INTERNATIONAL UNION FOR HEALTH PROMOTION AND EDUCATION
UNION INTERNATIONALE DE PROMOTION DE LA SANTÉ ET D'ÉDUCATION POUR LA SANTÉ
UNIÓN INTERNACIONAL DE PROMOCIÓN DE LA SALUD Y EDUCACIÓN PARA LA SALUD

ADVANCING HEALTH PROMOTING FOOD SYSTEMS

A Position Paper of the International Union for Health Promotion and Education

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ABOUT THIS PAPER

This position paper on food systems and health promotion provides background evidence and information to guide the International Union for Health Promotion and Education (IUHPE) Executive Board and membership as they play a role in addressing one of the more critical political, social, health and environmental problems of the 21st century: the capacity to provide a healthy and sustainable diet to a growing population in an increasingly resource constrained bio-physical environment.

IUHPE and its partners, in particular, Health Promotion Switzerland, had already made a solid contribution to the debate through an earlier White Paper entitled: *The Food System: a prism of present and future challenges for health promotion and sustainable development* (Kickbusch 2010). That paper adopted an eco-system perspective: a model for understanding the interrelationships between environmental conditions, food supply issues, diet-related non-communicable diseases (NCDs) and health equity. The White Paper framed healthy food system dynamics through a health promotion and sustainable development lens, arguing that 'in many cases, the best choices for health are also the best choices for the planet; and the most ethical and environmental choices are also good for health' (Kickbusch 2010, p.7).

In early 2013 Prof Jane Dixon was asked by the IUHPE Executive Board to develop a position paper on food systems and health promotion. This draft paper was subsequently discussed in a Workshop convened by Prof Dixon, Vivian Lin and Trevor Shilton during the 21st IUHPE World Conference on Health Promotion held in Pattaya, Thailand, in August 2013. Based on feedback Prof Dixon produced a version that was approved by the IUHPE Board in 2014. This subsequent update was approved by the Executive Board in December 2015.

In brief, the position paper argues that food security cannot be addressed within the food system alone. The production, trade, retailing, advertising and consumption of food is the outcome of what also happens within the human security and development systems which govern household incomes/employment opportunities, education, health care, housing, gender relations, exposure to crime, resource conflicts and environmental hazards. Thus, food security needs to be reframed as a feature of national human security and development policies in all countries, whether high, medium or low income.

The author would like to acknowledge substantial inputs from the following:

Professor Vivian Lin and Adjunct Professor Trevor Shilton, IUHPE

Participants at an open session of the 21st IUHPE World Conference on Health Promotion, Pattaya, 25 August 2013

Chad Foulkes and Katherine Cust, Geelong City Council, Victoria, Australia

Geoff Tansey, Joseph Rowntree Visionary for a Just and Peaceful World:- Working for a fair and sustainable food system, & Member and Trustee, Food Ethics Council, UK

Dr Corinna Hawkes, World Cancer Research Fund International

A roundtable discussion with the Leverhulme Centre on Integrated Research on Agriculture and Health Research (LCIRAH), London, 9 October 2013; additional input from Dr Helen Walls, LCIRAH and the Australian National University

Dr Claire Blanchard, Civil Society Network, Save the Children, UK.

Cite as: Dixon, J. (2015) IUHPE Position Paper: Advancing health promoting food systems. International Union for Health Promotion and Education (IUHPE), Saint-Denis, France.

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The problem being addressed in the Food Systems Position Paper: multiple forces within and outside the food system are undermining global food and nutrition security

1. THE MAGNITUDE OF FOOD INSECURITY AND RELATED HEALTH PROBLEMS

- 1.1. Food insecurity, or mal-nourishment, takes three main forms: under-nutrition, over-nutrition and micronutrient deficiencies. Underweight² affects close to 1 billion people, with a further 1.4 billion adults, 20 years and older, classified as over-weight or obese³. According to the WHO (2013), almost two thirds of the world's population live in countries where illnesses directly related to overweight and obesity kill more people than illnesses related to being underweight. Furthermore, micro-nutrient deficiencies can occur in people who are underweight, overweight as well as those of healthy weight. Inadequate iron intake, results in iron-deficiency anaemia, the most common micro-nutrient deficiency, affecting two billion people worldwide; and for this reason, the WHO claims anaemia to be a major global epidemic (WHO nd).
- 1.2. The health and social equity issues arising from the dominant food system model a food system based on industrial-scale production, corporate control and international trade are considerable.
 - 1.2.1. While the global food system produces sufficient calories to meet the energy requirements of the current population, there is an uneven distribution of adequate micro-nutrients and food considered safe from a toxicological perspective across all regions. The Asia-Pacific region has over half of the world's population and almost two thirds of the world's population living with chronic hunger (UN ESCAP 2013). The number of undernourished people has increased by 20 per cent in sub-Saharan Africa since 1990 (Hammond and Dube 2013).
 - 1.2.2. Under-nutrition is responsible for one third of all deaths of children under 5 years and is a major contributor to maternal deaths in lower-income countries. Maternal and child mortality constitute the major burden of disease in these countries (WHO 2009). Those who are classified as over-nourished in terms of energy (caloric) intake are at greater risk of chronic diseases, including diabetes, cardio-vascular disease and cancers. In lower and middle-income countries, under- and over-nutrition co-exist within the same communities and households. Just as the effects of under-nutrition are life-long, intergenerational and irreversible, the health effects of obesity can be lifelong (children and adolescents who are

¹ The terms 'food insecurity', 'poor nutrition' and malnutrition are often used interchangeably and can be defined narrowly or broadly. The narrow definition refers to insufficient calories or food energy to maintain health (also defined as hunger). The broader definition, and the one adopted in this paper, refers to insufficient calories/ food energy, an abundance of calories/ food energy and micro-nutrient deficiencies (lack of basic vitamins and minerals). The WHO considers both under-nutrition and over-nutrition to be conditions of food insecurity.

² Underweight is the most common indicator of under-nutrition, and it refers to abnormal or insufficient fat accumulation so as to impair health.

³ Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health, resulting in a body mass index of equal to or greater than 25kg/m² (overweight) and 30kg/m² (obese) (WHO 2013).

overweight or obese have increased risk of diabetes and other NCDs in later life) (WHO Western Pacific Region 2015); and harmful for future generations given evidence of the intergenerational transmission of obesity whether due to genetics, epigenetics or parental behaviours (Whitaker et al 2010; van Dijk et al. 2015).

