Social science for agricultural research

Training by DEFRA 0330.
Frances Harris, Kingston University,
with Fergus Lyon (Middlesex), Gareth Davies (HDRA), David Gibbon

Introduction

Why talk to farmers?

How do we carry out research?

Through rigorous procedures that attempt to control variables in order to get quantitative results for statistical analysis. Robust results can be used to convince others, make confident recommendations and can also be extrapolated to different contexts.

How do farmers' research?

"I am a researcher of sorts. Like all farmers, I constantly "experiment" with things like seed rates (not always deliberately), timing of cultivations, leave a strip there and see what happens, do that later and see what happens, feed this now and see what happens etc, etc. The linking of anecdotal research to scientific or pure research could prove valuable and running the two in parallel makes real sense. All knowledge comes directly or indirectly from experience and reflection on that experience. That is something we should not forget or ignore."

David Wilson, Proceedings of the UK Organic Research 2002 Conference

Farmers' own research

Advantages

- Relevant
- Locally specific
- Evaluated according to farmer's criteria
- Holistic
- Accepts dynamics of farming system

Disadvantages

- Lack of replicability, control
- Unable to distinguish clearly cause and effect
- Measurements potentially inaccurate
- Locally specific, not general results
- Lack of understanding of underlying processes
- Lack of information about potential options for change

The challenge for farmer participatory research

- a portfolio of approaches
- respects the different objectives of farmers and researchers and their different strengths.
- risk of crudely merging the farmers' approaches to experimentation with scientific methods
  - poor quality scientific knowledge
  - loosing the holistic approach of farmers.

Research approaches – A continuum

	Researcher managed and implemented	Researcher managed and farmer implemented	Farmer managed and implemented
	Contractual ***Consultative***	***Collaborative*** ***Collegial***	***Co-learning***
Location	On station or on farm	On farm	On farm
Design	Researchers design trial and control all treatments. Farmers rent or donate land	Joint design and selection of criteria. Farmers encouraged to use controls and replicates.	Farmers decide on trial design and evaluation criteria. Hypotheses may evolve out of chance events and change during the season.
Methods of data collection	Researchers control all measurements. Farmers invited to offer their opinion	Researchers collect what quantitative data they can and get farmers' opinions through interviewing	Researchers document farmers' evaluation/ reflections at certain points during the season.

FPR doesn't mean

Differentiating between research and chatting

- Characteristics of scientific research:
- Characteristics of qualitative research:

Choosing the research group

Sampling

Two types of sampling

Probability sampling: chosen because researcher thinks they will be a representative cross-section of the whole population

Non-probability sampling – when it is clear that cannot work with a large enough number to claim representative of whole population

Probability sampling

- Random sampling
- Systematic sampling
- Stratified sampling – in relation to proportion in the whole population
- quota sampling – ensures specific categories are filled, in proportion to whole population
- Cluster sampling - focus on naturally occurring clusters, saving time and money on travel.
- Multi-stage sampling – e.g. regions, schools, departments…..

Non-probability sampling, identifying small samples

- Purposive sampling – handpicked
- Snowball sampling – sample emerges through a process of reference from one person to the next
- Theoretical sampling – route of discovery
- Convenience sampling – not a good enough reason in itself!

