Interview

Interview with Brian Thompson, Senior Nutrition Officer, FAO

Brian Thompson is a Senior Nutrition Officer at the Food and Agriculture Organization of the United Nations (FAO). FAO is an intergovernmental organization, it has 191 Member Nations, two associate members and one member organization, the European Union. As a knowledge organization, FAO creates and shares critical information about food, agriculture and natural resources in the form of global public goods. FAO plays a connector role, through identifying and working with different partners with established expertise, and facilitating a dialogue between those who have the knowledge and those who need it. By turning knowledge into action, FAO links the field to national, regional and global initiatives in a mutually reinforcing cycle. Its mandate is to raise levels of nutrition and standards of living.

Interviewed by Christo Hall, Editorial Assistant, Pathogens & Global Health, Imperial College, London, UK

What is the size of the malnutrition problem and what regions are most affected?

There are persistently high levels of undernutrition. Nearly 870 million people in the world go to bed hungry (1 in 8 people) according to the recently released report of The State of Food Insecurity in the World 2012 (SOFI) and 2 billion have some form of micronutrient malnutrition – this constitutes a crime against humanity and is a responsibility for all of us.

Prevalence of undernourishment in developing countries has declined over the past two decades, from 23 to 15 percent. In terms of total numbers in 1990–92, around 980 million individuals were estimated to be undernourished. The number dropped to 901 million in 1999–2001, to 885 million in 2006–06 and to 852 million in 2007–09. The financial crisis, economic downturn, persistent food price volatility, drought and other repercussions of climate change since 2006–08 may have prevented any further significant improvements in the number of people who are undernourished in developing countries since then.

Africa has by far the highest prevalence, at around 23 percent in 2010–12 but though it is down from what it was in 1990–92 (27 percent) the numbers have risen from 175 million to 239 million with nearly 20 million added in the past four years. In sub-Saharan Africa, the modest progress achieved in recent years up to 2007 was reversed, with hunger rising 2 percent per year

since then. In Asia, both prevalence and numbers dropped over the same period from 24 percent (739 million) to 14 percent (563 million). Latin America and the Caribbean (LAC) boasts the lowest rate of undernourishment (8 percent) among developing country regions but the rate of progress has slowed recently. Countries considered as least-developed countries and low-income economies have the highest prevalence rates of all around 30 percent but down from the 40 percent levels of twenty years ago.

What political interest and contributions is the FAO seeing from developed and developing nations to counter nutritional issues?

Globally and nationally nutrition is receiving increased attention. FAO jointly with WHO are organizing the International Conference on Nutrition (ICN+21) which will be a high-level political event and the first global intergovernmental conference devoted solely to addressing the world's nutrition problems in the 21st century. The Conference will bring food, agriculture, health and other sectors together to mobilize the political will and resources necessary for improving nutrition. The ICN+21 will contribute to informing the post-2015 UN development agenda including identifying priority areas, nutrition development goals as well as the policies that are required to achieve them. The outcomes of the ICN+21 will contribute to the UN Secretary

General's call for a high degree of policy coherence at global, regional, national and sub-national levels and a global partnership for development at all levels. The ICN+21 will also amplify his call to leaders gathered at the Rio+20 Summit to take up the 'Zero Hunger Challenge'.

And what are developing countries doing to ensure that people are receiving enough essential nutrients and eating balanced diets?

A great deal is being done by countries to improve nutrition. Some have set up Nutrition Councils or other institutional mechanisms or arrangements to improve nutrition, some have expressed their willingness to put nutrition higher up on their development agenda and others have made commitments by joining the SUN movement for scaling up nutrition. FAO is supporting countries on all these fronts and have called for the holding of a second International Conference on Nutrition twenty one years after the first (ICN+21) in order to help mobilize the political will and the necessary resources for improving nutrition.

What changes are you seeing in the eating habits of the individuals of developing nations?

Increased consumption of total energy and of animal-source foods are positive trends for historically food insecure populations whose diets have traditionally been characterized by monotony and low quality.

In many developing countries around the world, there is a shift away from diets based on indigenous staples, legumes, and fruits and vegetables, towards more 'globalized' intake patterns that include increased quantities of processed and imported animal source foods, sugar, fats and (sometimes) alcohol. The nutrition transition is closely related to both

the demographic and epidemiological transitions.

Demographic transition is defined as a switch from a predominantly rural lifestyle characterized by low life expectancy and high rates of maternal parity to a predominantly urban lifestyle characterized by smaller families and improved life expectancy. Epidemiological transition occurs subsequent to demographic transition and is defined as a switch in the burden of disease. Prevalence shifts from communicable, infectious diseases (e.g. malaria, measles) to non-communicable diseases, or NCDs (e.g. diabetes, coronary heart disease). All three shifts are largely driven by economic development and globalization, and each transition informs the other. For example, the epidemiological transition follows on the heels of demographic transition, as risk of NCDs increases concomitant with age. Age, however, is not the only important risk factor for chronic disease. The vast majority of NCDs are now accepted to be closely associated with diet; tooth decay, overweight, obesity, hypertension, coronary heart disease, diabetes, and many cancers.