- 1.2.3. While approximately 75 per cent of the poor in lower income countries depends on agriculture and associated industries for their livelihoods (FAO 2009), the current global, industrial system is undermining local farming systems in high and low income countries alike (McCullough et al. 2008; Lyson et al. 2008; Keleman 2010). Many of today's hungry people are themselves food producers (Gonzalez 2012), and those who remain often work in hazardous conditions without any occupational health protections (Cole 2006).
- 1.2.4. For hundreds of thousands of fresh market stall holders around the world, typically women, livelihood options are becoming constrained by the growing presence of modern retail formats. While national per capita incomes may be rising for the growing number of countries hosting fast food and supermarket chains, stall holders who cannot compete with modern retailers are experiencing deteriorating nutrition outcomes (van Hook et al. 2013).
- 1.3. As the world population grows to an estimated 9 billion, and as agricultural productivity gains are compromised by environmental changes, including climate change, food insecurity will grow (Gregory et al. 2005; Cribb 2010; Godfray et al. 2010). This prognosis remains, due in part to inadequate governance alongside entrenched political inequalities despite the anticipated growth in adoption of biotechnologies aimed at increasing food yields.
 - 2. What are the underlying 'causes' of food and nutrition insecurity?
- 2.1. A complex and uneven nutrition transition makes global policy prescriptions elusive

'The nutrition transition' is not a singular unfolding of changes to dietary patterns. Rather, it is a two or even three-phase, and often over-lapping, process. The initial phase of the transition – movement from famine and restricted dietary quality and diversity – is generally health promoting. The second phase – from dietary diversity to diets low in fruits and vegetables and high in meat, fat, salt and sugar is health depleting (Popkin 2002).

Phase 2 of the nutrition transition, to more energy-dense nutrient poor diets, is spreading rapidly: "The 'Western diet' has also moved into the North, South and East. [Nutrition-related non-communicable diseases, once seen as a burden of affluent classes, now impact every socio-economic group at every level of macro-economic development. Disparities within groups... present their own inherent challenges" (Nazmi and Monteiro 2013, p. 571). Furthermore, Phase 2 is being experienced by ever greater numbers, with China witnessing a 400% increase in obesity prevalence over the last 20 years (APCS 2006).

Corporate economic imperatives contribute to the spread of Phase 2: a finite aggregate demand for food at any one time exists within a context of saturated markets, leading firms within concentrated food supply chains to

engage in a highly competitive process of 'growing the market' (PLoS Medicine Editors 2012). In particular, multinational food companies are targeting disadvantaged communities in low-income countries with energy dense, nutrition supplemented food which can encourage calorie rich, micro-nutrient poor diets (Monteiro et al. 2012). In this sense, the co-existence of obesity and underweight "may be linked to the same forces that drive reduction in malnutrition" (Hammond and Dube 2013, p.12356). These forces include major food processors and western-style food retailers which make access to energy dense foods relatively accessible and affordable, as well as development agencies keen to increase caloric intakes.

In addition, several 20th century 'advances' in agricultural development and food processing have turned out to be detrimental to health because highly processed, energy-dense foods and beverages are consumed in excessive quantities and can displace the consumption of healthier alternatives such as whole grains, cereals, fruit and vegetables. Such 'advances' in agricultural development and food processing include:

- High levels of red meat consumption particularly of ruminant animals has been associated with some noncommunicable diseases such as colorectal cancer (Friel et al. 2009)
- The intake of concentrated fructose products (the basis of many 'soft drinks') has become a health risk in a context of diets that already provide excess calories (Simopoulos et al. 2013)
- Diets are tending to be low in omega-3 fatty acids and high in omega-6 fatty acids (Simopoulos et al. 2013). High omega-6/low omega 3 fatty acid ratios are introduced through animal feeds, the use of particular oils (corn, safflower and sunflower) and low levels of fish consumption.
- A major driver of hypertension in low- and middle-income countries, especially Asia, is high salt consumption. Salt is often used in the drying of foods and the preserving of products e.g. fish (Asaria et al., 2007).

A third phase of the nutrition transition is now coming into focus: affluent populations in high and middle income countries are passing through, or by-passing, health depleting phase 2, and are embracing health promoting diets – high in dietary diversity and low in fats, sugars, and salt – because they can afford to and their educational and cultural status encourages them to do so as part of individual and social group capital accumulation (Offner 2001; Dixon et al. 2007). For other populations in low- and middle-income countries with fewer dietary choices (phase 1), the consumption of traditional diets rather than the 'Western diet'/Phase 2 diet can confer a health advantage (Lee et al., 2002; Monteiro et al. 2012).

This unevenness of the nutrition transition across nations, combined with different national capacities to address the transitions, means that no single global approach will work. Instead "policy choices are best informed through economic analyses that take account of the local environmental and social realities" (UN System High Level Task Force on Global Food Security, 2012, p.4).

2.2. Governments have ceded responsibility for regulating the nutrition transition

Due to a growth of global agencies and multi-lateral agreements, including the trans-border harmonisation of food standards, there has been a decrease in government control over national food systems, with two major consequences for food security: (1) unhealthy food moves from one country to another with reduced restriction (Hawkes et al. 2010); and (2) healthy food can become relatively scarce and expensive in fresh food producing nations, especially when development agendas encourage food production for export (Moseley et al. 2010).

Five key developments are responsible for a lack of national sovereignty over food systems or "the right of peoples to ... define their own food and agriculture systems" (Declaration of Nyéléni, 2007).

- The establishment of a raft of international agencies, with a focus on international trade in food. Early understandings of food security were based on a nation's capacity to grow and supply its own food (understood as self-sufficiency or food sovereignty) (Pinstrup-Andersen 2009). Only when a country could not meet those needs, would it consider importing food (if it had available currency). There was an international transition post World War 2, with the establishment of the Food and Agriculture Organisation and other UN agencies, which encouraged international food trade to address food insecurity. International trade laws, now administered by the World Trade Organization, constrain government attempts to 'protect' the economic viability of domestic food industries as well as publically controlled food stockpiles (De Schutter 2011). As Gonzalez (2012, p.1) noted, international trade law has taken precedence over international human rights law and international environmental law "to the detriment of small farmers and the environment".
- Structural adjustment policies administered by the World Bank and International Monetary Fund (IMF) imposed on agriculture have "dismantled the elaborate system of public agencies providing farmers with access to land, credit, insurance, inputs and cooperative organization" (The World Bank 2007, p. 138; see also Oswald Spring 2009, p.480). This has resulted in farmers leaving their land, under-investing in their farm enterprises or borrowing at rates that are not sustainable. The latter issue of borrowing funds beyond one's ability to make repayments has contributed towards the high rates of suicide amongst farmers in India (Mishra 2012).
- The unregulated application of financial instruments, or the 'financialisation' of commodity chains futures trading and private equity funds⁴ has entailed an upward trend of speculative capital into commodity sector planning (Burch and Lawrence 2013).
- Foreign direct investment in agricultural sectors has involved governments giving permission for land and sea leasing (or land and sea 'grabs') to 'foreign' states and corporations, often accompanied by agreements for them to impose their own production and quality arrangements which may involve high levels of exploitation of soils and water catchments, and unrecycled waste generation (Cotula et al. 2009).
- Self-regulation by food corporations can result in both the improvement and dilution of national food and nutrition standards as these corporations demand harmonisation of quality standards across national borders to facilitate global trade. Supermarket chains have led the way in shifting food chain auditing systems from government to the corporate sector (Henson and Humphery 2009; Higgins and Larner 2011), not only setting standards but also moving into certification and enforcement (Davey and Richards 2013). Such arrangements become subject to public scrutiny at times of food-borne disease outbreaks and competition enquiries.

