

authorities since their information will be more comprehensive. Knowledge of the expected side and long term effects of proposed developments will help them to ensure that precautions are taken to minimize detrimental impacts.

6.3 Strategies for natural environmental management should be incorporated into the planning and decision of public agencies, private planners and business leaders. These could vary between "public relations" exercises, whereby organisations devise new strategies to react to or accommodate environmental pressure groups, or technological innovations which could minimize the cost of waste management.

6.4 When the public is assured that the environmental price paid for progress is the lowest possible, conflicts over development projects will decrease and the image of the entrepreneurs will enhance.

6.5 The cost of some economic activities may increase in the short run due to the implementation of an EIA, but the social cost for society will decrease, provided that implementation is carried through in the correct manner. In the long run real cost should decrease due to innovations in environmental management.

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HOUSEHOLD SURVEYS FOR BASIC NEEDS PLANNING

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In that the quality of a plan is constrained by the quality of data upon which it is based, this paper will focus on the design and conduct of household surveys to obtain the data needed for basic needs planning. It draws upon research experience gained by the author in preparing an upgrading plan for an informal settlement near Porrt St Johns; and form association with the design of home interview surveys carried out in similar situations by portgraduate students*. While it is recognised that a household survey must be precisely tailored to the local context and to the purpose for which it is being undertaken, this paper seeks to establish a common core that can be used as a basis for surveys in an variety of situations.

1. BASIC NEEDS

During the 1970s a new paradigm of development began to emerge. It was one which "... gradually realized that development involves much more than merely raising income per head, and that what should be aimed at is the reduction of poverty, unemployment and inequality ..."

According to this approach "one of the explicit goals of development planning should be the satisfaction of an absolute level of basic needs." (Radwan and Altan 1978). The term 'basic needs' refer here to minimum requirements that are essential for decent human existence and include items of private consumption such as adequate nutritional intake, shelter and clothing, together with access to community services such as clean drinking water, sanitation, public transport, health and education facilities. Implicit in

the basic need concept is participation in local decision-making with the right to hold a productive job and other means of attaining basic needs, as defined also by the International Labour Organization (1976).

In an operational sense, *basic needs* can be summarised as minimum requirements of an individual or household for the following items: (Radwan and Altan, p. 198)

- (a) Shelter; (b) Nutrition; (c) Clothing; (d) Water and sanitation;
- (e) Health; (f) Education; (g) Transport; (h) Participation.

A strategy for basic needs type development in any community depends, in the first place, upon establishing the extent to which these basic commodities and services are available. Next, the existing levels have to be related to resources available within the community. Thereafter a set of targets can be drawn up to represent "the minimum acceptable level of access to specific basic goods and services that will be considered to be tolerable by a stated target date." Finally, actual policy packages can be drawn up to "implement the production and delivery of these goods and services to the people at whom they are aimed within the planning period" (Natrass, p. 61).

* Surveys in two urbanizing settlements in KwaZulu by D.R. A'Bear and surveys in two rural villages in Umzimkulu by N.N. Gwagwa carried out during 1980 for the Department of Town and Regional Planning at the University of Natal.

One of the critical pre-requisites for drafting such a strategy is a sound data base. This will identify the current levels of basic need provision in relation to the resource base; it will inform both the target setting and policy design stages; and it can become the foundation for subsequent implementation. Yet "available statistics in most developing countries are still far from adequate for the purposes of basic-needs planning" (Radwan and Altan, p. 197). This is not surprising because the statistical systems in most developing countries are "conditioned by the prevailing thinking on development" and began to take shape at a time when the problem of development was seen as essentially an economic one calling, in particular, for a rapid rate of growth of income per head.

On the basis of research undertaken for the International Labour Organisation, a strong case has been made for the use of appropriately designed household surveys to obtain data in the form required for basic-needs planning. What is important, however, is not merely collecting suitable data, but organising it in cross tabulations to highlight the relationships that are fundamental to a basic needs strategy. By way of example, these include the relation between such basic needs as nutrition, health, education and income; and between assets to productive assets, the extent of (un-)employment and average wages as explanations of poverty (Radwan and Altan, pp. 200-207).

2. QUESTIONNAIRE DESIGN

Questionnaires provide the channels through which planners obtain certain types of data. Their critical role suggests that careful attention would be devoted to design and conduct. Yet this is not always the case, and particularly so in South Africa. Many questionnaires in current use reflect poor design, are conducted insensitively and are inadequately analysed.

