CHAPTER IV

Methodology

INTRODUCTION

The chapter discusses the methodology of the study in details. The first section in the chapter begins with the discussion about the interdisciplinary context of the study. Particularly the convergence of education and anthropology at the methodological level is emphasized. This is followed by discussion about the sampling criteria employed by the researcher to select the village for the study. It is highlighted that the selection was a lengthy process consisting of three steps of which each step consisted of selection of less and less number of villages for further probing with the exclusive aim of selection of a community that was impoverished with respect to nutrition yet had the potential for development of nutritional resources. The second section of the chapter discusses the framework of the tools. It stresses on the importance of the field - work method in the light of the interdisciplinary nature of the present study. It discusses in detail the procedures followed for selection of the respondents and the designing of the tools of data collection. In the course of this discussion, three types of investigations used in the present research are described viz. (1) Ethnographic investigation; (2) Socio - economic survey; and (3) Exploration of the interdisciplinary communication networks. The third section of the chapter is about the procedure of data analysis. Three types of data are described in this part viz.

(1) Ethnographic data; (2) Survey data; and (3) Network data. This is followed by a brief description of the techniques used for analysis of the data.

4.1 Interdisciplinary context of methodology

The study was significant from the interdisciplinary perspective as it drew upon the convergence of perspectives of widely different disciplines like Anthropology and Education. This becomes more clear from the following discussion.

The major aim of the study was to develop education programme for nutrition, there was an emphasis on understanding nutrition in such a way that the investigation helps to develop specific curriculum for the target group. This curriculum would consist of scientific information about the nutritional processes and cognitive skills and values required to utilize this standard information in a way suitable to the perceptions of the community under consideration.

Thus, the application of these contents of the education programme depended on their relevance to the actual conditions of food production, distribution and consumption by the target group and cultural perception of the local people. These factors were historically determined.

The environmental conditions of nutrition would determine the applicability of the contents and the cultural perceptions would select the 'acceptable 'content of the curriculum.
It is clear from the discussion in the first chapter of the thesis that the major focus of the study would be on the definition of the relevant contents of the educational programme for the villagers. Nevertheless, it was necessary to select certain contents of the proposed programme that would be

organized into a design for testing among the people of the village. What would have been the nature of this experimental design ? It would have consisted of standard items of information pertaining to the nutritional needs of the people of the village.

The environmental feasibility of these contents was definitely not within the purview of the present research. However, the contents were to be defined with the help of specialists in the subjects . The help of the specialists was sought through extensive referencing of the reliable literature in the subjects. Then, as discussed earlier , since the natural and social environments of the target group function as an integrated system, it was necessary to consider those core parts of the culture of the village that were directly related to the control of production , distribution and consumption of food and analyze compatibility of these with the scientific information about the subject.

To understand the cultural perception about the processes of nutrition, it was decided to identify the information about nutrition within the target group in terms of cultural symbols and the way in which this information was possessed. While identifying the cultural perceptions, attention was particularly paid to certain environmental resources which acted as critical environmental factors related to nutritional processes.

It was realized by the researcher that to understand the cultural perception of the members of the community, the

conventional educational perspective was not sufficient since it focused narrowly on the instructional (i.e. pedagogical) aspects of the formal schooling system. Thus, the traditional educational perspective was not equipped with the methodology to investigate the cultural processes of a social group as complex as the nutrition related behaviour of an agrarian community. In other words, one could have found the answer to a question pertaining to the content of a nutrition education programme only to a limited extent through a conventional educational research. On the other hand, a social science particularly, one that studied nutrition in an integrated cultural, environmental perspective - would have proved very fruitful. This led to the choice of Anthropology as one of the collaborating disciplines.

4.2 Selection of the Village as the unit of study

As a consequence of adoption of the interdisciplinary approach , the researcher found the 'agrarian village' as the most appropriate unit for social organization of a nutrition improvement programme through nutrition education since (i) it was endowed with the natural and physical resources of nutrition (ref. a study carried out by the researcher in 2 villages in Pune district of Maharashtra(India) in 1991 about the Processes of resource mobilization for community based development , wherein he observed that the traditional corporate village of India had the potential to mobilize a wide range of resources for self-development); (ii) it served as a functional model of studying nutrition in an integrated manner i.e. cultural perceptions of

the villagers about nutrition in interaction with the environmental conditions surrounding the villages.No other unit of social organization was at so much advantage with respect to this aspect in the Indian context.

The argument can be taken further by saying that one was trying to correlate the environmental and social characteristics of a village community with its amount and type of nutritional information. While setting the criteria for the selection of the village, the researcher had considered certain methodological issues. It was important understand these issues in their contextual details as it would have been not only important for the selection of the selection of the village, but would have provided a practical direction to the investigation.

4.3 Criteria for Selection of the Agrarian Community

It was assumed that 'no phenomena are ever static'. Therefore, one was required to consider the variability in the social and environmental characteristics, and the amount and type of information flowing in and within the community.

The social and environmental variability was to be understood through the identification of certain social, economic, demographic and nutritional patterns within the community.

Majority of Indian population was organized into food producing agrarian communities but at the same time this majority lived without adequate nutrition.This condition adversely contributed to slowing down of pace of economic growth and

impeding the social development. If understood culturally, nutrition entailed ability of the agrarian community to obtain food with respect to (a) its environmental potential ; and (b) the community's culturally defined ways of production , distribution,and consumption of food.

This ability would affect the nutritional status of the community as it would have remained either above or below optimization level. This would have occurred through the culturally defined optimization of nutritional potential of the environment. Realization of this situation depends on the precise answer to two basic questions viz.

1. Did the community have optimal nutritional status ?
2. If the community had optimized its nutritional status, was it beyond the potential of the environment of the community to sustain it?

An attempt to answer these questions necessitated the comprehensive study of (i) the socio-economic context of the nutritional processes within the community ; (ii) the communication processes related to use of nutritional information within the community.

This approach required selection of an agrarian community that would lend itself to comprehensive analysis and generalizable modelling. Subsequently, it was necessary to adopt techniques of analysis that would have enabled creation of a control - experimental model of communication processes related to nutrition.As well as, the variability in the

information was understood through determining the amount of in flow and its direction .

