

Controlling Avian Flu and Protecting People's
Livelihoods in the Mekong Region, Africa and Indonesia

Livelihood Impacts of HPAI Outbreak

FAO-APHCA-DFID
International meeting on
Pro-poor HPAI Risk Reduction:
Lessons from Southeast Asia and Africa

IFPRI Economic Impact and Livelihoods Team

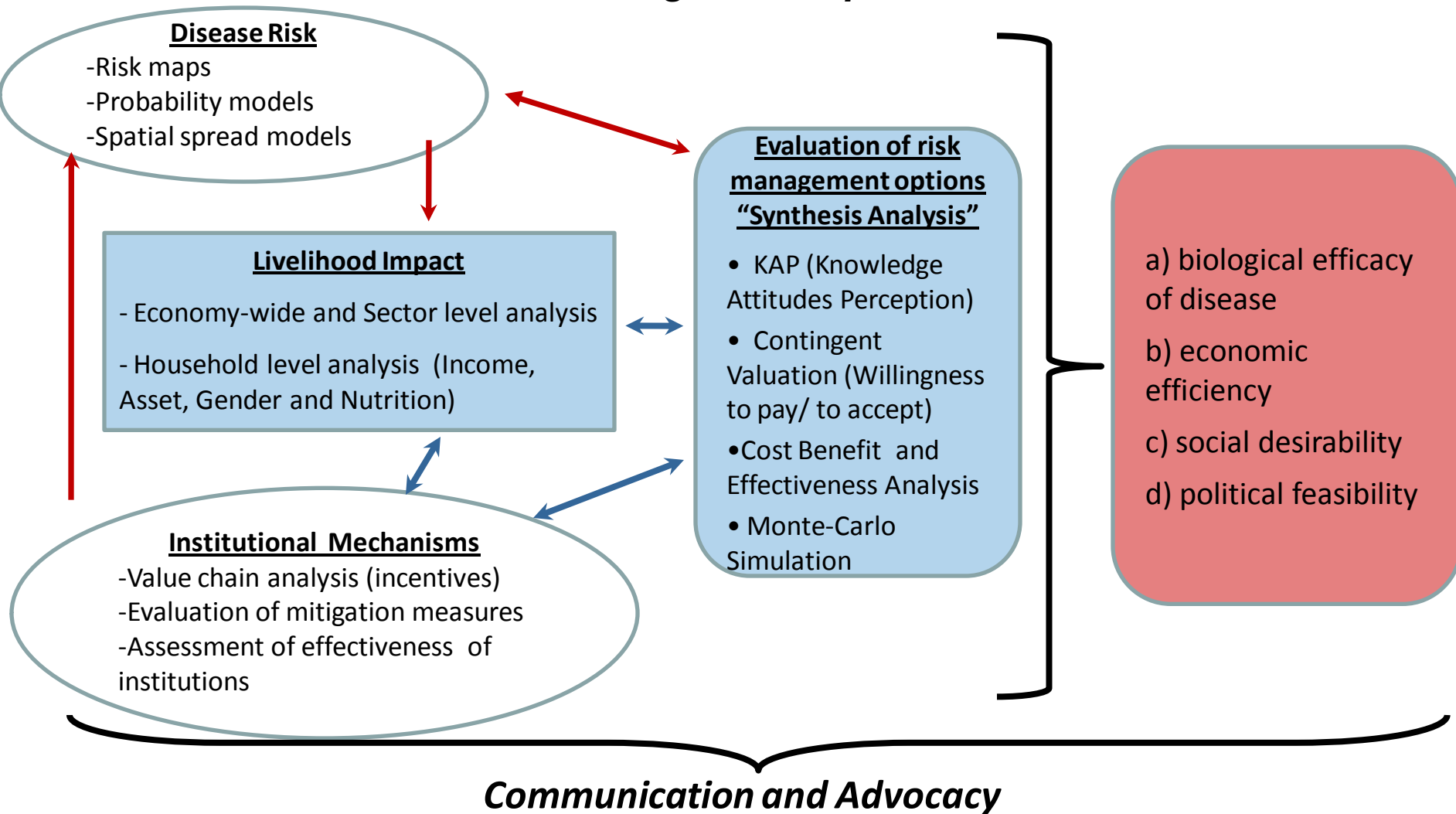
A Collaborative Research
Project Funded by:



