

The socio-economic base line survey

This project is made possible with the support of the Ministry of Agriculture, Nature Management, and Fishery, The Netherlands.

The socio-economic base line survey

First chapter of the handbook under preparation: “Managing farmers: a handbook for working with farmers in irrigation and drainage projects”

A. Schrevel

Alterra-Rapport 675

Alterra, Green World Research, Wageningen, 2002

ABSTRACT

A. Schrevel, 2002. *The socio-economic base line survey, First chapter of the handbook under preparation: "Managing farmers: a handbook for working with farmers in irrigation and drainage projects"*. Wageningen, Alterra, Green World Research. Alterra-Rapport 675. 52 pp. 2 figs.; 4 tables; 7 refs.

The text "the socio-economic base line survey" is the first chapter of a book under preparation meant to instruct senior staff of irrigation and drainage projects on techniques to work with farmers. It informs the reader about 'best practices' to set up and execute a socio-economic Base Line Survey. The work relation between the social scientist responsible for the survey and the project manager receives ample attention.

Keywords: base line survey, questionnaire, sample, data processing

ISSN 1566-7197

This report can be ordered by paying € 18,- into bank account number 36 70 54 612 in the name of Alterra, Wageningen, the Netherlands, with reference to Alterra-rapport 675. This amount is inclusive of VAT and postage.

© 2002 Alterra, Green World Research,
P.O. Box 47, NL-6700 AA Wageningen (The Netherlands).
Phone: +31 317 474700; fax: +31 317 419000; e-mail: info@alterra.nl

No part of this publication may be reproduced or published in any form or by any means, or stored in a data base or retrieval system, without the written permission of Alterra.

Alterra assumes no liability for any losses resulting from the use of this document.

Contents

Note from the author	7
Preface (<i>to the handbook of which the text below is the first chapter</i>)	9
Learning goals	11
1 Introduction	13
2 Purpose and definition of the Base Line Survey	15
3 Managing the survey	17
4 Phases and the research plan	19
5 Staffing	21
6 The questionnaire	25
6.1 Standard topics	25
6.2 Household demography	27
6.3 Sources of income and relative wealth	27
6.4 Opinions and expectations	30
6.5 Testing of the questionnaire	31
6.6 Structured interviews	31
7 The survey area and the survey area population	33
7.1 The survey area	33
7.2 Ensuring co-operation	34
7.3 Feed back	35
8 The sample	37
8.1 Minimum sample size	38
8.2 The stratified random sample	38
8.3 Control group needed?	39
9 Data processing and analysing	41
9.1 Preparation	41
9.2 Actual data processing	43
9.3 Data analysing	44
10 Reporting and report use	45
Questions for self-evaluation	47
Definition of terms	49
Suggestions for further reading	51

Note from the author

This text on the **Socio-Economic Base Line Survey** is the first chapter of a handbook under preparation. The working title of the book is “**Managing Farmers: A Handbook for Working with Farmers in Irrigation and Drainage Projects**”. The book is intended for experts with a training as irrigation or drainage engineer working on an irrigation or drainage project. They are informed about the principles that underlay the work of social scientists contributing to irrigation and drainage projects. This first chapter is meant as an example of the other chapters. It shows how the information is presented and structured. Of course the information can also be used for the purpose for which it was brought together: to assist those working on irrigation or drainage projects in their work.

Eventually the handbook will contain the following chapters (provisional): sociology of farmers' communities (*under preparation*), the socio-economic base line survey (*this text*), training project staff and farmers (*under preparation*), women and water, farming systems and farm economics (*under preparation*), Participatory Rural Appraisals and other assessment techniques, sustainable Water Users' Associations; farmers' participation in designing and implementation; service agreements; communicating with farmers (*under preparation*).

Funding to realise this and subsequent chapters of the handbook is available from the Ministry of Agriculture, Nature Management and Fishery, The Netherlands. Additional funding is required. Finally, the author wishes to thank the two persons who were kind enough to review the draft text of this chapter, to wit: dr. L.M. van de Berg, and dr J.W.S.M. Nibbering. Their constructive suggestions for improvements were greatly appreciated and have led to changes in the original text.

dr A. Schrevel
Wageningen, November 2002

Preface(to the handbook of which the text below is the first chapter)

Today, staff of drainage and irrigation projects communicate more intensively with farmers than ever before. Farmers participation and institutional development have become part and parcel of every irrigation and drainage project. The present trend to decentralise decision making in water management and to make those responsible for irrigation and drainage systems answerable to the clients of their services enforces this. For the better part staff of drainage and irrigation projects are experts with a background in one of the engineering sciences. Generally they have not been trained in the methods that experts with a training in one of the social sciences, for example rural sociologists, agro-economists, agricultural extension workers, and community organisers, apply when working with farmers. The handbook **Managing Farmers** is designed to inform engineers on irrigation and drainage projects in the methods and techniques that social scientists apply to communicate and work with farmers. They can either be project managers responsible for all operations of a project, staff charged with the task to supervise social scientists, or staff working together with social scientists and applying their results. Although those trained as engineers are the main target group, the handbook may also be appreciated and used by managers and staff working for different types of rural development projects and by social scientists who wish to refresh their knowledge.

The handbook intends to contribute to improved communication and working with farmers in irrigation and drainage projects. Each chapter discusses a method or technique that social scientists apply when working in an irrigation or drainage project. The perspective from which the information is presented is that of the manager or (senior) staff member of a project. They can only do their work of supervising or working with social scientists properly if they have an understanding of the basic principles of the work of social scientists. It is not the purpose of the book to turn professionals with an education as engineer into rural sociologists. This would not be advisable. It would also not be possible to do within the context of one single book.

Each chapter of the book deals with one method, technique, or task. The information is presented in such a way that it can be read without having knowledge of the contents of any of the other chapters (cross references are made occasionally, though). All information is presented following the instruction-example-exercise principle. Each chapter is concluded with suggestions for further reading. Following the principle that a picture says more than a hundred words, pictures, graphics, and tables are inserted in the text where appropriate. Text boxes are also included. They serve the purpose to illustrate the main text. Each chapter is written by another expert. Authors were selected on the basis of their knowledge of and experience with their subject. They were asked to remain as practical as possible and to sustain from theoretical discussions.

Learning goals

After having studied the contents of the chapter and having done the exercises, the reader will be able to:

- ? explain the purposes of a socio-economic Base Line Survey
- ? understand the functions of the socio-economic base line data in a project
- ? list the main categories of data to be collected
- ? list the phases of the Base Line Survey
- ? understand the basics of socio-economic survey methodology (sampling, the questionnaire, reporting)
- ? understand the work relation between the project management and the research team

1 Introduction

At some point in their career, managers and other senior staff of rural development projects – irrigation and drainage projects – find themselves in the situation that they have to commission a socio-economic Base Line Survey. They will have to instruct one of their staff members, or more likely, recruit a researcher from outside, to make a proposal, which they then will have to evaluate. Subsequently they will have to supervise the execution of the Base Line Survey, direct it, and accept and use its results. This chapter is instrumental in preparing them for these tasks. It describes the socio-economic Base Line Survey itself, how it is to be conducted, and the kind of information that it generates. It explains the minimal requirements for a proper Base Line Survey, and introduces such subjects as sampling, the questionnaire, and criteria for assessing the quality of a final report.