2.3. The environmental costs of industrial agriculture

Many current food production methods are damaging the environment (Butler 2009b; Rosin et al. 2012; Naylor et al. 2005) and in turn are compromising future food yield increases. "Of particular relevance are the intensive methods applied in industrial agriculture which requires large quantities of non—renewable fossil fuel, fuel-based inputs, such as fertilisers and pesticides, as well as antibiotic overuse in industrial food animal production" (Kickbusch 2010, p. 22). Some food groups have a greater environmental impact than others, especially industrial-scale ruminant meat production and fish aquaculture schemes established in sensitive marine environments (McMichael, A. et al. 2007; Friel et al. 2009; Jackson et al. 2001). The negative environmental influences on

⁴ "A private-equity takeover, or leveraged buy-out, usually involves the purchase of all or most of the shares in a publically listed company, and their liquidation and removal (Burch and Lawrence 2013, p.248)

ecosystems and biodiversity include the unsustainable use of water and fossil-fuels in food production, methane production as a result of enteric fermentation in beef cattle and sheep, the use of antibiotics and parasiticides, waste discharge and the destruction of natural habitats (e.g. mangroves).

Environmental resource constraints are already exacerbating healthy food availability issues and health inequalities (Ziervogel and Erickson 2010). A decrease in the availability of whole foods such as fruit and vegetables results in an increased cost of these foods, creating a barrier for people on a low income to maintaining a healthy diet. Corporate supply chains buy out local firms, often shifting food production sites and production methods and inputs (for example shifting agriculture to areas of relative water security) (Hattersley et al. 2013). Current food production practices, reliant on the natural resources, may not be sustainable over the long-term: for example, when countries export food they are also exporting the water, nutrients and other fossil fuel inputs used to produce the food (Whitmee et al. 2015, p. 25)

Another issue relating to industrial agriculture is when local food producers are unable to adapt to the new environmental conditions and unable to operate within the corporate supply chains (Altieri et al. 2011; Craviotti 2015). These circumstances can result in food producers either adopting new organisational models and farming practices or becoming impoverished to the point of leaving their land (Dorward 2013). This second pathway can lead to a spiral of environmental and social impoverishment, which can threaten food availability, accessibility and cost. This situation is an unfortunate reality in both lower and higher-income countries (Cribb 2010; Breuer and Kreuer 2011).

2.4. The climate change challenge

Climate changes pose a major direct threat to the establishment and future spread of healthy and sustainable food systems (McMichael, A. et al. 2007; Nelson et al. 2010; Meridian Institute 2011). Sustained heat waves, droughts and flooding negatively impact food yields, safety and quality. Climate change is expected to lead to price increases in four of the world's most important crops: rice, wheat, maize and soybeans. Irrigated crops will experience large declines in yield (IFPRI 2009). Rice continues to be a crucial food staple in low- and middle-income countries and provides 60 per cent of the carbohydrate and plant-based protein consumed by Asian people. There are 200 million rice farms in Asia, according to the International Rice Research Institute (IRRI); and this major livelihood generator and key plank to food security is taking place in a region where the population continues to grow, placing ever-greater strain on environmental resources (Butler 2009a). IRRI estimates that "To keep rice prices stable and affordable at around \$US300 a ton, an additional 8-10 million tons of rice needs to be produced every year. The challenge, above anything else, is to produce this additional rice with less land, less water, and less labour, in more efficient, environmentally-friendly production systems that are more resilient to climate change, among other factors"⁵.

Three billion people rely on fish for 20 per cent of their protein intake, and continued fish depletion will negatively impact on many lower-income countries and regions that depend on fish as a major source of dietary protein (FAO 2012a). Research suggests tropical fish catches could decrease by as much as 50 per cent as a result of climate change, with South East Asia and the Pacific being the most adversely affected (FAO 2011a; 2012a). A comparative study investigated the vulnerability of 132 national economies to the impact of climate change on their fish capture. Findings from this study indicate that the majority of the most vulnerable countries are also the poorest and most of their inhabitants are twice as dependent upon fish for food as those in more affluent nations (Allison et al. 2009). The food security challenge here derives from the impacts of climate on the food supply and

⁵ See http://irri.org/index.php?option=com k2&view=item&layout=item&id=9081&lang=en

from the human security issues posed by erratic weather events, heat and drought (see Climate insecurities, human security and social resilience Report, 2009). These conditions can result in areas becoming uninhabitable with subsequent wide scale people movements.

A lack of international agreement on climate change mitigation approaches has significant repercussions for food security. Most modes of food production are fossil fuel dependent, and even where they are not (e.g., biodynamic cattle and sheep production systems) other food system features can contribute toward global warming, such as methane emissions generated by the enteric fermentation in beef cattle and sheep.

2.5 The 'cheap food' conundrum

Among the important new strands of thinking and commentary is the extent to which industrial/corporate food systems can be health promoting given their current focus on calorific security through cheap processed foods rather than the delivery of affordable dietary diversity and nutritional security (WHO-FAO 2003; Monteiro et al. 2012). 'Cheap food' is a relative notion, which varies across and within countries and refers to the proportion of household income spent on various foods as well as cost per kg or cost per kJ. In middle- and high-income countries, energy-dense and nutrient poor foods, high in salt, saturated fat and/or added sugar, can be cheaper than healthier alternatives. As supermarkets displace fresh markets, consumers become exposed to larger amounts of cheaper processed foods and more expensive fresh foods (Hawkes 2008; Hawkes et al. 2010; Banwell et al. 2012). This disparity can result in households with low income meeting (and often exceeding) their energy requirements using a lower proportion of their household income; increasing their risk of micro-nutrient deficiencies in overweight and obesity ⁶.

