

SURVEYS TO MEASURE RESOURCE MANAGEMENT

WHAT IS IT?

Many auditors are well acquainted with the method of surveys, i.e. collecting data by submitting a prepared set of questions to a sample of the population. This example focuses on how surveys can provide data about attitudes and actions of actors responsible for environmental management.

WHY SURVEYS IN ENVIRONMENTAL AUDITING

Surveys are especially relevant when...

- the audit seeks to expose some of the *causes* of certain developments
- there is a need to confirm certain *observed risks* related to behaviour in private resource management or in public environmental management
- *risk assessments* indicate that lack of effectiveness have additional causes other than ineffective policy tools
- the audits concentrates on an area with many different actors, for example where the intentions and actions of lower level officials and private actors and also affect the *policy outcomes* in this area

HOW? EXAMPLES OF AUDITS

EXAMPLE I DOCUMENT 3:9 (2011-2012) THE OFFICE OF THE AUDITOR GENERAL'S INVESTIGATION INTO THE MANAGEMENT OF HAZARDOUS WASTE

The Office of the Auditor General of Norway's investigation into the management of hazardous waste conducted a survey towards a sample of the population to map how households handle different types of hazardous waste and small electronic equipment. The survey was conducted using an online panel (web-based questionnaire) carried out by a professional research institute, targeting a representative sample of 2604 persons. Special samples were taken in 4 cities. The sample was stratified by gender, age and education in accordance with public statistics. Before analysis, responses were weighted by gender and age to give an accurate picture of the behaviour of the household. The survey showed that a relatively high proportion of households throw electronic equipment into household waste.

EXAMPLE II DOCUMENT 3:17 (2011-2012) THE OFFICE OF THE AUDITOR GENERAL'S INVESTIGATION INTO THE MANAGEMENT OF NORWEGIAN FOREST RESOURCES

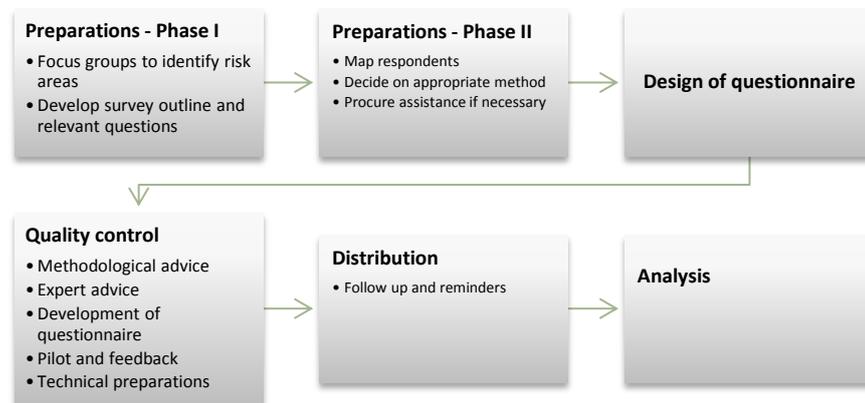
The Office of the Auditor General of Norway has conducted an audit on the management of the Norwegian forest resources. The project group found that there were no national data on forest owners' behaviour, nor on their attitudes towards the forests they owned and managed. The pre-study indicated information about forest owners' attitudes was vital to explain development and tendencies in the forest development. By using data collected through a survey of a sample of Norwegian

Data and method: Good examples 1/2013

forest owners, the investigation was able to extract quantitative information about the actions and attitudes of forest owners. The results confirmed unverified information about risks related to Norwegian forest resources development and lack of policy effectiveness, given by informants during the pre-study phase of the audit.

EXAMPLE OF PROCESS (EXAMPLE II CONTINUED)

The figure below illustrates the process of developing and conducting a survey, based on experiences from the project group of Example II.



In order to design a good survey, you need to know what you want to learn from it. After having developed a draft, it is necessary to map the respondents and narrowing down the questionnaire to the absolute basics. These two steps will also help you to decide on how to best conduct the survey, in order to reach enough respondents, and design the questionnaire to fit the respondents and the method.

