

# Modelling the Poverty Impacts of Livestock Policy Change: Evidence from Vietnam and Senegal

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**David Roland-Holst**  
**Joachim Otte &**  
**Saule Kazybayeva**



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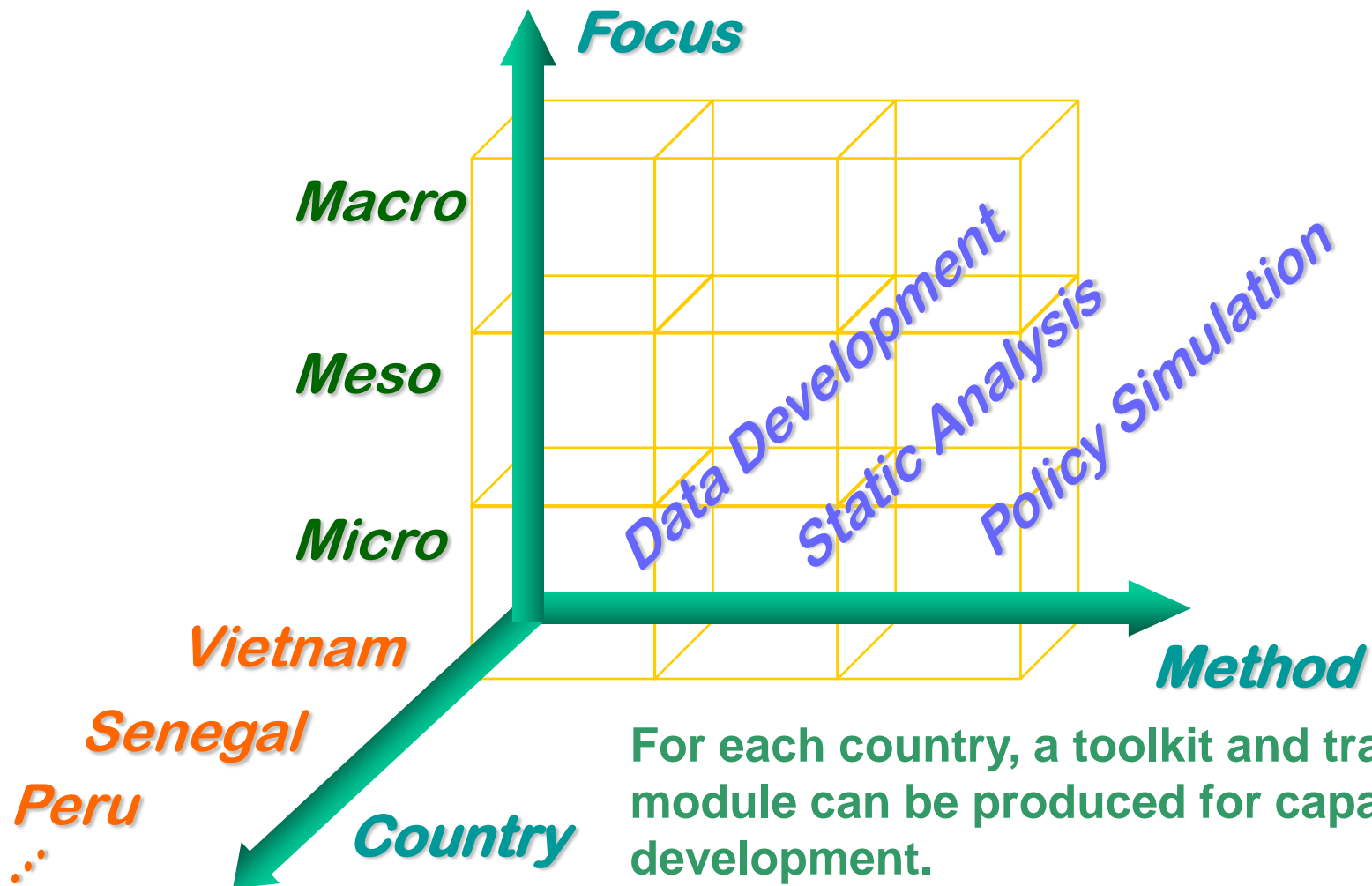
# Introduction

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- Livestock's potential to improve livelihoods of the rural poor depends on complex economic linkages and behavior.
- In recognition of this, a special research component of PPLPI is dedicated to elucidating the economic fundamentals of smallholder livestock production.
- The goal of this work is support more effective pro-poor policies at all levels.



# Integrated Poverty Assessment for Livestock Policy (IPALP) - Schematic Overview



For each country, a toolkit and training module can be produced for capacity development.



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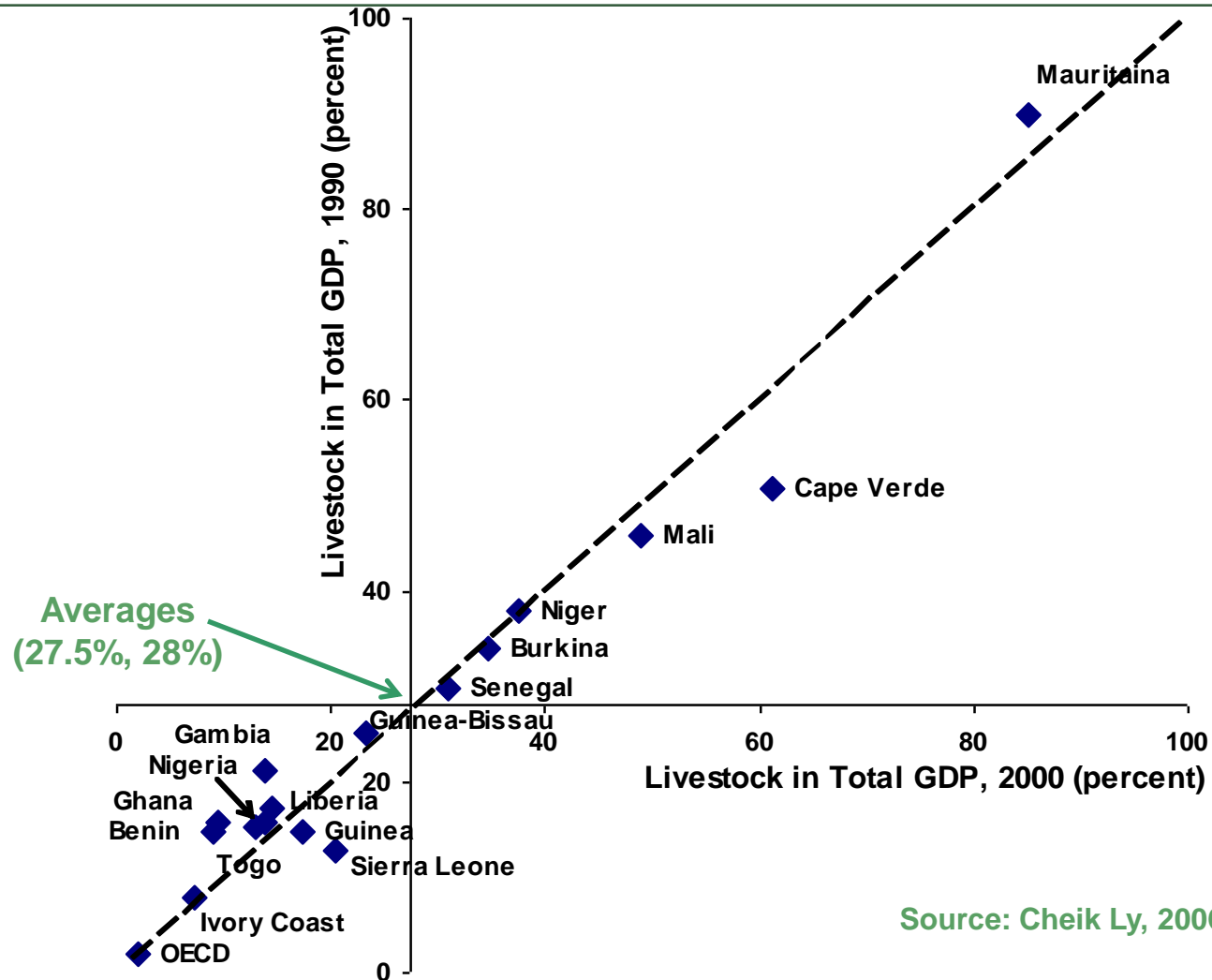
## 2. Livestock and Rural Poor Livelihoods

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- With the benefit of improved sector data and detailed microeconomic surveys, we are seeing again and again the importance of livestock to smallholder livelihoods.
- The challenge before us is to translate livestock dependence into a sustained source of income growth.
- In most of the cases examined so far, improving the terms for smallholder participation in food markets offers the best means of doing this.