Thus , one is attempting to understand the nutritional problem in a totalistic perspective of impersonal patterns of behaviour as well as personalized processing of information that goes with the observable behaviour.

This compound situation affected the choice of study unit for the present study. Thus, the present researcher wanted to interpret the nutritional behaviour of the village community in the specific context of his social and natural environment. One also wanted to try certain methodologies for data collection and processing which might be used generally for similar kinds of village communities. To meet these presumptions, the researcher employed certain criteria for selecting the village. These were as follows :

(1) The population sample must have receptivity towards the presence of the researcher in the village and probing by him about the socio - cultural processes.

(2) The community should be amenable to geographical definition.

(3) The community should be composed of definable social units.

(4) The community should be amenable to cultural definition.

(5) Population size should allow (ideally) each member of the village - community to identify any other member of the community.

(6) It should have defined nutritional resources.

(7)The community should have explicit communication linkages with

collectivities outside its own boundary.

4.4 Selection of Ghera Mordari as the Village for Study :-

The major reason for selecting Pune district was that it consisted of four important agro-climatic zones that were representative of Maharashtra state except the coastal region. These were (i)tribal (ii)hilly but not tribal(iii)drought - prone and (iv)rain fed.

Thus, selection of a village from either of these areas would have a representative characteristic. Given the condition that the unit for the present study and any other village community from similar type of agricultural - climatic zone of Maharashtra would have more or less similar socio- environmental conditions , there was likelihood of emergence of similar nutritional optimization strategies.In other words, findings of this study would be applicable for a number of villages in Maharashtra to a large extent.

Another reason to limit the study to a location in Pune district was that it was not possible for him to either go on a long stretch of field - work or frequently visit the side of the study given the time constraint due to his employment with the Indian Institute of Education,Pune. Thus, selection of a village in Pune district would have definitely helped conduct the field - work regularly and more frequently.

Following this, the researcher decided to restrict his investigation to the villages in the project area of that

organization which were within the Pune district.Therefore, given these combined advantages, the selection process was carried out within the project area of the Indian Institute of Education in Pune district.

The project area was spread in Bhor,Haveli,Velhe and Purandhar tehsils of Pune district. Thus, the researcher had a total population of 137 villages and settlements for selecting the unit of study. Characteristics of the majority of the villages in the area were as follows:-

1. Villages were located near the Bombay - Bangalore national highway .There was a potential influx of information related to nutrition in these villages by the virtue of their being located near the highway One may add that this diminished the chance of selection of a majority of these villages for the present study as it would not have been possible to identify the suitable recipients since the education programme was supposed to be aimed at people with very little or without nutritional information.
2. Villages had a mixed population made up of original inhabitants and migrants from other regions. This definitely affected the communication patterns .It was found that communication in these settlements or villages, which was based on sharing of interests rather than on communal principles tended to be restricted only to one's own immediate group.
3. Majority of the farmers in the villages, connected with the highway, tended to do irrigated and commercial agriculture.

Apparently, production of food for satisfying their own nutritional needs was not their priority.

4. Ratio of land to total population in the villages directly connected to the highway was very low ; and indeed this decreased the chances of doing experiments related to nutrition in the fields as the farmers in these villages tended to maximize the land available to them for growing cash crops.

5. Apparently, malnutrition was absent as the physical (observable) symptoms of malnutrition were not present among the residents of these so-called 'cosmopolitan' settlements dotting the highway.

Thus,the researcher decided to focus on villages located towards the interior i.e.villages located along the hill-track of Sahyadri. Many of these villages showed the desired characteristics like

a. A relatively homogenous population made up of original settlers.

b. Observable symptoms of malnutrition among the women and children.

c. Low cultivation potential of land, thus reducing the chances of cash-crop pattern.

d. A strong pattern of subsistence agriculture.

e. Low agricultural inputs thus keeping the chances of break out of commercial farming very low.

f. Villages were amenable to geographical definition.

These observations were made by the researcher during

preliminary visits to eleven villages spread in Bhor, Haveli, Velhe, and Purandar Tehsil in the wake of the study on 'Process Analysis of Resource Mobilization for community based development in two villages.'The preliminary visits were done between September and November 1991. Contact was established with these villages through the field - workers of IIE.

After stabilizing the focus on five villages, the researcher did a comparison of the social, economic , demographic and geographical characteristics of these villages. These villages included Sasewadi, Kondhanpur and the three settlements of Mordari.Certain salient socio - economic, demographic and geographical features of these five villages were noticed in addition to those mentioned above. These were as following.

1. Practising of commercial agriculture by at least a few cultivators.
2. The feudal landholding pattern was replaced by the 'modern' pattern wherein the tenant had turned into the landowner. This had led to the emergence of a sizable middle class cultivators. The most distinguishing characteristic of this class was a strong link with the urban market.
3. There was a consistent exposure to the employment opportunities in urban areas.
4. There was a preponderance of the agriculturalist caste of **Kanbi Marathas**.
5. Persistence of the traditional 'Balute' system (a kind of

barter system between two or more castes engaged in different occupations).

6. A sizable section among youth showed mobility towards the urban area of Pune.

7. Majority cultivators were engaged in dry agriculture.

8. Education was spread in a small segment within the population.

9. The villagers were not aware of the link between nutrition and health.

As a result of this comparative selection process , he narrowed down on the settlement of Ghera Mordari. It is located along the phalanges of Sinhagarh, that held strategic importance from the military point of view, in the medieval centuries. After comparison with the other villages, the researcher observed that the settlement of Ghera Mordari had all the features mentioned above. In addition, it showed (i) exclusive dependence on rain for agriculture which obviously limited its direct access to nutritional resources; (ii) the village was relatively isolated with respect to linkages with other places.This reduced the opportunity of the village to have a direct and permanent access to agricultural, technical facilities which consequently limited the scope of experimentation in cultivation and change in cultivational potential.

(iii) Next, village Ghera Mordari had a high ratio of land to population. Large part of the total land available to the village was classified as waste - land which could have been used for cultivation purposes.

