

Social Impact Assessment of the proposed Kalpasar Dyke

Executive Summary

**NATIONAL INSTITUTE OF ADVANCED STUDIES
BENGALURU**

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Social Impact Assessment of the proposed Kalpasar
Dyke

Submitted to

National Centre for Coastal Research (NCCR)
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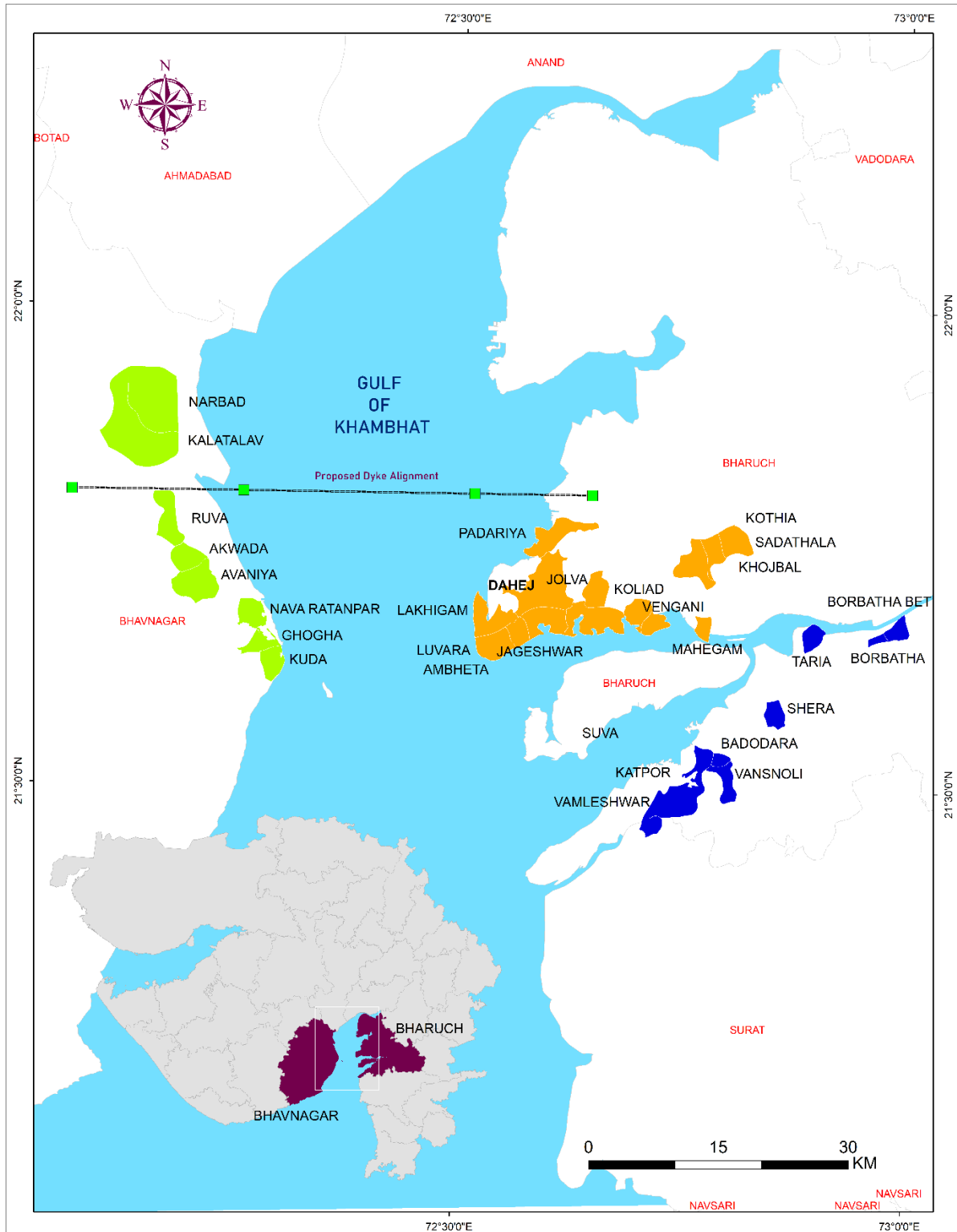
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1. The Study Area

- The main objective of this study is to assess the potential social and economic impacts of the proposed Kalpasar Dyke across the Gulf of Khambhat, Gujarat. According to one of the studies conducted by the Bhaskar Acharya National Institute for Space Applications and Geo-informatics (BISAG-N), the alignment length of the proposed Kalpasar dyke covers the administrative boundaries of six districts, fifteen talukas, and 302 villages. However, according to the initial observations made by the Kalpasar Department, Government of Gujarat, (as informed by the National Centre for Coastal Research), around 30 villages are most likely to be directly affected, in terms of partial submergence the possibility of facing a situation of displacement, and the partial and/or substantial loss of land to the requirement of the project. Along with this, the initial observations also highlight that the extended neighbouring villages on either side of the proposed dyke are also going to be affected indirectly.
- Accordingly, to assess the socio-economic impacts of the proposed dyke, a detailed survey of households in 30 villages (that are going to be directly affected) in the Bhavnagar and Bharuch districts have been conducted. The following representations [Map: 2.1] offer the sites and the geographical locations of the villages that have been surveyed as part of conducting a socio-economic impact assessment for the proposed Kalpasar dyke.

Composite Map of Villages Surveyed

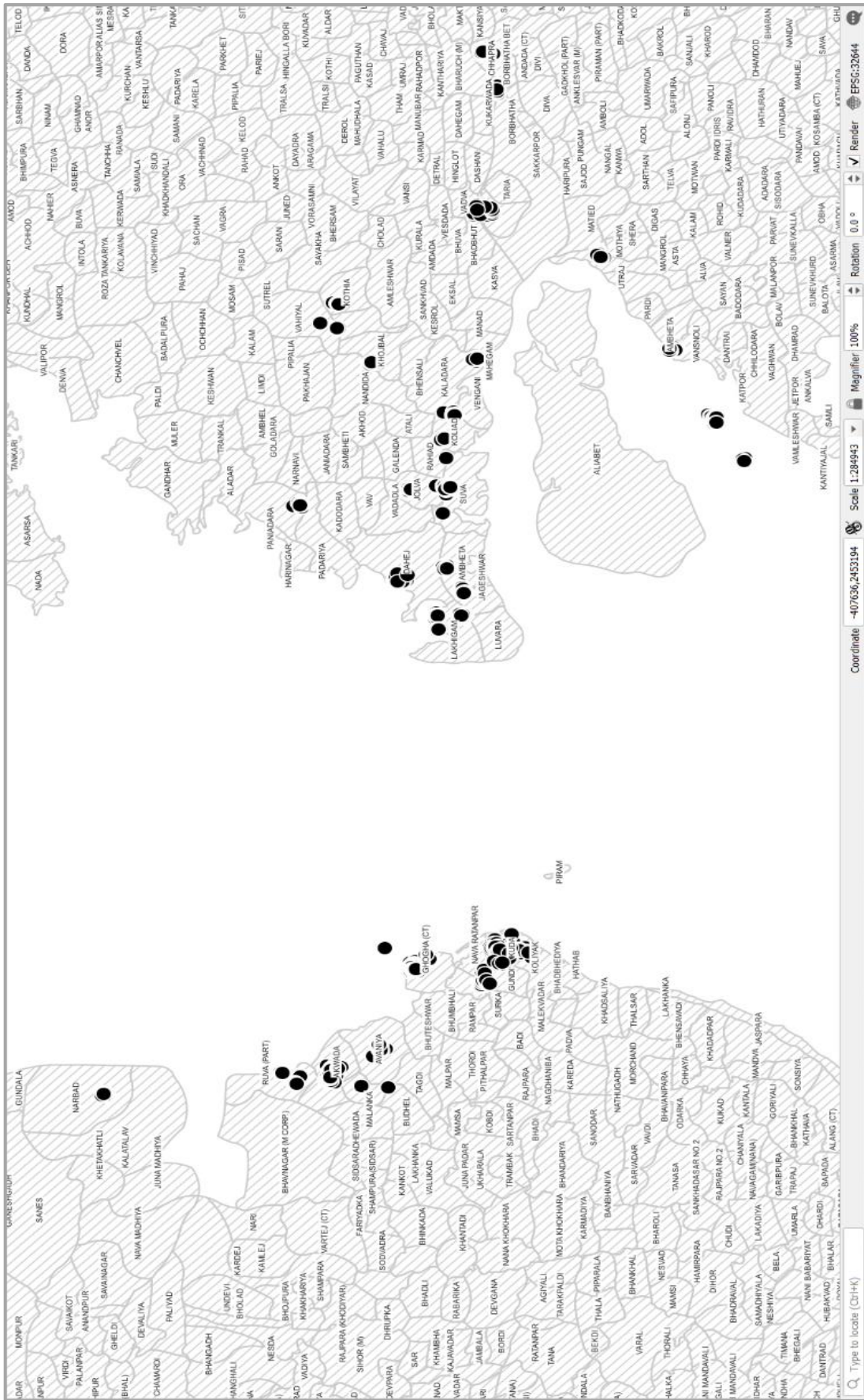


Map 2.1: Administrative regions of all the villages surveyed for the study.

