Tradition, Innovation and Fusion: how to produce enough food for the population?

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Current situation: changes in tradition
Enough food is produced globally to feed the planet but even so more than one billion people go to bed hungry every night. Famine is a leading cause of death, killing more people than AIDS, tuberculosis and malaria combined.

A child dies of famine every 6 seconds
(U.N. World Food Program - WFP)

PARADIGM:
A quarter of children in developing countries is underweight (WFP)

Myanmar, picture made in January 2010
3 countries: Are we in the same world?

The answer is NO

Let us consider what is happening with the population....
World population

Developed vs. Developing

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Constraints – Population and Land

... AND WE WILL HAVE TO INCREASE THE PRODUCTION WITH LESS LAND ...

Population

Agricultural land per inhabitant

1960

1980

2005

2025

3.0 mds

4.4 mds

6.5 mds

7.9 mds

4300 m²

3000 m²

2200 m²

1900 m²
... even if he growth rates decline ...

Let us consider what is happening with food production....
World and European context

- An ever-increasing demand for all crops
  (population and new development opportunities...)
  - Stocks of food are decreasing
  - A European market of 455 million consumers
  - Climate change will affect crop production
  - World and European crop land are not expendable
  - Use of Crop Protection Products is unavoidable
  - Seed improvement and new varieties are unavoidable
Urbanisation is a key factor in changing consumption patterns, particularly with regard to diets and the increased consumption of animal protein. Urban populations are generally more likely to have a job and access to regular banking and cash flow as indicated in the chart below showing Chinese NDI per capita for urban and rural residents.

**Figure 14: China Per Capita Annual Household Disposable Income**

![Graph showing Chinese NDI per capita for urban and rural residents.](image)

Source: Observatori: Centre d’Estudis Australians, Australian Studies Centre, Universitat de Barcelona

In Yuan per home; this means urban areas are attractive...

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**Price Index**

**Annual variation**

**FAO Food Price Index**

**Food Commodity Price Indices**

![Graphs showing annual variation of FAO Food Price Index and Food Commodity Price Indices.](image)

BUT....
Impact for consumers is critical ... but varies according to their income situation

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*These are illustrative food budgets that characterize the situations for consumers in high- and low-income countries.

Sources: As compiled by EMF.

Staples = Basic food: rice, maize, sugar, soybeans...
Innovation: Food for all

Food Crisis?

- Reduced stocks of food worldwide
- Climate: unpredictable changes, loss of yield
- Changes in population consumption: more meat by urban population
- World population spiraling toward 9 billion in 2050... we need to double food production by 2030
- Bio-fuel demand: affects food production?
Main issues

• We can increase productivity in some geographical areas, BUT how to provide food everywhere?
• How to reduce the cost of transportation of food in developed countries?
• How to replace fossil energies to produce food?

Typical meal in the West:
Beef from USA, Argentina or EU; juice from China; grapes from Chile; olive oil from Spain; butter from The Netherlands etc. This means transport, transformation, energy and so on.
There is not a unique global solution, probably a very creative effort has to be made worldwide to meet the challenge of feeding the entire world population.

Fusion of tradition and innovation the action we have to take to save our hot, crowded and hungry world.
Fusion means joining what we know to what we have to learn....

Innovation is evolution – not destruction – of the traditions...

The solution is in our hands

Francesc Llauradó i Duran was born in Barcelona in 1956. He holds a PhD in Soil Science by the University of Strasbourg (1983) and an MBA in Food Product Marketing (1987). He has worked in South America, France, Switzerland and Italy in the seed and agrochemical industry. He is currently the Managing Director of Nufarm Agrochemical Company in Spain.