# West Africa: National Livestock Dependence



Source: Cheik Ly, 2006



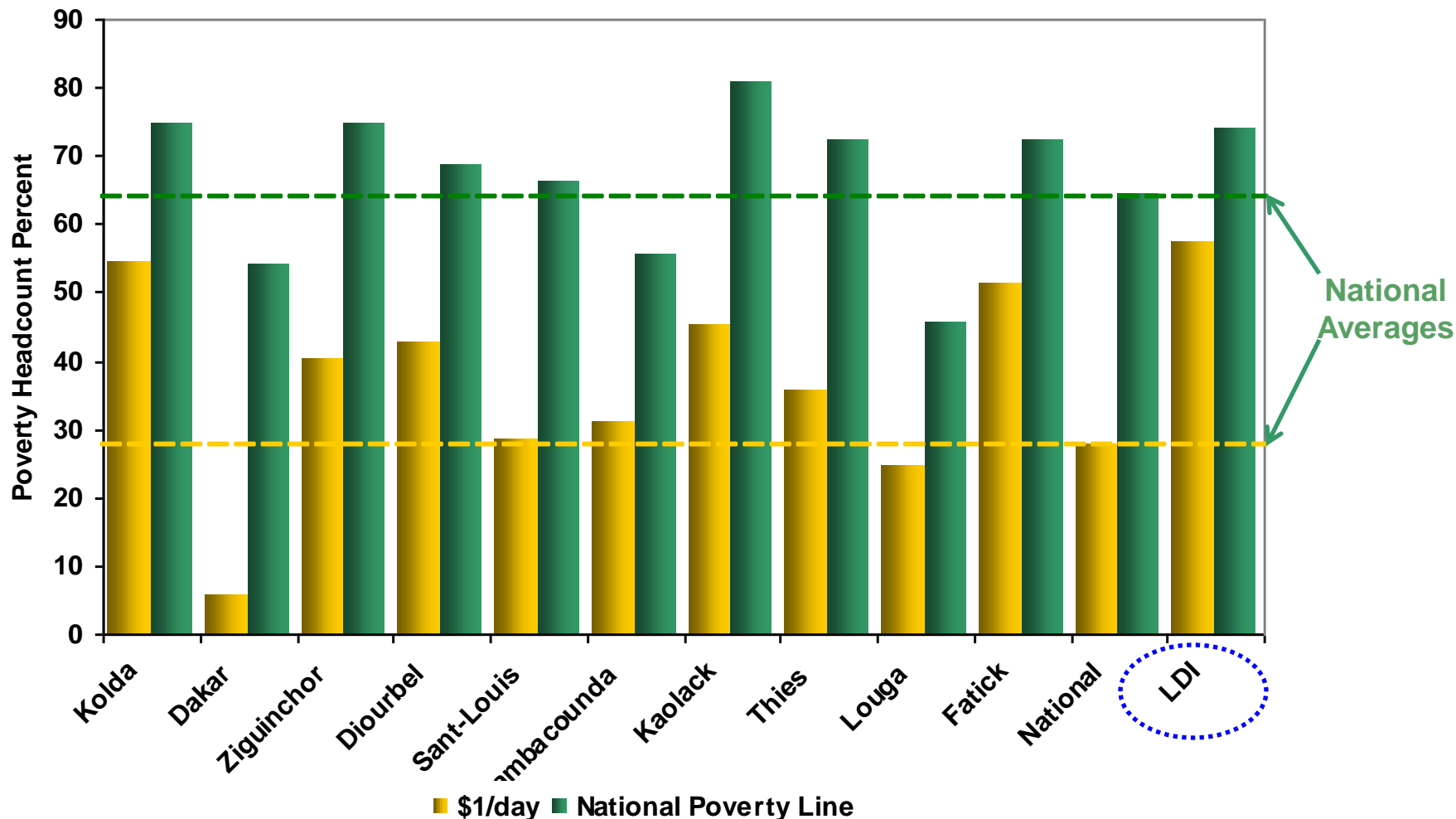
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# Senegal: Poverty Headcounts



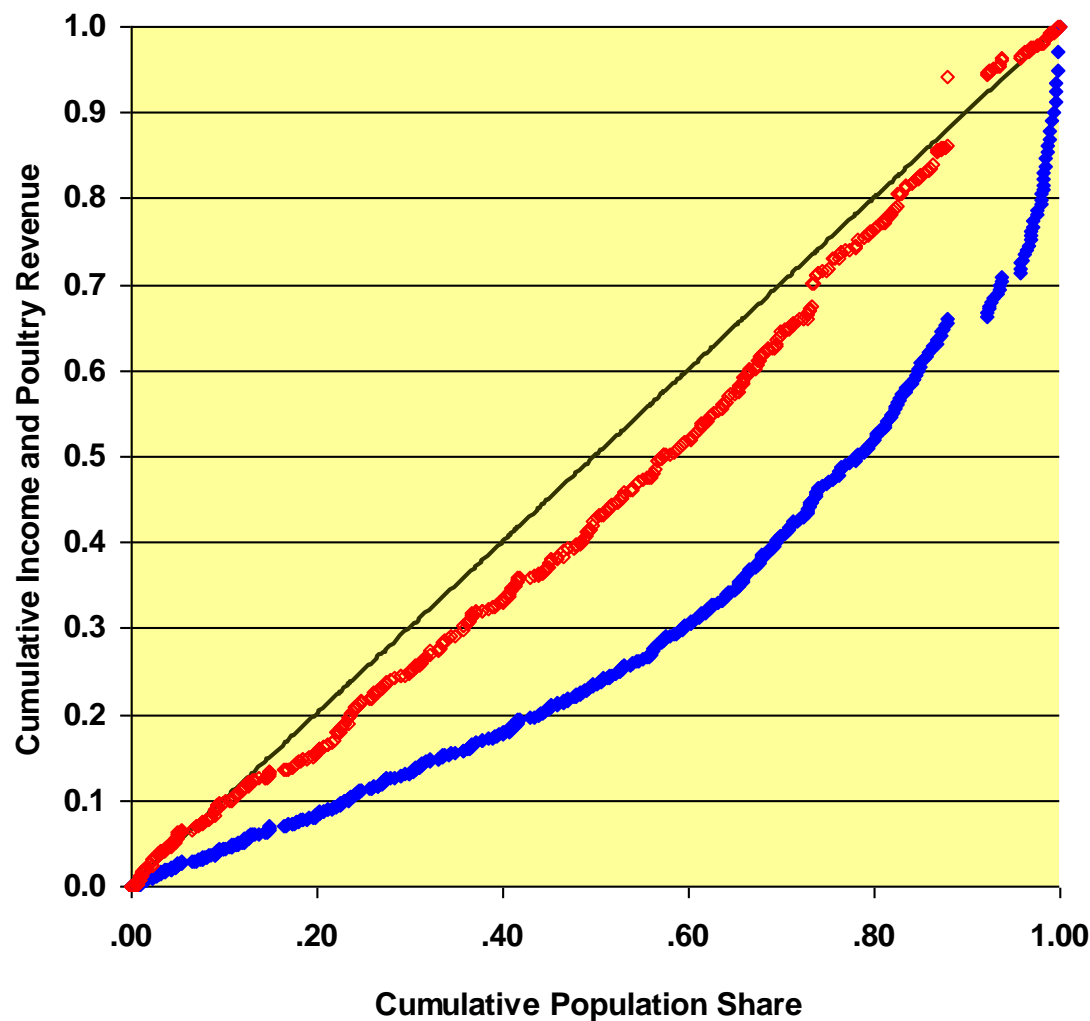
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# Vietnam: Poultry Income



Poultry income is far more equitably distributed than total income !

