Sustainable production and use of biofuels: key drivers

Department of Sugar Cane and Agroenergy

Why BIOFUELS?

- **Environmental gains**
  - carbon sequestration
  - lower emission levels in consumption
- **Renewability**
  - short production cycle
  - man-controlled process
- **Economic aspects**
  - new demand component
  - impacts on trade balance
- **Social aspects**
  - jobs creation
  - income distribution
- **Energy Security**
  - diversification;
  - reduction on imports;


BIOFUELS – ENERGY POINT OF VIEW

Energy security

- diversification of sources
- reduction of external dependence
- renewability

X

Agricultural risks

- climate problems
- plagues and diseases;
- decision making process
- harmonization involving food and fuel production

BIOFUELS – ENVIRONMENTAL POINT OF VIEW

Benefits

- lower emissions of GHG
- sulphur free
- lower emissions of other pollutants
- biodegradable

X

Risks associated to the production

- Increase in demand for arable land
- higher consumption of fertilizers and agrochemicals and water
- higher risks to biodiversity, soil and water

BIOFUELS – AGRICULTURAL POINT OF VIEW

New demand compound

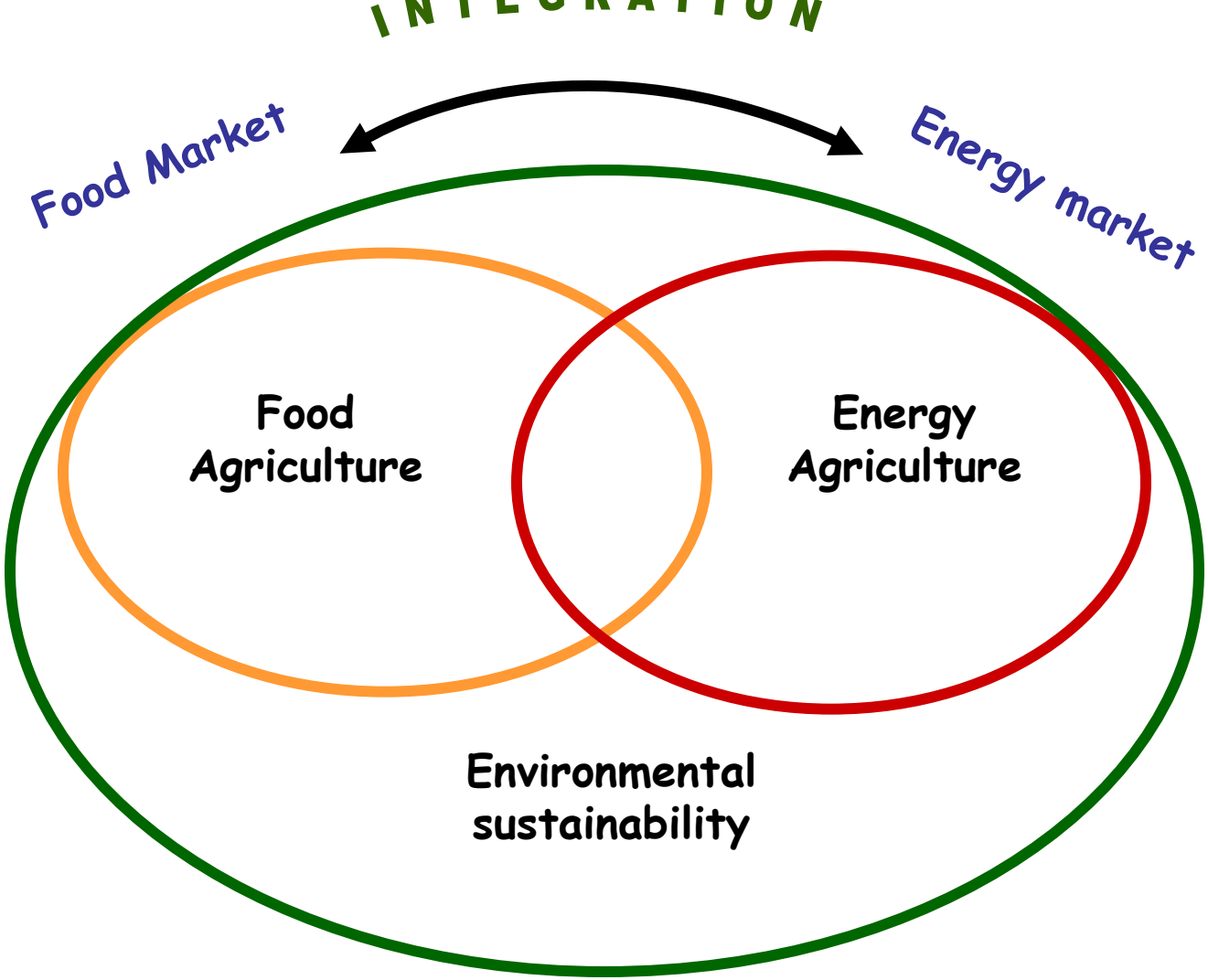
- new business in a increasing market
- higher prices for commodities
- mores investments, including in infrastructure

