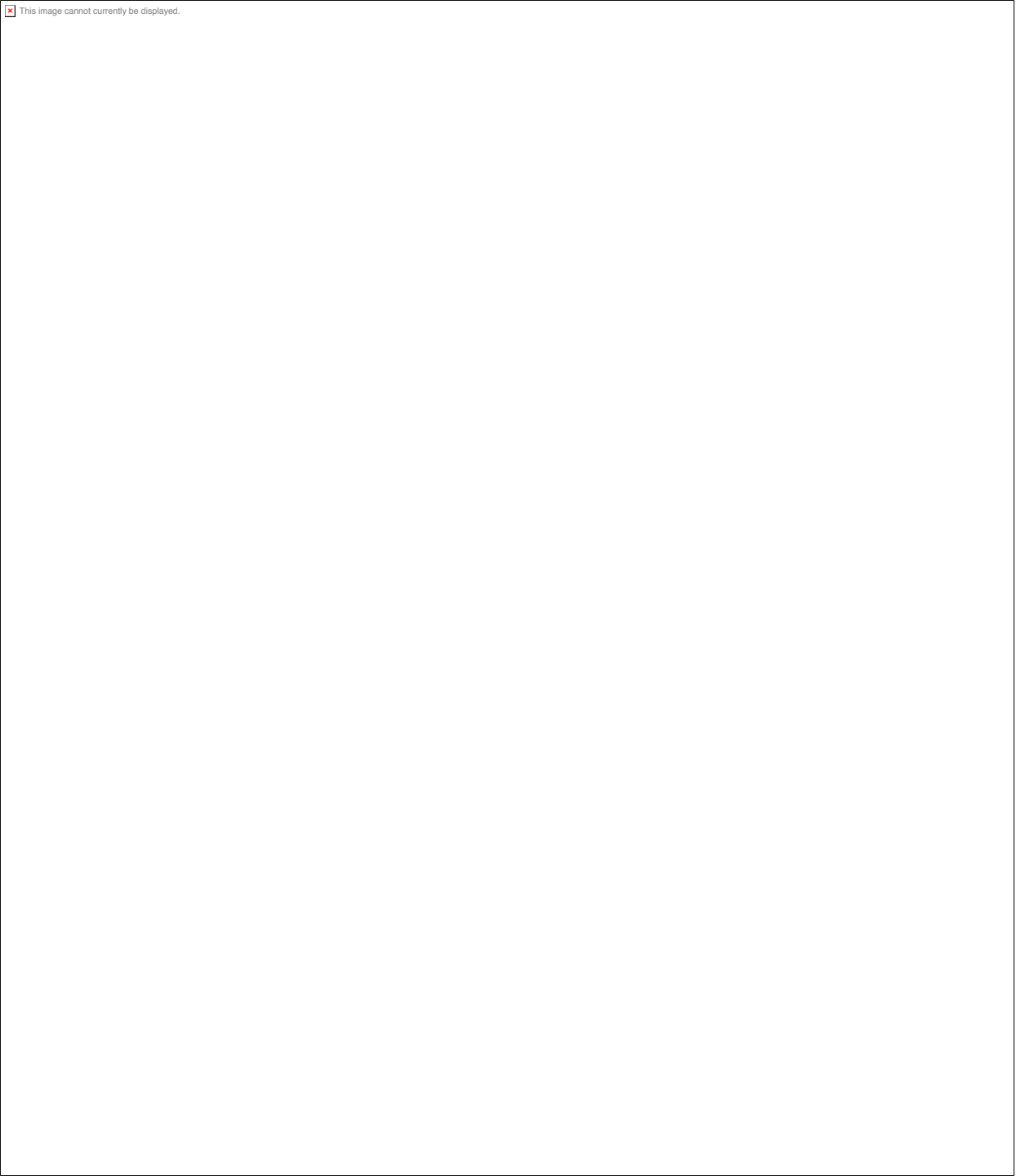


# Research and Development Methodology

- Ethics
- Research Methods

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# Ethic

- Aim of research should be clear
- Relevant
- True and not superficial
- Leading to do-able result at scale
- Group that benefits is engaged and its voice is heard
- Work with diverse people
- Make sure that all feel free to take part
- Do not assume that the reality is only what you see
- No risk to anyone
- Open access and actively shared

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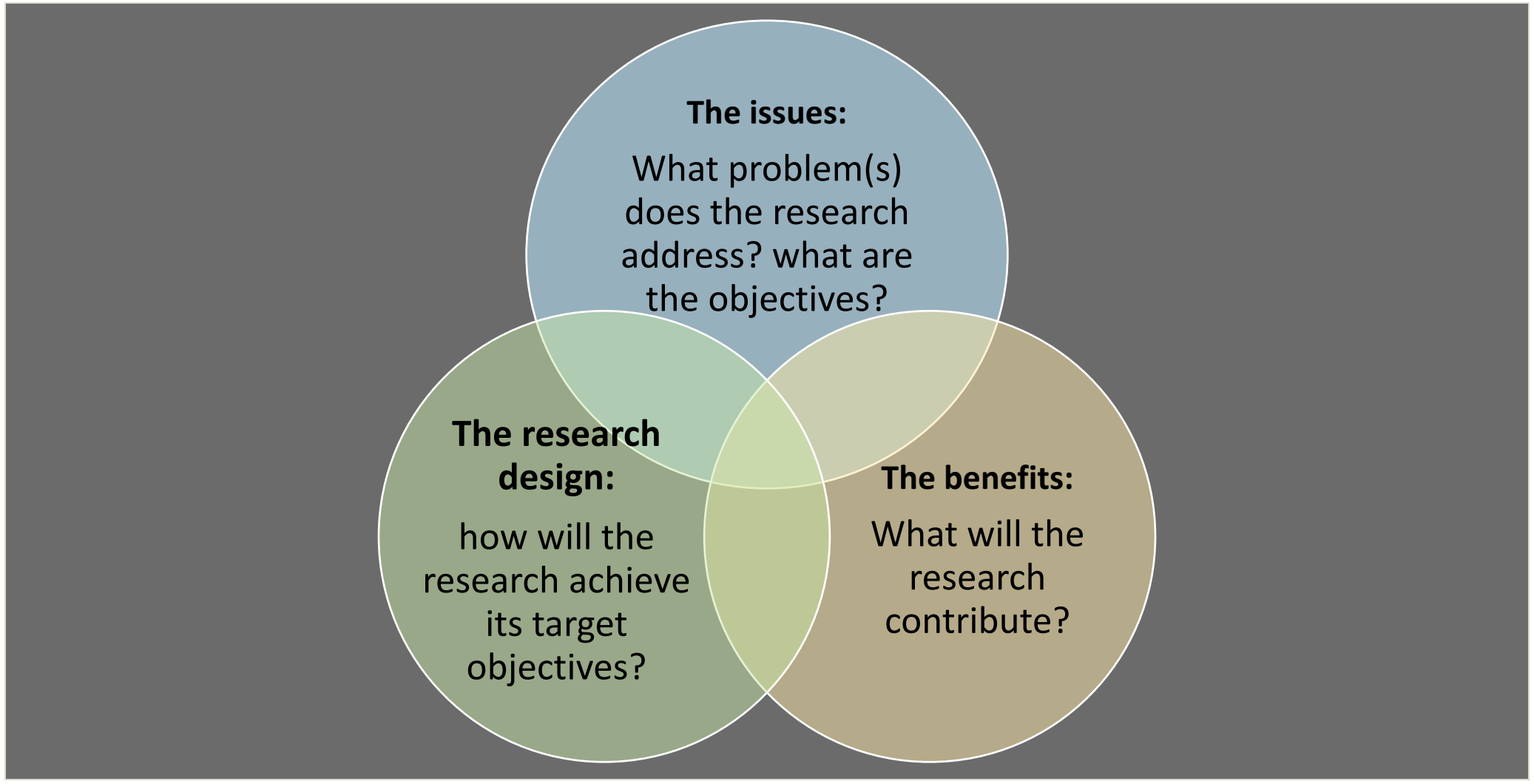