Sample of 600/65,000 representative households, rural and urban income quintiles for each of 60 provinces. (VHLSS:2002)



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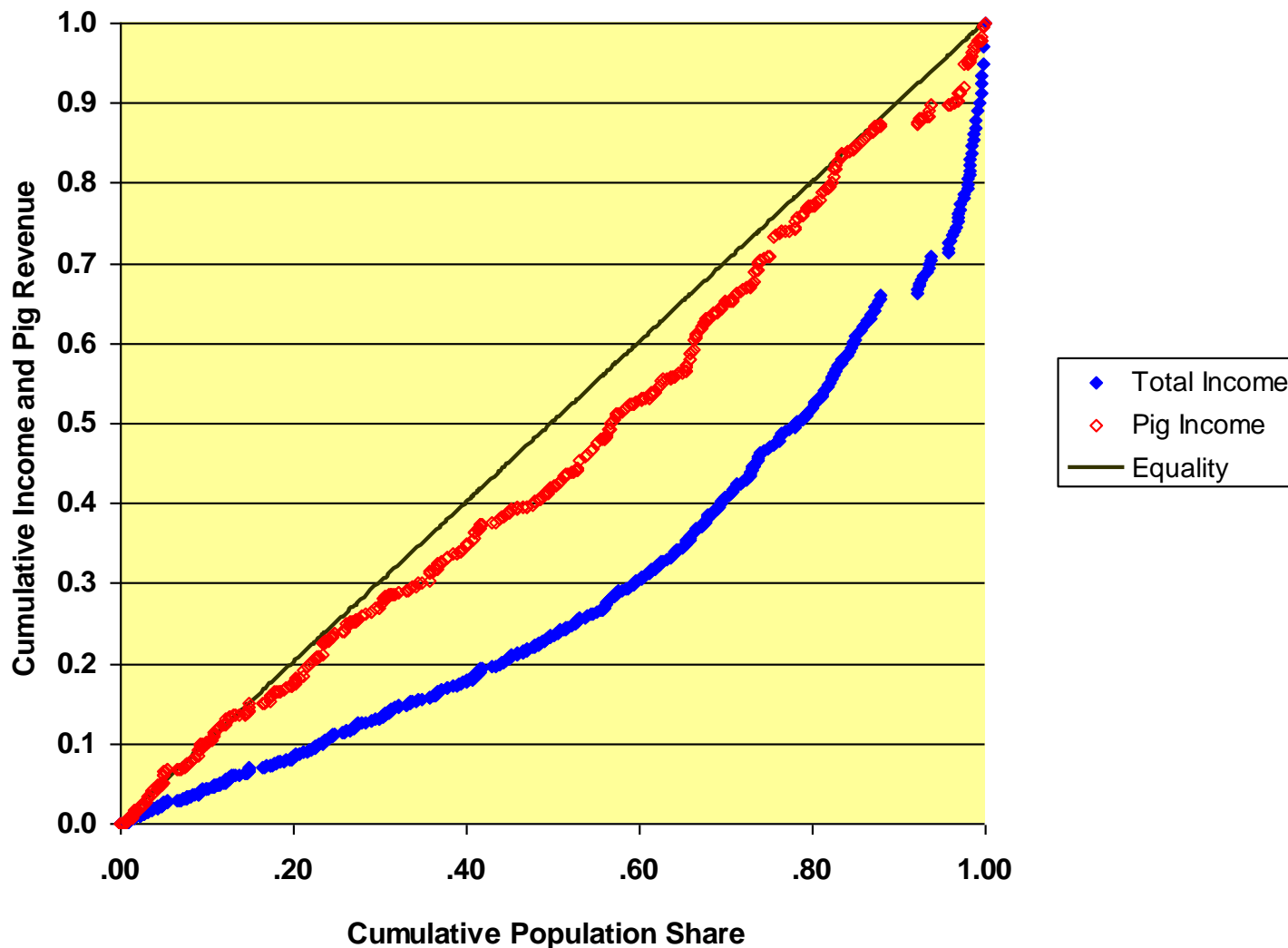
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# Vietnam: Pig Income



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# Microeconomic Fundamentals

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There are three ways to improve the balance sheets of farmers:

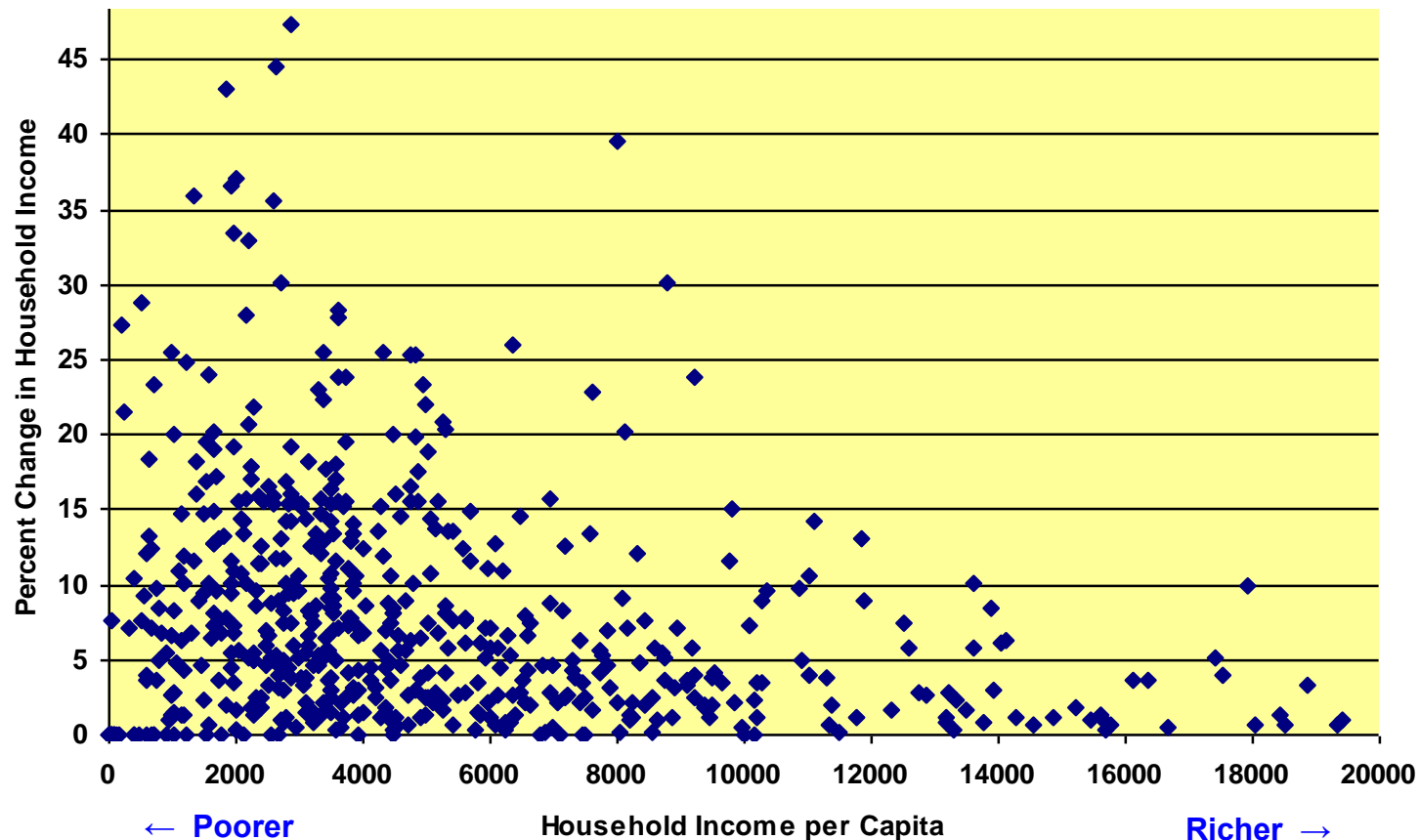
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- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>1. Increase output</li><li>2. Increase price</li></ul> | <ul style="list-style-type: none"><li>3. Reduce Cost</li></ul> |
|--|--|