Urbanization and shifts in physical activity patterns typically accompany the transition 'chain.' Demographic transition is characterized by urbanization, which is in turn often characterized by reduced physical activity. Moreover, independent of urbanization, physical activity levels are dropping throughout the world via expansion of television and other mass media.

What is the interaction between malnutrition and immunity? And which diseases are most frequent in malnourished individuals?

Malnutrition compromises immunological function and at the same time the undernourished frequently adopt behaviours that increase the risk of exposure to

infection, such as the likelihood of experiencing poor sanitary conditions and inadequate supplies of clean water and fuel for cooking, and that hunger can lead to eating foods that are not safe or of good quality. The result is weakened immunity and greater exposure to infection. Diarrhoeal disease is one of the biggest killers of children in developing countries with gastrointestinal infections, measles, upper respiratory tract infections all too common. Infections weaken resistance to disease, increase nutrient requirements while at the same time reducing appetite and food consumption. Thus, inadequate dietary intake weakens the immune system and increases susceptibility to disease. Infectious disease, in turn, increases nutrient requirements and weakens the immune system.

Is there a panacean solution or is the malnutrition problem more a context-dependent issue of food security, including land management, climate, resources and distribution?

Malnutrition, includes underweight and micronutrient deficiencies as well as overweight and obesity. Its most immediate causes are inadequate dietary intake and infectious disease. Inadequate dietary intake can include deficits in quantity and/or quality, where quantity refers to total caloric intake and quality to variety, diversity, nutrient content and safety.

There are three drivers of this vicious cycle: (1) food insecurity, (2) poor health mediated by poor water and sanitation and inadequate health services, and (3) lack of appropriate care in terms of inadequate breastfeeding, complementary feeding and other maternal and child caring practices. In addition to these proximate causes, nutrition is distally affected by economic, political and social factors. These include patterns of

income distribution, agricultural practices, trade and food policies, religion, socio-demographic trends, effects of climate change, and cultural beliefs.

Since the causes of malnutrition involve all sectors, all sectors (food and agriculture, trade, health, education and social welfare) are needed to improve nutrition.

Does the framing of the question return different political support? i.e. malnutrition as a human rights issue, economic or biomedical one.

Malnutrition acts as a brake on economic growth and governments tend to respond most positively if the problem is framed as an economic problem. Poor nutrition may be seen equally as a human rights issue with concern and impacts on legal departments and for civil society. Obviously it is also a health issue affecting health bodies. However, the point is that nutrition is all of this and more and action is required regardless of how the problem is framed.

How about the investment in biotechnologies and other innovations. Will there be a second green revolution?

Technological progress, unless specifically targeted to low income, resource poor, socially excluded, economically disadvantaged nutritionally vulnerable households, will unlikely be successful in reducing malnutrition.

Of those technologies that can make a difference. What are the most promising?

Biofortification using traditional cultivation methods holds

promise for increasing the nutrient content of staple foods consumed by the poor (e.g. golden rice, orange flesh sweet potato).

GMO crops also have great potential for increasing yields and reducing input use but there remain barriers to their wider adoption.

Can technology make an impact on food shortages by making food more affordable for the consumer?

Yes, in the sense that improved technologies throughout the food chain from production to consumption (be such technologies in the areas of traditionally-bred or GMO-improved seeds, mechanization, storage or marketing) can increase efficiencies by increasing yields, reducing need for expensive inputs such as water, pesticides, fertilizers etc., and can improve post-harvest management and handling thereby reducing losses and spoilage, which increases the efficiency and the coverage of distribution channels. Improved technology can also enhance nutrition education, and can increase consumer awareness to select, prepare and consume foods adequate in quantity (calories) and quality (variety, diversity, nutrient content and safety) and help reduce waste - these can all make food more affordable for the consumer. The green revolution was one such example. But unless there is a specific and explicit effort to make sure that low income, resource poor, socially excluded, economically marginalized households directly benefit from

such technologies, then these people will remain on the fringes of society.

Is there enough food for everyone?

Yes. FAO's Food Balance Sheet data shows that per capita calories were around 2900 cal/person/day in 2009 with fat and protein at around 96g per day. This is more than the average global dietary energy requirements.

With the advent of the Green Revolution, world cereal production rose from 876 million tonnes in 1961 to more than 2.5 billion tonnes in 2010, an increase far in excess of population growth (FAO, 2012). Between 1975 and 2000, cereal yields in South Asia increased by more than 50 percent, while the poverty rate declined by 30 percent (World Bank, 2007b).

However, growth in staple crop production and levels of income has not triggered matching reductions in the incidence of chronic hunger and malnutrition. In the developing world the number of chronically undernourished – people unable to meet their minimum food energy requirements – fell only slowly from 980 million (23%) in 1990–92 to 852 million (15%) in 2010–12 (FAO, SOFI 2012). Since 2007–2008, however, global progress in reducing hunger has slowed and has leveled off. What is needed is a "twin-track" approach where support for broad-based economic growth (including in agriculture) is nutrition-sensitive and is complemented by safety nets for the most vulnerable.