'project manager' In the following the term 'project manager' will be used as short for project managers and other – senior – staff of irrigation and drainage projects. Most likely they have a training as irrigation or drainage engineer. The term 'researcher' applies to the expert or the institute which is given the task to undertake a Base Line Survey. With *'researcher'* *'intervention'* 'intervention' is meant the project activities in the field (e.g. construction or rehabilitation of irrigation and drainage infrastructure). In all cases the word 'he' is used, rather than 'he/she', although that would have been more appropriate.

2 Purpose and definition of the Base Line Survey

Today, irrigation, drainage, and other rural development projects invariably have at least one socio-economic objective as one out of several objectives. Thus, projects are to 'improve the living conditions of the rural population', 'to increase the income of the rural poor', or 'to enhance the position of rural women'. The Base Line Survey can be used by project managers to help them to achieve such an objective, or more accurately, to help a manager to ascertain that he has achieved the social objective of his project. The definition of the Base Line Survey is:

definition a project management instrument to assess the socio-economic conditions of the population of the project area prior to changes in these conditions due to an intervention

example

Box 1.

The Project Management Unit of a large scale irrigation implementation project in Northwest India decided to organise a base line survey. The survey covered such diverse subjects as demographic composition of households, cropping patterns and yields, distribution of land and land transactions, main occupations of household members, labour input in agriculture, livestock ownership, income sources and levels, literacy rates, borrowings, migration, and willingness to participate in project implementation activities.

The definition is straightforward and simple. It says that project managers, by applying the Base Line Survey instrument, obtain information about the actual socio-economic situation in their project area, and that this information should be collected before the project will start its activities, thus before conditions in the field are changed by a project. Box 1 is an example of the questions that were asked during a socio-economic Base Line Survey that was implemented within the framework of an irrigation construction project in Rajasthan, India.

functions The Base Line Survey serves two functions. These are:

- ? to assess socio-economic conditions as they prevail in a survey area prior to an intervention, and,
- ? to provide project managers with the information that they need during project implementation about prevailing socio-economic conditions

different categories of households The first function is the most important one. Every project in a rural setting has an effect on the socio-economic conditions of the population. If all goes well, projects generate benefits and these benefits are available to the inhabitants of the area where the project takes place. It is not certain that all inhabitants benefit to the same extent and in fact some may even see their position deteriorate because of a project. By executing a Base Line Survey the socio-economic conditions that exist before the project are measured and recorded. Typically the socio-economic Base Line Survey distinguishes between different categories of households, like poor and rich farmers, upstream and down- stream farmers, or farmers with land to be drained by the project and without.

before and after At a later moment, after the project has been completed, the socio-economic conditions can be measured again. By comparing the socio-economic conditions before and after the intervention conclusions can be drawn with regard to the success of the project in realising its socio-economic objectives. More in particular a comparison allows conclusions to be drawn with regard to the question which households benefited most, and which less or not at all from the project. The Base Line Survey serves to appraise conditions before the project intervention. The survey that is taking place after the intervention is completed is called an Impact Assessment Survey. Basically the Impact Assessment Survey is a repetition of the Base Line Survey, although it is usually possible to shorten the numbers of issues addressed.

Impact Assessment Survey

source of data Socio-economic surveys generate a wealth of data on the actual living conditions of the population of the project area. They inform project managers about the composition of households, about their sources of income, and hence, their relative dependence on agriculture, about differences in wealth, about the livelihoods of the project area population, etc. Base Line Surveys also inform project managers about the aspirations of households with regard to the project and its management. Intelligent project managers know how to use this data to improve the outcome of their projects.

avoid overload Indeed the socio-economic Base Line Survey is a great opportunity to learn to understand better the population of a project area. Usually not much information about this is available at the start of a project. Thus it may happen that the researcher responsible for undertaking the socio-economic Base Line Survey is being asked to collect all kind of information, 'now that he is in the field anyway'. This could easily lead to the situation that the survey becomes overloaded with questions and becomes too time consuming and expensive to carry out, both for the project as well as for the respondents.

3 Managing the survey

*manage-
ment
situations*

Managing a Base Line Survey means that at least two situations have to be dealt with:

- ? commissioning the survey, and
- ? supervising the execution of the survey.

To this can be added that the manager will have the opportunity to:

apply the results of the survey

One of the first questions that a project manager will have to answer is who he should instruct or ask to implement the survey. Obviously the project manager will insist on the best possible candidate. The project manager can either instruct one of his staff to undertake the survey, but in case the required expertise is not available at the project, he will have to hire expertise from outside. The latter condition is more likely. Usually the work is commissioned by direct assignment or is tendered. In both cases the project manager needs to have a good understanding of the work to be done.

*research
institutions*

The most likely place to find the required expertise is a local university. This can be a general university which covers the full range of academic disciplines, or an agricultural university. Technical universities usually do not have the required expertise under their roof. Within a general university, the Department of Rural Development, Department of Sociology/Social Development, Department of Geography, Department of Socio-Economics, or the Department of Agriculture are most likely to have staff members trained to do this kind of work. Moreover, junior staff members and recently graduated students can be expected to be available as survey assistants.

Box 2.

<i>country</i>	<i>project focus</i>	<i>commissioned to</i>
<i>Indonesia</i>	<i>rural development and forestry</i>	<i>free lance consultants</i>
<i>Indonesia</i>	<i>irrigation rehabilitation</i>	<i>NGO</i>
<i>India</i>	<i>irrigation construction</i>	<i>development research institute</i>
<i>Pakistan</i>	<i>drainage pilot</i>	<i>free lance consultant</i>
<i>China</i>	<i>land reclamation</i>	<i>own staff</i>
<i>Malaysia</i>	<i>swamp protection</i>	<i>local university</i>

In a country like India, development research institutions exist that can do the job. In Indonesia several NGO's (Non-Governmental Organisations) qualify. In other countries, NGO's seem to have a far more applied-work attitude and do have the kind of academic orientation that is required

to do a Base Line Survey. Also rarely NGO's focus on water management development at field level. If they work in villages, they are more likely to focus on

community development aspects. Finally, consultancy firms may qualify. Box 2 contains details regarding the author's experience with commissioning Base Line Surveys in different countries.

*selection
criteria*

How can a project manager ascertain whether or not a candidate institution is suitable to do the work? Basically, by finding the answers to the following questions:

- ? does the candidate institute have experience in doing this kind of work (track record)?
- ? can it produce an acceptable survey plan?
- ? can it make the required staff (expertise) available?
- ? is the price acceptable?

These questions must be asked, either orally or in written. Prove of experience can be provided in much the same way as consultancy firms apply to prove their track record with regard to particular assignments. A list can be asked of all the surveys that the candidate institution has undertaken in the past, including details to clarify the nature of the survey. A survey plan should minimally describe the work to be done, the staff assigned to do the survey, when and over which period the survey is to take place, and the compensation that is required.

supervision

The supervision task preferably remains in the hands of the most senior project manager with a specialisation in the socio-economics of rural development. Day-to-day tasks can be delegated to a project staff member who is well informed about the requirements of the Base Line Survey (as described in this chapter). Preferably this person has a training as a socio-economist or rural sociologist. If not available, a person with a background in one of the engineering sciences can be given the task, provided that he has followed a training in basic socio-economic survey techniques.