2. Methodology adopted for Conducting the Household Survey

- Keeping the major objectives and the deliverables of the study in mind, the methodology adopted for this has been a mix of drawing insight from the existing literature on the Social Impact Assessment (SIA) from both the secondary and the primary sources. Additionally, a detailed household survey has been conducted in thirty villages in the Bhavnagar and the Bharuch districts to get a baseline data and other information about the villages that are potentially going to be affected. In the process of identifying the gaps in the existing literature on the impact assessment studies, an attempt has been made to conceptualize and contextualize the SIA in the Indian scenario. The specificities of the nature and the scope of the large-scale development projects and the popular perception and resentment around them have guided this study to bring about a conceptual framework that would offer an acceptable narrative for conducting the SIA studies in the Indian context. Contrary to the existing discourse that functions around a set guideline to conduct the SIA activities, this study stresses on the socio-political-cultural values of Indian society and polity to be taken into consideration in conducting the SIA studies. It is from this perspective; the present study deduces the principles around which the guidelines for conducting the SIS can be formulated. Accordingly, the larger conceptual framework around which this study has adopted the methodology is inclusive in nature. It is inclusive to the extent of following a set of guidelines that are derived from the principles which are ultimately deduced from the values of Indian social-polity. Hence, the SIA framework of this study focuses on both the intended and unintended implications of a planned development project on individuals as well as on the society. In this process, the study departs from the dominant narrative of most impact assessment studies that mostly focus on economic opportunism and/or on the aspects of displacement and rehabilitations. Accordingly, the study attempts to capture both the negative and positive implications of development projects on the social by engaging with the existing socio-economic and political situations of the households of the villages that are potentially going to be affected. It is through this exercise and by taking the insights from the existing literature, the study tries to predict the possible impacts of the proposed Kalpasar dyke on the people of these potentially affected villages. Subsequently, the study also offers a set of policy frameworks (read Social Impact Management Plan) for effectively and inclusively dealing with the potential impacts.

- To access the baseline information on various aspects of the villages that are potentially going to be affected by the proposed dyke, the study takes the households as the units of engagement and analysis. In doing so, the study chose not to go for any sampling for it would have excluded many households from the survey. However, in selecting the households to be surveyed, the study stuck to a five-to seven-meter contour limit from the sea, as suggested by the funding agency (NCCR). Accordingly, in two villages, Ghogha in Bhavnagar district and Dahej in Bharuch district, the households that fall under the five-to-seven-meter contour from the sea are surveyed. Apart from these two villages, the survey of each and every household has been done in the remaining 28 villages. It is important to mention that in the Vagra-Dahej region, where there is a huge influx of migration, those migrant households that are living in the villages for more than three years have also been surveyed. In the process of conducting the household surveys, a digital elevation model (DEM) was prepared and the spatial overlaps of corresponding villages was then drawn. Based on the geographical level of impact, 28 villages and two census towns (Ghogha and Dahej) have been decided for conducting the survey. The following map [**Map: 2.2**] highlights the villages surveyed in both districts across Gulf of Khambhat.
- To access the baseline information of these villages and also to have qualitative interactions with the people living in the villages, a structured questionnaire was used to get the responses. A close-ended questionnaire has been designed with fourteen distinct yet interrelated themes that are structured around the socio-economic and political parameters of the society. Further, these fourteen themes are classified into multiple sub-themes to capture the nuances of each of these themes which explains the socio-economic and the political profiles of the households and the villages. Accordingly, the questionnaire has been designed keeping in mind the information ranging from the individual households as the unit of analysis and its larger interactions with the society on multiple heads.



Map 2.2: Geo-coordinates of the households surveyed.

- In addition to the information, the geospatial coordinates and the altitude information have been captured for each household to better serve and explain the social dynamism in the study areas. The survey has been carried out in three different geographical locations (Bhavnagar-Ghogha, Dahej-Vagra, and Hansot-Ankleshwar). A thorough and well-structured questionnaire, a dedicated team of researchers and field investigators, good use of technology, and the application of software took us little more than three months' time to complete the survey.

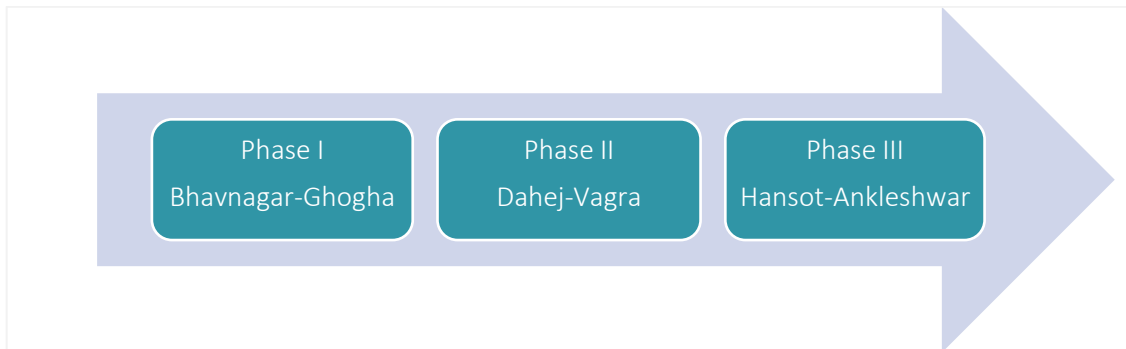


Chart 2.1: Phases of conducting the Surveys (Geographical Regions): **Phase I** is situated on the west coast of Khambhat; **Phase II** – on the northern coast of river Narmada estuary; **Phase III** – on the southern coast of river Narmada, east of the Gulf of Khambhat.

- In completing the survey, it recorded a total of 6783 responses (households) around two hundred questions. On the success of the survey, in terms of getting responses from the households, it has been more than ninety percent. The unwillingness of some of the households to respond to the questions and the non-availability of some other household members in their respective villages are the two main reasons of not getting the responses from the remaining households. An initial observation highlights the participation of more female members in responding to the interactions. The following graph reflects this aspect. Refer **[Figure 1]**.

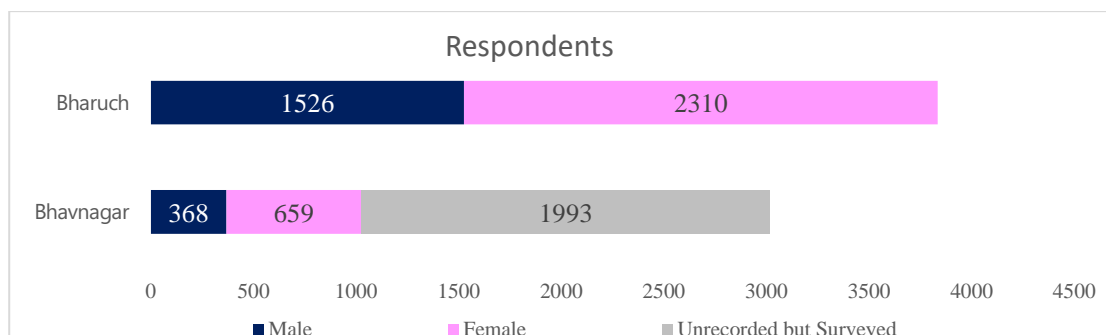


Fig. 2.1: Respondents interviewed in the households. (Data labels represent number of households)¹

¹ Unrecorded but Surveyed – This category of households was not categorised based on Gender and hence constitutes as a limitation in the survey.

- Apart from the household surveys, the survey also included the focused group discussions (FGDs) in of the villages. The main objective of conducting FGDs was to capture the views and the experiences of the people from across the sections of the societies on diverse socio-economic issues. It is important to mention that in some of the villages, especially in the Dahej region, it has not been possible to conduct the FGDs as we experienced strong resistance from some sections of society in sharing the platform with other sections/communities. However, interactions were made with various groups and important personalities separately to capture their views and experiences. The FGDs have offered the findings of the survey important insights regarding the social interactions, issues, challenges, and, the benefits and limitations of development projects in their respective societies. Based on the information collected through the household surveys followed by the analysis of the data, the following sections highlight the present socio-economic and political status of the households. Subsequently, the possible impacts of the proposed dyke are also analysed followed by a summary of the social impact management plan.

3. Existing Socio-Economic and Political Situation

3.1. Social Profile

- To understand the social characteristics of the study area, certain indicators of the ‘social profile’ were identified- such as social demography, social compositions, social status, and the nature of social interactions. Social demography has been identified through the population, age and gender ratio, housing pattern, and the social composition of various groups and communities. Similarly, the social status takes into account the status of the existing communities in terms of their access to educational and health services as well as the relative social conditions of women and Social marginalised groups. The social interactions in the regions have been of diverse nature. The study identifies interactions involving conflicts, negotiations, domination, and isolation from each other as various aspects of interactions among the communities.