Implemented by:



Background Papers



Characterization of shocks from HPAI

Supply Shock



Poultry Production



- Generally localized
- Small supply shock relative to poultry population (less than 2% in most countries)
- **small increase in price**

Demand Shock



Poultry Consumption



- Often discrete
- Mostly non-localized
- No actual outbreak is needed
- Slows down over time
- **big decrease in price**

➤ **Since we obtain reduction in prices, the demand shock prevails**

Livelihood effects by disease status

- High risk/ Endemic status
 - Supply shocks sporadic and demand shock restrained
 - potential for high value of supply and demand shocks
- Low risk/no previous outbreak
 - potential for high value of demand shock and possibly low supply shock

Household impact scenarios using disease spread risk map

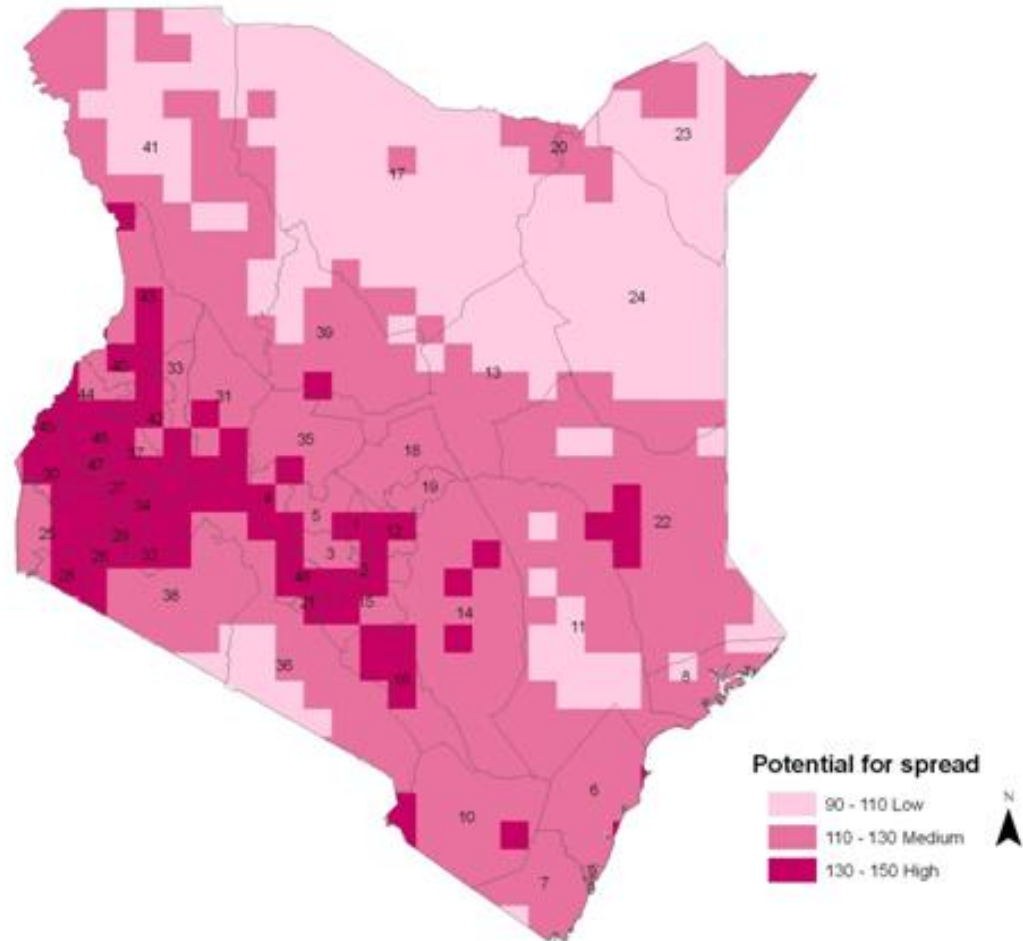
6 Scenarios:

