

Are we going in the right direction?
IAIA SEA Prague II 2011



SEA for Sustainable Bioenergy Production

IAIA SEA

September 21-23 2011 Prague, Czech Republic



Dr Rocio A Diaz Chavez
Centre for Environmental Policy
Imperial College London
(r.diaz-chavez@imperial.ac.uk)



Imperial College
London

Overview

- Background
- Feedstocks
- Sustainability considerations in Africa
- Putting the pieces together

Drivers for bioenergy

Developed countries : GHG reduction & Energy security

Developing countries

- Energy security
- Rural development
- Market opportunity
- Additional income
- Savings in imports of fossil fuels
- Land use and ownership
- Production systems and feedstocks promoted
- Economies of scale
- Value chains;
- Services and infrastructure needed

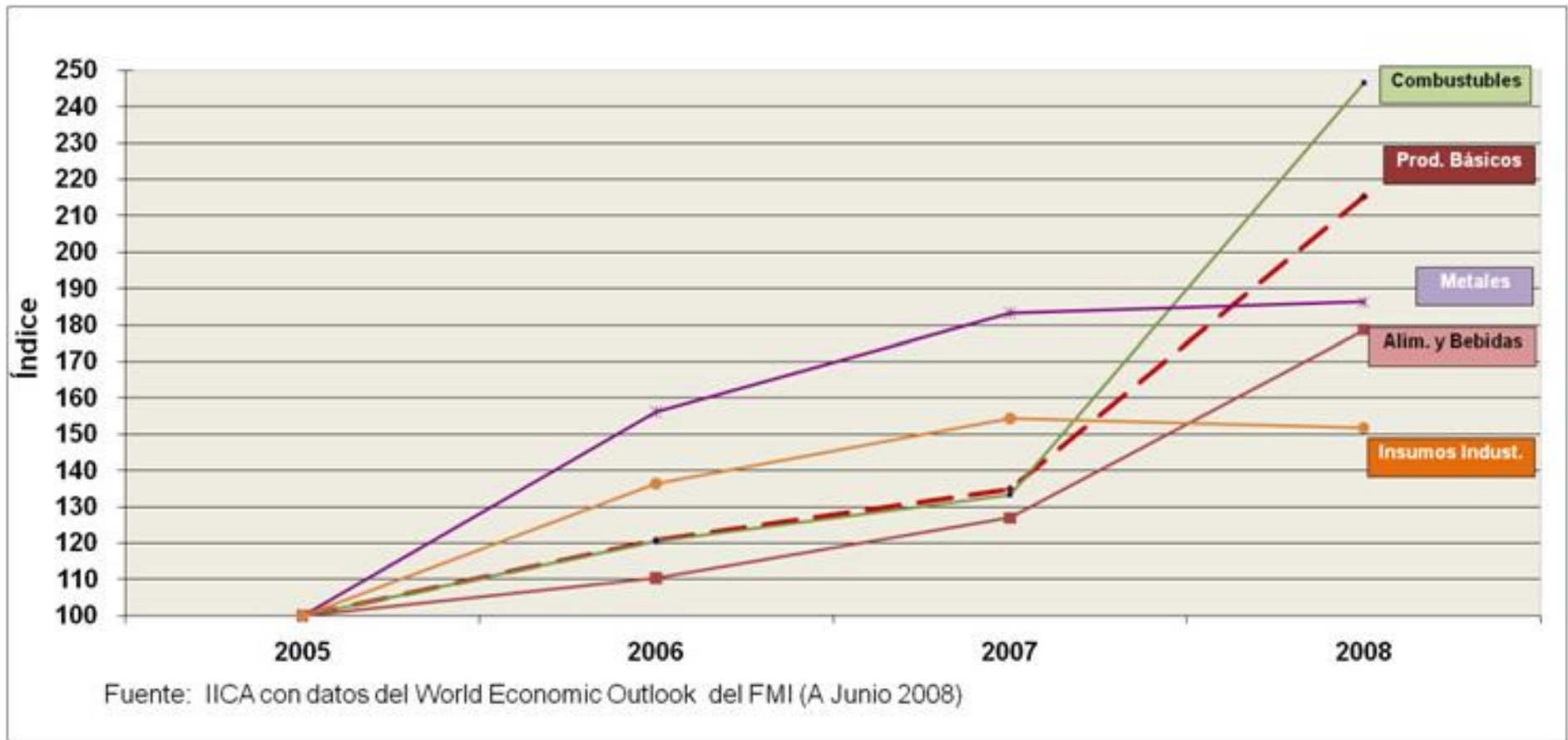
Causes of increased prices of food 2008

(IFPRI, 2009)

1. Increment between production and demand food products;
2. Biofuels production;
3. Low investment in agriculture technology and investment;
4. Market policies ;
5. Low production of crops due to climatic issues;
6. High costs of agriculture inputs and transport;
7. Population growth