# Vietnam: Generic Livestock Promotion

All Livestock: Simulated 7% annual productivity growth  
2005-2015



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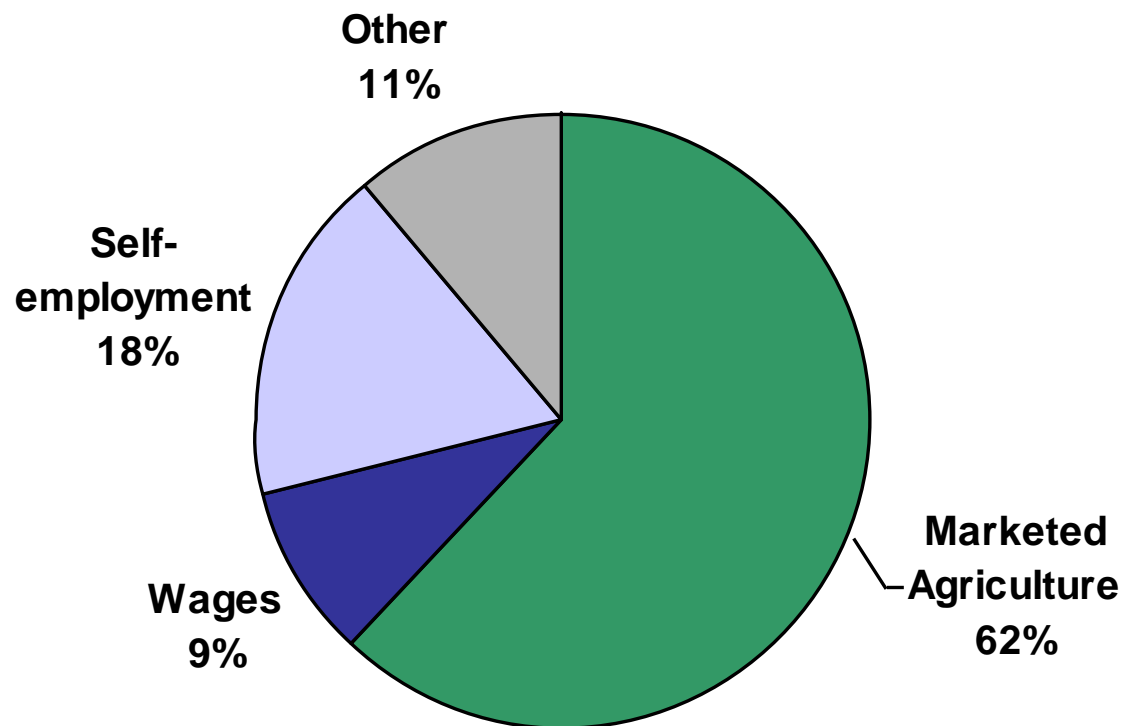
# 3. Smallholders and the Food Supply

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- In most developing countries, the majority of rural income arises from marketing food products.
- Livestock's contribution to this income depends on complex market supply chains extending from the farm gate to urban and even foreign households.
- Our research on these linkages indicates that the terms of this market participation are far from achieving their potential to help the rural poor.



# Vietnam: Rural Income Sources



Source: 2002 VLSS



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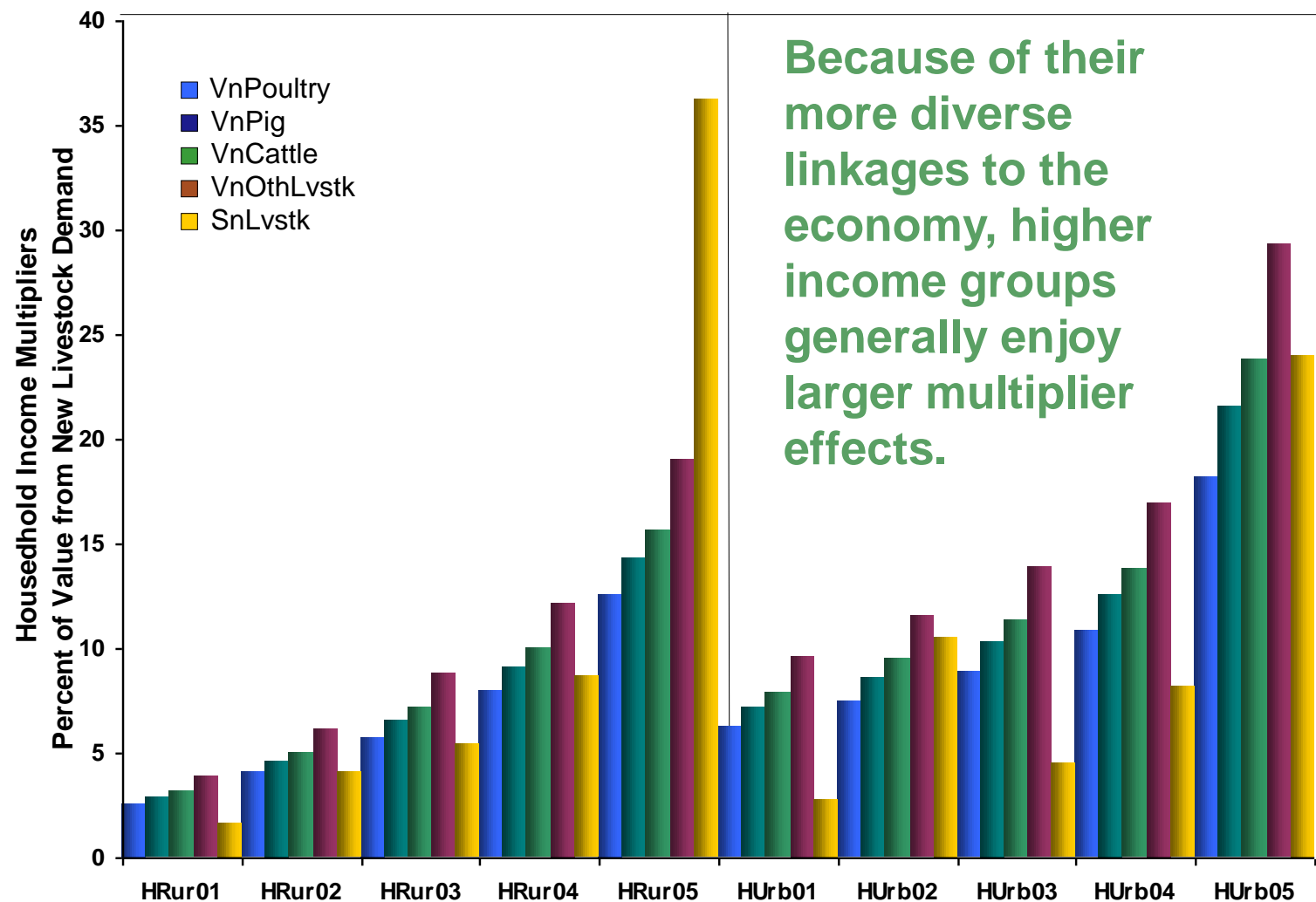
# Linkage Analysis with SAMs

- Multiplier analysis with Social Accounting Matrices (SAMs) offers a convenient way to examine livestock's linkages across the economy.
- To date, we have developed five SAMs for Vietnam and three for Senegal, working with different aggregations to look at a variety of income-expenditure linkages.