A further problem lies in the household survey being seen as a separate entity — something apart from other data upon which planning is based. Whereas in reality, the household survey forms an integral part of overall data collection which should itself be the responsibility of the planners who require the data. In addition, with careful organisation, the household survey can become a means of achieving local participation at an early stage in the planning process, and in this way it can become a vehicle for implementation at a later stage.

Figure 1 describes the sequence of operations in the design of any questionnaire according to the Technical Design Manual No. 5. It is intended as a set of guidelines to assist planners to avoid some of the common pitfalls of questionnaire which will vary, depending on whether the purpose of the study is to upgrade a peri-urban community, or to plan an agricultural betterment scheme or to undertake an urban renewal project, etc. The remaining steps are self-explanatory and will be referred to within the specific context described below.

3. HOUSEHOLD SURVEYS FOR BASIC NEEDS PLANNING

In order to show how the arguments outlined above can be applied, a typical situation will be considered. The brief for a plan to upgrade a rural or peri-urban settlement could be set out as follows:

- (a) To draw up a set of planning proposals to improve the quality of life for the residents of (These proposals should be guided by the dual principles of meeting the priority needs as perceived by the community; and of economic feasibility for both the residents and local authority.)
- (b) To provide a phased schedule and guidelines for immediate implementation of the plan.
- (c) To manage the implementation of the plan after its acceptance by the community and the local authority.

One of the early tasks in tackling such a brief is to set up a data base, further details of which are discussed in Shankland Cox Partnership (1977) and Van Nostrand (1979). This will involve several types of survey:

- (a) a site survey to establish physical and functional data;
- (b) a home survey coupled with an observer checklist to determine household characteristics, attitudes and living conditions;
- (c) a survey of local wages and commodity prices to assess minimum living levels.

The next step in designing these surveys is to list the objectives and then the actual data required to satisfy each objective. In this case the objectives might be:

- (a) to identify the physical characteristics of the site.
- (b) To determine the population, its demographic, employment and income characteristics.
- (c) To establish how, and to what extent, basic needs are met.
- (d) To assess the degree of satisfaction with existing conditions and the priorities for improvements.
- (e) To determine local wages and commodity prices.

The specific data required for each of these objectives is listed in Figure 2.

Procedures for physical-functional site analysis are a well established part of the practice of physical planning and require no elaboration here, nor do the methods of estimating minimum standards of living (Ellison, Pillary and Maasdorp). Attention will focus rather on the design and conduct of the home interviews (objectives (b), (c) and (d).)

The underlying aim of a home survey is to provide direct contact between the planning team and the community. Whether this is achieved in practice depends on the questionnaire being appropriate to the local situation and on the manner in which the survey is conducted.

It would be tedious and unnecessary to frame actual questions for the entire list of data to be obtained from the household survey (see Figure 2). Instead several reasonable successful innovations and unusual aspects have been selected for discussion. The questions themselves reflect the outcome of steps 6-9 in Figure 1.

(i) Activity breakdown

This question seeks data about household size, composition and the principal activity of each member of the household. It is designed in the form of a table which enables the interviewer to unravel large and complex households relatively easily, as shown in Figure 3 based on questions used by Stopforth and Haarhoff.

It should follow the question: "How many people live with you in your home(s)?" This provides a check to ensure that the entire household is recorded in the activity breakdown. Important features of this table are, on the one hand, the arrangement of household members according to their relationship to the head, and on the other, the distinctions within both 'economically active' and 'dependent' categories.

(ii) Employment

Again the data are recorded directly onto a table and establishes the relation of each employed person to the household head, as shown in Figure 4.

(iii) Nutrition

In this case a series of 'closed' questions is used to identify each household's sources of food and their consumption patterns as shown in Figure 5. Indirectly these questions also provide information about the overall nutrition intake of the community. Data relating to expenditure on food was not always reliable. Apart from those households working to a fixed budget many responses suggested that households spent as much as they had on food. Question 24 relates exclusively to the Port St Johns context where some residents caught fish, mussels etc. both for their own consumption as well as to sell to tourists, local hotels and resorts.

(iv) Satisfaction with existing conditions. (Figure 6).

