qui ont motivé et mobilisé de nombreux leaders paysans de l'Afrique de l'Ouest et conduit à la création du ROPPA :

- **La mondialisation**, qui tire l'activité économique vers le "marché mondial" et oblige les producteurs locaux à entrer en compétition sur les marchés nationaux avec d'autres acteurs, avec des conditions de production et de mise en marché des produits totalement inégales.
- **L'intégration sous-régionale** qui, à travers l'établissement par l'Union Economique et Monétaire Ouest Africaine (UEMOA) d'un espace commun aux plans économique, social et institutionnel, est aujourd'hui une réalité de plus en plus tangible. En effet, l'harmonisation en matière d'échanges avec le Tarif Extérieur Commun, sur le plan juridique avec l'Organisation pour l'Harmonisation en Afrique du Droit des Affaires (OHADA), et au niveau des politiques de développement (en particulier la préparation de la Politique Agricole de l'UEMOA), font du niveau sous-régional un lieu de décision stratégique qui affecte les activités et le futur des organisations paysannes.
- **La décentralisation** au sein des pays de l'Afrique de l'Ouest, qui responsabilise de plus en plus les communautés territoriales de base, et requiert donc des attitudes et des capacités nouvelles de la part des organisations paysannes.

Une des priorités du ROPPA est de renforcer les organisations et cadres de concertation paysans dans les pays où ils sont encore faibles. En effet, le ROPPA doit impérativement pouvoir compter sur des organisations paysannes et des "cadres de concertation nationaux" forts, capables de dialoguer avec leurs Etats respectifs, afin de soutenir le développement de politiques agricoles nationales cohérentes et favorables aux

exploitations agricoles familiales, qui représentent la majorité des exploitations agricoles dans les pays de l'Afrique de l'Ouest.

Il existe une réelle nécessité d'assurer la cohérence des politiques agricoles nationales avec la Politique Agricole Commune de la CEDEAO (ECOWAP), adoptée par les Chefs d'Etat lors du Sommet d'Accra, tenu en Juillet 2005. Le ROPPA a participé à l'élaboration de l'ECOWAP, qui est donc centrée sur la souveraineté alimentaire et est bien acceptée par les producteurs. Toutefois celle-ci gagnerait à être complétée par un volet nutritionnel.

La mise en œuvre des politiques doit être assurée au travers de programmes et de projets touchant directement les exploitations agricoles familiales et prenant en compte les questions de sécurité alimentaire et de nutrition, telles que l'éducation alimentaire et nutritionnelle et la promotion des aliments locaux et l'adaptation des recettes traditionnelles. L'intégration de l'éducation nutritionnelle dans le cursus scolaire, par exemple, est essentielle dans les stratégies à long terme afin de rétablir, au sein des populations, la connaissance des aliments traditionnels disponibles localement et de leurs valeurs nutritives. Il s'agit ici non seulement des produits agricoles mais aussi des produits de cueillette, actuellement négligés, tels que la liane goyine (ou wêda), la jujube ou le pain de singe.

Point de vue des organisations paysannes sur la crise alimentaire et l'augmentation des prix

La crise alimentaire a été certes aggravée par l'augmentation des prix en 2007-2008, mais était déjà latente, du fait des mauvaises options de politiques agricoles, bien avant le début de la hausse mondiale des prix.

Les organisations paysannes ont longtemps tenté d'attirer l'attention sur les conséquences, immédiates ainsi qu'à long terme, des politiques économiques libérales, mais sans être entendues. Une multitude de processus sans débouchés, de documents «cadre», de politiques incohérentes ont vu le jour mais peu d'actions concrètes majeures ont été réalisées au profit des cultures vivrières alimentaires. De plus, le secteur agricole est victime d'un sous-investissement généralisé; en effet, l'engagement des chefs d'Etat de l'Union Africaine à la Déclaration de Maputo (2003) d'accorder 10% du Budget national pour les investissements agricoles n'est pas respecté dans la réalité.

Dans cette situation fragile, plusieurs facteurs ont interagi et catalysé le déclenchement de la crise:

- la flambée du prix du baril de pétrole a entraîné l'augmentation du coût de l'énergie, donc du coût des transports et, par conséquent, du coût des produits transportés ;
- la réduction des stocks céréaliers mondiaux dans les dernières décennies a diminué la capacité de réaction des Etats à la flambée des prix des denrées alimentaires;
- l'impact de la crise dans les pays émergents a été majeur du fait de la forte dépendance des produits agricoles importés (viande, produits laitiers, etc) ;
- la forte demande des pays développés pour la production de biocarburant (Biodiesel et Bioéthanol) a provoqué une 'rivalité' entre les cultures destinées à la production des biocarburants et les cultures vivrières pour les terres agricoles disponibles ;
- les spéculations, à tous les niveaux, financières et foncières, ont contribué à la déstabilisation des marchés ;
- les conséquences du changement climatique, rendant aléatoires les récoltes.

Quelles opportunités pour les organisations paysannes?

Dans le contexte actuel, les organisations paysannes représentées par le ROPPA reconnaissent comme nécessaires à une agriculture paysanne performante et durable une série de mesures, parmi lesquelles :

- la garantie d'un juste prix d'achat au producteur, rémunérateur et incitateur ;
- le respect de la souveraineté/sécurité alimentaire ;
- la reprise de l'investissement dans le secteur agricole, notamment au profit des exploitations agricoles familiales, pour qu'elles améliorent leur productivité et la qualité des produits alimentaires ;
- des mesures d'accompagnement pour faire face à l'augmentation de la production en terme de transformation, conditionnement/ marketing, commercialisation et débouchés sur les marchés ;
- des Journées Promotionnelles pour la consommation des produits locaux ;
- la collecte, l'adaptation et la promotion des recettes culinaires traditionnelles auprès des communautés rurales ;

- la valorisation des produits de la recherche nationale et régionale, par exemple ceux du projet PROMotion des CERéales LOcales au Sahel (PROCELOS) du Comité Inter-États de Lutte contre la Sécheresse au Sahel (CILSS) ;
- l'inventaire, l'analyse et la valorisation des produits de cueillette, y compris forestiers, jusqu'à présent marginalisés mais ayant des valeurs nutritives et thérapeutiques certaines ;
- la valorisation des produits pastoraux et halieutiques ;
- la promotion de la consommation des produits horticoles (fruits et légumes).

Conclusion

La flambée généralisée des prix mondiaux des produits agricoles et alimentaires, liée entre autres à la recherche de nouvelles sources d'énergie et la lenteur dans la construction d'un marché régional protégé et sécurisé en Afrique de l'Ouest, accentuent les risques d'une insécurité aiguë et limitent la marge de manœuvre des organisations paysannes. Ce constat peut malheureusement perdurer si les Etats persistent à prendre des mesures séparément, avec des effets très ponctuels et inefficaces à long terme.

Au regard de l'ampleur de la décapitalisation des exploitations familiales ces dernières années, les mesures d'urgences à elles seules ne suffisent pas pour relever le défi d'une croissance agricole durable d'une part et pour lutter efficacement contre l'insécurité alimentaire et la pauvreté d'autre part. Les mesures d'urgences doivent être intégrées dans une stratégie à moyen et long terme de développement agricole et de réduction de la dépendance alimentaire de l'Afrique de l'Ouest, soutenue par une volonté politique bien affirmée et un engagement fort pour :

- travailler à **rendre effective l'intégration régionale**, pour tirer avantage de la **complémentarité** des différents Etats de l'espace CEDEAO et encourager les échanges intercommunautaires au sein de cet espace ;
- **valoriser les atouts sur le plan agricole**: accès aux ressources naturelles (terres cultivables, pâturages, eau douces et maritimes, forêts...), accroissement de la productivité à l'hectare, diversification et spécialisation régionale des productions, etc. ;
- **intégrer l'éducation nutritionnelle dans le cursus des écoles primaires**, appuyée de démonstrations culinaires à base de produits locaux ;
- réaliser des **campagnes d'information et de sensibilisation** sur les problématiques alimentaires et nutritionnelles.

Recommandations

- Une proposition ROPPA/OOAS devra être élaborée, discutée et approuvée afin que les deux institutions conjuguent leurs efforts pour que la question nutritionnelle soit mieux prise en compte en Afrique de l'Ouest. Le ROPPA marque sa disponibilité à mettre son réseau au service d'un plaidoyer commun en faveur de la nutrition.
- Au niveau national et sous-national, la collaboration entre l'OOAS, le ROPPA et ses plateformes nationales pourra faciliter le travail de réseau sur la nutrition. Des activités concrètes sont possibles avec les acteurs locaux au niveau communautaire : information et sensibilisation, relais utiles pour la vulgarisation de bonnes pratiques alimentaires et nutritionnelles, etc...
- Dans le cadre de sa campagne 'Afrique nourricière', le ROPPA invite l'OOAS à participer à l'organisation d'un atelier sur les arts culinaires traditionnels et la ruralité, à la suite d'un travail de collecte d'information au niveau des populations rurales et dans le but de vulgariser et promouvoir les produits locaux et leur utilisation pour leurs valeurs nutritives et thérapeutiques. Ce forum sur les arts culinaires et la ruralité devra regrouper toutes les plateformes nationales du ROPPA, et formera une bonne tribune pour examiner la possibilité d'une collaboration accrue avec l'OOAS.