4 Phases and the research plan

*four
phases*

In essence, the phases of the socio-economic Base Line Survey entail:

- ? preparation
- ? data collection
- ? data processing
- ? reporting

Each of the four phases needs to be broken down into sub-phases, or tasks. The tasks are implemented in their proper order. Some of the tasks are the responsibility of the project manager, others of the researcher. It is important to make a strict distinction between responsibilities. The tasks, the order in which they are implemented, and the first responsible for each task, are shown in Table 1. In the table it is assumed that the Base Line Survey is being tendered.

Before the selected researcher will write the research plan, he will first read secondary data as available. Secondary data are all reports and studies, as well as publications from government offices, etc., that contain relevant information about the survey area, or the survey population, or both. By doing so, the researcher will get a good idea of the situation in the field. And he avoids collecting data that are already available.

*the
research
plan*

Having done that the researcher is ready to write a research plan. Research plans should minimally contain:

- ? a description of the situation and background to the study, culminating in a central research question and – usually several – research questions
- ? a discussion on what exactly needs to be looked at in order to answer the research questions
- ? a description of the research methodology (survey instruments) that will be applied
- ? a staffing plan
- ? a time schedule, and finally,
- ? a description of the equipment, etc. that is required

About 6 months pass from the moment at which actual data collection starts until the final report is submitted. Before that the process of selecting a researcher takes another 2 months. These periods are indications. Depending on such factors as the complexity of the survey, the distance to the survey area, the availability of staff, etc. the period can be shorter or longer.

The project managers and the researcher should agree on a work schedule like the one presented in the table above as part of the overall contract in which the work is

commissioned. Important is also to agree on progress meetings. These serve to verify whether the work is still on track or whether adjustments in the schedule are required. Obviously the progress meetings are also suitable to discuss provisional results. Although preferably the original plan should not be altered, as this can have scientific consequences or can lead to extra work and costs, changes may have to be necessary. The progress meetings can be the moment to decide on changes in the original plan. In the schedule above, two progress meetings are foreseen. If required the number of progress meetings can be increased.

5 Staffing

The composition of the research team depends on such factors as the complexity and the size of the survey that is to be carried out. Minimally a research team consists of a

research co-ordinator research co-ordinator and a number of surveyors. The research co-ordinator has the lead and ensures that the research is carried out according to the research plan. Preferably he has written the research plan himself. Among the tasks of the research co-ordinator is to instruct the interviewers and to supervise their work. This implies that he is present in the field during the time that the interviewers meet with the respondents. If required he can be assisted by one or more research assistants.

surveyors The number of surveyors that is required can be anything from 4 – 10 or more. It is usually a good idea to form pairs of surveyors, who will team up together. As a general rule both male and female surveyors should be recruited. In certain cultural settings the involvement of female surveyors is the only way to obtain information from female respondents (Box 3). In other situations female surveyors are preferred because women are less comfortable speaking to men who do not belong to their family.

Box 3.

In 2000 a survey was organised in villages in Punjab, Pakistan. Pairs of female surveyors were talking to female respondents, whereas mixed teams could address male respondents. The collected information appeared to be more complete than it would be if only men were interviewed.

Table 1. Time frame of a standard Base Line Survey (months)

tasks	responsibility		preparation		data collecting			data processing		reporting
	pm	re	-2	-1	1	2	3	4	5	6
preparing tender/tendering	x		-							
writing/issuing proposal		x	-	-						
issuing contract	x			-						
reading secondary data		x			-					
writing detailed research plan		x			-					
forming the research team		x			-					
designing questionnaire		x			-					
instructing interviewers		x				-				
testing questionnaire		x				-				
running questionnaires		x				-	-			
designing structured interview sheets		x			-					
interviewing key informants		x			-	-	-			
progress meeting I	x						-			
data recording		x						-		
analysing data		x						-		
writing draft report		x							-	
presenting findings to population		x							-	
progress meeting II	x								-	
submitting final report		x								-

pm = project manager

re = researcher

*young
graduates*

Often, respondents are from different ethnic or religious backgrounds, or speak different languages. In a survey area where the population is of mixed background, the survey team should mirror the situation in the field as much as possible. Preferably interviewers are selected who understand the respondents' condition. Especially good results can be obtained if the interviewers are young graduates from a local university waiting for their first paid job as a professional and originating from the area in which the research is to take place. This latter condition is not absolutely necessary, though. The students should be selected from a suitable university department and should have had training in research methodology. Sometimes it is suggested to work with high school students as interviewers. This is not recommended, for the reason that high school students usually do not have any experience with survey methodology. Also acceptable is to form pairs of interviewers consisting of a graduated university student and a high school student. High school students do have the advantage that they can be normally be recruited from the survey area population.

*data
processors*

After the data are collected they need to be processed. For this purpose one or more data processors are required. They are typists with an understanding of the computer programme that is used to analyse the data (see below). Data analyses is the task of the research co-ordinator again. He will also write the survey report. Again research assistants can help him doing the work.

6 The questionnaire

definition One of the two instruments that is used to collect data in the field is the questionnaire. The other is the structured interview sheet. The questionnaire is actually *an ordered list of questions with space to write down the answers*. Although the questionnaire is almost always prepared on paper and also a hard copy is used to fill in the answers, it is quite possible to use a laptop computer. The advantage of the laptop computer is that the data are immediately available in digital form and can be processed much easier. If managed well, using a laptop computer to support data collection can lead to substantial time saving.

unique A standard questionnaire for socio-economic Base Line Surveys does not exist. The subjects that are being addressed through the questionnaire depend on the conditions in the field, which of course differ from one place to the another. And they depend on the purpose of the Base Line Survey itself, as expressed in the survey objectives and research questions. It follows that each questionnaire is unique and each Base Line Survey requires designing a new questionnaire. It is much like designing an irrigation or drainage canal. What needs to be done is standard practice, but how it will eventually look much depends on project criteria and local conditions, both of which are particular for a situation.

6.1 Standard topics

standard topics Having said that, it is also true that a number of topics feature in every socio-economic Base Line Survey. Table 2 presents these topics. The second column in the table gives details about the information that is actually analysed later during the survey and presented in the survey conclusions. The third column in the table shows the use of the data during project implementation (in line with the second purpose of the Base Line Survey to provide managers with insight in socio-economic conditions of the project area population).

Table 2: Typical socio-economic Base Line Survey topics

TOPICS	DETAILS	FUNCTION
composition of household	household members gender age of household members main occupations origin	- to understand demographic conditions and background of the project area population - to link occupations to categories of persons
occupations	per household member: kind of income generating activity, where, time spend	insight in which households members are working for an income, kind of income raising activities undertaken (also off-farm)
incomes	per household member: incomes earned, costs to make incomes	insight in relative wealth of household categories, relative dependence on (irrigated and drained field) agriculture
access to land, water, irrigation and drainage infrastructure	per household: area of (dry, irrigated, drained) land controlled, location of this land relative to water sources and collectors, fragmentation of landed property, relative fertility of the land, control over water supply or disposal systems, etc.	to understand the relative importance of and access to irrigation, drainage for different categories of households
role in management of land, water, irrigation and drainage infrastructure	respondents role, if any, in the management of the land assets of the community, or of water control infrastructure	to gain insight in ways in which the project area population manages land, and irrigation and drainage infrastructure
TOPICS	DETAILS	FUNCTION
perceptions about the project and willingness to participate	respondent's understanding about the project and its goals, expressed willingness to co-operate	learn about success of project's earlier attempts to communicate intentions, about attitudes towards the project, and whether households can be approached to participate

note: list is not necessarily complete

main topics Usually in a questionnaire the different main topics are dealt with in blocks of their own. Thus a standard questionnaire contains a block 'household demography', 'incomes from agriculture', 'incomes from off-farm activities', 'access to land', 'irrigation', 'household perceptions of the project', etc. However, it can be beneficial to apply an order of questions which is more logical to the mind of the respondent. In that case questions belonging to different main topics are mixed. For example, it is usually advisable to immediately ask for the main activities and occupations of each household member when discussing the composition of the household at the beginning of a questionnaire. The advantage of this way of working is that later during the survey further details of the different occupations can be systematically addressed simply by going back to the list of activities that is already produced. This way of doing reduces the risk that one or more income raising activities are missed. This risk would be higher if at some point in the questionnaire the question would be asked what the sources of income of the household are. In the same way it is also possible to ask for each field the crops that were grown the last harvest and the harvest before that, the income that the farmer earned for each crop, as well as the

irrigation and drainage conditions. The other, less accurate way would be to make a list of all fields first, then of all crops of the fore last season, then of the crops of the last season, then of the prices he received, and finally to ask the question of the irrigation and drainage situation on the farm.