These questions are 'open ended' to encourage a wide range

Figure 1 Questionnaire design

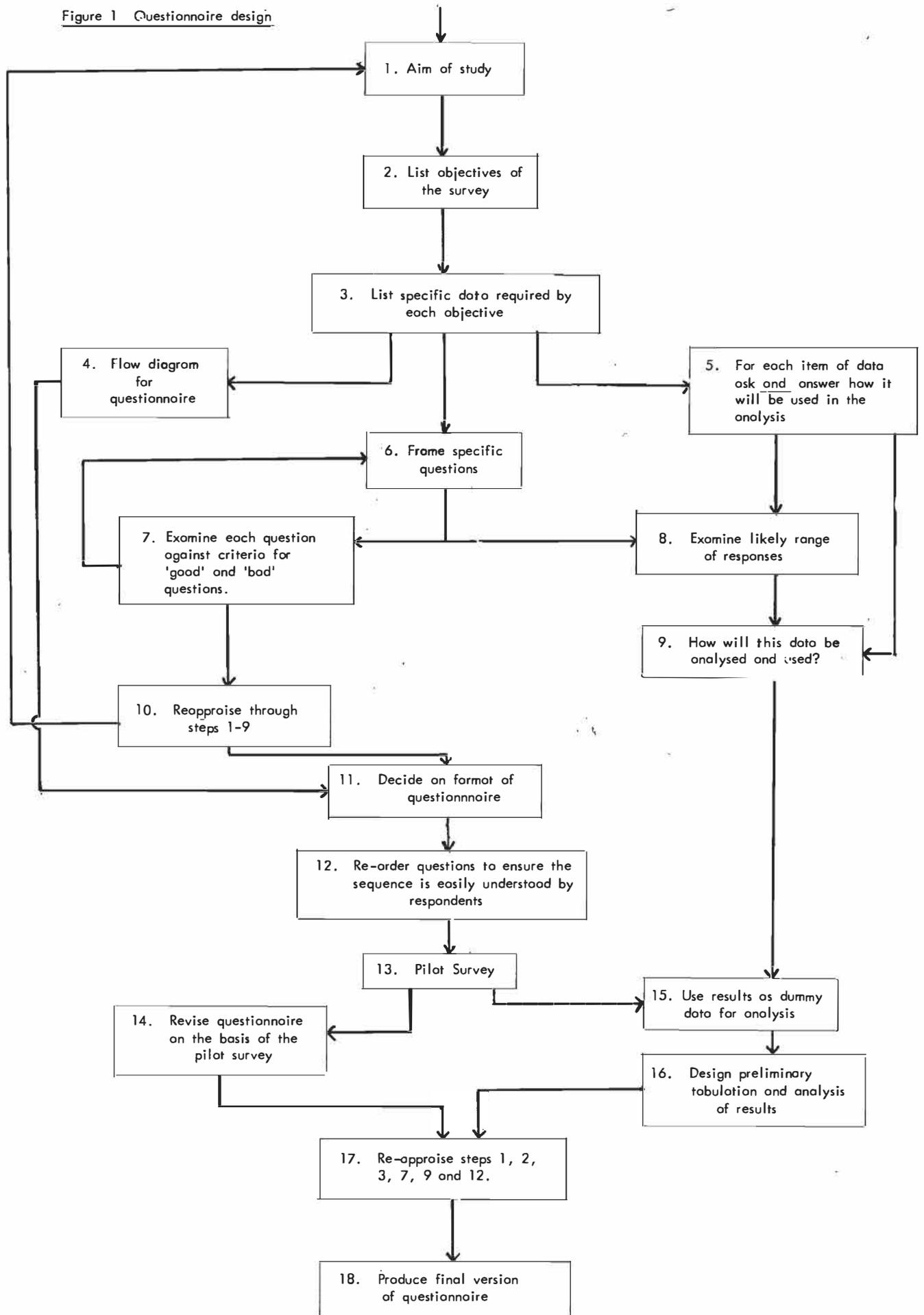


Figure 2. Data required for a plan to upgrade a typical rural or peri-urban settlement

