

ACERCA ECONOMIA CIRCULAR EXEMPLOS OPORTUNIDADES RECURSOS EVENTOS


**eco.nomia**

Missão: dinamizar a economia circular

**Peder Jensen**

IRP - UNEP

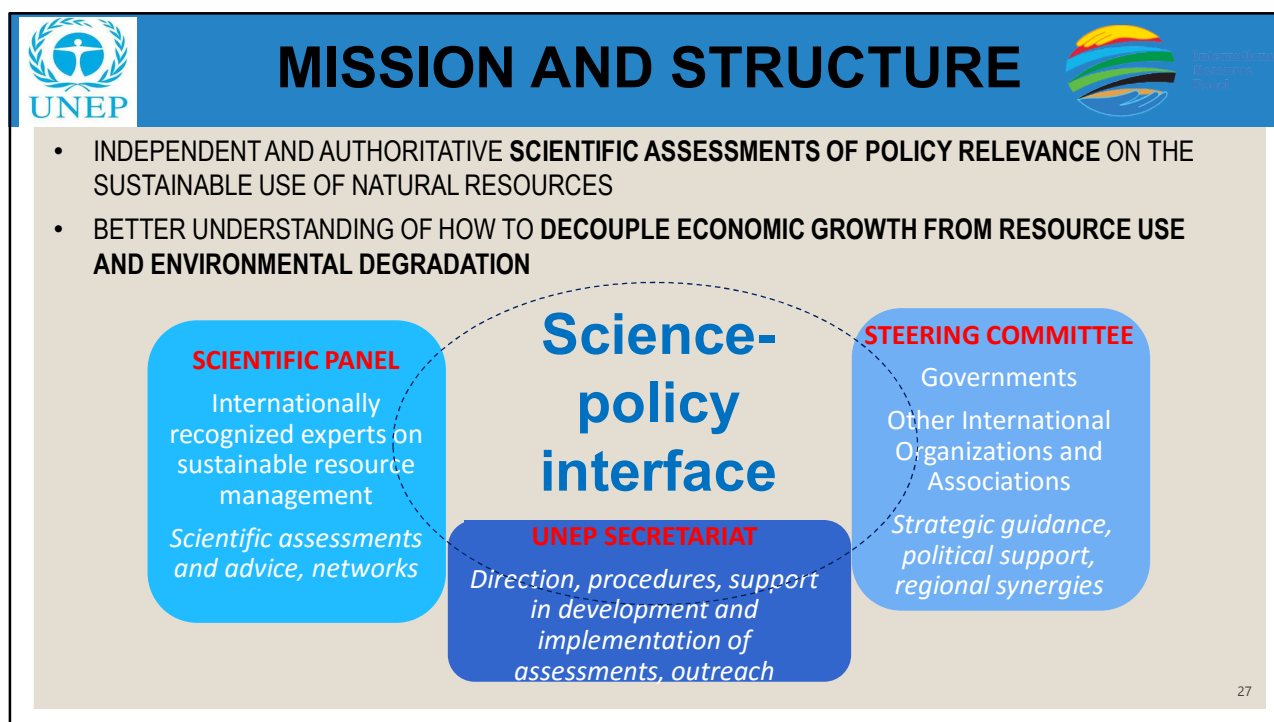
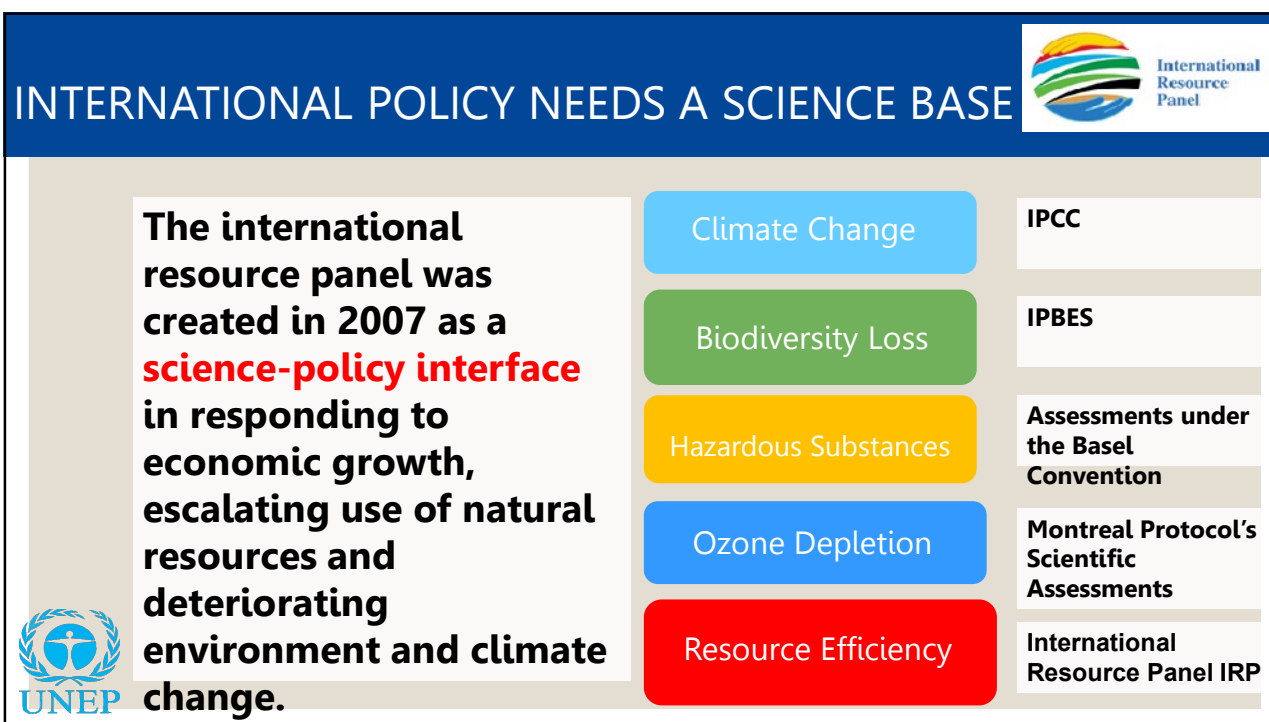
**FOOD SYSTEMS AND  
NATURAL RESOURCES**