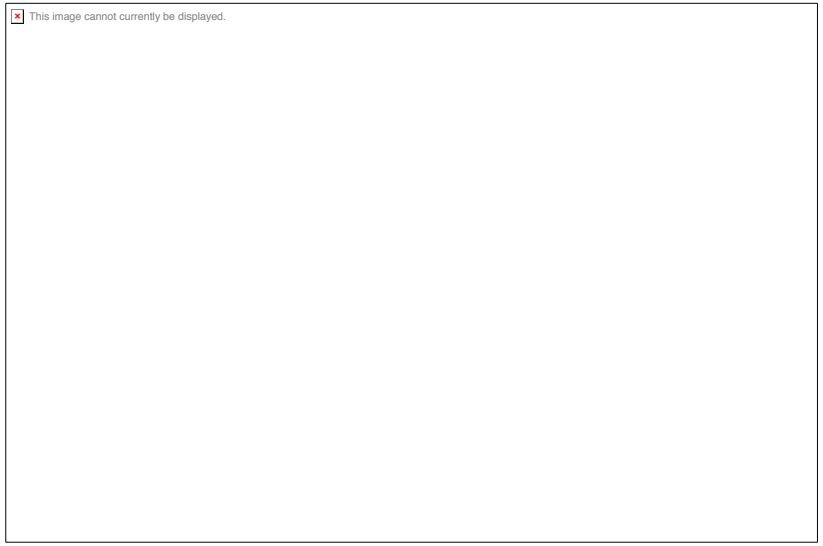

# Essential Ingredients of Relevant Research

# Discussion: who would you agree with this?

- Policy-makers and managers often complain that researchers are out of touch.
- Researchers often complain that policy-makers and managers make poorly informed decisions
- Actively building & maintaining relationships with key individuals through discussions, meetings, workshops or field days will ***increase the likelihood*** that research outcomes will inform policy decisions.

# For consideration:

- Do only policy makers matter? Should they get all on a plate?
- What is a ‘policy maker’ – can you give an example of someone and is he guided by research
- Should  we not give voice to poor and help think with them/ for them on things to can be done better by many (not only policy makers). Are we not a **bridge?**



# True - Getting confidence and verifiable

- Triangulation (the picture matches)
- Asking feedback and confirmation
- Rule of large numbers (statistics)

# True – don’t be superficial

Questions to get deeper

- Why not like this
- How in the past
- Who is better off, who is worst off – why
- What is your opinion
- When did it happen, when did it started to change

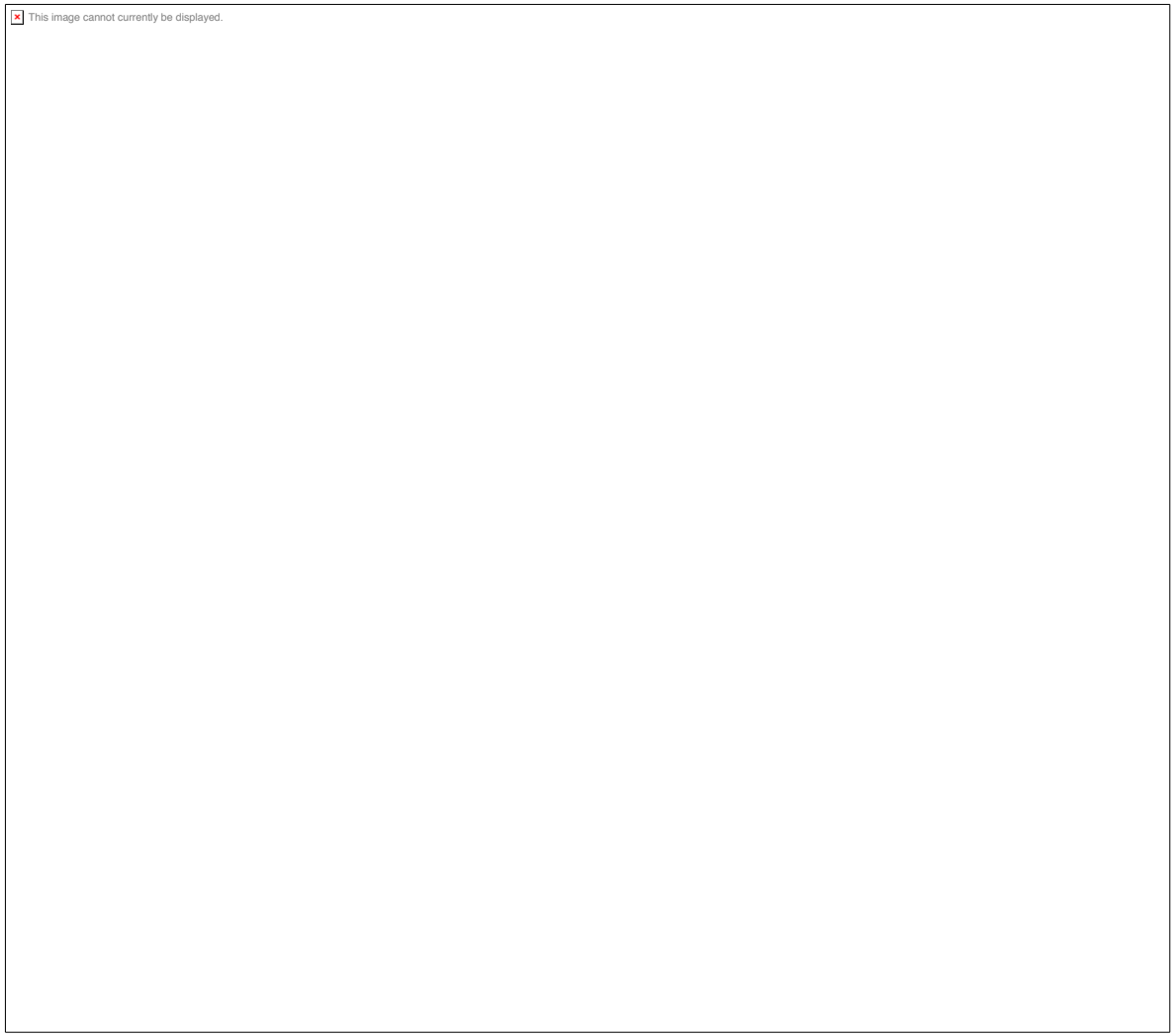
## Leading to results:
## The output of a research and developent  is at best as good as its objective

Setting concrete and well-considered research objectives is imperative to ensuring that your research is going to be meaningful, and that efforts aren't wasted on objectives that don't make sense or are impractical.