Objective	Subject	Data required	Source ⁽¹⁾
1. To identify the physical and functional characteristics of the site	Physical data	Climate, rainfall, winds Geology, land form, soils Slopes, orientation Hydrography Vegetation	S S S S S
	Functional data	Sub-regional context General land uses, layout and sub-divisions Roads and footpaths Main surface water drainage Water supply, storage and reticulation Electricity supply, street lighting, telephones Sanitation facilities and refuse collection	S S S S S S S
2. To determine the present population, its demographic employment and income characteristics	Settlement pattern	Number of houses/plots Plot sizes and use Spatial distribution	Air photo/S S/Ha* Air photo/S
	Population	Household size Household structure Age-sex breakdown Fertility and mortality rates Migration patterns	Hq Hq Hq Clinic & Hq Hq
	Employment	Activity breakdown Employment: place, firm, occupation Skills and experience in previous employment Unemployment: amount, type and duration	Hq* Hq Hq Hq
	Income	Formal employment) Informal activities) far head and other Contributions) members of the household in kind)	Hq/L Hq Hq Hq
3. To establish how and to what extent basic needs are met by each household.	Shelter	Tenure and rent House types, sizes and use of rooms Construction method; source and cost of materials Age and condition of houses; extensions Occupancy patterns (density, number of households, tenants)	Hq Ha* Hq/Ha Ha/Ha Hq
	Food	Staple diet Sources (home grown, shops) Cooking and lighting facilities Expenditure on food and cooking Income from sale of crops and animals Cost of basic foods Nutritional intake	Hq Hq* Hq Hq* Hq* Hq/L Clinic/Hq/Ha
	Clothing	Source Expenditure Income from sale, repairs Local cost of basic clothing	Hq Hq/L Hq Hq/L
	Water and sanitation	Water sources for drinking and washing (river, reservoir, taps, individual tanks) Reliability Cost Distance to nearest source Daily household consumption Toilet facilities Refuse disposal	S/Hq/Ha Hq Hq S/Hq/Ha Hq/Ha Hq Hq
	Health	Primary health care facilities Distance Cost of service	S/L S/Hq Hq/L
	Education	Education facilities available for children and adults Literacy and highest level of education Number attending school (+ level reached) Orientation of education Distance to schools Cost of education, books	S/L/Hq Hq Hq L S/Hq Hq/L

Figure 3.
Household composition and activity breakdown

Relationship to head of household	Sex	Age	Economically Active			Economically Inactive						
			Employed	Un-employed	Work-seeker	Household Duties	Pre-School	At School	Retired Persons	Grantees/Pensioners	Unspecified	

Figure 4. Persons in employment

Relationship to head of household	Present occupation	Name of Firm/Employer	Place of Work	Type of Transport		How long in this job? (years)
				To Work	From Work	

	Transport	Movement patterns (journey to work, shop, school, clinic, etc.) ¹ Modes of transport (car, cycle ownership) Public transport (destinations, frequency, cost) Use of public transport Expenditure on transport	S/Hq/Ho Hq/Ho Hq/Ho/L Hq Hq
	Participation in decision-making	Administrative and institutional context (national and local) Attitude of 'higher' authorities to the community Standards, codes and procedures Community leaders - role and influence Community organisations and committees (powers, functions and role within administrative framework) Role of groups within the community (church, school, co-operative, womens organisations, etc.) Extent of individual participation Constraints and opportunities for increased local participation	L L/Hq L Hq Hq/L Hq/L Hq Hq/L
4. To assess the degree of satisfaction with existing conditions and the priorities for improvements.	Degree of satisfaction	'Good' and 'Bad' aspects of living in-----. Housing preference and security of tenure Satisfaction with facilities (water, sanitation, etc.)	Hq* Hq* Hq
	Priorities	List most important needs in order of priority Preparedness to pay for certain improvements	Hq* Hq
5. To determine local wages and commodity prices.	Wages	Average local wages for main occupation types	L
	Commodity prices for components of the Minimum Living Level ⁽¹⁵⁾	Food) Clothing) Fuel and Light) This list is Washing and cleaning materials) disaggregated Accommodation) into specific Transport) items Medical expenses) Education) Replacement of household equipment) Taxes) Support of relatives)	L L L L L L L L L L

(1) Sources of data: S=Site survey Hq = Household survey questionnaire Ho= Household survey observer checklist L= Locality survey

(2) * indicates that the actual questions are discussed in the text.

HOUSEHOLD COMPOSITION AND ACTIVITY BREAKDOWN

Relationship to head of household	Sex	Age	Economically Active			Economically Inactive					
			Employed	Un-employed	Work-seeker	Household Duties	Pre-School	At School	Retired Persons	Grantees/Pensioners	Unspecified
HEAD	M	45	X								
WIFE	F	38			X						
SON	M	20	X								
SON	M	13						X			

Figure 4. Persons in employment

Relationship to head of household	Present occupation	Name of Firm/Employer	Place of Work	Type of Transport		How long in this job? (years)
				To Work	From Work	
HEAD	SWEAGER	MUNICIPALITY	TOWN	WALK	WALK	3
SON	SHOP ASST.	SUPERMARKET	TOWN	WALK	WALK	1

Figure 5. Nutrition

22. Do you grow any crops?
 No Why not?.....
 Yes What do you grow?.....
 Do you sell any crops?.....Name them.....
 Where do you sell them?.....

23. Do you keep any animals for eating?
 No Why not?.....
 Yes What do you keep?.....
 How many?.....
 Do you sell them?..... Which?.....
 Where?.....

