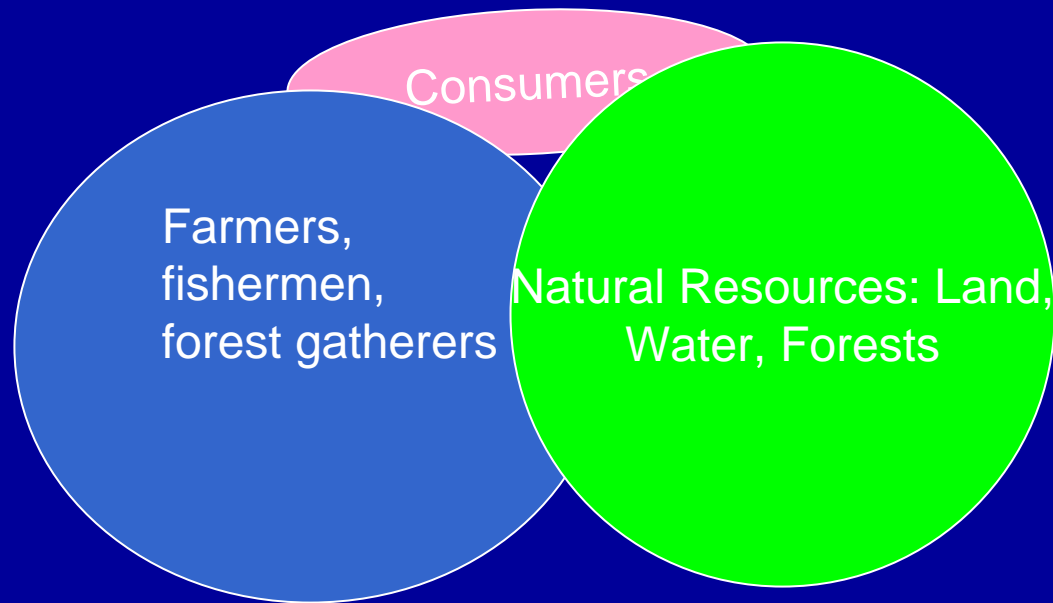


# Partnerships in Agricultural Development

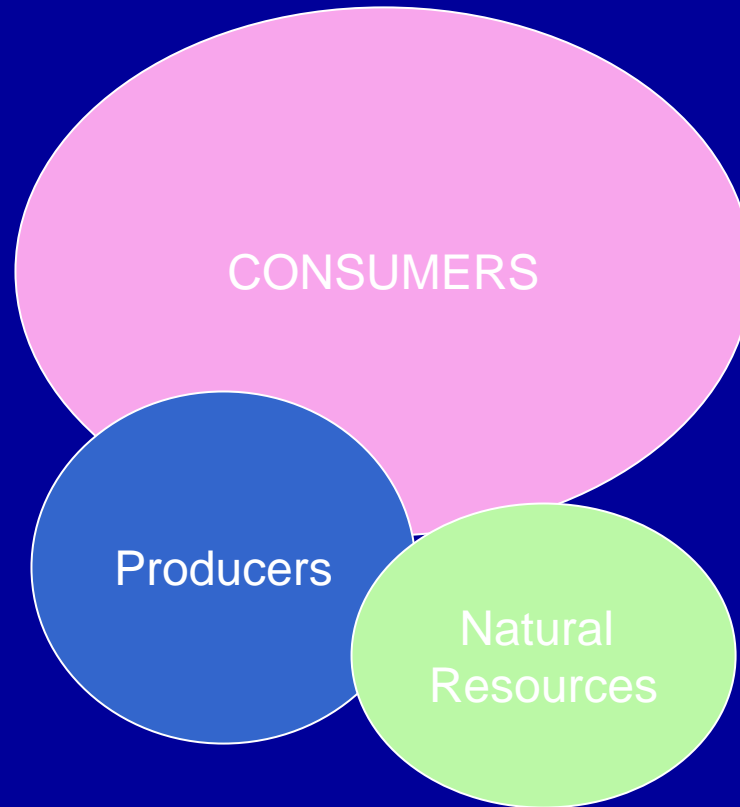
NAS Roundtable on Science and Technology  
for Sustainability