3.1.1 Social Demography

- The regions show a largely homogenous population, in terms of religious composition, with only three of the villages- Ghogha, Jolva, and Khojbal having religious diversity-

while the other villages consist of only Hindu households. However, the regions present caste diversity with all the villages having multiple caste groups. [Figure 2.2]

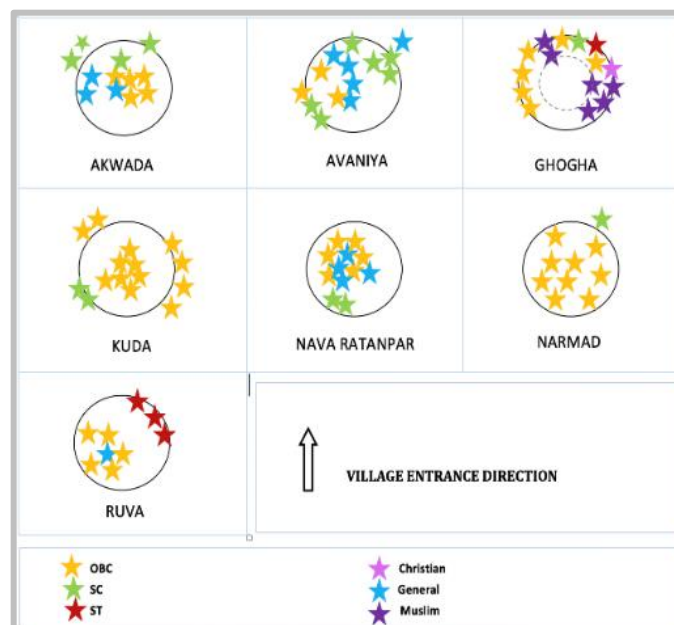
- While the urban areas of Bhavnagar, Ankleshwar, and Ghogha census towns have a diverse religious population, the surrounding villages have a predominantly Hindu population.
- In terms of the duration of stay, the regions present a stable population, especially in the Bhavnagar and Hansot-Ankleshwar regions, while the Dahej-Vagra region, which has a large number of migrant populations owing to heavy industrialization, has relatively unstable population.
- All the regions show a healthy sex ratio (read representative) with the Dahej-Vagra region presenting 1002 females per 1000 males. The Bhavnagar and Hansot-Ankleshwar regions have 969 and 992 females per 1000 males, respectively. It may be noted that, as per the 2011 census, the sex ratio of Gujarat is 919 while the national average 943.
- The differences in the size of the households, across regions and caste groups, vary as larger joint families were found in the upper caste households while relatively smaller nuclear families are predominant among the lower caste families.
- An inclination to migrate from the remote villages to nearby towns is common across all the regions. The nearest towns/cities- Bhavnagar, Vagra, Ankleshwar are the preferred destinations for the households to migrate for better economic opportunities and living conditions.



Fig. 2.2: Major Social Groups in the study regions.

3.1.2 Housing Patterns

- The housing patterns across the regions exhibit certain commonalities, in terms of the relative spatial location of the various social groups.
- A caste-based housing pattern can be observed in most of the villages with the marginalized communities living in the periphery of the villages while the core of the village is inhabited by the General and the OBC households. **[Figure 2.3]**
- This has various implications on the social role and the positions of the communities, their role in forming the village's cultural and social identity, and many a times, reflect the discriminatory developmental standards within the village.
- The differential treatments towards communities belonging to the same caste category has also been observed as the socio-economic conditions of communities belonging to one caste group varies depending on the level of educational and political awareness of the households. For Example: The Vankar and the Devipujaks belonging to the SC category experience different social positions in the Akwada village with the Devipujak households being isolated and marked with negligence and lack of development. In a contrast, the Vankar households are located within the village with better sanitation and drainage facilities. The housing structures of both these communities also present a contrasting picture.
- Several factors determine the relative spatial locations of the caste groups with control over the common resources, places of worship, and the occupational choices being the major factors. A similar caste-based housing pattern is also observed in the settlements like Borbatha Bet.



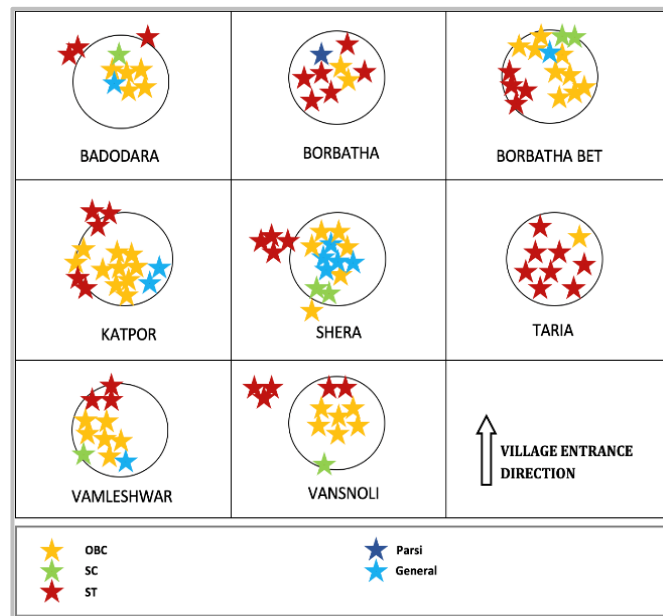
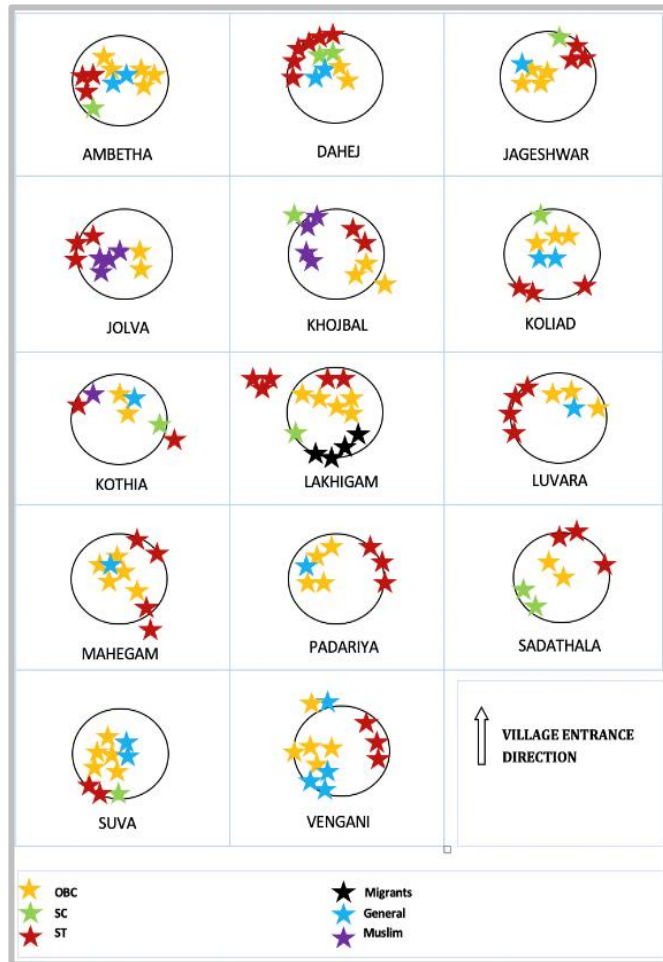
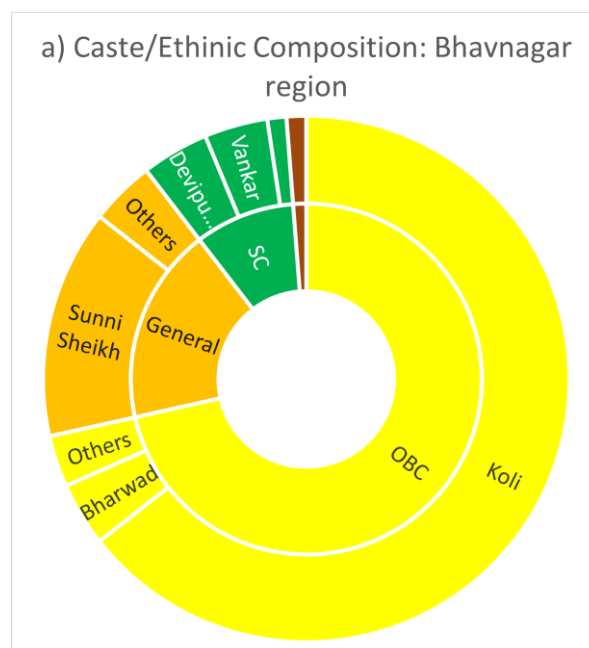


Fig. 2.3: Housing pattern in (a) Bhavnagar region, (b) Dahej-Vagra region, (c) Hansot-Ankleshwar region.

3.1.3 Social Composition

- Among the diverse caste groups present in the three regions, the Kolis belonging to the OBC remains the dominant majority followed by the Rathods (ST) which are primarily settled in the Dahej and in the Hansot regions in the Bharuch district. [Figure 2.4]
- The villages with dominant Muslim population also have a near equal Hindu population. The villages of Jolva and Khojbal, x in the Dahej region, have the ST population as the second major social group while in Ghogha, the Koli OBCs form the second major caste group. A Few Christian and Sikh households are also there in Ghogha. The villages in the Hansot-Ankleshwar region show a homogenous Hindu population although the towns of Hansot and Ankleshwar have a significant number of the Muslim households.
- The Dahej region, with heavy industrialization, has the presence of large number of migrant workers. The social and the economic interactions in this region revolves around the migrants with the expansion of Dahej and Jolva markets to cater to their needs.
- The Hansot-Ankleshwar region bears the religious significance as part of the Narmada Parikrama (an important religious activity among the Hindus of Gujarat and neighbouring states) circle and has several ashrams and maths (Hindu religious institutions) that influence the socio-cultural life in this region.
- Adivasi communities (STs) are primarily in the Bharuch district with villages like Luvara and Jageshwar having tribal majority as reflected in their socio-political representation. The following highlight the social compositions in the villages of three regions.