***The key question here is: how do I formulate such objectives?***

*Go beyond*

# The Standard Story




Source: http://alethonews.files.wordpress.com/2010/01/making-ethanol-cartoon.png?w=249&h=293

# Solutions or problems?

- Solution-oriented research objectives are often about providing *more focus or specific details*, looking at *how and why,* rather than the more typical science question about whether the effect exists

# Examples of research topics and objectives

Research topic: Water harvesting for groundwater recharge and flood mitigation

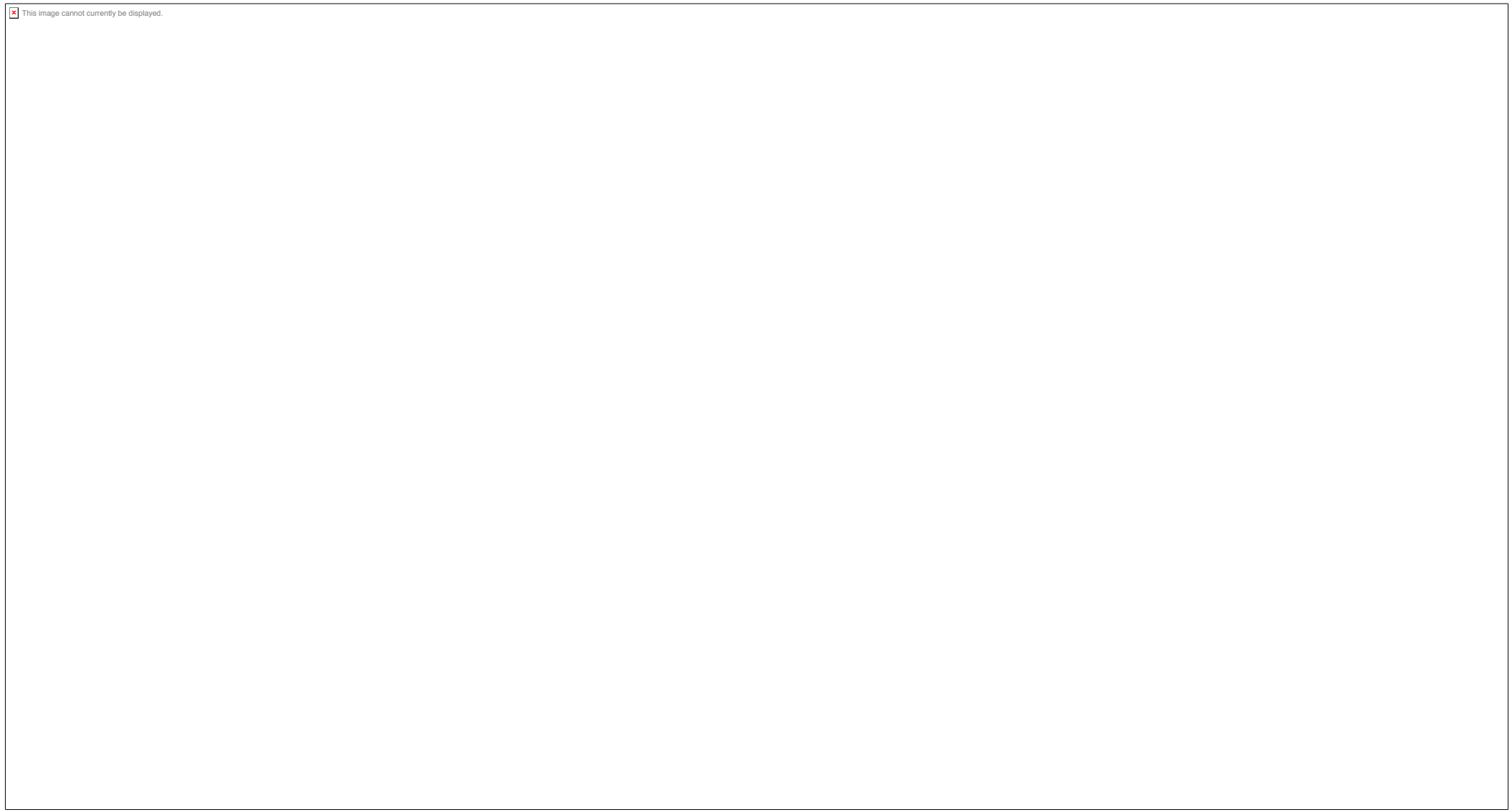
Research objectives

- Develop a water harvesting manual that details the different techniques that are necessary to improve groundwater recharge and mitigate floods
- Identify the three most effective practical water harvesting systems that have the potential to:
  - reduce the imbalance between groundwater recharge and use by 50%
  - Cut by 75% the frequency of large destructive floods.

# Do and don’t

- Do not research what you can read somewhere
- Give voice to the unheard
- Go for real impact
- Don’t be vague
- Don’t put yourself too high

How woulld you define impact?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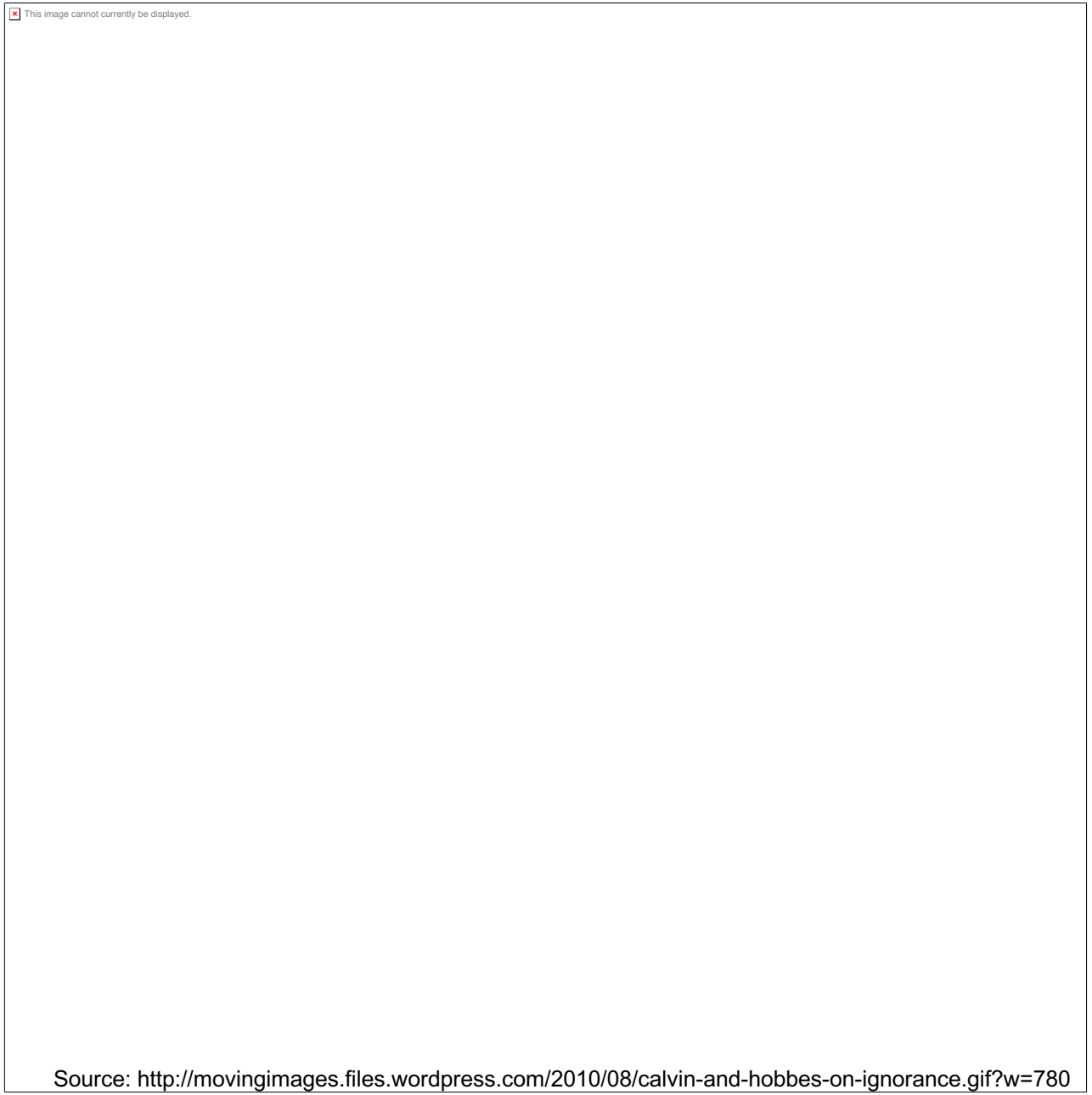
*How much to do we need to know before we can act?*