PPPs, Woods Hole, Aug. 2006

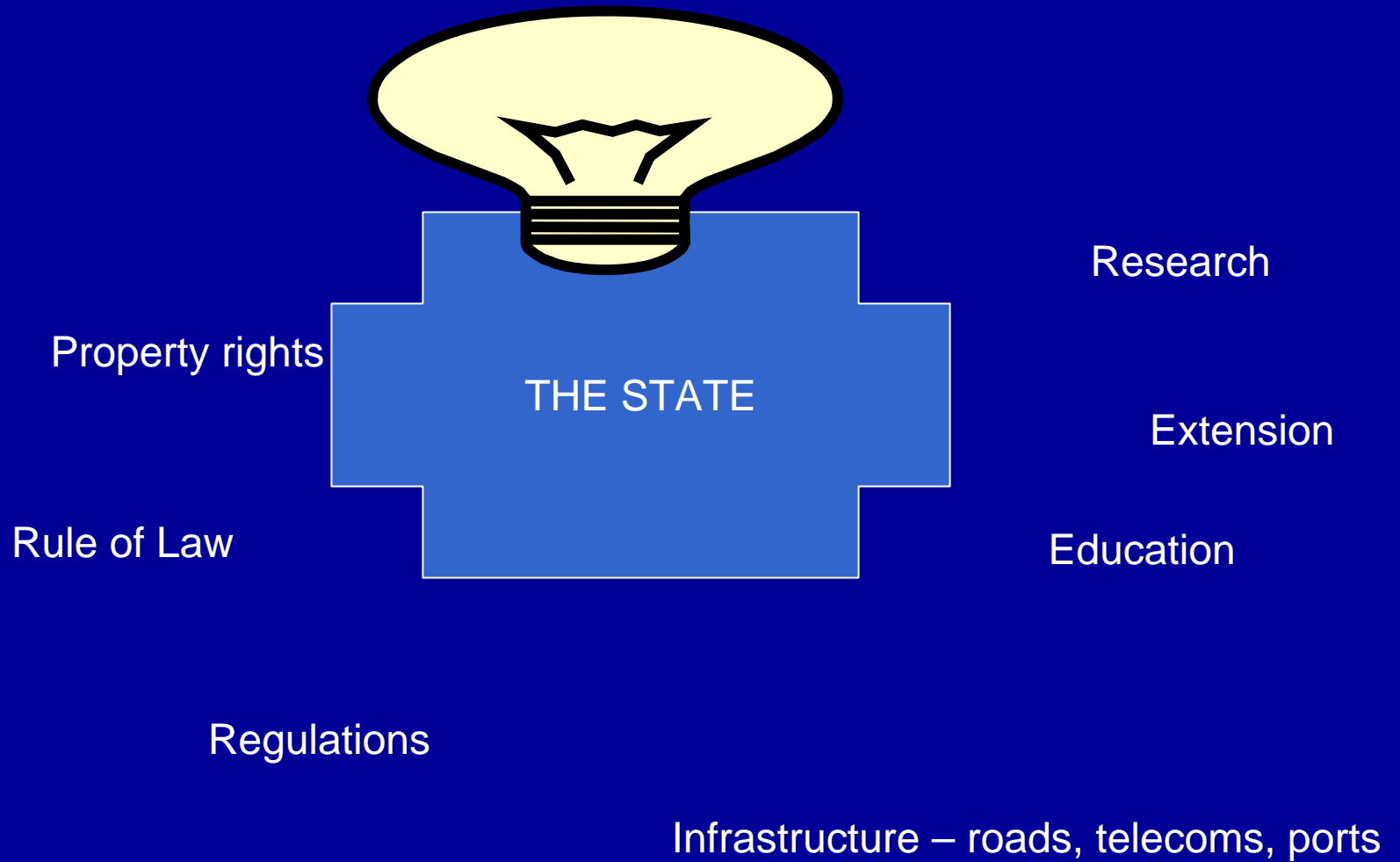
# SUBSISTENCE AGRICULTURE



# MARKET-LED AGRICULTURE



# ACCELERATING THE TRANSITION



Consumers:

MARKETS – with some regulation

INFORMATION – regarding prices, quality, etc.