Others

- Price of oil



Main crops for producing “first generation” biofuels

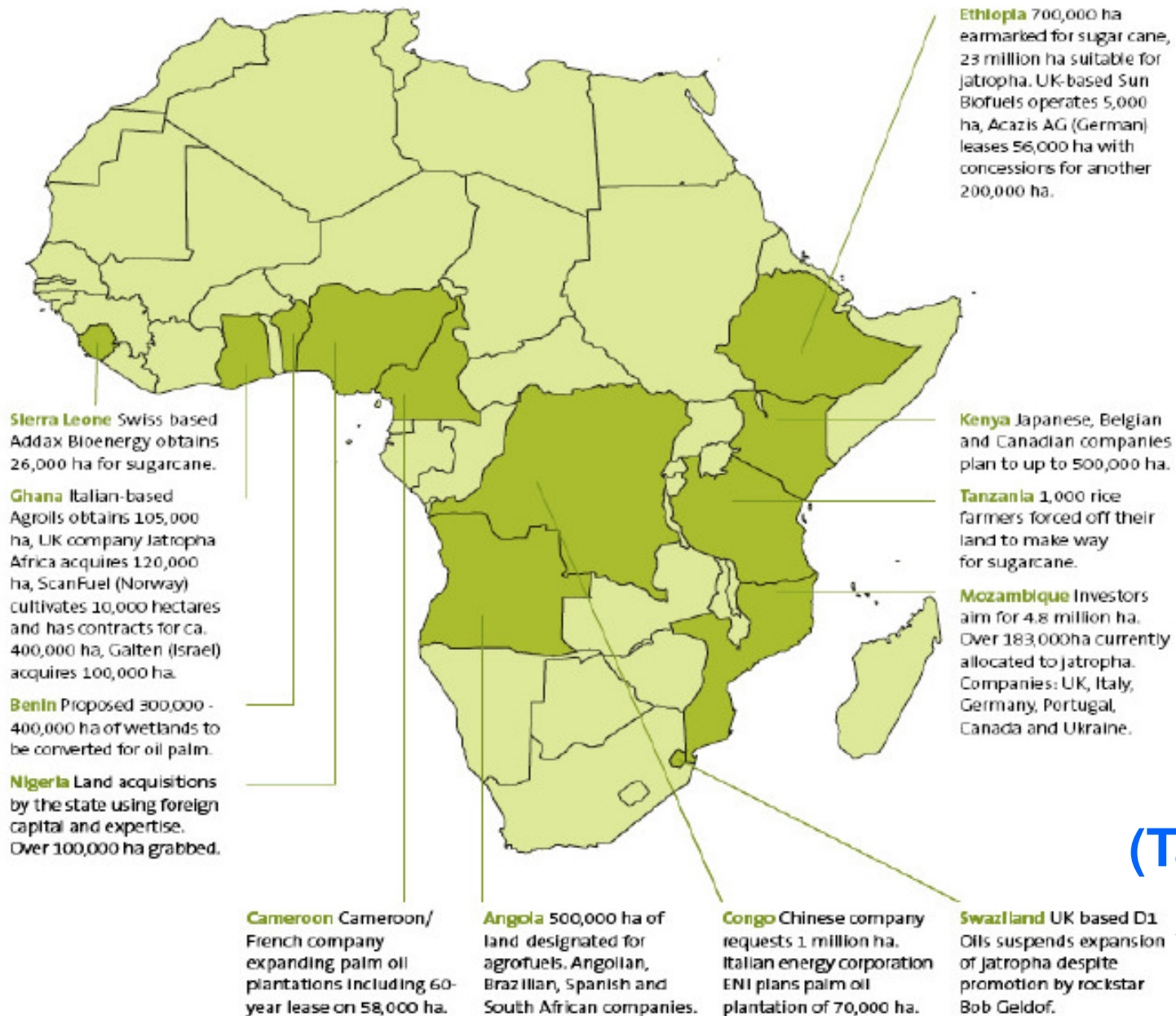
- sugar cane
- sweet sorghum
- cassava
- jatropha
- maize
- soybean
- sunflower
- palm oil
- castor oil
- cotton oil
- peanut oil
- pongamia



Land issues in Africa

- Land tenure (main impacts at local level)
- Land deals :Since 2006, 15m to 20m hectares of farmland in poor countries have been subject to transactions or talks involving foreigners
... in deals worth \$20 billion-\$30 billion (IFPRI, 2009)
- Not all of them have resulted in projects
(Wilson, 2009)

Land grabbing, 2010



(Tatedo).

Lack of investment in agriculture in Africa

1980s:

17% of ODA

30% of World Bank lending

Mid 2000s:

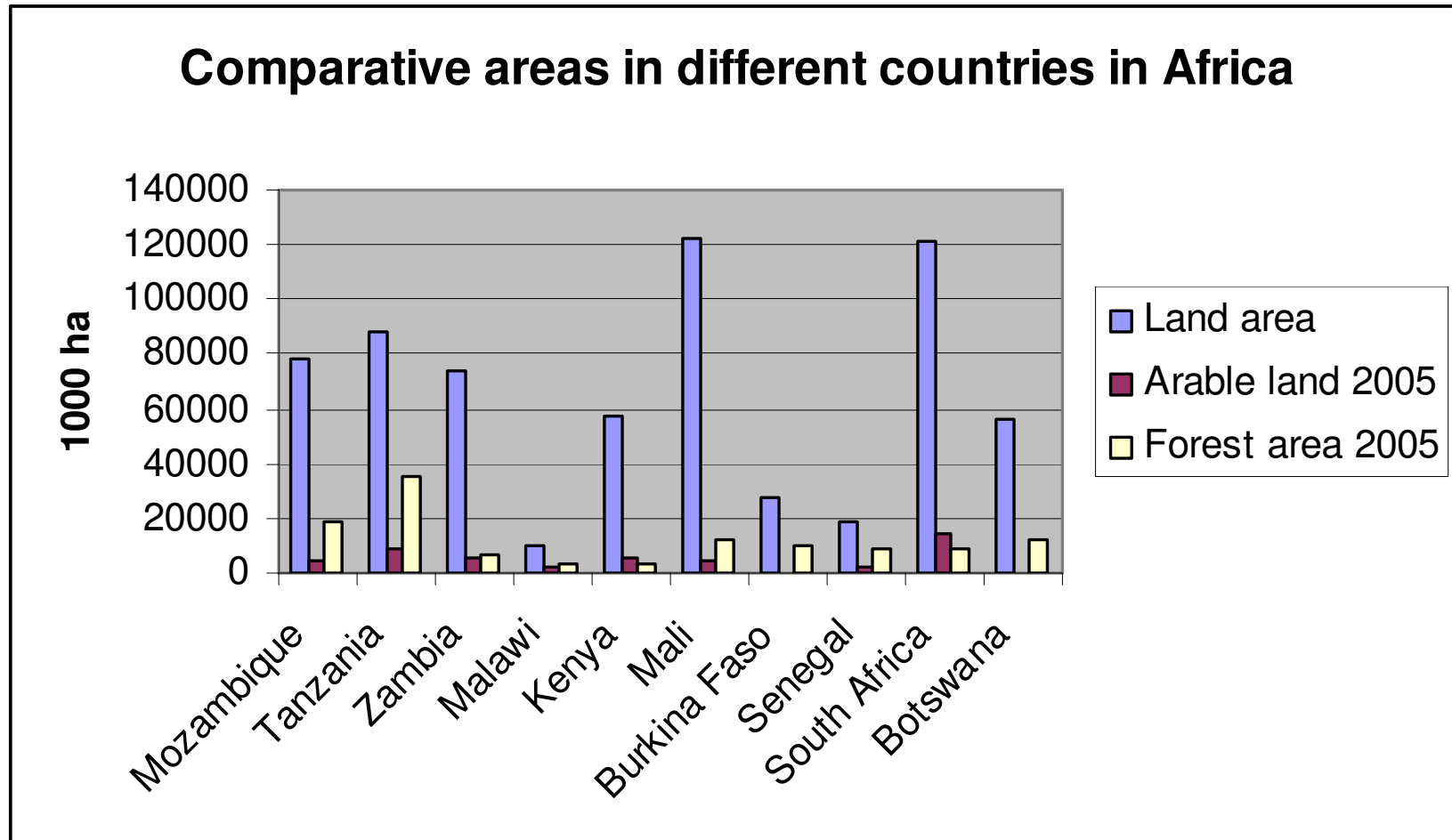
4% of ODA

7% of World Bank lending

(Wilson, 2009)

