

HOUSEHOLD SURVEY AND NEEDS ASSESSMENT STUDY

FOR

**ULTRA MEGA POWER PROJECT
Mundra, District Kutch, Gujarat, India**

**COASTAL GUJARAT POWER LIMITED
A WHOLLY OWNED SUBSIDIARY OF THE TATA
POWER COMPANY LIMITED**



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IL&FS Ecosmart Limited
Office Premises No. 301, Sunil Enclave,
Andheri-Kurla Road, Andheri (East)
Mumbai: 400 099
Phone: 022-6699 8569/70
Fax: 022-6677 0254
www.ilfsecosmart.com

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ABBREVIATIONS

BPL	Below Poverty Line
CGPL	Coastal Gujarat Power Limited
CSR	Corporate Social Responsibility
EPC	Engineering Procurement and Construction
GCMMF	Gujarat Cooperative Milk Marketing Federation
GMDC	Gujarat Mineral Development Corporation
GRC	Grievance Redress Mechanism
Ha	Hectares
HR	Human Resource
ICDS	Integrated Child Development Scheme
IFC.	International Finance Corporation
ITI	Industrial Training Institute
LPD	Litres Per Day
MC	Mentally Challenged
MSEZ	Mundra Special Economic Zone
MW	Mega Watts
NGO	Non-Governmental Organization
OBC	Other backward Classes
PAV	Project Area Villages
PC	Physically Challenged
PDS	Public Distribution System
PG	Public Grievances
RDS	Rural Development Scheme
SC	Scheduled Caste
SHG	Self Help Groups
SR	Sex Ratio
ST	Scheduled Tribe
TDS	Total Dissolved Solids
UMPP	Ultra Mega Power Project
WASMO	Water and Sanitation Management Organisation
WHH	Women Headed Households

CHAPTER I INTRODUCTION

1.1 PROJECT DESCRIPTION

The Mundra Ultra Mega Power Project (the Project) is being developed by Coastal Gujarat Power Limited (CGPL) in response to the plan of the Government of India (the Government) to increase the electricity production capacity of the country by 100,000 megawatts (MW) by the year 2012. The Project, awarded to CGPL on a build, own, and operate basis, is a supercritical coal-fired power plant with a total capacity of 4,000 MW.

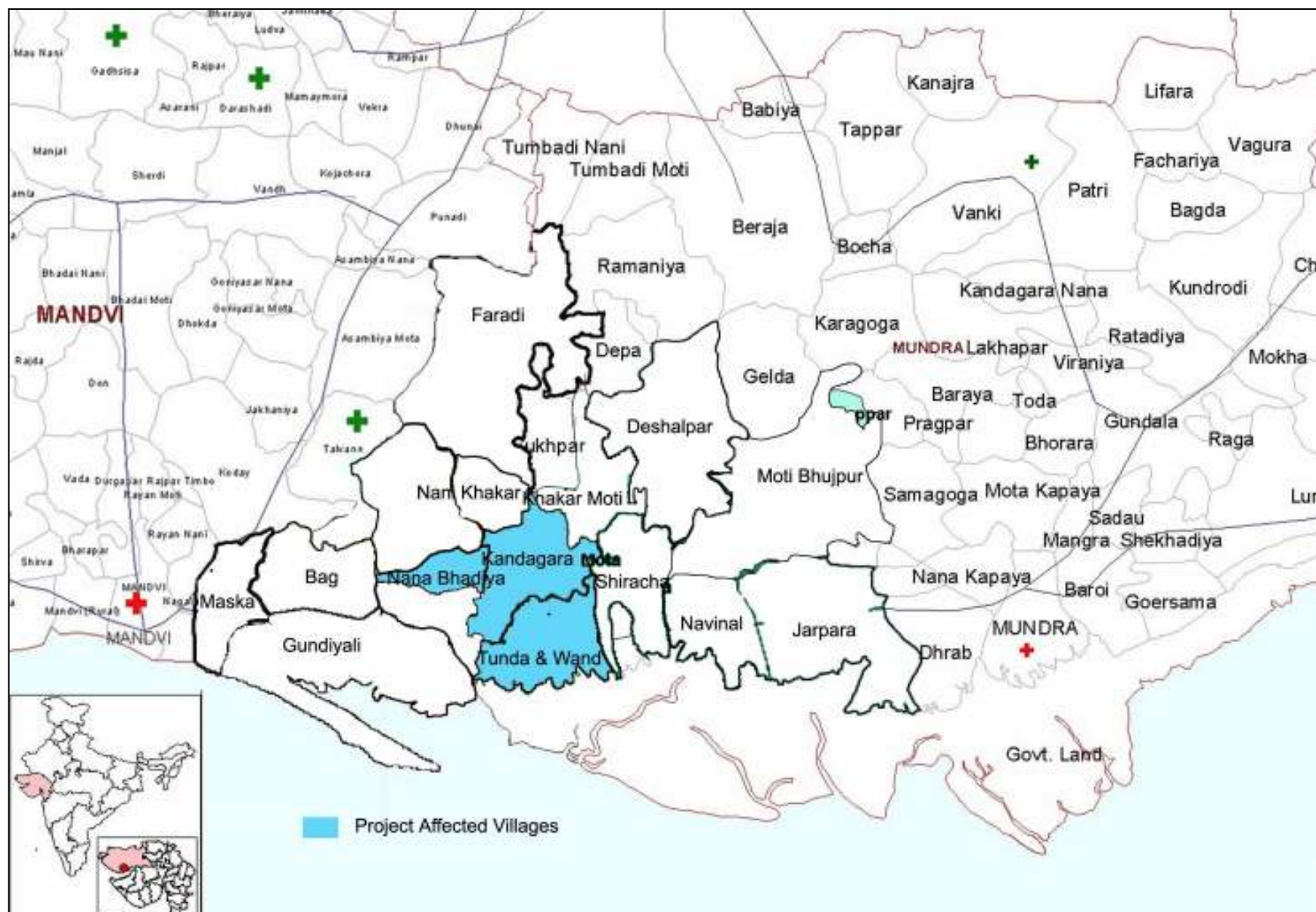
Coastal Gujarat Power Limited (CGPL), a wholly owned subsidiary of The Tata Power Company Limited (Tata Power or the sponsor) is setting up a 4000 MW supercritical coal based power plant near village Tunda, Taluka Mundra in Kutch District, in the state of Gujarat, India.

Based on the new technology and other measures being taken by the CGPL, the project would meet the social and environmental Performance Standards of IFC.

1.2 PROJECT LOCATION

The Project is located in a coastal area of Mundra and Mandvi Taluka, in Kutch District of Gujarat State. The project area covers 1054 hectares (Ha), of vacant land acquired from the villages of Tunda Wandh, Mota Kandagara and Nana Bhadiya (Refer Map 1) and is about 2 km from the first-phase development area of the Mundra Special Economic Zone (MSEZ), where a 1320 MW power plant, the Adani Power Project, is being implemented by Adani Power Limited. The project area is about 1.5 kilometers (km) from the sea, with a portion of the MSEZ intervening between the sea and the project area.

MAP 1: PROJECT AREA VILLAGES



1.3 OBJECTIVE

The objectives of the household survey and needs assessment study are as follows:

- To assess the existing living conditions and socio economic profile of the population living in the villages of Tunda, Mota Kandagara and Nana Bhadiya.
- To conduct a need assessment study of the villages within the project area with the purpose of determining feasible village infrastructure upgradation and
- Identifying income generating activities that could supplement people's livelihoods.

1.4 METHODOLOGY

The Ecosmart team conducted the survey in the months of March and April, 2008 with a team of 8 local investigators. The study involved collection of primary & secondary data and desk review. Primary data collection was facilitated through:

- Household survey
- Focus Group discussions
- Informal consultation with stakeholders of the project

Review of secondary data from:

- State & district reports
- Policy papers
- Census reports of district and state

The household census and socioeconomic profiling was carried out by using a structured questionnaire. Prior to initiating the survey, the questionnaire was piloted to identify the gaps and relevance of the queries in light of the project requirements. Accordingly the questionnaire was modified. The survey was carried out in 3 villages encompassing a population of 4703 spread over 1027 household. The survey was also strengthened by conducting informal consultation with the local community, Panchayat members and other stakeholders. The number of

household surveyed in different villages is presented in **Table 1.1**. Approximately 160 Houses in the Project Area Villages (PAV) were found locked and so the survey of these households could not be conducted. The village wise listing of the locked structures is included in **Annexure 3.5**.

Table 1.1: Number of household and population surveyed in PAV

S. No.	Villages	No. of household surveyed	Population covered
1.	Tunda	317	1366
2.	Mota Kandagara	529	2473
3.	Nana Bhadiya	181	864
	Total	1027	4703

The census and socioeconomic data analysis has covered the needs and resources of different groups and individuals, including intra-household analysis and gender analysis.

Information on the village profile was also collected through a village schedule. The data includes information on demographic profile, occupation profile, cropping pattern, land use, village infrastructure, community health and common property resources.

The combined English and Gujarati version of the questionnaire is included in the Report as **Annexure 3.1**. The village schedule has been included as **Annexure 3.2**.

The secondary sources of information included various documents published by the government of Gujarat such as district census handbook, statistical abstract, economic survey report and applicable laws/acts and policies etc. Relevant information from these documents was analyzed.

1.5 STRUCTURE OF THE REPORT

Chapter 1: Introduction describes the project background and location. It outlines the objectives of household survey and the methodology adopted in the preparation of the survey report.

Chapter 2: Project Area Profile gives a brief outline of the villages and the surrounding areas. A profile of the three villages describing the existing infrastructure together with the listing of the common property resources is described in this section.

Chapter 3: This chapter deals with the description of socio economic profile of the villages. A detailed outline of the demographic profile, population, literacy status, education profile, occupation, land use pattern, Income profile, vulnerability profile, asset holding, health status and availability of infrastructure is presented in this section.

Chapter 4: This chapter describes the process adopted for need assessment component as well as the feedback obtained from various stakeholders of the project.

CHAPTER 2 PROJECT AREA PROFILE

2.1 PROJECT AREA

The proposed power plant would be located at a site south of Tunda village in Mundra taluka of Kutch district in Gujarat, India. The Proposed site is located at 22° 49' 48" N Latitude and 69° 30' 58" E longitude. The site is well connected with State Highways No. SH-50 (Via Anjar) and No. SH-6 (Via Gandhidham) and would be nearer to the proposed NH-8A (Delhi-Kandla). The nearest railway station is Adipur, which is 57 Km away from the proposed site. Adipur railway station is well connected to multi terminal Mundra port through broad gauge railway system privately owned by M/s. Adani Group. Kandla port – one of the major ports in the area is at a distance of 45 km from the project site. Major industrial set-ups in the area are Adani ports, Adani Power Limited, Gujarat Mineral Development Corporation (GMDC) at Panandro, Cement plants of Jaypee and Sanghi Cement.

2.2 PROFILE OF AFFECTED VILLAGES

The land acquisition for the project is affecting the land belonging to the three villages of Tunda, Mota Kandagara, and Nana Bhadiya. Although this acquisition does not affect the settlement areas in these villages, it would be pertinent to mention that acquisition of private land is taking place only in Tunda whereas government land is being acquired from Mota Kandagara and Nana Bhadiya. The village settlements fall within a 5 Km radius of the project area.

2.2.1 Climate

The climate of the project area in general is characterized by frequent droughts and extreme temperatures with four distinct seasons: (i) Summer from March to May, (ii) wet monsoon from June to September, (iii) post-monsoon from October to November, and (iv) Winter from December to February. Temperatures peak in the summer with an average maximum of 41°C and are lowest during the winter with an average minimum temperature of 9°C.

The project area receives rains from the southwest monsoon. The rainfall is very erratic in both extent and duration. On average, rain falls in the project area only 14

days in a year. This rainfall pattern, high evaporation rates, and the lack of significant surface water resources make the area arid and increase seawater salinity. However, the relative humidity is quite high in the range of 90% to 80%.

2.2.2 Vegetation

Apart from agricultural land, the area has sparse natural vegetation in the form of thorny, stout tree like *Prosopis juliflora*, *Accasia* spp. and *Ephorbia* spp., and *Cassia auriculiformis*.

2.2.3 Soil

Soil types vary a great deal from place to place along the coastline, with alluvial soils that in some parts are saline. There are also areas with sandy soil.

A profile of each of the villages namely Tunda, Mota Kandagara and Nana Bhadiya in terms of expanse, settlement pattern, demography, occupation pattern, education, health and existing infrastructure is presented below.

2.2.4 Tunda

Location and Layout: Tunda is located in Mundra Taluka, Kutch district, at a distance of 70 Km from Bhuj, its District headquarters. The village settlement area is located to the north of the project area.

