Understanding the importance of the social and economic impact of PPR

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AGA presentation

22/05/20
Why is \textbf{impact} important

2 main reasons

\textit{Classic approach}
- To understand the extent of the problem

\textit{New approach}
- To build back better

Need both!
SOCIAL and ECONOMIC impact

Understanding the extent of the problem better:

- To inform decision making on funding
- To create awareness and get funding
- To improve resource allocation

An economic approach

1. Understand the context
2. Identify the weak resource allocation
3. Understand why it is weak
4. Reallocate resources

Adding value through searching for optimality

A health approach

1. A disease becomes important
2. A strategy is developed
3. An economic justification is made
4. Disease programme begins

Adding value through advocacy

Adapted from Rushton, 2017
SOCIAL and ECONOMIC impact

To BUILD BACK better:

- To get a sense on who is affected
- How they are affected by the disease
- Why they are affected
- Understanding incentives
- Targeting interventions
NdH1  
de Haan, Nicoline (ILRI), 22/05/2020
Understanding the importance of people in PPR

THE PEOPLE

their decisions and trade offs

how do we align the decision for PPR control
Understanding the importance of the people in PPR

- PEOPLE in PPR – not stakeholders or actors but people who make DECISIONS in any PPR disease control strategy

PPR ECOSYSTEM
- International community: PPR GEP and GREN, FAO DG, research organizations
- Governments: notifiable or not, who can vaccine, or make it compulsory
- Livestock owners: pay for vaccine or comply to take their animals to be vaccinated
- Producers and suppliers of vaccines
- Others: development agencies/aggregate companies
Approaches to IMPACT Assessments

Nested approach
(part of the PPR ecosystem)

Production and Household level

Value chains

National level
Framework on IMPACT OF DISEASE at HOUSEHOLD LEVEL

Adapted from de Haan et al. 2015
LIVELIHOOD PORTFOLIO

Number of rural poor livestock keepers (living below $2 income per day) in 2010

Source: WEF 2019 Meat: options for the livestock sector development in development and emerging economies to 2030 and beyond
# FUNCTIONS OF KEEPING LIVESTOCK IN ETHIOPIA

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Smallholder (n=178)</th>
<th>Pastoral/extensive (n=198)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hsh a</td>
<td>Hsh b</td>
</tr>
<tr>
<td>Regular cash income</td>
<td>107</td>
<td>69</td>
</tr>
<tr>
<td>Meat</td>
<td>138</td>
<td>16</td>
</tr>
<tr>
<td>Insurance/emergency</td>
<td>104</td>
<td>62</td>
</tr>
<tr>
<td>Manure</td>
<td>146</td>
<td>10</td>
</tr>
<tr>
<td>Planned investment</td>
<td>52</td>
<td>16</td>
</tr>
<tr>
<td>Ceremonies/Celebrations</td>
<td>73</td>
<td>1</td>
</tr>
<tr>
<td>Wool</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>Dowry</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>Cultural rites</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Milk</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Skin</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Breeding</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
<td>1</td>
</tr>
</tbody>
</table>

Purpose of keeping sheep and the ranking of the importance of these purposes by farming systems in Kenya (Kosgey 2008)
Multifunctionality of small holder systems

Multifunctionality
Of the animal
Of the herd composition
Of farming

determines extent of impact and approach to building back better through incentives and targeting
The OWNER

• Why is this important for PPR disease management and build back better?
  • Smaller animal
  • Limited political power
  • Often a woman
Differences in the approach

An economic approach

1. Understand the context
2. Identify the weak resource allocation
3. Understand why it is weak
4. Reallocate resources

Adding value through searching for optimality

A health approach

1. A disease becomes important
2. A strategy is developed
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4. Disease programme begins

Adding value through advocacy

A gender approach

1. Gender outcome identified
2. Gender issues identified
3. A strategy is developed
4. Reconsider targeting?

Adding value through targeting and inclusion/equity

Adapted from Rushton, 2017
Of the >750 million poor livestock keepers in the world, about two-thirds are rural women.

Women provide labor (20-60%) in livestock production. Men sell the livestock and are in control of the returns. Women often do not get a fair return for the labor they have provided.

Women also do not have same access to information, credit, land, water, animal health care to ensure productive animals.

Women already manage the animals, give them the tools to do it better.
ALLIES IN animal health management?