Three topics which are always present in socio-economic Base Line Survey designed for rural development projects will be discussed in more detail here. These are 'household demography', 'sources of income and relative wealth', and 'opinions and expectations'.

6.2 Household demography

*demo-
graphic
data*

Every Base Line Survey starts with questions regarding the household that is being surveyed and its structure. (Note that at the top of the first page space is reserved to register the name of the interviewer, the date of the interview, etc.) Standard questions include the number of household members, their age, gender, education levels, occupations, and the households' religion and ethnicity (if relevant). The names of the households or respondents must not be recorded. This in order to avoid every possibility that results of the survey are later traced back to individual households or persons, with possible negative consequences for them.

definition

In most rural areas the nucleus type of household is the most common type. A nucleus households consist of parents with their children. In this type of household one may see that the parents' parents live with their children, either in the older generations' house or in the children's house. Extended households, the type of household where families consisting of grandparents, children, grandchildren, cousins, uncles, etc. live are less frequent. The definition of household is *a group of related persons living together under one roof or eating their meals together.*

Another important question concerns a household's place of origin and when it came to live in the survey area, even when this is more than one generation ago. Often a relation exists between access to resources, place of origin, and date of moving to an area. Insight in these differences and their background is usually helpful in understanding the project area population and the different groups in which it must be subdivided.

6.3 Sources of income and relative wealth

*measuring
incomes*

At the core of the socio-economic Base Line Surveys are questions to assess household income. The number of questions involved is usually high, as a household's income situation is often complex. There can be different sources of income and more than one household member earning one or more incomes. Further complicating the issue is that incomes can be seasonal.

A sound approach is take a reference year and to ask for all incomes that were earned in that year. It is recommended to take as the start of the reference year the first

reference year the first month of the cultivation cycle of the main crop. The last month of the reference year is 12 months later. This allows for all seasonal crops to be covered. For multi-annual crops, the harvest during the reference year is asked. Over this twelve month period all incomes by all household members are measured. The economic data will provide detailed insight in:

- ? the sources of income of the households of the survey area, as well as of categories of households, e.g. the poor, middle class households, and the rich, and/or per ethnic group, and/or for upstream versus downstream farmers
- ? the relative importance of each of the sources of income, again for each group
- ? the relative wealth of each group in relation to other groups and to an established poverty level

Conditions with regard to these issues as existing prior to the project intervention can change because of the intervention. Or even stronger, are likely to change because of the intervention.

*incomes
from
agriculture*

The socio-economic Base Line Survey draws conclusions about the incomes of the households of a population. The incomes can be incomes from agricultural activities or from off-farm work. Incomes from agricultural fields concern all incomes earned from all fields and crops cultivated by a household during a reference year. The incomes are calculated by subtracting total costs from the value of the harvest. Especially in irrigation and drainage projects, it makes sense to differentiate between land with or without irrigation and drainage. Even further detailing can be required. It may be necessary to relate incomes to conditions of over-irrigated land (waterlogged!), well-irrigated land, less well-irrigated land, and not irrigated land. Other categories are of course possible, depending on local conditions. Similar categories can be made to indicate drainage conditions. Obviously the exact details require the input of experts of different disciplines. In addition to incomes from fields incomes from livestock are to be assessed.

*off-farm
work*

Examples of off-farm incomes are incomes from services (school teacher, government official, watchman, etc.), from skilled work (driver, cook, needle work, etc.), or from selling one's labour (agricultural labourer or industrial labourer). It should be noted that incomes from off-farm work are often higher than incomes from agricultural activities. For this reason care must be taken to also include all sources of off-farm income. Even if they were earned during only part of the year, have already stopped but did exist in the reference year, or where earned by children or elder household members. Incomes in kind are converted into incomes in money.

*household
categories*

The relative wealth of a household can be expressed by comparing it to the income of other households. For this purpose all households that are surveyed are divided into categories. The categories are usually based on the area of agricultural land cultivated by households. In irrigation schemes this usually means the area of irrigated land. In most rural societies, and especially in irrigation and drainage areas, a household's wealth is a function of the area of land it owns or controls.

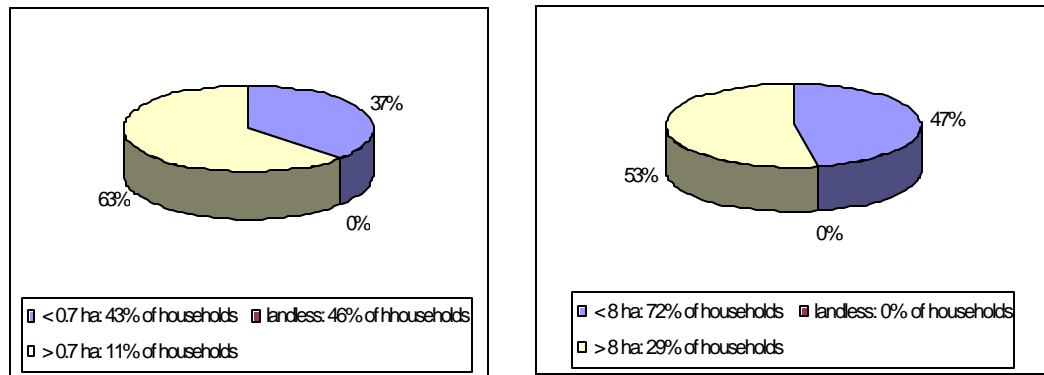


Figure 1. Land distribution in irrigation systems in West Java, Indonesia (left), and Haryana, India (right)

Figure 1 shows typical land distribution situations for Java, Indonesia, and Haryana, India. In both cases the distribution is highly skewed: a relatively large number of households with farms just enough to live from (Java: 43%; Haryana: 72%) has a relatively small proportion of the total land area (Java: 37%; Haryana: 47%), whereas a small number of households with large holdings in both areas (Java: 11%; Haryana: 29%) has a relatively large proportion of all land (Java: 63%; Haryana: 53%). In West Java the proportion of landless households is considerable: 46%. In Haryana the average village is said to have only a few landless households. However, there are many small farms, with a size of less than 2 ha (20%). Together they control 5% of all irrigated land. In many rural areas of the world the situation seems to be comparable. It has consequences for the social objective of a project. If the project is to generate better living conditions of the rural poor, it are the landless households and small landowners that are the target groups of the project.