24. Do you get food from the sea?
 No Why not?.....
 Yes What do you get?.....
 Do you sell any?..... What?.....
 Where?.....

25. What food do you buy from the shops?
 Fresh food Groceries Meat
 Other (specify).....
 Where?.....

26. How much money do you spend on buying food each month?.....

27. How much of all your food is
 grown here?.....
 from the sea?.....
 bought from the shops?.....
 Use code: 1= Most 2= more than half 3= about half
 4= Less than half 5= very little

Note: Question numbers relate to the Port St Johns Survey

and depth of response about the degree of satisfaction with the housing situation and with living conditions in general. It is followed by a 'closed' question requiring the household heads to make a choice between an range of housing types. Interpretation of responses to this question should take into account that household heads might not all have had experience of the range of options. This question was also designed to test the hypothesis that most households would prefer to remain in their existing settlement outside the town.

On the whole these questions yielded good quality data as well as detailed information, often throwing light on other aspects of local community life such as the degree of influence of various local personalities and committees; levels of despondency or optimism; and the possibility of generating 'self-help' solutions to problems.

(v) **Priorities for improvements** (Figure 7).

This question was a successful means of establishing priorities and the range of improvements desired. In particular it helped to distinguish between lower order priorities — the top priority is often clear but it is difficult to rank the second, third and fourth. One danger is that of interviewers prompting or suggesting typical improvements thereby giving a bias to the responses.

(vi) **Observer Checklist.**

The combination of an 'observer checklist' with a household questionnaire is a useful device for surveys undertaken in support of planning the physical environment. They have been used with success in several situations. An observer checklist supplements the questionnaire by recording site data relating to the use of resources and space at a micro level. The observer's task is to draw a sketch plan (Figure 8) of the plot and house, noting in particular, the following:

- a) Plot dimensions
- b) Position of nearest footpath/road and distance to adjacent plots/houses
- c) An elevation of the house showing the pitch of the roof and heights
- d) A plan of the house with outside dimensions; all doors,

Figure 6. Satisfaction with existing conditions.

46. Are you satisfied with your present housing?
 Yes
 No Why not?

47. What are the 'good' things about living in _____?

48. What are the 'bad' things about living here?

49. What things could be put right?

50. Who could do this?

52. Do you know of any committees to help people with their problems?
 No
 Yes Which committees? Who belongs?

54. Taking all things into account, what sort of housing do you think would suit you best in the future?

Live here in this house

Live here but with improvements

Live in Port St Johns in a house completely built by the municipality

Live in Port St Johns on a serviced site (road, water, electricity) and build your own house.

Live in Port St Johns in a house partly built by the municipality but with your being allowed to build extra rooms

Other, specify

53. What do you consider your most important housing needs? e.g. water, laid out streets, security of tenure, etc.
 (Give order of priority: 1,2,3, etc.)

Needs	Priority
.....
.....
.....
.....

windows (with sizes) inside openings and verandah; and internal arrangement of rooms.

e) Extension to original house

f) Material used in construction: walls, roof, floor, ceilings, doors, and windows.

g) Other information about the use of the plot e.g. water tanks, fowl run, pigsty, vegetable garden, outside sitting areas.

The checklist and diagrams are to be read in conjunction with a set of questions (Figure 9) aimed at finding out the number of households living in each house (or on the plot, whichever is the more appropriate unit for analysis) and how internal space is used.

(vii) Pilot Survey.

Finally, it should be borne in mind that a pilot survey (Figure 1 step 13) plays a crucial role in questionnaire design. Its importance cannot be overemphasized. Few pilot surveys, if any, fail to reveal some errors, gaps or overlaps in the questionnaire. But Over and above its 'trial run' aspects, a pilot survey, which should always be conducted *in loco*, gives the planner an early insight into the community. This facilitates subtle adjustments in the questionnaire to make it more appropriate to the local situation.

4. CONDUCT OF THE SURVEY

Standard methods of conducting surveys and interviews are well documented, but discussion about the operational decisions re-

quired when conducting surveys in a rural situation are less readily available. See also Cherry and Burton (1970).

The fundamental principle of conducting a household survey is that it must be done with the consent of whatever authority(ies) operate in the area and, equally important, with the support and understanding of the community. The first stage, therefore, is to obtain the active support (rather than merely the approval) of the local authority, of the community leaders and of the tribal chief. Through them a meeting should be arranged at which the planning team and interviewers can be introduced to the residents. This meeting provides an opportunity for the planners and the local leadership to explain why the survey is being undertaken, what it will require from the residents and what it will achieve. At this point in particular, but throughout the survey, it is important not to raise expectations to levels that will not be realized. The meeting serves a dual role in providing the residents with a chance to question the planners as well as local leaders and officials. Meetings at which all three groups are not represented are unlikely to achieve the desired results.