Thus, one had selected a community with impoverished land and water resources on one hand and a large potentially cultivable land with possibilities for satisfying the nutritional needs of the local community on the other.

4.5 Framework of Tools

As mentioned earlier, this was an exploratory study which sought to discover the broad range of interrelationship between the process of exchange of nutritional information and the socio -cultural context of a community. Thus, it was decided to use the different techniques in the Fieldwork method.

(A) The envisaged advantages of the Fieldwork method were :

1. It allowed a first hand experience with cultural events within the community;
2. It allowed an indepth knowledge of the processes underlying the problem over a period;
3. It allowed a cross - checking of data; and
4. It allowed the construction of precise Survey design.

These advantages were important given the anticipated complexity of the problem.

4.6 Participatory Interviewing for Ethnographic Exploration : -

In March 1992, the researcher visited village Ghera Mordari over a period of two weeks. Total number of eight visits were paid during this period. Intention of these visits was to establish a strong rapport with the community in order to undertake a more extensive survey about different aspects of

nutrition at a later stage.

During the third visit on 7th March 1992, the researcher attended a common meeting of the natives of all the three settlements of Mordari (including the Gheryachi Wadi). The purpose of the meeting was to distribute responsibilities in the organization of the forthcoming village fair (called as Uroos). Representatives from almost all families in the three settlements had attended this meeting. The teacher in the primary school of the village (with whom a good rapport was already established before the visits began) introduced the researcher to the assembly of villagers after the meeting was over. Researcher explained (a) the work and mission of the Indian Institute of Education and (b) aim of the proposed research, to the villagers. He also added that he wished to restrict his investigation to Ghera Mordari. He ascribed this decision to three factors viz. (1) government records showed it as an administrative entity separate from the other two settlements of Mordari; (2) his main intention to undertake this exercise was to try out certain methodological innovations for which a sufficient population size was available in Ghera Mordari; and (3) it had distinctive physical characteristics setting it apart from the other two settlements of Mordari and from any other settlement in that area. The school teacher ten took this researcher to the Anganwadi worker in Ghera Mordari. The researcher explained the purpose of his research to her. She agreed to help the researcher in (i) locating the key - informants for the ethnographic

exploration; and (ii) identifying the family heads for the socio - economic and demographic survey.

Twenty two respondents were selected with the help of the Anganwadi worker in the village to begin with. The first three respondents were contacted through her introduction of the researcher. The rest of the lot were identified with the help of the earlier respondents. The usual pattern of behaviour of the respondents in this respect was introducing the researcher to their immediate neighbours. This process formed the basis of sampling of twenty four respondents for the purpose.

Descriptive data regarding following aspects were collected through unstructured but guided interviews of thirteen male members and nine female members in the age group of twenty five to sixty years during these visits. The decision to probe individuals in this age group was taken in the light of the decision to collect data about socio - economic and demographic characteristics as well as about interpersonal communication networks with family as the unit of analysis at a later stage. Therefore, an effort was made by the researcher to include family heads in the stage of participatory interviewing for ethnographic exploration. All of them were engaged in dry agriculture and cattle - raising. Only one male person had education up to higher secondary level. In addition, one female person had education up to VIIth standard. Another three males had education between Vth and VIIth standard. All the other informants were without exposure to formal education.

The period spent for this field - interaction with the informants was unusually short for elucidation of the elaborate cultural data related to nutrition as well as cross - checking of data. However, the purpose of these visits was to understand the actual socio - cultural context of the subjects which would form the basis of probing under the survey for socio - economic, demographic and nutritional profile of the community and under the informant - interviewing for interpersonal communication respectively.

These items of the ethnographic investigation were :

(a) Definition of the geographical boundaries of the village.

(b) Convergence of the geographical boundaries of the village with other settlements.

(c) History of the settlement.

(d) Criteria for the membership of the community.

(e) Social composition of the village.

(f) Occupational patterns -

(i) Occupational patterns and associations within the village,

(ii) Seasonality of the occupational patterns.

(g) Patterns of discrimination in the village.

(h) Social, political and administrative agencies extending in the village.

(i) Channel for in - flow of nutritional information from outside the village.

(j) Connection between social relationships and land use patterns.

(k) Similarity of the village with other villages with respect to the connection between social relationships and land use patterns.

(l) Conditions of transport and other channels of communication.

(m) Land use patterns and changes within the same.

(n) Land ownership patterns and changes within the same.

(o) Sources of food and amount of food available in the village.

4.7 Socio - economic and Demographic Survey :

Based on the ethnographic data certain socio - economic and demographic variables were isolated that were important with respect to the development profile of the village and nutritional behaviour within the village community. These variables were important in terms of their stability over a long period.

A structured interview schedule was prepared for eliciting data about following variables for all the families within the village.(APPENDIX 1)

These variables with their importance are stated below :

(1) **Residential identification** : It affected the possibility of interpersonal communication depending on the extent of physical proximity.

(2) **Period of living in the village** : It was directly related to the lineage arrangement within the community which in turn consisted of role - status arrangements.

(3) **Head of the family** : It helped to retrieve family data rapidly as well as to construct interpersonal communication

networks.

(4) **Size of the family :** It directly affected the nutritional requirements of the family.

(5) **Age - sexwise composition of the family :** It directly affected the nutritional requirement of the family.

(6) **Marital Status :** It directly affected the reproductive rates and consequently nutritional needs of the community.

(7) **Occupational status :** It directly the income levels of the family and its capability to buy food and other essentials.

(8) **Educational level :** It indirectly affected the exposure to the types and amount of nutritional information as well as the ability of the individual to utilize it.

(9) **Literacy skills :** It indirectly affected the exposure to the types and amount of nutritional information as well as the ability of the individual to utilize it.

(10) **Caste identity :** It was directly related to the role - status arrangement within the community and possibly affected interpersonal communication of the members of the village community.

(11) **Land ownership :** It directly affected the interpersonal communication of a cultivator as well as the nutritional productivity of his family.

(12) **Ownership of domestic animals :** It was an indicator of economic status of the family which in turn possibly affected the interpersonal communication of a family head in the village as well as, it pointed towards the nutritional potential of the

family.