Réseau des Organisations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest (ROPPA)



Le ROPPA poursuit les objectifs suivants :

- Promouvoir et défendre les valeurs d'une agriculture paysanne performante et durable au service des exploitations familiales et des producteurs agricoles
- Informer et former les membres des Organisations Paysannes et des Associations de producteurs agricoles à partir des expériences pertinentes des membres du ROPPA et des autres acteurs du développement
- Encourager et accompagner la concertation et la structuration des organisations paysannes et des producteurs agricoles dans chaque pays en vue de leur participation/implication dans la définition, la mise en oeuvre des politiques et programmes de développement des secteurs agricoles et ruraux
- Promouvoir la solidarité entre les organisations paysannes et de producteurs agricoles membres du ROPPA
- Assurer la représentation de ses membres aux niveaux régional et international
- Favoriser la concertation et la coopération entre le ROPPA et d'autres organismes similaires en Afrique et dans le monde

Les principes directeurs du ROPPA sont :

- Un Réseau homogène, dans sa composition sociologique et professionnelle
- Un Réseau ouvert aux pays de la région de l'Afrique de l'Ouest
- La solidarité paysanne, qui donne une place à chacun en associant toutes les catégories d'Organisations Paysannes et de Producteurs Agricoles dans chaque pays et qui soutient les organisations paysannes et de producteurs agricoles et leurs membres dans la reconnaissance de leur identité, de leurs droits et de leurs rôles
- Le consensus comme démarche privilégiée pour décider et agir ensemble

Processus d'intégration d'indicateurs nutritionnels dans le suivi de la sécurité alimentaire au Sahel et en Afrique de l'Ouest

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ENGLISH ABSTRACT

Integrating nutritional indicators in food security monitoring in the Sahel region and in West Africa

Africa -and the Sahel region in particular- bears the highest rates of chronic malnutrition in under-five children, remaining thus particularly sensitive to food and nutrition crises. On one hand, while generalized crises are well anticipated and monitored by the information systems in place at the regional level, local nutritional crises are still a major preoccupation, and the growing urban populations are not adequately monitored. On another hand, the Sahel's 2005 food crisis, that hit the traditionally food secure areas as well the vulnerable ones, clearly highlighted that approaches based solely on food production were not sufficient to face nutritional problems. There is a need to setup national nutritional information systems coordinated at regional level to support and guide decision-makers in planning efficient and effective interventions at national and regional level. To address this need, the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) and various partners started in 2006 the NUSAPPS (nutrition, food security and public policies in Sahel) initiative. Its activities include so far the advocacy for the integration of nutrition in food security information systems and public policies, the provision of country support in data collection and analysis, and in capacity building in nutrition at national and regional level. Since 2007, pilot activities are carried out in Burkina Faso, Gambia, and Niger, both in rural and urban contexts, to test the integration of anthropometric indicators and to validate qualitative measurement tools such as the dietary diversity surveys (DDS) and the *household food insecurity access scale* (HFIAS) in existing permanent agricultural surveys as well as in urban food vulnerability surveys (VAMU). Multisector-based platforms for the integration of nutritional data in food security information systems are also being setup. The encouraging results obtained from these experiences have proven the possibility to enhance the existing food security information systems through the integration of simple and operational nutrition assessment tools. The up scaling of these experiences ought to allow the bridging of information systems on food and nutrition security of rural and urban populations of the Sahel region, thus highlighting possible risk situations that were not taken into account previously and enabling more specific and effective interventions.

Introduction

L'Afrique est le continent qui présente le plus important taux de malnutrition des enfants de moins de cinq ans (Black 2008). En effet, près de 40,1% d'entre eux accusent un retard de croissance et 21,9% une insuffisance pondérale. En Afrique occidentale on dénombre 37,7% de retard de croissance et 23,9% d'insuffisance pondérale. A titre de comparaison, en Asie, le continent le plus touché en nombre absolu, 31,3% des enfants de moins de cinq ans accusent un retard de croissance et 22% une insuffisance pondérale. Quant à l'Amérique latine, elle enregistre les chiffres respectifs de 16,1% et 4,8%.

Au niveau du Sahel, cette situation nutritionnelle chronique a été un terreau favorable à l'émergence de la crise alimentaire et nutritionnelle qui a touché une partie de la région en 2005. Elle a ainsi révélé que si les crises alimentaires généralisées sont désormais bien anticipées et gérées par les mécanismes mis en place dans la sous région, les crises localisées, en particulier nutritionnelles, restent encore une préoccupation majeure qui mérite une attention toute particulière (Crombé et Jézéquel 2007).

En 2005, la gravité de la crise a surpris à la fois les Etats et les institutions sous-régionales. Il a en effet fallu reconnaître que, malgré des disponibilités alimentaires relativement maîtrisées -à l'exception de quelques zones chroniquement déficitaires-, la région subit continuellement une malnutrition structurelle. Malgré sa prise en compte dans les schémas programmatiques, très peu d'actions concrètes avaient été effectivement entreprises pour juguler la malnutrition. Cette inaction était implicitement justifiée par un raisonnement qui voulait qu'une bonne production alimentaire puisse à elle seule suffire pour résoudre les problèmes nutritionnels. Cette crise a très clairement remis en cause cette logique, d'autant que ce sont notamment les zones qualifiées de « greniers du pays » (Tambacounda au Sénégal, Sikasso au Mali et Maradi au Niger) qui ont subi assez durement les effets de la malnutrition (The World Bank 2006).

L'une des grandes leçons tirées à la suite de cette crise a été l'impérieuse nécessité de mettre en place des systèmes nationaux d'information nutritionnelle convergeant au niveau régional, afin de mettre à la disposi-

tion des décideurs des informations fiables et actualisées, leur permettant de planifier l'adoption d'interventions efficaces à l'échelle de chaque pays et, par la suite, à l'échelle de toute la sous-région.

Le réseau de prévention des crises alimentaires en Afrique de l'Ouest et au Sahel a fait sienne cette préoccupation. Ce réseau, qui regroupe en son sein des organisations intergouvernementales, non gouvernementales et des institutions du Système des Nations Unies, telles que le Comité Permanent Inter-Etats de Lutte contre la Sécheresse (CILSS), le Système d'Alerte Rapide (FEWS NET) de l'Agence des Etats-Unis pour le Développement International, l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO), Le Service d'Aide Humanitaire de la Commission européenne (ECHO), le Bureau de la coordination des affaires humanitaires des Nations Unies (OCHA), le Club du Sahel et de l'Afrique de l'Ouest (CSAO) et le Programme Alimentaire Mondial des Nations Unies (PAM), s'est réuni à Paris en décembre 2005 et a émis une recommandation visant à dynamiser les dispositifs régionaux et nationaux d'information sur la sécurité alimentaire. Il a entre autre été demandé d'améliorer le fonctionnement des systèmes d'Alerte précoce (SAP), notamment en intégrant des informations sur la nutrition dans les critères de surveillance et d'alerte.

Dans cette lancée, le CILSS, en collaboration avec ses partenaires l'Institut de Recherche pour le Développement (IRD), l'Organisation Ouest-africaine de la Santé (OOAS) et le Ministère français des Affaires Etrangères et Européennes (MAEE), a mis en place en 2006 une initiative dénommée NUSAPPS : Nutrition, sécurité alimentaire et politiques publiques au Sahel. Cette initiative vise à améliorer l'information sur la sécurité alimentaire et nutritionnelle pour permettre une prise de décision plus adaptée. Elle bénéficie de l'expérience du CILSS dans la mise en place de réseaux régionaux d'information sur la sécurité alimentaire, ainsi que d'un programme de renforcement des capacités des Systèmes d'Alerte Précoce (SAP). L'initiative NUSAPPS est devenue réellement opérationnelle mi-2007.

Depuis le début de la phase opérationnelle, un grand nombre d'activités ont été menées dans plusieurs pays du CILSS pour promouvoir la validation et l'intégration de données nutritionnelles dans les systèmes d'information sur la sécurité alimentaire, aussi bien en milieu rural qu'en milieu urbain. Parallèlement à ces activités, NUSAPPS apporte un appui aux pays pour la collecte et l'analyse des données, participe au renforcement des capacités en nutrition au niveau national et régional et met en œuvre un plaidoyer pour l'intégration de la nutrition dans les systèmes d'information et les politiques publiques.

Dans trois pays pilotes, Burkina Faso, Gambie et Niger, NUSAPPS a mis en œuvre ou a participé à des actions visant à valider certains outils de collecte et d'analyse de données. Au Niger et au Burkina Faso, des expériences sur l'intégration d'indicateurs nutritionnels dans les enquêtes permanentes agricoles sont conduites afin de valider la possibilité d'obtenir une information fiable sans pour autant alourdir les systèmes existants. Au Burkina, l'expérience porte sur l'utilisation du périmètre brachial dans l'enquête permanente agricole (résultats présentés ci-dessous), alors qu'au Niger une expérience pilote (en cours) expérimente l'intégration d'indices anthropométriques plus complets : poids-pour-taille, taille-pour-âge et périmètre brachial. Dans les deux cas l'ajout d'indicateurs sur la sécurité alimentaire au niveau des ménages est envisagé.

Au Burkina Faso et en Gambie, des enquêtes sur la vulnérabilité alimentaire en milieu urbain (VAMU) ont permis de valider les outils de mesure de la diversité alimentaire ('Dietary Diversity Survey' - DDS) et l'échelle d'insécurité alimentaire du ménage (ou '*Household Food Insecurity Access Scale*' - HFIAS). Ces premières études sur la situation alimentaire et nutritionnelle en milieu urbain ont donné de bons résultats (voir ci-dessous).