The figure also shows that the area of land per household is about 10 times as large in Haryana compared to West Java. The reason is that the land in Java is much more productive. Income levels in both areas are roughly the same (in both areas about 20-30% of the population appeared to have incomes at lower than poverty level).

Distinguishing between three landownership categories, as is done in the examples above, appears to be a practical way to differentiate between households. If necessary four or five classes can be made instead of three. This, however, will have consequences for the required number of households in the survey sample (see below). In stead of distinguishing between landownership categories, it may be useful to construct categories on the basis ethnicity, or location of land in relation to the source of water (in irrigation projects), or area of land drained (in drainage projects).

poverty level

The relative wealth of a household can also be expressed in relation to a poverty level, or minimum income level. Almost all countries work with a poverty level of some sort for statistical and political purposes. The poverty level is the income that an average household or person is considered to need in order to survive or to live a 'decent' life. The poverty level is often calculated as the sum of a number of essentials, like rice, other food products, cloths, school fees, etc. By comparing the incomes earned by the households in a Base Line Survey with the poverty level valid for that area conclusions can be drawn regarding the number of households or

persons living below the poverty level before the project intervention. After the project is finished and the Impact Assessment Survey is completed, the incomes at that time can again be compared to the poverty line and conclusions can be drawn as to the effect of the project on poverty.

Figure 2 is an example of the use of a poverty level. The data concern the same irrigation area on Java, Indonesia, as in Figure 1a. In the figure the incomes from agriculture and off-farm activities are separated and are compared to a poverty level.



Figure 2.

It is clear that in this situation only households with farms larger than 0.7 ha earn an income from agriculture above the poverty level. All the other households, a majority, require incomes from off-farm work to reach income levels higher than the poverty line. The average income of each of the three categories distinguished in the figure was always above the poverty level. Still about 20% of all households did not reach this level. They were found among the landless and households with less than 0.7 ha of land.

6.4 Opinions and expectations

The last block of questions in a Base Line Survey deals with the opinions and aspirations of respondents vis-à-vis the project. Usually the questions are open questions and the respondent's exact words are written at their appropriate place in the questionnaire. To hear the opinions at an early moment is important. With this knowledge

Box 4.

In a land reclamation project in South Sulawesi, Indonesia, contractors had started clearing land. The Base Line Survey which just had become available showed that local inhabitants strongly felt that certain trees and distinct land marks would be left undisturbed, as this would facilitate land distribution later. The opinion was respected and the contract with the land clearing company was reviewed. The higher costs were seen as justifiable in view of the demands of the population.

a manager can formulate more accurately a policy to involve the project area population in the project. And the more accurate a policy is, the higher are the chances on success. Also, on the basis of information about a population's opinions and aspirations, a manager can more or less predict the reactions to a decision he wants to take. If he had not known the opinions he would be more uncertain. It follows that this block of questions serves the second objective of the questionnaire, namely to provide the project manager with relevant information during project implementation.

expectations Respondents can have all kind of expectations about a project, of which some may be realistic, others less unrealistic. Project managers need to understand these expectations. This knowledge is indispensable when dealing with individual inhabitants of the project area as well as with groups of people during village meetings. Expectations expressed by the project area population can even change project plans or policies, as is clear from an example of Indonesia (see Box 4).

6.5 Testing of the questionnaire

10
questionnaires

It is essential that a questionnaire is first tested before it is used to collect data on a larger scale. The test should include about 10 households. The questionnaires are filled in with households from the survey population as if the survey would already have commenced. After the 10 questionnaires have been filled in, the questionnaire as a data collection instrument is evaluated. This must be done together with the surveyors, as they have the relevant experience. If required the questionnaire is adjusted. Usually the required changes concern reformulation of questions and additional space for answers that were not foreseen. It is not unusual that quite a few adjustments are necessary. Of course the research co-ordinated is to be directly involved in the testing. It is usually possible to use the data collected during the test in the survey proper.

6.6 Structured interviews

definition

Just a few words are required to explain the survey instrument 'structured interview'. A structured interview is *a list of questions that is used during in-depth interviews with key persons*. Key persons are persons who are known or expected to have a good understanding of one or all of the survey subjects. They are asked to be available for an interview. An important difference between respondents and key persons is that the former are selected at random, whereas the latter are always hand-picked.

7 The survey area and the survey area population

7.1 The survey area

definition The survey area is *the area where people live who are either affected by or who may affect the outcome of the project*. The survey area is not congruent to the project area. The project area is *the area definition where the intervention of the project takes place*. In case of an irrigation or drainage area, it is the area where the irrigation or drainage system is constructed or rehabilitated. The survey area is larger and includes this area and the surrounding area of which the population experiences either positive or negative effects of the project.

spill-over effects It is not unusual for the people living outside the boundaries of a project area to experience the – positive or negative – effects of a project. The effects are referred to as positive or negative spill-over effects. For example, in the area downstream of an area where an irrigation system is rehabilitated water levels in drains may increase and if the water levels are not too low it may be used for irrigation. This can be considered a positive spill-over effect. However, if water levels rise to the level that flooding occurs, a negative spill-over effect occurs.

boundaries? The positive and negative spill-over effects must be taken into consideration when the success of a project is assessed and therefore should be measured. The question is of course where the boundaries of the survey area should be situated. After all, the effects can be felt at long distances from a project area. It is impossible to be precise about this. The boundaries of the survey area are best determined by the manager and the researcher together. One criterion could be whether a ‘substantial’ impact, either positive or negative, on the incomes of people not living in the project area proper must be expected. What exactly is meant with ‘substantial’ should be assessed as best as possible, using information as available.

direct effects only It is usually correct to address only those inhabitants in the survey area – project area plus surrounding areas – who are directly affected by an intervention. Whether this can indeed be done depends on the formulation of the research questions. Households directly affected by an irrigation project are those who will have more less or irrigation water on their fields after project completion. In a drainage project they are the people whose land will be directly drained by the project or who will experience lower groundwater levels. Inhabitants who do not have a direct interest in the land themselves can safely be excluded from the survey. For instance this is the case with school teachers, government officials, shop keepers, families working in the industrial sector, etc. To make matters complicated, if these people have land themselves or are members of households with land, they cannot be excluded.

landless households

An important question is always whether landless households should be included in the survey. They should in all those cases that one or more of the household members derives an income by working as an agricultural labourer on another person's land. In that case their incomes are directly affected by the intervention. If land becomes more productive because of irrigation or drainage becoming available, the demand for agricultural labourers may increase. Or with production levels and incomes of land owners increasing, more machines are introduced. In that case the demand for the services of agricultural labourers decreases. This example also shows the importance of taking stock of also the conditions of those who do not have land themselves, but working in agriculture. Irrigation and drainage projects can have important effects on their income situation too.

claims

In addition to the reasons already mentioned project managers may have another reason why they wish to understand the extent of spill-over effects on households outside the project area proper. This is because it allows them to react with more certainty on claims for compensation because of negative spill-over effects coming from people from outside the project area.

7.2 Ensuring co-operation

private or sensitive questions

The co-operation of the population of the survey area is required in order to be able to execute the survey. People have to make available at least one hour of their time and have to be willing to give all kind of data regarding their personal lives. Some of this data may be private or sensitive. Data on the actual composition of a household may be sensitive information, for example in those cases that a man or a woman is living with another partner. Typically data on income sources and levels are sensitive also, as people may not wish to share that information with strangers, perhaps because they fear that this information is passed to the tax authorities.