Settlement pattern: The settlement pattern in the village is characterized by clusters which are formed according to the caste. Such clusters are known as “Fariyas” or “Vas”. Thus the clusters are called as Darbar Fariya, Muslim Fariya, Lohar Fariya, Brahmin Vas, Kumbhar Vas, Maheshwari Vas and Dataniya Vas. There are nine such typical clusters. Some of the more affluent families in addition to owning a house in the village reside in farmhouses which are located at some distance away from the main settlement area.

Wandh which is a hamlet of Tunda revenue village lies to the south of the project area. It is located 2 kms. away from the Tunda settlement area. The Rabari community resides in Wandh. This community has their own distinctive culture. The Rabaris are a wandering community known for their extraordinary capacity for survival.

Population: As per the 2001 Census, the total population of the village was 1207 of which 607 were male and 600 were female. The total households in the village were 241. Based on this information the average household size for Tunda is 5.01. The sex ratio is 988 females per 1000 males.

Literacy: As per the 2001 Census, the Mundra Taluka level literacy rate was 63.6% as against the state level rural average of 61.29%. The Mundra Taluka male literacy level was 74.82% vis-à-vis the female literacy of 52.04%.

Occupation: The occupations of the resident population are agriculture and livestock farming. The landless population work as casual labour in other farmhouses or are involved in construction of the upcoming Adani power plant and Mundra port.

The Rabaris in Wandh are recognised for their distinctive arts, especially embroidery, beadwork and mirrored mud sculpture. Rabari women make mud sculpture themselves. They traditionally spin wool from their sheep and give it to local weavers to make the woolen skirts, veils, blankets and turbans. Rabaris embroider a wide range of garments, bags, household decorations and animal trappings. The objects that they embroider highlight important events, rites and values in their lives. Girls traditionally embroider blouses, skirts, veils, wall hangings, pillows, purses etc.

Education: The village has one functional Anganwadi center and one primary and middle school (up to class 7). For high school education one has to travel to Nana Bhadiya which is 4 km away. For higher secondary education such as Jr. College, vocational and English medium education, the villagers have to travel to Mandvi. For graduation, villagers have to travel Mandvi and Bhujpur which is 18 km from the village.

At present, the school in Tunda has only two class rooms, and only 3 teachers. The School building has structural cracks due to the earthquake in 2001. However, one acre land can be made available to the school with the help of local gram Panchayat to enhance the educational facilities in the village.

Water Supply: “Bhukhi Nadi”, a seasonal river flows in the vicinity of Tunda. Water supply is through a rain-fed tank which serve as common public water sources. Scarce rainfall together with sedimentation affects the water holding capacities of all these sources. Thus de-silting is an urgent requirement in all the ponds and tanks. The rapidly falling water table is also a cause of concern in the wells. As a result of these constraints, the quality of drinking water in the village is severely impacted. The feasibility of providing a water treatment plant and usage of rainwater harvesting techniques could be explored.

After the 2001 earthquake destroyed water supply and storage systems, the repair and augmentation of the water supply system has been taken up by WASMO's Earthquake Rehabilitation and Reconstruction (ERR) which aims to restore and develop water supply and sanitation facilities.

Sanitation: 60% households are known to have toilets whereas 40% of population use open ground for defecation mainly in areas around the proposed CGPL site. Fencing of the CGPL site may add to the villagers' inconvenience.

Electrification: The Gujarat Electricity Board is the service provider in Tunda. Electrification was done in the year 1978; however, it mainly covers domestic users.

Road and Transportation: The village is not covered in the railway network and the nearest railway station Adipur which is 57 KM away from the village. The unpaved roads in village Tunda are a constraint to the public transport system. The connectivity is minimal with just one state transport bus service is twice a day. Transportation heavily depends upon private operators.

Health care: The village has no primary health care center and the villagers have to go to Kandagara, Bidada and Mandvi for medical treatment. However the only medical facility is by the way of a clinic where a doctor visits in the evening. There are no maternal and child care facilities and child births are usually managed by local women.

Communication facilities: There is one sub post office in the village. The telecommunication network is reasonably good with local landlines and mobile telephonic coverage is in the village.

Temple and community hall: Based on the public consultations held in the villages it was understood that the Shankar temple, Hanuman Mandir and Ram temple need renovation. They have also put forth a need for separate community halls for Hindu, Muslim and Harijan for the community activities, marriages and other religious activities.

2.2.5 Mota Kandagara

Location and Layout: Mota Kandagara falls within the Mundra Taluka, Kutch district and is located at a distance of 70 Km from Bhuj, its District headquarters.

Settlement pattern: The settlement pattern in the village is characterized by clusters which are formed according to caste. Such clusters are known as “Fariyas” or “Vas”. Thus the clusters are called as Darbar Fariya, Muslim Fariya, Lohar Fariya, Brahmin Vas, Kumbhar Vas, Maheshwari Vas and Dataniya Vas. There are eight such typical clusters. Some of the affluent households in addition to owning a house in the village reside in farmhouses which are located at some distance away from the main settlement area.

Population: As per the 2001 Census, the total population of the village was 2306 of which 1150 were male and 1156 were female. The total households in the village were 454. Based on this information the average household size for Mota Kandagara is 5.07. The sex ratio is 1005 females per 1000 males.

Literacy: As per the Census, the Mundra Taluka level literacy rate was 63.6% as against the state level rural average of 61.29%. The Mundra Taluka male literacy level was 74.82% vis-à-vis the female literacy of 52.04%.

Occupation: The principal occupations of the resident population are agriculture and livestock farming. The landless population work as casual labour in other farmhouses or are involved in construction of the upcoming Adani power plant and Mundra port.

Education: The village has one functional Anganwadi center and one primary and middle school. The School building has two separate toilet blocks for girls and boys but these toilets are in a state of disrepair with a damaged sewerage system.

For high school education students travel to Nana Bhadiya which is 4 km away. For higher secondary education such as Jr. College, vocational and English medium education, the villagers have to travel to Mandvi. For graduation, villagers have to travel Mandvi and Bhujpur which is 18 km from the village.

Water Supply: Mota Kandagara is dependent for water on the “Bhukhi Nadi”, a river which flows close by. In addition there are three ponds, one tank and one open well which serve as water sources. All these sources are rain-fed. Scarce rainfall together with sedimentation affects the water holding capacities of all these sources. Thus de-silting is an urgent requirement in all the ponds, tanks and open wells. The rapidly falling water table is also a cause of concern. As a result of these constraints, the quality of drinking water in the village is severely impacted. The feasibility of providing a water treatment plant and usage of rainwater harvesting techniques could be explored.

After the 2001 earthquake destroyed water supply and storage systems, the repair and augmentation of the water supply system has been taken up by WASMO's Earthquake Rehabilitation and Reconstruction (ERR) which aims to restore and develop water supply and sanitation facilities.

Electrification: The Gujarat Electricity Board is the service provider in Mota Kandagara. Electrification was done in the year 1978; however, it mainly covers domestic users. Only Jain settlement clusters have street lighting, which are private connections maintained by Jain Community. Other settlements do not have any street lights.

Road and Transportation: The village is not covered in the railway network and the nearest railway station Adipur which is 57 KM away from the village. The unpaved roads in village Mota Kandagara are a constraint to the public transport system. The connectivity is minimal with just one state transport bus service in twice a day. This service is quite irregular, therefore locals depend upon private transport i.e. Chakdas and four wheelers.

Health care: Health care facilities in the village are in the form of a primary health care center and two private clinics. Two trained nurses to take care of emergency maternity cases. In the event of the existing facilities not addressing the health care requirements, the villagers go to Bidada and Mandvi for medical treatment.

Sanitation: The Jain community has toilets in their houses. Certain areas within the village have been cordoned off with a compound wall and have been designated as areas for open defecation. These areas known as Sandaswada are maintained on a weekly basis by a sweeper.

Communication facilities: There is one sub post office in the village. The telecommunication network is reasonably good with local landlines and mobile telephonic coverage is in the village.

Social Infrastructure: The Jivdaya Seva Trust located in Mota Kandagara provides veterinary services and fodder in times of distress. This trust has been doing commendable work in the nearby villages. There is no milk collection center and milk has to be sold in nearest market which is in Mandvi.

2.2.6 Nana Bhadiya

Location and Layout: Nana Bhadiya falls within the Mandvi Taluka, Kutch district and is located at a distance of 70 Km from Bhuj, its District headquarters.

Settlement pattern: The settlement pattern in the village is characterized by clusters which are formed according to caste. Such clusters are known as “Fariyas” or “Vas”. There are four such typical clusters. These are Jain Fariya, Maheshwari vas, Mufat Nagar and Muslim Fariya. There are two households who in addition to owning a house in the village reside in farmhouses which are located at some distance away from the main settlement area.

Population: As per the 2001 Census, the total population of the village was 799 of which 394 were male and 405 were female. The total households in the village were 179. Based on this information the average household size for Nana Bhadiya is 4.46. The sex ratio is 1028 females per 1000 males.

Literacy: The Mandvi Taluka level literacy rate was 69.95% as against the state level rural average of 61.29%. The Mandvi Taluka male literacy level was 79.98% vis-à-vis the female literacy of 59.89%.

Occupation: The landless population work as casual labour in other farmhouses or are involved in construction of the upcoming Adani power plant and Mundra port. Most of the Jain households comprise of senior citizens as the younger generation has migrated in the other districts or state. Based on various discussions held in the village it was understood that the major crops are Cotton, Jawar, Mung and Groundnut.

Education: The Nana Bhadiya village has two functional Anganwadi center wherein mid-day meal provided by ICDS. The village has only one primary and middle level school up to 10th Std.

For higher secondary education such as Jr. College, vocational and English medium education, the villagers have to travel to Mandvi. For graduation, villagers have to travel Mandvi and Bhujpur which is 23 km from the village.

Water Supply: Nana Bhadiya is dependent on a river and a creek for water. In addition there are two tanks, one pond, one dug well and one open well which serve as common public water sources within the village precincts. All river, tanks and pond sources are rain-fed. All these water sources are affected due to scarce rainfall and require de-silting. The rapidly falling water table in the wells is also a cause of concern. As a result of these constraints, the quality of drinking water in the village is severely impacted. The quality of drinking water in Nana Bhadiya on the whole is very poor (TDS 2100).

Electrification: The Gujarat Electricity Board is the service provider in Nana Bhadiya. Electrification was done in the year 1978; however, it mainly covers domestic users. Only Jain settlement clusters have street lighting, which are private connections maintained by Jain Community. There are 52 street lightning connections and 2 commercial users in the village.

Road and Transportation: The village is not covered in the railway network and the nearest railway station Adipur which is 57 KM away from the village. There are

some roads constructed by Panchayat which were broken during the laying of drinking water pipeline under the WASMO project.

The connectivity is minimal with just one state transport bus service in twice a day. This service is quite irregular, therefore locals depend upon private transport i.e. Chakdas and four wheelers.

Health care: The village has no primary health care center and the villagers have to go to Mota Kandagara, Bidada and Mandvi for a medical treatment. The only medical facility is by the way of a clinic run by a Mitra Mandal Trust, where a resident doctor visits twice a day. There are no maternity and child care facilities in the village. The common ailments are viral fever, cough and cold, deficiency of iron, stomach problems and joint pain, etc.

Communication facilities: There is one sub post office in the village. The telecommunication network is reasonably good with local landlines and mobile telephonic coverage is in the village.

Social Infrastructure: There are three trusts working in Nana Bhadiya, namely; Shri Dhanvallabh trust run by Shri. Chandrakant Gogri, Shri Mitra Mandal Trust run by Shri. Popatbhai Gala and Jain Mahajan trust run by Shri. Jayantilal Lakhansingh Gogri. Shri Dhanvallabh trust has been working on the issues like drainage, water supply, education construction of house including sanitation. Shri Mitra Mandal has been working on the health side and Jain Mahajan Trust is involved in religious activities. The Hindu crematorium in Nana Bhadiya is located close to the Shiva temple. The Muslim graveyard which has an in situ mosque is also in the same vicinity.

Table 2.1 presents the village wise listing of all available infrastructure and facilities.