The risks and benefits of cheap food are not simply experienced at the household level. The process of national development which moves a country from peasant or agrarian societies to industrial and service sector economies is based on the availability of cheap calories (Friedmann and McMichael 1989; Dixon 2009). Cheap food allows wages of factory and service sector workers to remain low, thereby increasing company profitability and investment in new ventures which in turn generate growth in employment and national revenues. However, national development based on cheap calories is an approach which overlooks the economic needs of the global rural population (3 billion people), 50 per cent of whom work in agriculture (Altieri et al. 2011). While agricultural households benefit from cheap food, they also need to derive decent and fair incomes from their activity in order to stay in agriculture and not relocate to cities to become the urban poor. Favouring cheap, processed foods as central to the national food supply also ignores the environmental externalities generated by industrial chains geared only to greater efficiencies and economies of scale (Ingram et al. 2010).

2.6. The relationship between food and human insecurity

Countries that have high food insecurity commonly have poor infrastructure, low levels of education and skills, and limited investment in agriculture. In turn, food insecurity is believed to contribute to famine, civil unrest, warfare, degradation of land, and protectionist trade policies (Wahlqvist et al. 2012). It is in this sense that food insecurity is both a cause and an outcome of human insecurity.

⁶ In some high-income country settings (US), where there are few fresh markets, supermarkets can improve access by poorer populations to dietary diversity (White 2007).

3. Why do these problems persist and why haven't they been solved?

Five major barriers to the pursuit of health promoting food systems have been identified.

- The evolving and contested nature of definitions of food security undermines clear policy direction
- A narrow productionist approach to food systems
- Capital accumulation among a few corporations to the exclusion of wealth sharing
- Urban migration and de-agrarianization policies
- Fragmented oversight of food and nutrition security at national and global levels.

3.1. The evolving and contested nature of definitions of food security undermines clear policy direction

Definitions of food security have evolved over time, with some unintended consequences. As Pinstrup-Andersen (2009) notes, early definitions of food security focused on national capacity to deliver sufficient dietary energy requirements rather than nutritional security based on adequate micro-nutrient *and* energy intake. The two earliest criteria of food security were 'availability' (what is present in the food supply) and 'access' (financial and physical ability of consumers to obtain what is present).

However, studies from the 1950s onwards revealed that availability does not guarantee access, and meeting energy (calorie) requirements does not guarantee adequate micro-nutrient intake. Therefore, in the mid-1970s, food security was re-defined as 'access by all people to live a healthy and productive life', and the definition was amended to incorporate nutritional adequacy or 'appropriateness' (nutritional composition and food safety), and food preferences or 'acceptability' (cultural suitability). Since that time, the widely accepted pillars of food security have included food availability, accessibility, affordability, utilization and acceptability⁷.

When meeting energy requirements is deployed as the chief metric of food security, the emphasis is on macronutrients such as carbohydrate, fat and protein. When the nutritional adequacy of a diet becomes the chief metric of food security, emphasis is placed on the consumption of a greater range of foods to meet micronutrient requirements, such as fruit and vegetables.

Further complicating the data management issues is the fact that the nutritional and environmental data required for food and nutrition security planning are in distinctly separate spheres of action. Development and government agencies collect national nutrient stocks and household dietary intake data while environmental agencies focus on collecting data on bio-sphere resources: soil and water nutrients, biodiversity, carbon release and capture, waste and other factors important to food production.

and Ericksen 2010).

⁷ Other definitions emphasise the *utilisation* of food, or the ability of people to consume and benefit from food and its nutrients. This is influenced by the nutritional benefit and food quality, as well as access to cooking facilities, clean water, and safe food storage facilities. In some definitions, too, less emphasis is put on acceptability and more on stability which relates to the continuity of access to food. Factors include seasonal variations in food supply or income, price fluctuations, and political and economic factors (Ziervogel

3.2. A narrow productionist approach to food systems

Tomlinson (2011, p. 8) has argued that framing of food security around an emphasis on production "does not address problems of climate change, diet-related ill health and does not substantially reduce absolute levels of hunger... [rather, it] legitimises particular economic and political food system structures and technological solutions". In particular, it legitimises a particular food system model – a corporate/industrial model – which is based on the corporate control of a narrow band of commodity chains, rather than small holder/peasant/ pastoralist/fisherperson production systems which might engage not in international, or even national, commodity markets but with cash and barter food markets (Abrahams 2006; Gertel and LeHeron 2011; Goodman et al. 2012).

Public health figures have been at the forefront of challenging a productionist perspective of food systems (where farming, peasant occupations and rural living are considered worthwhile only when they deliver increasing food yields). In an early critique for the New Nutrition Science Project, Lang (2005), contrasted the productionist paradigm of food and nutrition with what he termed an 'ecologically integrated' paradigm. The productionist approach is characterised by industrial scale operations, mono-culture farming, lack of consideration of environmental costs, consumer autonomy and an acceptance of diet-related disease once hunger is overcome.

An ecological approach favours an approach to diet, disease and health on the principles of "the right to be well: [with] the entire food supply geared to deliver health" (Lang 2005, p.735). This approach is based on diverse systems of food production and care of food producing environments. From an ecological perspective, agricultural lands perform multiple functions, including livelihood generation which is not necessarily linked to food production on a constant basis. The stewardship of these lands is valued because of its role in future food security: through protecting agricultural lands and also through providing incomes to access available food.

3.3. Capital accumulation among a few corporations to the exclusion of wealth sharing

A small number of global food corporations dominate the major food sector supply chains (meat, grains, dairy, oils, and some horticulture). In the grain sector, and more recently in sectors where genetic modification and biotechnologies are being applied (meat and fish), the laws and conventions on intellectual property rights (especially TRIPS: Trade-Related Aspects of Intellectual Property Rights) are privatising access to the biological foundations of agriculture (Tansey 2002; Tansey and Rajotte 2008). This intellectual property rights architecture has transformed agricultural research and development and biotech innovation, with corporate science and 'private right' patents displacing community and farmer knowledge and public and farmer investment in agriculture. Knowledge and agricultural inputs, once in the public domain, are no longer available to many small farmers (Tansey 2002).

As a result of their market power and intellectual property ownership, corporations have the lobbying and research capacity to influence dietary guidelines and national food supply, bio-technology and bio-security policies and to dominate all aspects of the supply chain (PLoS Medicine Editors 2012; Hastings 2012). By capturing the regulatory architecture, industrial scale and corporatized food systems become normalised, and encourages food insecure countries to produce and trade themselves out of poverty and by extension food and nutrition insecurity. This logic does not necessarily play out in practice (De Schutter 2011).