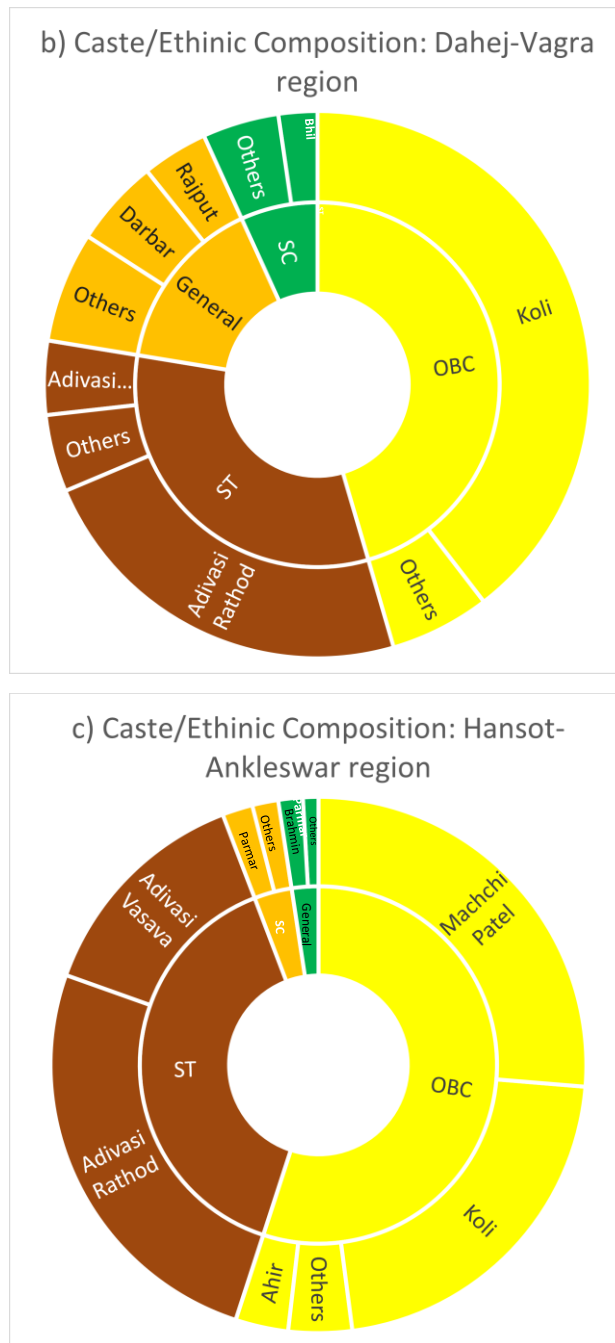


Fig. 2.4: Caste/Ethnic composition of (a) **Bhavnagar** region; (b) **Dahej-Vagra** region; (c) **Hansot-Ankleshwar** region.

3.1.4 Social Status

- The social status of different caste and religious communities is largely determined by their social positions in the caste hierarchy which influences the occupational choices and economic condition of the households.
- The OBCs (Kolis), show greater political and educational awareness and dominate the socio-political discourses of majority of the villages. The Darbars and the Brahmins

enjoy powerful positions in the society and share the decision-making space with the Kolis.

- The SC and ST communities remain at the lower positions on the socio-political hierarchy due to historical backwardness transgressing into the economic well-being as well as the social awareness.
- The intra-caste differences, in education and employment status, are visible within the SC community as Vankar and Devipujak communities enjoy different social and political statuses within the village.
- In the Dahej region, with the shift in the agricultural practices, the differences among communities, presently, are largely factored on the access to education, ownership of land, and the political influence in negotiating with the industries. The Darbars and the Kolis enjoy higher status in the villages owing to greater political and economic influence while the STs remain relatively marginalized.
- The Muslims enjoy dominant position in the villages of Jolva and Khojbal due to strong political leadership and their religious unity.
- The Hansot-Ankleshwar region has majority of the OBCs. Their influence on the socio-cultural character of the region is visible within their cultural and religious practices like the Narmada Parikrama circuit pilgrimage.
- The STs being dependent upon the landholding of the OBCs for sustenance, remain socially and economically vulnerable. The trade and commerce opportunities in this agriculture-dominant region are also limited for them as a large part of the community remains landless.
- The STs, who are traditionally a distinct social group with unique culture and practices, have diluted their identity and currently share space with the SCs as marginal communities.
- The compound inequality (in terms of social stigma and material deprivation) and social vulnerability of STs is very high in the region due to the lack of economic opportunities. Fishing and Liquor businesses, which attract social sanctions, further add to the isolation of the STs.

3.1.5 Education and Health Status

- The education and the health Status of different social groups vary due to the differential economic conditions as well as the social position of the households. Health facilities

primarily depend upon the availability of facilities a preference for public over private hospitals can be observed among the SCs and the STs. This is due to the financial cost involved as well as the acceptance of governmental health cards by the facilities.

- Similarly, the access and the pattern of education vary on the basis of the caste and the region-centric employment opportunities. The Dahej region, with industrial employability, attracts a large number of students into technical education, i.e., Industrial Training Institutions (it is) after the completion of higher secondary studies.
- A strong disparity between the ST community and the upper castes can be noticed as more than 50% of the ST households have Primary or no formal education. The percentage of households having Graduates as the highest degree is 2% among STs while the same stands at 21-22% among OBCs and General category respectively.

3.1.6 Status of Women

- Status of Women, in general, is poor with social, cultural, and economic factors restricting their access to education and employment.
- Interestingly, the access to education does not translate to the right to work in the case of upper-caste women, while the women from the marginalized communities without education are forced to work as wage laborers due to economic compulsions.
- The Dahej region offers largely male-centric employment opportunities with women members being confined to the household or participating in Bhajan Mandali and Sakhi Mandali in the villages.
- There exist limitations to education of women in the Muslim Community as evident by the proportion of girl child being educated.

3.1.7 Social Issues

- Some of the major issues across the three regions are caste discrimination, politicization due to caste-based associations, and harmful liquor consumption with its negative impact on women, especially among marginalized communities.
- The access to common resources is mostly restricted on the basis of the caste identity as the denial of temple entry to the SCs and the STs communities can be observed in some villages. There is a similar case in Khojbal too as the STs are denied access to the common park by the majority Muslim community.

- The spurious liquor business often runs with covert support from the local law and order agencies as well as the political leaders.
- The women, from the marginalized sections, are the primary victims of illicit liquor sales and consumption as these often lead to domestic violence, untimely deaths of the bread earner of the family and the debt traps.

3.1.8 Social Interactions

- The caste-based social interactions transgress into the social and into the economic lives of the communities. The caste symbols displayed on the households and the members reflect the caste consciousness among the communities.
- The interactions in the religiously diverse villages of Ghogha, Jolva, and Khojbal is that of subtle conflict, cooperation through everyday negotiation, and co-dependence.
- The Dahej region, with its industrial nature of employment, reflects impersonal and isolating interactions among the communities. The apprehension and the anxiety against migrant workers and the fear of industrial accidents remain the major concerns among the locals.
- The bargain and the allocation of Corporate Social Responsibility (CSR) benefits remain the central concern among the leaders of the villages in and around Dahej region, as the health and the education facilities in this region are dependent upon the support from the nearby industries.

3.1.9 Conflicts

- The Caste and the communal identity remain major sources of conflict with allegations of political favouritism among marginalized communities. This study has taken into account the conflicts based on caste, religion, property, and political ideology to understand the nature of community interactions in these regions.
- The political conflicts during elections are common and short-lived as the majority of the villages show uniformity in terms of political ideology.
- The perceptions of the caste-based conflicts are relatively higher among the SCs and the STs while the very act of pursuing such conflicts is higher in the Dahej and the Hansot regions.
- The lack of social interaction and urbanization of the region indicate a greater caste consciousness and pursuance of caste-based conflicts.

- The deep-rooted political Favoritism in resource distribution is alleged, especially, by the marginal sections.
- The traditional caste domination, associated with political power, creates conflict between the social groups and gives rise to caste-based associations.
- Dahej region shows animosity against the migrants as the locals complain of losing of employment opportunities due to the preference of migrants over the locals by the industries. The following charts reflects on the perception and pursuance of conflicts among the social groups.