Other issues

Trustworthiness

Cooperation

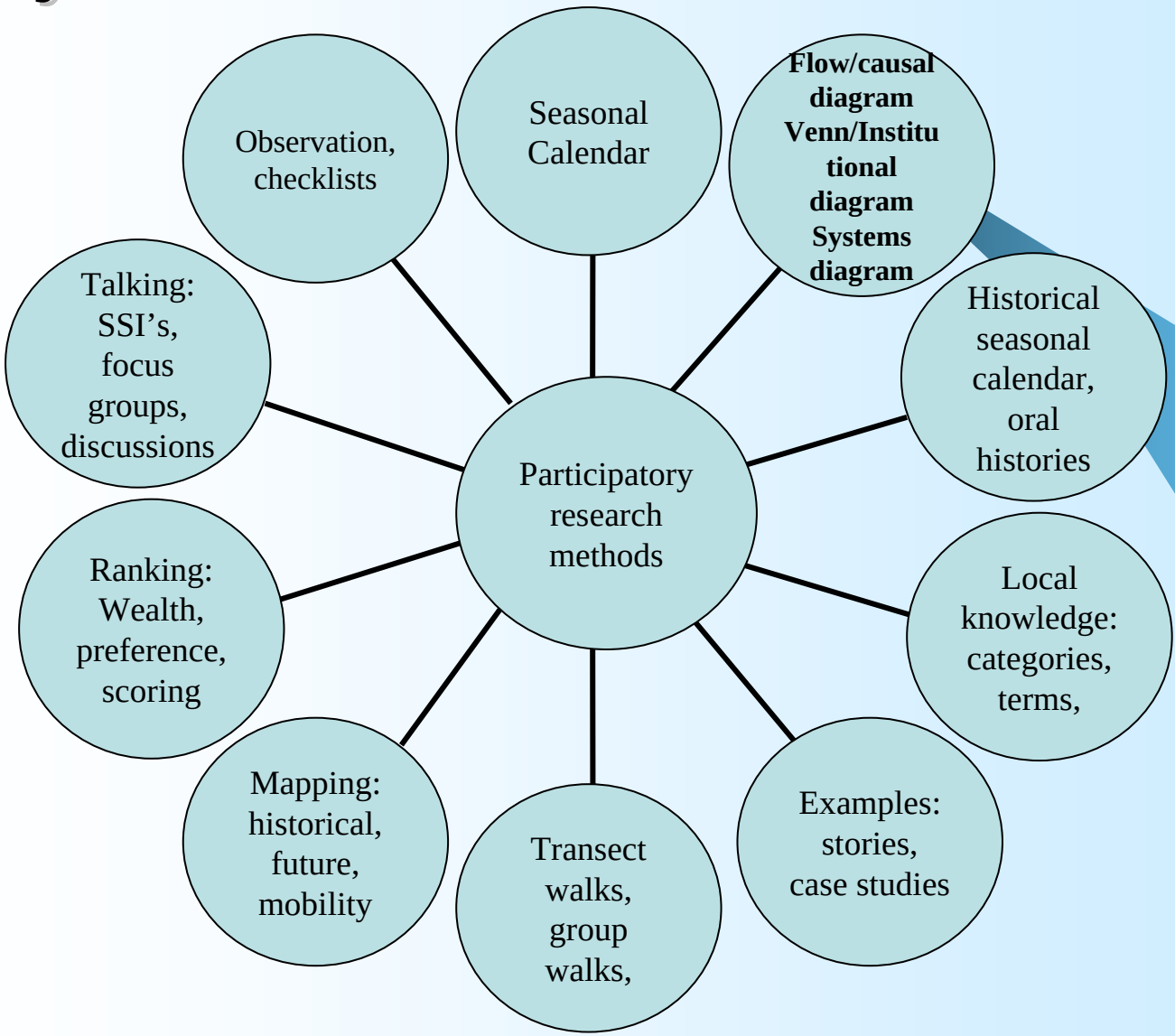
Access

Key informant

Gathering information from farmers

When and where?

Ways to elicit information



Interviews vs. Questionnaires

Semi-structured interviews

- Best for learning and understanding opinions, behaviours, attitudes
- Flexible
- Dialogue
- Short-time
- Little statistical analysis
- Opportunity sample

Questionnaires

- Best for gathering representative, quantitative data and statistical analysis
- More formal
- Fixed content
- Categorisation
- Long time
- Heavy statistical analysis
- Random sample
- Enumerators

Case Studies

- Focus on one instance
- In-depth study
- Study of relationships and processes, rather than outcomes
- Work in its natural setting
- Using many sources of info and research methods
- Holistic rather than isolated factors

Choice of case study

- Typical, and therefore illustrative
- Exceptional – at the extreme ends of the spectrum
- To test a theory
- Intrinsically interesting
- Convenience
- Unique opportunity

Choosing the right method

Identifying questions you wish to ask at interviews

Group work over lunch

Identify the goal of the interview, and the key questions you will need to ask to gather the information you need.

Develop separate lists of questions for different types of interviewees

Being participatory

Good fieldwork practice

and

interview techniques

Role Play

Sample interview scenarios

Interrogators

Who?

What?

Where?

When?

Why?

