IFPRI Activities on Compensation

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Outline of presentation

- ▶ Who is IFPRI?
- ▶ IFPRI's past research on compensation (1, 2)
- ▶ Context for presentation based on the discussions at the workshop
- ▶ IFPRI's current research on compensation
- ▶ What are experiments? (1, 2, 3)
- ▶ Examples of experiments
  - ▶ Experiment (1): Preferences "The price is right"
  - ▶ Experiment (2): Preferences "The time/risk is right"
  - ▶ Experiment (3): Institutions "Design reporting mechanism"
- ▶ Next steps (1, 2)

Who is IFPRI?

- IFPRI stands for *International Food Policy Research Institute* (`www.ifpri.org`)
  - One of 15 research centers belonging to the *Consultative Group on International Agricultural Research* (`www.cgiar.org`)
- IFPRI's vision
  - A world free of hunger and malnutrition
- IFPRI's mission
  - To provide research-based policy solutions that reduce poverty and end hunger and malnutrition
- IFPRI's human focus
  - The world's poor, primarily in developing countries

IFPRI's past research on compensation (1)

- ▶ Enhancing control of HPAI in developing countries through compensation: issues and good practice
    - ▶ Published in 2006
    - ▶ Collaborating partners: FAO, IFPRI, OIE, WB
- ▶ Main issues
    - ▶ Why compensate?
    - ▶ Who to compensate?
    - ▶ What to compensate?
    - ▶ When to compensate?
    - ▶ How to compensate?
    - ▶ Other necessary conditions for good practice
        - ▶ Awareness, understanding and preparedness
- ▶ The FAO-IFPRI-OIE-WB report answered these questions mainly from a qualitative standpoint (next slide)

IFPRI's past research on compensation (2)

- ▶ Why compensate?
  - ▶ Prevention and control; i.e., to induce reporting
- ▶ Who?
  - ▶ The appropriate beneficiaries; mainly, the owners of the culled animals
- ▶ What/how much?
  - ▶ More than 50% of pre-outbreak market prices; ideally, between 75% and 90% (only direct losses)
- ▶ When/how quickly to compensate?
  - ▶ Within 24 hours of culling–*preventive*
- ▶ How?
  - ▶ Cash or vouchers; designated budget
- ▶ Awareness and understanding?
  - ▶ 3%-5% of budget dedicated to social marketing
- ▶ Preparedness!

Context based on discussions in the workshop

▶ Recurring theme throughout the workshop
  ▶ The purpose of compensation is for prevention and control, which means *"to induce reporting"*
▶ If we agree on this, then we can think of the "reporting" transaction as consisting of two sides
  ▶ A "demand side" of reporting (e.g., the government side) and a "supply side" of reporting (e.g., the farmer side)
  ▶ The workshop has mainly focused on the "demand side"; i.e., what is the right price of compensation from the government side? (i.e., valuation methods etc.)
  ▶ It has focused less on the "supply side"; i.e., what is the right price of compensation from the farmer side? (i.e., incentive compatibility etc.)
  ▶ Just because government offers a "price" it does not mean farmers are willing to accept it and report–even if the price is based on careful valuation techniques
▶ The remainder of the presentation will discuss how IFPRI is assessing the "demand side" (i.e., farmer incentives to report)

IFPRI's current research on compensation

- At least two of the previously mentioned issues can be addressed more rigorously
  - What/how much to compensate?
  - When/how quickly to compensate?
- Namely, these questions determine people's incentives to report
- This has lead IFPRI to take a *behavior-based approach* to compensation; i.e., *economics experiments* (more later)
  - Experiments on preferences
    - Willingness-to-report experiments
    - Risk, time and trust experiments
  - Experiments on institutions
    - Mechanism design: Can we design institutions that interact with preferences to induce optimal reporting?
- How do the Ott-Traoré approaches (presentations) fit in?
  - Well, among other things they inform carefully what parameter values to calibrate the experiments at

What next?

► First, what are experiments?

► Then, examples of compensation-related experiments

What are experiments? (1)

- ▶ We refer to economics (behavior-based) experiments
- ▶ A "session" in which we observe people's behavior in a controlled environment. Usually, framed around a "game"
- ▶ Quick example (more later)
  - ‣ Suppose we want to know the price at which a farmer is willing to report a disease outbreak
  - ‣ We can conduct a "game" in which the farmer has private information about an "outbreak"
  - ‣ Suppose there is a return to reporting, but that it is also risky/costly to report
  - ‣ We can vary the returns to reporting (i.e., level of compensation) and study the following question: *"What is the right price that induces the farmer to report?"*
  - ‣ Note that we can also vary the velocity at which compensation occurs and study a different question
- ▶ Important (!)
  - ‣ What do we hope to learn from conducting the experiment?
  - ‣ This determines the design of the experiment

What are experiments? (2)

▶ Different scales of experiments distinguished by 4 features

Name	Features			
	Participant	Location	Task	Knowledge
Laboratory	Students	University	Game	Yes
Artefactual	Farmers	Field	Game	Yes
Framed	Farmers	Field	Actual	Yes
Natural	Farmers	Field	Actual	No

▶ Lab experiments: Typically, with students at universities

▶ Artefactual field experiments: Also referred to as *"lab experiments in the field"*. Quite popular since they are relatively costless to implement, but still identify generic behavioral responses

▶ Framed and natural field experiments: Differ by the fact that participants in the latter tend not to know that they are part of an experiment. Many recent social programs have been implemented as framed or natural field experiments