Au Sénégal, en Gambie et au Niger, la mise en place de plateformes multisectorielles pour l'intégration des données nutritionnelles dans les systèmes d'information de sécurité alimentaire a été initiée. Cela a permis une prise de conscience par tous les acteurs de l'aspect complexe et multifactoriel des problèmes de nutrition rencontrés dans ces pays.

Au vu des résultats encourageants de ces premières expériences, NUSAPPS compte élargir son champ d'action et inclure à terme l'ensemble des pays de la CEDEAO.

Surveillance de la situation nutritionnelle en milieu rural

Le volet de suivi de la situation nutritionnelle entend s'appuyer sur le système d'information sur la sécurité alimentaire mis en place dans chaque pays du Sahel, en particulier l'enquête agricole lorsqu'elle existe et qu'elle est fonctionnelle. Le processus consiste alors à adjoindre une fiche de recueil de données sanitaires et nutritionnelles portant sur les enfants de moins de cinq des ménages échantillons.

Cette expérience a été conduite par le Burkina Faso à travers la Direction Générale des Prévisions et des Statistiques Agricoles (DGPSA). L'initiative, qui date de 2004, a utilisé l'enquête permanente agricole à raison de deux passages par an (juillet et novembre) pour récolter auprès des enfants de moins de cinq ans les données suivantes :

- Le périmètre brachial (à partir de l'âge de 6 mois) ;
- Le sexe ;
- L'âge ;
- La morbidité au cours des deux dernières semaines ;
- L'appréciation générale du niveau de vie du ménage.

La taille de l'échantillon pour chaque passage de l'enquête variait entre 6000 et 7000 enfants de moins de cinq ans.

Pour le milieu rural, l'analyse des sept bases de données primaires, issues de différents passages de l'enquête permanente agricole de la DGPSA, a été faite avec le périmètre brachial-pour-l'âge exprimé en Z-score (MUAZ) calculé par rapport à la nouvelle courbe de référence de l'OMS de 2006 (Mahamadou 2008 ; OMS 2008). Cette analyse quantitative a été complétée par une enquête qualitative menée auprès des acteurs œuvrant au Burkina Faso dans le domaine de la sécurité alimentaire et de la nutrition et des décideurs politiques et portant sur leur perception de l'expérience par les acteurs œuvrant au Burkina Faso dans le domaine de la sécurité alimentaire et de la nutrition et par les décideurs politiques.

L'instrument utilisé et la qualité des données collectées ont été préalablement examinés par comparaison avec les indicateurs de malnutrition considérés comme les « gold standard » : poids-pour-taille, taille-pour-âge et poids-pour-âge (Capon et al 2007).

Les résultats montrent que l'écart-type de la distribution du MUAZ s'est progressivement amélioré entre 2004 et 2007, passant respectivement de 1,27 à 1,06. Cette évolution est visible sur les courbes de distribution (figure 1) qui présentent un rétrécissement progressif et tendent à ressembler de plus en plus à la courbe de référence de l'OMS.

Les résultats portant sur l'ensemble des passages ont par ailleurs permis de noter que :

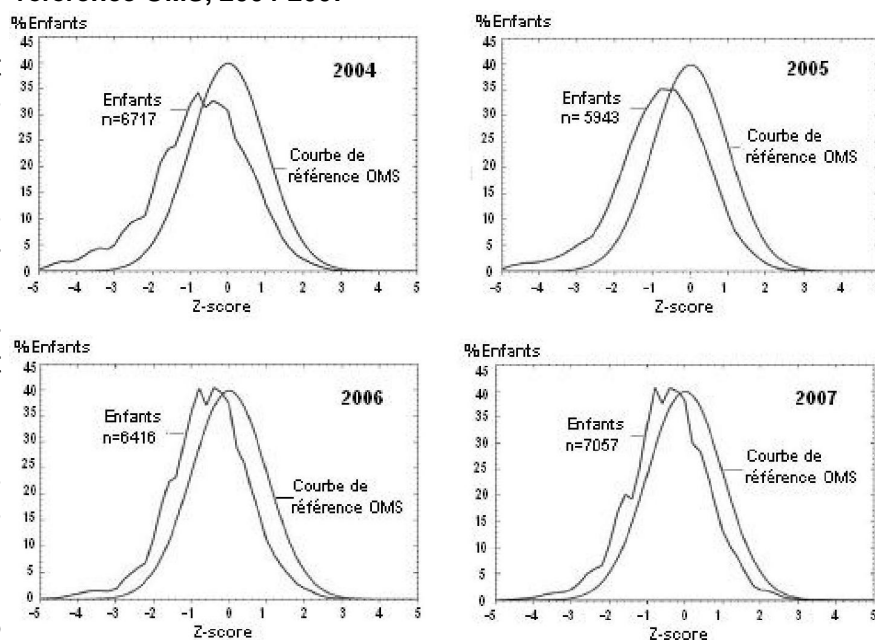
- La situation nutritionnelle des filles est significativement meilleure que celle des garçons indépendamment de l'âge ;
- Les enfants ayant connu un épisode morbide au cours des deux semaines précédant le passage de l'interview présentent un moins bon état nutritionnel ;
- L'état nutritionnel connaît une détérioration progressive jusqu'à 18 mois avant d'amorcer une amélioration ;
- Les enfants des ménages en situation de précarité économique sont en moins bon état nutritionnel que ceux des autres ménages ;
- La situation des enfants a connu une détérioration au cours de l'année 2005 correspondant à la période de crise nutritionnelle subie dans certains pays sahéliens.

Ce fait est surtout consécutif à la situation qui a prévalu dans les régions les moins bien loties telles que l'Est et le Nord du Burkina Faso.

Ainsi, globalement, la qualité des données s'est améliorée au cours du temps et les résultats se sont montrés sensibles aux caractéristiques structurelles connues de la malnutrition, ainsi qu'à la situation conjoncturelle (crise nutritionnelle de 2005). Il s'avère cependant que c'est la constitution de séries de données et l'interprétation de leurs variations qui apporte une réelle information.

Pour autant, disposer de l'information nutritionnelle ne signifie pas garantir son utilisation au niveau opérationnel. L'enquête qualitative a en effet montré qu'en dehors des techniciens du système même, pratiquement aucun des acteurs impliqués dans le suivi de la sécurité alimentaire interviewés n'a pris connaissance des rapports de cette expérience. Pourtant, tous s'accordent sur l'intérêt d'une telle démarche. Ainsi, pour que l'information nutritionnelle que représente la mesure du périmètre brachial dans les enquêtes agricoles puisse jouer son rôle au Burkina Faso, d'énormes efforts de communication, de connaissance de l'informa-

Figure1: Comparaison de la distribution du MUAZ avec la courbe de référence OMS, 2004-2007



tion, de plaider et un renforcement du partenariat technique et financier entre les acteurs du système doivent être réalisés.

Pour plus d'efficacité, un certain nombre de paramètres doivent également recevoir une plus grande attention. Il s'agit notamment de :

- réduire le plus possible le délai entre la collecte de l'information et sa publication pour que des mesures efficaces puissent répondre à temps à une détérioration de la situation constatée. Cela passe notamment par une appropriation, par la structure en charge de la collecte, de tout le processus de traitement et d'analyse des données recueillies;
- mener un plaidoyer afin que cette initiative serve effectivement à la mise en œuvre des procédures conçues pour entraîner des actions plus approfondies ;
- faire bénéficier le processus technique des leçons tirées des premières analyses approfondies dès que disponibles ;
- poursuivre le recueil de l'information afin de disposer d'une série continue de données qui seule peut permettre un meilleur suivi des tendances.

Surveillance de la vulnérabilité alimentaire et nutritionnelle en milieu urbain

L'adoption d'une démarche de suivi de la vulnérabilité alimentaire en milieu urbain fait suite au constat que, malgré l'urbanisation rapide qui prévaut en Afrique de l'Ouest, il n'existe pratiquement pas de données sur la sécurité alimentaire et nutritionnelle en ville. La prise en compte de la spécificité des zones urbaines en termes de sécurité alimentaire permet d'assurer l'exhaustivité et la cohérence des évaluations de la situation alimentaire de la population dans son ensemble.

A l'image des autres régions du monde, le Sahel connaît un rythme accéléré de croissance de sa population urbaine, alimentée à la fois par un exode rural sans cesse renouvelé, une extension continue de l'espace urbain par absorption de sa périphérie et un dynamisme démographique lié à une fécondité élevée induite par la forte jeunesse de sa population. Ces éléments contribuent alors à imprimer un rythme de croissance de population généralement bien plus élevé (de l'ordre d'une fois et demie) que celui de la population rurale (Tabutin 1988).

Parallèlement à cette augmentation significative de taille de la population, on observe une paupérisation urbaine croissante. Si, globalement, le niveau de vie reste indéniablement meilleur en milieu urbain qu'en milieu rural, il est cependant assez préoccupant de noter une augmentation constante de la proportion de pauvres parmi les citadins. Toutes les enquêtes conduites ces dernières années sur les conditions de vie des ménages abondent dans ce sens (Lachaud 1995).

Malheureusement, les dispositifs de recueil de l'information sur la sécurité alimentaire ne rendent pas compte de cette réalité. Les enquêtes agricoles qui constituent l'ossature des systèmes d'alerte précoce portent par définition sur les ménages agricoles du milieu rural seulement, si bien que la population urbaine n'est pas prise en compte par ces systèmes d'information.