Kathy Sierra, World Bank, Oct 2009

Land availability

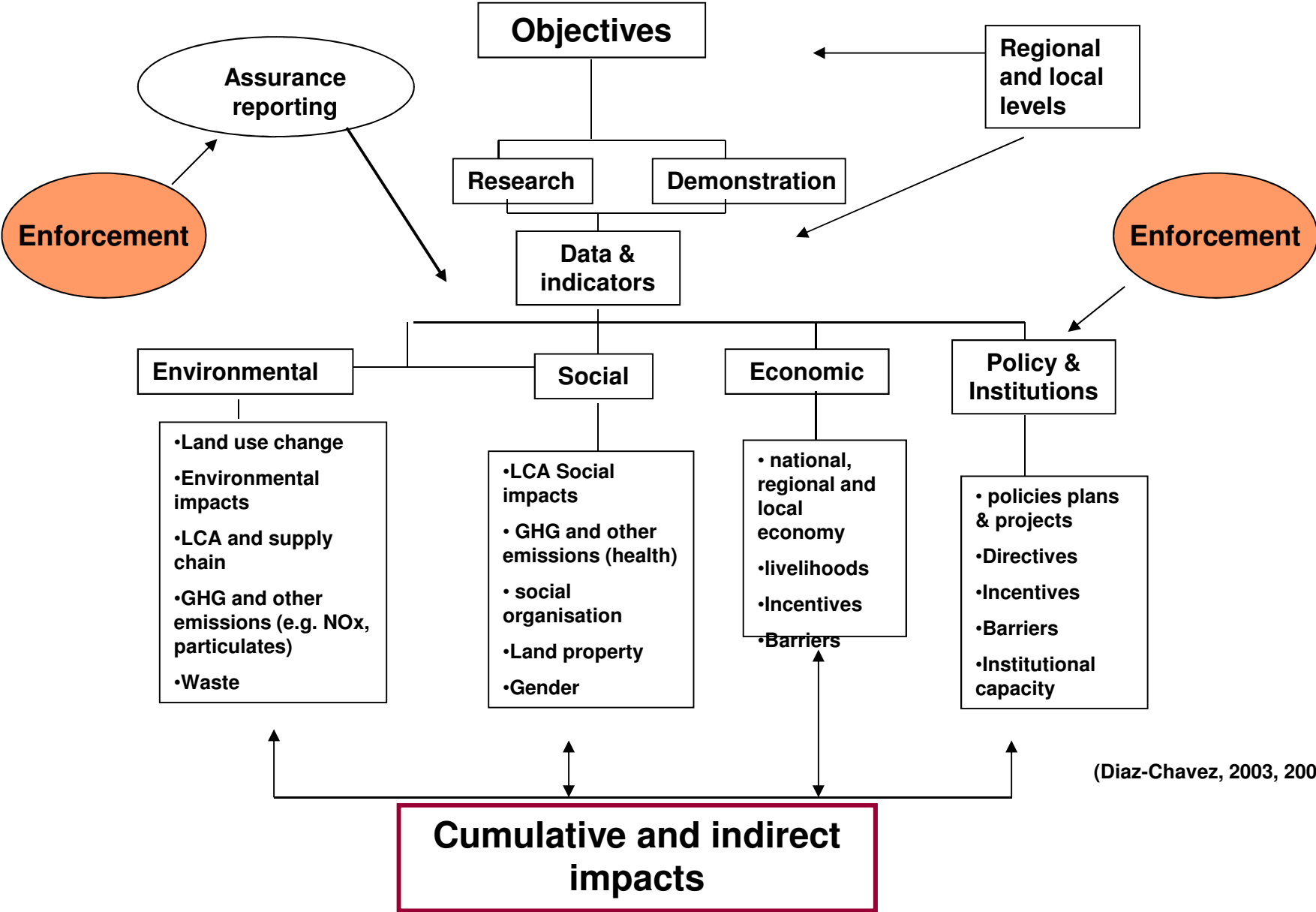


(FAOSTAT, 2009)

RED

- Renewable Energy Directive *on the promotion of energy from renewable sources* (2009/28/EC) sets targets to reduce GHG emissions by 20%, to establish a 20% share for renewable energy, and to improve energy efficiency by 20%, *to be achieved by 2020* (20-20-20).
- set out in Article 17 (2) to (5), soil, water and air protection, the restoration of degraded land, the avoidance of excessive water consumption relevant information”
- **GHG emissions, biodiversity, carbon stocks, soil, air, water, restoration of degraded land, land rights, and labour conditions (ILO) not affect food security conservation areas**

FRAMEWORK



Some initiatives on standards

- Renewable Transport Fuel Obligation (UK) (2006)
- Cramer Report (2006) now NT8081
- Roundtable on Sustainable Palm Oil (RSPO)
- Roundtable on Responsible Soy (RTRS)
- Roundtable on Sustainable Biofuels (RSB)
- Global Bioenergy Partnership (GBEP)
- CEN, ISO
- Others no standards: GBEP

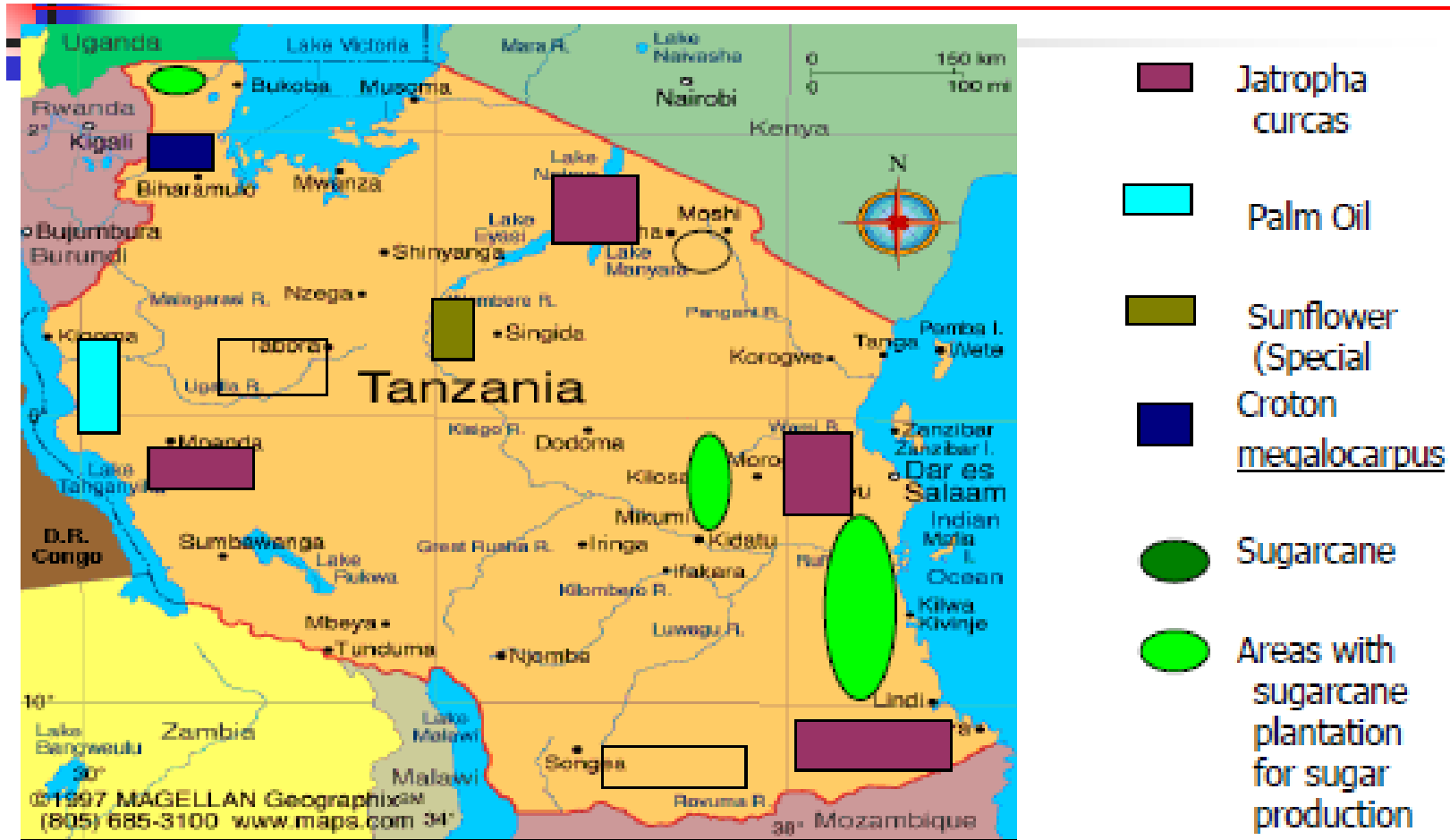
FARA report

1. To look for evidences of food to bioenergy conversion (if any) or early indications of this in the future.
2. To review the role of policies and institutions bioenergy development
3. To identify stakeholders for bioenergy production and their role in this activity.



