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# **Towards a system of environmental economic accounting for agriculture and rural development**

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# Agriculture at the centre of sustainable development

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- 17<sup>th</sup> Session of the Commission on Sustainable Development, May 2009, UN Headquarters, New York policy and analytical framework
- While agricultural production is renewable, unlike all other activities, the **production process can affect the future climate, the environment, and its future sustainability.**
- The climate and the **environment** in which agriculture takes place have a **great impact on the availability of inputs, technology used, and resulting outputs from the production process.**

# Agriculture's effect on the environment

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## NEGATIVE

- largest user of water (70% worldwide; up to 90% in developing countries)
- cause of agro chemical pollution
- cause of soil degradation (intensity of cultivation of marginal and erodible land)
- large contributor to greenhouse gas emissions (esp. through deforestation, rice production, the raising of livestock, etc.)
- exploiting natural resources & reducing biodiversity (e.g. fisheries)
- spread of animal diseases
- .....
- **This impact is much higher in developing countries where agriculture is still the major component of employment and GDP**

# Agriculture's effect on the environment

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## POSITIVE

- carbon sequestration
- managing watersheds
- preserving biodiversity
- providing feed stock for bio fuel production
- amenity function
- ...

# Effect of global warming on Agriculture

- **Climate change** will increase the incidence of **poverty, hunger and malnutrition**. It will worsen the living conditions of farmers, fishers and forest-dependent people who are already vulnerable and food insecure.
- Risk of increased **crop failure** due to droughts,
- **New pests and diseases** that flourish only at specific temperatures and humidity
- **Loss of livestock**, and **reduced availability of marine, aquaculture and forest products**.
- More frequent and more intense **extreme weather events** will have adverse impacts on **food availability and accessibility**, as well as on **livelihood assets** and opportunities.
- Poor people will be at risk of food insecurity due to loss of assets and lack of adequate insurance coverage.

# SEEA for Agriculture and Rural Development

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- Multi-purpose statistical framework about the interrelationships between the economy, environment and society for agriculture.
- Point of departure: A System of Economic Accounts for Food and Agriculture (SEAFA), published in 1996 by FAO
- Extend SEAFA to broaden the policy relevance to additional questions of sustainable production, consumption and accumulation (SEEA).

# SEA Food & Agriculture

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- 3 types of accounts:
  - Part I: production and primary income accounts for the agricultural household sector and their capital formation
  - Part II: production and generation of income accounts for all establishments, which principal activity is agricultural production, and goods and services accounts for food and agricultural products
  - Part III satellite accounts and supplementary tabulations relating to food and agriculture (including physical food balances)

# SEEA

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- The SEEA allows for the broadening of analysis:
  - physical and hybrid supply and use tables covering flows of products, residuals, natural resources and ecosystem services;
  - physical and monetary asset accounts covering natural resources, land and ecosystems;
  - economic accounts detailing the economic transactions of the public and private sector related to the environment;
  - environmental adjusted aggregates in the institutional sector accounts.



# SEAA for Agriculture and Rural Development: issues covered by physical supply and use tables

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- Food security and nutritional intake available for human consumption through food balances
- Sustainable use of the environmental assets by the agricultural economy through inputs from the environment and the use of the environment as sink from the emissions of pollutants
- Losses in agricultural production, gross waste generation and the treatment and disposal of the solid, liquid and gaseous waste from the agricultural economy.

# SEEA for Agriculture and Rural Development as a hub for satellite accounts

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- SEEA for ARD: Material Flow
- SEEA for ARD: Water
- SEEA for ARD: Energy
  
- and subsequently
  
- SEEA for ARD: Land and Ecosystems for agriculture
- SEEA for ARD: Rural Development

# Way forward: the process

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- On-going international work, coordinated by UNCEEA, under the auspices of the UNSC: SEEA, SEEA Material Flow, SEEA Water and SEEA Energy to be adopted as international standard in 2012
- Greater and more coordinated involvement of FAO in the SEEA revision.
  - Classification of land
  - Classification of forests
  - Carbon sequestration by forest
- FAO to take the lead in the development of the System of Environmental Economic Accounts for Agriculture and Rural Development