**June, 21<sup>th</sup> 2017**

**Dr. Peder Jensen**

Head of Secretariat, International Resource Panel (IRP) UN Environment





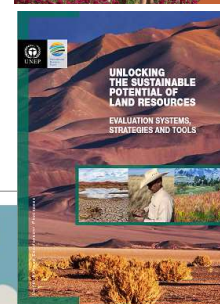
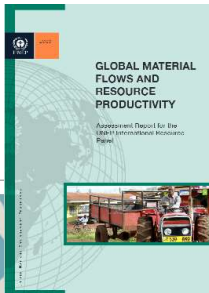
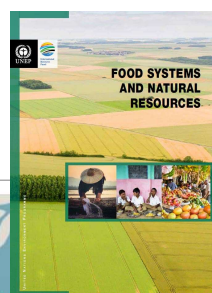
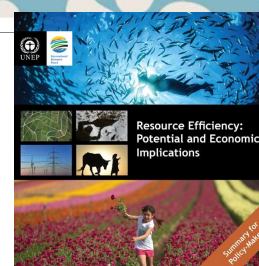
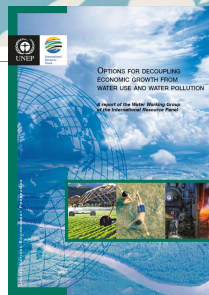
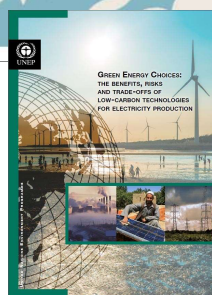
International  
Resource  
Panel