Preparation along these lines is essential if channels of communication are to be established between the community and the planning team. Without it any survey, no matter how well designed, will be doomed, at best, to superficial, incomplete and biased data. Since planning is limited by the quality of the data upon which it is based, this principle of consent and co-operation is of profound significance.

The next aspect to be considered is the choice of interviewers. Here the key principle is that interviewers should be acceptable to the community or, preferably, a member of that community. This overcomes the problem of local language or dialect differences, but it requires that the interviewers have a good command of written and spoken English or Afrikaans to translate the questions and fill in the questionnaire. It may be useful to have the questionnaire translated into the local language. In these situations the planners must check to ensure that the translated version has neither picked up nuances of meaning not in the original, nor lost the particular emphasis in certain questions.

An alternative approach is for planners to work in conjunction with a local resident acting as interpreter. This arrangement has the advantage of imposing less stringent language demands. In either case, detailed briefing sessions will be needed to ensure that the interviewer/interpreter is fully conversant with the questions and has been given the opportunity to think over and discuss with the planners likely difficulties and misunderstandings that could arise. A useful first step in such briefing sessions is to conduct the full survey using the interviewer/interpreter as the respondent in his/her home.

The planner-interpreter team has a number of distinct advantages such as exposing planners to a range of actual living conditions in the community, thereby increasing their understanding of the local situation and enabling them to make a multitude of observations that an inexperienced layman would not record. It also enables the planner to play the role of observer, and to complete the checklist and site sketches accurately. This avoids the difficult task of either finding an observer with the necessary drawing and measuring skills or training someone. Furthermore this arrangement gives the residents increased contact with the planners as well as an opportunity to ask questions or express opinions they might not have ventured at the community meeting. Overall it facilitates participation, but at the same time, imposes time and manpower demands on the planning team. To a certain extent the size of the survey will influence the extent to which planners can themselves become fully involved in conducting the survey. But it is essential for planners to be actively involved in at least some household interviews and the planner-local counterpart principle provides such an opportunity.

The matter of the size of the survey raises the question of whether to interview a sample or to obtain data for the entire community. It has been argued that a sample survey should be set up in the first instance and that data for the remaining households be collected

later (Shankland, Chapter 5).

A related issue is which member of the household should answer the questions. Wherever possible home interviews of this nature should be conducted with the household head. However, this is not always possible and a reasonable compromise is, with the head's consent, to complete part of the survey with other members of the household and cover remaining questions with the head when he is at home or possibly at his place of employment.

This issue is closely linked with the length of the questionnaire. Even acting on the principle of keeping it as short as possible, a comprehensive questionnaire for basic needs planning is likely to require some time to answer in full. In establishing criteria for including or excluding questions, the guiding principle should be more stringent than whether the question will contribute to the survey. Instead it is necessary to ask whether exclusion will leave serious gaps in the data base. Planners should be aware of the time imposition of home interview surveys, particularly in communities where household heads travel long distances to work and where there is no electric lighting at night. A solution appears to be in splitting the questionnaire and dealing with part only, in the first visit; and the remainder on second or even third visits*. This has particular merits in facilitating closer rapport between interviewers and respondents; in providing an opportunity to check back on data that is not clear; and in avoiding a common problem of a questionnaire becoming tedious with consequent loss of detail and accuracy. This approach will, however, have design implications. (See Figure 1, step 12).

Finally there is a problem relating to different perceptions of time and cost. From the planner's viewpoint the objective is often to collect data as quickly as possible and to keep household survey costs to a minimum. To people of a rural village, the meaning and value of time is likely to be markedly different from that of planners from the cities. And it may be unreasonable to expect rural households to attach much importance to "getting the survey done within a week", or whatever time has been allocated. The planner's operational approach tends to be short-term and as such often overlooks social costs. To a community the ultimate costs of being presented with an inappropriate or unusable plan, as could well result from a poor data base, are far in excess of the planners' savings by rushing the home interview survey.

It is incumbent upon planners to consider both the short and long term implications of their actions. And in the last resort one of

the roles of the professional planner is to seek a balance between minimising costs for his immediate client — (usually a public authority or private developer) and maximising benefits for his ultimate clients (the people who will live in whatever environment is created).

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* Personal communication with Mr P.S. Derma, Department of African Studies, University of Natal regarding interviewing techniques used in Swaziland.