- Loosing all flock:
 - Country-wide
 - High-Risk areas

- Large flocks become small
 - Country-wide
 - Medium-Risk areas

- Small flock lose all

- Price Shock



Results from Economy-wide Modeling

Change in...	Sporadic (Ghana)		High Risk/endemic(Nigeria)	
	10% P-Shock	40% C-Shock	10% P-Shock	10% C-Shock
Price	10%	~ 0%	33%	- 2%
Production	- 10%	- 27%	- 10%	- 9%
Revenue	~ 0%	- 27%	20%	- 11%
Household Income of Poor	~ 0%	0.15 %	~ 0%	- 0.1%

- Production shock in an endemic case causes high price increase since less is captured by imports
- Demand shock is much more damaging for poultry producers
- Income of large poultry producers are affected much more due to higher share of income from poultry

Structure of the poultry sector in the project countries and households' income portfolio

- Traditional mode is significant in all countries
 - No outbreak case (like Ethiopia), there is extreme concentration
 - Regardless of epidemiological status the secular trend is towards greater presence of the modern poultry sector
- In terms of size, small number of birds per farmer is the norm
- Generally, households that own poultry also engage in several other activities – crop-livestock, livestock-livestock and livestock-non farm interactions
- **Livelihood effects on average are small**
 - **BUT there are livelihood hotspots where poor rely more on poultry**

Impact of HPAI on livelihoods: low risk (no outbreak case)

Scenarios:	Livestock Income	Livestock Wealth	Total Income	Total Wealth
1 –Lose all poultry	x	x	x	x
2 –Lose all small flocks	x	x	x	x
3 – Large flocks become small flocks	- 28 %	- 31 %	- 7 %	- 6 %
4 – Poultry Sellers: High price falls to low price	x	x	x	x
5 – High HPAI Risk: Lose all poultry	- 67 %	- 46 %	- 8 %	- 4 %
6 – Medium HPAI Risk: Large flocks become small	x	-41 %	x	- 9 %

x = **not significant**

Impact of HPAI on livelihoods: sporadic case

Scenarios:	Livestock Income	Livestock Wealth	Total Income	Total Wealth
1 –Lose all poultry	-17%	x	-0.8%	x
2 –Lose all small flocks	x	x	x	x
3 – Large flocks become small flocks	x	-23 %	x	-12 %
4 – Poultry Sellers: High price falls to low price	x	x	x	x
5 – High HPAI Risk: Lose all poultry	-22%	x	-1.6 %	x
6 – Medium HPAI Risk: Large flocks become small	-30%	-31 %	-0.5%	-16%