Table 2.1: Infrastructure and facilities in PAV

Sr. No	Tunda	Mota Kandagara	Nana Bhadiya
Infrastructure services			
1	Bus stop	bus stop	bus stop - 1
2		Street lighting - 25	street lighting - 52
3			commercial Electrification - 2
Commercial Units			
4		Tea Shop - 5	Tea Shop - 2
5		Retail Grocery Shop - 5	Retail Grocery Shop - 5
6		Vegetable shop-7	Vegetable shop-1
7		Tobacco/cigarette shop- 2	Tobacco/cigarette shop- 7
8		Cycle repairing shop - 2	Cycle repairing shop - 1
9		Motor cycle repairing shop-1	Motor cycle repairing shop-1
10	Telephone booth - 30	Telephone booth- 1	Telephone booth- 1
11		Loose petrol/ diesel selling shop- 2	Loose petrol/ diesel selling shop- 3
12		ration shop- 1	ration shop- 1
13		Seed- Fertilizer- Pesticide Shop - 1	
Service Facilities			
14		Mason - 50	Mason- 15
15	Carpenter- 9	Carpenter- 12	Carpenter - 20
16	Barber - 1	Barber - 2	Barber - 2
17	Tailor - 2	Tailor - 5	Tailor- 4
18	Electrician - 4	Electrician - 1	Electrician -4
19	Potter - 60	Gold smith - 1	Priest- 3
20	Black smith - 9	Black smith - 1	
21	Cobbler - 2	TV/ Radio Mechanic - 1	
22	Priest - 18	Priest - 4	
Education			
23	Anganwadi - 1	Anganwadi - 1	Anganwadi - 2
24	UP school-1	UP school-1	UP school-1
25	ME School- 1	ME School- 1	ME School- 1
26		High School - 1	High School - 1
27	Library - 1	Library - 1	
Veterinary Services			
28		Veterinary Dispensary -1	
29		Trust- fodder facilities twice a week and in distress time	
Health			
30	private clinic	PHC	Allopathic - Private clinic- Trust- 1
31		Ayurvedic - private	
32		Allopathic- private clinic	
Marketing Facilities			
		Daily market - 1	Milk collection center - 1
Banking Facilities			
33		Dena Bank - 1	
Communication Facilities			
34	Sub post office -	Sub post office - 1	Sub post office - 1

Sr. No	Tunda	Mota Kandagara	Nana Bhadiya
	1		
35		Village Telephone -1	Village Telephone -1
Social Care Facilities			
36		Family Counseling Center - 1	
Other Facilities			
37		Dharmashala - 3	Dharmashala - 1
38		water troughs for animals	Water troughs for animals
39		Animal Shelters - 1	
Religious Facilities			
40		Temple - 15	Temple -
41	Mosque - 1	Mosque - 1	Mosque - 1
42	Burial Ground for Muslim - 1	Burial Ground for Muslim - 1	Burial Ground for Muslim - 1
43	Cremation Ground - 1	Cremation Ground - 1	Cremation Ground - 1
Community Organisations & Resources			
44	Play Ground - 1	Play Ground - 1	Play Ground - 1
45			Garden / Park - 1
46		Community Hall - 1	Community Hall - 1
47			Office of Trusts - 3
Drinking Water & Other Water Bodies			
48	River - 1	River - 1	River - 2
49		Tank - 1	Tank - 2
50	Pond - 1	Pond - 3	Pond - 1
51	Dug well - 1		Dug well - 1
52	Open well - 1	Open well - 1	Open well - 1
53			Pipe water - 1
Details of NGOs working in the Village			
54		VRTI- Education, Training, and Rehab work	Dhanvallabh Charitable Trust- Education, Drainage, Water supply, Construction of house sanitation etc.
55		Bidada Sarvodaya Trust- health	Mitra Mandal - Health services - Dispensary
56		Kandagara Visha Oswal Jain Mahajan- Education and development work	Jain Mahajan- Religious activities
57		Kandagara Panjarapole Jivadaya Trust- Animal shelter, water troughs, fodder	
Details of Development work in the village			
58	Housing scheme- 15 household benefited by VRTI and United way		Indira Awas Yojana / Sardar Awas Yojana - 14 household benefited in 1971

CHAPTER - 3

FINDINGS OF THE HOUSEHOLD SURVEY

3.1 BACKGROUND

The census and socioeconomic survey was carried out to estimate the number of households and assess their socioeconomic status. The information collected through the survey would assist in assessing the sources of livelihood and income levels.

3.2 METHODOLOGY

The census and socioeconomic profiling was carried out by using a structured questionnaire. Prior to initiating the survey, the questionnaire was piloted to identify the gaps and relevance of the queries in light of the project requirements. Accordingly the questionnaire was modified. The survey was carried out in 3 villages encompassing a population 4703 spread over 1027 household. The survey was also strengthened by conducting informal consultation with the local community, Panchayat members and other stakeholders. The number of household surveyed in the villages is shown in **Table 3.1**. Approximately 160 Houses in the Project Area Villages (PAV) were found locked and so the survey could not be conducted of these households. Refer **Annexure 3.5**. All the statistics presented in this chapter is based on the household survey carried out by the ECOSMART team.

Table 3.1: Number of household and population surveyed in PAV

SI. No.	VILLAGES	NO. OF HOUSEHOLD SURVEYED	POPULATION COVERED
1.	Tunda	317	1366
2.	Mota Kandagara	529	2473
3.	Nana Bhadiya	181	864
	Total	1027	4703

The data analysis has covered the needs and resources of different groups and individuals, including intra-household analysis and gender analysis.

Information on the village profile was also collected through a village schedule. The data includes information on demographic profile, occupation profile, cropping pattern, land use, village infrastructure, community health and common property resources.

The English and Gujarati version of the questionnaire and village schedule are included in the Report as **Annexure 3.1** and **3.2**.

The secondary sources of information included various documents published by the government of Gujarat such as district census handbook, statistical abstract, economic survey report and applicable laws/acts and policies etc. Relevant information from these documents was analyzed.

3.3 SOCIO-ECONOMIC PROFILE OF THE PROJECT AREA VILLAGES

3.3.1 Demography

Based on the household survey and census carried out in the Project affected villages it was found that Mota Kandagara had the highest population and Tunda the least.

The Sex Ratio (SR) serves as one of the indicators of Gender development particularly the health & social status of women. The overall sex ratio is 956 female per 1000 male which more than the national sex ratio of 933 female / 1000 male. When taken on a village wise basis the SR of Mota Kandagara is the highest (965 female /1000 males) followed by Tunda (960 female /1000 males) and trailed by Nana Bhadiya (924 female / 1000 males). The village wise break up of the surveyed population in terms of gender is shown in **Table 3.2**. The village wise listing of population data is given in **Annexure 3.3**.

Table 3.2: Village Wise Break-up of Population in terms of Gender

SL NO.	VILLAGE	MALE	FEMALE	TOTAL
1	TUNDA	698	668	1366
2	MOTA KANDAGARA	1258	1215	2473
3	NANA BHADIYA	449	415	864
	TOTAL	2405	2298	4703

The caste wise distribution of population in the PAV shows that the OBC (43 %) which comprise of mainly Muslim and the Rabari communities account for the

largest share of the total population. The General category accounts for 35% of the total population. Scheduled Caste category makes up 22% of the population. The SC comprise of the Dattaniya and Maheshwari communities.

When analysed on a village wise basis, Tunda has the largest OBC population (78%) in the form of Rabaris. Mota Kandagara has the maximum share of General population (50.9%). Nana Bhadiya has the maximum SC population (47%). **Table 3.3** presents caste distribution of the population in the PAV.

Table 3.3: Caste Wise break up of the population in PAV

SL NO.	VILLAGE	GENERAL	OBC	SC	Total
1	TUNDA	197 (14.42)	1072 (78.48)	97 (7.10)	1366
2	MOTA KANDAGARA	1259 (50.91)	681 (27.54)	533 (21.23)	2473
3	NANA BHADIYA	172 (19.91)	284 (32.87)	386 (44.68)	864
	TOTAL	1628 (34.62)	2037 (43.31)	1038 (22.07)	4703

Note: Numbers in parenthesis represent the percentage

The average family size in the PAV was found to be 3.56. A village wise break up of the different categories of households is presented in **Table 3.4**. It is pertinent to note that the nuclear family is the most prevalent type of family in the PAV and accounts for 72% of the total families surveyed. The village wise listing of household data is given in **Annexure 3.4**.

Table 3.4: Households in PAV in terms of family type

SL NO.	VILLAGE	NUCLEAR	JOINT	SINGLE	TOTAL
1	TUNDA	244	56	22	317
2	MOTA KANDAGARA	359	128	42	529
3	NANA BHADIYA	144	27	11	181
	TOTAL	747	211	76	1027

3.3.2 Vulnerability

Vulnerability has up to now been defined by either referring to a general condition of being exposed to potentially harmful events or by focusing on risk exposure and its impact on future poverty i.e. the risk of remaining or becoming poor (where poor usually refers to a well defined low level of consumption). Information on

vulnerability of household, therefore, has been collated on the basis of below poverty line household, women headed household, elderly couple above the age of 50 with no support & household with members who are mentally or physically challenged. The BPL families in the PAV were identified based on the possession of the BPL card issued by the Government. The number of families in the various vulnerable categories is presented in **Table 3.5**. The village wise listing of BPL, WHH, elderly couple data and Mentally and physically handicapped is given in **Annexure 3.6, 3.7, 3.9 and 3.11**.

Table 3.5: Vulnerable Families in PAV

SL NO.	VILLAGE	BPL	WHH	SENIOR CITIZENS	MC/ PC
1	TUNDA	103	52	99	33
2	MOTA KANDAGARA	149	82	181	32
3	NANA BHADIYA	70	25	61	20
	TOTAL	322 (31.35%)	159 (15.48%)	341 (33.2%)	85 (8.28%)

Note: Numbers in parenthesis represent the percentage

Out of 1027 households surveyed, 322 households fall in the BPL category. Out of 1027 households surveyed, 159-are women headed household out of which 31 belong to BPL category. 341 households come under the category of elderly persons above the age of 50 and with no support.

A total of 85 persons in the PAV are mentally or physically challenged. A village wise break up of the differently disabled persons is presented in **Table 3.6**

Table 3.6: Physically / Mentally Handicapped Families in PAV

SL NO.	VILLAGE	DEAF / DUMB	PARTIALLY BLIND	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED
1	TUNDA	2	5	18	8
2	MOTA KANDAGARA	3	2	26	2
3	NANA BHADIYA		2	15	2
	TOTAL	5	9	59	12

3.3.3 Literacy rate

The general literacy rate of the PAV is 64.34% which is more than the rural Gujarat average of 61.29% as well as the district level average of 59.79% (Kutch district).

The Female literacy level of the PAV is 58.24 % and the male literacy level is 73.38%. Both these values are higher than the district female literacy level of 48.59% and district male literacy level of 70.39%. Mota Kandagara ranks highest in female literacy, male literacy and overall literacy. A village wise break up of the literacy level is presented in **Table 3.7**. The village wise listing of literacy of the population is presented in **Annexure 3.3**

Table 3.7: Literacy Levels in PAV

SL NO.	VILLAGE	FEMALE	MALE	GENERAL
1	TUNDA	336 (50.29%)	405 (58.02%)	741 54.24%
2	MOTA KANDAGARA	761 (62.63%)	953 (75.75%)	1714 69.30%
3	NANA BHADIYA	241 (58.07%)	330 (73.49%)	571 66.08%
	TOTAL	1338 (58.24%)	1688 (73.38%)	3026 64.34%

Note: Numbers in parenthesis represent the percentage

A study of the village level data shows that Mota Kandagara has the maximum literacy level (69.30%). This is followed by Nana Bhadiya with a literacy level of 66.08%. Tunda has a literacy level of 54.25% which is lower than the district and state average. A sizeable one third of the population has attained primary level of education. It is pertinent to note that a very small fraction (3%) of the population has achieved a higher than matriculate level of education. **Table 3.8** shows the break up of the educational level in the PAV.

Table 3.8: Education Levels in PAV

EDUCATION	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL
GRADUATE & ABOVE	2 (0.15)	35 (1.42)	13 (1.50)	50 (1.06)
PROFESSIONAL QUALIFICATION	0 0.00	12 (0.49)	2 (0.23)	14 (0.34)
UNDER GRADUATE	4 (0.29)	11 (0.44)	1 (0.12)	16 (0.30)
HIGHER SECONDARY	19 (1.39)	55 (2.22)	10 (1.16)	84 (1.79)
SECONDARY	48 (3.51)	181 (7.32)	59 (6.83)	288 (6.12)
MIDDLE	127 (9.30)	366 (14.80)	160 (18.52)	653 (13.88)

EDUCATION	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL
PRIMARY	474 (34.70)	903 (36.51)	292 (33.80)	1669 (35.49)
JUST LITERATE	67 (4.90)	151 (6.11)	34 (3.94)	252 (5.36)
ILLITERATE	625 (45.75)	759 (30.69)	293 (33.91)	1677 (35.66)
TOTAL	1366	2473	864	4703

Note: Numbers in parenthesis represent the percentage

3.3.4 Migration

The survey revealed that younger members of about 152 households had migrated to neighbouring districts and to Mumbai for business; work in the service sector and for higher studies. Out of the 152 households, permanent migration has been recorded in case of 117 households. It is pertinent to clarify here that permanent migration means wherein the migrated family members stay in the city/town of their work and return to their village during vacations, festivals and family contingencies. The family elders stay back in the village to tend to their lands and other assets in the village. Seasonal migration is observed in case of 35 households. The majority of this migration is not to do with pursuing a livelihood but for higher education. Therefore, it is not a “migration” in a strict sense. The village wise migratory pattern is given in **Table 3.9**.