3.4. Urban migration and de-agrarianization policies

The current migration of people to cities in low- and middle-income countries represents the largest and most rapid human movement in human history, and is having considerable impact on food security, environmental degradation and the separation of peoples from their food supply. In part, this movement is the result of political instability in rural regions, but it is also due to government and development agency policy. The movement of peoples away from agriculture and into cities and towns as skilled and semi-skilled labourers is viewed in development circles as a sign that sufficient food is entering the global food system and that national economic development can become more broad-based (Dorward 2013; Dorward 2009). While the movement to cities and factory and service sector jobs can mean a move away from a lifetime of drudgery as peasant farmers, this particular view of peasant farming has been criticized as too simplistic because it overlooks the multiple reasons that farmers have for being on their own lands working for themselves (van de Ploeg 2008).

The movement of people out of agriculture and into factories and service jobs, referred to as 'de-agrarianization', can lead simultaneously to higher national incomes as well as an increase in urban poverty (Lipton 1984; Patel 2013). Davis (2006) has argued that the practice of urban in-migration is leading to a planet of slums, and all too often the shanties and other accommodation to house growing numbers of urban workers are on lands which previously grew food. Peri-urban expansion may be accompanied by the need to import more basic food stuffs, which in turn requires the requisite household income to access. For those rural citizens who leave the land and who cannot find work in cities, or who can secure only the most precarious jobs, income and food poverty follow (Martinez-Gomez et al. 2013). Their return to rural areas as landless peasants can also result in higher rates of rural poverty.

3.5. Fragmented oversight of food and nutrition security at national and global levels

In many nations, food security is approached through the uncoordinated efforts of numerous ministries: Ministries of Agriculture concentrate on agricultural production; Ministries of Trade oversee food import and export policies; Ministries of Health focus on food safety and nutrition education; and Ministries of Social Security and Taxation oversee household income policy. More recently, Ministries of the Environment have become involved because of their responsibilities for environmental conditions which directly influence food production, such as water, soil and conservation values.

Fragmented efforts across government departments have been compounded over the last 20 years with increasing emphasis on government deregulation (Davey et al. 2013). This is alongside the rising influence of bodies such as the World Trade Organization, World Bank and International Monetary Fund, pushing for food supplies to come under the rule of international agencies and treaties (McMichael, P. 2005). The influence of middle-class consumers over food supplies through activism regarding animal welfare, sustainability and other ethical positions plays a paradoxical role in undermining government authority (Gibson et al. 2011).

Lack of national regulatory oversight has fostered a global food system characterised by (Kickbusch 2010, p.25):

- considerable environmental strain and contributing to global warming
- increasing chronic disease worldwide endangering the sustainability of health systems
- the control of a small number of very large and influential companies, which are further driving the liberalisation of agricultural trade which can have unexpected outcomes for food producers
- the rise of counter movements comprising knowledgeable consumers and civil society organisations which are opposed to the lack of health, equity, sustainability and democratic control over food systems.

At the same time, governments face political challenges in intervening in food security at household and community levels. A reluctance to intervene follows from acceptance of political philosophy's dichotomisation between public and private interests, with the private sphere encompassing household and individual lifestyle decisions. Central to neo-liberal orthodoxy is the principle that cultural customs are perceived to be 'untouchable' except in extreme cases (e.g., hunting of seals for meat). Support for household and individual level self-regulation is reinforced continuously through heavy lobbying by what has been termed 'Big Food', companies which use rationales of consumer choice to defend themselves against regulation in terms of product marketing and advertising (PLoS Medicine Editors 2012).

Given that no single agency is in charge of food systems at either the national or global levels, contestation over food security is set to intensify within nations and between nations⁸ (Tansey 2013; SCAR 2011).

4. What is the way forward? What building blocks are needed to advance health promoting food systems?

A health promoting food system guarantees food and nutrition security – understood broadly as the uninterrupted delivery of sufficient energy and micro-nutrients to lead a healthy and productive life – while promoting the health of the environment so that future generations can be guaranteed their food security.

The UN System High Level Task Force on Global Food Security (2012) describes policies that enable food and nutrition security to be 'nutrition-sensitive'. However, nutrition sensitive policies are only half of the equation. As Kickbusch has noted, malnutrition is 'closely linked to the standard of living, the environmental conditions, and whether a population is able to meet its basic needs such as food, housing and health care. Malnutrition is thus a health outcome as well as a risk factor' (Kickbusch 2010, p. 19).

Following this reasoning, it becomes important to introduce human development and security to the food and nutrition security equation. In this paper, human development and security systems encompass minimum household incomes (from salaries and government funded social security), universal access to education, housing and health insurance and protection from crime, corruption and toxic physical environments. Land reform is also essential to livelihood generation and personal security in some country contexts (Oswald Spring 2009).

In order to counteract the impact of the multiple drivers of food insecurity, laid out in Sections 2 and 3, what is required is the creation of a virtuous cycle between nutrition and bio-sensitive food system policies and human development and security. Figure 1 illustrates the inter-linkages, and shows food and nutrition security to be <u>an outcome</u> of nutrition and bio-sensitive food systems and human development and security systems as well as <u>an input</u> to equitable social development.

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⁸ Thailand is an exception. In 2008, the government introduced the National Food Commission Act creating a National Food Committee (NFC) charged with coordinating policies and actions across all aspects of Thai Food Policy. Chaired by the Thai Prime Minister, the body has representatives from the Thai Food and Drug Administration (FDA), Ministry of Public Health and the Ministry of Agriculture as co-Secretaries. The Commission has four main concerns: food security, food quality and safety, food sector management, and food research. In 2010 the NFC produced a comprehensive Thailand Food Strategy document.

