Cost-Benefit of Foot and Mouth Disease Control on Global Food Security

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FMD and Markets

• Developed economies
  actual or potential losses
  • Great Britain 2001 outbreak:
    5 Billion U$s

• California simulation exercise:
  possible losses 8 – 13 billion U$s
FMD and Markets

• Meat exporting developing economies
  Enormous potential losses

• Brazil: meat exports 5 billion U$s/year
• Uruguay: meat exports 1 billion U$s/year
• Paraguay: meat export 0.7 Billion U$s/year
FMD and Markets

• Low-income, non meat exporting countries:

What are the market impacts of FMD?
What are the incentives?
What are the allocation of resources?
FMD and Food Security

Poverty and extreme poverty a serious problem

- 1000 or more million persons suffer food insecurity (USDA and FAO studies, 2007)
- Last 4 years number food insecure persons increased by 75 – 133 million (USDA and FAO studies, 2007)
- 700 or more million of worlds poor (income < 1 US$/day) are livestock keepers (ILRI study)
- How are poor livestock owners and consumers affected by FMD?
Impacts of animal diseases on the poor economies

• Most evident impacts:
  • Mortality/morbidity/ Treatment costs
  • Restrictions on access to domestic markets
Impacts of animal diseases on the poor economies

- Hidden impacts (may be more important than above)
  - Reduced medium and long-term productivity gains
  - Reduced incentives for saving and investment
  - Increased production and household uncertainty
  - Indirect impacts on human well-being
Projected Production Trends Developing Countries 1993-2020

Impacts of Increase in Livestock Production 1993-2020*

Increase in number of animals
Cattle +230 Mill

Increase in Disease Risk

Production intensification

Increased B/C of Resources Allocated to OVS
Livestock Production and Food Security

• Per-capita consumption of livestock products in developing countries less than 1/5 of developed economies.

• Research results show for developing and poor countries: positive impact of livestock ownership on nutrition status

• High-energy, high protein food. Source of micronutrients
Livestock Production and Food Security

• Positive impacts on child nutrition

• Positive impacts on household savings and asset base
Economics of FMD Control in Developing Countries

• Developed and meat exporting countries:
  • High B/C of programs directed to FMD prevention/eradication

• Less developed countries:
  • What are the incentives for FMD control?
B/C of FMD Control in Developing Countries

- **Proposition:** Low livestock productivity both a consequence and a cause of underinvestment in Animal Health programs

- **Implication 1:** Economics (including C/B analysis) of AH programs should be viewed as part of overall livestock development effort

- **Implication 2:** Priorities should be set according to C/B criteria
Enormous Gaps in Livestock Productivity

- Netherlands
- France
- United States
- Argentina
- Uruguay
- Venezuela
- Tanzania
- Ethiopia
- Sudan

Production per Animal-Equivalent

Kg/AE
Resource Allocation in Poor Countries

• Budget for VS competes with other public programs (human health, education, infrastructure, ag research)

• Given a budget constraint for the OVS, how are priorities set among different programs?

• Role of C/B analysis in decision-making?
Poor countries: Animal Health Resource Allocation

Source: ILRI Study (2002)
### Possibilities for “Economies of Scope”?

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<thead>
<tr>
<th></th>
<th>GI parasites</th>
<th>FMD</th>
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<tbody>
<tr>
<td>Total impact on poor</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Total cost of control</td>
<td>++</td>
<td>++</td>
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<tr>
<td>Technical complexity</td>
<td>+</td>
<td>++</td>
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<tr>
<td>Probability of success</td>
<td>?</td>
<td>?</td>
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<tr>
<td>“Public good” dimension</td>
<td>-</td>
<td>+++</td>
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Conclusions (I)

**Developed and meat-exporting developing countries:**

- FMD can cause billions of dollars of losses
- FMD control in less-developed countries also benefits developed countries
Conclusions (I)

• **Low-income, food deficit countries:**
  
  • Severe constraints for effective FMD programs

  • FMD eradication increasingly important given livestock production and consumption trends for next decades

  • Increase benefits from FMD control/eradication can be expected
Conclusions (II)

- International assistance benefits both developed and developing countries
- Transference of Resources from Developed to Developing
Conclusions (II)

• **Focus and linkages**
  - Quality of Veterinary Services
  - C/B analysis
  - PVS and Gap Analysis
  - Political commitment
Thank you!