3.1.10 Cooperation

- Along with all these sources of conflict, several issues and agencies facilitate cooperation and negotiation among the communities.
- The common religious and cultural practices, among the social groups, remain a strong factor in bringing them together and the role of the Ashrams and other religious organizations in resolving conflicts play a crucial role in the Hansot-Ankleshwar region.
- The cooperation between villages, on the basis of political leaderships, can be found in villages like Jolva-Khojbal, Ambetha-Dahej, Kuda-Nava Ratanpar, where the leaders share common social and political identity.
- The occupational interdependence, especially in agriculture-centric regions of Bhavnagar and Hansot, helps in building cooperation. The growing awareness regarding the legal safeguards for the marginalized communities also prevent caste-based conflicts (only to some extent).
- Accordingly, the legal safeguards also ensure cooperation and coexistence.
- The industries and the Civil Society Organizations (CSO) act as unifying agencies between the communities and the villages with shared interests.

3.2 Economic Profile

3.2.1 Housing Structures and Economic Well being

- The consumption of the goods and the services is a primary component of economic well-being and, as such, a primary indicator of living standards. The income, consumption, and the accumulation of wealth are three dimensions of the broader concept

of economic well-being and therefore, it becomes essential to understand the relationship between them.

- The study focuses on the existing economic status of the households in the three regions of Bhavnagar, Dahej-Vagra, and Hansot-Ankleshwar. The social position of the people is very well influenced by their economic status. As the proposed dyke project might offer a range of economic opportunities and might subvert the existing economic status, it is crucial to look at the present level of disparities within the social groups as well as across the regions to weigh the existing economic status of the households.
- The study assesses the economic status by weighing in on the cumulative wealth of the households among the social groups regionally. Various economic activities that the households practice and the sources of income generation for sustaining their livelihoods; and the major economic activities are being analysed. Further, the study also peeks in to the status of migration in these regions, as well as the existing capacity and willingness of the social groups to migrate over distances. Not the least, but the factors which affect the capabilities on individual households and social groups have also been highlighted in this section.
- The relevance of doing an economic profile of the regions is expressed through providing a baseline distribution of resources in the regions which are rarely balanced.
- The existing conditions of households are reflective of the socio-economic status, poverty dynamics, and the intra and intergenerational socio-economic mobility. It explains the housing comfort, the access to minimum necessary assets, that a household should have in order to sustain and lead a dignified life. Further, it reflects on the issue of relative gendered comfort.
- The housing quality takes in to account the type of houses (material used in walls, roof as well as the kind of floor), living conditions like number of rooms, density of the household in terms of number of people sharing the space. There is a high correlation between the house structure and the social groups. The houses which are sturdy in construction across regions are owned by forward caste groups (General and OBCs). Not only the strength that these houses projects, but retaining traditional symbolism in construction of house with modern amenities explains their social power beyond just economic wealth. The houses of lower social groups (Devipujaks, Adivasi Rathods and the Vasava) are loosely built and are ill maintained. The Hay roofs, tin sheds and sometimes, a clay tile roof with hay walls are often found for these communities. The

disparity in the housing condition also exists between the religious groups where the Muslims (especially in Ghogha) do not spend much on maintaining their ‘multi-storied wooden houses’. The kuccha houses in the region are found among (*Vadi Vistaar* in Kuda Village), Taria, villages in Dahej industrial region. Therefore, owing to their ‘low economic capacity’ these social groups spend less on the maintenance or on the augmenting their living standards.

- Despite having larger family size, the OBCs and the General caste own more housing space than the SCs and STs, across regions. These indicators essentially reflect (beyond purchasing power of the household) on the important aspects of the social and the human values such as privacy, dignity, personal and familial choice, and degree of individualism. The social assets in their houses also follow the same trend and accordingly, three or four classes of social groups emerge, where the forward castes with more assets are concentrated on the right of the graph and lower castes with less assets on the left. [Figure 2.5]

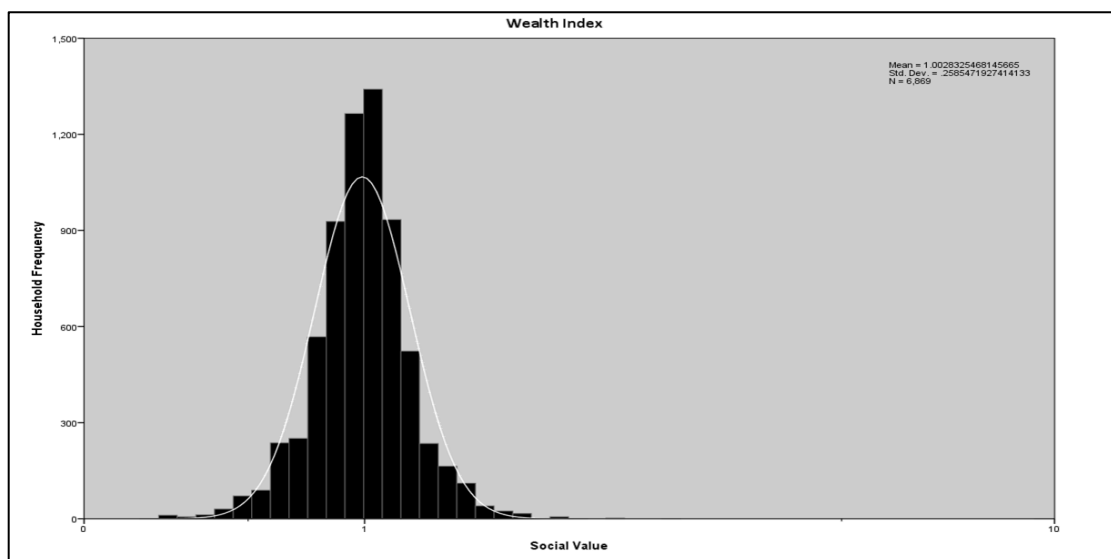


Fig. 2.5: Distribution of economic wealth and living standards of households in all three regions.

- A computed mean of 1 signifies that the most households have social wealth (In terms of Social Assets) concentrated around the 10th Percentile in the normal distribution [Refer Figure 2.5]. Accordingly, the households with relative scores above the mean can be classified as well off, while the households to the left of the mean can be categorized in three distinct head relative to asset impoverishment vis a vis Poorest (values less than 0.6), More Poor (values in between 0.6-0.8) and Less Poor consisting of households consisting values up to mean value. Based on above assumptions, Poorest class of people

holds 3.5 per cent of the households, more poor are 14.5 per cent, less poor are 33 per cent well offs are top 49 per cent are well off. [Figure 2.6]

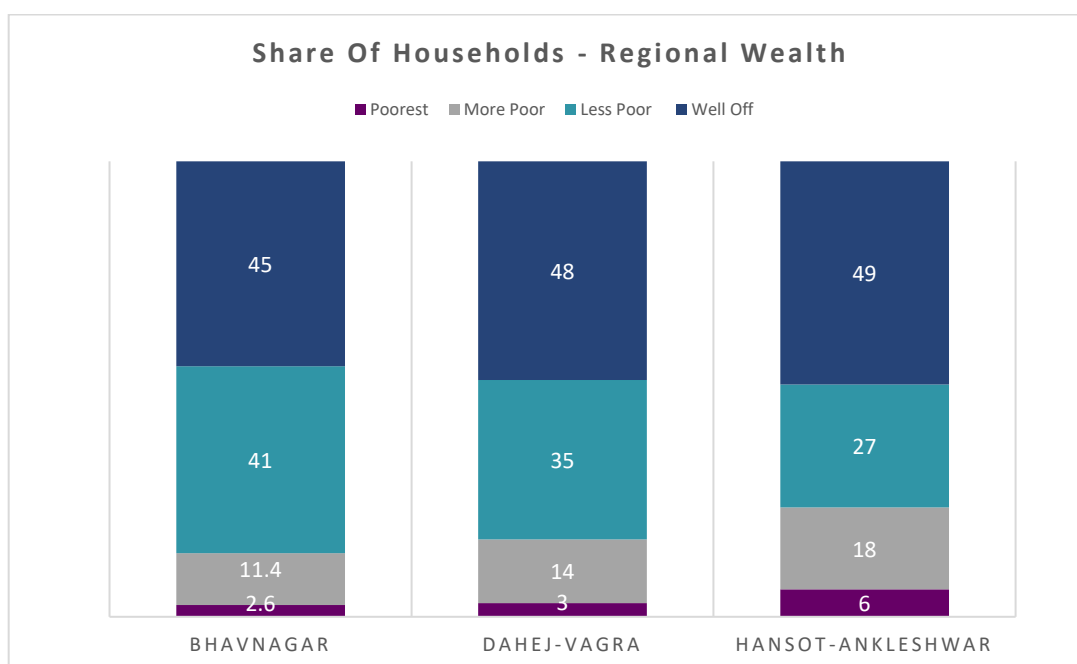


Fig. 2.6: Composition of relative wealth of the households in respective regions. (Share of households are represented in percentages). **Note** - The categories devised throughout the document are based on relative poverty measurement of World Bank and UNICEF, which has been factored on the distribution of households along the social assets holding capacity.