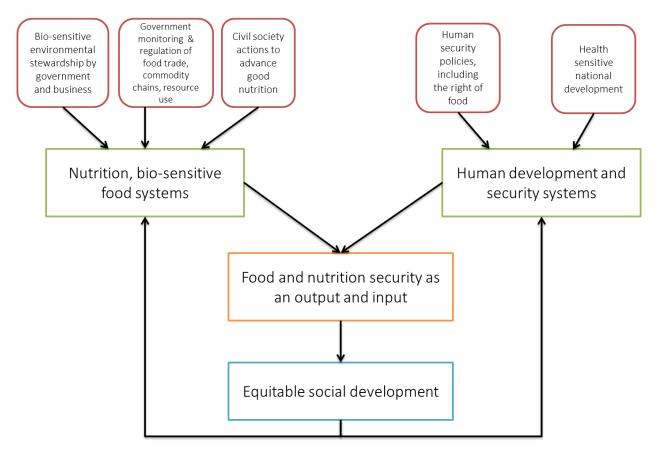


FIGURE 1. THE BUILDING BLOCKS FOR FOOD AND NUTRITION SECURITY

The following material describes the action domains (the top row boxes in Figure 1) which are relevant to: A) the creation of nutrition and bio-sensitive food systems, namely: bio-sensitive environmental stewardship; government monitoring and regulation; and, support for civil society auspiced food systems; and B) advancement of human development and security systems, namely: linking human security policies with food security policies; and, the pursuit of health-sensitive development.

4.1. Three action domains to advance nutrition and bio-sensitive food systems

4.1.1. Bio-sensitive environmental stewardship

The geo-spatial and agro-ecological conditions which influence the viability of different approaches to national food supplies vary between countries. Hence, there is no one internationally applicable response. Instead the response has to be based on a resilient systems principle: diversity in approaches – urban *and* rural agriculture, non-commodified *and* commodified food systems, small-scale *and* industrial-scale sectors, local food self-sufficiency *and* the fair/free trade in food – and an agro-ecology approach. Agro-ecology refers to a holistic systems approach, which not only acknowledges the specificities of local natural conditions, but the specifics of historical approaches to food production and producer capacities in terms of education, incomes, access to technological developments, and market access. It reorients practices to those that are most sustainable in the natural and social environment, which tend to favour small-hold producers⁹.

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⁹ See also resources from The Center for Agroecology & Sustainable Food Systems, University of California, Santa Cruz.

In terms of advancing sustainable and healthy diets, a 'healthy agriculture for healthy populations' approach is being advocated (Simopoulos et al., 2013; Dangour et al., 2012). Under this new 'agri-health' paradigm, healthy populations reflect healthy agriculture systems and healthy agriculture systems reflect healthy populations attuned to sustainability principles. In the UK, the Leverhulme Centre for Integration of Research on Health and Agriculture (LCIRAH) has been working to develop a set of tools and indicators to measure progress in advancing food system impacts on livelihoods, health outcomes and environmental outcomes simultaneously (see http://www.lcirah.ac.uk/node/9; Hawkesworth et al. 2010).

There have been other high level agency interventions arguing that 'business as usual' approaches will not guarantee food and nutrition security. The Standing Committee on Agricultural Research (SCAR), European Union, has contrasted a productivist approach to agriculture with a sufficiency approach, which involves internalising the environmental impacts of food production and consumption through a combination of technological innovations, behaviour change and food system-wide structural changes (SCAR 2011). The UN- and World Bank-sponsored International Assessment of Agricultural Science and Technology for Development (2008) noted increasing scientific and development practitioner consensus that sustaining the earth and its people requires less reliance on industrial agriculture made possible by non-renewable resource inputs. It too acknowledged agro-ecological methods, which have been shown to be equally productive, less energy-intensive, restorative, carbon-sequestering and stabilising of rural cultures and healthy diets (Pretty et al. 2003; see also numerous articles in the journal Agroecology and Sustainable Food Systems).

4.1.2. Government monitoring and regulation of food trade, commodity chains and environmental resource use

Within public health and development circles, stronger government leadership and involvement in food markets is being recommended on several fronts, including: food reserves, foreign investment in farming and fisheries, and free/fair trade. Calls for stronger government regulation in food systems repeatedly appear in reports on diet-related chronic non-communicable disease. Where there is considerable support within the public health community is for government regulation of food-company marketing and advertising (WHO-FAO 2003; Hastings 2012) with some support also for 'fat taxes' in order to make high energy, processed foods less affordable relative to nutrition rich fresh foods (Plos Medicine, Editors, 2012). It is in this context, that INFORMAS – the International Network for Food and Obesity/Non-communicable Diseases Research, Monitoring and Action Support – has been established to provide guidelines to monitor the impact of food trade on food environments (see Friel et al. 2013).

Another arena where there is growing consensus for government intervention relates to foreign investments in farming lands, aquaculture environments and associated firm-level operations, whether through purchase or lease-arrangements. The FAO (2011a; 2012a) has expressed concern about national countries leasing their marine areas to countries keen to control fish commodity chains, often to ensure continuity of supply for their own consumption. Such arrangements are questioned on environmental sustainability and social justice grounds¹⁰.

In the area of free trade, there are also calls for stronger government engagement. For example, under the WTO's Agreement on Agriculture (AoA), as well as WTO agreements on public procurement, it is difficult for national governments to establish food reserve schemes (i.e. set aside food at times of crises in supply and to stabilise price volatility). This development has led the UN Special Rapporteur on the Right to Food to argue that governments in poorer countries are denied a key instrument in ensuring adequate food supplies (De Schutter

¹⁰ See for example: http://www.srfood.org/index.php/en/component/content/article/1-latest-news/2543-ocean-grabbing-asserious-a-threat-as-land-grabbing-un-food-expert

2011). The Special Rapporteur has identified the opportunity in Doha negotiations to introduce flexibility in current arrangements to increase public investment and oversight of agriculture (De Schutter 2011).

This oversight is appearing in low- and middle-income countries, with a growing number of governments in Asia and Latin America providing support, for example, to cooperative farm ventures – through establishing food distribution hubs, logistics company support to farmers and market cooperatives – to link small farmers to global and national markets through supermarkets (Reardon et al. 2013).

4.1.3. Support for the role of civil society auspiced food systems

Civil society – including community organisations, non-governmental organisations, and ad-hoc citizen actions – has reinstated itself as a major food system actor in affluent countries, while maintaining a strong presence in low-income countries. In high-income countries, civil society is manifest in local areas as farmers markets, community food gardens, local food planning committees, bee keeping societies and so forth. In low- and middle-income countries, civil society is the basis of the food barter and reciprocity systems as well as thriving black markets where cash is exchanged for commodities. In some countries, what happens in this civil society sector minimises exposure to food insecurity. Trade in food and formal cash as well as commodity markets are relatively minor pathways to food security for a sizable number of the world's poor population (De Schutter and Sepulveda 2012).

It is in this context that much is made of the food sovereignty movement. The Global Small-Scale Farmers' Movement organisation, Via Campesina, coined the term 'food sovereignty' in 1996, spawning an international political movement which continues to attract government and civil society interest. At the Forum for Food Sovereignty in Mali, 2007, about 500 delegates from more than 80 countries adopted the Declaration of Nyeleni which states:

Food sovereignty ... puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers. ... It ensures that the rights to use and manage our lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food.