Figure 9. Use of internal space

14. Does more than one family stay in the house?

Yes

No

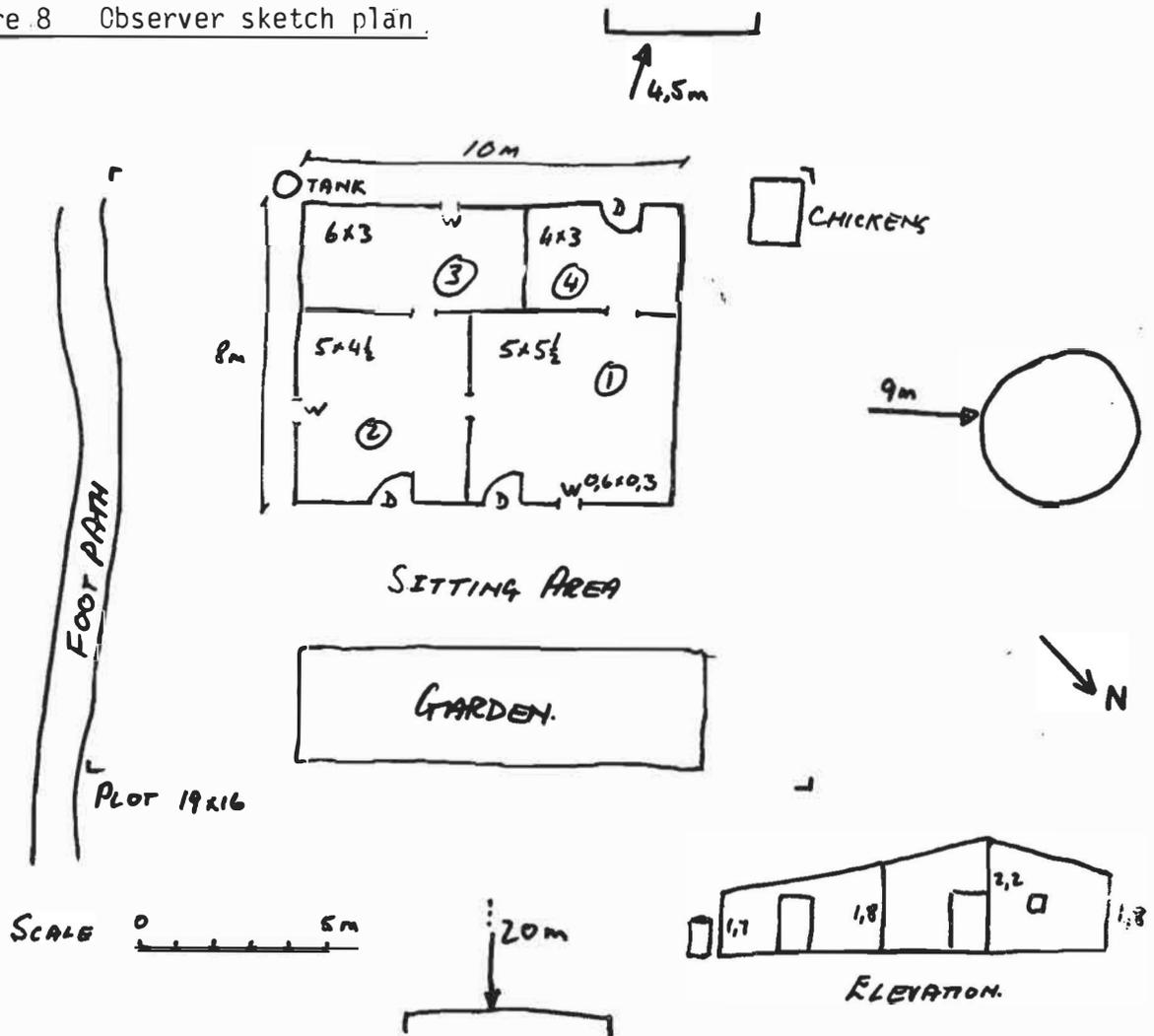
15. If 'Yes'

Code as on plan	Numbers of rooms occupied by each family	Number of persons in each family
A	3 Rooms (1) (2) (3)	6
B	1 Room (4)	2
C		