C'est donc pour combler cette lacune qu'ont été initiées les enquêtes 'Vulnérabilité alimentaire en milieu urbain (VAMU)'. Le CILSS, en collaboration avec l'IRD au Burkina Faso et avec la National Nutrition Agency en Gambie, a conduit trois enquêtes VAMU à Ouagadougou entre juin 2007 et juillet 2008, pour rendre compte de la situation alimentaire et évaluer la capacité des outils à servir la surveillance nutritionnelle dans un espace urbain sahélien. Une enquête VAMU a aussi été menée à Banjul et banlieue en mai 2008 pour établir la situation de référence de l'état nutritionnel et alimentaire de la population de cette ville.

Ces enquêtes ont évalué la situation alimentaire des ménages urbains à travers deux outils simples, performants et de moindre coût : le score de diversité alimentaire (DDS) et l'échelle d'insécurité alimentaire du ménage (HFIAS), développés par la FAO et le projet FANTA (Food and Nutrition Technical Assistance), et présentés plus en détail ci-dessous.

Le score de diversité alimentaire

La diversité alimentaire est un élément de la qualité du régime alimentaire. Elle donne une approximation de l'apport d'énergie, de l'apport de micronutriments, de l'état nutritionnel et de l'accès aux aliments (Hoddinott et Yohannes 2002; Arimond et Ruel 2004; Savy et al. 2006).

Lors des enquêtes VAMU conduites en 2007 et 2008, on a tenté de capturer la diversité alimentaire d'une personne-clé du ménage pour rendre indirectement compte de la situation du ménage dans son ensemble. Une mère possédant un enfant de moins de cinq ans était donc interviewée dès que possible. A défaut, l'interview pouvait être faite, dans l'ordre, à une mère d'enfant de plus de cinq ans, une femme en âge de pro-

créer, voir un homme. L'approche privilégiait la mesure au niveau individuel par rapport à celle portant sur le ménage tout entier, en raison de la consommation alimentaire hors domicile de l'ensemble des membres du ménage, comportement alimentaire très répandu en ville. La valeur du score a été obtenue par comptage des groupes d'aliments consommés par l'individu durant les 24 heures précédant le jour de l'interview. Les 14 groupes alimentaires tels que définis par la FAO en août 2007 ont été considérés (FAO 2007).

Les résultats font ressortir, pour les deux villes de Ouagadougou et Banjul, la prépondérance des céréales et des légumes, ainsi que des produits de la mer pour Banjul, qui constituent la base de l'alimentation (figures 2 et 3). Pour Ouagadougou, entre juin 2007 et juillet 2008, on enregistre une baisse de consommation substantielle sur certains produits comme la viande (-25%), les fruits riches en vitamine A (-69%) et non (-31%), les produits laitiers (-21%). La baisse enregistrée pour ces groupes riches en micronutriments traduit certainement les effets du phénomène mondial de la hausse des prix qui s'est dramatiquement fait ressentir au Burkina et au niveau de la sous région.

Cet aperçu des variations par groupes d'aliments est complété par une synthèse sur le nombre moyen de groupes alimentaires consommés les dernières 24 heures, suivant le niveau de vie des ménages (figures 4 et 5). La mise en relation du nombre de groupes alimentaires et du statut économique du ménage a fait ressortir, à Banjul comme à Ouagadougou, une très forte liaison entre le niveau de vie du ménage et la diversité de sa consommation alimentaire. Plus un ménage est riche, plus il a accès à une alimentation diversifiée. Par ailleurs, entre le passage de juin 2007 et celui de juillet 2008, les habitants de Ouagadougou ont connu une baisse significative de la diversité de leur alimentation (figure 5). Cette situation a touché indistinctement tous les niveaux économiques.

Figure 2 : Fréquences des groupes alimentaires consommés à Banjul en 2008

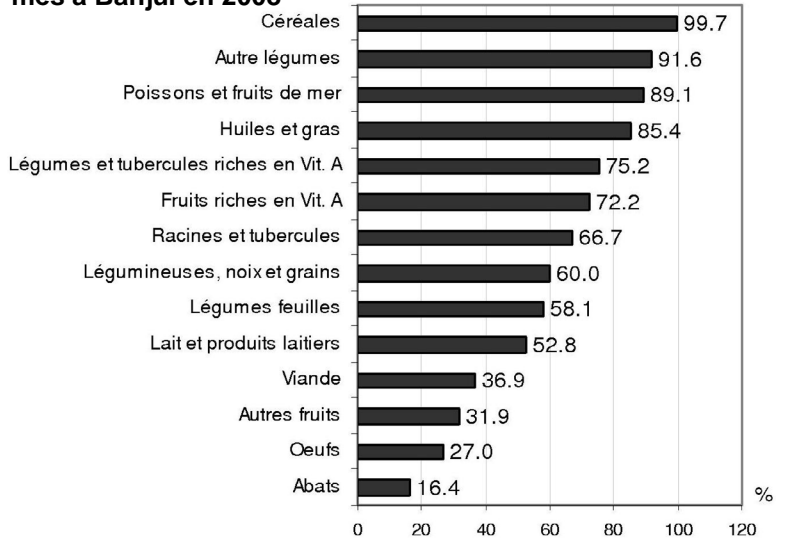


Figure 3 : Fréquences des groupes alimentaires consommés à Ouagadougou en 2007 et 2008

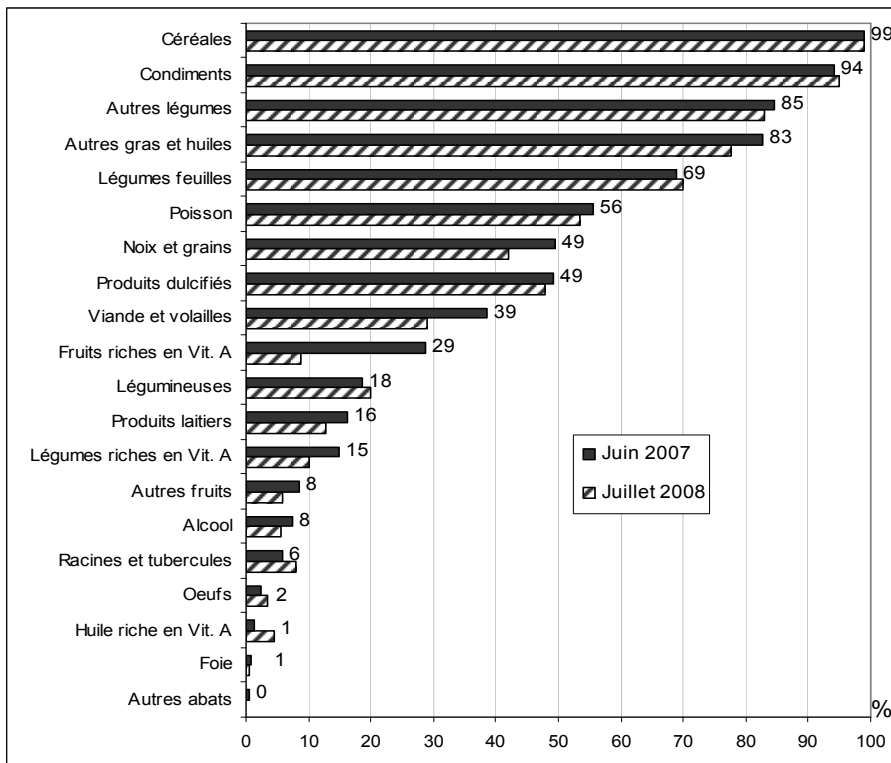


Figure 4 : Nombre moyens de groupes alimentaires consommés par niveau de vie à Banjul

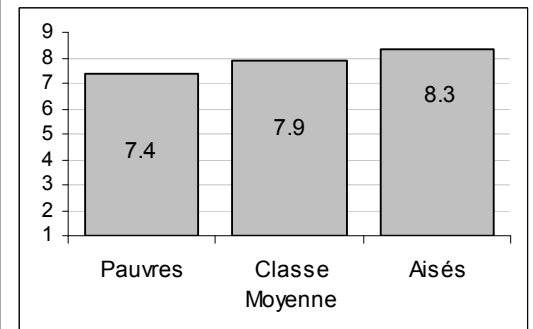
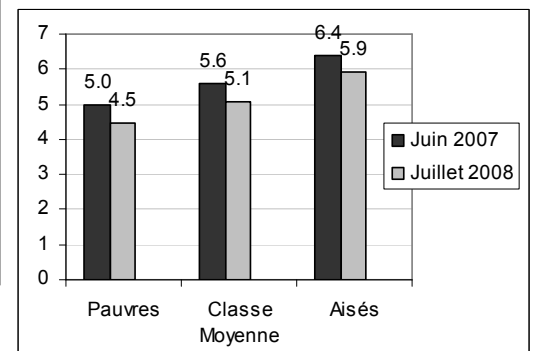


Figure 5 : Nombre moyens de groupes alimentaires consommés par niveau de vie à Ouagadougou



L'échelle d'Insécurité Alimentaire des Ménages (HFIAS)

Elle est déterminée à l'aide d'une série de neuf questions sur les difficultés graduelles éprouvées pour accéder aux aliments et sur les stratégies adoptées pour faire face aux difficultés (Coates et al. 2006). L'échelle saisit trois dimensions (table 1).

Les questions portent sur l'ensemble du ménage et la période de référence porte sur les 30 jours écoulés. La réponse à chacune des questions est graduée au moyen de 4 réponses ordonnées *jamais, rarement, parfois et souvent* correspondant respectivement aux valeurs 0, 1, 2, 3.

