


***Production, Supply, and
Natural Resource Management
Policies***


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***Food Production: Meeting
Food Needs and Wants***

- Management of natural resources
- Input use
- Technology
- Production structure




Policies to change:

- Producer behavior
- Socio-economic and political environment
within which the producer operates




Producer Goals Underlying Behavior

- Increased incomes and family well-being
- Reduced risks
- Sustainable use of natural resources




Natural Resources

- Soil
- Water
- Air
- Biodiversity
- Forest stock
- Marine fishery stock



Inputs

- Fertilizers: soil mining, overuse
- Labor: organic, agro-ecological production
- Pesticides: alternatives, health and ecology
- Water: Shortage, water logging, salination
- Technology: Replacing Nat. resources
- Knowledge: Sustainable productivity




Goals and Behavior

- Stakeholders
- Growth/sustainability trade-offs
- Poverty reduction/sustainability trade-offs
- Sustainability goals as a function of income
- The u-shaped function
 - Reversibility




Human-Made Resources (Capital)

- Physical
- Financial
- Human
- Social




Interaction Between Natural and Human-Made Capital

- Competition
- Complementarities
- Substitution
- Reversible or irreversible changes
- Intrinsic values




Farmer Behavior

- Short versus long-term effects
 - Discount rate
 - Risk taking and consequences
 - Degradation and productivity effects
 - Clearing of forests
- Public versus private costs and benefits
 - Internalizing environmental costs




Soil Degradation

- Restoration costs
- Salination, water logging
- Desertification, erosion
- Soil mining
- Deforestation




Water Management Issues

- Global availability and local access
- Seasonal and regional shortages
- Surface and ground water
- Low use efficiency
- Agriculture is major user (80%)
- Competition, conflict
- Water contamination, health issues
- Effects of climate change




Marine Fisheries Stock

- Overexploitation, depletion, collapse
- Open access
 - Tragedy of the commons
- Over investment in technology
- Substitution: Aquaculture




Types of Government Intervention

- Regulations
- Incentives
- Knowledge




Policy Issues - Soils

- Clear property rights
- Collective action
- Access to credit
- Infrastructure and markets
- Improved technology
- Information
- Public or private goods?




Policy Issues - Water

- Incentives and regulation to improve efficiency
- Technology to reduce losses and increase efficiency
- Clarify water rights and allocation
 - Water user associations
 - Water pricing
- Risk management policies
- Rainwater catchments



Policy Issues – Marine Fisheries

- Overexploitation, depletion, collapse
- Open access
 - Tragedy of the commons
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Producer Response to:

- Output price policies
- Quantity policies
- Input price and availability policies
- Income policies
- Natural resource policies
- Technology policies and availability

Public or Private Investment in Research and Technology

- Is it a public or private good?
- Do social benefits exceed private benefits?
- Relative cost
- Inability to pay
- Perceived size of market



Producer Response to:

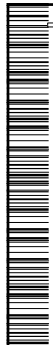
- Changing consumer demand
- New demands
- Food safety and quality policies
- Biosafety policies



Changing the Socio-Economic and Policy Environment


- Land, water, labor, capital markets and policies
- Credit policies
- Output markets, domestic and international trade
- Research and technology
- Infrastructure
- Market information





Roles of Public and Private Sectors

- Social versus private costs
- Market failures
- Externalities
- Economies of scale
- The future of the small farm

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