# Optimum ignorance?




Source: http://movingimages.files.wordpress.com/2010/08/calvin-and-hobbes-on-ignorance.gif?w=780

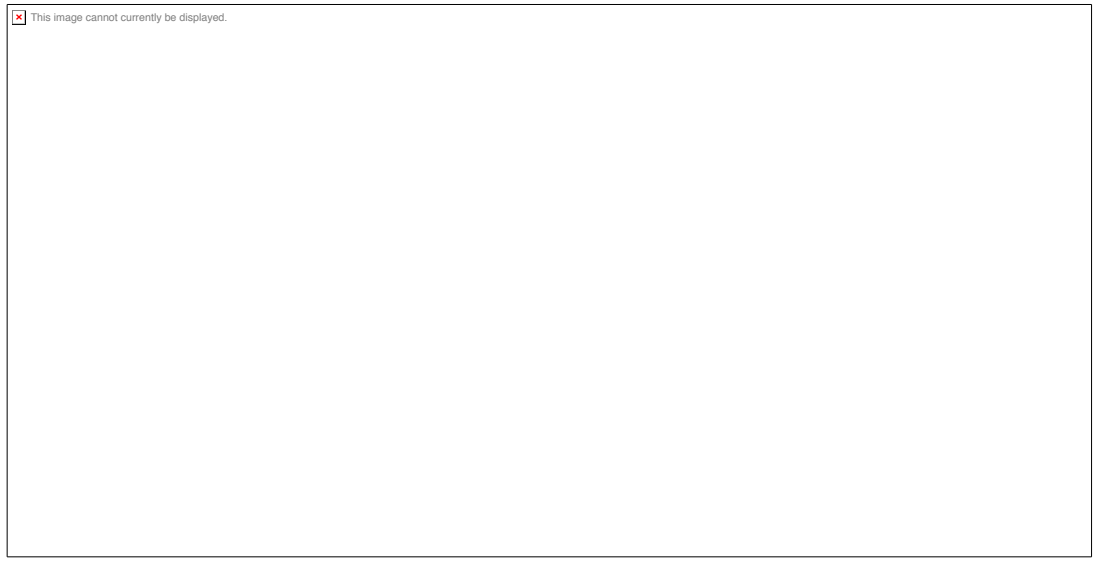
# Research methods - general

- Be clear about intention – do not creat false expectatiion
- Triangulation – confirm observation from different sources and angles
- Comparative analysis – understanding what makes the difference between areas – understanding the ‘driving forces’
- Do not rely on one method only (=triangulation)
- Understand the hidden interests and games (detective)

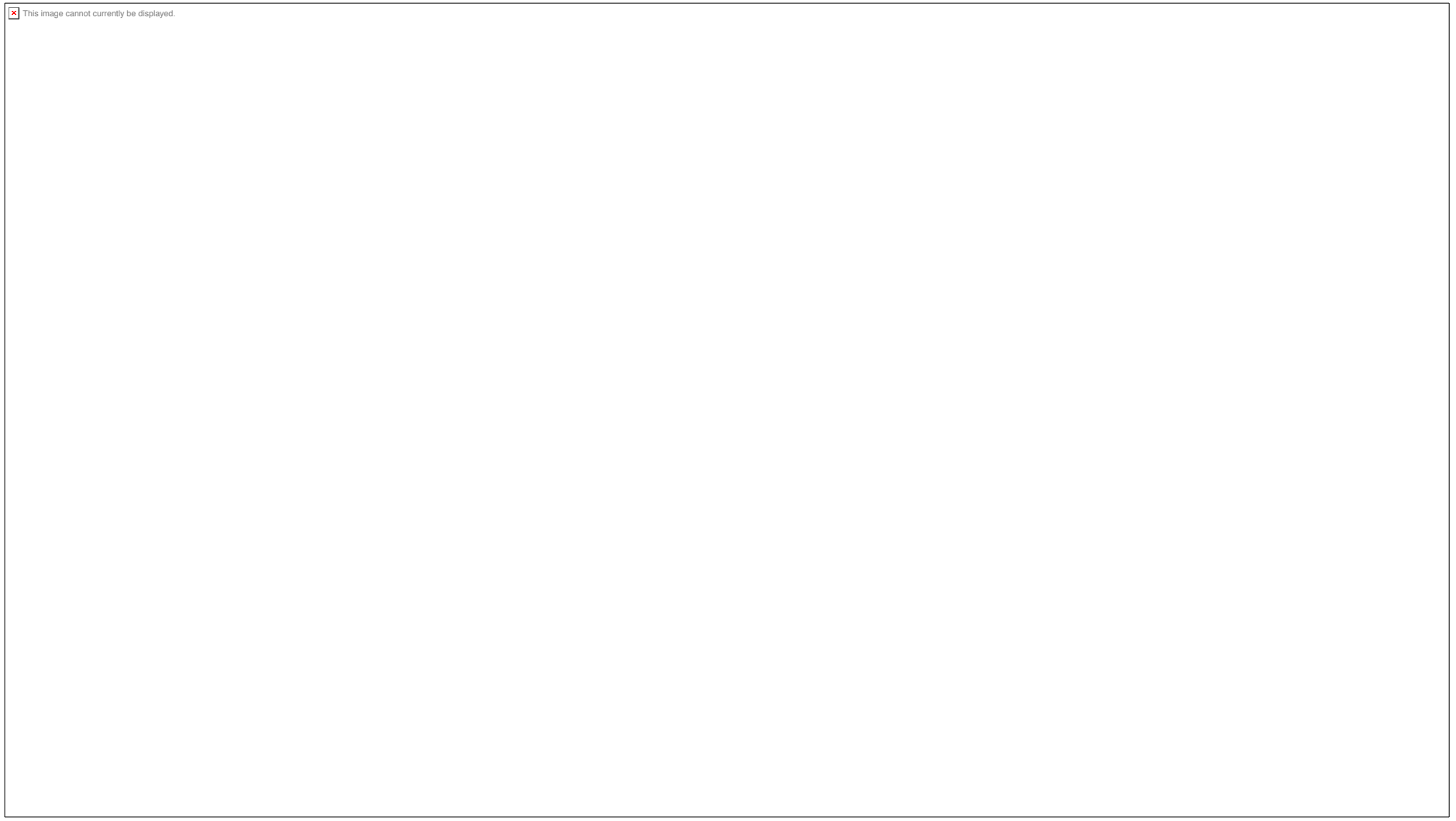
# Methods

- Interviews (well-being method)
- Special persons interviews
- Focus group discussion and participatory appraisal
- Joint activities and doing together
- Observation
- Reading grey material