La classification FANTA définit quatre catégories d'insécurité alimentaire selon les réponses apportées aux neuf questions: l'insécurité alimentaire forte, l'insécurité alimentaire moyenne, l'insécurité alimentaire faible et la sécurité alimentaire.

Table 1 : Les trois dimensions de l'alimentation capturées par le questionnaire HFIAS

	Ces 30 derniers jours, est-ce que vous ou tout membre de votre ménage...
Inquiétude	...avez été inquiet par le fait que votre ménage puisse manquer de nourriture ?
Baisse de qualité	...n'avez pas pu manger, par manque de moyens, certains aliments que vous préférez consommer d'habitude ?
	...avez été contraint, par manque de moyens, de manger tous les jours la même chose ?
	...avez été contraint, par manque de moyens, de manger des aliments que vous préférez ne pas manger d'habitude ?
Réduction de quantité	...avez été contraint, par manque de nourriture, de diminuer la quantité consommée au cours d'un repas ?
	...avez été contraint, par manque de nourriture, de réduire le nombre de repas habituellement consommés par jour ?
	...par manque de nourriture, êtes allés vous coucher le soir en ayant faim ?
	Est-il arrivé qu'il n'y ait rien à manger du tout dans votre maison parce qu'il n'y avait pas les moyens ?
	...avez passé, par manque de nourriture, toute une journée sans manger ?

Les résultats obtenus sur le niveau d'insécurité alimentaire du ménage sont conformes à ce qui est logiquement attendu par rapport au niveau de vie. A Banjul, on note en effet une augmentation significative de la proportion des ménages en sécurité alimentaire lorsque l'on passe de la catégorie des ménages les plus pauvres à celle des ménages les plus aisés, tandis que les proportions de ménages classés en insécurité alimentaire moyenne ou sévère enregistrent une baisse continue (figure 6).

A Ouagadougou, la même relation est retrouvée entre insécurité alimentaire et niveau économique. En outre, on a observé une réduction substantielle de la proportion de ménages en situation de sécurité alimentaire de 2007 à 2008 (figure 7), ainsi qu'une augmentation de la proportion des ménages en insécurité moyenne et sévère. Ceci est en cohérence avec les résultats obtenus sur la diversité alimentaire.

Figure 6 : Insécurité alimentaire à Banjul selon le niveau de vie

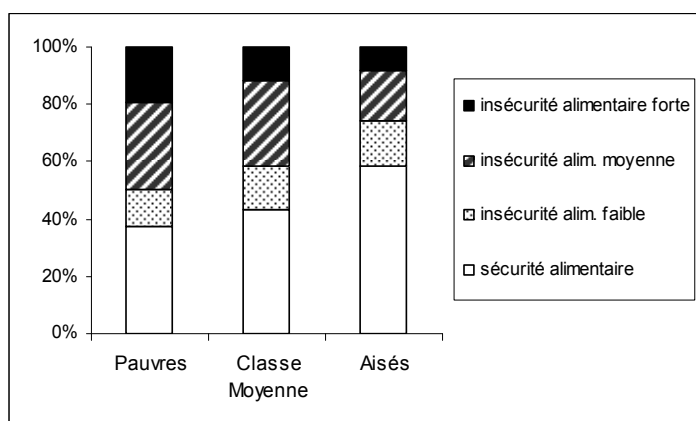
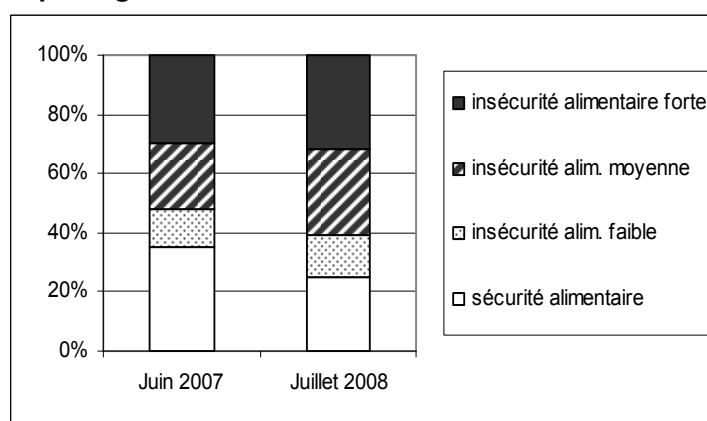


Figure 7 : Insécurité alimentaire à Ouagadougou selon le passage



Conclusion

Pour compléter efficacement les enquêtes nationales actuelles sur la sécurité alimentaire avec des données sur le statut nutritionnel des ménages, le recours à la mesure du périmètre brachial des enfants de moins de

cing ans constitue certainement une première étape intéressante. Notamment, la constitution de séries de mesures apporte une information intéressante dans le suivi de la situation nutritionnelle car ces dernières ont montré leur sensibilité aux phénomènes conjoncturels.

Concernant l'intégration du milieu urbain dans l'évaluation nationale de la sécurité alimentaire et nutritionnelle, et sur la base des enquêtes VAMU conduites à la fois à Banjul et à Ouagadougou, de nombreux arguments sont en faveur de l'utilisation des outils d'évaluation que sont le score de diversité alimentaire (DDS) et l'échelle d'insécurité alimentaire (HFIAS). La sensibilité de ces indicateurs au niveau de vie du ménage, au contexte général, aux difficultés d'accès aux aliments, ainsi qu'à d'autres facteurs non présentés ici, font l'intérêt de ces outils en milieu urbain et, donc, pour compléter les systèmes d'information et d'alerte rapide sur la sécurité alimentaire en place dans les pays sahéliens.

Ces deux expériences menées dans le cadre de l'initiative NUSAPPS ont montré la possibilité d'améliorer les systèmes de surveillance actuels à l'aide d'outils simples et opérationnels. La généralisation de ces expériences devrait permettre de relier l'information nutritionnelle et l'information sur la sécurité alimentaire, concernant les populations rurales et urbaines des pays de la sous-région, et peut-être d'identifier certaines situations à risque non prises en compte actuellement. Ainsi, il sera possible d'agir de façon plus spécifique et donc de gagner en efficacité.

Références

Arimond M. et Ruel M. T. (2004). "Dietary diversity is associated with child nutritional status: evidence from 11 demographic and health surveys". *J Nutr* 134(10): 2579-85.

Black R.E., Allen L.H., Bhutta Z.A., de Onis M., Mathers C. et Rivera J. (2008). "Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences". *The Lancet* 371 (9608): 243-260.

Capon G., Lompo M., Millogo S., Ouili R., Zerbo M., Zoungrana M., Tapsoba S. et Prével Y.M. (2007). *Comparaison des mesures anthropométriques réalisées au sein de l'EPA et de l'ENC*, 25p. (document non publié)

Coates J., Swindale A. et Bilinsky P. (2006). *Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide (v. 2)*. Washington, D.C., Food and Nutrition Technical Assistance Project, Academy for Educational Development.

http://www.fantaproject.org/publications/hdds_mihfp.shtml

Crombé X. et Jézéquel J.-H. (2007). *Niger 2005 : une catastrophe si naturelle*. Coll. Les terrains du siècle, Karthala / Médecins Sans Frontières.

FAO (2007). *Guide pour la mesure de la diversité alimentaire au niveau des individus et des ménages, version 3*. Préparé par la Division de la Nutrition et de la Protection des Consommateurs de la FAO avec le soutien du Programme CE-FAO « Sécurité alimentaire : Information pour l'Action » et du Projet Food and Nutrition Technical Assistance (FANTA). Rome.

<http://www.cilss.bf/nusapps/pdf/faoguidesda.pdf>

Hoddinott J. et Yohannes Y. (2002). *Dietary diversity as a food security indicator*. FCND discussion paper No136, International Food Policy Research Institute. Washington DC.

<http://www.ifpri.org/divs/fcnd/dp/papers/fcndp136.pdf>

Lachaud JP. (1995). "[La pauvreté urbaine s'aggrave en Afrique](#)". *Travail* 11:10-12. Bureau international du travail, Genève.

Mahamadou T. (2008). *Apports d'une information nutritionnelle dans les systèmes de surveillance de la sécurité alimentaire : Exemple de l'intégration du périmètre brachial dans l'Enquête Permanente Agricole du Burkina Faso*. Ouagadougou, 33 p. (document non publié)

OMS (2008). *WHO Child Growth Standards, Methods and development*. Organisation Mondiale de la Santé, Genève.

http://www.who.int/childgrowth/standards/technical_report/en/index.html

Savy M., Martin-Prevel Y., Traissac P., Eymard-Duvernavy S., Delpeuch F. (2006). "Dietary diversity scores and nutritional status of women change during the seasonal food shortage in rural Burkina Faso". *J Nutr* 136(10): 2625-32.

Tabutin D. (1988). *Populations et sociétés en Afrique au Sud du Sahara*. Editions l'Harmattan, Paris.

World Bank (2006). *Repositioning Nutrition as Central to Development: a Strategy for Large-Scale Action*. Directions in development, Washington, DC.

<http://siteresources.worldbank.org/NUTRITION/Resources/281846-1131636806329/NutritionStrategy.pdf>

Integrating agriculture and health: implications for improved food and nutrition security, experience from Sierra Leone

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Introduction

Agriculture is fundamental to achieving nutrition goals as it produces food, energy, and essential nutrients for the health and well-being of the population. In Sierra Leone, increasing food production has played a significant role in feeding a growing and increasingly malnourished population since the peace declaration in 2002 (FAO/WFP 2002, 2003&2004). However, this has not translated into a food secure Sierra Leone nor reduced the increasing prevalence of malnutrition challenges (UNICEF 2000&2007). Malnutrition afflicts a large and increasing number of children and impedes social and economic progress.