## PUBLISHED REPORTS

Assessing **biofuels**: towards sustainable production and use of resources (2009)  
 Priority products and materials: assessing the environmental impacts of **consumption and production** (2010)  
**Metal stocks** in society: a scientific synthesis (2010)  
**Recycling rates** of metals: A status report (2011)  
**Decoupling** natural resource use and environmental impacts from economic growth (2011)  
 Measuring **Water Use** in a Green Economy (2012)  
**City-level Decoupling**: Urban Resource Flows and the Governance of Infrastructure Transitions (2013)  
**Metal Recycling**: Opportunities, Limits, Infrastructure (2013)  
 Environmental Risks and Challenges of Anthropogenic **Metals Flows and Cycles** (2013)  
 Assessing **Global Land Use**: Balancing consumption with sustainable supply (2014)  
**Decoupling**: Technological Opportunities and Policy Options (2014)  
**Managing** and Conserving the **Natural Resource Base** for Sustained Economic and Social Development (2014)  
 Policy Coherence of the **SDGs** – A Natural Resource Perspective (2015)  
**International Trade** in Resources: A biophysical assessment (2015)  
 10 Key Messages on **Climate Change** (2015)  
**Green Energy Choices**: The Benefits, Risks and Trade-offs of Low Carbon Technologies for Electricity Production  
 Options for **Decoupling** Economic Growth from **Water Use** and Water Pollution (2016)  
 Rapid Assessment on **Global resource efficiency** prospects and economic implications (2016)  
**Food Systems** and natural resources (2016)  
**Global Material Flows** and Resource Productivity (2016)  
 Unlocking the Sustainable Potential of **Land Resources** (2016)



## RECENT REPORTS ...



*Lunch for...*

7,2 Billion  
People

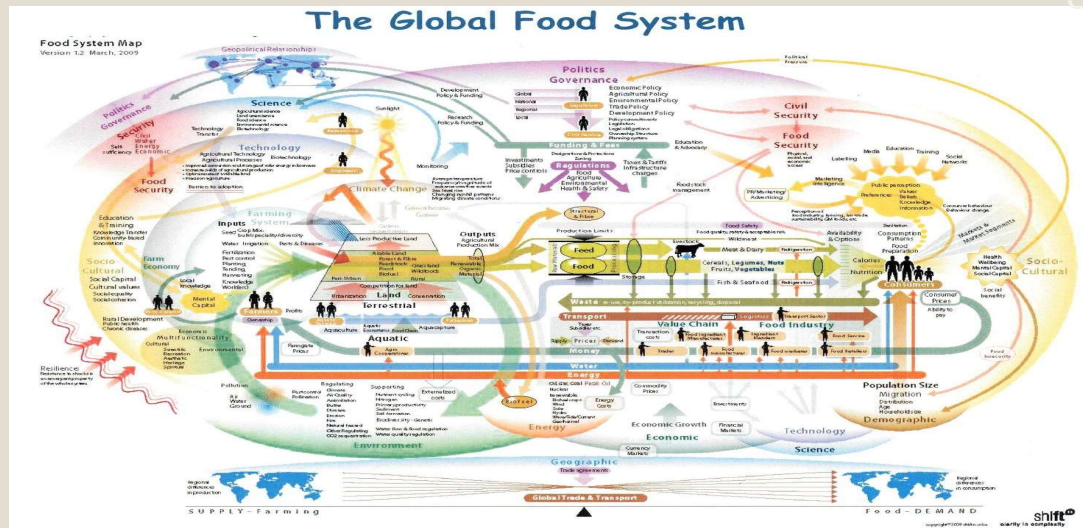


## What is a Food System?



"A food system gathers all the elements (environment, people, inputs, processes, infrastructures, markets, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food and the outputs of these activities, including socio-economic and environmental outcomes".

# Complex, changing, diverse



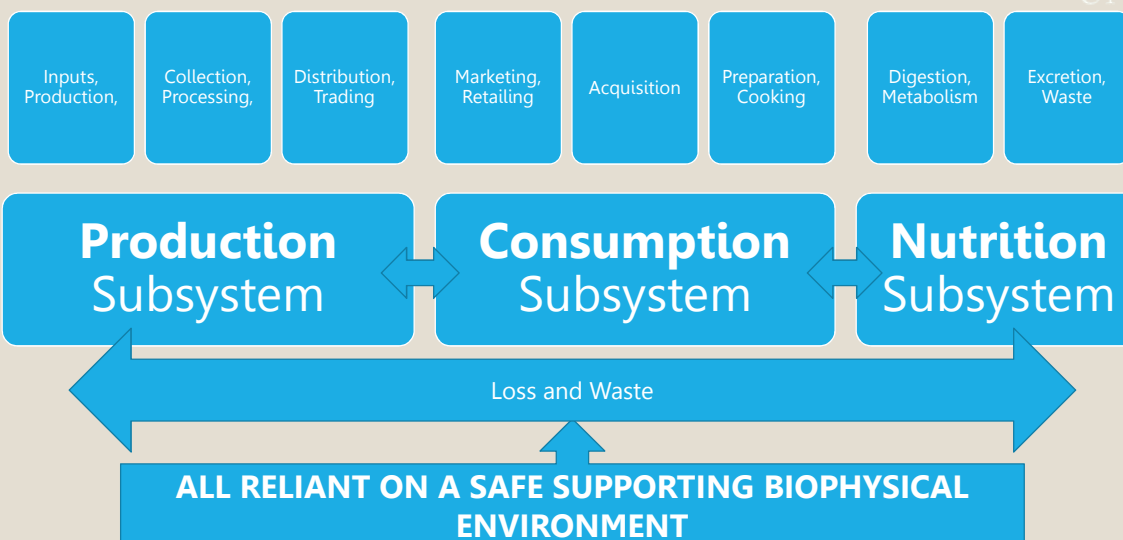
*Food is a  
central part  
of all our  
societies.*