In this example forest owners were the intended respondents of the survey. It was decided to include the whole population of private forest owner (omitting companies and public owners such as municipalities); more precisely all registered owning a forest property of minimum 25 decares. A random sample of 5200 owner was drawn from the population found in the register at The Norwegian Agricultural Authority. Statistics indicated that forest owners were a diverse group, so in order to have a representative group, including all sub-groups a minimum of 1000 responses had to be collected. The sample was stratified according to gender, regions and property size. An external research institute was used in the data collection phase due to the large number of respondents.

The selection of an appropriate approach for the survey was based on available information and knowledge about forest owners. Information about forest owners found in the register indicated that using telephone interviews (as opposed to regular mail or web-based questionnaires) would be the most appropriate method. There were two main reasons for this:

- Many forest owners were farmers and occupied most of the day. Therefore using telephone would be the easiest way of reaching them. This would also give them the possibility to agree on an appropriate time to conduct the interview.

Data and method: Good examples 1/2013

- A high percentage of forest owners were 50 and older, which suggests that using a call assisted interview would be more appropriate than e-mail. The register also lacked information about e-mail addresses, making this solution more work demanding.

The objective of the survey was to gather information about the actions and attitudes of forest owners, and of their knowledge of the public policy instruments directed at them. When analysing the data, the group faced a problem of disproportion of the of respondent groups, between forest owners with smaller properties (many), and managers of bigger estates (few).

Because including the actual percentage of forests being managed by the respondents was important, the analysis had to take into account the total acreage the respondents covered when interpreting the results.

The analysis showed that the smaller the property, the less knowledge about regulations, qualities of the forest, their responsibilities and policy instruments in general. The survey indicated that the bigger property the better knowledge. However, the survey also showed that the percentage of forest owners with less or little knowledge about forest management and relevant policy tools together constitutes a significant part of actual Norwegian forest resources. The managers of these resources express that they lack the necessary knowledge about their properties, and need more information and follow-up from government, in order to manage their resources in the best way possible. This information which could explain certain developments, could not have been verified and used in the report, without this data.

GENERAL ADVICE

It is recommended that the questionnaire designed for the survey is based on already observed risks, in order to make it most targeted and relevant to the audit.

It is necessary with good competency about what you are commissioning, before you go ahead with using external assistance to collect data for you. Without understanding the area fully, there is a greater risk that you commission a survey that will not give you the answers you are seeking. Although external research institutes are experts in the field of executing the survey, they may not be experts on what is sought in a public audit or on the target group of the survey.

Know your respondents. If your survey targets a certain group, consider the respondents for the survey when choosing the method, to reach as many as possible. Whether you are targeting private persons, companies or organisations, may affect what method you wish to choose. Also, identified characteristics of the group you are addressing may affect the method and the design of the questionnaire. Also, it may allow you to ask more specific questions based on special knowledge, a general survey to the population would not allow you.

Always do a quality assurance of the questionnaire before distributing the survey. Involve all relevant actors, including experts in the area and relevant authorities as these may have helpful input. Do a pilot, distributing the questionnaire to potential

Data and method: Good examples 1/2013

respondents, to test if the questionnaire is logical and reaches the intended audience. Listen to the feedback and do necessary adjustments. And finally, always test the duration of responding to the survey. Underestimating the time it takes will only give you several "non-completed" responses, as respondents get tired and feel fooled by the initial instructions.

Reassess materiality of the responses before concluding on your analysis. Even though the sample may be stratified correctly, the interpretation of the data may be somewhat misleading if not all relevant variables are taken into account, as was the case of forest property acreage coverage. To illustrate with another example, an analysis of survey data to waste companies would also have to consider the amount of waste processed by the company each year, when interpreting the data. This is to avoid that the responses presented in your report, although being representative of the population of waste processors, may not represent the main waste processors.

It's important to know how to use quantitative analysis tools, to get most out of the analysis. Big data sets are often analysed using tools such as SPSS and SAS software. Skills on how to apply these tools is necessary to get the most out of the data, and to quality assure the quantitative analyses. If none of the team members have these skills, it is advised to get an introduction to the software by a method advisor in your office, who also can help you with the analysis and the quality assurance of the results.

SOURCES

Document 3:9 (2011-2012) *The Office of the Auditor General's Investigation into the Management of Hazardous Waste*

Document 3:17 (2012-2013) *The Office of the Auditor General's Investigation into the Management of Norwegian Forest Resources*