Table 3.9: Out Migration in PAV

SL NO.	VILLAGE	PERMANENT	SEASONAL	TOTAL
1	TUNDA	37	11	48
2	MOTA KANDAGARA	68	21	89
3	NANA BHADIYA	12	3	15
	TOTAL	117	35	152

3.3.5 Occupational Pattern

As per the census definition of work; “work is participation in any economically productive activity” and “main worker is a person involved in work for more than 183 days”. Those who have not been involved in work for more than a year are termed as non workers and those involved in work for less than 183 days is termed as a marginal worker.

According to the survey, 1097 (23.33%) villagers in PAV may be classified in the “main worker” category. More than 73% of the population is not engaged in any economic activity. Village wise break up of working population in the PAV is shown below in **Table 3.10**.

Table 3.10: Break up of population in PAV in terms of workers

VILLAGE	Non Workers	Marginal Workers	Main Workers	Total
TUNDA	979 (71.67%)	38	349 (25.55%)	1366
MOTA KANDAGARA	1835 (74.20%)	95	543 (21.96%)	2473
NANA BHADIYA	629 (72.80%)	30	205 (23.73%)	864
TOTAL	3443 (73.21%)	163	1097 (23.33%)	4703

Note: Numbers in parenthesis represent the percentage

Of the total number of non workers in the PAV (3443) approximately 377 (8%) are reported to be unemployed. Mota Kandagara being the largest village has the maximum number of unemployed people (220). **Table 3.11** presents the break up of non workers in the PAV.

Table 3.11: Break up of non workers in PAV

	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL	% of total population
Unemployed	82	220	75	377	8.02
House wife	256	493	188	937	19.92
Handicapped	16	20	12	48	1.02
Old & retired	100	222	51	373	7.93
Non school age children	118	192	69	379	8.06
School age children not going to school	104	128	40	272	5.78
Student	303	560	194	1057	22.48
TOTAL	979	1835	629	3443	

The occupational data together with a study of the usual activity data revealed that approximately 40% of the working population is engaged in agricultural activity and 60% of the working population in non agricultural activity. **Table 3.12** presents the numbers in terms of main workers and marginal workers in the PAV.

Table 3.12: Occupational pattern of workers in PAV

	TUNDA		MOTA KANDAGARA		NANA BHADIYA		TOTAL
	MW-1	MW-2	MW-1	MW-2	MW-1	MW-2	
Agricultural Workers							
Agricultural labourers	37	2	112	27	85	16	22.14
Cultivator	8	3	91	7	12	2	9.76
Allied agricultural activity	60	0	31	1	6	0	7.78
							39.68
Non Agricultural Workers							
Non Agricultural labour	111	26	117	39	37	9	26.90
Trade & commerce	41	1	43	4	16	0	8.33
Service	90	5	147	16	48	2	24.44
Others	2	1	2	1	1	1	0.63
TOTAL	349	38	543	95	205	30	60.3

Note: Numbers in parenthesis represent the percentage

MW-1- Main Worker

MW-2 – Marginal Worker

3.3.6 Livestock Population

As per the survey, the total livestock population recorded in the PAV is 3373 out of which cows account for the maximum share (34%). Buffaloes account for the next highest population (22%). Camel, ox, goat and sheep make up the rest of the cattle population. The survey also revealed that Tunda has the maximum livestock population of which camel form a major component. Nana Bhadiya has a negligible cattle population in comparison to the other project area villages. **Table 3.13** presents the different livestock owned by the households in the project area villages.

Table 3.13: Livestock in Project area villages

	Cow	Buffalo	Ox	Camel	Goat	Sheep	Poultry	Ass	Total
TUNDA	369	273	9	437	194	268	55	227	1832
MOTA KANDAGARA	713	422	140	9	69	6	10	17	1386
NANA BHADIYA	53	61	23	1	14	2	0	1	155
TOTAL	1135	756	172	447	277	276	65	245	3373
% OF LIVESTOCK	33.65	22.41	5.10	13.25	8.21	8.18	1.93	7.26	

The survey also revealed that out of 824 families owning livestock 288 (28%) own cows as livestock followed by families owning buffaloes (13%). **Table 3.14** presents the break up of the number of families owning livestock in the villages.

Table 3.14: Ownership pattern of Livestock in Project area villages

HOUSEHOLD OWNING LIVESTOCK									
Village	Cows	Buffalo	Ox	Camel	Goat	Sheep	Poultry	Ass	Total
TUNDA	76	42	4	23	30	10	1	20	206
MOTA KANDAGARA	176	85	52	7	8	2	1	3	206
NANA BHADIYA	36	11	7	1	8	1	0	1	412
TOTAL	288	138	63	31	46	13	2	24	824
% OWNING LIVESTOCK	28.04	13.44	6.13	3.02	4.48	1.27	0.19	2.34	

3.3.7 Land Holding Pattern

The maximum average land holding size among the households is in Mota Kandagara (2.82 acres/family). This is followed by Nana Bhadiya where average land holding is 2.71 acres/family. The average land holding size among the households in Tunda is the lowest in the PAV (0.91 acres/family).

742 (72.25%) households are title holders. Majority of the agricultural land in the PAVs is fragmented and distributed among the marginal farmer (land holding size less than 2.47 acres). 75.88% of the household belong to marginal class, where 10.11% is small farmers (2.47 to less than 4.94 acres), 10.11% belong to semi medium (4.94 to less than 9.88 acres) category of land holders, 3.2% to medium (9.88 to less than 24.7 acres) category of land holders and 0.67% belonging to large (more than 24.7 acres) category of land holders. **Table 3.15** shows the land holding distribution among the household in PAV.

Table 3.15: Land holding pattern of household in PAV

VILLAGE	marginal farmer <2.47 acres	small farmer 2.47- 4.94 acres	Semi Medium 4.94- 9.88 acres	medium farmer 9.88 - 24.7 acres	large farmer > 24.7 acres	total
TUNDA	224	14	14	0	1	253
MOTA KANDAGARA	257	50	44	18	2	371
NANA BHADIYA	82	11	17	6	2	118
TOTAL	563 (75.88%)	75 (10.11%)	75 (10.11%)	24 (3.23%)	5 (0.67%)	742

3.3.8 Land Use Pattern

1400 acres of land in the PAV were under cultivation. **Table 3.16** shows the trend of land use pattern in the Project Area Villages. 445 acres of cultivated land is un-irrigated and 954.26 acres of cultivated land is irrigated. Bore wells form the source of irrigation. Mota Kandagara has largest amount of land under cultivation. Nana Bhadiya has the next highest land followed by Tunda.

Table 3.16: Land use pattern of the Villages

SL NO.	VILLAGE	CULTIVATED LAND IN ACRES		TOTAL
		IRRIGATED	UNIRRIGATED	
1	TUNDA	54.75	64.09	118.84
2	MOTA KANDAGARA	639.51	252.6	892.11
3	NANA BHADIYA	260	129	389.00
	TOTAL	954.26	445.69	1399.95

3.3.9 Cropping Pattern

Cotton and wheat are the main crops grown in this region. Moong dal, Jawar and Bajra are subsidiary crops in this region. Apart from these crops some of the households also carry out Chiku and Mango farming to a certain extent.

3.3.10 Source of Drinking Water

Wells, ponds and piped water supply are the main sources of drinking water. Out of the 1027 households in the PAV majority (84%) 862 have their own source of water and the balance 16% use community sources. **Table 3.17** below shows the household level ownership pattern of drinking water supply in PAV.

Table 3.17: Ownership pattern of Drinking water supply in PAV

	OWN	COMMUNITY	TOTAL
TUNDA	274	43	317
MOTA KANDAGARA	438	91	529
NANA BHADIYA	150	31	181
TOTAL HOUSEHOLDS	862	165	1027

3.3.11 Houses and Infrastructure

Most of the houses (85%) in the PAV are “owned” by the resident population. The survey indicates that the incidence of owned houses is highest in Tunda, followed

by Mota Kandagara and Nana Bhadiya. **Table 3.18** presents the owner / tenant break up of the houses in the villages.

Table 3.18: House ownership pattern in PAV

SL NO.	VILLAGE	OWNER	TENANT	TOTAL
1	TUNDA	298	19	317 (94.01)
2	MOTA KANDAGARA	431	98	529 (81.47)
3	NANA BHADIYA	144	37	181 (79.56)
	TOTAL	873	154	1027 (85.00)

A total of 76 shops are there in the PAV. Mota Kandagara has the maximum number of shops followed by Tunda and Nana Bhadiya. **Table 3.19** presents the ownership pattern of the shops and commercial establishments in the PAV.

Table 3.19: Shop ownership pattern in PAV

SL NO.	VILLAGE	OWN	RENTED	TOTAL
1	TUNDA	28	1	29
2	MOTA KANDAGARA	27	3	30
3	NANA BHADIYA	13	4	17
	TOTAL	68	8	76

3.3.12 Income Levels

Farm based income is not the primary source of income in the project area villages. Average annual family income in the PAV is about Rs.44,267/-. Average annual family income for Mota Kandagara village was found to be maximum and amounted to the tune of Rs.45,603/-. The average annual income for Nana Bhadiya was Rs.44,101/-and Tunda was Rs.44,077/-.

To compare the income range of the Household in different villages, the household are categorized in four different annual income classes. The different income classes were created by differentiating the highest annual family income to the lowest of the same and then dividing the difference value in four even groups. The annual family income was assigned to a particular class and the distribution of the household across the income class was compared.

There exist disparities in the income level, only a few household in the project area village earns an amount more than 3.2 lakhs per annum. Majority (91.8%) of the household is falling under the first category of income classification (Rs.< 0.80

Lakhs). The following **Table 3.20** shows household falling under different income category classes.

Table 3.20: Distribution of household in different income category classes

	< 0.80 Lakhs	>0.80 - 1.6 Lakhs	>1.60 - 2.40 Lakhs	>2.40 - 3.20 Lakhs	> 3.20 Lakhs	Total
Tunda	302	9	2	1	3	317
Mota Kandagara	480	38	5	1	5	529
Nana Bhadiya	161	15	5	0	0	181
Total	943	62	12	2	8	1027
% of Households	91.82	6.04	1.17	0.19	0.78	

(Income range in Rs.)

Since maximum concentration of household is observed in the first income category class, the range was further split into four equal segments (income classes). It was observed that out of 92% of the household, 33% falls in the income category class ranging less than Rs 21000, 46.75% is in the range class of Rs 21000 to Rs. 42000. The following **Table 3.21** shows the percentage distribution of 616 household in various income category classes.

Table 3.21: Household Distribution in income range of Rs.21, 000 - Rs.80, 000

	< 0.21 Lakhs	>0.21 - 0.42 Lakhs	>0.42 - 0.66 Lakhs	>0.66 - 0.80 Lakhs	Total
TUNDA	51	169	67	15	302
MOTA KANDAGARA	109	38	5	1	153
NANA BHADIYA	45	81	25	10	161
Total	205	288	97	26	616
% of Families	33.28	46.75	15.75	4.22	

3.3.13 Expenditure Pattern

The survey revealed that annual expenditure per Household is maximum in Mota Kandagara (Rs. 38430/-), followed by Nana Bhadiya (Rs. 37399/-), and Tunda (Rs. 35766/-). It was observed that food rations accounted for a major share of the total annual expenditure (30%). Transport (12%) and Water and electricity bills (10%) also accounted for a sizeable share of expenditure. **Table 3.22** presents the annual household expenditure pattern in PAV.

Table 3.22: Annual Household Expenditure Pattern in PAV

	TUNDA		MOTA KANDAGARA		NANA BHADIYA	
	ANNUAL EXP.	% Of TOTAL EXP	ANNUAL EXP.	% Of TOTAL EXP	ANNUAL EXP.	% Of TOTAL EXP
Food	10568	29.55	12191	31.72	11003	29.42
Cooking fuel	1940	5.42	2786	7.25	3107	8.31
Clothing	3040	8.50	2708	7.05	2407	6.44
Alcohol & Tobacco	886	2.48	566	1.47	665	1.78
Health	1082	3.03	1434	3.73	1282	3.43
Education	554	1.55	897	2.33	720	1.93
Transport	4060	11.35	3715	9.67	4378	11.71
House Repair	887	2.48	885	2.30	667	1.78
Electric & Water Bill	4038	11.29	4159	10.82	3812	10.19
Social Function	2054	5.74	2014	5.24	1666	4.45
Purchase of Durables	2480	6.93	2751	7.16	2885	7.71
Miscellaneous	4177	11.68	4324	11.25	4807	12.85
Total	35766	100.00	38430	100.00	37399	100.00

3.3.14 Status of Health

The main diseases prevalent in the PAV are Asthma, joint pain, diabetes, cardiac ailments and blood pressure. Occurrences of Malaria, Tuberculosis, skin and HIV have also been recorded in the region. Apart from these the common ailments like cold, cough, fever and stomach ailments were also recorded in the PAV. The general perception of the surveyed population is that the poor quality of drinking water gives rise to a majority of the ailments. A majority of the population depend on private doctors and clinics for treatment.