# Multiplier Linkages to Households

## Vietnam (Vn) and Senegal (Sn) Compared



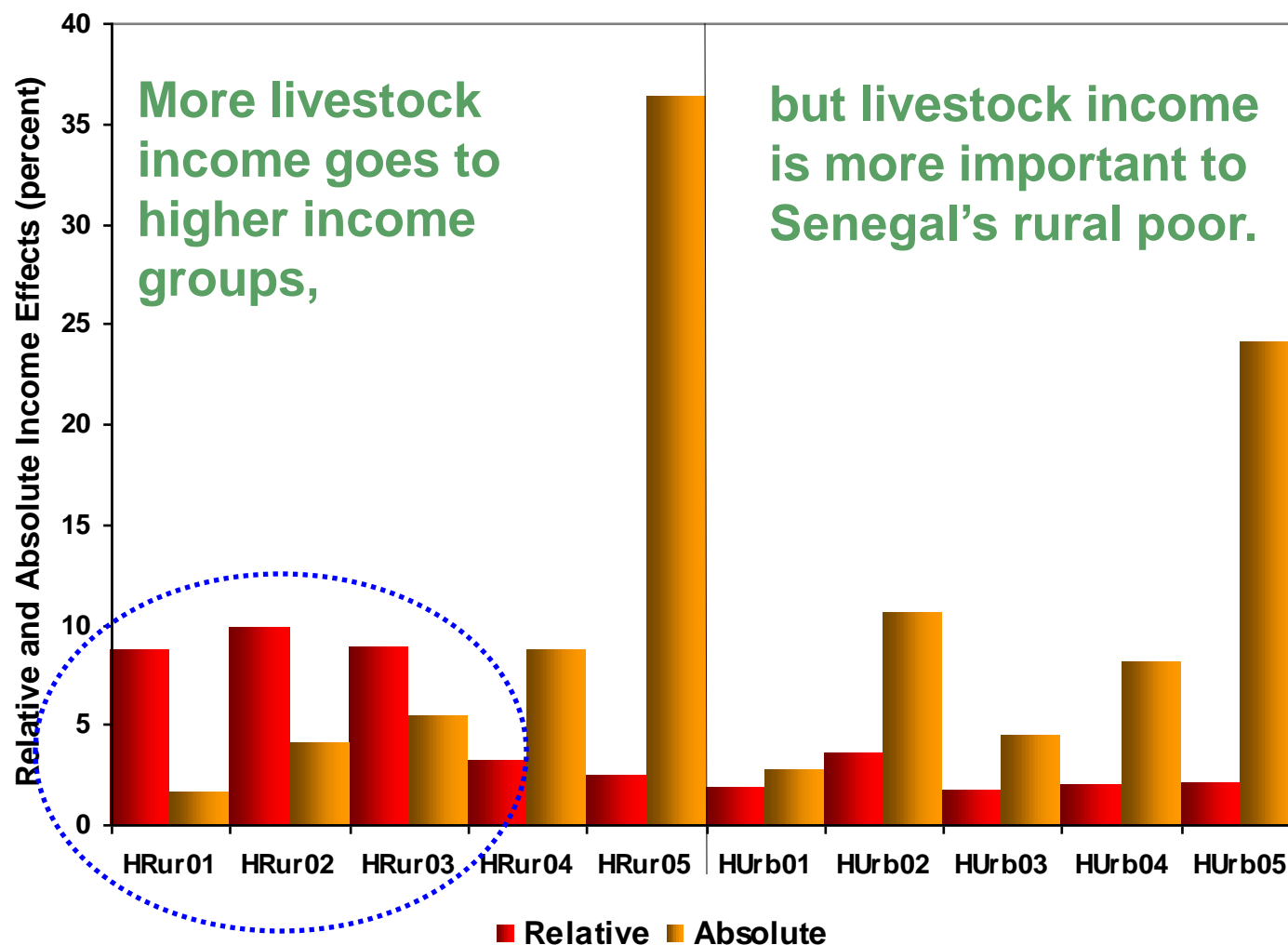
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# Senegal: Income Effects from Livestock





# Policy Simulation

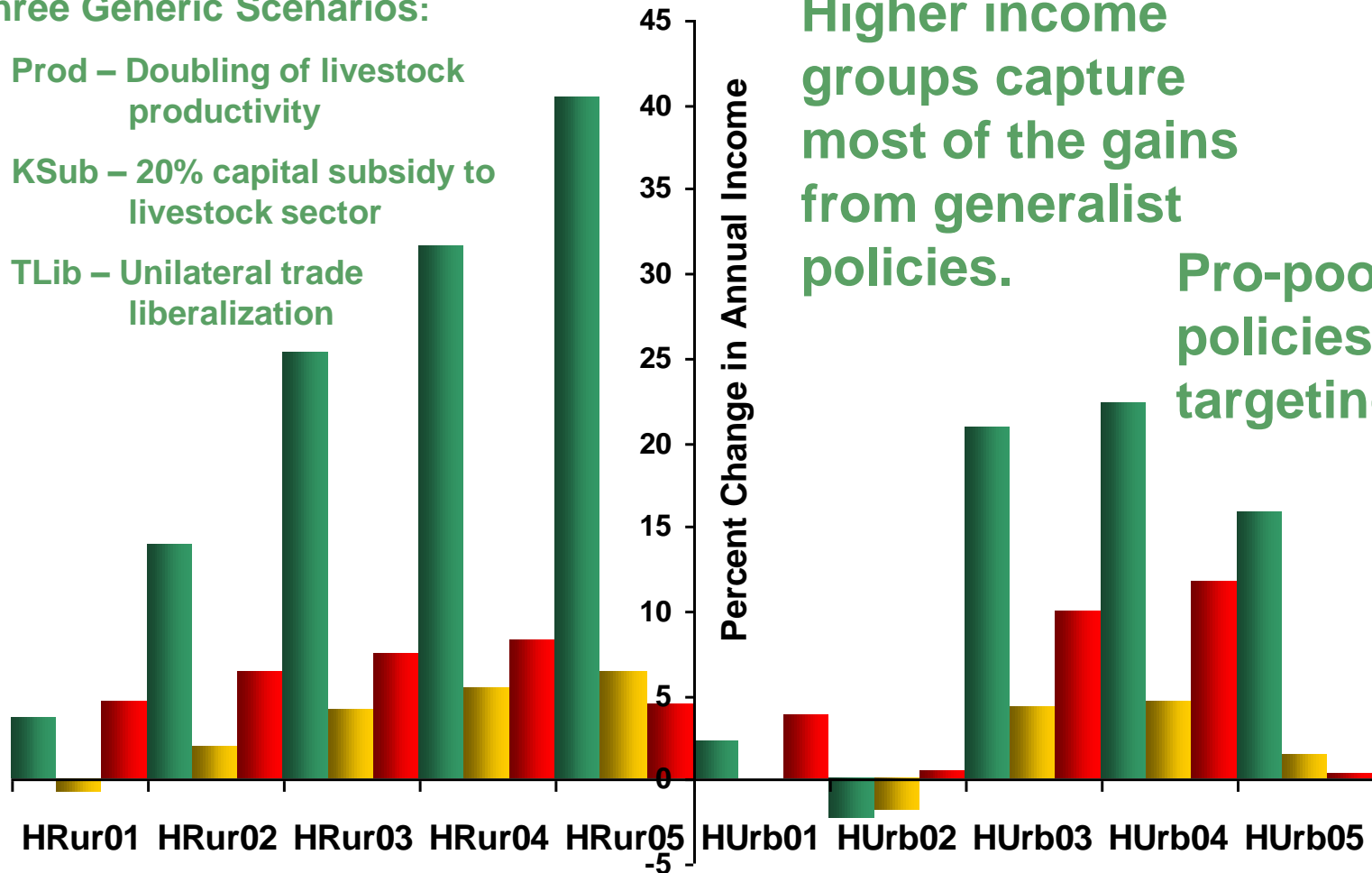
- Using simulation models, we can assess a wide variety of policies *ex ante*.
- Because we develop these models with consistent macro-micro datasets, we can evaluate economywide linkages and detailed incidence such as poverty alleviation.
- Here we look at two generic kinds of scenarios:
  - Policies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



# Simulations of 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.

Pro-poor policies need targeting.



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## 4. HPAI – Challenge and Opportunity from a Major Animal Disease Risk

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- Pathogens associated with livestock pose a challenge to public health and economic security at the national and global levels.
- A dramatic recent example of this is Highly Pathogenic Avian Influenza, which has potentially momentous consequences for human society.
- Smallholder livestock producers can be seriously threatened by conventional measures to fight diseases like this.
- On the contrary, we believe disease risk management can be an opportunity to improve their circumstances.