(13) **Exposure to media** : This was an indicator of the economic status of the family as well as showed the potential of the family to acquire nutritional information.

4.8 Exploration of the Interpersonal Communication Networks :

Based on the same descriptive data collected during the visits to establish rapport and the priorities in construction of a planned nutrition education programme, informant - interview schedules were prepared. These schedules were finalised through a pilot study. The schedules were used to interview six respondents from the village Bandewadi (Bhor tahsil in Pune district) and two respondents from Khalashachi Wadi in Mordari (Haveli tahsil in the same district). Intention of the pilot interview schedules used in these two villages was to provide comparative picture with respect to responses about nine cultural ecological context of nutrition. These nine context were as following :

(i) Information about soil typology;

(ii) Information about cumulative effect of soil type and temperature on crop pattern;

(iii) Information about relationship between precipitation and crop pattern;

(iv) Information about channels of rain water and land management;

(v) Information about temperature and crop pattern;

(vi) Information about sources of food;

(vii) Information about agricultural technologies through labour organization;

(viii) Information about village land use;

(ix) Daily food exchange.

Depending on responses during the pilot study, following dimensions were reconsidered in order to finalize the interview schedules.

(i) Information about soil typology :

(A) Exchange of variable information about crop cultivation as a result of variation in soil type in the interpersonal communication network.

(B) Multiplexity of the interpersonal communication network on the basis of the amount of exchanged information.

(C) Multiplexity of the interpersonal communication network on the basis of shared social relationships.

(ii) Information about cumulative effect of soil type and temperature on crop pattern :

(A) Exchange of information about the cause - effect relationship between the temperature variations and soil specific crop patterns.

(B) Existence of interpersonal communication networks dependent on issue specific information.

(C) Multiplexity of interpersonal communication network on the basis of amount of exchanged information.

(iii) Information about relationship between precipitation and crop pattern :

(A) Reference nodes that pass on information to others about potential crop patterns depending on the range of precipitation.

(B) Year specific crop yield obtained by particular members of the village community.

(iv) Information about channels of rain - water and land management :

(A) Information about methods developed to control the consequences commonly affecting two or more cultivators.

(B) Interpersonal communication network arising out of the need to share the responsibilities related to soil erosion and waterlogging.

(C) Multiplexity of the interpersonal communication network arising on the basis of the amount of exchanged information.

(v) Information about temperature and crop pattern :

(A) Information about traditional and non- traditional strategies for crop protection.

(B) Potential interpersonal communication network dependent on exchangeable information about crop protection.

(C) Projected interpersonal communication network dependent on exchange of non - cultivable food.

(vi) Information about sources of food :

(A) Multiplexity of the network paths between the Receiver and the individual under analysis (i.e. a Reference node).

(B) Multiplexity of interpersonal communication network on the basis of exchangeability of innovations in crop cultivation.

(C) Multiplexity of the interpersonal communication network

depending the type of information about relationship between soil type and crop patterns.

(D) Multiplexity of the interpersonal communication network on the basis of common social relationships.

(E) Multiplexity of the interpersonal communication network on the basis categories of information about organic supplements for cultivation.

(F) Potential interpersonal communication networks on the basis of common use of food in the community.

(G) Multiplexity of interpersonal communication network on the basis of exchangeability of standard information about use of common food provisions.

(vii) Exchange of information about agricultural technology through labour organization :

Correlation between educational status and type and amount of information about cultivational innovations.

(viii) Information about village land use :

Potential interpersonal communication network depending on exchangeability of information about possible uses of village land.

(ix) Daily food exchange :

Potential interpersonal communication network depending on the exchange of food (raw or cooked) between specific families in the village.

These tools finalized through pilot study were used to probe fifteen randomly selected family heads from the village Ghera

Mordari. Families from the village were numbered from 1 to 49 and fifteen families were picked up randomly from the population. These schedules intended at

(i) Identification of issue specific information possessed by the informant;

(ii) Identification of communication network of the respondent through which issue specific information was obtained.

Nine informant - interview schedules were administered to the fifteen respondents over a period of one hour per schedule each. All the schedules were used in the same order as given above.Each of these was used as a semi - structured interview tool that required :

(a) Elaboration of the issues through conversation with the respondents,

(b) Posing the questions in alternate forms till the respondent comprehends the crucial theme implicit to each question.

(c) Recording the responses of the respondents in terms of verbal details.

These schedules helped in elucidation of data related to structure of interpersonal communication network and properties of the information flowing in it. Each schedule dealt with a specific cultural ecological context. The rationale behind selection of each of the context was as given below

(i) Information about soil typology:

(a) Soil type is the basic principle on which food production practices depend in all human societies. The same was observed

about Ghera Mordari.

(b) Villages were found not exposed to standard ways of soil classification. Thus, there was a possibility of villagers following traditional ways of soil classification. In such an eventuality, there was possibility of homogeneity in food production practices in the village. This would have helped the researcher to identify distinctive food production patterns in the village.

(ii) Information about cumulative effect of soil type and temperature on crop pattern :

Given the situation that there were more than one type of soil in the village, there was a possibility that (i) that the same type of land was used for different purposes in different seasons by the cultivator; and (ii) the different types of land were used for different purposes during the same season by the cultivator. Precisely, variation in temperature ranges in different seasons was an independent factor. Thus, it was to be investigated whether there were any traditional crop strategies to deal with the stressful seasonal conditions.

(iii) Information about relationship between precipitation and crop pattern :

The study village was approximately located on the boundary of the heavy rainfall zone of the coastal area and the sparse rainfall zone of the plains skirting the Western Ghats. This had led to an unpredictable condition with respect to precipitation. Precipitation in this region varied between extremes ranges. In

the light of this situation, there was a possibility of traditional strategies of crop - choices for various intensities of precipitation being followed in the village. Thus, the objective of this schedule was to understand the nature of any such kind of strategy.

(iv) Information about channels of rain water and land management :

Ghera Mordari did not have any artificial irrigation facilities. Cultivation was exclusively dependent on rain water. Thus, water available from rains formed the next important source of irrigation. This rain water was drained to shallow areas through a number of natural channels. Remarkably, substantial parts of the village land were located along these channels. This was bound to lead to a sharing of water channels between land holders. Thus, the researcher wanted to understand the patterns of interaction between different land holders with respect to control over common water channels.