Table 3.23: Occurrence of diseases among Households in the PAV

	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL
Asthma	14	30	3	47
Joint pain	7	6	25	38
Diabetes	1	6	2	9
Heart	1	6	2	9
Blood Pressure	1	3	1	5
Malaria	0	4	0	4
Tuberculosis	1	2	1	4
Skin	1	1	0	2
HIV	0	0	2	2
Total	26	58	36	120

3.3.15 Development Projects

Gujarat government in order to uplift the economic condition of the marginalized and the under privileged section of the rural society, has initiated a number of development projects. Different public distribution and rural development schemes (RDS) were running in the PAV. All these schemes were practically aimed at benefiting the resident households. Out of the various RDS in operation in the state, the households of the PAV have benefited from housing schemes like the Sardar Awas Yojana and the Indira Awas Yojana. These schemes have been in operation since the Bhuj earthquake of 2000. A majority 926 (90%) of the households have benefited from these schemes in the PAV. **Table 3.24** shows the distribution of households benefiting from development schemes in the PAV.

Table 3.24: Distribution of household benefiting from development schemes

	household receiving PDS		household receiving RDS		Total
	Owner	Tenant	Owner	Tenant	
Tunda	225	9	68	0	302 (95.27)
Mota Kandagara	330	60	62	0	452 (85.44)
Nana Bhadiya	118	31	23	0	172 (95.03)
Total	673	100	153	0	926 (90.17)

3.3.16 Status of woman in PAV

As already mentioned, the literacy level among women in the PAV is low but better than the district and state average. The heartening factor of these numbers is that of the total 1338 women who are literate 465 (20% of total women) are students and are still in the process of completing their education. Measure to encourage women to complete more than primary education may be employed in the PAV.

Table 3.25: Literacy Level among Women in PAV

EDUCATION	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL
GRADUATE & ABOVE	1 (0.15)	13 (1.07)	6 (1.45)	20 (0.87)
PROFESSIONAL QUALIFICATION	0 (0.00)	3 (0.00)	2 (0.00)	5 (0.22)
UNDER GRADUATE	0 (0.00)	4 (0.33)	1 (0.24)	5 (0.22)
HIGHER SECONDARY	2 (0.30)	16 (1.32)	3 (0.73)	21 (0.91)
SECONDARY	12(1.80)	47 (3.88)	16 (3.87)	75 (3.26)
MIDDLE	45 (6.74)	166 (13.70)	51 (12.35)	262 (11.40)

EDUCATION	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL
PRIMARY	244 (36.53)	434 (35.81)	138 (33.41)	816 (35.51)
JUST LITERATE	32 (4.79)	78 (6.44)	24 (5.81)	134 (5.83)
ILLITERATE	332 (49.70)	454 (37.46)	174 (42.13)	960 (41.78)
TOTAL	668	1215	415	2298

The study revealed that women participation in economic activities is almost negligible. The percentage of workers among women is merely 7 percent. The majority of those who are gainfully employed are engaged in non agricultural labour followed by allied agricultural activities. Most of the females are restricted to the household chores (41%). As the study revealed, women are engaged in household work ranging from collecting potable water, cooking and child rearing to helping the male members either in running their petty shops or in agriculture field.

Table 3.26: Occupation Pattern among Women in PAV

	TUNDA	MOTA KANDAGARA	NANA BHADIYA	TOTAL	% OF TOTAL WOMEN
WOMEN NON WORKER					
unemployed	44	92	33	169	7.35
House wife	256	493	188	937	40.77
Handicapped	7	7	6	20	0.87
old & retired	58	135	28	221	9.62
non school age children	57	91	25	173	7.53
school age children not going to school	49	78	25	152	6.61
student	138	237	90	465	20.23
WOMEN WORKER					
Marginal worker	16	25	3	44	1.91
Main worker	43	57	17	117	5.09

3.4 IMPACTS DUE TO LAND ACQUISITION

Private acquisition of land is taking place only in Tunda village. As per administrative records 68 title holders are losing parts of their land. The total private land acquisition amounts to 181 Ha.

The table below summarizes the land requirement in each village:

Table 3.27: Village wise land requirement by the project

	PRIVATE	GAUCHAR	GOVT. / WASTE	FOREST	MSEZ	TOTAL
TUNDA	181	12	88	0	218	499
MOTA KANDAGARA	0	37	0	130	0	167
NANA BHADIYA	0	0	160	0	0	160
TOTAL	181	49	248	130	218	826

Private land acquisition for the Project has followed the procedures as prescribed under the Land acquisition Act, 1894 with due thrust on consent mechanism wherein land prices were agreed with the land owners in line with the prevailing markets rates for agricultural land.

CGPL organized a series of village and district level meetings with the affected persons and other stakeholders including the Village Panchayats and District administration. These meetings and negotiations with the private land owners culminated in fixing a land compensation rate of Rs. 6 Lakhs per acre (about Rs. 1.5 Million per hectare). This rate is higher than the land compensation rate of Rs. 1 Lakh per acre fixed by the State Government.

The above consent approach adopted by CGPL has expedited the Land acquisition process and ensured smooth transfer of land required for the Project.

In Tunda village out of the total 317 households covered, 253 (80%) households own lands and out of these 253 households, 241 do not have any earnings from their lands. Moreover income from agriculture is not the primary source of income for the private land owners.

Only 12 out of the 253 households have an annual agricultural income ranging from Rs. 5000 to Rs. 1 Lakh. It is also worth mentioning that the private land parcels that were acquired vary in size from 0.7 acres to about 20 acres.

Thus land compensation rate of Rs. 6 lakhs per acre translates into a sale price of Rs. 4 lakhs to 1.2 crores for the private land owners. This is an additional income that the land losers could fruitfully utilize by investing in their businesses and even if they put the money in a bank fixed deposit at an interest rate of 8% compounded

annually for a duration of one year, the monthly earnings would range from a minimum of Rs. 4500/- to a maximum of Rs. 80,000/- depending upon the amount invested.

About 72% of the households owning lands in Tunda have an annual income which is below Rs. 42,000/-, the compensation amount received from land sale definitely has a positive impact on the living standards of the land losers if it is judiciously utilized or invested. If the compensation amount is invested in a fixed deposit, the monthly interest earned would be more than the household's pre project monthly income.

Prior to the project, the villagers of Tunda depended upon the government lands for grazing grounds and fodder for their cattle. Following land acquisition, the Government lands have been transferred to CGPL. The loss of access to the grazing grounds and fodder for the livestock had the possibility of adversely affecting the livelihoods of the villagers owning livestock and whose incomes depended upon sale of milk and milk products.

CGPL in consultation with the village community and panchayat has decided to provide fodder to the village livestock and also planned to construct an animal shelter (Gaushala) with provision for drinking water, fodder and shelter for the village cattle. This initiative of CGPL has been welcomed by the villagers of Tunda. Availability of fodder and other facilities in the animal shelter will further augment the earnings of the cattle owners and encourage the involvement of the villagers in the management and upkeep of the Gaushala.

It can be safely concluded that land acquisition has had marginal impact on the land losers and the village community and the same have been duly mitigated by means of cash compensation as per market value for private lands and augmentation of village infrastructure with the participation of the local community.

CHAPTER 4

COMMUNITY NEEDS ASSESSMENT STUDY

4.1 INTRODUCTION

The needs assessment component of the assignment was guided by the site conditions, prevalent social customs, sentiments and beliefs of the local community and an independent assessment of the existing infrastructure of the village. The objective of the needs assessment was to obtain the stakeholders' perspective on the project activities and expectations from the project activities in terms of possible economic linkages, community welfare and infrastructure augmentation. The data required for the needs assessment was collected through the structured questionnaire developed for household survey and village schedule. The primary data generated collected through the questionnaires and consultations with the local community provided the required inputs for an objective needs assessment.

4.2 METHODOLOGY

The questionnaire based survey covered about 1027 households in the three villages. The opinions of the surveyed households were collected in terms of social and economic standing, opportunities and apprehensions in light of project activity, existing village infrastructure and areas wherein they feel improvement/assistance is required.

In addition, informal consultations were held with the Panchayat members, school teachers and village elders to get an idea about the social fabric of the village, immediate infrastructural needs of the village and type of support required from the district administration and the project promoters to improve the living standards of the village community and cope with the changes that are associated with industrialization.

Survey Data analysis and inference drawn from the informal consultation revealed two distinct components wherein interventions would meet the village and stakeholders requirements.

- Physical Infrastructure
- Livelihood opportunities and Market linkages

4.2.1 Physical Infrastructure

The physical infrastructure wherein the community felt project's intervention and support would be beneficial were:

- Water supply,
- Sanitation,
- Community and Reproductive Health,
- Transportation and Connectivity,
- Education – school building and educational aids – computers etc.,
- Water troughs and animal shelters
- Veterinary Services
- Repair and renovation of Common property resources

4.2.2 Livelihood Opportunities And Market Linkages

The livelihood opportunities and market linkages wherein the villagers felt that assistance and training would assist in improving their income levels and give access to better facilities are:

- Employment
- Services
- Entrepreneurship – Contracts, construction material supply
- Fodder supply- catering to project and neighboring villages-
- Dairy Cooperative- in light of township
- SHG for tie and dye products
- Market linkage augmentation for handicrafts

4.3 FINDINGS

The findings of the need assessment exercise carried out in the three villages are discussed in the next section. Based on the findings a road map for infrastructure improvement and community initiatives has been proposed.

The infrastructural requirements and community aspirations of economic advancement and village development in light of project activities and participation in the project are given in Table 4.1 and 4.2. The priorities accorded by each village on the infrastructure component and community aspirations are also covered.

Table 4.1: Infrastructure Requirements of the local Community

PRIORITY INFRASTRUCTURE	TUNDA	MOTA KANDAGARA	NANA BHADIYA
Priority 1	Fodder for Livestock	Drinking Water Supply	Drinking Water Supply
Priority 2	Drinking Water Supply	Community Toilet block	Community and Reproductive Health
Priority 3	School infrastructure	School infrastructure	Transportation Facility
Priority 4	Animal Shelters	Community and Reproductive Health	Desilting of ponds and rejuvenation of dug wells
Priority 5	Transportation Facility	Transportation Facility	Ambulance services
Priority 6	Restoration and rejuvenation of dug wells	Desilting of ponds and rejuvenation of wells	-
Priority 7	Street Lighting	Street Lighting	-
Priority 8	ITI	-	-

The livelihood options preferred by the respondents included employment in the project, providing contract services, training in income generation activities and Self help group activities. About 65% of the surveyed population expressed their desire to be employed in the project. About 18% of the respondents wanted to provide contract based services in the project activities.

Table 4.2: Preference of respondents on Livelihood options

VILLAGE	EMPLOYMENT IN PROJECT	PROVIDING CONTRACT SERVICES	TRAINING FOR INCOME GENERATION	SHG FORMATION	TOTAL
TUNDA	199 (62.78)	62 19.56	51 (16.09)	5 (1.58)	317
MOTA KANDAGARA	345 (65.22)	88 (16.64)	88 (16.64)	8 (1.51)	529
NANA BHADIYA	125 (69.06)	34 18.78	22 (12.15)	-	181
TOTAL	669 (65.14)	184 (17.92)	161 (15.68)	13 (1.27)	1027

4.4 ROAD MAP

The infrastructure needs and demands of the local community could be categorized as immediate interventions and long term interventions. The immediate interventions would not only create a good will about the project but also pave way for ensuring participation of the local community in the project CSR activities and later on lead to ownership of assets by the community after CSR intervention.