Agriculture and nutrition are inextricably linked and in recent years the recognition of this interdependency has renewed impetus to the efforts in harnessing the synergies of these two sectors. It has long been recognized that food security is one of three key-pillars of good nutrition, including good care practices and good health. Over the past three decades, evidence from Sierra Leone has increasingly indicated that agricultural productivity is a powerful platform for reducing poverty, improving nutritional status and economic development.

Box 1: Absolute poverty is...

"...a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services".
World Summit on Social Development, 1995, Copenhagen.

Box 2: Sierra Leone at a Glance

Population (2004):	5 million
Urban population (% of total pop.):	75%
Population growth (% , 1990-03):	2.4%
Poverty (% of population below poverty line):	50%
Rural (% of pop below poverty line):	89%
Absolute poverty:	65%
Life expectancy:	35 years
Child malnutrition (% ≤ 5):	24%
Maternal mortality ratio:	1,800/100,000 live births
Gross Domestic Product (GDP) per capita:	US\$210
Agriculture (% of GDP, 2004):	45%

Despite a sustained economic growth of 7% per annum over the last 2 years, Sierra Leone remains in the lowest rungs of the UNDP Human development Index (UNDP 2005). About 82% of the population lives below the poverty line of US\$1/day and more than 50% live in absolute poverty (Box 1) (SSL/DFID 2007).

About 80% of the population live in rural areas where poverty is much more prevalent, intense and severe (Box 2). More than two-thirds of the rural population lack access to safe drinking water and health services. Seasonal hunger is still severe and food and nutrition insecurity continue to plague the country as the urban population continues to depend on import (food aid and commercial imports). Meanwhile, in rural communities, the high rate of malnutrition among children continues to be a problem. Child underweight and stunting prevalence are reported at 27% and 34% respectively (SSL/DFID 2007).

To address these issues, the United States Agency for International Development (USAID) Office of Food for Peace funded in 2006 a

three-year Assistance Programme for Sierra Leone. This programme titled Livelihood Expansion for Asset Development (LEAD) is led by CARE International and implemented by the Consortium for Relief and Development (CORAD). CORAD comprises of four food pipeline agencies in Sierra Leone: CARE, World Vision, Catholic Relief Services (CRS) and Africare. CORAD partners utilize an integrated approach to food security that includes the promotion of sustainable livelihood strategies as well as a focus on health and nutrition in 32 chiefdoms, including five major towns in five districts of Sierra Leone. In implementing this programme, CORAD collaborates with two key government ministries: the Ministry of Agriculture, Forestry and Food Security (MAFFS) and the Ministry of Health and Sanitation (MOHS). The programme targets 16,000 beneficiaries' households over the three-year period. Beneficiaries consist of children from 6 to 59 months; pregnant and lactating women; poor farmers and socially marginalized youths. The project aims to reduce vulnerability to food insecurity via three main programme components:

- Agricultural and off-farm livelihood enhancements
- Mother-Child Health (MCH) and nutrition enhancement
- Governance

Priority interventions for the 'Agricultural and off-farm livelihood enhancements' component include improved agricultural production and post-harvest loss management. These integrate support to better natural resource management, empowerment of producer associations; increased access to financial resources and to markets, and diversification of non-agricultural livelihood activities. The MCH and nutrition interventions include

linking the most vulnerable and under-served communities to health and nutrition services as well as providing training on health and hygiene practices especially for mothers and children. At the same time, the project works with beneficiary groups and communities increasing their internal capacity to monitor conditions and develop community safety nets and their own local emergency response plans. Through these activities, CORAD partners intend to reduce food insecurity among vulnerable populations and increase rural community capacities to influence and improve long-term food and nutrition security.

An opportunity to integrate agriculture, health and nutrition

Prior to the commencement of implementation, the Consortium conducted a baseline survey (CORAD 2007) which showed that malnutrition was a challenge in the LEAD Programme communities in the six districts.

Wealth ranking among beneficiaries indicated inequality across the sample population with 43% of households categorized as “asset poor”, implying that they could be exposed to greater insecurity and vulnerability. Most sample households reported experiencing seasonal food insecurity for 4 out of 12 months, June-October being the months they were most exposed to food shortages. This shortfall in production to meet household food consumption and income needs could be associated with the fact that major food crop yields achieved less than 50% of potential yields.

The Household Dietary Diversification Score (HDDS) (Swindale & Bilinsky 2006) indicates that household members were consuming foods from 7 food groups during the reference period. Despite this encouraging statistic, the study observed that only 45% of the sample population had access to protected drinking water year round. Of the 2,544 children under 5 years of age weighed, 495 were moderately malnourished (underweight); boys were moderately underweight compared to girls (59% vs. 41%). It was also observed that 20% of the underweight children were 6-11 months old, 39% were 12-23 months old and 41% were 24-59 months old, thus highlighting the increase of malnutrition related to inadequate complementary feedings practices.

To achieve its priority interventions for the livelihoods component, the LEAD Programme focused on the farmer field school (FFS) concept to build the innovation capacities of the participating farmers through experiential learning and self-discovery (FAO 2002). This approach enhances farmers’ understanding and analysis of the agro-ecological conditions within which they operate and sharpens their critical thinking, further enhancing their ability to better manage their farms. The FFS is a small group of 25-30 farmers meeting on a regular basis to discuss and prioritize farm problems. They explore ways and means to overcome farm-related problems and conduct experiments to test innovations, ideas, and new technologies. FFS members also explore existing opportunities and create new ones to increase and sustain farm production and incomes. In addition, these groups are a catalyst to the establishment of linkages with the service providers (MOHS, MAFFS), sources of new innovations (Sierra Leone Agricultural Research Institute – SLARI), and suppliers of good-quality agricultural inputs.

Box 3: The Household Dietary Diversification Score (HDDS)

The dietary diversity score consists of a simple count of food groups that a household or an individual consumed over the previous day and night. The percentage of households or individuals consuming specific types of foods, such as Vitamin A-rich fruits or vegetables, can also be obtained.

HDDS is usually highly correlated with caloric and protein adequacy, percentage of protein from animal sources (high quality protein), and household income. The HDDS includes food groups that may not be nutritionally sound but that require the economic means to acquire, such as sugar and sweets, and beverages including alcoholic drinks. For this reason, it is considered a measure of economic access to a varied diet.

A missed opportunity to integrate agriculture, health and nutrition

Two years (Financial Year 2007-09) and 340 FFS later, CORAD LEAD has reached over 10,000 household heads, not including more than 18,000 farmers from 606 FFS established under the LINKS programme also funded by USAID. A 2008 Assessment Report for the CORAD LINK Project implemented in 3 of the 5 districts covered by CORAD LEAD indicated that FFS have a very high spill-over effect on farmers located both in the vicinity of the FFS and further away. A great number of non-participating households in the FFS villages as well as in neighbouring ones, know of and have adopted the improved practices propagated in the FFS (CORAD 2008a).

Despite the popularity and success of the FFS, the Household Food Insecurity Access Scale (HFIAS) estimates that 78% of participating farmers worried that they would not have enough food to eat during the preceding four weeks; the proportion was 80-84% among non-participants. More importantly, despite interventions through the FFS about half of all sample households reported at least an occasion when there was no food of any kind in the household because of lack of resources to get food during the preceding four weeks. Worse still, 40% of households had occasion where a member of the household went to bed hungry, and 25% of households had an occasion when at least one member went a whole day and night without food.

Although activities had relevance in their own right, true relevance of interventions comes from the integrated 'basket of activities' offered by the LEAD programme (CORAD 2008b). Despite the limited success in integrating the 'basket of activities' provided by the project; there was however evidence of intra-sectoral successes. This was attributed to the "silo mentality" (sector-based) of staff, seeing themselves responsible only for outcomes in their areas of responsibility. For example, there was more focus on the achievements of singular targets rather than on the overall impact or on the good coordination of sector activities. Furthermore, health and agriculture are administratively and financially separated within the LEAD programme and as such, interventions will probably continue to be sector-specific, presenting an internal barrier to integration.

The FFS was particularly successful in promoting unity among community members to work together for development. The report also highlighted the success of the growth monitoring programme where women in most of the programme communities took children for weighing regularly, adopted basic hygiene practices (for example, using clothes lines, and plate racks) and practicing exclusive breastfeeding. In the area of coordination, it was observed that the District Health Management Team (DHMT) outreach services successfully facilitated community committees to oversee health practice (Community Health Club [CHC] or Village Development Health Committee [VDHC]) and raising awareness about children's nutritional needs among women.

Increasing the synergies between agriculture and nutrition

If the potential benefits of integrating agriculture and nutrition are large enough, i.e. improved impact on household nutrition and increased profits for farmers as the LEAD programme results indicate, why is integration not as effective? According to the CORAD Mid-Term Report, part of the problem lies in the fact that even though nutrition cuts across sectors, its placement within a typical line sector such as health creates a scenario where staff feel responsible for the health outcomes rather than the 'big picture'. In addition, equating food production with food security or nutrition with food security, sanitation and behavioural change rather than emphasizing the integral relationship between food, health, and care within the conceptual frameworks could also account for this. In the absence of strong incentives to develop cross-sectoral activities, the benefits of this synergy are lost.