# Risk Management from a Development Perspective

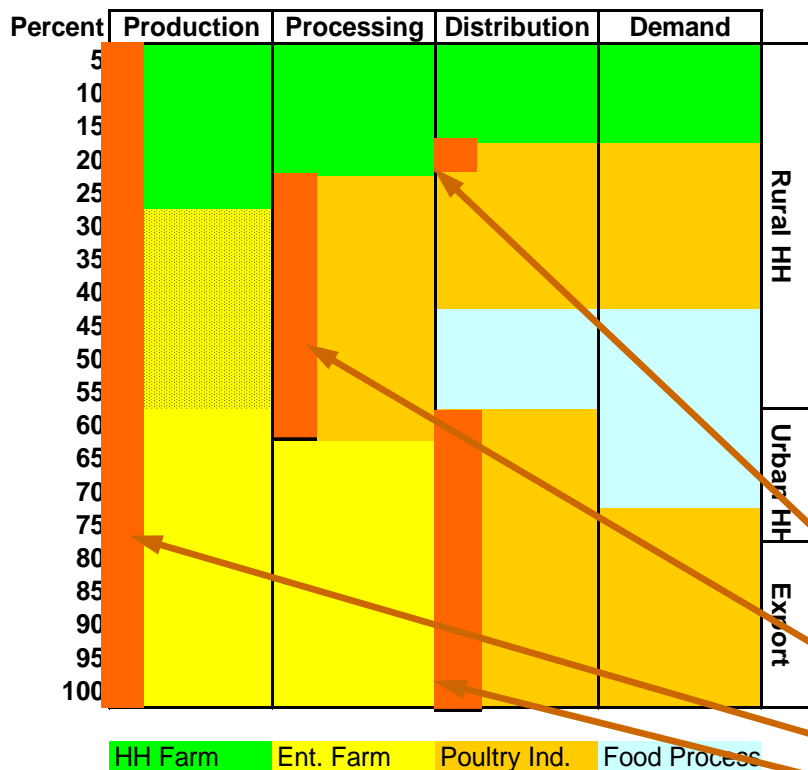
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- HPAI presents an unusual opportunity for international cooperation because poor rural households can contribute the global commons of disease prevention.
- Their participation in this effort is unlikely to be voluntary, and indeed should be rewarded if success is to be achieved.
- To make such policies effective, economic analysis of incentives and localized design and implementation are needed.

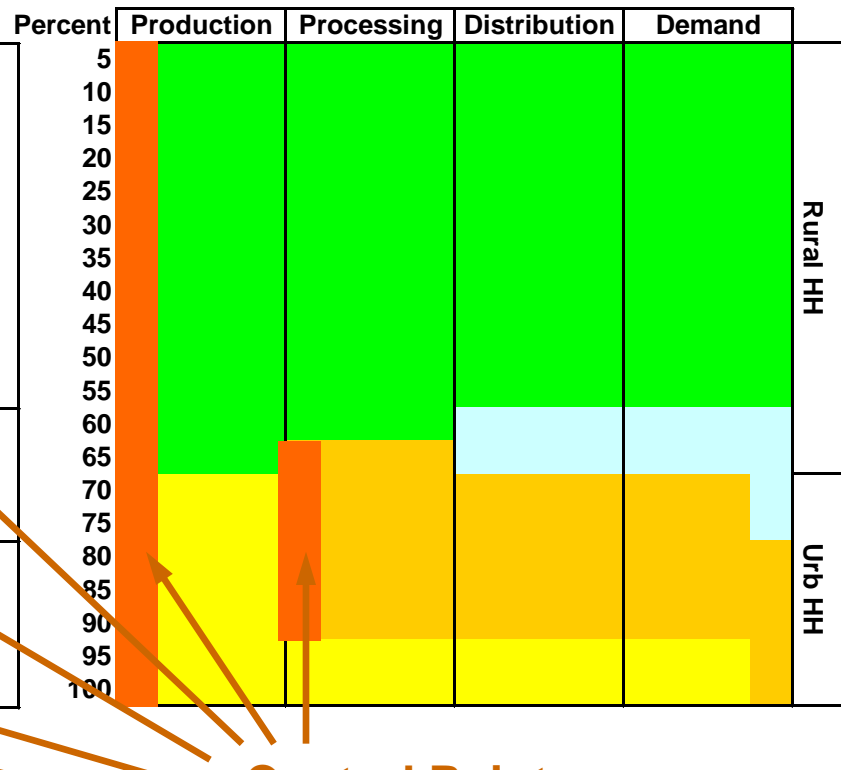


# What Can go Wrong: Resource Flows in the Poultry Sector

## Thailand



## Vietnam



Control Points



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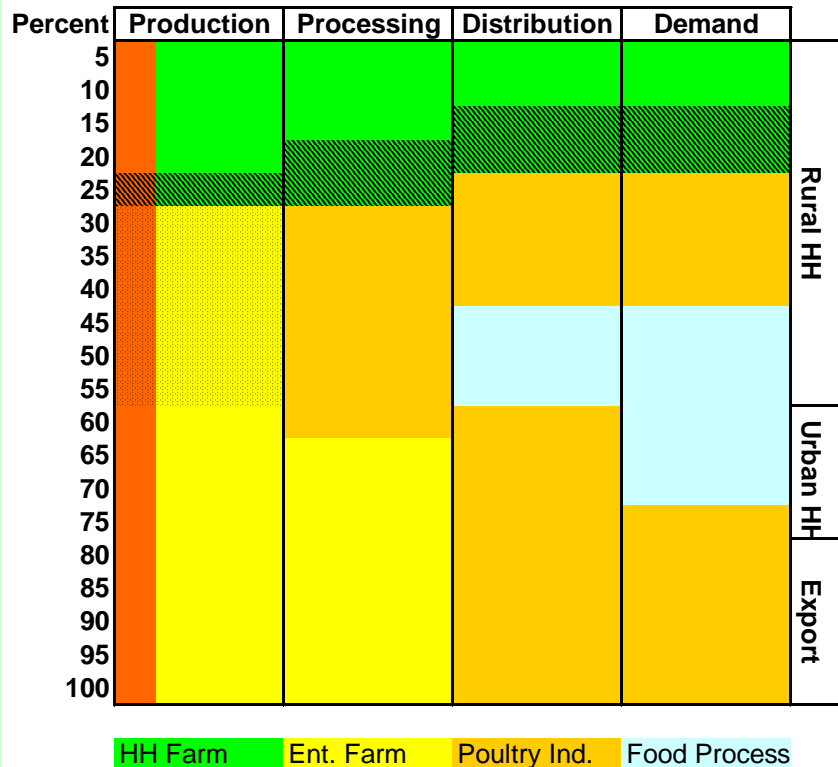
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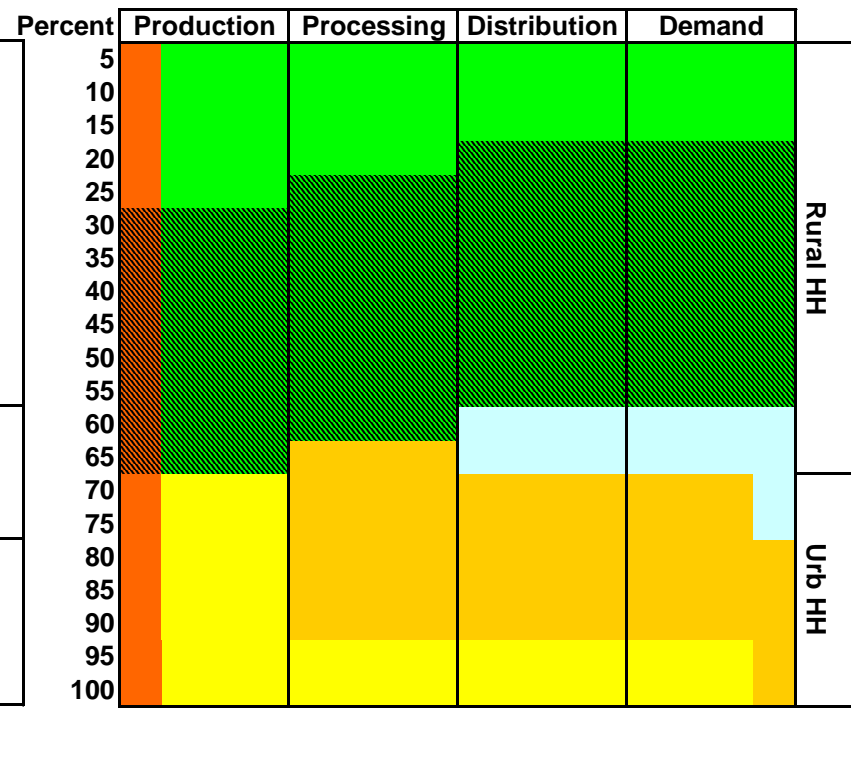


# Control and Displacement

## Thailand



## Vietnam



There are significant risks that control strategies could permanently displace small producers. This could adversely impact local food security, poverty, and inequality.