X

Conflict between economic and social

- Globalization requiring higher scales
- concentration of assets, including land
- inter-temporal unbalances (prices X income)

WORLD CHALLENGE



SOME FUNDAMENTAL ASSUMPTIONS

- **Photosynthesis is still the cheapest way of appropriation of solar energy, especially in tropical countries;**

- **Biofuels industry is still an incipient one;**

- **There are several possibilities associated to 1st generation technologies, which are easily accessible for developing countries;**

- **There is the challenge of reaching appropriate solutions to local needs and to global problems.**

Public policies: some important drivers

- Domestic potential to produce:

- **Availability of land;**
- **Identification of best alternatives (crops);**
- **Integration between farmers and mills;**
- **Technical support (equipments and technical assistance);**
- **Financial support;**

- Domestic potential to consume:

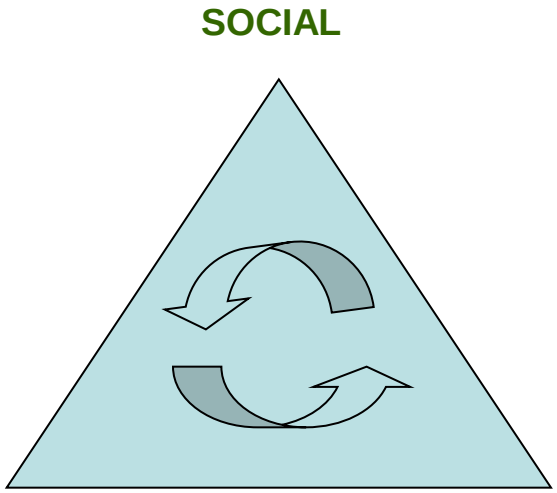
- **Local needs (transport or other uses);**
- **Characteristics of the demand (dimension, geographic distribution, average consumption);**
- **Environmental and social concerns, supported by laws.**

BRAZILIAN STRATREGY FOR AGROENERGY

BRAZILIAN AGROENERGY PLAN:

- BIODIESEL
- ETHANOL
- WASTES OR RESIDUES
- ENERGETIC FORESTS

Brazilian challenge: how to promote sustainable production and use?



Priorities:

- Agro-Ecological Zoning
- Research and Development
- Support to Household Farmers