*Everybody needs to eat*



## Elements of a food system



## Biodiversity

**Only 12 plant crops & 14 animal species provide 98 % of the world's food needs. Wheat, maize and rice represents more than 50% of energy intake.**

A DIVERSE DIET RICH IN VITAMINS AND MINERALS IS ESSENTIAL FOR HEALTHY GROWTH

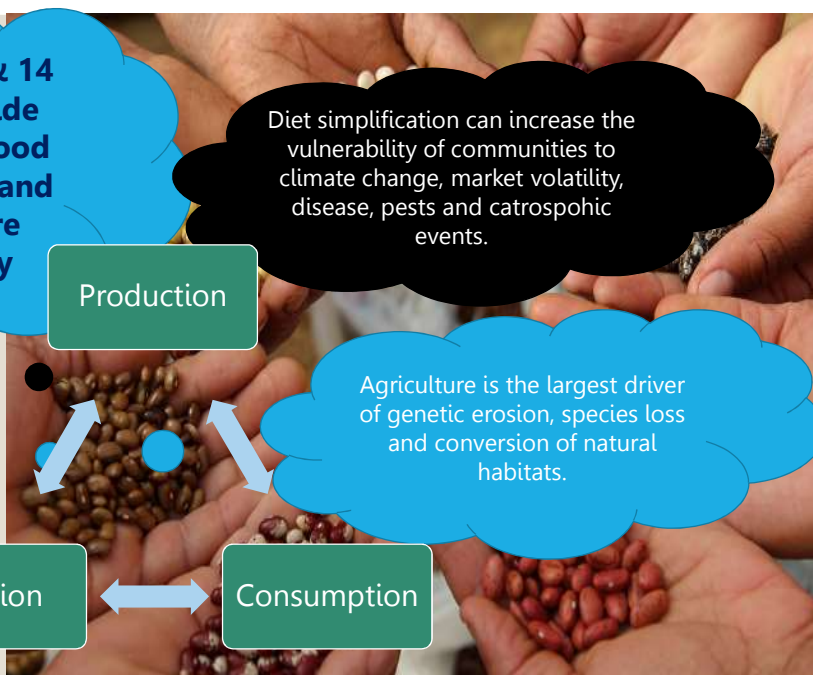
Diet simplification can increase the vulnerability of communities to climate change, market volatility, disease, pests and catastrophic events.

Agriculture is the largest driver of genetic erosion, species loss and conversion of natural habitats.

Production

Nutrition

Consumption



Our food systems are not sustainable...



**500 million people suffer from obesity**



But lets look at a snapshot of what else is happening **in just 1 day...**

\$ 201,263,333	money spent <b>due to obesity</b> related diseases in the USA <b>today</b>
\$ 49,732,250	spending on <b>food purchased and then tossed</b> by US households today
\$ 2,312,449	spending on global <b>food aid</b> today



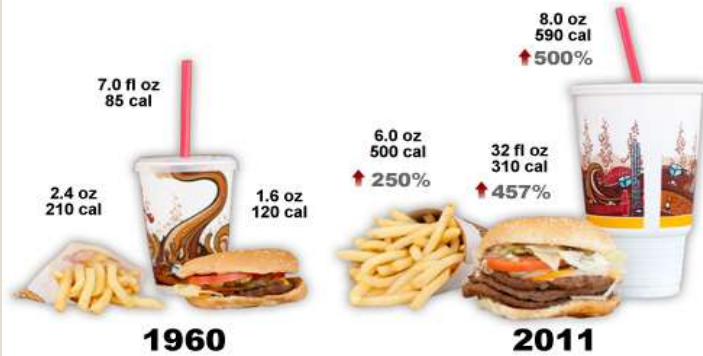
55,684	tons of <b>food wasted</b> in America today
11,601	tons of <b>global food aid</b> provided today





## Portion Sizes—Then and Now

Fast food portions have increased dramatically since 1960. Here's how they stack up, then and now:




Picture taken in front of university in Uruguay

## HOW WE ARE EATING...

## WHAT WE LOSE OR WASTE...



Up to **30%** of food produced is lost or thrown away.