The FFS approach has been largely successful, evolving from various models, particularly from primary rural health care and functional literacy programmes. CORAD's adaptation of the Asian Integrated Pest Management (IPM) model, to meet the immediate post-war needs for increased food production in the war-affected communities, has successfully increased production and incomes among beneficiaries. Using this platform, CORAD partners should push for greater interaction between agriculture and health to promote better programme integration and collaboration across sectors. Multidisciplinary planning and implementation of locally adapted curriculum on nutrition and household food security is critical to the success of the integration process. The involvement of women in this participatory process in the FFS raises awareness on nutrition issues, consequently leading to a broad discussion of the underlying causes of malnutrition. This will help the FFS' participants to develop a more integrated discussion on possible links between locally perceived nutrition and health problems, food and nutrition issues, and agricultural production as a special topic in their weekly meetings.

FFS groups meet weekly and discuss special topics dealing with group dynamics to strengthen team-building and organizing skills, and other topics of their choice. During these encounters they also undertake an agroecosystem analysis (AESA), a participatory monitoring and evaluation exercise. This is a powerful tool to assess the impact of their production activities on their household's food and nutrition security. With proper sensitization and training, this tool can be adapted by the health and nutrition teams to support existing community-based growth monitoring and promotion system. This way, it will help FFS members relate the impact of good agricultural practices to household food and nutrition security. It would also galvanize the FFS to becoming an effective and integrated platform for the delivery of agriculture, health and nutrition messages.

To increase impact and raise awareness of health related agricultural issues among FFS participants, CORAD partners should consider expanding the current number of training sessions per learning cycle to accommodate the special needs of women. For example, for FFS participants meeting on a weekly basis, the sessions can be expanded to 20 – 22 weekly meetings per learning cycle. About 30% of these sessions should be dedicated to women members, to allow them to discuss topics that specifically address their needs and improve household nutrition status, since women spend a larger share of their time and income on food and health care for their families compared to men.

World Vision's current implementation of the FFS has given birth to market-focused producer associations, acknowledging the important role of the value chain in ensuring food availability and access. While implementing interventions that increase household income as a means of improving household food and nutrition security, more focus should be given to women, since they are the providers of food, childcare, and health

care to their household.

Conclusion

Central to the better integration of agriculture in nutrition interventions are the farmers and farmer groups that create the agricultural production environments, implement good agricultural practices, decide on the utilization of agricultural inputs, and are thus the principal actors in fighting malnutrition and achieving resilient livelihoods for nutrition and food security at household level. Given this, this article recommends the FFS as a platform to bridge the gap between agriculture and nutrition. It has not discussed the coordination issues nor the paradigm shift required to ensure a smooth transition of this empowerment process. CORAD in its implementation of the LEAD programme also enabled the formation of community committees Village Development Committees (VDC), Village Health Development Committee (VHDC) Community Welfare Committees (CWC), community facilitators groups which could also be sensitized and empowered to raise the awareness of the importance of simple activities to improve household nutrition using local resources. It is not the silver bullet but it offers a guide to health and nutrition workers on the potential of the FFS as an effective messaging board.

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FFS session in Sierra Leone

References

- CORAD (2008a). *CORAD FFS Assessment: A livelihood Impact Assessment (July 2008)*. World Vision Sierra Leone, Lead Agency for CORAD Agriculture Working Group.
- CORAD (2008b). *CORAD LEAD Final Mid-term Report*. CORAD DME Coordinating Unit, World Vision Sierra Leone.
- FAO/WFP (2002, 2003, 2004). *Vulnerability Assessment and Crop Production Reports*; Undertaken by the Ministry of Agriculture, Forestry and Food Security with technical and financial support from FAO and WFP (Osro/sil/204/usa)
- FAO (2002). *Ten years of IPM training in Asia: From Farmer Field Schools to community IPM*. Pontius, J.C. Dilts, D.R., Barlett, A., FAO Community IPM Programme, FAO Regional Office for Asia and the Pacific. Bangkok.
- <http://www.fao.org/docrep/005/ac834e/ac834e00.htm> (see <http://www.farmerfieldschool.info> for more information)
- SSL/DFID (2007). *Sierra Leone Integrated Household Survey (SLIHS) 2003/04, Final Statistical Report*. Statistics Sierra Leone and The Department for International Development (DFID) http://www.statistics.sl/SLIHS_REPORT.pdf
- Swindale, A. and Bilinsky, P. (2006). *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide version 2*. Food and Nutrition Technical Assistance Project (FANTA) and Academy for Educational Development: Washington, DC. http://www.fantaproject.org/publications/hdds_mahfp.shtml
- UNICEF (2007). *Sierra Leone, Monitoring the situation of children and women - Multiple Indicator Cluster Surveys 3rd round (MICS-3)*. http://www.childinfo.org/mics3_surveys.html
- UNDP (2005). *Human Development Report 2005: International cooperation at a crossroads - Aid, trade and security in an unequal world*. The United Nations Development Programme, New York, USA. <http://hdr.undp.org/en/reports/global/hdr2005/>
- UNICEF (2000). *The Status of Women and Children in Sierra Leone - Multiple Indicator Cluster Surveys 2nd round (MICS-2)*. http://www.childinfo.org/mics2_sierraleone.html

11th ECOWAS Nutrition Forum Recommendations

The participants to the 11th Economic Community of West African States (ECOWAS) Forum expressed concern at the deterioration of the food and nutrition situation in the region and therefore the inadequacy of the present system. They recommended that priority be given to communication and coordination between stakeholders at regional and national level to raise awareness on nutrition security issues and to develop and implement integrated responses.

The problem

The 2007-2008 soaring food price crisis, together with the debate on biofuels and on the growing threats of climate change have *de facto* brought back nutrition and food security to the agenda. Existing resources (both in terms of natural resources and financial investment) are mismanaged and insufficient attention is paid to local and traditional food sources and to the promotion of resilient agricultural systems.

While the proportions of malnutrition in West Africa, its chronic character and multisectoral causes call for a regional integrated response involving all actors, institutional segmentation, lack of communication and competition for funding result in fragmentation of efforts and low effectiveness. Key stakeholders from the financial, social and educational spheres remain largely absent and insufficient political attention has resulted in the low visibility of nutrition on national agendas.

The solution

The participants of the 11th ECOWAS Forum collectively urge national and regional stakeholders to:

- Develop collaboration and synergies in information-gathering, managing and dissemination, and in interventions.
- Entrust joint leadership to the Agriculture and Health sectors and develop a framework for interdisciplinary action in nutrition advocacy and programming.
- Collect information on countries' initiatives and experiences, to build on existing policies, programmes and projects and take advantage of successful experiences in the design of new interventions.
- Raise awareness of the underlying factors that turned soaring food prices into a major food and nutrition crisis and seize the opportunity to focus international, regional and national attention on food security and nutrition issues.
- Call upon the ECOWAS to strengthen coordination mechanisms between its agriculture and health bodies to ensure synergies and take the lead for the definition of interdisciplinary integrated strategies in the region.
- Target parliamentarians to raise their awareness of the importance of nutrition, of its implications on health and development and of what can be done to support nutrition security. Raising visibility and understanding of nutrition within national political institutions will facilitate the inclusion of nutrition in political programmes.

The priority recommendations are:

For the West African Health Organisation (WAHO) to:

- Pursue the integration of nutritional concerns into food security information systems, in collaboration with relevant institutions, especially with the UN System.
- Coordinate and bring into line analysis frameworks and tools used to collect and analyse nutrition and food security data, in order to facilitate appropriate local, national and regional policy making.
- Take climate change into account in formulating and implementing actions in favour of food security and nutrition, with particular focus on the management of risks related to the occurrence of extreme climate events.
- Involve community organisations, civil society and research and training institutions in the resolving of issues regarding nutrition. Particular attention should be given to establishing bridges and collaborative platforms with farmer organisations of the region to work on agriculture-for-health approaches.

For the Economic Community of West African States (ECOWAS) to:

- Support the collaboration between the Agriculture and Health commissions of ECOWAS in order to wage, articulate, coordinate and strengthen the interventions, by including actions on nutrition and biodiversity management.

- Pursue the reflection on the possible implications of the emergence of biofuels for agricultural production and nutrition.

For the Parliament of ECOWAS to:

- Take the lead on advocacy for facilitating institutional anchorage, resource mobilisation and strengthening of the legal and regulatory framework aiming at securing and improving the food and nutrition situation in the ECOWAS region and at country level.

For Countries to:

- Reassert political will and mobilise resources – from national and international institutions – in order to accelerate the fight for nutrition and food security.
- Implement/reinforce a national cooperation framework, with adequate resources (human, material and financial), in order to ensure intersectoral collaboration and communication between stakeholders (government, NGOs, community organisations, research and training institutions, etc), at all levels.
- Involve actors from other sectors (finance, social development, education, etc), civil society and the National Parliament for leadership and institutional anchorage at the highest level.
- Promote the systematic utilisation of biodiversity for healthy and balanced local diets.

For partners to:

- Develop collaboration and ensure synergy of activities between the different partner institutions, primarily in the fields of Health and Agriculture.
- Provide coordinated support to countries.
- Build on experience and country initiatives.
- Seize the opportunity of the current food crisis to put nutrition and food security at the heart of development, taking into account gender and poverty aspects, to accelerate the achievement of the MDGs.
- Strengthen linkages between UN institutions and other development partners through the SCN, in order to implement global, regional, national and local actions aimed at reinforcing collaboration between different sectors, especially Agriculture and Health.