- Likewise, the regional differences do not vary much but there are some significant observations that one comes across –
- that despite not being exposed to full-fledged industrialisation, the wealth is relatively (read as marginally) more in Bhavnagar region compared to the Dahej and the Hansot region.
- that the scores which assumes to exclude (at present analysis level) land asset value suggests that, Bhavnagar, being agronomy dominated region would leap ahead more in terms of household wealth regionally.
- that the poorest class of people are least in Bhavnagar (2.6%) and the most in the Hansot Region (6%). The same trend follows for share of households that are well off in the three regions (declines from Bhavnagar to Hansot).
- The access and the distribution of basic services and certain important facilities complement and complete the economic picture of the households. It has been observed that, despite having piped water access in the villages, the frequency of water supply varies from three to five days. Likewise, in terms of the sanitary facilities, there seems to be major disparities among the caste groups. The size of toilets of the SC and the ST

households (under the Swachh Bharat Abhiyan) generally are very small and at times without assuring regular water supply.

- Across the communities, for the cooking fuel, barring villages which are close to cities or major highways, the use of the LPG cylinders is limited and traditional ways of cooking using firewood dominates.
- The use of smartphones, internet bandwidth usage again follows the same pattern across caste lines.
- The access and the distribution of welfare resources such as Public Distribution System (PDS) also gets distorted which tells that a certain level of manipulation exists at the regional level where some sections benefit more through favouritism and certain others get deprived because of it. Although, the distribution of Below Poverty Line (BPL) ration cards is generally in proportion to their numbers and to their socio-economic status, in Bhavnagar, there is one exception where the Bhils (STs) despite relatively deprived have less distribution of these benefits.
- Looking at all the indicators, certain conclusions about the regional wealth of these social groups can be drawn. They are:
 1. The OBCs (and the Darbars) which practically dominate Bhavnagar region holds more social wealth.
 2. Ghogha, a sub region of Bhavnagar, has more income disparity even among the dominant caste.
 3. Industrialization in Dahej has increased the social wealth of households but disparities among the castes have also widened.
 4. The SC Parmars in the Hansot- Ankleshwar region are a good example of how welfare benefits if efficiently utilised can help uplift lower social groups, at least economically.
 5. Overall inequality in wealth is less in Bhavnagar and increases in the Dahej and Hansot regions.

3.2.2 Land Ownership Pattern

- The landholding, as a socio-economic asset, has been studied to make a sense of the ownership pattern across regions where the primary use of land across regions is agricultural. In the Bhavnagar and the Hansot region, there is a significant share of households which hold land while in Dahej it is nearly absent except certain exceptions.

Disparities in the land holding capacity of social groups exists here and it can be said that the OBCs and the General Caste Darbars hold almost all land in Bhavnagar.

- The STs do not have much landholding, and if they do, it is not sufficient enough to support them economically. This landlessness and lack of opportunities forces them to take to work as wage labour. The ownership of farmlands is largely hereditary. Forward castes across regions have multiple sources of income. They may be involved in agriculture and simultaneously having a skilled job to supplement income. Thus, dependence on land is not only limited to who holds the land here but also the livelihoods which depend on it as such.

3.2.3 Cropping and Irrigation Pattern

- Significant differences in the cropping pattern exists in the regions. The Hansot-Ankleshwar region has remunerative farming with multiple crops grown annually. Owing to availability of year-round canal water irrigation, the surplus generated has larger economic value.
- The same in the Bhavnagar region is of a subsistence kind where one crop a year dominates owing to saline affected soils and lack of water for irrigation. This is the reason why surplus production (Jowar and Bajra) is routed to feed the livestock. **[Refer Figure 2.7]** The diversification of the crops and remunerative agriculture in these regions require water which the project is going to supplement.
- Intensity of mechanization of agriculture is observed more in the cash crops. Fertiliser usage also follows the same trend. Despite so many differences in the existing cropping and irrigation, a common pattern emerges where in marketing of the agricultural product go through selling via private traders and the consumption of which is in the local region itself.
- However, sugar cane, a cash crop in Hansot region, as well as the grains in Bhavnagar are sold through union cooperatives and Agricultural Produce Marketing Companies (APMC), respectively. Farmer Producing Organisation are absent here, even in developed infrastructure region, since the storage chains are non-existent. The following charts highlight the cropping pattern in the three regions.

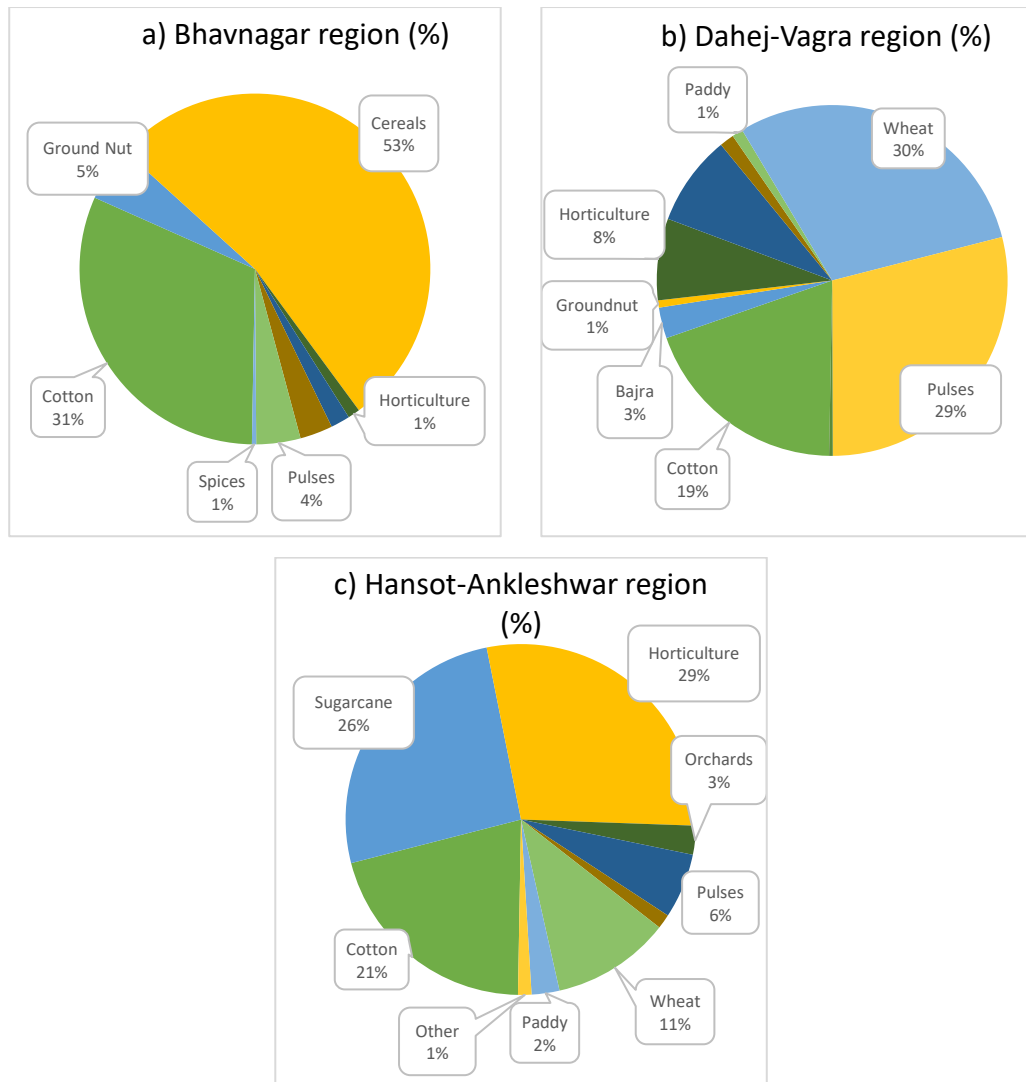


Fig. 2.7: Cropping Pattern in the three regions (In Per Cent Share)

- The dairy industry thrives in the Hansot and the Bhavnagar regions. Certain Social groups (the Maldharis) who practice animal husbandry hold large stocks of milching and non-milching livestock. However, these communities are now transitioning to include alternate sources of livelihood since the land on which the cattle used to feed are now disappearing.

3.2.4 Fishing and Aquaculture

- The fishing activities are confined to some of the OBCs and the STs across the three regions. These social groups in the coastal villages, like Ghogha, Borbatha, Jageshwar and Mahegam, experience economic vulnerability for variety of reasons. First, there is

hardly any alternate source of livelihood; second, they catch small number of fishes; third, that they do not have ownership over the boats or big nets to catch enough fish to sell. It has been observed that the newer technologies in Aquaculture are being practiced in certain villages like Vamleshwar and Katpor but it is uncertain how much of the income it generates.

3.2.5 Salt Industry

- The salt industries across the sea coasts are active, but it is more prominent along the upper Bhavnagar region and Aliabet-Vamleshwar sub-region across the gulf. These lands are leased to the outside businesses which do not contribute to the villages. However here is an exception where the Nirma Chemicals in Bhavnagar upstream claims that it contributes to the welfares of the three villages (Narmad, Khetakhatli, and Kalatalav) it has adopted. However, not many local people are directly employed in these industries.

