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A TRIFLUMPH OF HUMAN ENDEAVOR

A system that feeds 7 billion: Constant demand being met by seasonal production
Overview

- Food System
- Marketing
- Consumer Science
- Healthy Diets
- Sustainable Diets
- Discussion
Food Security: a Grand Challenge for the 21st Century

‘when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’ (FAO 2008)

and an aspirational goal….
Food System

Globally, food is ‘plentiful’ and ‘cheap’.

However, inequalities in access to food and environmentally unsustainable system

(a victim of its own success....)
# Global Food System Under Pressure: how to create ‘more’ from ‘less’??

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Food System

Social welfare:
- Employment
- Human capital

Environmental welfare:
- Ecosystem resources
- Sustainability

Food availability

Food utilisation

Food access

(Ingram 2011:421)
Food Supply Chain

- Producing food
- Processing and packaging food
- Distribution and retailing food
- Consuming food
Marketing
Consumer Science
Global Diets

‘Fit’ A diet that meets main nutritional requirements for healthy humans. Prevalent diet in developed countries.

‘Fat’ A diet in which a surplus of energy is consumed, leading to adverse conditions such as obesity.

‘Famine’ A diet in which not enough food in consumed, resulting in undernourishment.
Global diets 2010

- Famine diet: 15%
- Fat diet: 15%
- Fit diet: 70%
The UN Food and Agriculture Organisation has defined a sustainable diet as being:

‘protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimising natural and human resources’

(FAO 2010)

(an aspirational goal...)
Pathways for changes in food system

**Resilience**
- The ability of a system to reorganise and adapt when disturbed in such a way that retains its function and structure
  - thus avoiding ‘failure’ and preserving ‘status quo’

**Transition**
- Involves incremental changes whilst still maintaining existing system
  - Focus on *marginal improvements*

**Transformation**
- Requires radical changes in political, economic and social structures and discourses
  - increasingly being seen as *essential for achieving a sustainable society*
Global diets 2050

Global Diets 2010
(7 billion people)

Fat diet 15%
Fit diet 70%
Famine diet 15%

Pathways

Global Diets 2050
(9 billion people)

Resilience

Sustainable diet 10%
Fat diet 15%
Fit diet 60%
Famine diet 15%

Transition

Sustainable diet 60%
Fat diet 5%
Fit diet 30%
Famine diet 5%

Transformation

(Pearson, D. In press)
**Features of a Healthy Diet**

- Be physically **active** and choose amounts of nutritious food and drinks to meet individual energy needs that maintain a **healthy weight**

- Drink plenty of **water** whilst eating a wide **variety of foods** from the five groups every day:
  - **Vegetables**, including different types and colours, and legumes/beans
  - **Fruits**
  - **Grain** (cereal) foods, mostly wholegrain and/or high cereal fibre varieties
  - Lean **meats** and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
  - **Milk**, yoghurt, cheese and/or their alternatives

- Limit intake of **alcohol** and foods containing saturated **fat**, added **salt** and **sugars**.

- Support **breastfeeding**

- Prepare and store food **safely** (NHMRC, 2013)
Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.
Drink plenty of water.

- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties
- Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans
- Vegetables and legumes/beans
- Fruit
- Milk, yoghurt, cheese and/or alternatives, mostly reduced fat

Use small amounts

Only sometimes and in small amounts
Sustainable Diet

- There is presently a lack of knowledge regarding what constitutes a sustainable diet (and consumers likely acceptance of it).

