

Secure, safe, sustainable and ethical food systems

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Defining and facilitating the transition to safe, sustainable and ethical food systems that contribute to human and planetary health is amongst the greatest challenges facing our world today (Alders 2017, FAO et al 2017, Glopan 2014). Agriculture and the food system play a key role in nutrition, health and food security. It provides for the primary sources of energy along with essential nutrients, while simultaneously being a source of income, creating jobs and earning foreign exchange (Schönfeldt et al 2017). Focussing on producing enough calories per person to feed all, food systems in the 20th century responded with an enormous increase in the quantity of food produced and witnessed the globalisation of agricultural commodities and food products. At the start of the 21st century, food systems had also delivered the double burden of under and over nutrition, contributed to degradation of ecosystems, resulted in farming families becoming the working poor and perpetuated women carrying the major burden of health problems and poverty (Conway 2012, Demaio and Rockström 2015, Whitmee et al 2015).

To achieve nutritious, secure, safe, sustainable and ethical food systems, the interlinkages between all Sustainable Development Goals (SDGs) must be explored and optimised. Planetary Health, defined as ‘the health of human civilization and the state of the natural systems on which it depends’ (Whitmee et al 2015), provides a solid framework to guide this transformation.

Current constraints to food security and systems

Constraints to food security and systems include the growth in population and consumption exceeding the planet’s bio-capacity, thus nutritional inadequacies are related to global resource decline which affects species survival, including the human species (Crist et al 2017). Policy constraints include the lack of integration of agricultural, health, environmental and socioeconomic policies and inadequate recognition that good food is essential to good physical, mental and cultural health (HLPE 2017). Food production policies do not account for either quality or quantity and as a result society does not adequately recognise and value the true cost and benefit of quality food (Demaio and Rockström, 2015, HLPE 2017).

Food systems have no incentives to deliver the nutrients lacking in quality foods—such as vitamin A, iron, zinc, iodine and protein (Schönfeldt et al 2016) and do not yet adequately focus on or monitor the presence of chemicals such as antimicrobials and pesticides (Cribb 2014). The nutritional needs of people across the life cycle—including pregnant and lactating women, children, adolescents and the

elderly in particular—are not yet adequately addressed (Alders et al 2016, Merchant 2014) nor are gender, race/colour/ethnicity, poverty and forced displacement. This limits access to resources and the possibility to achieve optimal nutrition and wellbeing (Conway, 2012, Merchant 2014).

Agricultural frameworks, including subsidies and trade agreements, do not currently support the production, distribution and marketing of food that promotes good health, while also accounting for the external costs to communities, public health, the global economy and the planetary ecosystem (Conway 2012) and transparency, accountability, traceability and proportionality are not adequately addressed and so undermine sustainability of food systems (Alexander et al 2017, Caplan 2017).