❖ **BRAZILIAN POLICIES:**

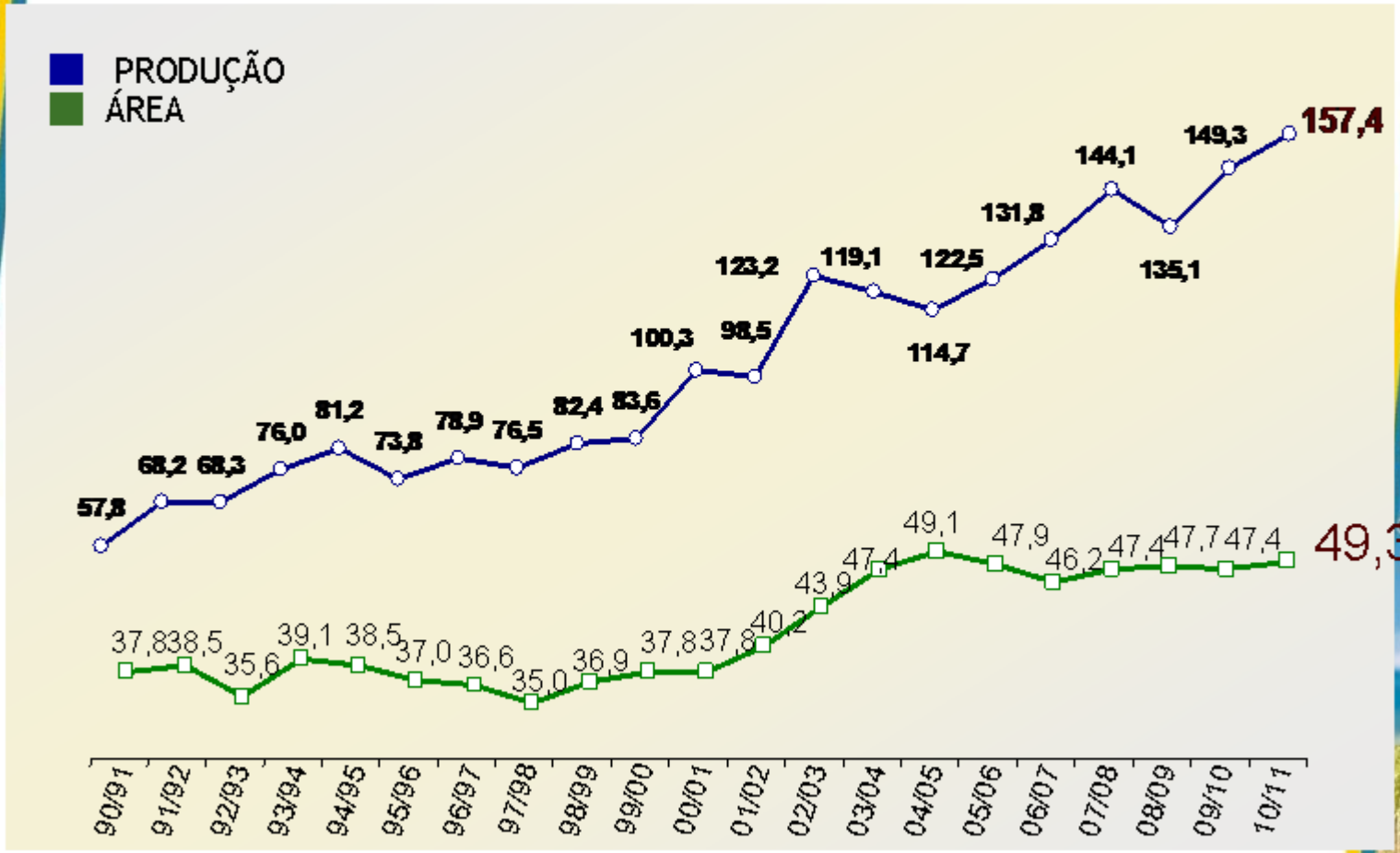
- **First step: the Ecological and Economic Zoning (harmonizing agriculture and environment);**
- **Second step: the Agricultural Zoning (identification of most suitable areas to grow different crops);**
- **Current driver: Agroecological Zoning (the combination of environmental concerns of Ecological Economic Zoning with technical information provided by Agricultural.**





BRAZIL

Evolution of production and planted area
Harvests 1990/91 to 2010/2011



Source: CONAB - Survey: April/2011 – 7° Survey.





❖ CONCLUSIONS:

- Bioenergy must be thought as the combination of needs, challenges and opportunities;
- There are several possibilities (feedstocks, bioenergy products, technologies and alternative uses) to be explored;
- The combination of feasibility studies, with tools such as agroecological zoning is one of the best ways of starting up bioenergy programs;
- Brazil is open to share its experience in these fields.




THANK YOU!

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