A first step to be taken to obtain the co-operation of the population is to approach the (administration) leaders and ask them the question whether they agree and support the initiative. An immediate answer can usually not be given, as the leader will have to consult with others, like for instance the members of the village council, or the heads of villages or other administrative units, and ask their opinion.

Once permission from the local authorities has been obtained the respondents can be approached. Their permission to ask them questions must be obtained and this is done by asking each of them individually whether they are willing to co-operate. This is best done prior to actually starting to ask them the questions on the questionnaire. To ask whether they are willing to co-operate must be preceded by an explanation of the purpose of the survey, the context in which the survey is taking place, and the kind of questions that will be asked. It will usually be necessary to explain for which purposes the survey data are used.

*privacy
protection*

Surveyors should explain that the survey data are only used for the purpose of the project and will not be available for any other purpose or organisation. Of course they can do this only if they know it to be true, which means the project follows a deliberate strategy with regard to privacy protection. Surveyors must be carefully instructed with regard to the way that they introduce themselves and the purpose of their visit.

7.3 Feed back

At the end of the survey, after all data have been collected, processed, analysed, and used to write the concept of the final report, the conclusions of the survey should be explained to the respondents. This should not only be done as a courtesy, but also to solicit their feed-back. Hearings can be organised during which the survey results are presented. Given the fact that the population of irrigation and drainage areas is usually not used to work with this kind of aggregated data special efforts must be made to present the information in a way that it can be understood. Comments and reactions can be ploughed back into the report.

8 The sample

The population of project areas is often large. On the island of Java, Indonesia, the average farm has an area of 0,25 ha and an irrigation scheme may have an area of 10-20,000 ha. Even on relatively small irrigation areas like these the number of farms is 40-80,000. In the Punjab (north-west India and north-east Pakistan) it is not unusual for irrigation schemes to have a size of 300,000 ha and more. Systems of twice or even three times of that size are also not an exception. An average farm in the Punjab would be in the order of 2 ha. A quick calculation shows that the number of farms in those regions can be 150,000 or a multitude of that number. In cases like these it is quite impossible to survey entire survey area populations. It simply would be too time consuming and too costly. Fortunately acceptable results can be achieved if a sample of the population is surveyed instead of the entire population.

definition A sample is a selection of households from a population to be surveyed and reflecting its characteristics. It can be compared with the cross cut that engineers take from an area to be irrigated. The cross cut shows all the characteristics of the larger area it represents. Sampling and interpreting sampling data requires knowledge of complex techniques.

random selection For the Base Line Survey it is necessary to draw a random or a-select sample. This means that every household belonging to the survey population has the same chance of being selected in the sample. Random sampling is achieved relatively easily.

Box 5.

Examples of ways to randomly select households:

- *pick every 25th or so house in each street of each village in the survey area*
- *use a table with random figures (from a PC or calculator) and apply the figures to the list of persons living in each village*
- *draw squares of equal size on the map of the project area and pick in every square the same number of farms*
- *any other method based on the principle that chance only directs selection of households*

It does not matter how a household is selected in the sample, as long as it did not have a higher chance than any other household to be selected. Chance and chance only dictates which households enter the sample. Never should households be hand-picked. Examples of methods for random sampling are shown in Box 5.

Note that it is usually not a good idea to use the land ownership register or a land ownership map. In many rural areas part of the rural households do not have land of their own. However, their lives and incomes are depending on the agricultural sector, either because they are land labourers or because they are traders in agricultural products, or because they are indirectly dependent of the agricultural sector. If we would use land ownership data, we would fail to include these categories in the sample. The conclusions would not be valid for the entire population (but only for the group of landowners).

Another reason why land registration files are unusable is that they are almost never up to date. Often people prefer not to have all changes in land ownership registered either because of the costs involved or because of tax consequences. In countries where a maximum is put to the area of land that a household may possess land is often registered in another persons name. Using the land registration files to draw a sample under such conditions would produce unacceptable biases in the sample.

8.1 Minimum sample size

The size of a sample depends on two factors: the level of accuracy that one wishes to achieve, and the level of differentiation that one expects in the answers. Higher levels of accuracy require larger samples, or more accurately, samples that constitute a larger proportion of the population from which the sample is drawn. The highest level of accuracy is 100%, which is achieved if the size of the sample is equal to the size of the population. In the kind of socio-economic Base Line Survey that is discussed here, much lower levels of accuracy are usually considered acceptable (90%).

A more important consideration than the level of accuracy is the level of differentiation that one expects in the sample and that is to be shown in the results. If the sample population is broken down into a high number of categories, the sample must be larger than in case a small number of categories is required. This has to do with the fact that a minimum number of cases is required in each category. The minimum number is put at 20. Categories are for example land ownership categories, income categories, or distance to a source or irrigation water categories. A highly differentiated sample produces cross tables of, for example, 5 columns and 5 rows. The sample in that case would require a size of $(5 \times 5 \times 20 =)$ 500 cases. A simpler sample would have 3x3 cross tables and consequently a size of $(3 \times 3 \times 20 =)$ 180 cases.

The actual sample that is taken should be 5-10 households more than the minimally required number. The extra households are the reserve. These households are also interviewed. If for some reason a household in the sample produces unreliable results it can be left out and replaced by one of the reserves.

8.2 The stratified random sample

*stratified
sample*

Above it was explained how a sample is drawn from a survey population. The survey population was looked at as one whole. Sometimes it is necessary to divide the survey population into two or more main categories, or strata, and to draw an equal, pre-determined, number of respondents from each of the strata. In that case a stratified sample is drawn. Each of the strata is treated as if it were a sample of its own. It follows that a stratified sample must be twice or more times as large as a straight sample, depending on the number of strata that are required. A stratified sample is drawn when the researcher wants to make sure that households which share one characteristic can be compared with households that share another, usual opposite characteristic. An example is a stratified sample with two strata, of which

one contains exclusively households with upstream land and the other households with downstream land.

Drawing a stratified sample works as follows. Before the sample is drawn the survey population is subdivided on the basis of the strata. Thus, the names of all upstream farmers are written on one list and those of downstream farmers on another. Subsequently within each of the strata a sample is drawn as if the strata population were a survey population by itself.

*dis-
advantages*

Working with strata has two distinct disadvantages. Households are preselected on the basis of one characteristic, the differentiating factor, and an equal numbers of households are entered into each stratum. This method of working usually implies that the distribution of the households in the survey population over the differentiating factor remains unknown. This can be a problem. The other disadvantage is that the stratified sample is much larger than the normal sample, and consequently more expensive.

8.3 Control group needed?

*control
group*

Text books on methodology mention the possibility of working with a control group. The advantage of a control group is that the impact of an intervention – on the survey population can be established with more confidence. The idea is that exactly the same data are collected on the survey population as on a control group. The survey population experiences the impact of the intervention, but the control group does not. After the intervention, both populations are surveyed again. By comparing the differences between the populations the impact of the intervention is established. Thus if after a project the average income of the population of the project area is twice as high as in the control population it can be concluded that this is the effect of the project (all things being equal).

From a purely methodological perspective working with a control group is good practice. Yet there is a problem that renders the method not appropriate in case of the socio-economic Base Line Survey for irrigation and drainage projects. This is that it is almost always difficult, if not impossible, to find a control group that shares exactly the same characteristics as the survey area population. There is also a practical problem that makes it difficult to work with control groups: the survey costs will be twice as high. All in all, working with a control group in case of a socio-economic Base Line Survey is not recommended.

