Applying food supply and value-chain concepts for achieving positive nutrition outcomes

Corinna Hawkes PhD
Head of Policy and Public Affairs
World Cancer Research Fund International

Defining food supply chains

**Activities**

- Inputs into production
- Food production
- Primary food storage and processing
- Secondary food processing
- Food distribution, transport, and trade
- Food retailing and catering
- Food promotion and labeling

**Actors**

- Crop breeders; extension services
- Farmers, agricultural laborers,
- Packers, millers, crushers, refiners
- Processed foods manufacturers
- Importers, exporters, brokers,
- Informal retailers, supermarket chains,
- Advertising agencies

i. Comprise the processes and actors that take a food from farm to fork - seed to field, field to food, food to fork
ii. All food supply chains have the same basic steps, but can be mapped in many ways.

iii. Methodological tool used to analyse the nature of the food supply e.g. carbon footprint; how food prices change throughout the chain; who holds the power in the chain; entry points of foodborne pathogens in the chain.
### Changes in food supply chains

<table>
<thead>
<tr>
<th>Time and place</th>
<th>Local</th>
<th>Regional</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pre-modern economies</td>
<td>- 1940s-70s</td>
<td>- 1980s- now</td>
<td></td>
</tr>
<tr>
<td>- In modern economies, local markets etc</td>
<td>- now, in regional trade areas</td>
<td>- all areas touched by globalization</td>
<td></td>
</tr>
</tbody>
</table>

| Characterized by… | Local food for local people; production and producer-driven | Regional self sufficiency; state-driven | Food for the world; “consumption” & privately-driven |

| Consumption… | Shortages, hunger | Excess & shortages | Obesity and hunger |
The basic steps in the chain are the same; what has changed are the actors and processes in the chain, and their relative importance, power and scale.
Why food supply chains are relevant to nutrition (3As)

- Key challenge in understanding the role of the supply chain in nutrition: is it driven by supply from producers or demand from consumers?
- Because the nature of the chain - the way it is organized, who controls it, the economic and policy incentives and disincentives embedded within it - affect key aspects of the food environment in which people eat

Food supply chain
- Organization
- Control
- Incentives, disincentives

Food Availability

Diet quality

Food Affordability

Food Acceptability
Both supply and demand important...

- “consumers” include food-consuming industries, which “demand” & “supply”
- result: bidirectional link between supply & demand, mediated by f-c i

Food traders
Food processors
Food retailers
Food marketers

Agriculture
Food consuming industries
Consumers

Food supply chain
Supply Chain Approach for Improving Nutrition: Change supply and demand incentives throughout chain

**Goal:** Reduce supply & demand of “excesses”; increase supply & demand of positives

Example policy actions to change incentives

**WHERE?** Agriculture
**WHAT?** Disinvesting in policy and research biases that encourage production of less healthy foods (e.g. dairy fat, veg oils, corn); investing in research/production/retailing of positives
**WHO?** Governments, trade authorities, FAO, World Bank, CGIAR
**CHANGES INCENTIVES BY?** Affects production incentives; affects demand from f-c industries and consumers

**WHERE?** Food processing
**WHAT?** Composition standards; packaging; labeling; investment in processing facilities
**WHO?** Governments, processors
**CHANGES INCENTIVE BY?** Affecting food environment, consumer demand; sending incentive signals to agriculture/trade

Production incentives; affects demand from f-c industries and consumers
Organising framework. 3As

Agricultural policies
- Input policies
- Production policies
- Trade policies

Influence on production
- Food Availability
- Food Affordability
- Food Acceptability

Food consuming industries in the food supply chain
- Storage
- Primary processing
- Secondary processing
- Distribution
- Retail
- Marketing

Consumer food environment
- Availability
- Affordability
- Acceptability

Diets
“Value chain” approaches
**Aim** = to move food from food to fork  
**Analysis** = identifying activities and actors
Value chain development is becoming an increasingly important component of the agricultural development landscape.

- **How can poor people in agriculture benefit more from supplying food?**

- Increase managerial & technological efficiency of the relationship between farmers & markets

- Facilitate greater involvement of farmers in the process of value addition

- Promote participation in commercial supply chains in a way that works for farmers
Value chain development in agriculture has generally not considered nutrition

- Concern has been with enhancing the economic value of food production and the impact on the producers in the value chain, not value for nutrition (or other “values”) for consumers
- Perceived as a process of responding, not influencing, “consumer demand”
3) Enables identification of coordinated, multi-sectoral solutions which we know are needed to address malnutrition in all its forms.

4) Can help meet agricultural goals by identifying leverage points where economic value for agriculture and food system actors and value for nutrition can be created, while assessing the trade-offs.

1) Focus on creating value for nutrition through supply.

