Integrated Poverty Assessment for Livestock Policy

CREA/FAO-PPLPI Seminar on Livestock and Poverty in West Africa
Saly, Senegal
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Contents

1. Poverty, Livestock & Livelihoods
2. IPALP Methodology
3. IPALP Applications
4. Conclusions & Discussion
1. The Extent of Extreme Poverty

- Globally 1.2 billion extreme poor (<1USD/day)
- 800 million extreme poor in agriculture
- 600 million extremely poor livestock keepers
Livestock and Livelihoods

**Natural Capital**
Land, water, livestock, wildlife, biodiversity, environment

**Physical Capital**
Transport, shelter, communications, clean water, energy

**Human Capital**
Skills, knowledge & information, ability to work, health

**Social Capital**
Networks, groups, trust, access to wider institutions, ability to ‘demand’

**Financial Capital**
Savings, credit, remittances, pensions

*Image: A Living from Livestock - Pro-Poor Livestock Policy Initiative*
Livestock: Economic Perspective

- More income from **natural resources** through:
  - Access to common land resources
  - Utilization of marginal resources, e.g. ‘waste land’ not suitable for crops
  - Re-cycling crop by-products
  - Increase in output of crop production (fertilizer)
  - Savings

- More income from **family labour** through:
  - Better use of heterogeneous labour resources
  - Balance seasonal labour demand for crop farming
  - Use of labour for processing of primary products (value added capture)
  - Release labour for more productive purposes (animal traction)
The Role of Economic Analysis

Detailed economic analysis can support policy and complement technical assistance in three ways:

• Improve visibility and strengthen policy dialogue about economic fundamentals, including
  ✓ Trends
  ✓ Heterogeneity/complexity
  ✓ Linkages

• Enable more effective targeting
  ✓ Identification of stakes and stakeholders
  ✓ Recruitment of beneficiaries to support more effective policy, and
  ✓ Anticipation of adjustment needs for others.

• Facilitate assessment, ex ante, ex post, and during the course of projects.
2. IPALP: Introduction

• To support the larger agenda of its Pro-Poor Livestock Policy Initiative (PPLPI), FAO has developed a research facility to evaluate economic effects of livestock and policies related to them.

• Integrated Poverty Assessment of Livestock Policy (IPALP) is a suite of analytical methods that elucidate local incidence of national and regional policies toward the livestock sector.

• Among the livestock policies to which IPALP will be addressed are animal health and disease control strategies, including HPAI.
Livestock will help the poor if its adoption is compatible with local responses to regional and national economic conditions and incentives.

To capture linkages across the economy and from the top down, a four-fold modeling framework is used. Each of these four modules has now been developed in prototype form.
IPALP: Detailed Methodology

Data Development
- NIPA Accounts, Input-output Data, Trade Statistics, Household Surveys
- Initial micro conditions for Synoptic Atlas

Policy Modeling
- Social Accounting Matrix, Baseline Macro and Micro Data
- Occupational choice Production technology Consumer behavior
- Household Incomes, Expenditure, Output Factor use
- Indicators for Poverty, Inequality, HDI, MDG

Digital Mapping
- Occupational choice Production technology Consumer behavior

Living Standards Analysis
- Household Incomes, Expenditure, Output Factor use

- Data
- Results
- Policy Intervention

PPLPI, Taxes/subsidies, Investment, Ag. Services, Credit, Producer Support, Labor/land regulation

WTO Regimes Doha, FTAs, External Shocks

A Living from Livestock
Pro-Poor Livestock Policy Initiative
IPALP: Components

1. **Data development**
   A comprehensive inventory of data related to the overall economy, including macro and micro information, with particular reference to rural conditions and the livestock sector.

2. **Policy Modelling**
   With a highly disaggregated dynamic CGE forecasting model, a baseline scenario for growth is compared to a variety of national policy scenarios, including PPLPI, generic development strategies, trade policy, WTO accession, market reform, tax policies, etc.

3. **Living Standards Assessment**
   Using the microeconomic results obtained from the previous two components, we will apply state of the art assessment tools to evaluate the effects of PPLPI and other policies on poverty, inequality, and other living standard and human development indicators.