3.2.6 Manufacturing Industries

- There are regional variations, in terms of local employment and the dependence of the locals on these industries. Bhavnagar has NIRMA Chemical Limited and a ship breaking yard at Alang which rarely employ the local people. The other smaller industries which exist here, like the diamond polishing does provide certain dependence for communities.
- The Dahej region – a major hub of large-scale manufacturing industries- displays a contrasting picture, where the industries provide employment to the locals, mostly, of temporary nature. Livelihood insecurity and an overpowering constant sense of dependence in a situation of no other alternative, forces these workers to take work even at marginal wages.
- Some households from the higher castes here have high pay jobs also, owing to historical capital accumulation but the STs, a second majority, still work as wage labour only. The hazardous and unsafe category of work is taken up by these social groups and by the women. Thus, the industries have done bare minimum just enough to maintain the dependence of people around them.
- Other allied economic activities, which provide support to these sectors, are local transportation in which vehicle owning Kolis and some Muslim groups operate ferry

services along the Dahej Highway. Other than this handicraft industries in Bhavnagar provide employment to thousands of women across regions.

3.2.7 Tourism

- For tourism which is a very important component of the project, the existing popular mode are either religious or leisure. There are many places of historical and religious importance in Bhavnagar such as a 1000-year-old mosque in Ghogha to nearby Nishkalank Mahadev. The Narmada Parikrama circuit also adds to the tourism. There are beaches at Ghogha and Kuda that are popular among local tourists. Ferry ride from Ghogha to Hazira near Surat also attracts a diverse group of tourists.

3.2.8 Migration

- In terms of migration, the three regions exhibit stark differences. The migration in Dahej is facilitated by the presence of large-scale industries. Accordingly, the Dahej region draws labour migrants from neighbouring districts to the far away states. Migrants from far away states like the Satnamis of Chhattisgarh and the Mondals of Bengal have migrated here for better work opportunities. The nature of migration in Dahej is from rural to urban.
- In Bhavnagar, people migrate from villages in close proximity to the city region. Some of the OBCs of the Bhavnagar region also migrate (part time) to Surat to work in the diamond factories. Similarly, in the Hansot region, upper castes as well as the SC Parmars have migrated to Ankleshwar town for employment.
- This capacity to migrate part time or permanently is somewhat explained by the economic situation of the households. Willingness to move over distances is again dependent on the land attachment or/and availability of any residual source of income to fall back on. The lower social groups in Bhavnagar are more willingly to migrate as the region has limited economic opportunities for them **[Figure 2.8]**.

The willingness to migrate in the other two regions is on the lower side. This resistance has different but related factors. The presence of the industries as a source of livelihood in Dahej and Land as a source of livelihood in the Hansot region provides certain level of hesitation among social groups to move out of their native places. Even the priority of

migration is limited to the nearby town for low-capacity households. Owing to larger capabilities, for higher economic status caste groups, the same preference can be extendable up to metropolitan cities.

- The willingness to migrate among all the communities is more when migration is with community and their social resources against moving alone. Such a pattern of willingness to migrate along with their social groups comes across as a commonality across the three regions. This qualifies the argument that the belongingness is an important factor in successful rehabilitation approach in any developmental intervention. The following chart reflects on the willingness to migrate among the social groups across three regions.

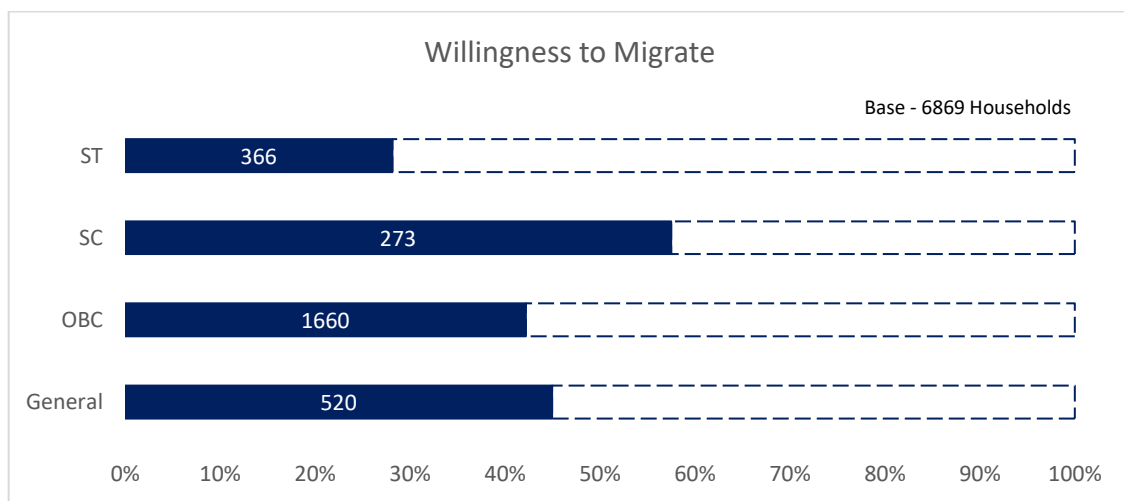


Fig. 2.8: Willingness to migrate across regions from the place of stay among different social groups. (Data labels represents number of households while the extent of colour bar represents percentage share of households within the respective caste groups)

3.2.9 Social Infrastructure

- Education and Health are two important infrastructures which when developed can make a difference in adding necessary skills to uplift any community. Across the regions, the educational infrastructures starting from Anganwadis to Primary to Secondary and Tertiary education exists but preference to study is limited to trade schools like ITIs. They are hardly adding any capacity to generate additional economic infrastructures but just helping in filling the gaps between demand of jobs and the supply of labour.
- The preventive and the curative health infrastructure in over industrialised regions like Dahej is abysmal. Lack of access to primary healthcare forces the SCs and the STs to depend on the private clinics for treatment since the nearest good government hospital is

at least tens of kilometres away and convenience takes a toll on the purse and time. Likewise, the careless effluent discharges from industries have created a conducive environment for vector borne diseases to multiply, which affects the overall community health of the population.

- The social security net, across caste, is a net result of how equitable is the distribution and access. The financial inclusion is more in the urbanized regions than in the isolated villages. The access of direct benefit transfers in the region, such as pension, are more an issue of the governance and less of an issue of distribution. The monetary benefits get diverted to the likeminded social groups in power in villages. The availability of non-monetary welfare support and various identification cards does not necessarily translate in welfare of the needy as observed in the villages. The lack of awareness and political favouritism comes into play equally in explaining these distortions.

3.3 Political Profile

3.3.1 Identity

- Identity plays a significant role in the polity and in the governance. In the context of surveyed areas, people identify themselves in multiple ways, many of which often overlap. For the general caste households, the caste identity compliments their religious identity. It is true for both, among the castes in Hindus and some sects among Muslims. Both the identities indicate a higher position in society, which allows them to exercise dominance among others.
- In all the villages of Dahej-Vagra region, two competing identities stays with people namely, Caste and the Village. The share of the households with whether ‘Where you live’ and ‘who you are’ matters are identically strong communities.
- The General caste strongly identifies with caste then their village, while all other groups identify more strongly with village than any other. Having a religious identity follows the caste hierarchy also. Forward classes more frequently identify by their religion then any caste groups on the lower hierarchy. This pattern correlates stronger in villages (Jolva and Khojbal) with diverse and competing social structure based on faith.
- In the Hansot-Ankleshwar region, caste/ethnicity emerges as a dominant identity among all the sections. A preference of political identity is seen among the upper castes since

they are majorly active in the political domain. These identities further form associations among the communities in the villages.

3.3.2 Associations

- Associations are important structures in society. It is a tool for interactions within the socio-economic, and political environment and is also an element of power projection. These associations were formed based on majorly three identities – caste/ethnicity, religion and political affiliation.
- The preference for the privileged identity is reflected in the formation of associations. Caste-based associations are prevalent in the Bhavnagar region. In religiously homogeneous villages, caste-based associations were prevalent, while in Ghogha, the religious associations were dominant, considering the heterogeneous setup.
- The political associations are influenced by caste or religious dynamics. In the absence of religious heterogeneity, the caste becomes a prominent identity, and thus, the associations are based on the caste grouping.
- The STs are majorly situated in Ruva and have formed a group among themselves known as 'Madhuli'. These groups not only influenced the social position of the STs but also guided them in the religious and political domain.
- The less association in political domain attachment found among the various caste category is because of the reflection of the political interest of each category served in the caste-based association. These degree of association of caste category to various caste based, religious based and political ideology-based groups.
- Few Households in Dahej region make associations ranging from caste credence to religious following or simply being member of political party. It is normally seen that the social groups aspiring to rise above cling to forming association which would help them do so, but in this region the highest caste groups along with the subaltern engage in maintain the status quo.
- Forming association is more rigorous in forward castes than those who lack competence. Since scheduled tribes make a significant share in the population matrix in the region, they are naturally taken along. To the extent of political struggle, they merge into one or other power class in the villages.

- The Ankleshwar-Hansot region is also home to various kind of associations like caste-based, religious, and political associations. Due to its bipolar distribution of households among the Kolis and the Adivasi communities, majority of the caste-based associations belong to either of these caste groups.
- While the Koli associations are organized and work towards promotion and facilitation of education and employment opportunities for its members, the associations working for the marginalized communities are primarily for political sensitization and aim at consolidation of Adivasi voices against exploitation.
- Another major distinction between the associations from these two caste groups is the nature of participation and involvement of people in these associations. While the Koli associations have active participation of its members at the village level, the associations working for the marginalized community are mostly based in the district and taluk levels and the role of the villagers is limited to spreading of information passed down from the above.