9 Data processing and analysing

definition Data processing is *the task of preparing the rough data for analysing* It is done after all questionnaires have been filled in. Processing of the data is preferably done electronically. A popular data processing program that can be run on an average PC is SPSS/pc+ (SPSS is short for Super Performing Software System; it used to stand for Statistical Package for Social Sciences). Other programmes designed to analyse data are SAS, CSS Statistica.

SPSS

dependent and independent variables Data processing essentially means to relate the answers that respondents gave to one question to the answers given to one or more other questions. Depending on which factor is believed to influence the other, we speak of 'dependent variables' and 'independent variables'. One step further is to assess the strength of the relation between two variables. For example, the answers to the question about the total annual income of the households in a sample is related to the answers regarding the area of well-drained agricultural land that households cultivate. This is done in order to establish whether or not households with more well-drained land have higher total annual incomes. Expressed differently, it is established whether a positive relation exists between total annual income and area of well-drained land cultivated. Obviously, 'well-drained land' is the 'independent variable' and 'total annual incomes from agriculture' is the 'dependent' variable.

9.1 Preparation

code book definition Processing of the data collected by way of a questionnaire is preceded by three steps. The first two steps take place during the design stage of the questionnaire. Step one is to give each and every possible answer to each of the questions in the questionnaire a unique code. The second step is the construction of a code book. The code book is *a list of all questions in a questionnaire and all the answers and the code of each answer*. The list also shows in which column of the data matrix (see below) the codes are found. The codes only have a meaning in combination with the column in which they occur.

Table 3 shows an example of a code book. Usually question 1 in the table concerns the sex of the head of household. There can be only two possible answers; these are given code 1 and code 2. Thus code 1 in column 5 means 'male' and code 2 in the same column means 'female'. Note that the same codes have an entirely different meaning in another column. In case the cell in which a code can be recorded is left open, it means that the information regarding the gender of the respondent is not available. In the example the codes related to the following question are recorded in columns 5 to 7. Three columns are required, because the actual age of the respondent is to be recorded. Sometimes the number of possible answers, and hence the number of codes required, can be high. This is the case for example with the

question on the composition of the household. Many combinations are possible, as can be seen in the table. .

Table 3. Example of a the first 4 questions of a questionnaire recorded in a code book

question number	description	variable number	column number	code
1	identification gender of respondent	1	1-3 5	1 – male 2 – female open – no data
2	respondent's age	2	6-7	actual age open – no data
3	household members	3	8-9	01 – 1 02 – 2 03 – 3 --- 11 - >10 persons
4	households composition	4	10 – 11	01 – single, male 02 – single, female 03 – husband and wife 03a – husband, wife, male grandparent 03b – husband, wife, female grandparent 04 – husband, wife, son <16 04a – husband, wife, son <16, male grandparent 04b – husband, wife, son <16, female grandparent --- 15 – husband, wife, >3 sons <16, >3 sons >16, >3 daughters <16, >3 daughters >16

The third step takes place after the data have been collected, thus after all questionnaires have been filled in. The actual answers that respondents gave to the questions are transferred from the questionnaires to a data matrix. In the data matrix each cell provides space for a code. The columns represent questions and each row represents a respondent (identified by a number). Table 4 shows the data matrix that relates to the data of Table 3, above. The data from 5 imaginary respondents are recorded.

Table 4. Structure of the data matrix

	codes from Table 3									space for more codes														
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
0	0	1			1	2	2	1	1	1	5													
0	0	2			1	4	5	0	9	1	1													
0	0	3			2	3	2	0	5	0	7													
0	0	4			2	6	7	0	2	0	3													
0	0	5				5	5	0	1	0	1													

The data matrix has as many columns as the total number of digits required by the codes. The length of the data matrix is equal to the number of respondents. Now the advantage of working with codes becomes clear. Codes are short for answers. Sometimes an answer can be very long. If the full answers were to be recorded in a matrix, it would be inconveniently wide.

accuracy The main problem with transferring the data from the questionnaires to the data matrix is accuracy. In the process mistakes can be made. These will have a bearing on the end results of the survey. In order to minimise the risks involved, data processing has to be given proper attention. Sufficient time should be taken to allow for the job to be carried out, and above all, dedicated people should be set to the task. Comfortable work stations should be provided. It is good practice to ask a colleague to check the codes entered by the data processor into the data matrix.

9.2 Actual data processing

Now that all answers to each of the questions are written in the data matrix actual data processing can take a start. SPSS and the other software programme to analyse statistical data can be given many instructions, including to:

- ? calculate frequencies: count the number of times that a variable is recorded; e.g. the number of men and women, or the number of households classified as poor, middle class, or rich, or the number of times that respondents said to agree with the project plans
- ? calculate a measure to express a series of data (average, mean, median, variance, standard deviation, etc.)
- ? calculate the strength of the relation between two variables; using the example above, to calculate whether rich households tend to have more irrigated land than middle class and poor households (the programme calculates Kendall order correlation, Spearman order correlation, and similar measures)
- ? produce cross tables, histograms, section diagrams, graphs, column and bar diagrams, etc

SPSS and similar programmes produce the outcome of complicated statistical tests with pressing just a few keys on the keyboard. This allows researchers wishing to

under-standable interpretation impress their readers to produce the values of different statistical values in their reports. Applying statistical tests is only acceptable if the tests are adequately applied and correctly interpreted. The conclusions must be explained in words that are understandable. Project managers must insist on this. Producing only the value that is *interpretation* obtained after doing a test is useless.

Two tests that are frequently applied in socio-economic Base Line Surveys are Kendall order correlation, and the Spearman correlation. Both indicate the strength of the relation between sets of data, for example, income and percentage of total land holding under irrigation. In both cases a perfect possible correlation is +1 and a perfect negative relation is expressed as -1. A score of 0 indicates no relation at all. In the example it means that as many households have much irrigated land and low incomes as there are households that have high incomes and not much irrigated land. The researcher is still left with the task to explain how this is possible.

9.3 Data analysing

data interpretation Data interpretation means deciding which characteristics should be counted, which relations between variables should be appraised, and the actual interpretation of the results. It is the responsibility of the research co-ordinator together with his assistants. The decisions are guided by the objectives of the survey, and more specifically, by the research questions. Data analysing is another critical step in the Base Line Survey.

Data processing essentially means going back to the research questions and using those collected data that can help in answering the questions. Thus, if one of the research questions was to establish the number of households living below the poverty level, the data on the incomes of all households are looked at in relation to a poverty level. If a research question was to establish whether households with farms further away from a main drain would be less dependent on incomes from well-drained fields than households living closer to the village, data on the distance of fields from main drains would be analysed and related to data on household income structure. Most probably the research co-ordinator will prepare a cross table showing 'distance to main drain' in the columns and 'highly dependent', 'moderately dependent', and 'not dependent' in the rows. In the text the figures in the table would be explained.

10 Reporting and report use

Reporting includes the process of writing the socio-economic Base Line Survey report and submitting it for approval. As is the case with report writing in general, the task of producing the report is time consuming. At least one month must be allowed for the writing itself and another for discussing the first draft and producing the final version of the report. Usually the report itself is written by the research co-ordinator. He can be assisted by research assistants.

basic reporting questions

It is good practice to agree at the moment of signing the contract that a meeting will take place to discuss the draft concept of the survey report. This can be seen as a Progress Meeting. The project manager receives the draft report prior to the meeting. He prepares himself for the meeting by asking himself three basic questions:

- ? does the report give answers to the research questions that were agreed earlier?,
- ? is the information presented in such a way that it is possible to compare it with the results of the Impact Assessment Survey later?, and,
- ? is the information logical and can it be understood?

satisfactory results?