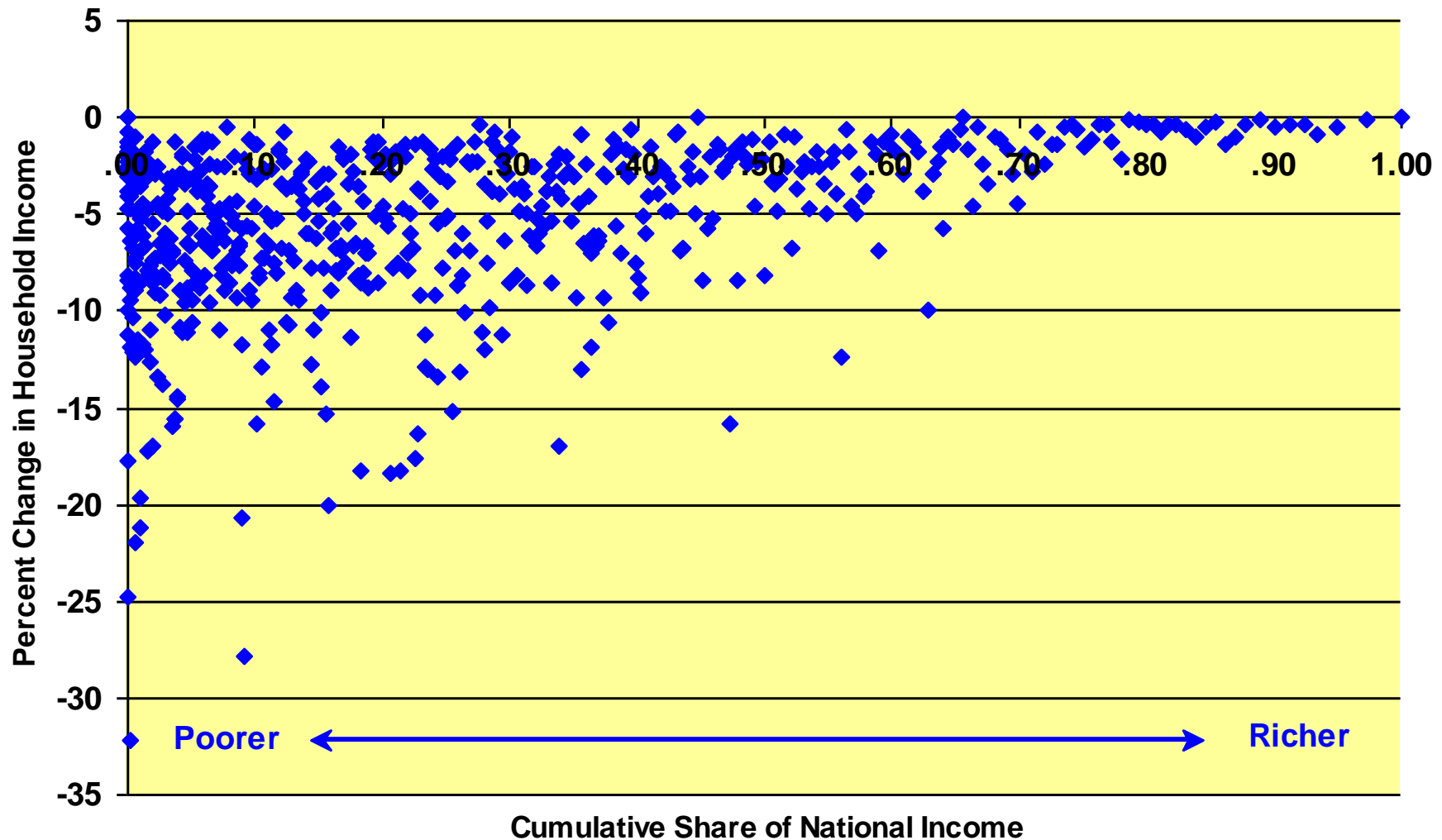
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# Vietnam: Household Income Effects of a 50% Cull



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# Reducing HPAI Risks while Safeguarding Livelihoods

- If policy makers want to reduce HPAI risks to animal and human populations, without undue adverse effects on the poor, they need cost-effective means to identify local outbreaks and contain them.
- The information needed to accomplish this exists, but it has until now been very difficult to obtain and implement.
- Evidence suggests that local communities are well aware of infection patterns, but reporting processes are plagued by inefficiency and incentive problems.





# Socially Effective Risk Management

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Recognizing economic realities in livestock production and livelihoods, we propose a three part program to manage animal disease risk:

- Surveillance
- Control
- Traceability



# Surveillance

We are beginning research to examine alternative policy designs that facilitate early detection of outbreaks.

- Effective surveillance combines
  - incentives for collective responsibility and self-reporting
  - takes account of resource constraints of different communities

to develop mechanisms that

- reduce health risk
- protect economic survival of the producers.



# Control

- Cost effective decentralization of control capacity is essential to the long-term success of disease management.
- In the HPAI epicenter countries, this will require new command and incentive relationships between district and provincial authorities, the central government, and outside stakeholders (NGOs, aid agencies, etc.).
- Regional participation and coordination are necessary for sustained risk reduction.



# Traceability

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Defined:

- An important class of strategies are mechanisms to trace the movement of agricultural products through the food supply chain.
- Traceability has value for government, consumers, and producers, reducing health risk while increasing the effectiveness of demand targeting and raising value-added by origin.



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# Traceability: Advantages for Stakeholders

- Government** - Testing moves downstream to reduce search costs (funneling), from extensive to intensive screening, reducing scope of surveillance systems.
- Accountability: Increased risk for noncompliance.
  - Rapid Identification: Reduced scope and time for disease incubation, lowering mutagenic risk.
  - Lower Control Cost: More effectively targeted culling.

## Consumers

- Food and disease risk reduction
- Quality improvement
- Product differentiation



# Traceability: Producer Advantages

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- Market access/value chain participation
- Technology transfer
- Extension services
- Network externalities (CE, marketing boards, producer coops)



# Traceability: Producer Behavior

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## Incentive Effects:

- Certification/branding and quality incentives (e.g. French AOC wine, coffee)
- Brands are collateralizable assets
- Bargaining power