Twelfth ECOWAS Nutrition Forum (Abidjan, Côte d'Ivoire, September 2010)

The theme of the twelfth Economic Community of West African States (ECOWAS) Nutrition Forum is "financing and planning nutrition policies and programs in ECOWAS Member States". The Forum will be held in Abidjan in the third week of September 2010. The Forum is coordinated by the West African Health Organization (WAHO).

Nutrition is recognized as a priority area to improve Human Development and to achieve the Millennium Development Goals (MDGs). The economic situation in West Africa is worsening due to low economic performance: the expected average of annual growth rates does not achieve 5% in the 15 Member States (based on the UNDP Report for Human Development 2009).

ECOWAS and WAHO recognize the important role partners and Member States should play by implementing priority interventions towards that end.

However it is recognized by WAHO that most of the countries do not have an adequate institutional anchorage to have nutrition policies as a top priority. Many partners are implementing programs not in line with a National Nutrition Policy; also very often nutrition strategies do not take into consideration a multisectoral and multidisciplinary approach. This forum will be an opportunity to partners and others stakeholders to share experiences and identify the best way to reduce the malnutrition burden in West Africa.

The technical update session related to the theme will be led by UNICEF (West and Central Africa Office), with the contribution of other partners (HKI, World Bank...).

Douzième Forum de Nutrition de la CEDEAO (Abidjan, Côte d'Ivoire Septembre 2010)

Le thème du douzième Forum de Nutrition de la CEDEAO portera sur "le financement et la planification des politiques et programmes de nutrition dans les pays de la CEDEAO". Le Forum se tiendra à Abidjan durant la troisième semaine de Septembre.

La Nutrition est reconnue comme une priorité permettant d'atteindre un Développement Humain Durable, dans la perspective des Objectifs de Développement du Millénaire (ODM). La situation économique en Afrique de l'Ouest se détériore, du fait des faibles performances de nos économies : le taux de croissance attendu n'atteint pas 5% dans les 15 pays (selon le Rapport du Développement Humain du PNUD de 2009).

La CEDEAO et l'OOAS reconnaissent le rôle important que les partenaires et les Etats Membres doivent jouer, par la mise en œuvre d'interventions prioritaires dans cette perspective.

Cependant, l'OOAS reconnaît aussi le manque d'ancrage institutionnel devant permettre à la nutrition d'être une priorité nationale. Par ailleurs, beaucoup de partenaires mettent en œuvre des programmes souvent en dehors des orientations des politiques nationales, enfin bien souvent, les stratégies d'interventions ne prennent pas en compte la dimension multisectorielle et pluridisciplinaire. Ce Forum sera ainsi une opportunité pour les partenaires et les autres acteurs de partager leurs expériences et d'identifier les voies les plus appropriées pour réduire la charge de morbidité due à la malnutrition en Afrique de l'Ouest.

La mise à Jour technique relative au thème sera coordonnée par l'UNICEF (Bureau Régional pour l'Afrique de l'Ouest et du Centre), avec la contribution d'autres partenaires (HKI, Banque Mondiale...)

Policy Harmonization of Food Fortification in West Africa: experience from the Regional Food Fortification Initiative (FFI) (Abuja, Nigeria, 13-14 April 2010)

WAHO, the ECOWAS Commission for Trade and the Free Movement and the Regional Partners for Food Fortification will organize the International Planning Meeting of the Third Dialogue for Food Fortification in West Africa on 13 and 14 April 2010. The Third Dialogue will capitalize on lessons learnt from the West Africa Monetary Union (UEMOA) on Food Fortification to be possibly extended to the ECOWAS Member States.

This meeting will be attended by participants from the public and private sector, the Regional Institutions (ECOWAS, West African Monetary Union, African Development bank) and Nutrition partners (GAIN, HKI, UNICEF, MI, USAID, FFI...) as well as representatives from the Private Sector.

The meeting will take place in Abuja (Nigeria) at the Economic Commission of West African States.

Harmonisation des Politiques en matière de Fortification en Afrique de l'Ouest: Expérience de l'Initiative Régionale de Fortification (Abuja, Nigeria 13-14 Avril 2010)

L'OOAS et la Commission de la CEDEAO pour le Commerce et la Libre Circulation et les Partenaires Régionaux pour la Fortification, comptent organiser la Réunion de Planification Internationale du Troisième Dialogue pour la Fortification en Afrique de l'Ouest les 13 et 14 Avril 2010. Le Troisième Dialogue va capitaliser sur les leçons apprises à partir des pays de l'Union Economique et Monétaire de l'Afrique de l'Ouest (UEMOA) sur la fortification, en vue d'étendre l'Initiative aux pays de la CEDEAO.

La réunion verra la participation des Institutions Régionales (CEDEAO, UEMOA, La Banque Africaine de Développement), les partenaires pour la nutrition (GAIN, HKI, UNICEF, MI, USAID, FFI...) et des représentants du Secteur Privé.

La réunion aura lieu à Abuja (Nigeria) à la Commission de la CEDEAO.

Optimizing local food systems to improve food and nutrition security in West Africa expert meeting (Abuja, Nigeria, from 18 to 20 May 2010)

WAHO, Bioversity International and the Food and Agricultural Organization of the United Nations (FAO) are compiling data on the nutrient values of local foods from the West African ecosystems, integrating the biodiversity indicator. The biodiversity indicator was defined during the Expert Consultation on nutrition indicators for biodiversity (FAO, INFOODS, Bioversity) in 2008. The final compilation will be followed by a Regional Experts Meeting on the way forward. The theme of this Expert Meeting is: nutrient values of local foods from West African ecosystems in the framework to control food and nutrition security.

Meeting partners are: FAO, Bioversity International, USAID, the ECOWAS Commission for Agriculture, Environment and Water Resources and the Network of Peasants and Food Producers of West Africa (ROPPA).

More information will be available at: www.nutritionecowas.org and on the website of Bioversity: www.bioversityinternational.org

Optimisation des aliments locaux pour améliorer la sécurité alimentaire et nutritionnelle en Afrique de l'Ouest (Abuja, Nigeria, du 18 au 20 Mai 2010)

L'OOAS, Bioversity International et l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO) sont entrain de mener une compilation des données existantes sur la valeur nutritionnelle des aliments locaux issus des écosystèmes Ouest Africains, intégrant l'indicateur de biodiversité, défini lors de la réunion d'Experts (FAO, INFOODS, Bioversity International) en 2008. La compilation finale sera suivie par une réunion d'Experts pour dégager les perspectives. Le thème de cette réunion d'Experts se focalisera sur : la valeur nutritionnelle des aliments traditionnels des écosystèmes Ouest Africains dans le cadre de la lutte contre l'insécurité alimentaire et nutritionnelle dans les pays de la CEDEAO.

Les partenaires de cette rencontre sont: la FAO, Bioversity International, USAID, la Commission de la CEDEAO pour l'Agriculture, l'Environnement et les Ressources en Eau et le Réseau des Paysans et Producteurs Agricoles d'Afrique de l'Ouest (ROPPA).

Des informations détaillées seront disponibles sur le site www.nutritionecowas.org et sur le site de Bioversity: www.bioversityinternational.org

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UNITED NATIONS SYSTEM

STANDING COMMITTEE ON NUTRITION

The Administrative Committee on Coordination (ACC), which was comprised of the heads of the UN Agencies, recommended the establishment of the Sub-Committee on Nutrition in 1976, following the World Food Conference and with particular reference to Resolution V on food and nutrition. This was approved by the Economic and Social Council of the UN (ECOSOC) by resolution in July 1977. Following the reform of the ACC in 2001, the ACC/SCN was renamed the United Nations System Standing Committee on Nutrition or simply “the SCN”. The SCN reports to the Chief Executives Board of the UN, the successor of the ACC. The UN members of the SCN are ECA, FAO, IAEA, IFAD, ILO, UN, UNAIDS, UNDP, UNEP, UNESCO, UNFPA, UNHCHR, UNHCR, UNICEF, UNRISD, UNU, WFP, WHO and the World Bank. Bioversity International, IFPRI and the ADB are also members. From the outset, representatives of bilateral donor agencies have participated actively in SCN activities as do nongovernmental organizations (NGOs). The SCN Secretariat is hosted by WHO in Geneva.

The *mandate of the SCN* is to serve as the UN focal point for promoting harmonized nutrition policies and strategies throughout the UN system, and to strengthen collaboration with other partners for accelerated and more effective action against malnutrition. The *aim of the SCN* is to raise awareness of and concern for nutrition problems at global, regional and national levels; to refine the direction, increase the scale and strengthen the coherence and impact of actions against malnutrition worldwide; and to promote cooperation among UN agencies and partner organizations. The SCN’s annual meetings have representation from UN agencies, donor agencies and NGOs; these meetings begin with symposia on subjects of current importance for policy. The SCN brings such matters to the attention of the UN Secretary General and convenes working groups on specialized areas of nutrition. Initiatives are taken to promote coordinated activities—interagency programmes, meetings, publications—aimed at reducing malnutrition, reflecting the shared views of the agencies concerned. Regular reports on the world nutrition situation are issued. *Nutrition Policy Papers* are produced to summarize current knowledge on selected topics. *SCN News* is published twice a year, and the *NICS* (formerly *RNIS*) is published quarterly. As decided by the SCN, initiatives are taken to promote coordinated activities—interagency programmes, meetings, publications aimed at reducing malnutrition, primarily in developing countries.

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