x = **not significant**

Impact of HPAI on livelihoods: high risk/endemic case

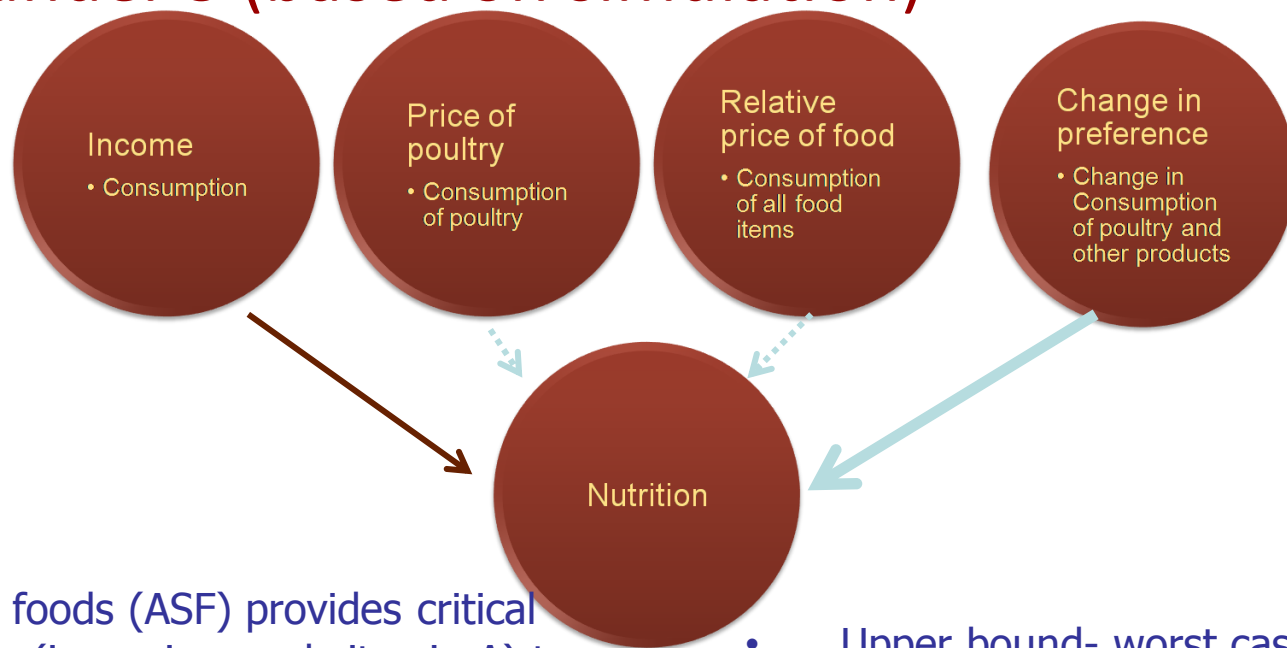
Scenarios:	Livestock Income	Livestock Wealth	Total Income	Total Wealth
1 –Lose all poultry	x	x	x	x
2 –Lose all small flocks	x	x	x	x
3 – Large flocks become small flocks	-42 %	x	-0.6 %	x
4 – Poultry Sellers: High price falls to low price	x	x	x	x
5 – High HPAI Risk: Lose all poultry	x	x	-1.6%*	x
6 – Medium HPAI Risk: Large flocks become small	-39%	-21 %	-0.7%	-9%

x = not significant; *Indonesia case, poultry share of income

What about other livelihood effects: Nutrition

- Can judge *potential* effects on early childhood nutrition
 - Good degree of specialization on poultry products among ASF
 - If poultry withdrawn from the diet –can have significant effect on outcomes such as stunting, anemia
 - Fact that it has not occurred is good news-contained/restrained
 - Endemic probably adjusts the preferences!!!

Potential impact of HPAI on nutrition children under 3 (based on simulation)



- Animal source foods (ASF) provides critical micro nutrients (iron, zinc, and vitamin A) to young children
- Endemic case like Indonesia: data (IFLS3 (2000) indicated 30% stunted, 17% underweight, 11% wasted, and 65% anemic
- No disease case like Kenya: data (KIHBS 2005/2006) indicated 34% stunted, 16% underweight, 8% wasted (low weight/height)
- Upper bound- worst case scenario /Reduced poultry product consumption from a modeled sustained HPAI shock with no ASF substitute
- Indonesia and Kenya -significant detrimental nutritional impacts (stunting, height for age, and hemoglobin concentration)

Main findings

- **Consumer panic** foremost factor in the reduction of poultry production outbreak => **education campaigns** will be crucial;
- Most small-scale poultry producers on average tend to have **diversified income** portfolios and thus unlikely to be significantly affected by HPAI shocks
- **Under the assumption of no animal source food substitute**, reduced poultry consumption from a simulated sustained **HPAI shock** => **could have significant detrimental impacts** in terms of stunting, height for age, and hemoglobin concentration for children 1-3 years old

Policy implications

- Education and awareness campaigns will be crucial at limiting the reaction of consumers due to perceived risks;
- If outbreak occurs, there has to be contingency plans for livelihood strategies esp. targeted to small-scale producers –not necessarily restocking
- Prioritize the intervention in areas where there is congruence between disease risk and livelihood risk hotspots
- Provide an encouraging environment for small-scale poultry producers to adopt control measures such as bio-secure poultry management
- If there is sustained **HPAI shock**, Governments may want to target nutritional support programs for children of 1-3 years old