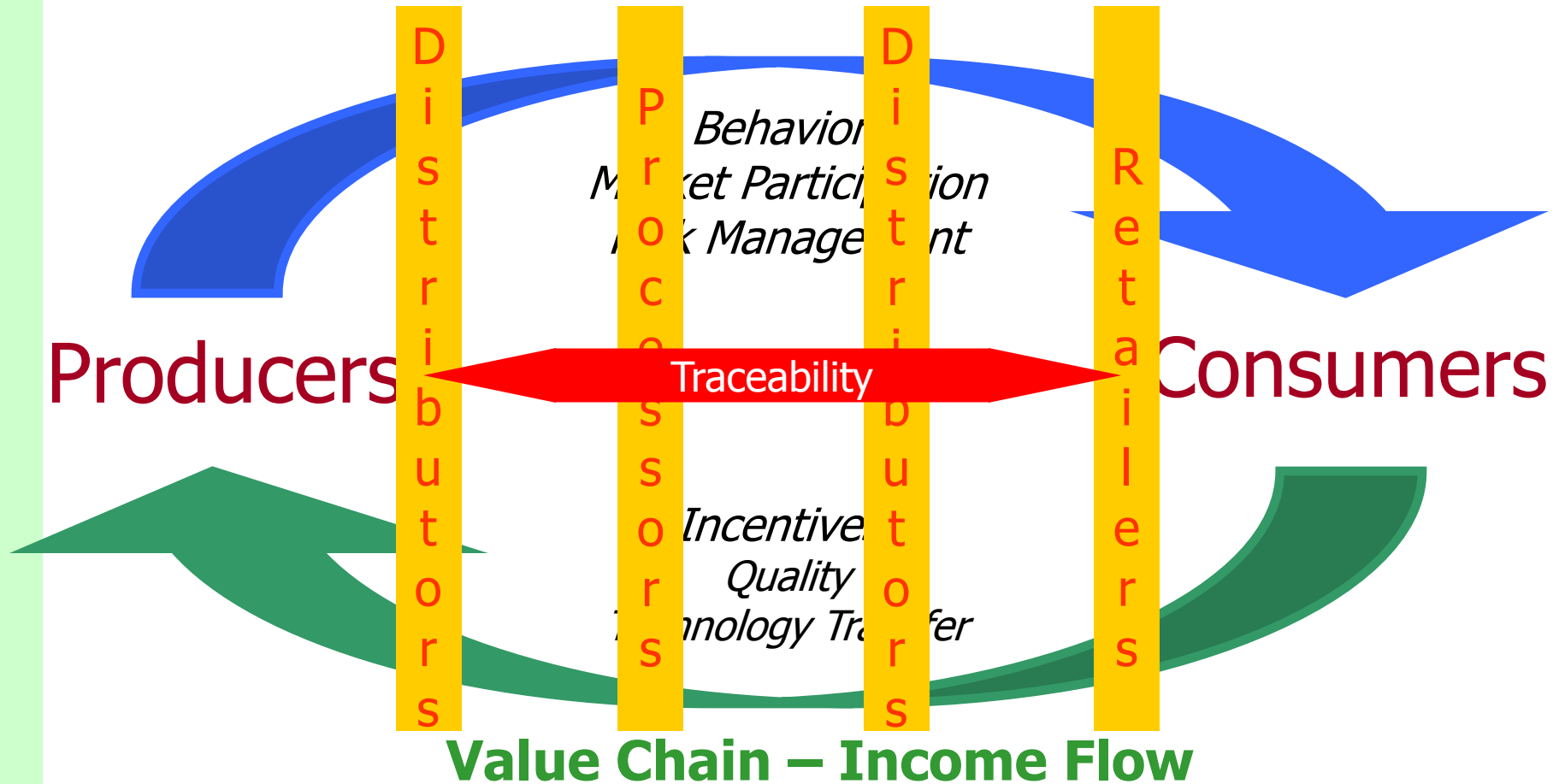
## Program Implications:

- Voluntary participation for value chain entry
- Experiment with membership fees to finance SPS infrastructure



# Market Flow: Resources and Income

## Supply Chain – Resource Flow



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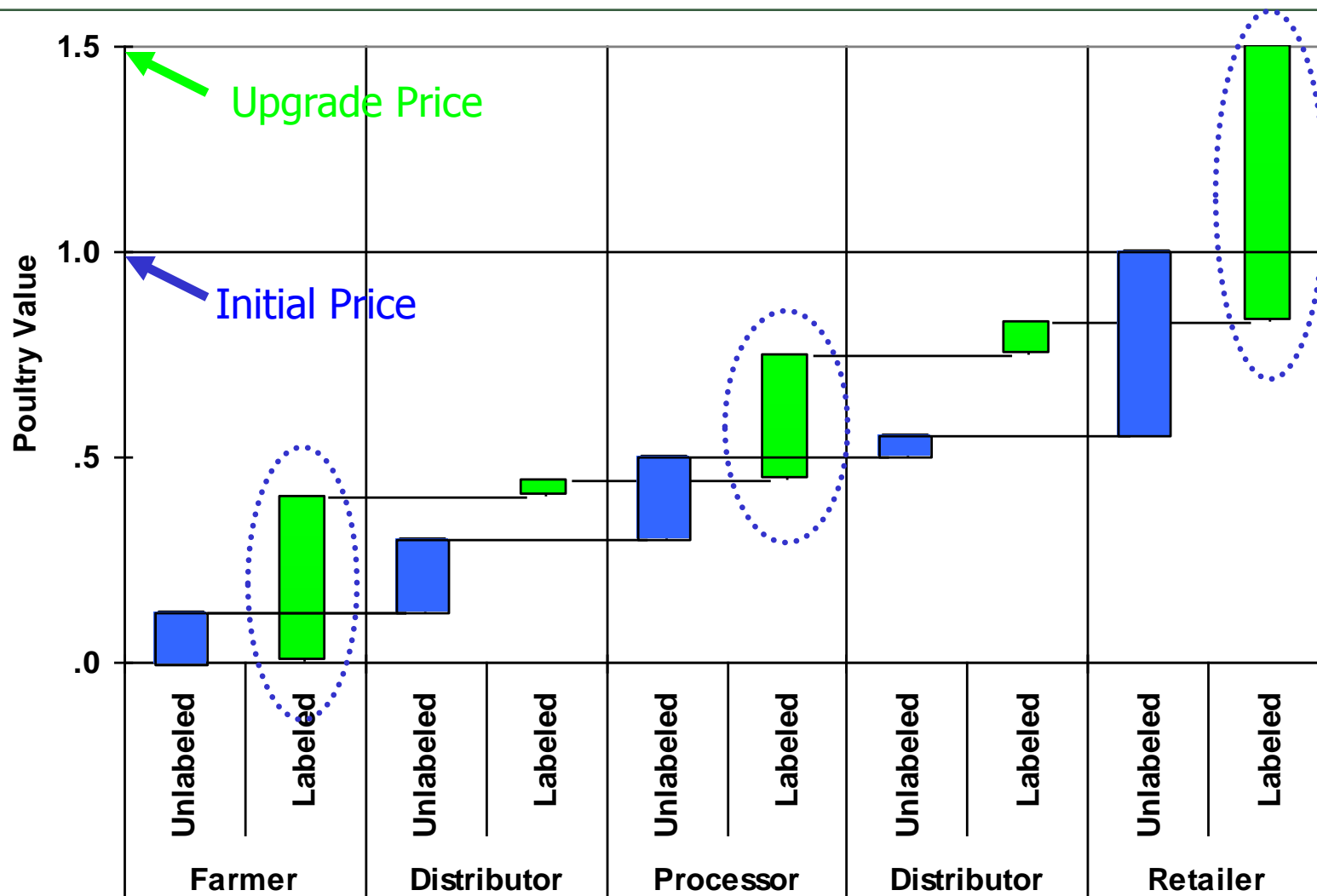
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# Poultry Value Chain



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# 5. Conclusions

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- Livestock can make a substantial contribution to poverty reduction, but pro-poor policies need targeting
- Effective, market oriented livestock promotion has significant potential to
  - Increase output quantity, quality, and prices
  - Reduce cost with improved distribution technology



# Conclusions - HPAI

- Policies toward HPAI and other significant animal diseases in developing countries necessarily implicate the rural poor majority.
- These people need to be recognized as part of the solution to reducing disease risk, not the problem.
- Despite the global momentum for rapid and intensive measures to control poultry stocks and restructure management practices, socially effective policies must address the economic and institutional realities poor rural majority populations.



# HPAI 2

- Because of diverse initial conditions, national policies cannot be decentralized effectively without close attention to local incentives. One size will not fit all local conditions.
- Driving the problem underground can increase contagion risk and more seriously disrupt rural markets/livelihoods.
- Well designed monitoring and traceability systems can improve the terms of market access for the rural poor, making them better off as a result of risk reduction policies.



# *DISCUSSION*



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