What are experiments? (3)

- ▶ Why conduct experiments?
  - ▶ Experiments elicit responses in a clear yet non-transparent manner, reducing participants' incentives to "lie"
  - ▶ Experiments typically record people's actual decisions over tasks–as opposed to stated decisions
  - ▶ Experiments typically give monetary incentives for participating in tasks. Rewards depend on decisions made during the experiment
- ▶ How are experiments different from surveys?
  - ▶ Experiments are different from surveys primarily in the way responses are elicited
  - ▶ Experiments and surveys form good complements to one another
- ▶ IFPRI and experiments
  - ▶ *IFPRI Mobile Experimental Economics Laboratory* (IMEEL, `http://www.ifpri.org/themes/IMEEL/imeel.asp`)
  - ▶ Equipment and know-how to conduct both computer- and paper-based experiments in the field

Experiment (1): "The price is right"

- ▶ Suppose we want to learn the "right price" of compensation
- ▶ Consider a game in which a farmer (say, Juan) has a stock of some commodity (e.g., toy chicken) that can be sold in a market for a price of $X
- ▶ Suppose Juan has private information about some occurence (e.g., a coin flip that lands "cara" o "sello")
    - ▶ If "cara", the market is undisturbed for two periods
    - ▶ If "sello", the market is undisturbed this period, but may be disturbed next period
- ▶ Juan chooses whether or not to report when "sello" occurs
    - ▶ If he reports, Juan loses half his stock and gets compensated at price "a" times $X, where "a" lies between 0.5 and 2
    - ▶ If he does not report and the market is disturbed, Juan loses half his stock and does *not* get compensated for them
- ▶ We can vary multiple parameters to study the level of compensation that induces reporting
    - ▶ Calibrate "X" and "a" and vary levels
    - ▶ Exogenously induce disturbance

Experiment (2): "The time/risk is right"

- ▶ The above example alludes to at least two issues
  - ▶ Occurrence of "sello" is risky
  - ▶ Compensation need not be either immediate or certain
- ▶ We can consider an alternative game in which Juan does not get compensated till a third or later period
- ▶ We can also consider another game in which Juan may not get compensated at all due to some random event
- ▶ We can also study Juan's risk and time preferences by having him play risk and time preference games (i.e., have Juan choose over real lotteries and trade-offs between immediate and future earnings)
- ▶ These preferences will also serve as controls in the games described previously

Experiment (3a): "Design of optimal reporting mechanism"

- ▶ The previous experiments mainly studied preferences for reporting, time and risk
- ▶ We can also conduct experiments that explicitly vary the reporting mechanism
- ▶ Suppose that reporting now not only depends on Juan, but also on other farmers
- ▶ Can this reduce monitoring costs and induce higher reporting levels?
- ▶ In particular, is one institution more likely to induce reporting over another?
- ▶ Compare two cases
    - ▶ Compensation based on group reporting
    - ▶ Compensation conditional on level of bio-security

# Experiment (3b): "Design of optimal reporting mechanism"

- ▶ Compensation based on group reporting
  - ▶ Suppose groups of farmers are identified based on geographical area
  - ▶ If at least one person in the group reports an outbreak, the group gets compensated at price of "a" times $X for "a" greater than 1
  - ▶ If not, all birds in infected region are culled and there is no compensation
  - ▶ Aim: Lower monitoring cost and incentivize group monitoring
  - ▶ Possible caveats: (a) outside options, (b) social conflict, (c) unfairness?

- ▶ Compensation conditional on level of bio-security
  - ▶ Bio-security "level" represented by size of stock
  - ▶ Smaller stocks less likely to get compensated
  - ▶ Possible caveats: (a) social exclusion, (b) perverse incentives to report among smallholders?

- ▶ How do the two systems compare with regard to incentives to report?

Next steps (1): HPAI Project

- ▶ DFID-funded HPAI control project
  - ▶ Participating institutions: IFPRI, ILRI, FAO, RVC, UC Berkeley
- ▶ Three clusters (disease risk, livelihood impact, institutional challenges) and synthesis analysis (see figure)

Figure: Clusters of DFID-funded HPAI Project
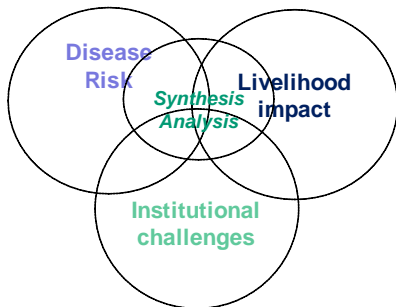
- ▶ Within institutional cluster, behavior-based economics experiments

Next steps (2): Conduct experiments

▶ Experiments currently under design

▶ Which countries?

- ▶ **Indonesia**
  - ▶ History: Compensation did not work
  - ▶ Why not? (1) Decentralization, (2) limited funds and (3) lack of incentives among smallholders (sector 3, 4)
  - ▶ Status quo: Lack of interest in compensation. Consider other options such as (1) market closure and (2) demand-driven best practices for poultry production

- ▶ **Ghana**
  - ▶ Status quo: Preventive. Proposal to tie compensation to level of bio-security
  - ▶ Question: Will this create perverse incentives for smallholders?

- ▶ **Nigeria**
  - ▶ Insurance schemes for poultry and compensation tied to insurance
  - ▶ Question: Can group-based insurance schemes facilitate compensation? Are these self-sustaining?
  - ▶ Perhaps, an option for smallholders in CPA?

The End

Thanks for your attention!

Questions/Comments?