Working towards nutrition-sensitive food value chains and food systems

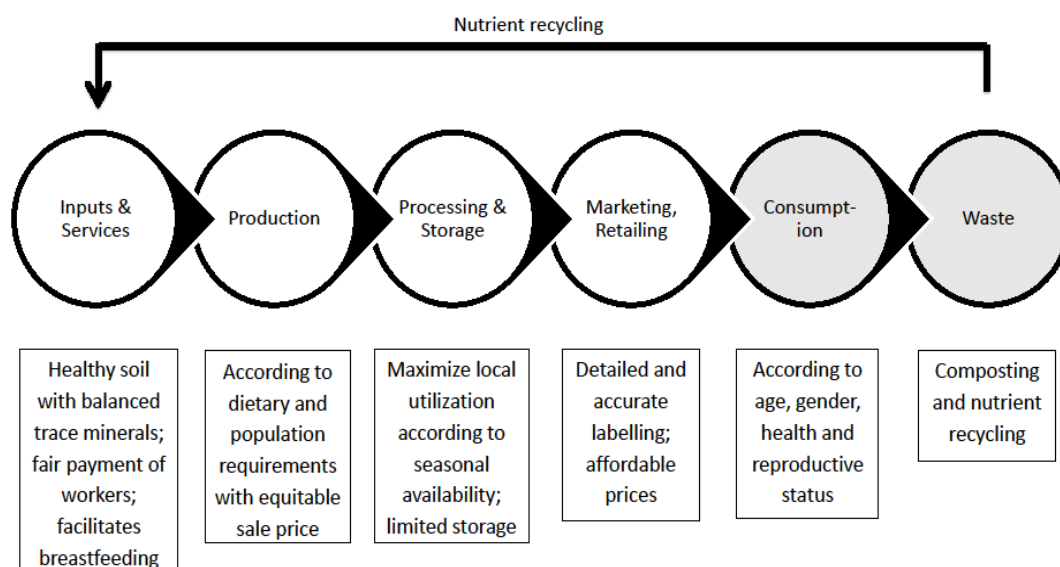
Our food systems are based on the movement of nutrients, including water, along value chains. The flow of capital along a value chain is monitored and regulated with relative precision. The flow of nutrients from the soil, while of crucial importance, requires increased attention as our world now battles with widespread micronutrient deficiencies across low, middle and high income countries. The tracking and recycling of nutrients and their equitable distribution and consumption amongst nations, communities, households and household members is of utmost importance to ensure that our food value chains become nutrition-sensitive and based on the principals of regenerative agriculture (Figure 1 next page).

Multicountry, multisectoral statement regarding sustainable and ethical food systems

Experts from 17 countries across six continents representing practitioners, researchers, policy makers and community development workers gathered from 30 November to 2 December 2016 at the University of Sydney to communicate priority areas in nutritional and environmental health for current food systems. The three-day workshop focused on four key issues:

1. The acknowledgment that current food systems are not sustainable, and fail to provide nutritious and safe food and water to support good health for all.
2. The need for consensus on the transformation of food systems to address current challenges, to ensure good health for our planet, animals and humanity.
3. The need to work together as a global society to change our food systems to produce ethical, accessible, safe and nutritious food for all.

Figure 1: Critical components of nutrition-sensitive food systems (adapted from Alders et al. 2016)



4. The recognition that the responsibility of achieving balanced food systems lies with individuals and representative bodies of our societies.

The statement from the workshop was shared with participants in the 4th International One Health Congress and 6th Biennial Congress of the International Association for Ecology and Health (Alders 2016).

Going forward

In support of the sustainable development goals, our future food systems will need to:

- be resilient to climate change including making systems equitable, sustainable (environmentally, socially and economically) and resilient to weather variability;
- assess nutrient recycling with a focus on the nutrients generally lacking in diets, for example vitamin A, iron, zinc and iodine, including emerging nutrients of concern such as protein, folate and vitamin C;
- provide diets suitable to the life stages and cuisines of sub-populations;
- minimise or eliminate all forms of tillage and prevent over-grazing and over-cropping;
- be based on ecosystem, human and animal health needs dictating production levels using sustainable systems adapted to local agro-ecological zones;
- contribute to evidence and rights-based policymaking on access to food for humans and animals (domestic as well as wild); and
- provide full socioecological accounting (adopted from Alders et al. 2016).

Conclusions

Agriculture, health, education and infrastructure sectors must work together closely to ensure that food can be produced and utilised efficiently and effectively to achieve the SDGs.

Food producers and harvesters can contribute to enhanced physical and mental health and in the process make the health of the planet more resilient (Alders et al 2016).

Ethically and sustainably nourishing 9 billion people by 2050 will involve direct action from all levels of production. A planetary health approach to the production of sustainable, ethical, nutritious and safe food delivered with minimal waste has the potential to promote human, animal and environmental health. As governments worldwide grapple with unsustainable health budgets, nutrition-sensitive, regenerative agriculture and value chains, bolstered by more effective policy frameworks can help stop malnutrition and ensure that food produced delivers maximum health and livelihood benefits.

Note

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