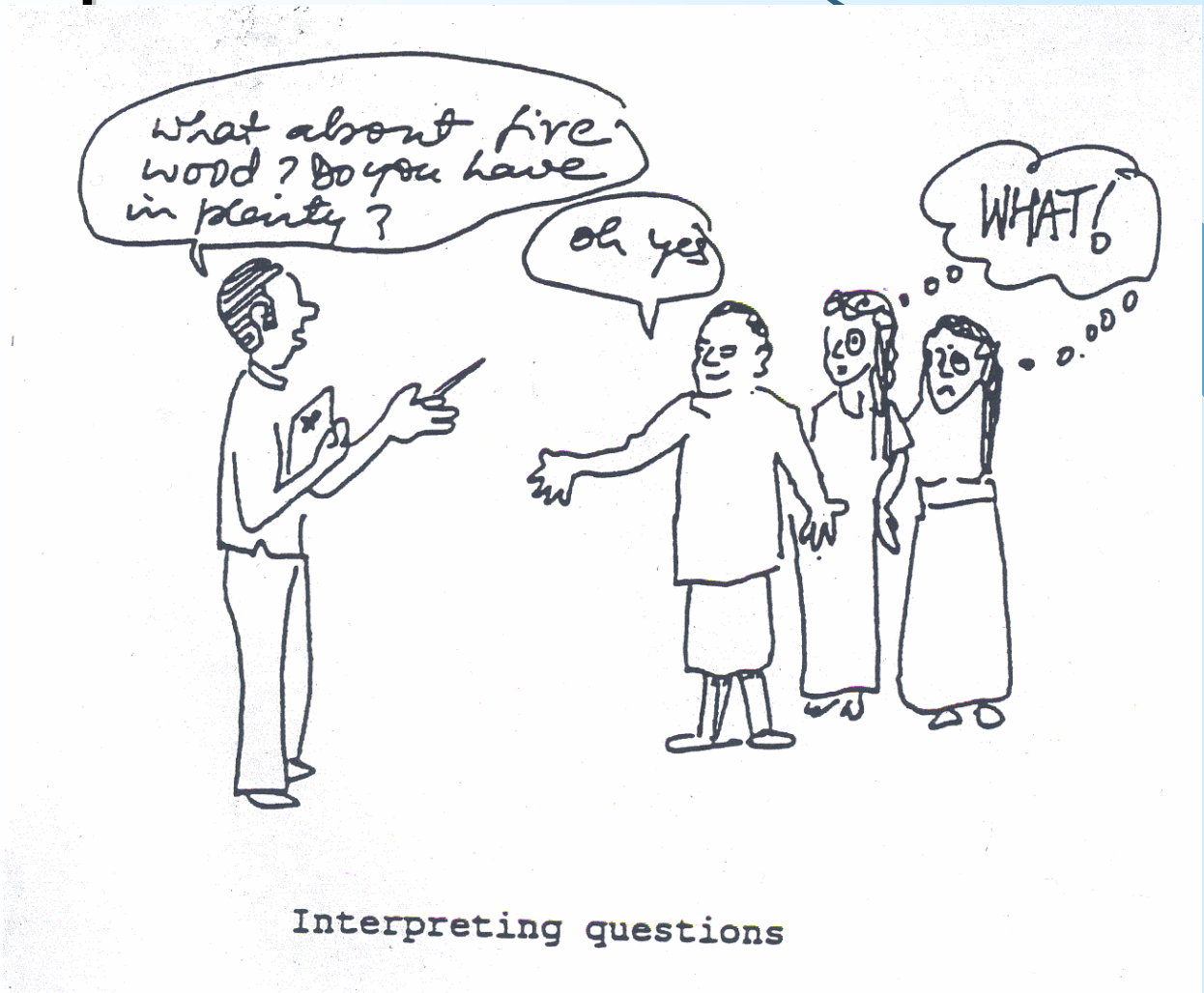
How?

Don’t ask too many questions at once!

Prompts

- Can you tell me more about that?
- Can you give me an example?
- How does that come about?
- Why do you…?
- Is that the only way / reason?
- Can you give me an example?

Ensure you are interviewing the right person



Leading questions to avoid

- Isn’t it the case that?
- Don’t you think….
- Isn’t it true that…
- You ….. don’t you?
- I believe that….
- There are….. aren’t there?
- So what you are saying is…..

Phrasing

- Why is it important to immunise children? (should ask what do you think about immunisation?)
- Do you plant wheat in the spring? (should ask when do you plant wheat?)
- You plant winter wheat and beans, don't you? (should ask what do you plant, as other crops may also be included)
- So you are a farmer (could, in fact, also be a businessman, trader… farming could be a small proportion of income)

Recording information

- Take copious notes,
- Record interview on tape but remember transcribing time
- Post interview, add context, fill in gaps
- Observations and lurking
- Remember, you can gather information at group discussions as well as individual interviews

Data Analysis

- Review notes / Listen to tapes
- For each issue or question, identify categories of responses, drawing out commonalities
- Use coding in notes
- Develop analysis tables
- Draw out themes
- Use case studies of particular individuals
- Use of quotes and local phrases

Sample analysis table: Why farmers leave organic sector

	Farmer Smith	Farmer Jones	Farmer Brown
Organic regulations	Inspection too time-consuming	Inspector not supportive, nit-picky	No problem
Techniques of organic farming	Ok, almost farming organically anyway	Difficulty with weed control	Challenging but managing
Market	No buyer for organic milk in his area	Prices not as high as expected	Producing organic cheese on premises to sell in farm shop
Personal	Death in family, gave up farm-tenancy	Retirement	Foot and Mouth disease

Demonstrating validity

- Consistency
  - Researcher trained in interviewing techniques
  - SSI ensures comparable data collected from each interview
  - Awareness and documenting of potential bias in process
- Corroboration
  - Triangulation (by method and source) and cross checked
- Evidence
  - Document the process (method, analysis)
  - Demonstrate how conclusions drawn -use of analysis tables
  - Providing transcripts of all interviews

Presentation

- Sections on different themes
- In each section draw out differences according to farming system, commodity, location, farm size, etc
- Use case studies of particular individuals
- Use of quotes and local phrases