4. **Digital Mapping**
   GIS mapping is applied to data on initial conditions and results of policy simulations. This synoptic economic atlas provides a transparent set of assessments that can be widely disseminated and compared across case studies.
3. IPALP Applications

1. Initial conditions: Vietnam
2. Linkage analysis: Senegal
3. Policy simulation:
   - Livestock promotion
   - Market access
3.1 Livestock Ownership in Vietnam

% Households owning livestock

Urban

- Northern Mountain
- Red River Delta
- North Central Coast

Rural

- Major Urban
- Middle Urban
- Small Urban
- Red River Delta
- North Central Coast
- South Central Coast
- Central Highlands
- Southeast
- Mekong River Delta

Source: 1998 VLSS
Vietnam: Poultry Income

Poultry income is far more equitably distributed than total income!

Cumulative Population Share

Cumulative Income and Poultry Revenue

- Total Income
- Poultry Income
- Equality

Poultry income is far more equitably distributed than total income!
Livestock and Savings

Pigs are important to both income and savings, cattle/buffalo more to savings

Vertical axes measure Buffalo and Pig asset values as a multiple of HH income.
### Commercialization of Rural Production

#### Source: VLSS

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Subsistence rates are high, therefore the marginal income effect of higher productivity will be greater, the poorer the household.
Reasons for Improved Welfare

- More farm land: 27%
- Higher cropping intensity: 24%
- Higher crop yields: 64%
- New crops with higher profits: 38%
- More income from livestock: 50%
- More income from fisheries: 6%
- More income from forestry: 19%
- More income from wages: 5%
- More enterprise income: 11%

Source: IFPRI
Usefulness of Public Assistance

% of responses

- Credit
- Support existing crops
- Irrigation
- New crops
- Roads
- Education/health
- Electrification
- Non-farm activities

Source: IFPRI
Likelihood of Marketing Livestock by NMR Households (Logit regression results)

Significance of Remittance Income and Purchased Inputs reveals a cash constraint in livestock promotion.
3.2 Linkage Analysis with SAMs

• With Social Accounting Matrices (SAMs), multiplier analysis is a convenient way to examine livestock’s linkages across the economy.

• We have developed five SAMs for Vietnam and three for Senegal, working with different aggregations to focus on a variety of income-expenditure linkages.
Multiplier Linkages to Households
Vietnam (Vn) and Senegal (Sn) Compared

Because of their more diverse linkages to the economy, higher income groups generally enjoy larger multiplier effects.
More livestock income goes to higher income groups,

but livestock income is more important to Senegal’s rural poor.
### Path Decomposition (1): Rural

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- Individual global effects are aggregations of extended income-expenditure chains across the economy.
Higher income groups generally have more indirect linkages to livestock income.
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- This means they may capture a large percentage of gains, even from policies targeted elsewhere.
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3.3 Policy Simulation

• Using CGE models, we can assess a wide variety of policies *ex ante*.
• Because we develop these models with consistent macro-micro datasets, we can evaluate economy-wide linkages and detailed incidence such as poverty alleviation.
• Here we look at two generic kinds of scenarios:
  • Policies targeted to improve livestock production
  • Policies to improve market access
Vietnam: Poultry & Pig Promotion

Poultry: 7% annual productivity growth 2005-2015

Pig: 7% annual productivity growth 2005-2015

← Poorer Richer →
Market Access - a Basic Policy Challenge: How to Help the Poor?

Poverty Incidence

Poverty Density

Source: IFPRI

A Living from Livestock
Pro-Poor Livestock Policy Initiative
Poverty and Related Variables

Poverty

Pro-Poor Livestock Policy Initiative

A Living from Livestock

Pro-Poor Livestock Policy Initiative
Poverty and Market Access

Dual Policy Implications:

• Extreme poverty requires significant commitments to facilitating market access, including infrastructure investment and extension support.

• The majority of Viet Nam’s poor, however, can be reached with more conventional enterprise instruments, like credit, marketing, and product supply-chain/quality support.
What can Trade Liberalization do for Livestock Keepers?

• Demand
  • Aggregate domestic income growth means accelerating domestic demand for meat and other animal products
  • External demand – may or may not grow, but is not likely to be a significant influence on smallholders

• Supply
  • Technology transfer
  • Capitalization from cash remittances
Scenarios for Producer Support and Trade Liberalization: Senegal

Three Generic Scenarios:
- Prod – Doubling of livestock productivity
- KSub – 20% capital subsidy to livestock sector
- TLib – Unilateral trade liberalization

Higher income groups capture most of the gains from generalist policies.
4. Preliminary Conclusions

- Livestock can make a substantial contribution to poverty reduction, but
- Pro-poor policies need targeting
- Livestock promotion has significant potential
  - Increase output quantity and quality
    - better market access and traceability
  - Improve distribution technology to reduce
    - margins
    - perishability (e.g. cold chains)