West Africa: Senegal and Mali
East Africa: Kenya and Tanzania
Southern Africa: Mozambique and Zambia
Review of Ghana

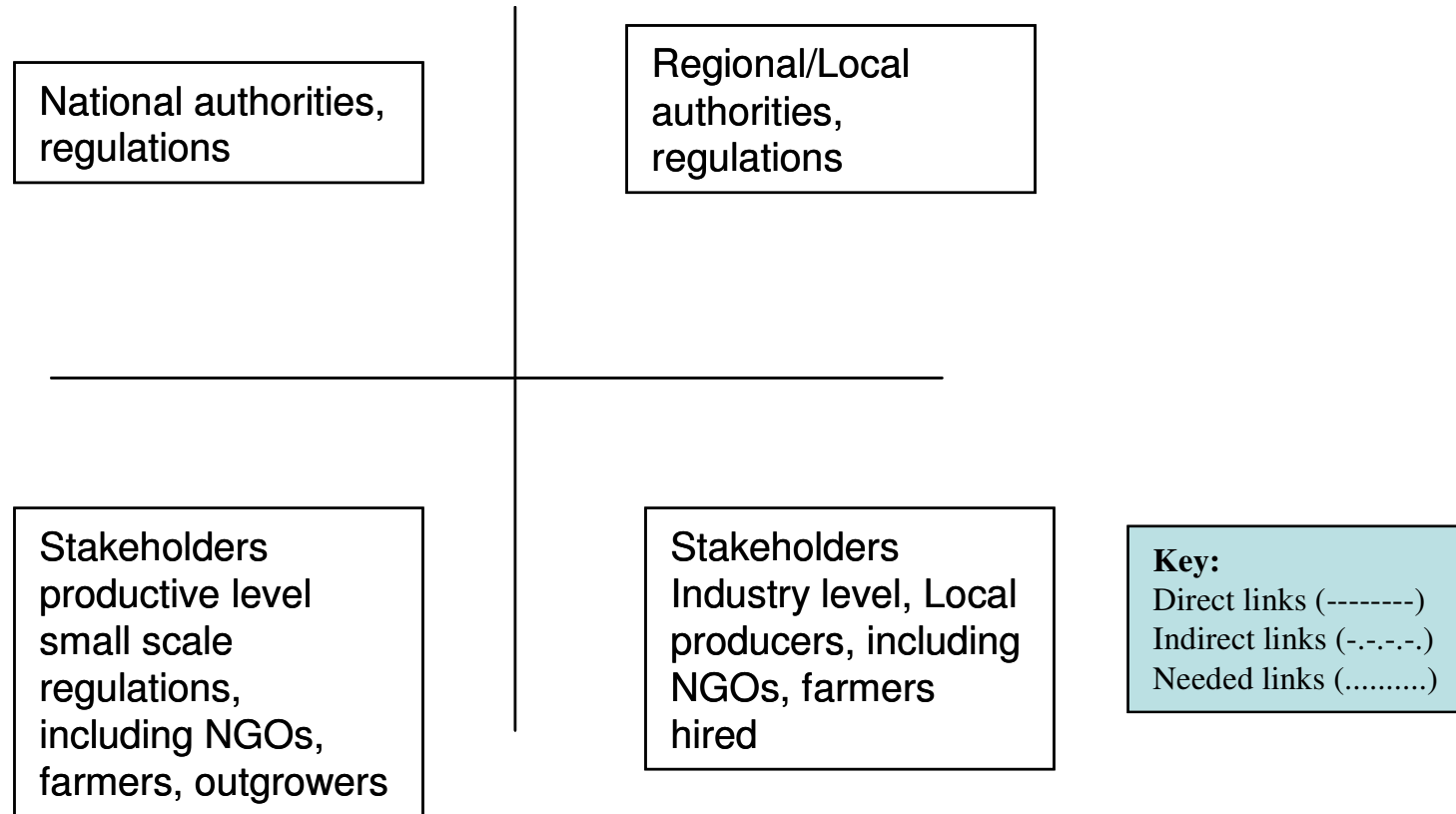
Areas under biofuel development in Tanzania