Many countries now host highly active national food sovereignty movements, including Australia (http://australian.foodsovereigntyalliance.org/). The food sovereignty ethos and principles are also often present in the urban agriculture movement (Smit et al. 2001), and in analyses of the protective effects of adherence to traditional diets and customary dietary practices (e.g. social eating) (Monteiro et al. 2012).

In addition, numerous international non-governmental organisations – Save the Children, OxFam, World Wildlife Fund – have major initiatives underway to assist in the prevention of under-nutrition. Their ethos typically involves community building, infrastructure development to assist rural producers and support of programs to improve maternal and child health.

4.2 Two action domains to advance human development and security

4.2.1. Make links between human security policies, including the right to food, and nutrition

Within poorer nations, food security is all too often driven by crisis and charity, and within more affluent countries food security is driven by financial access to commercial markets. In neither case is food security a matter "of collective aspiration and mutual responsibility" (Kickbusch 2010, p. 30). There are now numerous

international and regional bodies arguing that food security is first and foremost a matter of human security. For the purposes of this document human security is defined in terms of access to jobs and income, education, personal safety, living in sustainable resource environments, universal health coverage (WHO 2012) and the right to food.

In a welcome development, the links between human and nutrition security are beginning to appear at global and regional levels. For example, while fully supportive of 'free' food trade, the UN System High Level Task Force on Global Food Security argues that governments need to act on their social protection schemes and safety nets to assist farmers who can no longer compete in the marketplace, including school meals, work or asset-based creation schemes and risk-assurance schemes (2012, p.2). In turning such aspiration into action, a recent initiative jointly supported by the Special Rapporteur on the Right to Food and the Special Rapporteur on Extreme Poverty and Human Rights calls for the creation of a Global Fund for Social Protection with an aim to establish a social protection floor in least developed countries (De Schutter and Sepulveda 2012). As they argue: "The right to social protection is deeply linked to the right to adequate food" (p. 6).

Within this context, it is worth noting that 40 per cent of South Africans are in receipt of social protection/social safety net assistance, with the largest proportion residing in rural areas. While the country is characterised by a highly commercialised and productive agricultural sector, the provision of social benefits has been shown to be effective in fighting poverty and improving health and education especially among low-income households (Woolard et al. 2010)¹¹.

The right to food was recognized in the 1948 Universal Declaration of Human Rights (Art. 25) as part of the right to an adequate standard of living, and was enshrined in the 1966 International Covenant on Economic, Social and Cultural Rights (Art. 11). And in 1996, the World Food Summit requested that the right to food be given a more concrete and operational content. A number of initiatives were taken as a result, including:

- In 1999, the UN Committee on Economic, Social and Cultural Rights, the body of independent experts monitoring States' compliance with the International Covenant on Economic, Social and Cultural Rights (ICESCR), adopted General Comment No. 12 on the right to food which states: "The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement."
- In 2000, the mandate of the Special Rapporteur on the Right to Food was established by the Commission on Human Rights (Resolution 2000/10, 17 April 2000). That office is responsible for monitoring State actions on their obligations defined by the UN Committee on Economic, Social and Cultural Rights. One of the four obligations states that: "the State must pro-actively engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security."

As one way of advancing the right to nutritious food, a number of countries have included food sovereignty in their constitutions or have developed charters. In 2012, at a UN-sponsored conference, Latin American and Caribbean countries renewed their commitment to the Hunger 2025 Initiative, an effort that aims to ensure that no child, man or woman in the region endures hunger (United Nations conference on food and agriculture in Buenos Aires, Argentina, April 2012)¹².

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¹¹ 'The social security system in South Africa has two main objectives. The first objective is to reduce poverty among people vulnerable to low income, such as the elderly, children, and people with disabilities who cannot participate fully in the labour market. The second objective is to increase investments in health, nutrition, and education, in order to increase human capital to accelerate economic growth and development" (Woolard et al. 2010, p. 3).

¹² See http://www.iisd.org/tkn/pdf/food security policies latin america.pdf

4.2.2. Pursue health-sensitive development approaches

Both the WHO and FAO have recently made more direct links between health status and security and development in their responses to the Post-2015 Development Agenda process for deciding what steps to take regarding the Millennium Development Goals. According to the WHO (2012): "Health is central to development: it is a precondition for, as well as an indicator and an outcome of progress in sustainable development".

In addition, The Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020, WHO Regional Office of Europe 2013, provides a further platform linking national development and health promoting food systems. This body has argued that investing in diet-related prevention and control will support a country's human capital and its economy (WHO Ministerial Conference 2013).

More recently, participants in the March 2014 High-level Roundtable on Food and Nutrition Security through Sustainable Agriculture and Food Systems in the post-2015 Agenda issued a communique entitled 'SHIFT: Food and Nutrition Security through Sustainable Agriculture and Food Systems in the Post-2015 Agenda.' SHIFT refers to five elements: Small-scale food producers empowered; Hunger and all forms of malnutrition ended, and full access to food ensured; Inclusiveness in decision-making on sustainable agriculture, food security and nutrition; Food systems which are sustainable, diverse and resilient, less wasteful, restore soil fertility and halt land degradation; and Trade policies reshaped and food price volatility mitigated¹³.

5. SUMMARY

The persistence of food insecurity, coupled with the growth in diversity of forms of food insecurity, are being driven by multiple forces from both within the food system and from outside the food system. Food security, now and into the future, will be advanced by establishing health promoting food systems which are built on the twin pillars of nutrition and bio-sensitive food systems, and human development and security systems.

These propositions follow from the evidence presented in earlier sections, that:

- i. The right to [nutritious] food advances the right to health, and is a fundamental input to national and human development;
- ii. Access to nutritious food is a key dimension of human security, while human security underpins nutrition security;
- iii. Environmentally unsustainable food production will deny future generations access to sufficient nutritious food;
- iv. The hybrid and fragmented oversight of national food systems, combined with the commercial and economic development imperative to produce cheap, nutritionally inferior food, contributes to both diet related health risks and agro-environmental degradation;
- v. An approach to feeding the world equitably will require major changes at all levels of governance and a reorientation of many international organizations and programmes (Kickbusch 2010, p. 25).

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¹³ See http://post2015.iisd.org/news/high-level-roundtable-calls-for-7-targets-on-food-and-nutrition-security/

6. THE IUHPE HAS A ROLE TO PLAY

The IUHPE, as the global professional society for health promotion, has a critical role in supporting the capacity to provide a healthy and sustainable diet to a growing population in an increasingly resource constrained biophysical environment.