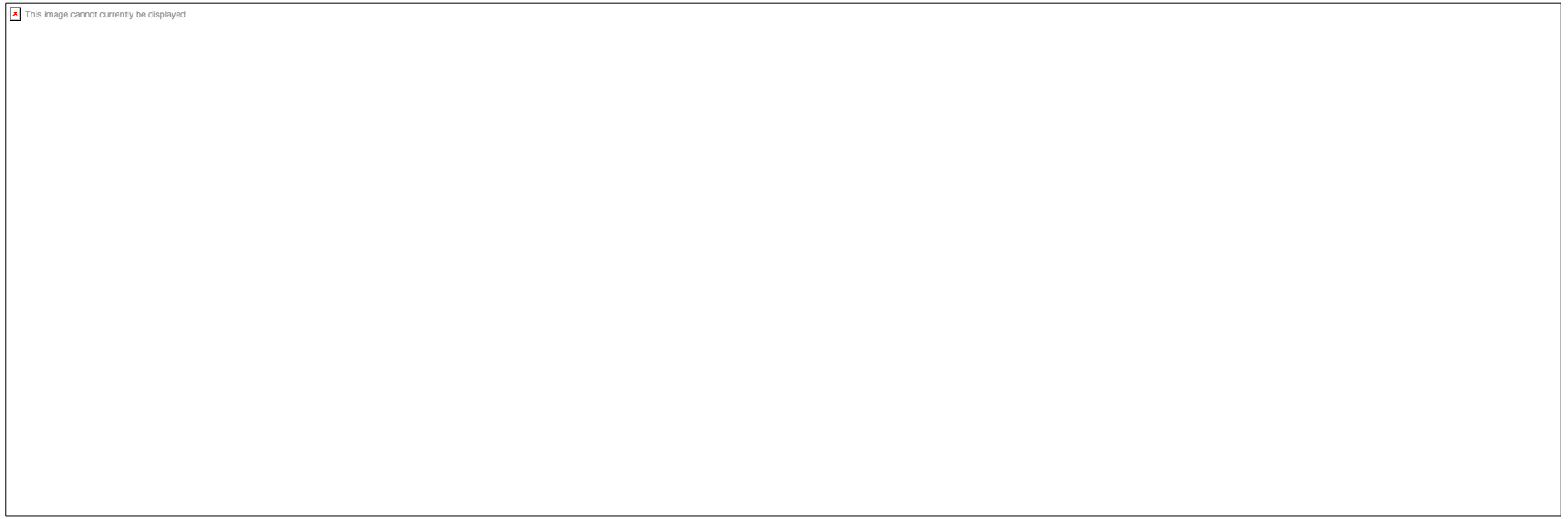
**Making the voice heard**

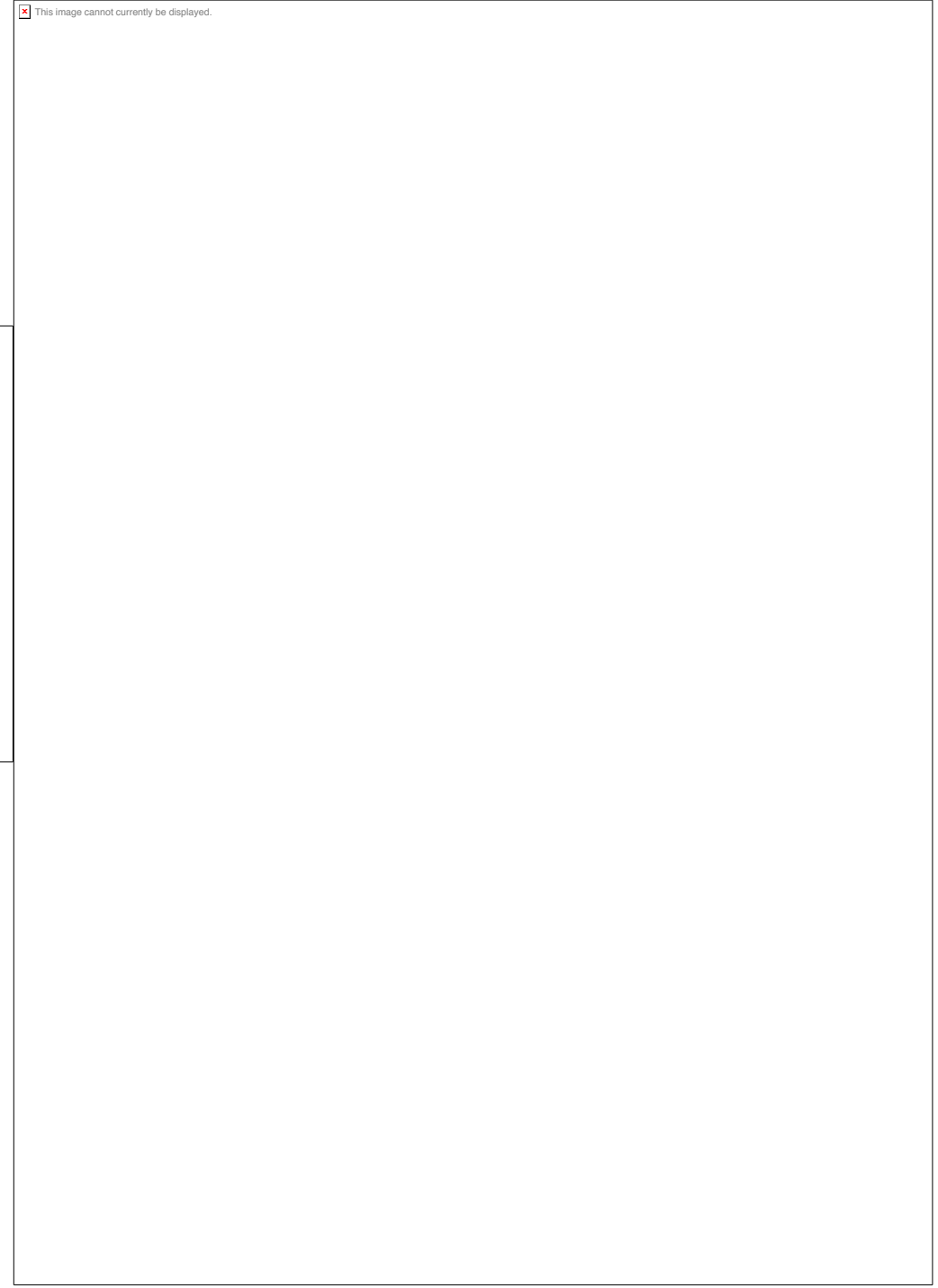


# ➔Interviews



# Three stages

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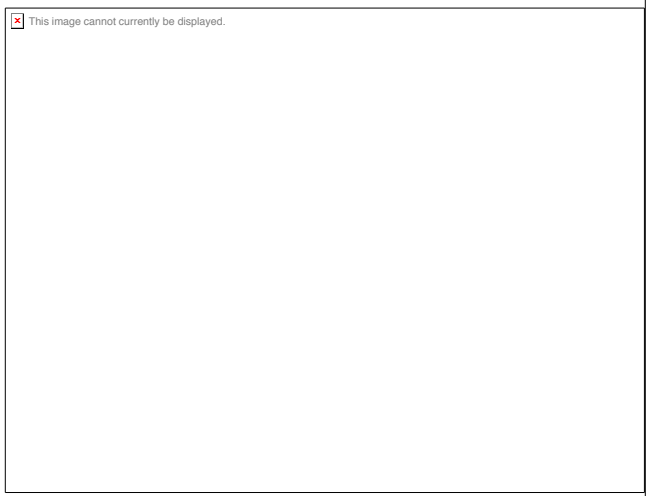
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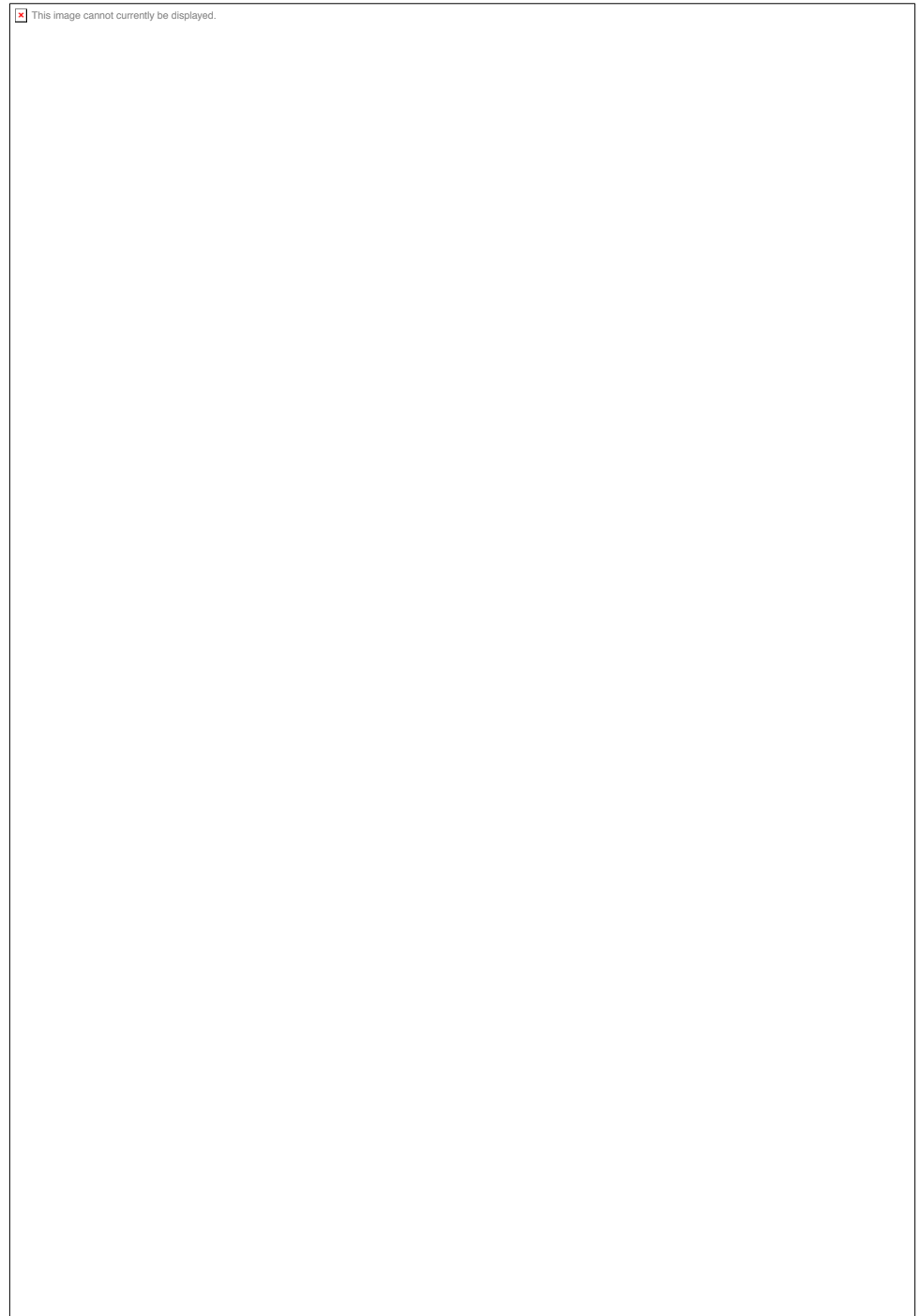
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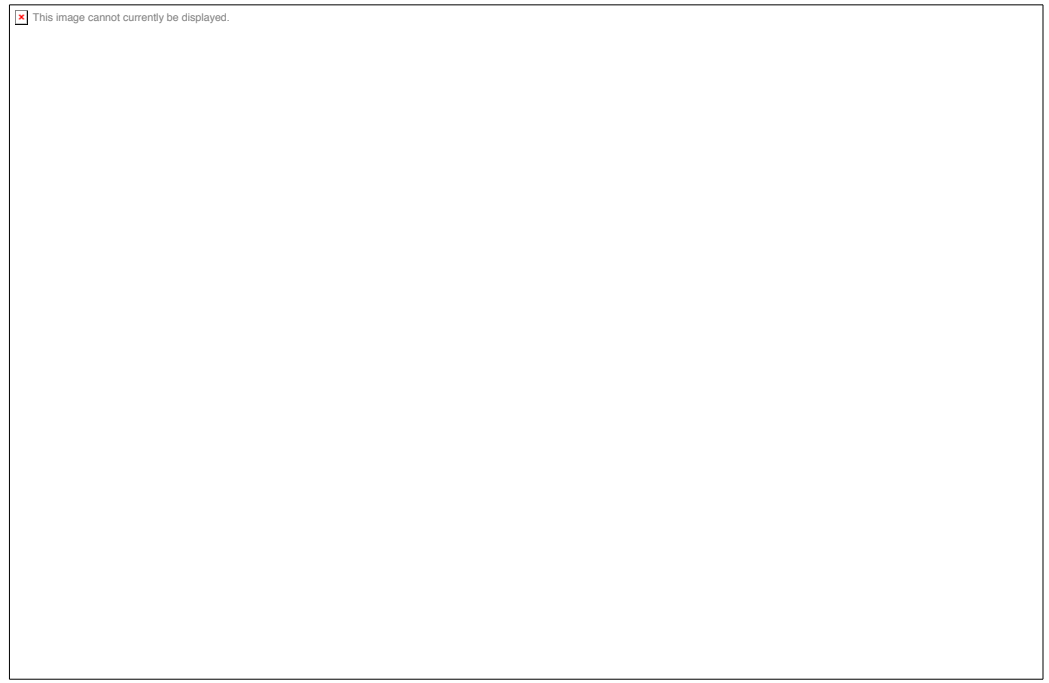
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# ➔Focus group discussion

- Engages stakeholders – discussion and feedback
- Allows researcher to listen with open ear, absorbing new issues
- More relaxed and natural
- Can lead to action planning

But be careful:

- Who is there
- Who is talking, who react to who?

# Focus group discussions

(1) Introduction

(2) Discussion

- Mapping
- Open discission
- Transect walk
- Problem tree analysis
- Trrend analysis