Kiwele, 2010

London

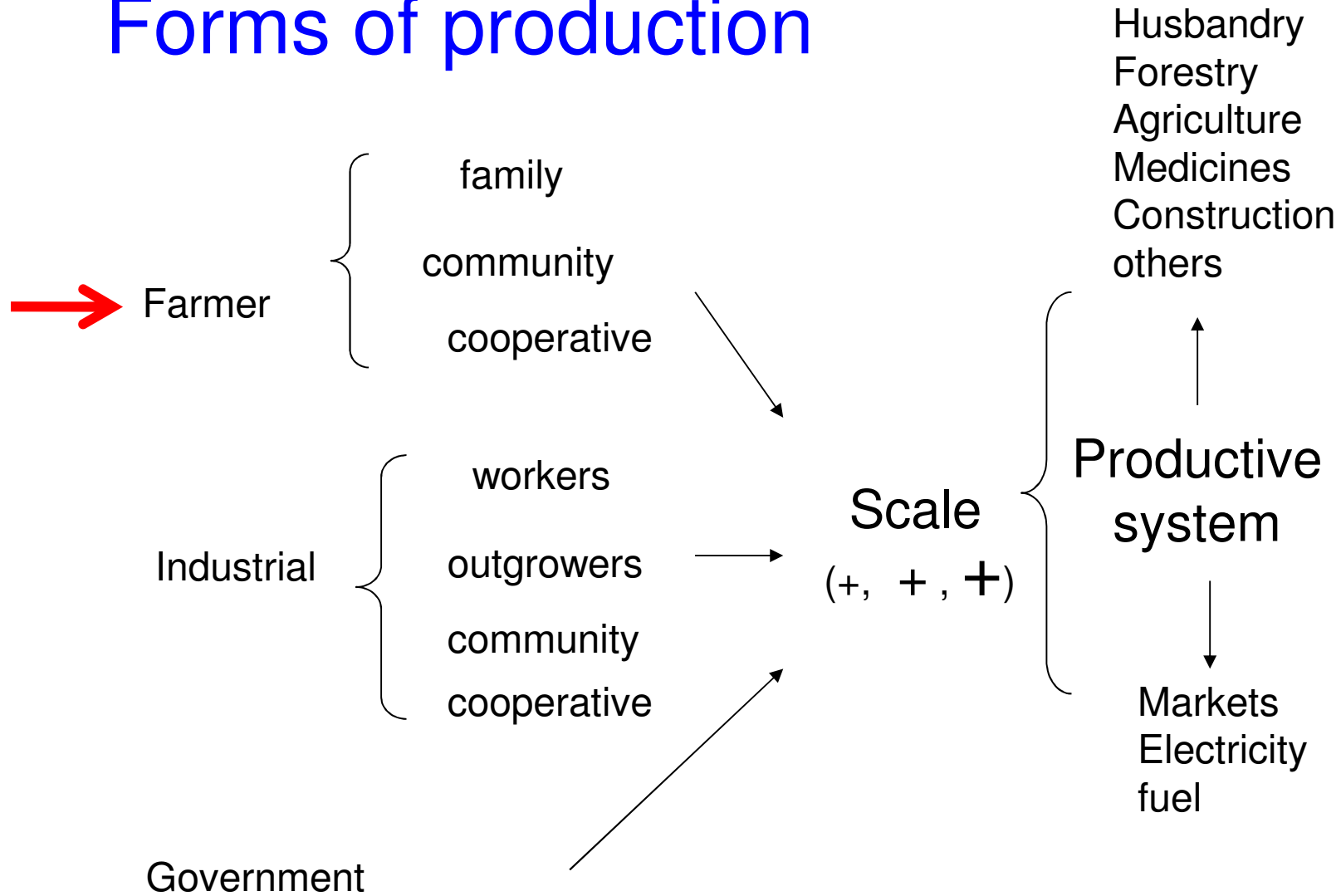
Mapping stakeholders



Policies and institutions

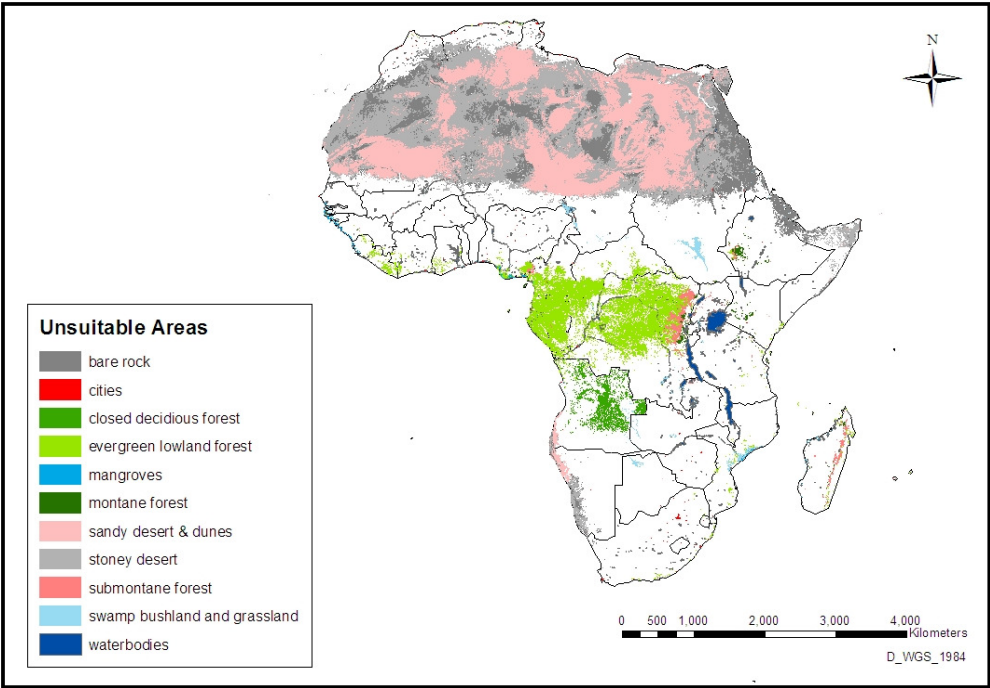
- Regional efforts for policy in Southern Africa through SADC with Probec the *Programme for Basic Energy and Conservation* (ProBEC) with GTZ
- ECOWAS, ECCAS, COMESA
- International aid organisations collaborating with different countries in Africa (GTZ in Mozambique, SIDA Swedish Agency in Tanzania, CIRAD - Centre de Coopération Internationale en Recherche Agronomique pour le Développement- in Burkina Faso)
- South African Biofuel Association
- The Biofuels Association of Zambia
- Energy Strategy Botswana