4.4.1 Infrastructure Augmentation- Short term Interventions

The immediate interventions in terms of infrastructural facilities could include:

Health

1. Community and reproductive health is an important sector wherein CGPL could provide services by organizing awareness campaigns on communicable and sexually transmitted diseases, endemic diseases, fluorosis and nutrition and old age related ailments, health camps and maternity and pediatric health checkups. Awareness campaign on HIV –AIDS should also be conducted not only in the project affected villages but also in the other neighbourhood villages.
2. A mobile medical van with a Doctor and Nurse could be arranged by CGPL to cater to the villages in the project area. Initially the health and medicare services that could be provided are OPD, Ante-natal/post-natal services, identification of difficult pregnancy and referral for institutional care, Immunization- Mother & children, BP examination, First Aid, Distribution of Iron Folic tablets, Vit-A Prophylaxis, Treatment of mal-nutrient cases, etc.
3. Ambulance services to cover all the three villages.
4. Community toilet Blocks at strategic locations in the village settlements especially in Mota Kandagara would greatly improve the local environs and substantially reduce open defecation in and around the village.

Education

5. School infrastructure needs to be improved in terms of addition of class room, laboratory facilities, computer labs, drinking water and functional toilets and teaching aids. This would be an important area of intervention in Mota Kandagara and Tunda.
6. CGPL could provide a bus service to these three villages connecting to Mandvi and Mundra. This would go a long way in creating goodwill among the villagers. This

service would also benefit the students traveling to Mandvi and Bhujpur for higher education.

7. Veterinary services in the villages.
8. Animal shelters and water troughs for cattle.

4.4.2 Infrastructure - Long term support

1. **Potable water supply** - CGPL would explore the feasibility of providing potable drinking water to the three villages. About six lakhs LPD of water supply would be required for the three villages.
2. De-silting of ponds, tanks and rejuvenation of dug wells in Mota Kandagara and Nana Bhadiya will also ameliorate the water scarcity problems of these villages.
3. Roof top rain water harvesting and pond management.
4. **Electrification** - Street lighting by using solar panels would be an economical investment in all the villages.
5. **Solid waste management in the villages** - It is imperative that in the coming years with more development and increase in population of the villages, more municipal waste would be generated. It is important that a waste management mechanism is put in place and integrated to the waste management and disposal system proposed for the Township.
6. Access to referral hospital to be set up in Project Township.

4.4.3 Livelihood options and income generating activities

Livelihood options and income generating activities that could be implemented during the project development phase include:

- Employment to eligible persons as per company policy and rules
- Explore possibility of giving small contracts for material supply, transportation
- Business opportunities in township market complex

Long term sustainable income generating activities whose feasibility could be studied and piloted in the project villages:

1. **Fodder production through Hydroponics:** The hydroponics and greenhouse technologies enable production of high protein green fodder in small spaces throughout the year. Grain seeds such as barley, oats, wheat, rye or sorghum, are germinated into sprouts that are grown on to form a thick mass of green feed

with interwoven roots high in both nutrients and enzymes. Hydroponics technologies promote fast production with a growing cycle typically ranging from 7-10 days under controlled conditions in enclosed structures, often in locations where harsh environmental conditions are prohibitive for plant growth. Over this duration, the green feed grows to a height of approximately 250-300mm. This technology of fodder production has been implemented in Gujarat.

CGPL would explore the possibility of establishing a 1000 Kg per day capacity unit in Tunda village in consultation with the villagers and monitor its functioning and cost effectiveness over a period of one year and if found sustainable it could be replicated. These units operate on solar as well as wind power. Such green houses spread over an area of about 300 to 500 square feet on an average produce 800 to 1000 Kg of green fodder and water requirement is about 3 litres to produce 1 kg of fodder. Smaller modules of 120 Kg per day fodder capacity could also be explored and established. Hydroponics fodder has been found to increase milk yields in dairy cows appreciably.

2. **Provision of Milch cattle:** CGPL could explore providing the interested affected persons in Tunda with hybrid milch cows and buffaloes at subsidized rates or free of cost to vulnerable households. The sale of milk would substantially supplement the income of the households affected due to the project. As part of its CSR initiatives, CGPL could also cover Mota Kandagara and Nana Bhadiya villages wherein milch cattle at subsidized rates could be provided to vulnerable households.
3. **Dairy cooperative:** The milk demand in the project area would go up considerably in a span of two to three years in light of the project activities and the development of the project township. CGPL in discussion with the villages in the project influence area and with the technical assistance of Gujarat Cooperative Milk Marketing Federation (GCMMF) more popularly recognized as AMUL could work out the feasibility of a milk cooperative and carry out capacity building and training of the participating villages in managing the cooperative. This initiative would be a forward linkage to the fodder production activity and milk production in the project area villages.

- 4. Industrial Training Institute:** CGPL could facilitate the establishment of an industrial training (ITI) centre that provides training in various technical trades like welding, electrical works, motor mechanics, plumbing etc. Such trades would not only generate employable manpower for the project but also for the neighbouring industries. The trained manpower could also get employment in the service industry.
- 5. Self help group for manufacture and marketing of Bandhej (Tie and Dye) products:** The women of Mota Kandagara are involved in tying activity of the fabric. A village level SHG could be envisaged wherein with financial support and training assistance, this group could be mobilized for manufacture of finished products. A lucrative market is available for the bandhej products in Gujarat and outside Gujarat. The market linkages could be explored and developed under the capacity building component.
- 6. Embroidery, marketing and sales unit for Rabari community of Vandh:** Vandh hamlet is internationally famous for its embroidery works. CGPL in consultation with the artisans, embroidery workers and entrepreneurs involved in the embroidery works could explore the possibility of providing a cooperative production unit, marketing and sales counter near the National highway or at any urban location like Mandvi, Bhuj or at Koday pool that would not only augment their earnings but also cater to a bigger clientele in terms of local and foreign tourists visiting these units.

ANNEXURE 3.1: QUESTIONNAIRE

ID CODE	DIST	BLOCK	VILLAGE	F.C.	SCH. SL. NO.

SOCIO-ECONOMIC CENSUS STUDY: BASELINE HOUSEHOLD SURVEY

1. KEY INFORMATION:

i) Village: ગામ	iii) Hamlet: મ્હોલા	v) Taluka તાલુકા
ii) Gram Panchayat: ગ્રામ પંચાયત	iv) Block: બ્લોક	vi) District જિલ્લો

2. IDENTIFICATION DETAILS:

i) Name of the Respondent: ઉત્તરદાતાનુ નામ	v) Caste: જાતિ
ii) Father's/Husband's Name: પિતા/પતિનું નામ	vi) Sub Caste: ઉપ જાતિ
iii) Religion: ધર્મ	vii) Type of Family: પરિવારનું પ્રકાર
iv) Since when have you been living in the village? આ ગામ મા કયારથી રહે છે	viii) Mother Tongue: માતૃભાષા

Religion: 1) Hindu 2) Muslim 3) Christian 4) Buddhist 5) Sikh 6) Parsi 7) Jain 8) Others (Specify)
 Caste: 1) General 2) SC 3) ST 4) OBC 5) Others (Specify)
 Type of Family: 1) Joint Family 2) Nuclear Family 3) Single

3. FAMILY STATUS: પરિવારની સ્થિતિ

i. Below Poverty Line (BPL) ગરીબીની રેખાની નીચે	ii. Beneficiary of Public Distribution Schemes (PDS) પીડીએસ થી ફાયદા થયો	iii. Beneficiary of other Rural Development Schemes અન્ય ગ્રામીણ વિકાસ યોજનાનો લાભ લેલો

(Put 1 if possess the card, 2 if eligible but do not possess the card, 3 if not eligible to possess the card)

4. DOCUMENT VERIFICATION:

i. 7/12 Extract ખસરા નં.	ii. Ration card No રાશન કાર્ડ નં
iii. Electricity bill વિજળી બિલ નં	iv. Voter's ID card મતદાન કાર્ડ નં

5. HOUSEHOLD IDENTIFICATION

i. Type of land ownership / occupation જમીન ની માલિકી/ધંધો જમીન નો માલિક / વ્યવસાય	ii. If Title Holder (1. Owner 2. Lessee) (૧. માલિકી, ૨. ભાડે)
iii. If Non Title Holder (1. Tenant 2. Sharecropper 3. Squatter 4. Encroacher)	iv. If Usufruct Right Holder (1. Fisherman 2. Toddy Tapper 3. Blacksmith 4. Carpenter 5. Handicraftsman 6. Agricultural labourer 7. Salt pan worker 8. Charcoal manufacturer 9 Other)

6. DETAILS OF RESIDENTIAL HOUSE/BUSINESS UNITS/AMENITIES:

i. Name of the Title Holder જમીન નો માલિક નું નામ			
ii. Census House No. ઘરના નં	xi. Type of Floor: તળિયા નો પ્રકાર	xx. Cow shed (1.Yes 2.No) ગમાડ	
iii. Ownership: માલિકી	xii. Type of outer wall: બહારની દિવાલ	xxi. Electric connection (1.Yes 2.No) વિજળી કનેક્શન	
iv. Ownership Period (in years): કેટલા સમય થી રહે છે	xiii. Type of Roof: અગાશીનો પ્રકાર	xxii. Type of Connection કનેક્શનનો પ્રકાર	
v. Condition of House: ઘરની સ્થિતિ	xiv. No of Windows/doors દરવાજા/બારીની સંખ્યા	xxiii. Average Monthly Bill (Rs.) અદાજીત મહિનાનો બિલ	
vi. Annual Tax Amount (Rs): વર્ષનો ટેક્સ	xv. Waste water outlet (1.Yes 2.No) ગટર લાઈન	xxiv. Shop/Show Room/Workshop (1.Yes 2.No) દુકાન/સો રુમ/વર્કશોપ	
vii. Area of plot (sq ft): પ્લોટનો એરીયા	xvi. Availability of Toilet (1.Yes 2.No) શોયાલય છે	xxv. Ownership: માલિકી	
viii. Construction area (sq ft): ચોરસ માપ	xvii. Placement of Toilet (1. Inside, 2. Outside) શોયાલય ની જગ્યા (૧. અંદર, ૨. બહાર)	xxvi. Location: જગ્યા	
ix. No of floors: કેટલા માળ	xviii. Availability of Bathroom (1.Yes 2.No) બાથરૂમ છે	xxvii. Any other immovable property (Specify) અન્ય સ્થાયી મિલકત	
x. Total rooms: કુલ રૂમ	xix. Placement of Bathroom (1. Inside, 2. Outside) બાથરૂમ ની જગ્યા (૧. અંદર, ૨. બહાર)		

iii. Ownership : (1) Own; (2) Rented; (3) Others v. Condition of House: (1) Good; (2) Average; (3) Poor
 xi. Type of Floor : (1) Earthen; (2) Cement; (3) Tile; (4) Marble; (5) Others
 xii. Type of outer wall : (1) Earthen wall; (2) Brick wall; (3) Stone Wall; (4) Others
 xiii. Type of Roof : (1) Thatched; (2) RCC; (3) Tile; (4) Asbestos; (5) Tin; (6) Others

7. SOURCE OF DRINKING WATER: પીવાના પાણીનું સ્રોત

i. Type of sources: ; સ્રોતનું પ્રકાર		iii. Quality of drinking water: પીવાના પાણીના ગુણવત્તા	
ii. Details of source: સ્રોતના વિગત		iv. Distance of source of water from house (m): ઘરથી સ્રોતના વચ્ચેનો અંતર	

Type of Source : (1) Community; (2) Own
 Details of Source : (1) Open Well; (2) Tube Well; (3) Tap; (4) Tank-Pond; (5) River; (6) Canal; (7) Any Other (Specify)
 Quality of drinking water : (1) Good; (2) Poor; (3) Bad

8. Family Background (Include members who stay permanently)

Sl. No.	Name (Start with head of House Hold) નામ (ઘરના મુખ્ય વ્યક્તિથી શરૂઆત કરવી)	Relation with HH મુખ્ય સાથે સંબંધ	Sex સુલ (1. Male 2. Female)	Age (in completed Year) ઉંમર	Immunization Received ટીકાકરણ (1. Yes 2. No)	Marital Status વિવાહીક સ્થિત	Educational Qualification આવૃક્ષિક લાયકાત	Year of passing પાસ કરવાનું વર્ષ	continuation up to ... કયા ધોરણ સુધી ભણવા ઉચ્છ્રના	Subject of specialization (Technical/Professional) ટેકનીકલ વિષય	Usual Activity આમાન્ય ગતિવિધિ	Type of Worker કામનો પ્રકાર	Occupation વ્યાસાય	Annual Income વાર્ષિક આવક	Seeking Job (1. Yes 2. No) નોકરી ઉચ્છ છે નહિ	Skills ટેકનીકલ લાયકાત	Vocational Training Required (Specify) કેવા પ્રકારની ટ્રેનિંગ જાઈએ છે
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Code:

Column 3: 1. SELF 2. WIFE 3. SON 4. DAUGHTER 5. FATHER 6. MOTHER 7. BROTHER 8. SISTER 9. NEPHEW 10. NICE
 11. DAUGHTER IN LAW 12. SISTER IN LAW 13. GRANDSON 14. GRAND DAUGHTER 15. SON IN LAW
 16. UNCLE 17. AUNT 18. GREAT GRAND SON 19. GREAT GRAND DAUGHTER 20. MOTHER IN LAW 21. FATHER IN LAW 22. HUSBAND
 23. GRAND DAUGHTER IN LAW 24. GRAND FATHER 25. GRAND MOTHER 26. GREAT GRAND DAUGHTER IN LAW

Column 7: 1. Married, 2. Unmarried, 3. Widow/ Widower, 4. Divorce/Deserted

Column 8 & 10: 1. Illiterate 2. Just literate 3. Primary 4. Middle 5. Matriculate
 6. Intermediate 7. Graduate and above 8. Professional qualification (Specify) 9. Other (Specify)

Column 12: 1. Worker 2. Unemployed 3. House wife 4. Student 5. Old/Retired
 6. School age children not going to school 7. Non-school age children 8. Handicapped 9. Others (Specify)

Column 13: 1. Main Worker: Engaged for > 180 days/year 2. Marginal Worker: Engaged for < 180 days/year

Column 14: 1. Cultivation 2. Allied activities (Specify) 3. Agri Labourer 4. Non-Agri Labourer 5. Service
 6. Profession (Specify) 7. Trade/Commerce (Specify) 8. Others (Specify).