- Consequently, decision makers are currently unable to develop policies to alter unsustainable dietary habits.
Features of a Sustainable Diet

Food product:
- adjusting consumption of meat to recommended dietary amount
- adjusting consumption of dairy products to recommended dietary amount
- adjusting consumption of junk food to amount for optimal enjoyment
- hydrating from tap water rather than purchasing it in a bottle

Source of food product:
- minimising consumption of out-of-season products, particularly fresh fruits and vegetables
- minimising consumption of fish from non-sustainable sources
- increasing consumption of food from environmentally enhanced sources, such as certified organic
- reducing purchases of foods with packaging which is above that required for product protection
- reducing food transport by selecting more local options
- favouring less processed foods

Behaviours around food provisioning:
- reducing food waste, and recycling unavoidable waste
- reducing energy use in food purchases, storage and cooking

(Pearson et al In press)
“Scientists agree… no more than 100 grams… of meat per day… substantial reductions in consumption in developed countries and constrained growth in demand in developing ones”

(UNEP 2012 Global Environmental Alert Service, Oct)
“Livestock’s contribution to environmental problems is on a massive scale”

(FAO 2006 Livestocks Long Shadowxxi)
“…we humans waste about 40 per cent of our food on its journey from the farm to our fork.”

(Dr Karl Kruszelnicki, Foodwise)
“eating junk food... it's fun at the time, but ultimately not the best choice.

(Dita Von Teese, Actor)
“…1 billion people lack access to safe drinking water while other people spend billions on a bottled product that… harms the environment and costs up to 2,000 times the price of tap water.”

(Annie Leonard, creator of The Story of Bottled Water)
“… studies indicate that 30 – 40 percent of the energy used in the food chain is by household cooking, storage, and transportation.”

(Lusk et al. 2011 Economics of Food Consumption and Policy)
Reducing food miles (some quote from Prof Tim Lang may be suitable)

“Cheap fossil fuel energy makes intensive agriculture and long-distance transportation economically viable… Prices in shops do not reflect the full cradle-to-grave environmental and social costs.”

(Angela Paxton, author of the Food Miles Report)
“over 4.2 million tonnes packaging in Australia every year… could be dramatically reduced by consumers making smarter choices.”

(Nola James, Australian Food and Grocery Council)
“If you want to maintain a sustainable supply of fish you have to farm the fish, rather than mine them”

(Maurice Strong - Lead author of world’s first ‘state of the environment report in 1972)
Increasing environmentally friendly option (eg organic)

INCREASING SUSTAINABLE FOOD

“Every major food company now has an organic division. There's more capital going into organic agriculture than ever before.”

(Michael Pollan author of Omnivores Dilemna)
“a shift towards less animal based and more plant-based diets, rich in legumes, would be beneficial from an environmental perspective”

(Elinor Hallström, The Role of Legumes For Sustainable Eating)
INCREASING FRESH FRUIT AND VEGETABLE (WHILE REDUCING OUT-OF-SEASON)

“Reducing meat and increasing vegetable consumption has a host of positive benefits for our health and can ease our footprint on the environment”

(Dr. Robert Lawrence, Director of the Johns Hopkins Center for a Livable Future)
INCREASING UNPROCESSED FOODS

“Get people back into the kitchen… combat the trend toward processed food and fast food.

(Andrew Weil – Founder of Integrative Medicine)
"I was certain that... if you eat together as often as possible, and demonstrate your own enjoyment of flavour and conviviality, that a child will eat well forever”

(Stephanie Alexander - food author and creator of School Kitchen Garden program)
Current research project

‘Shrinking the food-print by creating consumer demand for sustainable and healthy eating’

ARC Discovery Project 2013-15 $310,000

Chief Investigators: David Pearson (University of Canberra), Sharon Friel (Australian National University), Mark Lawrence (Deakin University)

- Gain understanding of **consumptive drivers** that shape food demand in Australia
- Contribute to an **emerging global discussion** on potential impact to food systems of changes in consumer choices
- Provide options and encouraging citizens to make **considered choices**
The challenge...

Global diets: Now

Year 2050
Conclusions for a Healthy and Sustainable Diet

- Policy should be oriented in such a way that encourages people to consume less, consume smarter and minimize waste.

- Optimal impact will be achieved when policy is targeted in high impact areas where consumers are willing to change - eg. minimizing consumption of ‘junk’ food, and reducing food waste.
Questions and comments...

+ Future research opportunities and collaborations....
References


Ingram J (2011) A food systems approach to researching food security and its interactions with global environmental change Food Sec. 3:417–431


Acknowledgements

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