SUPPORT INDUSTRIES- Processing, adding value, shipping

ROLE - Contract enforcement, IPR protection, etc.

Producers:

RESEARCH- to raise productivity

EXTENSION SERVICES – to improve knowledge

SERVICE INDUSTRIES – supplying inputs, credit

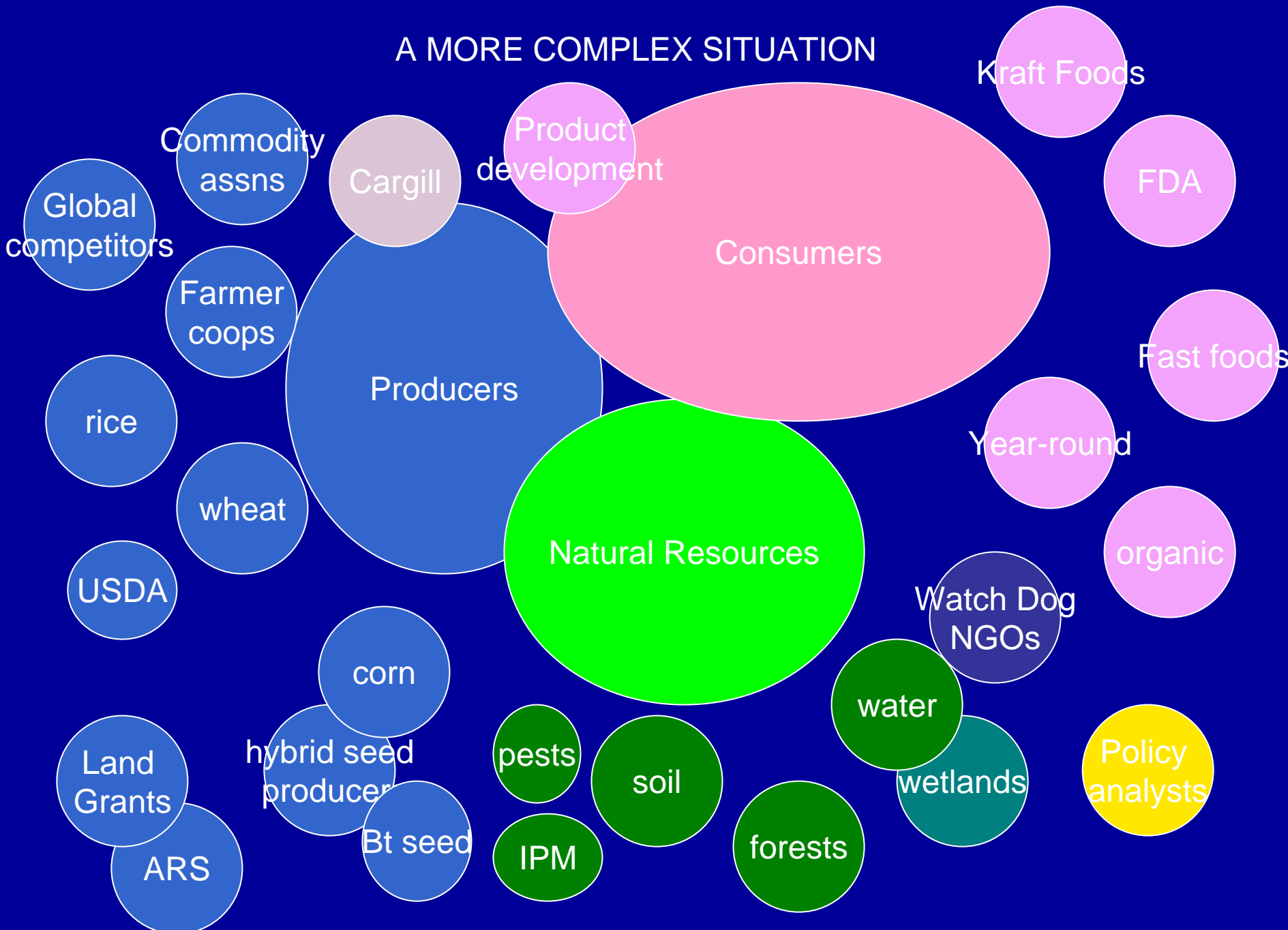
Natural Resources:

PROPERTY RIGHTS – private and public

RESEARCH – on sustainability

MONITORING AND PREDICTION - climate

# A MORE COMPLEX SITUATION



Global competitors

Commodity assns

Cargill

Product development

Kraft Foods

FDA

Farmer coops

Producers

Consumers

Fast foods

rice

wheat

Year-round

USDA

Natural Resources

organic

corn

Watch Dog NGOs

Land Grants

hybrid seed producer

pests

soil

water

wetlands

Policy analysts

ARS

Bt seed

IPM

forests

# IN THE U.S. -- BAYH-DOLE

- Intended to foster greater commercial application of research products (30k patents, 5% commercially licensed)
- Expanded the role of patents, IPR
- Explicitly linked federally-funded “discovery” to the idea of sustainable utilization in the real world, aka “Knowledge to Action”
- Contributed to the PPP idea

# PPPs for Sustainable Agricultural Development

- Is Bayh-Dole a good model for framing linkages in the developing world?
- What other models are out there?
- The case study: Sustainable Global Forest Partnership

# The Bayh-Dole PPP Model: Simplicity Itself

- Gov't funds research in university
- University completes basic research – discovers something novel
- University offers discovery to private investor through its technology transfer office, notifies gov't
- University/private investor enter into agreement
- Money flows to university
- Product is developed by private entity for sale to consumers
- [Who pay taxes, generate public benefits, or in other ways justify the initial public research investment]

# Bayh-Dole as a Replicable Model on a Global Scale?

- Essentially a national model that assumes:
  - There should be public funding for basic research
  - Universities, small businesses, capable of doing publicly-funded research
  - System for legally establishing IPR through patents
  - Laws protecting IPR
  - Broad agreement as to what constitutes intellectual property – civil society concurrence
  - Private sector investors ready to capitalize on IPR – develop commercial technologies
  - Viable markets for new products or separable market/non-market distribution systems

# ....Realities

- Public research funding for agriculture, and especially U.S. funding for international agriculture, is trending down – that positive feedback loop on benefits for the funding government is weak
- Institutional capacity and interest in international agricultural problems is highly variable
- IPR still a hard concept for many developing countries
- Many international NGOs aggressively against IPR in agriculture
- Private investor interest in the BOP market for agricultural products is limited, competition for high-end markets is brutal
- Not quite so simple....

# Another model: the Early Green Revolution – a Successful PPP

- Private foundations and OECD donors focussed on crop development research – production of global public goods
- Taken to scale with state support in developing world, farmer-to-farmer extension, diffuse private investments
- Population boom (early part of demographic transition) provided local markets for expanded production, especially in Asia
- Other development investments and policies adequate to support

# Even the GR- PPP model needs updating

- Public research funding down – more short-term
- Private foundation funding down
- More competition among research partners for shrinking resources
- Developing country government funding and support organizations uneven
- Beyond the big foodgrains – scaling up requires more partners
- The unsustainability of monocropping, current irrigation methods – a systems perspective
- Many breakthrough innovations are gene-based, IPRs essential
- NGOs need to be part of picture
- Private industry support narrow but with growth potential
  
- The Sustainable Tree Crops Partnership -- Cocoa
- The Sustainable Global Forest Partnership – Lumber and paper