Column 17: 1. Welder, 2. Fitter, 3. Electrician, 4. Mechanic (Diesel),
 5. Carpenter, 6. Mechanic (motor vehicle), 7. Turner, 8. Machinist (composite),
 9. Mechanic (radio and TV), 10. Mechanic (refrigerator and AC), 11. Draughtsman (Civil), 12. Draughtsman (mechanical),
 13. Electronic mechanic, 14. Foundry man, 15. Plumber, 16. Mason,
 17. Sheet Metal Operator, 18. Wireman, 19. CNC Machine Operator, 20. Vehicle Driver,
 21. Blacksmith, 22. Pottery, 23. Bamboo work, 24. Tailoring,
 25. Cobbler, 26. Weaving, 27. Artist, 28. Building Painting,
 29. Cycle repairing, 30. Embroidery Work 31. Handicraft work 32. Mud work
 33. Beautician 34. others (Specify)

9. HOUSEHOLD ASSETS/FARM EQUIPMENTS:

Assets	Possession (Number)	Assets	Possession (Number)	Assets	Possession (Number)
Telephone ટેલિફોન		3/4 Wheeler ત્રણ/ચાર પેડા વાળા વાહન		Bore Well બોરવેલ	
Cell Phone મોબાઈલ		Bullock Cart બળદ ગાડુ		Tube Well ટ્યુબ વેલ	
Fan પંખા		Tractor ટ્રેક્ટર		Trees ઝાડ	
Fridge ફ્રિજ		Diesel Pump ડિઝલ પંપ		Cattle Shed પશુને બાંધવાની જગ્યા	
TV ટીવી		Plough પ્લગ		Water Tap નળ	
Washing Machine કપડા ધોવાનું મશીન		Sprayer સ્પ્રેયર		Hand Pump હેન્ડ પંપ	
LPG Stove ગેસ સ્ટવ		Thresher થેસર		Radio/Tape રેડિયો/ટેપ	
Bi Cycle સાયકલ		Two Wheeler બે પેડા વાળું વાહન		Dug Well કુવા	

10. LAND OWNERSHIP DETAILS (Convert local units to Acres)

Names of Villages:	1.	2.	Other States
A. Land ownership			
i) Homestead land ઘરની જમીન			
ii) Cultivated - Irrigated ખેતી વાળી પિયત જમીન			
iii) Cultivated –not Irrigated ખેતીવાળી કુપિયત જમીન			
iv) Total Cultivated land કુલ ખેતીવાળી જમીન			
v) Orchard બગીચો			
vi) Well/Pond/Tank બુવો/પોડ/ટેન્ક			
vii) Non agricultural Land બિનખેતીવાળી જમીન			
viii) Total Land Owned કુલ પોતાની જમીન			
ix) Extent of land Leased in ભાડા પર લીધેલી જમીન			
x) Extent of land Leased out ભાડા પર આપેલી જમીન			
xi) Extent of land under share cropping ભાગીદારી વાળી જમીન			
B. Details of new land (Sale/Purchase)			
i) Type of land જમીનનો પ્રકાર			
ii) Area એરીયા			
iii) Month & Year of purchase મહીના અને વર્ષની ખરીદી			
i) Type of land જમીનનો પ્રકાર			
ii) Area એરીયા			
iii) Month & year of sale મહીના અને વર્ષની વેચાણ			

11. CROPPING PATTERN

Sr. No.	Season મોસમ	Crop Name પાકનું નામ	Area cultivated (in acres) કુટલા એરીયામા ખેતી કરી	Production Qt. ઉત્પાદન	Cost of production per quintal પ્રતિ કિલોગ્રામ ઉત્પાદન ખર્ચ	Rate (in Rs. / Qtls.) પ્રતિ કિલોગ્રામ કિંમત
i.	(Dec - March.)					
ii.						
i.	(April-July)					
ii.						
i	Other Season અન્ય મોસમ					

12. LIVESTOCK OWNERSHIP

Livestock	Nos.	Annual Income (Rs.)
I) Cattle		
i) Cow ગાય		
ii) Buffalo ભેસ		
iii) Ox બળદ		
iv) Camel ઊંટ		
v) Ass/Mule ગધેડા/ખચ્ચર		
vi) Others (Specify) અન્ય		
II) Small Animals		
i) Goat બકરી		
ii) Sheep ઘેટા		
iii) Poultry મરઘા		
iv) Pig સુવર		

13. ANNUAL FAMILY INCOME: કુટુંબની વાર્ષિક આવક

Activity	Duration	Income for duration
I) Agriculture		
i) From own land cultivation પોતાની જમીન ની એતી		
ii) From leased in land ભાડત પર લિઘેલી જમીનની એતી		
iii) From leased out land ભાડત પર આપેલી જમીનની એતી		
iv) By hiring agricultural assets એતીને લગતી મિલકત ની આવક		
II) Animal Husbandry		
i) Dairy ડેરી		
ii) Poultry મરઘા ફામ		
iii) Goatery બકરી પાલન		
iv) Fishery માછલી ઉદ્યોગ		
v) Others (Specify) અન્ય		
III) Other occupations		
i) Charcoal manufacture ચારકોલ ઉત્પાદન		
ii) Pottery પોટરી		
iii) Salt pan workers		
iv) Embroidery workers / Handicraft ભરતકામ/વણાટકામ		
v) Forestry જંગલની વસ્તુથી		
vi) Collection & sale of fire wood બળતણ માટેના લાકડા		
vii) Sale of minor forest produce નાના મોટા જંગલી વસ્તુ વેચવાથી		
viii) Household industry ગૃહ ઉદ્યોગ		
ix) Trading/Business વેપાર		
x) Profession (Specify) વંધો		
xi) Service (Specify) નોકરી		
xii) Farm wages (Specify) ખેત મજૂર		
xiii) Non-farm wages (Specify) મજૂરી		
xiv) Income from rent/interest/dividends, pension etc. ભાડુ/વ્યાજ/પેન્શન વગેરે		
xv) Remittance રેમીટેશન		
xvi) Others (Specify) અન્ય		
Total		

14. FAMILY EXPENDITURE PATTERN (Rs.) (Annual)

Items	Amount (Rs)	Items	Amount (Rs)
Food/Ration આદ્ય/રાશન		Social Function/Religious Activities/ Recreation સામાજિક કાર્યક્રમ/ધાર્મિક પ્રક્રિયા	
Cooking Fuel ખાવાનું બનાવવા માટેનું ઈંધણ		Repair/Maintenance of House રિપેરિંગ/મકાનનો મરામત ખર્ચ	
Clothing કપડા		Electricity-Bill/Water Bill/Phone Bill/Tax & Case etc. વિજળી/પાણી/ફોન નું બિલ અને ટેક્સ વગેરે	
Alcohol /tobacco/beedi શરાબ/તમાકુ/બીડી		Purchase of Durables ડ્યુરેબલ/મિલકતની ખરીદી	
Health સ્વાસ્થ્ય		Miscellaneous નાના મોટા ખર્ચા	
Education ભણતર			
Transport/Communication મુસાફરી ખર્ચ/તાર ટપાલ		Total કુલ ખર્ચા	

15. SAVINGS: બચત

QN	Questions	Code
15.1	Do you save money for future requirements? (1. Yes 2. No) શું તમે બચત કરો છો. (૧. હા ૨. ના)	
15.2	If yes, what is your average annual savings? વર્ષમાં લગભગ કેટલી બચત કો છો	
15.3	Where do you save? 1. Bank 2. Co-operative 3. Post Office 4. SHG 5. Other (Specify) બચત ક્યા કરો છો	

16. INDEBTEDNESS: કર્જ

16.1	Have you taken any loan? (1. Yes 2.No) કોઈપણ પ્રકારનું કર્જ લેવું છે (હા ના)					
Source (Bank)* કયાથી લીધું	Location distance in kms. જગ્યાનું અંતર	Year વર્ષ	Amount રકમ			Purpose of loan** કર્જ લેવાનું કારણ
			Borrowed કુલ ઉધાર	Repaid ચુકવણી કરી છે	Outstanding બાકીની કર્જ	

*Source (Bank) : 1. Co-operative 2. Pvt. Money Lender 3. Neighbours/Friends/Relatives 4. SHG 5. Other (Specify)

**Purpose of Loan 1.Agriculture 2. Business 3. Household Consumption 4. Construction of House
5. Purchasing of land 6. Marriage & other social function 7. Repaying old loans 8. Others (Specify)

17. HEALTH STATUS: સ્વાસ્થ્ય ની વિગત

17.1	Did any member of your family suffer from any illness last year? ગયા વર્ષમાં કોઈપણ બિમાર પડ્યું છે (1. Yes 2.No)					
List out the names as in Column (6) બિમાર પડેલા વ્યક્તિઓના નામ	Age ઉંમર	Sex સેક્સ	Type of disease બિમારીનું પ્રકાર	Cause બિમારીનું કારણ	Treatment received from* ઈલાજ કયાથી કરાવ્યું	Present Status** હાલની સ્થિતિ

Treatment received from*: 1. Pvt. Doctor 2. Govt. doctor, 3. Quacks, 4. Household treatment

Present Status**/*: 1. Cured, 2. Not Cured

18. TYPE OF DISABILITY: ખોડ ખાપણ

Names વ્યક્તિનું નામ	Age ઉંમર	Sex સેક્સ	Type of disability કેવા પ્રકારનું ખોડ ખાપણ છે	Since when કયારથી છે	Treatment / rehabilitation received from*ઈલાજ કયાથી કરાવ્યું	Present Status હાલની સ્થિતિ

Treatment / rehabilitation received from* 1. Pvt. institution (Trust), 2. Govt. institution , 3. No treatment

19. BENEFICIARY OF DEVELOPMENT PROGRAMMES: વિકાસ યોજનાઓથી લાભદાયક

20.1 Are you a beneficiary of any development programme during last 10 years? 1. Yes 2. No છેલ્લા દસ વર્ષમાં વિકાસ યોજનાથી લાભ થયો છે (હા ના)	
If Yes, Name of the Programme: Programme: 1. SGSY; 2. PMRY; 3. SJRY; 4. JRY, 5. IRDP, 6. TRYSEM, 7. SITRA, 8. IAY, 9. Antyodaya 10. PMRY 11. Million Wells Programme 12. Swavalambana 13. Others (Specify)	
Source of funding: Source of Funding: 1. GO, 2. Voluntary Organization, 3. Charitable trust	
Details of benefit received	
Cash Component (Rs) રોકડા રૂપિયા	
Kind/asset સંપત્તિ/અન્ય	
Specify in detail, the improvements made through programme આ બાબતમાં વિસ્તાર ફાયદા જણાવો	

20. MIGRATION (In-migration) – Settled in the Study Village સ્થળાંતર : બહારતી આવી અહીં વસેલા લોકો

Type of migration (Seasonal/ Permanent) સ્થળાંતરનું પ્રકાર (મોસમી/કાયમી)	Birth Place જન્મ સ્થળ	Reasons for Migration સ્થળાંતરનું કારણ	Since when migrated and settled in the village (in case of permanent migration) કયારથી સ્થળાંતર કર્યું છે	Period of migration (in case of seasonal migration) સ્થળાંતરનું સમય	Types of Assets purchased in the village કયા પ્રકારની સિલકત ખરીદી છે	Staying in rented/own house પોતાના ઘરમાં રહે છે કે ભાડુમાં ત

21. MIGRATION (Out migration) – (Migration for employment/education etc) સ્થળાંતર : અહીયાથી બહાર જઈને વસેલા લોકો (નોકરી / ભણતર)