**PLAY FAIR**  
 4 pints ..... £1.18 Retail price  
 ..... 68p Farmers' cost of production  
 ..... 56p Price paid to thousands of farmers for their milk from 1 Aug  
**PAY FAIR**  
 Milk should not be ..... FARMERS

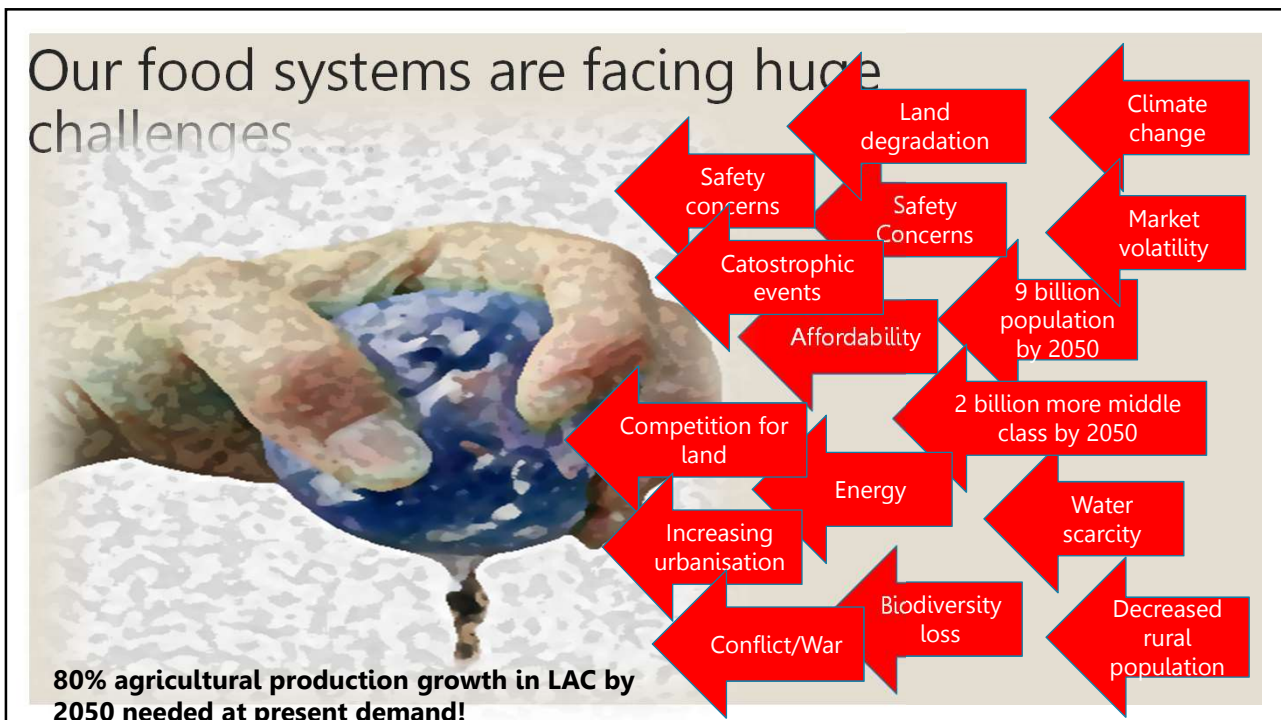
**50%-80%**  
 The poor in the LAC region spend between 50% and 80% of their incomes on food.

In 1975, I received 40¢ for every dollar spent on the food I produced, in 2011, I only received 16¢ of every dollar.

"Buying a family combo of fried chicken, chips and a soft drink can feed me and my three children at a price I can afford,"

**PRODUCERS** **CONSUMERS**

**What are we paying for?**



## Two examples

### ◦ Climate Change

**3°C or more**

rise in temperature by the end of the century, due to doubling of GHG emissions by 2050, under BAU.