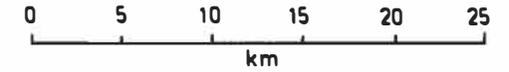
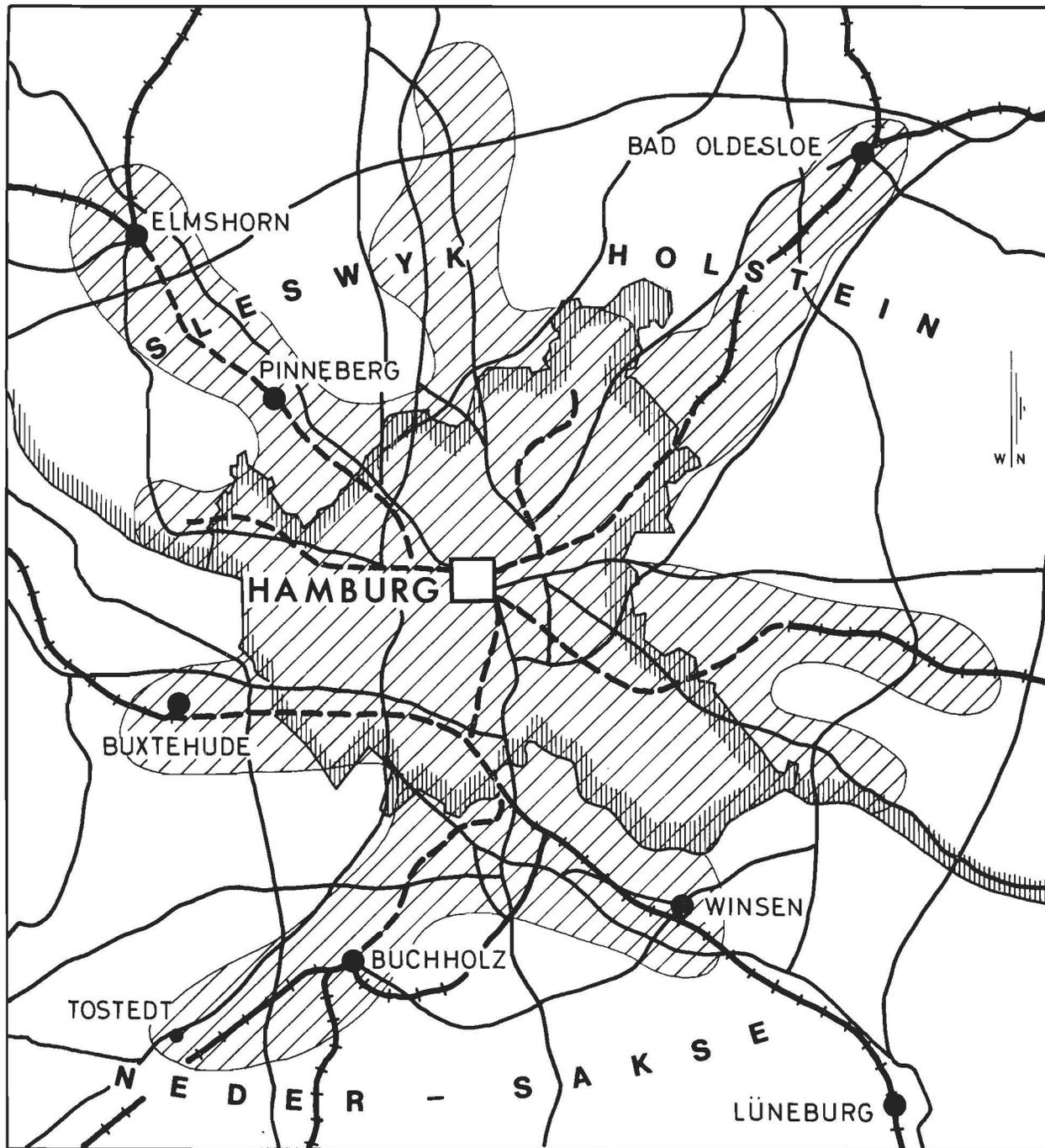
16. Room schedule

Room No. as on plan	Use of each room						Sleeping arrangement						Total for each room	Number of beds in each room	
	Sleeping	Cooking	Washing	Sitting	Eating	Bathing	Other use Specify	Head	Wife	Other Adults		Children			
										Male	Female	Male			Female
①	X	X		X	X						1			1	1
②	X							1	1			1		3	1
③	X											1	1	2	1
④	X			X	X							2		2	2

Figure 8 Observer sketch plan



HAMBURG EN SY OMLAND



-  Spoorweë
-  Hoofpaaie
-  Trems
-  Ontwikkelingsgebied
-  Staatsgrense

INSTITUUT VIR BEPLANNINGSNAVORSING,
UNIVERSITEIT VAN STELLENBOSCH.
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Figuur 4