

Primary Data from Surveys

1. Precepts of primary data collection
2. Modes of primary data collection
3. Community survey design
4. Individual survey design
5. Tasks to complete before enumeration
6. Tasks to complete after enumeration
7. Resources for survey design



Primary data: Modes

Community surveys

- Low investment (time, cost)
- Good for establishing presence of invasives
- Good for establishing common practices regarding invasives
- Limited information on income and other individual impacts

Individual surveys

- High investment (time, cost)
- Good for establishing presence of invasives
- Good for establishing individual practices regarding invasives
- Extensive information on income and other individual impacts
- Good for establishing attitudes

Primary data: Modes

| | Time | Reliability | Ability to Participate | Response Rate | Cost |
|---------------------------|-----------|-------------|------------------------|-----------------|-----------|
| Internet | Mid | Low-Mid | Low | Low-Mid | Low-Mid |
| Telephone | High | Mid-High | Mid | Med | Low-Mid |
| Mail | Low | Low-Mid | High | Med | Mid-High |
| Focus group | Mid | Mid | High- Very High | High- Very High | Low-Mid |
| Personal interview | Very high | High | Very high | High- Very High | Very high |



Community surveys

- Have you seen this before? What do you call it?
- In what ways is this species good for you and the community?
 - Do people consume it in any way? What is the value?
 - Are there markets in this species? What is the value?
 - What have people done to encourage its presence?
 - How much time?
 - How much money?
- In what ways is this species bad for you and the community?
 - Has it had negative consequences for health? What is the cost?
 - Has it had negative consequences for ecosystems? What is the cost?
 - Has it had negative consequences for tourism? What is the cost?
 - What have people done to discourage its presence?
 - How much time?
 - How much money?



Community surveys

- Are other species seen more because of this species? Is that good or bad?
 - Good: Do people consume it ? Are there markets in this species? What is the value?
 - Bad: Does it have negative consequences for health, ecosystems, or tourism? What is the cost?
- Has this species displaced other species? Is that good or bad?
 - Good: Were there negative consequences for health, ecosystems, or tourism? What was the cost?
 - Bad: Did people consume it ? Were there markets in this species? What was the value?
- Status
 - When did it first arrive?
 - Is it seen with more or less frequency since it first arrived?

Recap:

Primary data: Modes

Community surveys

- Low investment (time, cost)
- Good for establishing presence of invasives
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What features were present in this sample survey?



Individual surveys: Data needs

- Income: agricultural, off-farm, urban
- Value of damage caused by the species
 - e.g., crop loss, housing values
- Costs to mitigate damage
 - e.g., cost of pesticides
- Value of personal consumption of the species
- Health status
 - e.g., cost of treatment
- Time use
 - e.g., time spent fighting the effects of the invasive species
- Social changes
 - e.g., have people changed jobs because of the invasive?
 - e.g., has the invasive changed social functions?



Individual surveys: Q types

- “Naïve” approach (“long form”)
 - What is the value of damage that invasive species caused your crops in the past 12 months, in dollars? \$ _____
- “Complex” approach (“wide form”)
 - What is the value of damage that invasive species caused your sugar cane in the past 12 months, in dollars? \$ _____
 - What is the value of damage that invasive species caused your rice in the past 12 months, in dollars? \$ _____
 - What is the value of damage that invasive species caused your cocoa in the past 12 months, in dollars? \$ _____



Individual surveys: Precepts

- *Test the survey design* for understanding before enumeration
 - Understanding
 - Ensure that questions and vocabulary are understood by the respondent
 - Validity
 - Internal consistency: Respondent gives same answer to repeated questions
 - Intra-observer consistency: Respondent gives same answer to different enumerators
- Avoid learning that the question is invalid after the survey has been conducted



Individual surveys: Precepts

- Before the survey begins, *clarify the purpose of the survey* and explain how data will be used
- Respondents should be *ensured of anonymity*
- Not all will agree to participate
 - Can re-sample or eliminate sampled individual

Hello. My name is Pike and I am a researcher at Landcare Research in New Zealand.

We are conducting a study of village economics. In total, we will interview 400 households from this area.

Because this is an economics survey, we will ask some personal information about income in addition to many questions about crops, livestock, fishing, children, and several other topics. We will use these answers to conduct research, but our study will not show the names of the people who answer our survey. We promise not to share any personal data with *anyone*, including other people in the village.

The survey will take 1 hour to complete, and we will make a donation to the village for each survey conducted.

Do you agree to participate in the survey?



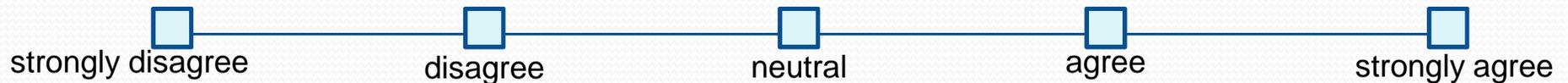
Individual surveys: Precepts

- Keep all questions neutral
 - “Just how awful are the worst invasive species?” will guarantee dramatic (but unrealistic) results
- Ask closed-ended questions
 - “Did your household grow bananas in the past 12 months?”, not “What crops did your household grow in the last 12 months?”
- Questions should be time specific and cover recent periods
- Use skip patterns
 - If they don’t grow bananas, don’t ask how many bananas they grew!