Small ruminant for (economic) empowerment of women

- Women can own small ruminants easily – unlike land, which needs a title deed
- Goats are an “ATM” – providing constant income: for household nutrition and education; for start up investments.
- Small ruminants self-propagate so can multiply easily, no new investments required.
- Women can take their small ruminants with them in case of divorce or conflict.
- Small ruminants provides opportunities and approaches to move women up on either the livestock or livelihoods ladder.
GENDER AND PPR projects

- IDRC: ($6.3 million investment – 300K for ILRI)
  - Transforming the vaccine delivery system for chickens and goats in Ghana: what approaches and what benefits for women? Women as consumers and entrepreneurs in vaccine value chains
- PRAPS: gender audit (gender projects in 6 countries)
- ECO- PPR: gender post doc – EU IFAD
A typical goat and sheep marketing value chain in Ethiopia
IMPACT OF DISEASE at VALUE CHAIN LEVEL

A “simple” value chain

IMPACT OF DISEASE at VALUE CHAIN LEVEL

Disease affects a multitude of people. How do diseases and resulting behaviors influence the VC?

Framework on IMPACT OF DISEASE at NATIONAL LEVEL

Use of a **social accounting matrix (SAM)** to quantify economywide effects of PPR-induced supply shocks (case studies of Ethiopia and Burkina Faso)

Basic structure of a SAM

![Table structure of a SAM](image)

Source: Breisinger et al., 2010, Social accounting matrices and multiplier analysis, An Introduction with Exercises. [www.ifpri.org](http://www.ifpri.org)
Framework on IMPACT OF DISEASE at NATIONAL LEVEL

Recent SAMs allow for greater disaggregation of livestock (sheep and goats as separate economic sectors)

Jones et al. (2016) – application in quantifying benefits to PPR eradication

Types of impacts (based on a shock to animals killed by PPR):

- Sectoral impacts (change in economic output)
- Employment impacts (change in # of jobs)
- GDP impacts
- Livelihoods impacts (change in income by quartile/rural vs. urban)
Based on a 5% negative shock to the volume of sheep and goats due to PPR:

A reduction in GDP at factor cost (before taxes) of 0.34% and a reduction in agricultural GDP of 0.47%

Output losses (% change in value terms)
- Goats: -3.8%
- Sheep: -3.3%
- Feed: -1.3%
- Sorghum: -0.44%
- Maize: -0.40%
- Wheat: -0.40%

Downstream effects on non-agricultural sectors (services, transport, etc.) range from -0.01% (public administration) to -0.32% (other services)
SAM results – Ethiopia (2)

**Based on a 5% negative shock to the volume of sheep and goats due to PPR:**

A reduction in jobs of nearly **220,000 (-0.5%)**, concentrated in the sheep (38,575 jobs lost, -4.7%) and goats (36,435 jobs lost, -4.8%) sectors, plus losses in the cereals, feeds, and livestock sectors:

- Enset (-12,084 jobs, -1%);
- Maize (-14,657 jobs, -0.6%);
- Sorghum (-19,735 jobs, -0.6%);
- Milk (-2,547 jobs, -0.82%);
- Feed (-1,042 jobs, -0.9%)
Based on a 5% negative shock to the volume of sheep and goats due to PPR:

Livelihoods impacts (% change in income)

<table>
<thead>
<tr>
<th>Household category</th>
<th>Rural farm households</th>
<th>Rural non-farm households</th>
<th>Urban households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest quintile</td>
<td>-0.45%</td>
<td>-0.29%</td>
<td>-0.36%</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>-0.42%</td>
<td>-0.24%</td>
<td>-0.31%</td>
</tr>
<tr>
<td>Quintile 3</td>
<td>-0.39%</td>
<td>-0.21%</td>
<td>-0.26%</td>
</tr>
<tr>
<td>Quintile 4</td>
<td>-0.36%</td>
<td>-0.19%</td>
<td>-0.23%</td>
</tr>
<tr>
<td>Quintile 5</td>
<td>-0.27%</td>
<td>-0.16%</td>
<td>-0.17%</td>
</tr>
</tbody>
</table>
Extent of impact and ability to build back better

- Impact and smallholder NOT homogenous

- Targeting

- Incentives

- Need a mosaic approach and closer approach with epidemiologists and vets
Sweet spot: Where magic can happen!

Vaccines (what)

Epidemiology (where)

Social and economics (how)
Final thoughts

- Need to understand impact – as a tool to do the job better
- Better impact of disease studies
  - Comparable studies
  - Different levels
  - Linking with advocacy
  - Link with better approaches
- Owner and a whole package to improve their system
- Link with policy makers: what data do they need
- Social factors leading to emergence/endemic of the disease
- Surveillance and transboundary
ACKNOWLEDGEMENTS GO TO:

Barbara Wieland, Michel Dione, Bernard Bett, Henry Kiara, Delia Randolph, Mireille Ferrari, Jonathan Rushton, Anni McLeod

For the invitation and to you for listening!
About 620 ILRI staff work in Africa and Asia to enhance incomes and livelihoods, improve food security, and reduce disease and environmental degradation. Australian animal scientist and Nobel Prize laureate Peter Doherty serves as ILRI’s patron. Organizations that fund ILRI through their contributions to CGIAR make ILRI’s work possible. Organizations that partner ILRI in its mission make livestock research for development a reality.

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