(v) Information about temperature and crop - patterns :

There was a possibility of cultivators from Ghera Mordari opting for different crop choices during the same season. Making such a choice appeared to be a complex situation as it depended upon the possibility of seed availability ; access to sufficient rainwater ; and the timing of cultivation. This choice making was also limited by the access of the cultivator to non - conventional crop - choices. The concern of the researcher in investigating this context was to identify the range of exposure

of the community to crop - cultivation alternatives.

(vi) Information about sources of food :

During the ethnographic exploration, it was observed by the researcher that the villagers depended on sources other than land produces too for food consumption. This was the community strategy to attain optimum nutrition. Thus, it was in the wider interest of the research to know if information exchange pattern played an important role in nutrition optimization.

(vii) Information about agricultural technology through labour organization :

Participation of members of one family in agricultural activities of another was a very common activity in the village. This reciprocal exchange of labour contained the possibility of non - conventional ideas in the form of information information being shared by the community members. Of course, this possibility was preconditioned by the exposure of the community members to media and individuals outside the village. Therefore, in the given context the researcher tried to identify those individuals who were having access to external sources of information. In the absence of such external sources of information there was very little possibility of community members being exposed to non - conventional technology.

(viii) Information about village land use :

In Ghera Mordari, some pieces of land were owned by the community. However, these were not used for cultivable purposes. Given the possibility of increasing the productive potential of

land due to new wasteland development technology, it was important to know who controlled the decision - making with regard to community land in the village. It was possible to utilize the community land either through strategically located individuals or community meetings. It was the objective of the researcher in this context to understand the decision - making mechanisms in this regard.

(ix) Daily food exchange :

In many human societies, nutrition optimization is attained through food exchange. Similarly, in the study village too food exchange was evident. It was the objective of the researcher to specify the range of relationships through which cooked food as well as raw food was exchanged.

Please, refer to the APPENDIX 1 for the details of the different interview schedules employed by the researcher during the exploration of the communication networks.

4.9 Data Analysis

The study focused on three types of data viz.

(A) Ethnographic data; (B) Survey data; and (C) Network data.

(A) Ethnographic data :

It is an organized body of description about certain events and processes within a given cultural group. In other words, it is a ' picture about the way of life ' of a people. Ethnographic investigation is guided by certain questions or problems in the mind of the researcher. With the help of these guidelines, the researcher tries to organize the facts about the cultural life

of the people under study. In fact, ethnographic investigation is an attempt to understand the **etic** patterns of behaviour of a people. It is an attempt to understand the cultural categories that are employed by a given cultural group to organize the world around it.

The ethnographic investigation in the present study tried to define the cultural identity of the village Ghera Mordari. Ceratin cultural traits were assumed to be important from the perspective of cultural ecology of nutrition. These cultural traits were elaborately studied with the help of certain guided questions mentioned below :

(a) What were the geographical boundaries according to inhabitants of the study village ?

(b) Were other villages perceived to be within these geographical boundaries ?

(c) What were the historical versions about the settlement of the study village ?

(d) On what basis, the membership of the community was decided ?

(e) What was the proportion of members of different castes and religions within the village ?

(f) Which lineages inhabitated the village ?

(g) Were there occupational associations within the village ?

(h) How did the villagers discriminate within the village ?

(i) Were there any social or political agencies from outside the village ?

(j) Were there any administrative offices operating within the

village ?

(k) Were there any channels through which nutritional information flowed into the village ?

(l) Was there a close relationship between social administration within the community and the use of land for inhabitation ?

(m) Was there a similarity shown by the study village with other villages with respect to above attribute no. (a) ?

(n) What was the condition of transport facility for people and goods ?

(o) Were there menial channels of communication with outside world ?

(p) What was the proportion of land use for different purposes ?

(q) What was the ownership pattern of land ?

(r) Were there any changes in land holding patterns ?

(s) Were there any changes in land use patterns ?

(t) What type of food was cultivated within the village ?

(u) What type of food was brought from outside the village ?

(v) Did the community produce surplus food ?

(w) Were there broad occupational patterns within the village ?

(x) Did these occupational patterns change according to seasonal cycles as was generally observed in rural Maharashtra ?

(B) Survey data :

The major aim of collecting the survey data was to understand the broad socio - economic and demographic features of the village population. These features were indirectly related with the nutritional behaviour of the community as well as its development

profile. More precisely, the researcher was trying to relate these socio - economic and demographic characteristics with the nutritional information exchange behaviour.
Thus, the survey was supposed to play following two roles viz.
(a) Comparison between forty nine family units in the village;
(b) Interpretation of ethnographic observations about the village.

4.10 Techniques of Network Analysis :

(A) Data reduction :

Reference nodes controlling the exchange of nutritional information were identified on the basis of juxtaposing two or more communication networks specific to fifteen respondents. Primarily, any individual located on the general interpersonal communication network of any respondent was regarded as a reference node. The chances of an individual controlling information more frequently were dependent on either its being located on two or more general interpersonal communication networks; or any of its direct or indirect recipients being located on two or more general interpersonal communication networks.

The content of nutritional information was valued in terms of the number of context in which the communication took place.

Example : -

If one selects a population of five individuals variously interacting with each other with respect to three specific context (say, friendly interaction, jocular interaction and

family interaction) then it could be said the value of any linkage between any two individuals in the above network is either zero or one, or two or three i.e. these two individuals might be having no interaction; or having interaction with respect to either one context or two or three context mentioned above.

(B) Data processing :-

(1) The juxtaposed interpersonal communication networks were subjected to two types of graphical interpretations viz.

(a) Social Network Analysis : In it, the values of lines represent the strength of social relationships.

The basic idea of a Social Network is that an individual's behaviour may be affected by the ways in which he is directly or indirectly connected to other individuals and the way in which they in turn are connected with each other.

To the present study, it applied in terms of the reachability of the individuals present in the juxtaposed network from each other. Please refer to APPENDIX 4.