Name નામ	Sex સેક્ષ	Type of migration (Seasonal/ Permanent) સ્થળાંતરનું પ્રકાર (મોસમી /કાયમી)	Reasons for Migration સ્થળાંતરનું કારણ	Place where migrated સ્થળાંતરની જગ્યા	Type of engagement (Army, Govt job, Pvt job, Business) શુ કામ કરો છો	Income/month at Migration place પ્રતિ મહિનાની આવક	Amount Remitted/month

22. PREFERRED REHABILITATION OPTION :

23	1. Employment in project (Direct & Indirect) પોજેક્ટમા નોકરી 2. Providing contract services કોઈપણ પ્રકારનું કોન્ટ્રાક્ટ આપો 3. Training for income generation activities આવક વધાવવાની ચીજોની ટ્રેનિંગ 4. Formation of SHGs and cooperatives for micro enterprises નાના મોટા વ્યવસાય માટે સ્વયં સહાયતા માટેનું સંગઠન 5. Any other અન્ય	
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23. OPINION ON PROJECT પ્રોજેક્ટ માટેના વિચાર

Opinion-Ranking			Specific Opinion on Project અન્ય કોઈપણ વિચાર
1. Good સારું	2. OK બરાબર	3. Bad ખરાબ	

Signature of the Investigator:

Date:

Cross Checked by Field Supervisor (put signature with date) : _____

Cross Checked by Officials (put signature with date): _____

24. ATTACH PHOTOGRAPH OF THE TITLEHOLDER / RESPONDENTS

ANNEXURE 3.2: VILLAGE SCHEDULE

HOUSEHOLD SURVEY – UMPP, CGPL, MUNDRA VILLAGE SCHEDULE

1) IDENTIFICATION PARTICULARS:

i) Village		ii) Taluk	
iii) District		iv) Gram Panchayat	
v) Block		vi) Location Code No	

2) LOCATION OF VILLAGE:

Location From	Distance (Km.)	Location From	Distance (Km.)
i) District H.Q.		vi) All weather road (nearest)	
ii) Taluk H.Q.		vii) Fair weather road (nearest)	
iii) Block H.Q.		viii) Mettaled Road (nearest)	
iv) Panchayat H.O.		ix) Bus stop (nearest) (specify)	
v) Municipality/NAC (nearest) (specify)		x) Railway Station (nearest) (specify)	

3) DETAILS OF VILLAGE / HAMLET

Title of Hamlet					
All weather approach roads to hamlet (Y/N)					
Distance of hamlet from main village					

4) VILLAGE WISE DEMOGRAPHY DATA

Village / Hamlet	Hindu	Jain	Muslim	Buddhist	Sikh	Christian	Others	Total

No. of families in-migrated to the village & settled permanently:

5) HAMLET WISE DEMOGRAPHY DATA

Hamlet / Village	SC	ST	OBC	General	Others	Total	BPL	WHH	Landless

6) ELECTRIFICATION:

Is the village electrified? Yes/No; If yes, when (year)?.....Specify hamlets not electrified.....

Sectors	No of Consumers		
	Legal	Illegal	Total
i) Domestic			
ii) Street lighting			
iii) Commercial			
iv) Agriculture			
v) Industry			
Total			

Make a separate column to understand If the electrical facility functional or disconnected . Reasons for disconnection

7) SERVICES & INFRASTRUCTURE FACILITIES:

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
I) Service Facilities:			
i) Mason			
ii) Carpenter			
iii) Black Smith			
iv) Cobbler			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
v) Barber			
vi) Washer man			
vii) Potter			
viii) Tailor			
ix) Gold Smith			
x) Electrician			
xi) TV/Radio mechanic			
xii) Priest			
xiii) Others (Specify)			
II) Commercial Units:			
i) Tea Shop			
ii) Restaurants			
iii) Hotel			
iv) Retail grocery shop			
v) Vegetable shop			
vi) Tobacco/Cigarette shop			
vii) Cycle Repairing Shop			
viii) Motor Cycle Repair Shop			
ix) Seed-Fertilizer-Pesticide Shop			
x) Tractor-Agril Implements Repair Shop			
xi) Textile Shop			
xii) Medicine Shop			
xiii) Telephone Booth/Cyber cafe			
xiv) Loose Petrol/Diesel Selling Shop			
xv) Fair Price Shop (Ration Shop)			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
xvi) Petrol Pump			
xvii) Others (Specify)			
III) Education Facilities (Including no. of teachers and infrastructure facilities):			
i) UP School			
ii) ME School			
iii) High School			
iv) English Medium Public School			
v) College (General Education)			
vi) Technical Institution			
vii) Adult Education Center			
viii) Special School for Disabled			
ix) Library			
X) Others (Specify)			
IV) Health Facilities:			
i) Anganwadi/Balwadi			
ii) ANM Center/Family Welfare center			
iii) Dispensary/Hospital (Allopathic)			
iv) Ayurvedic Dispensary			
v) Homoeopathic Dispensary			
vi) Private Medical Practitioner			
vii) Quacks			
viii) Others (Specify)			
V) Veterinary Facilities:			
i) Artificial insemination center			
ii) Veterinary dispensary			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
iii) Veterinary stockman center			
iv) Others (Specify)			
VI) Marketing Facilities:			
i) Daily market			
ii) Weekly market			
iii) Wholesale market/ Grain Market			
iv) Cold Storage			
v) Ware House			
vi) Milk Collection Center			
vii) Marketing co-operative society for agril. Produce			
viii) Multipurpose Cooperative Society			
ix) Others (Specify)			
VII) Processing Facilities:			
i) Grain Mills			
ii) Grain Hullers			
iii) Oil Expeller			
iv) Oil Mill			
v) Others (Specify)			
VIII) Banking Facilities:			
i) Commercial bank			
ii) Regional Rural Bank			
iii) Licensed money lender			
iv) Agri. Co-operative society			
v) Land development bank			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
vi) Cooperative Banks			
vii) Others (Specify)			
IX) Communication Facilities:			
i) Branch Post Office			
ii) Sub post Office			
iii) Village telephone			
iv) E- Governance kiosk			
v) Cyber Cafe			
vi) Others (Specify)			
X) Social Care Facilities:			
i) Yoga Center			
ii) Police Station/Chowki			
iii) Family Counseling Center			
iv) Old Age Homes			
v) Care Center for Disables			
vi) Care Center for the Destitute			
vii) Care center for Child Labour			
viii) Orphanage			
ix) Others (Specify)			
XI) Other Facilities:			
i) Animal Shelters (water troughs/ gauraksha Kendra)			
ii) Dharmasala			
iii) Rest House			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
iv) IB			
v) Others (Specify)			
XII) Agri. Extension Facilities:			
i) Agro Service Center			
ii) Village Agricultural Worker			
iii) Agriculture Extension Officer			
iv) Others (Specify)			
XIII) Religious Facilities: (Specify for each caste SC/ST/OBC/Gen & Religion)			
i) Temple (OBC)			
ii) Mosques			
iii) Churches			
iv) Math			
v) Burial Ground			
vi) Cremation Ground			
vii) Burial Ground for Muslims			
viii) Others (Specify)			
XIV) Community Organizations & Resources, Political Organisations:			
i) Play Ground			
ii) Garden/Park			
iii) Community Hall			
iv) Yuvak Sangh			
v) Mahila Samiti			
vi) SHG			

Particulars	No in the village (if available)	Nearest Place Where Available	
		Distance from Village (Km)	Name of the Place
vii) Office of Political Organizations/Parties			
viii) Office of Charitable trusts/NGOs			
ix) Others (Specify)			

8) DRINKING WATER & OTHER WATER BODIES:

Type	No. in the village	Nos. Functioning	Nos. Out of order	Average no. of family dependent on each unit
i) River				
ii) Tank				
iii) Pond				
iv) Tube well				
v) Dug well				
vi) Open well				
vii) Pipe water				
viii) Other (Specify)				

9) DETAILS OF NGOs WORKING IN THE VILLAGE:

Name of the NGO	Name of Contact Person & Address & Tel. No.	Area of Work	Duration of the Project

10) DETAILS OF INDUSTRIES (within a radius of 5 kms):

Sl No	Name of the Industry	Place	Type	Status (Functioning/Under Construction/Proposed to be set up)

11) FARMERS CATEGORY:

Category	Nos.	% to total	Total area (Approx) (ha)	% to total
i) Large Farmer (> 4 ha)				
ii) Semi medium (3 to 4 ha)				
iii) Medium Farmer (2 to 3 ha)				
iv) Marginal Farmer (1 to 2 ha)				
v) Small Farmer (<1 ha)				
vi) Land Less				
Total				

12) RATE OF VARIOUS AGRICULTURAL OPERATIONS/COMMODITIES/HUMAN LABOUR

Particulars	Unit	Rate/Unit	Particulars	Unit	Rate/Unit
AL -Male	Man Days		Diesel Pump (Rent) – Without POL	Hour	
AL -Female	Man Days		Diesel Pump (Rent) – With POL	Hour	
NAL -Male	Man Days		Electric Pump (Rent) – Without Electricity	Hour	
NAL -Female	Man Days		Electric Pump (Rent) – With Electricity	Hour	
			Tractor Ploughing	Hour	
			Tractor (Other Operation)	Hour	
			Bullock Ploughing	Days	
			Bullock Cart	Days	

13) LAND USE PATTERN

Type of Land use	Area (ha)	Type of Land use	Area (ha)

Example: Forest, Misc. tree crops & grooves, Permanent pasture & other grazing land, Cultivable waste land, Land put to non-agricultural uses, Barren & uncultivable land, Current fallows, Other fallows and Net Area Sown

14) COMMON PROPERTY RESOURCES:

Resources	No./Total Area (Approx)	Ownership (Village/Revenue/Panchayat/Forest)	Type of trees (Common Name)	No of trees (Approx)
i) Barren Land				
ii) Burial Ground				
iii) Pastures				
iv) Grazing Land				
v) Village Forest				
vi) Avenue Plantation				
vii) Social Forestry Plantations				
viii) Any Other Land				
ix) Internal Road				
x) Approach road				
xi) Community Hall				
xii) Sanitation/Community Toilet				
xiii) Drainage facility				
xiv) Street Lights				
xv) GP Office, Godown, Meeting hall				
xvi) Tank/Pond - General				
xvii) Tank/Pond - Fishery				
xviii) Others (Specify)				

15) IRRIGATION DETAILS

Type of Irrigation facilities	Details (Approx.)		Major Crops/Vegetables	Details of Status (Functioning well/Needs Improvement/Out of Order)
	Area (ha)	No of Farmers		

16) MISHAPS/NATURAL CALAMITIES:

Particulars	Year & Details

Example: Drought/Flood/Earthquake/Accident/Cyclone/Group Clash/Epidemics etc.

17) RENEWABLE ENERGY SYSTEM/SANITATION IN VILLAGE

System	Capacity	Nos.	Working	Out of Order	No of Beneficiaries
i) Community Latrine					
ii) Family size biogas plant					
iii) Community size biogas plant					

System	Capacity	Nos.	Working	Out of Order	No of Beneficiaries
iv) Improved chullha					
v) S P V Lighting Community					
vi) S P V Lantern Domestic					
vii) Water purification system					
viii) Solar cooker					
ix) Others					

18) HISTORY OF VILLAGE (Timeline)

Year	Major Activity	Year	Major Activity

- Details of Festivals organized in the village in a year
- Details of Heritage sites in the village
- Details of Place of historical and religious importance

19) DETAILS OF DEVELOPMENT WORK IN THE VILLAGE:

Name of the Programme/Details of work*	Year of Execution	Status	No of HH benefited	Run By**	Name of the Programme/Details of work*	Year of Execution	Status	No of HH benefited	Run By**

* Nala Bunding/ Percolation Tank/ Tree Plantation/ Wells/ Tube wells/ Latrines/ Solar Lights/ Nursery/ Balwadi etc

** Government/ NGO/ Village Committee/ Others

20) BENEFIT RECEIVED FROM DIFFERENT POVERTY ALLEVIATION PROGRAMMES:

Caste/Social group	Programme	No. of beneficiaries	Year of benefit

Signature of Investigator:

Date:

Cross Checked by Field Supervisor (put signature with date).....

Note by IFC to be inserted after Annexure 3.2 of the Household Survey and Needs Assessment Study for ULTRA MEGA POWER PROJECT, Mundra, District Kutch, Gujarat, India

The completed household surveys on which the findings of this study are based were prepared and submitted to IFC as Annexures 3.3 - 3.9 in separate files. These surveys identify individual households and family members by name. To maintain the confidentiality of the sample households, IFC has not disclosed Annexure 3.3 - 3.9 of this study. These annexures will be made available on request.