Advancing health promoting food systems is one of the more critical political, social, health and environmental challenges and opportunities of the 21st century.

6.1. At the international level

- 6.1.1 Use the material in this paper as the basis for advocacy 'key-message' documents, one focused on 'Nutrition Security and National Development' and the other focused on 'Noncommunicable Disease Prevention and Sustainable Food Systems'. Fundamental to the documents is to relay the critical importance of a paradigm shift in human-environmental relations and to valuing cooperation, diversity and equity (Tansey 2013).
- 6.1.2. Strengthen and extend relationships with relevant international policy bodies and advocate for a) their attention to the critical intersection between national development, human security and sustainable food systems; and b) greater clarity around respective roles so that the fragmentation of international effort is minimised. Relevant bodies include:
 - WHO NCD branches: see the WHO 2013-2020 Global Action Plan for Non-communicable Disease Prevention and WHO-WPRO Action Plan to reduce the double burden of malnutrition in the Western Pacific Region (2015-2020) which provides guidance for key strategies to establish and strengthen initiatives for the surveillance, prevention and management of diet-related factors that lead to noncommunicable diseases.
 - WHO branches handling the post-2015 development process: "In contrast to the previous health-related Millennium Development Goals, there is now a greater recognition of the need to focus on means as well as ends: health as a human right; health equity; equality of opportunity; global agreements...) that enhance health security; ...addressing the economic, social and environmental determinants of health; and multi-sectoral responses that see health as an outcome of all policies" 14.
 - FAO: The FAO recognises the importance of developing sustainable food systems as part of food security: "Agricultural policies and research must continue to support productivity growth for staple foods while paying greater attention to nutrient-dense foods and more sustainable production systems" (FAO 2013)¹⁵.
 - UN Development Program
 - UN Environment Program
 - OECD and its call for a zero emissions economy by middle of 21st century¹⁶
 - UN Special Rapporteur on the Right to Food
 - UN Special Rapporteur on Extreme Poverty and Human Rights
- 6.1.3. Secure partnerships with major interdisciplinary/big-picture/integrative efforts underway like the movement for Scaling Up Nutrition and the ICN2, a joint FAO-WHO initiative, and with and between research

¹⁴ See http://www.who.int/topics/millennium_development_goals/post2015/WHOdiscussionpaper_October2012.pdf

¹⁵ See http://www.fao.org/publications/sofa/en/

¹⁶ See OECD Secretary-General Gurria, October 9, 2013: http://www.oecd.org/about/secretary-general/the-climate-challenge-achieving-zero-emissions.htm

bodies (e.g. the Leverhulme Centre for Integration of Research on Agriculture and Health and Global Panel for Systems on Agriculture and Health; International Food Policy Research Institute; United Nations University International Institute on Global Health, and its program on bio-diversity and community well-being) and regional development bodies (e.g. Asia Development Bank) and civil society groups delivering food and nutrition security programs (e.g. International Planning Committee for Food Sovereignty, Oxfam, SUN Civil Society Network¹⁷, WWF¹⁸).

- 6.1.4. Establish and support regional knowledge networks to develop a register of bio-sensitive nutrition practice policies and initiatives which advance health promoting food systems: in terms of being good for human health, the environment, human security and national development
- 6.1.5. Develop capacity for monitoring and evaluating the effectiveness of these initiatives, and for scaling up those with most positive impact. In the first instance collect matrices and case study approaches for monitoring and evaluation 192021.

6.1.6. Develop policy positions on:

- Mandatory reformulation to reduce salt, sugar, trans fats and saturated fats
- Guidelines on associated product labelling
- Restrictions on advertising and promotion, especially to children
- Addressing portion sizes
- Advocating for levies on high fat/sugar foods
- 6.1.7. Create an interdisciplinary, multi-interest group to examine and explore alternate rules and regulations regarding trade in intellectual property and commodities, food advertising and marketing. Such a group could also examine what principles would be required for trade flows between 'food sovereign' countries, that is, countries that practise self-sufficiency where possible but generate surpluses which could be traded on a nation to nation fair-trade basis.

6.2. At national/regional levels

- 6.2.1. Encourage national health sectors to become engaged in food trade and intellectual property right agreement debates and negotiations.
- 6.2.2. Create regional knowledge hubs to develop appropriate legislation, monitor the food system and for example the impact of trade on nutrition, as well as to negotiate and manage the risks associated with trade agreements, many of the risks of which are food-system related.

¹⁸ WWF's focus in this area is to protect and enhance the ability of the natural world to supply a growing human population with a nutritious, sufficient and diverse food supply.

¹⁷ See http://scalingupnutrition.org/

¹⁹ FAO has produced a "Guide to produce a succinct description of a Sustainable Agriculture and Rural Development (SARD) Good Practice" ftp://ftp.fao.org/SD/SDA/SDAR/sard/MicrosoftWord-GPGuidelines-English.pdf

²⁰ See Lee at al's (2012) framework to investigate value chain effects on small scale producers

²¹ See INFORMAS to monitor the impact of trade on food environments and health (Friel et al. 2013)

- 6.2.3. Advocate that a levy mechanism on high fat/sugar foods be used to fund new national Health Promotion Organizations, programs and research.
- 6.2.4. Encourage research on innovative ways to support traditional food practices (plant-based, low energy density, home prepared, foraged).

6.3. At the local level

- 6.3.1. Adopt a settings-based approach, and advocate to the WHO and FAO for a joint program to establish a 'healthy villages' program to enhance farmer health and well-being in low- and middle-income countries.
- 6.3.2. Advocate for school and community food systems and health education and food literacy programs, to enhance consumer/citizen knowledge of food system operations and the power of food advertising.
- 6.3.3. Increase the capacity of health promotion practitioners by creating a model for establishing and managing a community of practice to capture local sustainable food system experiences and foster cross-learning that would feed into the proposed regional registers (see 6.1.4). A dynamic, participatory system of knowledge exchange could create a sense for practitioners that they own this platform. It may also be an opportunity to create an open space for practitioners to support one another when facing specific issues in their working life.
- 6.3.4. Encourage audits of the existing capacity of local food systems and the development of plans for capacity building through technology and knowledge sharing; extension of local markets; and development of food hubs to package, market and distribute food.

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- Equity in health, social and economic outcomes for all people;
- Accountability and transparency within governments, organisations and communities;
- Sustainability;
- Social justice for all people; and
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