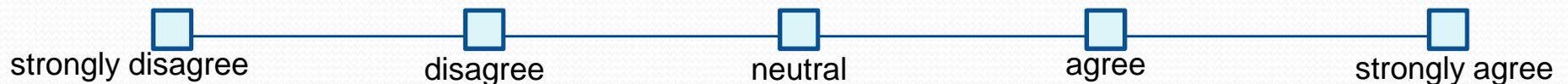


Individual surveys: Precepts

- Likert scales efficiently collect qualitative information, particularly attitudes
 - The government should help people in this community to control the golden apple snail.



- I would like to see more research into methods to prevent the golden apple snail from damaging crops.



- If a natural way of keeping the golden apple snail away from this community was discovered, I would not be in favour of it.



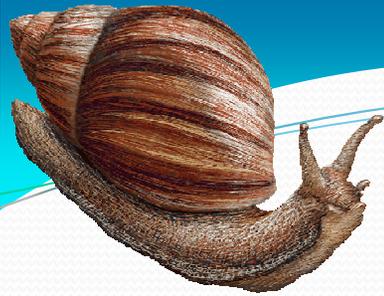
Recap:

Primary data: Modes

What features were present in this sample survey?

Individual surveys

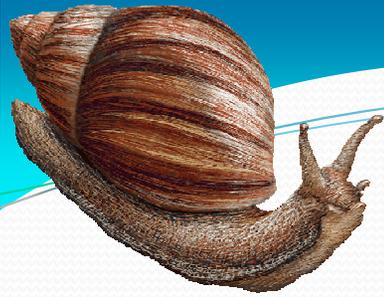
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Pre-Survey

Sampling and Non-Response

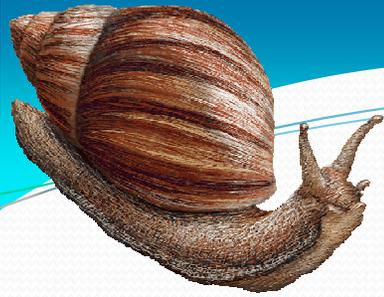
- Ideally, we survey every member of a population
 - In reality, we sample from the population due to cost
- Sampling methods:
 - Random: Sample with equal probability
 - Stratified random: Sample with equal probability from key groups
 - Systematic: Select every x^{th} member of a community
 - Convenience: Respondents are available and willing
 - Snowball: Respondents recommend others
- Be wary of sample selection bias
 - With non-random sampling, it is difficult to interpret results
 - e.g., If only people who are affected by invasive species are surveyed, then average effects will be overstated



Pre-Survey

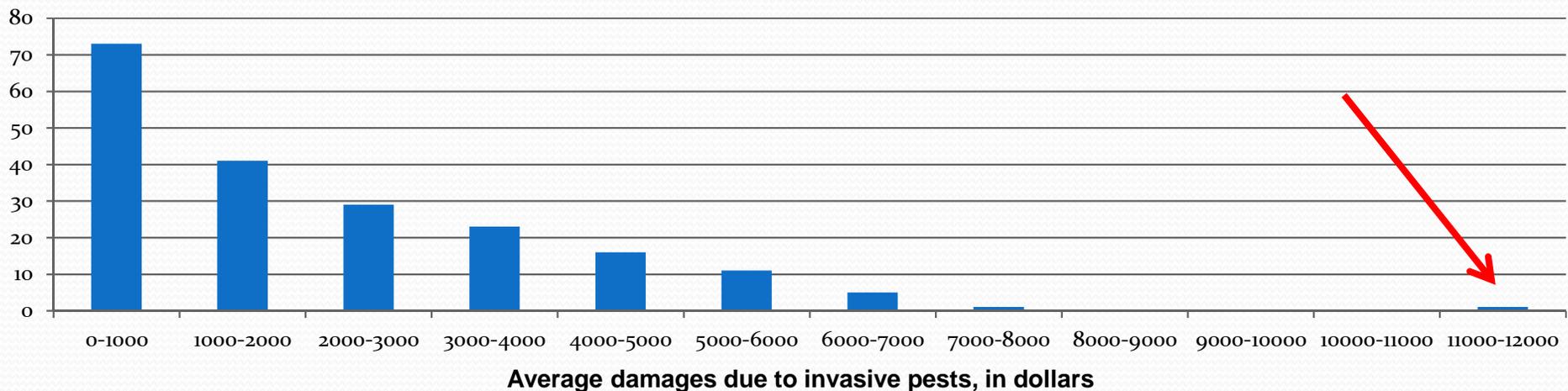
Sampling and Non-Response

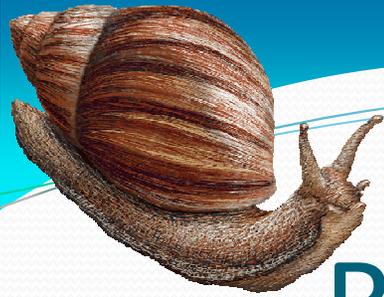
- Because people are not required to participate, be wary of non-response bias
 - If non-response is systematic, sample selection bias will corrupt interpretations
 - If people who are not affected by invasive species opt out, then average effect will be overstated



Post-survey Consistency checks

- Check responses for consistency and completeness
 - Contact respondent to re-ask questions or eliminate answers from analysis
 - If many problems with a particular respondent, consider excluding responses
- Look for outliers
 - Contact enumerators if answers seem dubious





Resources for survey design

- World Bank Living Standards Measurement Study (LSMS) website
- Interuniversity Consortium for Political and Social Research (ICPSR) website
- Grosh and Glewwe, 2000. Designing Household Survey Questionnaires for Developing Countries. Washington, DC: World Bank (free online)
- Emerton and Howard, A Toolkit for the Economic Analysis of Invasive Species. Nairobi: Global Invasive Species Programme (reference sections, free online)