Rise in temperatures, changing precipitation rates, unfavorable growing conditions, including severe and unpredictable weather events, along with increasing global population will place severe pressure on our food systems.

### ◦ Growing middle class

**2 to 3  
billion**

additional middle class consumers by 2030

Likely to consume more energy and resource intensive foods.

FAO predicts a 60% increase in demand for meat, milk and eggs by 2050. This will have serious impacts on the food system and the environment. And it puts pressure on land, water, biodiversity, energy resources and also adds to the problem of



## WE NEED TO TRANSFORM OUR FOOD SYSTEMS





This will require  
**SYSTEMS  
THINKING**

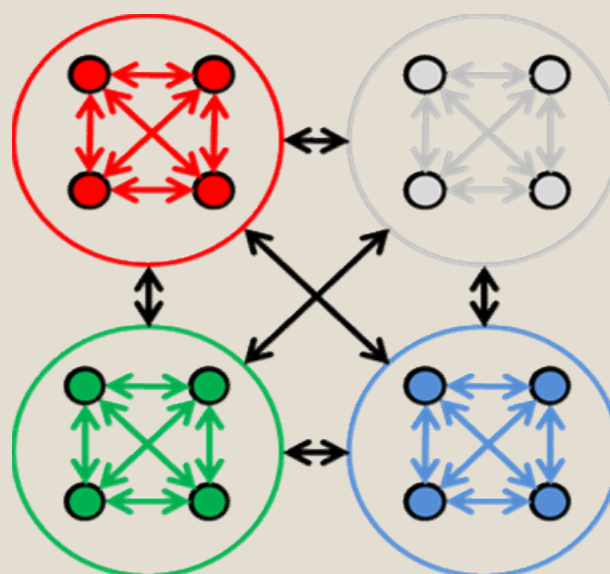


It will require

farmers  
 Civil society organisations  
 marketers  
 MULTI-  
 Urban & rural planners  
 STAKEHOLDER  
 teachers  
 PARTICIPATION  
 retailers  
 Governments  
 Processors  
 transporters and trade officials  
 Health workers  
 transporters

Multi-stakeholder participation will encourage...

## INTER-CONNECTED POLICY-



### Twelve critical shifts towards environmentally-sustainable food systems

1. **Reduce food loss** and waste.
2. **Reorient away from resource-intensive products** such as meat, 'empty calories' and ultra-processed food; and rethink the 'food environment' (the physical and social surroundings that influence what people eat, especially relevant in urban areas) to facilitate consumers adopting more healthy and sustainable diets.
3. **Reframe thinking by promoting 'resource-smart food systems'** in which 'Climate-Smart Agriculture' (CSA) plays one part, and search for linkages to new dominant values such as 'wellbeing' and 'health'.
4. **Reconnect rural and urban**, especially in developing regions, where urban actors (e.g. supermarkets) could invest in regional supply chains and improve the position of smallholders.
5. **Revalue the pricing of environmental externalities**, reinforce legislation to prevent pollution and other forms of environmental degradation and remove subsidies that provide disincentives for better resource efficiency.
6. **Reconnect urban consumers with how their food is produced** and how it reaches their plates, and inform them about both the health and environmental consequences of dietary choices, protect peri-urban zones around cities and use them for local food production.



## Twelve critical shifts towards environmentally-sustainable food systems

7. **Research the current functioning of the local, national or regional food systems** and their impact on national resources.
8. **Reconnect mineral flows between urban areas and rural areas**, as well as between crop and livestock production.
9. **Reform policies on land and water rights**, develop and implement policies at all levels of governments (multilateral, national and local) to enable better resource management and encourage synergistic 'adaptive governance' by the wide range of non-state actors (i.e. businesses and civil society) within the food system.
10. **Reinvigorate investment in rural infrastructure**, education, training, technology, knowledge transfer and payments of environmental services.
11. **Research and innovate, to decouple food production from resource use** and environmental impacts, and to replace certain inputs (such as pesticides) with ecosystem services.
12. **Rebuild feedback loops by functional and informative monitoring and reporting**, at various levels, such as countries, cities and companies.

" In this plate of food, I  
see the entire universe  
supporting my existence."

A Zen Proverb

