Food Security and Animal Production

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Outline

Key Concerns for the Future of Livestock
- Problems and Drivers
- Livestock and Livelihoods
- Consumption and Nutrition

Supply and Demand Policies for Sustainable Livestock Production

Reduced Meat Demand and Global Food Security

Key Conclusions
Key Concerns for the Future of Livestock
Problems and Drivers

- How to achieve food security
- How to maintain livelihoods
- Protection and maintenance of ecosystems services
- Reducing environmental impacts of livestock systems
- Economic growth
Livestock and Livelihoods

- 3.4 billion hectares of pastureland
  - Compared to 1.6 billion ha cropland, 0.5 billion feed crops

- $1.4 trillion asset value

- Employs 1.3 billion people

- Reduces risk for vulnerable communities
  - Livestock significant value in severe drought

- Provides nutrients and traction for smallholder systems
  - Significant amount of N, P, K crucial for small farmers
Consumption and Nutrition

As people get richer, they consume more animal products.

Consumption and Nutrition

Per capita meat consumption, 2000-2050

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Consumption and Nutrition

Negative health impacts of high meat consumption

- Colorectal, esophageal, liver, prostate and lung cancer
- High saturated fat and cholesterol intake
- Cardiovascular disease mortality
- Type 2 diabetes
- Obesity
Nutrition benefits from increased meat consumption in developing countries

- Addresses micronutrient and protein deficiencies (including iron, zinc, vitamin A and B12)
- Bolsters immune resilience and health
- High nutrient density
  - Efficient delivery for low income people
Supply and Demand Policies for Sustainable Livestock Production
Sustainability of livestock production can be enhanced

- **Management practices**
  - Optimized diet, improved feed digestibility, water management, high quality grain concentrates

- **Technologies**
  - Waste management, use of byproducts for energy production, recycling

- **Genetic resources**
  - Breed improvement (drought/heat tolerance), conversion of feed to meat and milk, crop breeding
Sustainability of livestock production can be enhanced

**Infrastructure**
- Roads, processing – link farmers to markets (higher price, lower losses)

**Markets and policy**
- Increase: water prices, carbon payments as incentives to GHG reductions, better waste regulation
Solutions vary according to type of livestock production system

Extensive mixed livestock and cropping systems

- Combine intensification and environmental protection through integrated management
- Technology transfer and development

Source: http://www.fao.org/docrep/x5303e/x5303e09.htm
Solutions vary according to type of livestock production system

Livestock grazing / rangeland systems

- Limited options for intensification – constraints on land capacity

- Supplying other ecosystem goods and services

- High potential: carbon sequestration through pasture management

- Need carbon payments

Source: http://www.kkl.org.il/kkl/english/main_subject/curb%20global%20warming/livestock%20grazing.htm
Solutions vary according to type of livestock production system

**Intensive / industrialized livestock systems**

- Needed for meeting the growing demand of animal products

- Challenges:
  - Limit negative environmental impacts through improved technology, regulation incentives
  - Animal management and animal care

Source: [http://www.nextgenerationfood.com/article/Acid-test/](http://www.nextgenerationfood.com/article/Acid-test/)
Demand policies to reduce meat consumption in the more developed countries

- Advocacy by institutions working on food policy issues
- Educational and public relations campaigns
- Promote menus with less meat in public sector institutions (cafeterias, schools, hospitals)
- Taxation and subsidy policies to increase the cost of meat compared to other food products
Reduced Meat Demand and Global Food Security
Scenario Results

Real world prices of meats (US$/mt)

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Scenario Results

Real world prices of cereals (US$/mt)

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Scenario Results

Total feed consumption of cereal (mil mt)

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Scenario Results

Per capita food consumption of meat and cereal (kg/year)

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Scenario Results

Calorie availability (kCal/capita/day)

Source: IFPRI IMPACT projections, business as usual, IPCC SRES B2 climate scenario, May 2009
Scenario Results

Malnourished children under age 5 (million)

Source: IFPRI IMPACT projections, business as usual, IPCC SRESB2 climate scenario, May 2009
Key Conclusions
Key Conclusions

- Reduced meat consumption in developed countries provides small benefits in developing countries
- Invest in improved breeds, technologies, management, markets
- Tax, regulate, and pay to reduce negative environmental impacts