Information sharing

(3) Feedback and validation

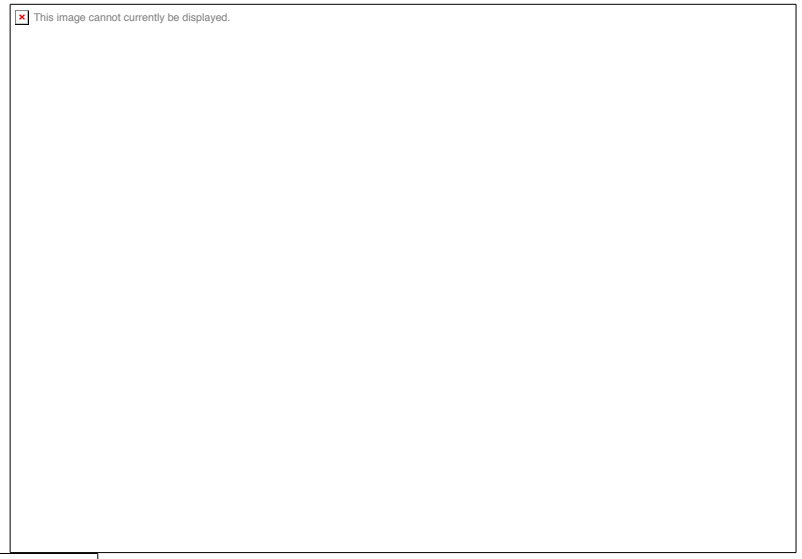
# 1. Introduction

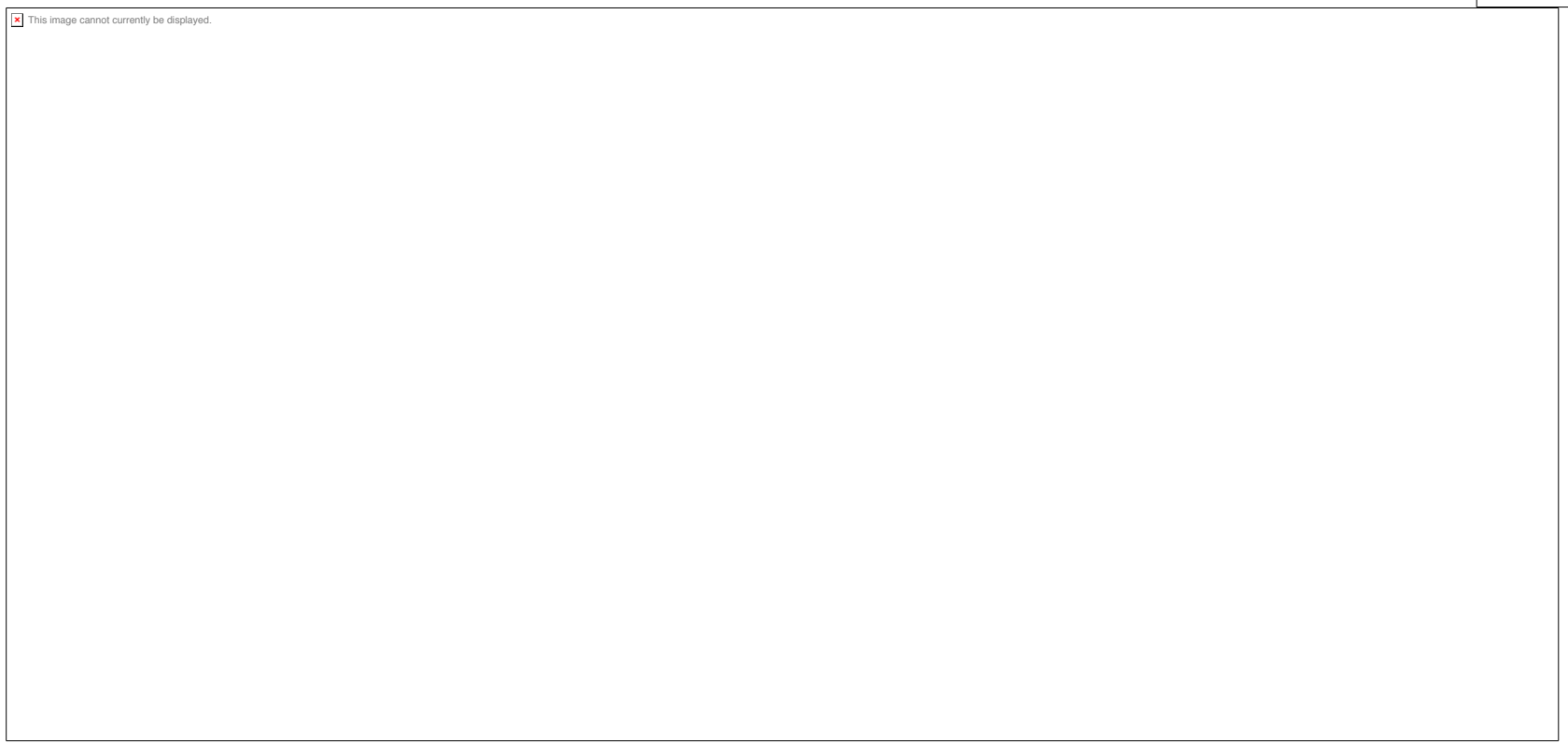
- Whom to invite and engage?
  - Those that matter
  - Those whose voice is often forgotten
  - Make sure people feel relaxed and speak freely
- What status to give to the discussion
  - Be clear about intentions
- Observe who is talking, who react to whom

# Resource map

- Prepare map using paper or coloured powder
- Indicate (in different colours) for instance
  - Roads
  - Main buildings
  - Good/ bad lands
  - Safe/ unsafe spots
  - Areas with special issues

# Resource mapping

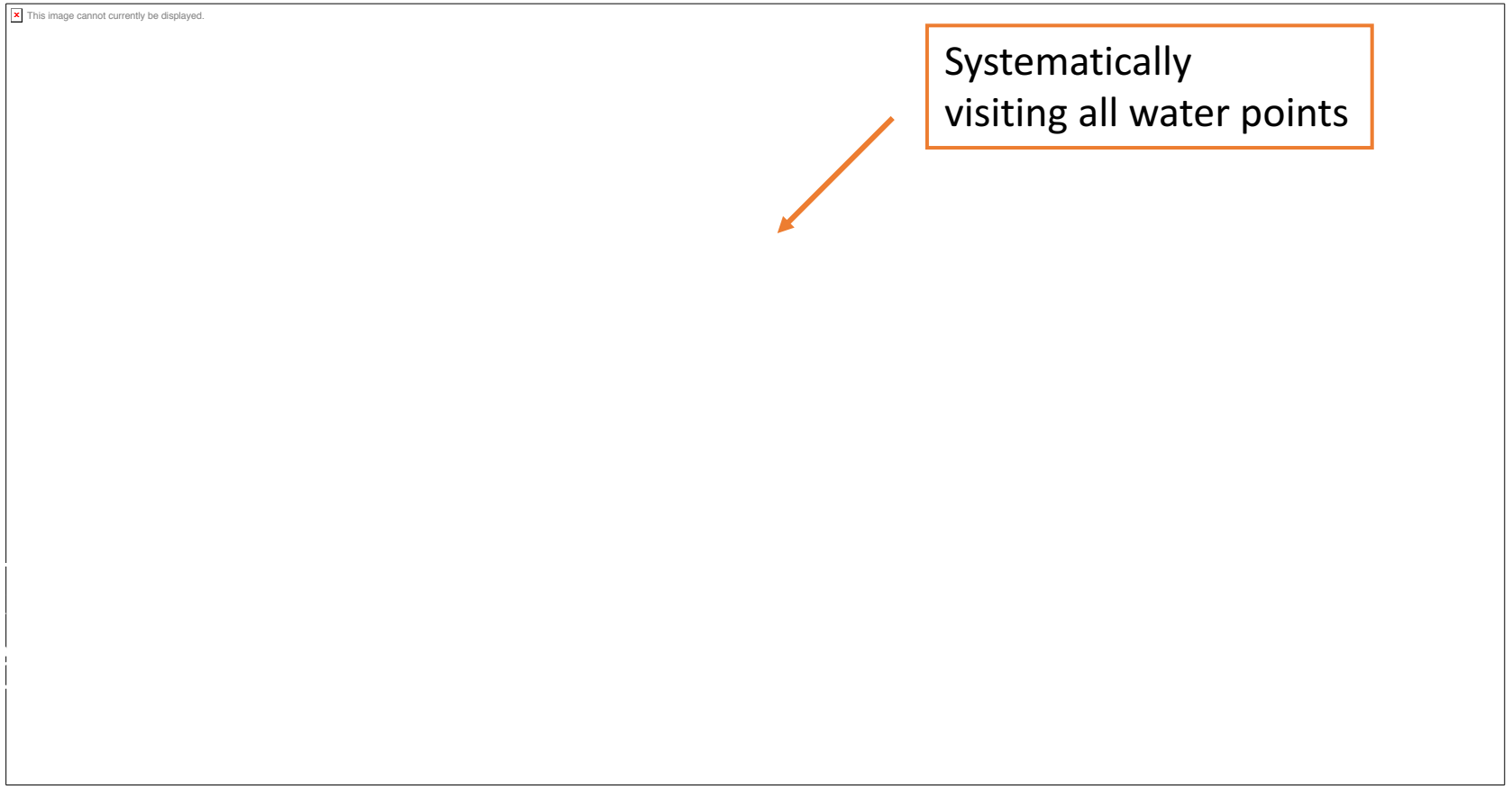


# Transect walks

- Systematic route through the area
  - Stop at each special point,
  - Small discussions
- Making observations at all water points
- Summarize findings