(b) Capacitated Network Analysis : In it, the membership of an individual in juxtaposed networks is determined through definition of the minimum cut - set.

In this analysis, values of the lines represent the amount of flow over a system of channels. Each line of the network N represents a channel that can carry a flow from its first point Fx to its second point Sx.

This method can be used for the purpose of determining given

target groups in the village and the conditions that lead to their emergence. Please, refer to APPENDIX 4.

4.11 Field Work Schedule:

The study was interspersed with three important techniques of field work method viz. ethnographic exploration; survey and network analysis. The field work was drawn over a long period of almost six months. A total of twenty days were spent within the village over this period. Out of these, twelve days were spent in single - day visits and eight days were spent in three parts of overnight halts in the village.

In the completion of the field work, approximately eight days were spent in ethnographic exploration; four days of survey; and eight days for collection of data related to network analysis.

The first two parts of overnight halts stretched for four days in October 1992 and the investigation during this time overlapped with the socio - economic and demographic survey of the village.

The field - investigation was resumed in December 1992 which mainly consisted of probing the fifteen household heads selected for understanding the characteristics of nutritional information available with them and for identifying their interpersonal channels of communication that were used for exchange of nutritional information.

Summary

Selection of the village :

Following criteria were used for selecting the village :

(1) The sampled population must have receptivity towards the presence of the researcher and the probing about the social interactions.

(2) The community should be subject to geographical definition.

(3) The community should be composed of definable social units.

(4) The community should be culturally definable.

(5) Population size should allow each member of the community to identify any other member of it.

(6) Community should possess identifiable nutritional resources.

(7) Community should have explicit communication linkages with collectivities outside its own boundary.

(8) Community should have a large impoverished land with potential to meet the nutritional needs of the community.

Framework of Tools :

The strategy adopted was one of using different techniques in Field work Method for data collection.

Participatory Interviewing for Ethnographic Exploration :-

Focus of informant-interviews of a limited number of community members was :

(1) Definitions of the community by the members themselves.

(2) Social composition and broader schemes of social

classification.

(3) Extension of networks of external institutions in the community.

(4) Interrelationship between social composition and settlement pattern.

(5) Communication infrastructure for contact with outside.

(6) Land use patterns

(7) Nutritional sources

(8) Seasonal occupation patterns

Socio - economic and Demographic Survey : -

A structured interview Schedule was used for eliciting data about certain socio - economic, and demographic variables for all the families in the village. These variables were

(1) Residential identification

(2) Period of residence in the village

(3) Personal identification of family members

(4) Family size

(5) Age - sex distribution

(6) Marital composition

(7) Occupational distribution

(8) Educational achievement

(9) Literacy skills

(10) Caste composition

(11) Degree of kinship

(12) Land ownership pattern

(13) Domestication pattern of animals

(14) Media exposure

Exploration of the Interpersonal Communication Networks : -

Based on the data collected in the earlier phases, informant - interview schedules were prepared. These schedules intended to (a) identify information specific to cultural ecological context. (b) identify interpersonal communication linkages of the respondent through which information is obtained and transferred. Nine cultural ecological context were defined for framing of informant - interview schedules. These schedules were administered to fifteen randomly selected family heads. These cultural ecological context were -

(1) Information about soil typology,

(2) Information about cumulative effect of soil type and temperature on crop pattern

(3) Information about relationship between precipitation and crop pattern.

(4) Information about channels of rainwater and land management

(5) Information about temperature and crop pattern

(6) Information about food sources

(7) Exchange of agricultural technology through labour mobilization

(8) Information about use of community land

(9) Daily exchange of prepared food

Data Analysis :-

The study focused on three types of data :

A) Ethnographic Data B) Survey Data C) Network Data.

The ethnographic investigation in present study tried to define the cultural identity of the village Ghera Mordari. Certain cultural traits of the village were elaborately studied with the help of certain guided questions.

The major aim of collecting data through survey was to understand the broad features of the village population. These socio - economic, demographic features were probed for relationship with the nutritional information exchange behaviour of members of the community. Thus, the survey was supposed to play two roles viz. comparison between family units in the village, and interpretation of ethnographic observations about the village.

The network data was collected in order to study the information optimization behaviour of the agrarian community. It mainly consists of individuals considered as communication nodes, interactions between individuals considered as linkages ; and aspects of interactions between individuals considered as strength of linkages.

The juxtaposed interpersonal communication network was subjected to two types of graphical interpretations viz.

a) **Social Network** : The basic idea of a social network is that an individual's behaviour may be affected by the ways in which he is directly connected with other individuals and the ways in

which they in turn are connected with each other. In present study, the analysis was applied to measure the reachability between 15 individuals with primary linkages, and 26 individuals with secondary linkages.

b) Capacitated Network : In it the membership of an individual in network is determined through the determination of the minimum cut - set. In this analysis, values of the represent the amount of flow over a system of channels. Each arc of the network N represents a channel that can carry a flow from its first point Fx to its second point Sx. In the present study, the analysis was used to identify the stable sources ; stable linkages and mobilization groups.

DATA INTERPRETATION

Background :

This was an interpretative study. The major characteristics of such a study were :

1. It adopted a holistic approach toward its subject- matter.
2. It related together a broad range of data in a functional manner depending upon the definition of the problem.
3. It exposed the emic-etic patterns of behaviour of people under study (i.e. the people under study).
4. It constructed general patterns of behaviour that were applicable only with respect to the subject under study.

As discussed elaborately in the earlier chapters, the major concern of this study was developing a nutrition education programme for Ghera Mordari. The applicability of such a programme depended upon the definition of nutritional needs by the community itself and capability of it to mobilize its own nutritional resources on its own. In other words, 1) The content of a nutrition education programme would have been specific to the cultural needs of the village ; 2) Organization of this programme would have been specific with respect to the structure of the interpersonal communication network of the village.

Types of Data

As described in the chapter of Methodology, this part was

expected to deal with three types of data pertaining to the two points mentioned above:

(A) ethnographic data, (B) survey data (C) network related data. The data and related interpretations under each of these categories are organized in three chapters for convenience of presentation.