Forms of production

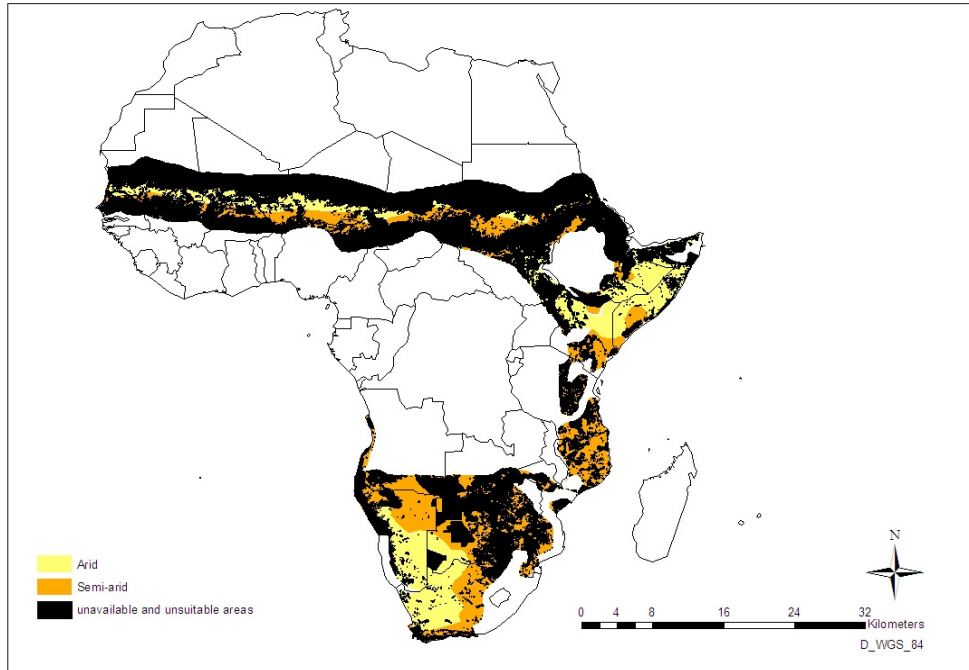


COMPETE

Land covers unsuitable for bioenergy crops in Africa

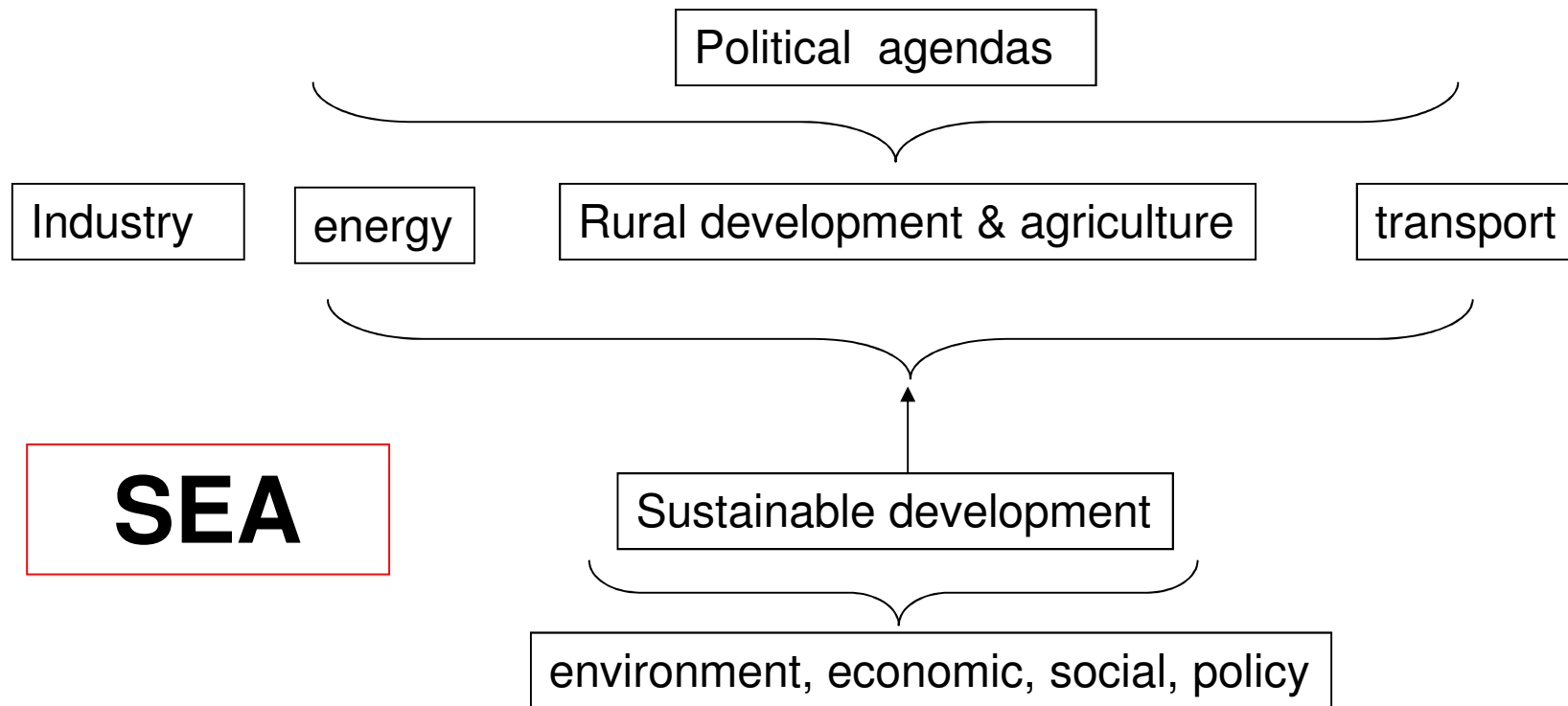


Areas that are unsuitable and /or unavailable for bioenergy crops in sub-Saharan's arid and semi-arid regions

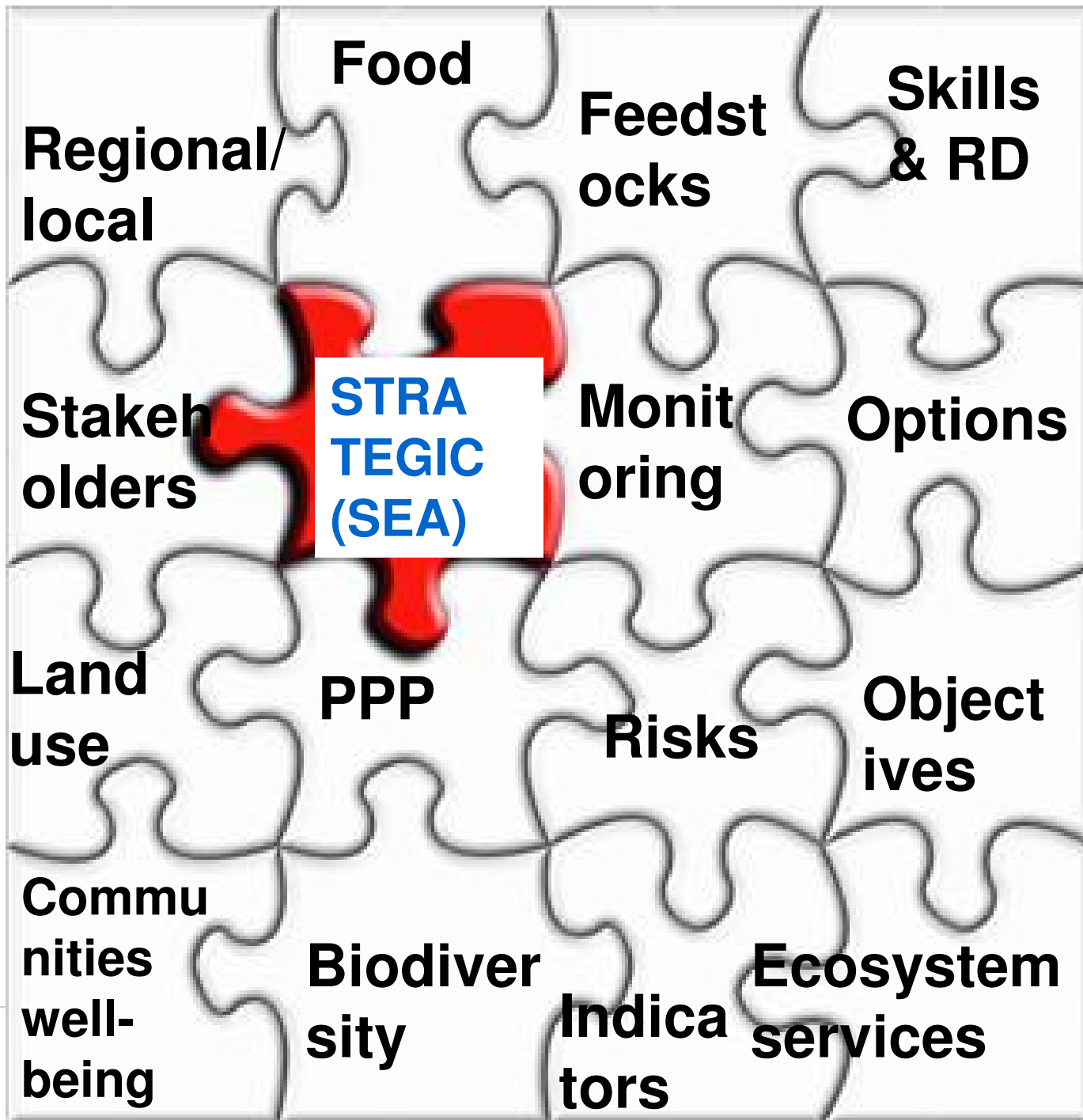


(Watson, 2010)


Links of policies



(Diaz-Chavez, 2006)



Integrating elements

- Individual isolated studies based on sustainability assessment
- SEA elements:
 - triggers, objectives,
 - driver forces
 - stakeholders,
 - data
 - individual plans
- Example of Tanzania  SEA



Thank you



**Imperial College
London**