2) … and demand.
Examples

- Orange Fleshed Sweet Potato, Mozambique

**OFSP Marketing Strategy**

**Farmers** (Market-oriented & those selling surplus)
- Farmer marketing training
- Linking producers to traders
- Radio commercials & programmes
- Trader database
- Formation of marketing groups

**Sweet Potato Traders** (Assemblers & Retail)
- Trader training
- Linking traders to producers
- Radio commercials
- Village road signs

**Consumers** (Rural & Urban)
- Radio commercials with jingle & programmes
- Promotion events, market signs and murals

NGOs: Facilitate & develop existing SP market links via:
- to:
  - Create confidence;
  - Increase skills;
  - Reduce risk
  - Raise awareness;
  - Increase profit
  - Raise awareness;
  - Increase consumption

Local foods and obesity in Iowa

Production
- Financing for diversification, food safety standards

Distribution
- Online ordering

Processing
- Value added processing

Retail
- Engaging schools as stable markets

Promotion
- Buy local brand, farm visits

Greater consumption of fruits and vegetables, lean meats, low-fat dairy?

Thank you to Brenda Ranum, Teresa Wiemerslage, Iowa State University Extension, USA
Examples of policy (in)coherence in supply and value chains
Global example: palm oil

- Palm oil is the world's most used vegetable oil (46.8 million tonnes in 2010)
- Used for “personal care”, animal feed, biofuels – and food
Role of policy: Indonesia = “we will produce 40 mil tonnes palm oil by 2020”

**Input policies**
- Research funding (e.g. Indonesian Oil Palm Research Institute; Palm Oil Research Institute of Malaysia)

**Production policies**
- Opening of new, degraded lands for cultivation
- Lower limits on plantation size
- Nucleus Estate Smallholder scheme (Indonesia)
- Private sector investment

**Trade policies**
- Promotion of Investment Act (Malaysia)
- Lower export taxes
- Low import tariffs

**Promotion policies**
- Promotion of health benefits of palm oil

**Nutrition policies**
- Trans fat restrictions
- Trans fat labelling
## Impact on food supply chain

<table>
<thead>
<tr>
<th>Private sector</th>
<th>Top 10 plantation companies own 22% of the world palm oil production (combined market capitalization of US$79.1 billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mergers and acquisitions</td>
<td>“Mega-plantations”</td>
</tr>
<tr>
<td>Vertical integration</td>
<td>Upstream production, processing, and downstream manufacturing united in one company</td>
</tr>
<tr>
<td>Global network</td>
<td>Exports, processing, re-exports, further processing</td>
</tr>
</tbody>
</table>
World palm oil production, 1980-2012, Million Metric tonnes
MALAYSIA’S PALM OIL EXPORTS (RM billion)


Values: 14.94, 14.23, 19.65, 26.23, 30.44, 28.60, 31.85, 45.17, 65.19, 49.59, 60.00

Source: Malaysian Palm Oil Board
f: Forecast
Development of the Dutch production of processed palm oil in 2000-2009
Price

Figure 1.3 Monthly price developments of the major commodity oils, 2005 - August 2010

Source: Product Board MVO, September 2010
Figure 1.4 Composition global consumption of vegetable oils and fats in 2004 and 2010

Global consumption in 2004 (108.5 million tonnes)

- Soybean: 29%
- Palm: 28%
- Rapeseed: 14%
- Groundnut: 4%
- Lauric: 4%
- Others**: 6%

Global consumption in 2010 (F) (146.6 million tonnes)

- Soybean: 26%
- Palm: 32%
- Rapeseed: 16%
- Lauric*: 6%
- Sunflower: 9%
- Groundnut: 3%
- Others**: 5%

**): Olive oil, corn oil, sesame oil, linseed oil and castor oil

*e: ISTA Mielke, September 2010
Availability for consumption of vegetable oils, world, total MT

Source: USDA FAS, PSD database
Policy incoherence 1?

Government policy; World Bank and International Finance Corporation = big investments

WHO = recommending less sat fat consumption
Policy incoherence 2?

- Have these policies been assessed according to their effect on the food supply chain?
  - 2004 – Danish trans fat ban
  - 2010 – WHO best buy “Replacement of trans fat with polyunsaturated fat”
  - 2011 - EU Regulation on the provision of food information to consumers (requires palm oil labelling)
  - 2012 – French proposal for 4X increase on import tax on palm oil (not passed)
Key issues
Key issues

1. Policies to encourage better diet quality among consumers should be analysed in the context of the food supply chain, and complemented by supportive and coherent policies (“nutrition sensitive”/ “policy coherence”)

2. Policies to lever food value chains are needed to create sustainable improvements in nutrition (“nutrition-enhancing”)

3. Current focus on value chain development in agriculture provides an opportunity to build in nutrition - an inter-sectoral approach

4. Provides an opportunity for people concerned with all forms of malnutrition to get together to identify common leverage points, and the actors needed for multi-sectoral approaches

5. Focus on food systems needed rather than agricultural production alone
THANK YOU!

www.wcrf.org

{}c.hawkes@wcrf.org