Chapter V

Ethnography of the village and its neighbouring areas:

The ethnographic investigation in present study tried to define the cultural identity of village Ghera-Mordari. Certain cultural traits were assumed to be important from the perspective of cultural ecology of nutrition. These cultural traits were as following.

(i) Definition of the geographical boundaries of the village.

(ii) Convergence of the geographical boundaries of the village with other settlements.

(iii) History of the settlement.

(iv) Criteria for the membership of the community.

(v) Social composition of the village.

(vi) Occupational patterns -

(a) Occupational patterns and associations within the village.

(b) Seasonality of the occupational patterns. g) Patterns of discrimination in the village

(vii) Social/political/administrative agencies extending in the village.

(viii) Channels for inflow of nutritional information.

(ix) Connection between social relationships and land use patterns.

(x) Similarity of the village with other villages with respect to the connection between social relationships and land use patterns.

(xi) Conditions of transport and other channels of communication.

(xii) Land use patterns and changes within the same.

(xiii) Land ownership patterns and changes within the same.

(xiv) Sources of food and amount of food available to the villagers.

Chapter VI

Survey data :

The major aim of collecting survey data was to understand the socio - economic and demographic features of the village. These features could have been possibly related with the nutritional behaviour of the community. To be more specific, the researcher wanted to check the possibility of the information either being 'shared' or 'hoarded' by the virtue of one's membership in a particular social or economic category. This presumption connoted that the researcher wanted to check the relationship between the socio-economic, demographic characteristics and the nutritional information exchange behaviour. The survey data was supposed to contribute to the comparison between the persons in communication and between their families on the basis of certain characteristics like common neighbourhood; lineage affiliation; relationship

between the family heads; family size; age difference; sex difference; marital status; occupational status; educational status; level of literacy; caste difference; ownership of land ; ownership of domestic animal; exposure to media. This comparison was to be carried out on the basis of the assumption that 'persons with the same characteristics tend to communicate more frequently with each other than with those which possess different characteristics.

Another purpose that the survey data was expected to serve was projection of a comprehensive socio - economic, and demographic profile of the village.This was particularly important with respect to the problem of characterization of the community as one afflicted by the syndrome of 'culture of poverty'.It would be a major contribution of the present study to the efforts of nutritional improvement if it was capable of telling something decisively about the relationship between the cultural and socio - economic characteristics of the village and the qualities of the exchange of nutritional information in the village.

Chapter VII

Network Data :

Fifteen individuals were probed about their interactions with other members of the community. Their regular interactions were treated as Linkages carrying a flow of information. Strength of this information flow was determined on the basis of the value

of the flow in each linkage. This value of the flow in each linkage was determined on the basis of the number of contexts in which the persons identified as communicators interacted with the other person. The individuals identified as communicators were called as Reference Nodes. Finally, the set of Reference Nodes and the Linkages together were called as a Network. The final network consisting of the 15 respondents and the communication partners of each of them together were subjected to two types of analyses viz. (i) Social Network Analysis, (ii) Capacitated Network Analysis. The results of the two types of analyses are presented in this chapter. The results are interpreted with respect to certain structural properties of the communication network of the group studied, viz. Reachability; Information mobilization capacity through reticula; Maximum flow capacity of different channels in the network; Reference Nodes maintaining minimum constant information flow; and Chance of emergence of Simple Cut - sets and Minimum Cut - sets in the network.

Definition of Ghera Mordari as a Community

From a nutrition education perspective, following cultural traits of the village were important.

(i) Nature of economic activities.

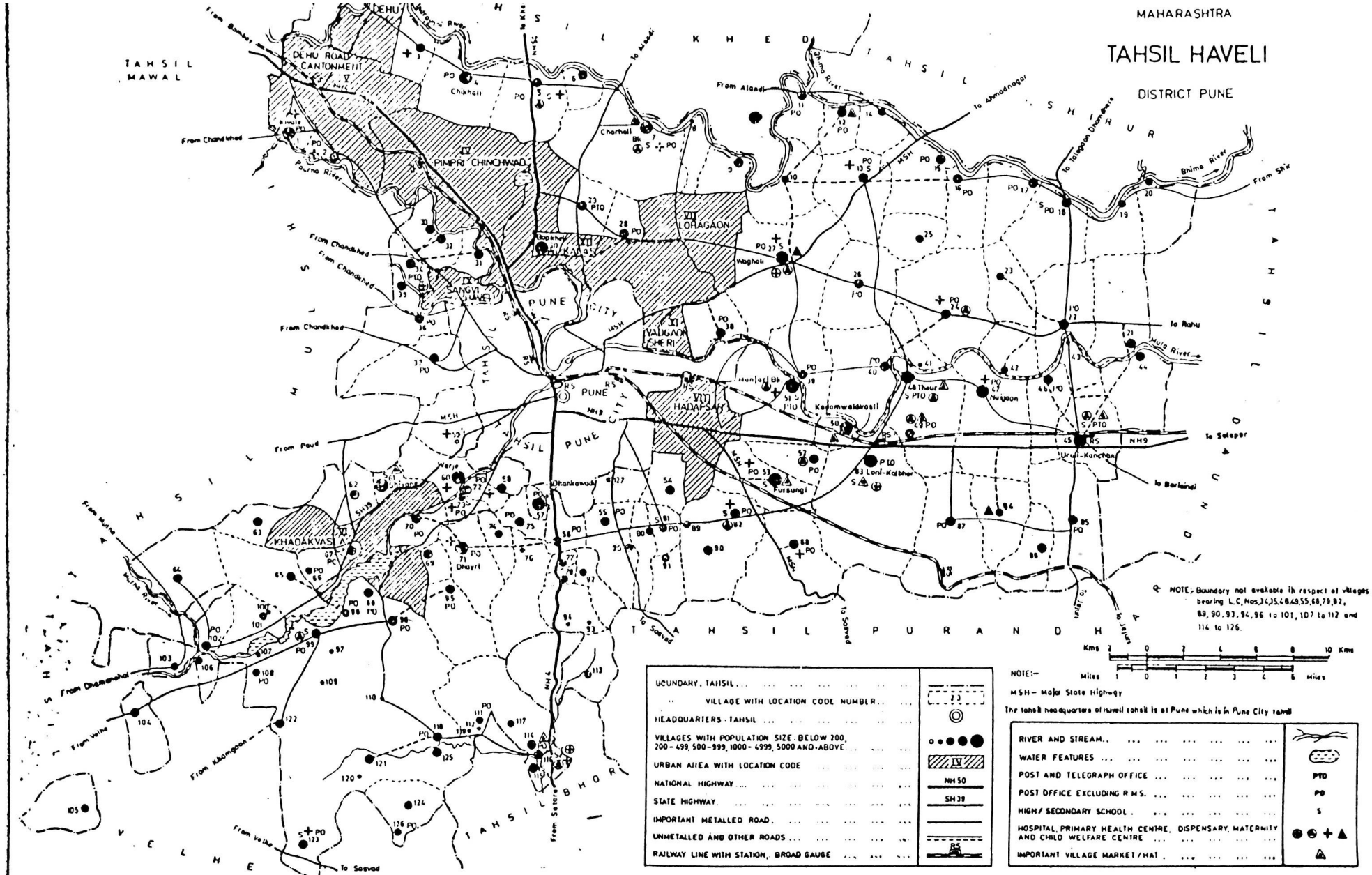
(ii) Access to development resources.

