

OECD Informal Expert Meeting  
Development and Climate Change

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Food Security, Development and Climate Change

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## Food Security – concerned with staples

Food Security (FS):

Aggregate domestic nutritional need =

(A) Domestic production + (B) Net Foreign trade + (C) Food Aid receipts

- 1970s – 1980s emphasis on self-sufficiency (A) with (C) if needed
- 1990s growth in neo-liberal argument for (B). Traded component may be enhanced by CC surplus potential and deficits

## **CC and staple foods**

- Potential increased output is likely to be adequate for population growth up to 9 billion people (with max. temp rise of 2°C)
- Main increase in CC staples potential is in Developed Countries
- Increased potential in some Developing Countries is offset by greater expected losses in others
  - Great regional variations (e.g. forecast Kenya major increase in potential, Tanzania major decrease in output)
- Most of the developing countries likely to experience reduced output are also least capable of Adaptation because of low: incomes, capital, technology, skills, institutions, government reach

*No necessary relationship between a country's increased potential output, and an actual increase in output.*

*Cannot assume that global potential surplus will translate into greater ability of poor people in poor countries to buy it.*

- Food Security has not been achieved for nearly 800 million people at present (FAO estimate of undernourished population in world)
  - Is it any more likely that because of CC there will be an improvement?
- Need to understand factors that prevent current global output from meeting local nutritional needs, and assess what happens under CC
- Will international action on CC lead to greater efforts in food security to match output with need? New instruments for fairer distribution?

*Problem is that the Food Security model points us in the wrong direction: it is not helpful to seek to match aggregate output to need (and rely on trade and aid to clear the market and provide a safety net). We need to understand what prevents people from getting to eat food – why some cannot grow enough or buy enough.*

- We need to shift away from the emphasis on aggregate production and output and understand actual household production and local livelihoods and issues of *Exchange*
- This requires understanding power and distribution of income and assets within Food Systems:  
the main determinants of how food is produced and consumed are income differentials and asset distributions

The Food System is a sub-set of agriculture. We cannot understand Food Security except in wider context of global agricultural economy

Agriculture sector contains 5 sub-sectors:

1. Staples (mainly grains, root and tuber crops)
2. Non-staple nutritional foods (mainly oilseeds, soya, pulses, meat, fruit, vegetables)
3. Staples not consumed as staples (used in animal feed, brewing, distilling)
4. Industrial crops and other raw materials and consumer crops (fibres, construction materials, paper, rubber, flowers, tobacco and other drugs)
5. Non-nutritional 'foodstuffs' (beverages, sugar).

What are the factors that determine the balance of production between crops in these five sub-sectors at various levels (from global to local)?

What differences is CC likely to make?

## **An alternative Food Systems approach: from Food Security to Entitlements Security**

- This approach allows us to analyse at household and livelihood level what factors prevent people from growing or buying enough food: production but not aggregated so that crucial socio-economic information is lost
- Emphasis can be put on *exchange* as well as production: trade, prices, power of different actors, international processes. These may be more significant than aggregate production in determining peoples' access to nutrition

## **Food System: four components**

### **Production**

(land, water, livestock, tools, labour, capital or credit, other inputs)

### **Exchange**

(transfers and transactions, income streams, rents, taxes, interest)

### **Distribution**

(transport, delivery, storage, distribution, strategic issues)

### **Consumption**

(household shares, budget allocations, gender issues)

*Disruptions and deficiencies in one or more of these is what causes  
hunger*

## **Food systems and Climate Change**

### **Production shifts (well known, easy to project)**

Changes in rainfall and temperature regimes, changes in crop potential, pest incidence, hazards etc.

### **Exchange (largely ignored, difficult to know)**

Governs outcome of potential increases; prices, international actors and their behaviour, shifts in production between the 5 sub-sectors, functions of governments re agriculture, international instruments for equalisation or transfers etc.

*Exchange issues will become more significant because the geographical gap between the countries with potential higher outputs and those with rising deficits will be increased: the balancing of output and need will increasingly rely on international trade and international relations, prices, redistribution and aid*

**Distribution (largely overlooked, some issues easy to know, others very difficult)**

Disruption to transport from climate problems and hazards, pests and diseases in storage, damage to storage from climate hazards, increased costs of transport over distance, potential for increased civil unrest and military conflicts

*Distribution issues likely to be of increased significance but key one difficult to predict (especially unrest and conflicts)*

**Consumption (difficult to know and predict, largely ignored)**

Where poverty increases under CC, shifts from better to less nutritious foods, changes in household consumption patterns?