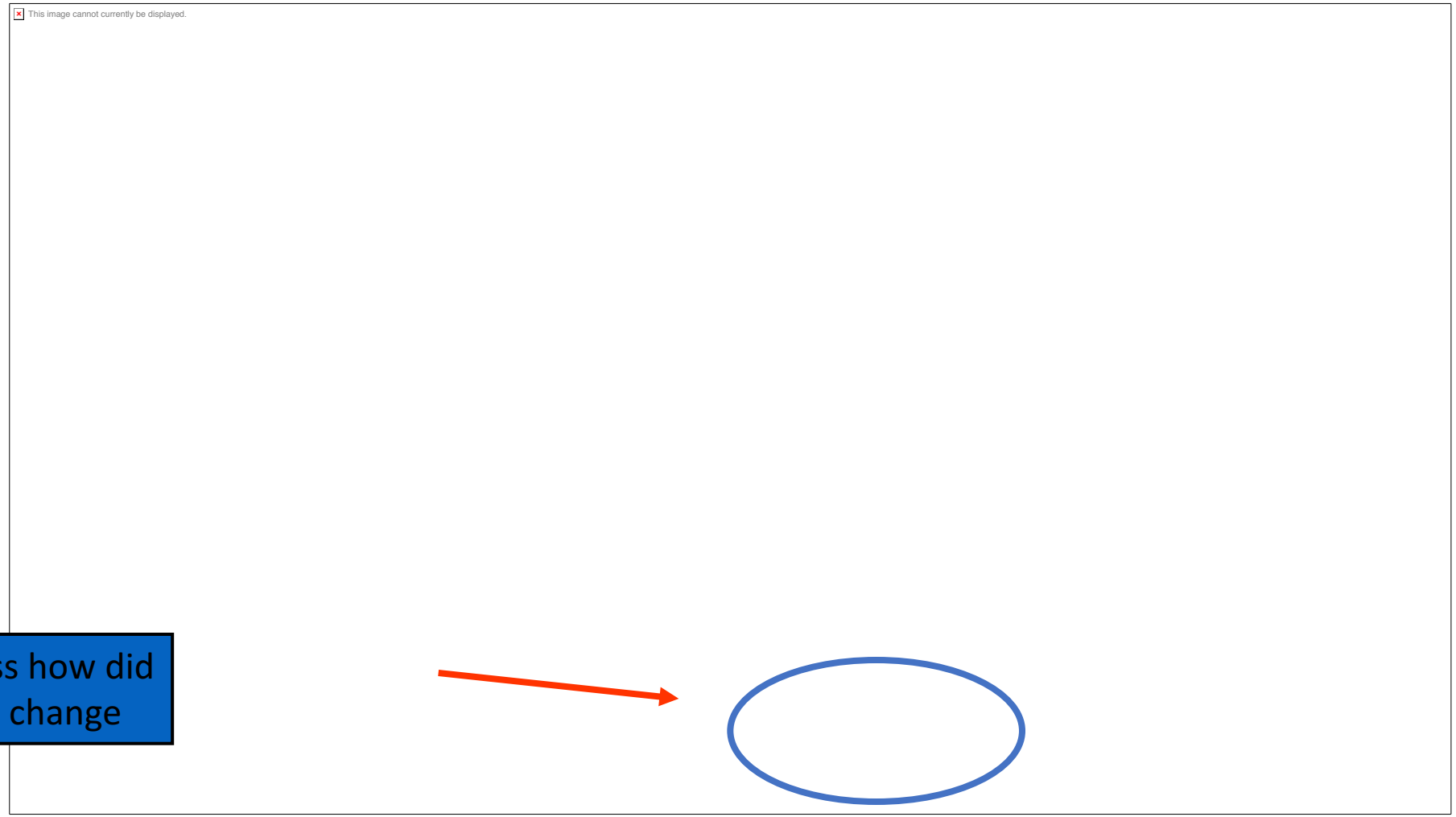
# Transect walk



# Trend analysis

- Discuss with group situation now and in the past
- Take 3-4 points in time (related to political events) and discuss:
  - Population numbers
  - Livestock numbers
  - Type of crops
  - Type and number of floods
  - Condition of tanks, terraces and other structures
  - Depth of water table
  - Quality of water

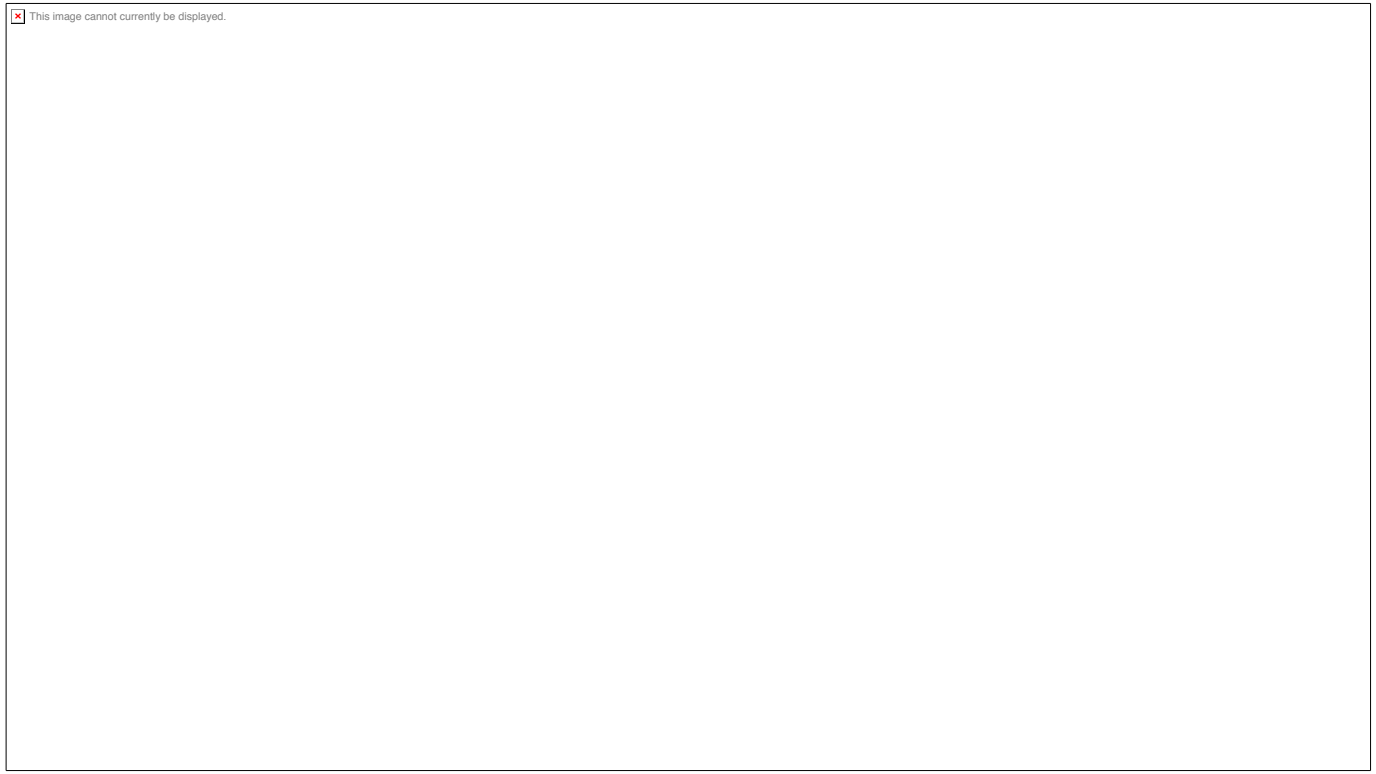
# Trend analysis



# Information sharing – for instance legal and institutional awareness

- Many legal provision and institutional arrangements and support facilities exists
- But usually no one knows - so no one will use
- So explain what to water users what legal instruments or investment opportunities they have

# 3. Feedback and synthezing

- Compare results from different methods
- Verify
- Identify what should be done:

# Discussions of findings – to share and validate