(iii) Development of nutritional resources within the village.

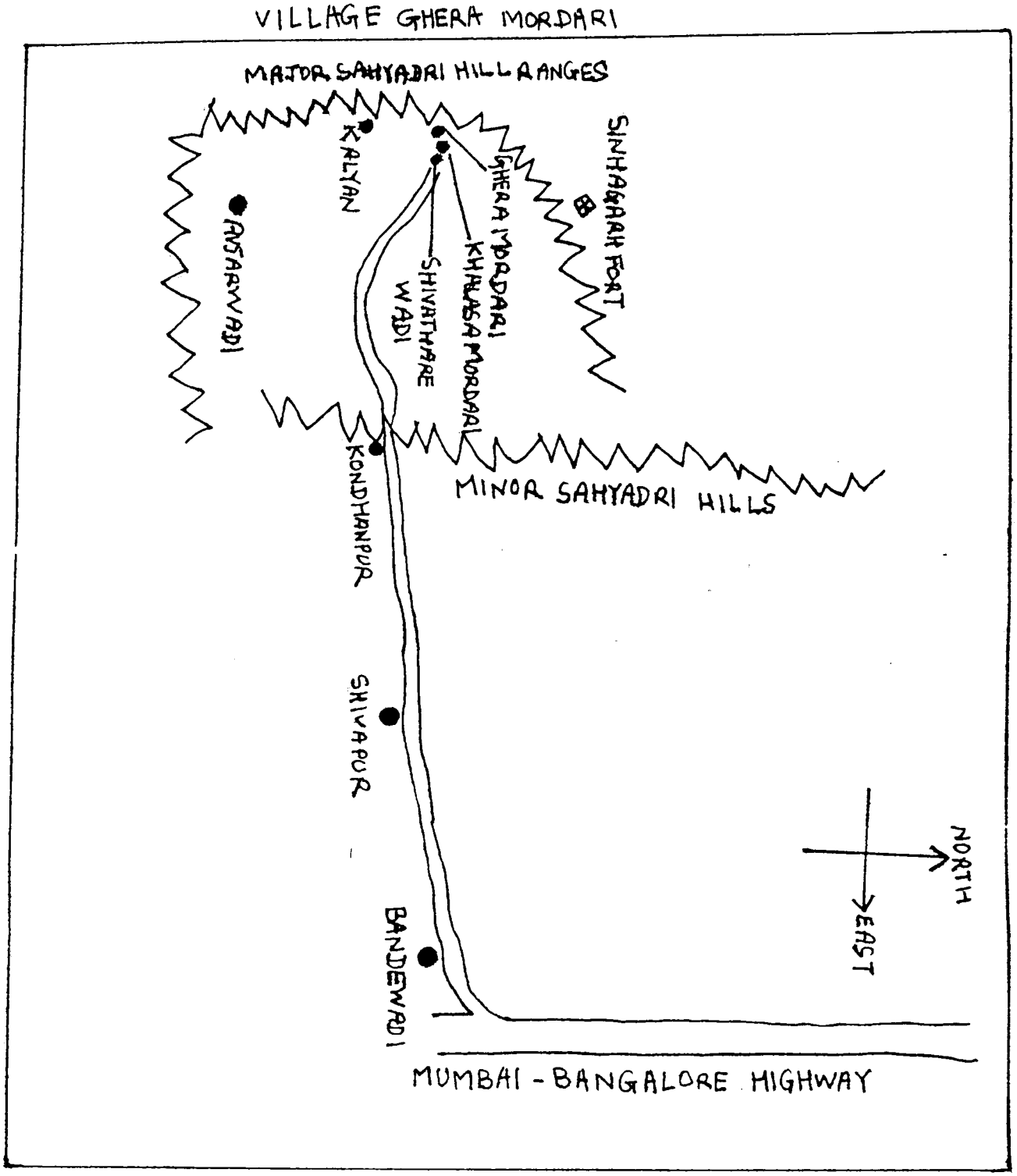
(iv) Sufficiency of nutritional resources.

The problem of defining Ghera Mordari as an integrative

unit was basic to all analysis under all the points mentioned above. Thus, different dimensions of the cultural identity of the village were considered viz. geographical definition of the settlement, historical distinctiveness of the settlement, distinct social composition of the village, distinguishing characteristics of the relationship of the village with other social entities. Thus, an elaborate ethnography of the village needed to be explored in the first place.



Based upon Survey of India map with the permission of the Surveyor General of India.


VILLAGE GHERA MORDARI
MAJOR SAHYADRI HILL RANGES
KALYAN
GHERA MORDARI
SINHAGARH FORT
ANSARWADI
SHIVATHARE WADI
KHALSA MORDARI
KONDHANPUR
MINOR SAHYADRI HILLS
SHIVAPUR
BANDEWADI
NORTH
EAST
MUMBAI - BANGALORE HIGHWAY