A survey report starts with an explanation of the survey itself, the objectives, and the research questions. It continues with presenting and explaining the data that were collected, and finalises with the conclusions. The project manager should convince himself that the report addresses indeed each of the research questions in a satisfactory way. In other words, he should make sure that the researcher is delivering what was agreed earlier.

transparent information?

Equally important is the check on the way in which the information is presented. Of course the information should be easily accessible or transparent. Still another condition must be fulfilled also. All information should be presented in such a way that the researchers responsible for the Impact Assessment Survey can compare their results with those presented in the Base Line Survey. Basically this means that as much as possible information is expressed in figures and presented in tables. It is also necessary to include in the report a detailed account of the research methodology that was applied. The questionnaire that was applied and the structured interview should be added as annexes to the report. For reasons of privacy, all questionnaires with data are to be destroyed after the final report is accepted.

It is good practice to invite staff members of the project to participate in the meeting during which the draft report is discussed. Usually all kind of detailed information concerning the project area population is discussed during the meeting and this information is of importance to all project staff. They should have the opportunity to read the report before the meeting is actually taking place. In order to start the discussion the researcher can be asked to present the main conclusions of the report to the meeting. For this purpose he can use an overhead projector or a computer.

corrections, supplementary information required? The meeting during which the draft report is discussed should be concluded with an agreement on the corrections and supplementary information that are required. The final report will reflect the agreements. With submitting the final report the researcher has fulfilled his contractual obligations.

Questions for self-evaluation

Question 1. Give two reasons why a socio-economic Base Line Survey is necessary in every irrigation and drainage project.

Question 2. The socio-economic Base Line Survey and the Impact Assessment Survey are two surveys that take place before and after a project intervention. Explain the relation between the two surveys. Do the questionnaires in the surveys have to be identical?

Question 3. Describe the phases of a Base Line Survey . How much time is required to complete a Base Line Survey from the moment of tendering onwards?

Question 4. Mention four tasks of the research co-ordinator.

Question 5. Which categories of households are usually distinguished in Base Line Surveys designed for irrigation and drainage projects? Do landless households have to be included in the survey?

Question 6. Explain what is meant with structured interviews. What are key informants?

Question 7. What is meant with random sampling? How can random sampling been achieved?

Question 8. What is a code book and how does it look like?

Question 9. What is a data matrix and how does it look like?

Question 10. What tasks can be performed by a computer programme like SPSS?

Definition of terms

average	- value obtained after dividing the sum of all values by the number of values (μ) (interval or ratio level)
Base Line Survey (socio-economic)	- survey to assess (socio-economic) conditions (of a population) prior to an intervention
code book	- list showing for each question all possible answers, the codes to the answers, and the column numbers of each code
commissioning (a survey)	- instructing (the implementation of a survey)
control group	- population of equal size and further characteristics subjected to the same survey
data (socio-economic)	- collected and recorded information regarding the (socio-economic) conditions of a survey population
data analysing	- act of drawing logical conclusion from data
data collecting	- act of gathering data using standard data collection methodology
data matrix	- table showing the coded answers of each respondent
data processing	- act of transferring collected data to data matrices
data processor	- person processing data (see data processing)
direct assignment	- giving a project to a person or institution against an agreed price without organising other bids
household	- group of people living under the same roof or cooking together
Impact Assessment Survey (socio-economic)	- survey to draw conclusions regarding the (socio-economic) effects of a project after an intervention
intervention	- activities of a project in the project area (this text)
key informant	- person selected for interviewing because of expected knowledge about a subject
livelihood	- means of living, making a living
median	- value exactly in the middle of a list of all values ranked from low to high (ordinal level)
modus	- value most frequently available in a list showing all values (nominal level)
negative relation (between variables)	- relation whereby a high value on one variable goes together with a low value on the other
NGO	- Non Governmental Organisation
percentage	- proportion per hundred (%) (ratio or interval level)
positive relation (between variables)	- relation whereby a high (low) value on one variable goes together with a high (low) value on the other
progress meeting	- meeting between partners in a project to discuss progress of the work
project area	- geographical area where intervention takes place (compare survey area)
project manager	- manager of an irrigation, drainage, or other type of rural development project (this text)
questionnaire	- ordered list of questions with space to write down the answers
random sample	- sample of a population generated in such a way that all

	members (households) have an equal chance of being selected
range	- the highest and lowest value to a variable (ratio or interval level)
reporting	- act of presenting preliminary or final findings or conclusions
research assistant	- (junior) expert helping the research co-ordinator in doing the research tasks
research co-ordinator	- person responsible for the implementation of a research of survey
research methodology	- ways to conduct a research
research plan	- detailed steps to do a research
research question	- question that give direction to data collection and analyses
researcher	- person or institute responsible for implementation of a research (this text)
respondent	- person asked to answer the questions in a questionnaire
sample	- selection of households from a population to be surveyed and reflecting its characteristics
secondary data	- data relevant to the subject and already available before a survey
socio-economic Base Line Survey	- survey to assess socio-economic conditions of a population prior to an intervention
sources of income	- place from which income is got
Spearman order correlation	- measure to express relation between two variables (r_s) (minimally ordinal level)
spill-over effects (negative or positive)	- (positive or negative) effects of an activity or intervention in a distinct area felt outside that area
SPSS	- Super Performing Software System (formally Statistical Package for Social Sciences), software programme for data analyses
standard deviation	- measure to express the spread or dispersal of values around the average (σ) (root of variance; compare variance) (ratio or interval level)
stratum	- layer in a population singled out because of one or more exclusive characteristics
stratified random sample	- random sample based on strata
structured interview sheet	- questionnaire
structured interview	- interview (with key persons) using pre-determined questions set in a logical order
survey area	- geographical area from which data are collected, area where people live who are either affected by or who may affect the outcome of a project (compare project area)
survey population	- population subjected to a survey
surveyors	- person asking the questions of a questionnaire to respondents
tender	- act of asking bids from one or more pre-selected persons or institutions to implement a project
variables	- possible answers to a question
variance	- measure to express the spread or dispersal of values around the average (σ^2) (compare standard deviation) (ratio or interval level)

Suggestions for further reading

Arminger, G., Clogg, C.C., Sobel, M.E., 1995, Handbook of statistical modeling for the social and behavioral sciences, Plenum, New York

Lewis - Beck, M.S., 1993, International handbooks of quantitative applications in the social sciences, Vol. 1: Basic statistics, Vol. 2: Regression analysis, Vol. 3: Experimental design & methods, Vol. 4: Basic measurement, Vol. 5: Factor analysis & related techniques, Vol. 6: Research practice, Sage, London

Lohr, S.L., 1999, Sampling : design and analysis, Duxbury Press, Pacific Grove

Peterson, R.A. 2002, Constructing effective questionnaires, Sage, Thousand Oaks, California

Silverman, D., 1997, Qualitative research : theory, method and practice, Sage, London

Strauss, A., Corbin, J., 1997, Grounded theory in practice, Sage, Thousand Oaks, California

Wright, D.B., 1997, Understanding statistics : an introduction for the social sciences, Sage, London