3.3.3 Decision Making

- The aspect of decision making for the purpose of analysis in the SIA is defined as the relative power men and women hold in the household in domestic and other matters. Secondly, an important element of the existence of different political orientations are also taken in into consideration to see the existence of possible intra family conflict on political lines among the households.
- A gendered gap exists in the decision making in the households. The households reflect a pattern where the family is led by eldest male member. The patriarch of the family is in charge of the decision making and has final authority on the domestic matters. The existence of the system derives its authority from the existing gendered norms of the society, which classifies the role of men and women in to archetypal positions of the earner and care taker, respectively. These gendered norms are firmly embedded in the daily life, intra family relations, social interaction and political dynamics.
- Among the tribals, since both the genders work to earn wages, the egoistic behaviour is milder. But it still is there for who earns and for who doesn't. Along with the gendered view on, decision-making activities were also observed on the caste/ethnicity and village levels.

- Within the caste/ethnicity, in all the three regions, it is usually the elite, usually political influential, well-educated or economically affluent who heads the decision-making activities.
- Among the Muslims in Ghogha, Jolva and Khojbal, the Imams of the mosques in different mohallas head the decision-making process. At the village level, it is usually the dominant caste which is involved in the decision-making activities.

3.3.4 The Existing Conflicts

- In Bhavnagar, among the upper castes, the resource-based conflict on the lines of property dispute exists. In contrast, among the backward castes, such conflict on the lines of unequal distribution has also been observed.
- The occurrence of caste-based conflict is predominant in the Bhavnagar region. Religious conflict is mainly concentrated in Ghogha, Jolva and Khojbal, where the population is heterogeneous. It is imperative to note that in these places, despite the existence of conflicts between the Hindus and the Muslims, no event of communal violence has been reported. The conflicts are mostly limited to the discrimination in the governance institutes and allocation of the welfare schemes.
- Regarding the political conflict, it is only over the leadership in the village. These instances of conflict happen between the village elite and the leader in power.
- In the Dahej-Vagra region, the major conflicts among communities were based on resource sharing. The conflicts between the industries and the surrounding villages are very common. The issues like unfair compensation, non-employment of locals from families affected of land takeover by industries in the past, industrial pollution, low contractual wages and occasional industrial accidents due to lack of safety standards persists between the groups.
- The Intra-caste and inter-caste conflicts, are resolved between parties. Depending on the intensity of the situation village elders, religious leaders and Panchayat would intervene and act as a mediator for resolving conflicts.
- While the SCs and the STs prefer approaching the village elders (usually from the same caste) the upper castes prefer the Panchayats for conflict resolution. The role of religious leaders plays imperative among the Muslims in Ghogha, Jolva and Khojbal.

3.3.5 The Welfare Schemes

- The welfare schemes that are taken into consideration for the study purpose can be broadly divided into three categories:
 - a) Socio-Economic Welfare Schemes – UJJWALA Yojana, SAUBHAGYA Yojana, PM Awas Yojana, Mid-Day Meal, Swachh Bharat Mission Toilet (SBM), MGNREGA, E-Shram;
 - b) Agriculture Schemes – PM Kisan, PM Fasal Bima Yojana (FBY), Soil Health Card;
 - c) Healthcare Schemes: Mukhyamantri Amrutam Yojana, Ayushman Bharat.
- All the schemes under categories are integrated with each other in a functional capability. Welfare across social and economic parameters is essential for the upward mobility of the marginalised. At the same time, these schemes are also precautionary in nature, which prevent the downward mobility of a particular household. For instance, farmers in the surveyed villages in Bhavnagar and Vagra-Dahej region are dependent on rainfall. At the same time, the seepage of sea water has turned the soil saline over time.
- The rainfall leeches the salinity deep into the ground, making the upper layer usable for cultivation. In the event of no rainfall, or excessive rainfall, the crops may get severely damaged, causing an economic burden on the household. In such a scenario, farmers under economic crisis may be forced to see a part or the whole of their land, which may render them landless and loss of an economic activity. This causes downward mobility. To prevent such an occasion, schemes such as PM-KISAN, which provides ₹2000 quarterly to the farmers act as an input cost, saving some money. PM-FBY assures an insurance to the farmer in case of the loss of the crop, thus saving them from economic crisis and preventing downward mobility.
- Welfare schemes in Dahej region come through financial devolution through the CSR as well as through the State and the Union government routes. The central sector schemes and the centrally sponsored schemes both have active presence in the region. The distribution is largely based on the lists prepared by the local panchayat. The reach of the schemes in Dahej region has been significant.
- It covers majority of eligible BPL households whilst the proportion of distribution has been little lopsided. Few households which do not have pucca housing still lack the connection.

- The distribution of the PMFBY and the PM-KISAN benefits directly correlate with the land ownership which is constricted to forward castes. One scheme which falls back in supporting the households in the region in MNREGA. Industries have diverted most of the labour away from the scheme.
- The Hansot-Ankleshwar region benefits from several government schemes as the development programmes are mostly government-centric in the absence of any major industry in this region. While the Vagra-Dahej region is heavily industrialised and developing with active support from large manufacturing industries, this region is dependent on traditional occupations of agriculture and fishing.
- The asymmetric distribution of resources, among different castes and groups, meant that the governmental interventions through schemes like Swachh Bharat Mission, Ayushman Bharat, UJJWALA, etc. become crucial in ensuring basic amenities to the marginal communities, especially the Adivasis. The following tables [Table 2.1, 2.2, 2.3] provides an overview of the functioning of various government schemes in this region.
- It may be noted that while schemes like PMAY-G and SBM Toilet providing basic necessities of a pucca house and toilet are largely availed by the marginal communities, agricultural support schemes like PM-KISAN and Soil Health Card are beneficial to General and OBC households due to concentration of agricultural land with these communities.

Scheme/ Welfare Program		Caste Group (In %)			
		General	OBC	SC	ST
1	UJJWALA	45.9	58	48.1	58.8
2	SAUBHAGYA	64.5	61.2	51.9	61.8
3	PMAY-G	4.6	8.1	0.4	32.4
4	MGNREGA	11.7	7.8	1.1	0
5	PM-KUSUM/Solar Rooftop	21.2	5.1	2.6	14.7
6	Ma Amrutam	36.5	31.6	32.5	32.5
7	Soil Health Card	1.8	1.9	0.4	5.9
8	Mid-day Meal	37.9	37.9	37.7	61.8
9	PMFBY	12.9	9.5	1.9	0
10	Ayushmaan Bharat	16.3	21	22.4	41.2
11	SBM Toilet	32.3	45.3	39.6	73.5
12	PM-KISAN	16.5	19.7	2.2	0

Table 2.2: Welfare benefits of select schemes in households of different caste groups in Dahej-Vagra Region.

Scheme/ Welfare Program		Caste Group (In %)			
		General	OBC	SC	ST
1	UJJWALA	24.2	27.4	27.2	34.8
2	SAUBHAGYA	53.8	50.8	39.9	32.6
3	PMAY-G	3.3	3.5	10.4	28.0
4	MNREGA	1.3	0.8	1.7	2.9
5	PM-KUSUM/Solar Rooftop	1.3	0.3	1.2	1.8
6	Ma Vatsalya	29.5	28.1	30.1	21.8
7	Soil Health Card	1.8	0.5	1.7	0.7
8	Mid-day Meal	38.1	40.2	32.9	37.6
9	PMFBY	11.4	4.7	2.3	1.5
10	Ayushman Bharat	29.0	25.5	30.6	22.0
11	SBM Toilet	13.6	17.9	24.3	35.5
12	PM-KISAN	21.5	11.2	2.9	2.5

Table 2.3: Welfare benefits of schemes in households of different caste groups in Hansot-Ankleshwar Region

Scheme/ Welfare Program		Caste Group (In %)			
		General	OBC	SC	ST
1	UJJWALA	21.3	36.5	58.3	46.5
2	SAUBHAGYA	70.2	59.8	80	40.8
3	PMAY-G	4.3	3.9	26.7	34.7
4	MNREGA	2.1	0.5	6.7	5.5
5	PM-KUSUM/Solar Rooftop	0	0.8	0	1.1
6	Ma Vatsalya	51.1	45.6	53.3	26.3
7	Soil Health Card	17	3.4	1.7	0.2
8	Mid-day Meal	38.3	29.4	40	40
9	PMFBY	27.7	19.2	13.3	1.3
10	Ayushman Bharat	61.7	67.8	70	39.4
11	SBM Toilet	14.9	28	53.3	53.7
12	PM-KISAN	68.1	53.6	36.7	6.9

3.3.6 The Developmental Awareness

- Developmental awareness represents the effectiveness of communication mechanism. Coming to the communication of development, awareness levels among the communities

represents the effectiveness of the communication carried out. The developmental awareness is measured on two levels - in the village and the immediate neighbourhood, across caste section and in between men and women.

- It has been observed that the women from the upper castes are restricted to work, and are not exposed to the information, whereas the women from the other three social groups engaged in work have limited information on the developmental activities.
- There seems to be some commonality between the general and the OBC households. These households are well integrated with the political and administrative institutions. Just by focussing on share of household which are not aware of the development happening around them can tell the level of involvement of STs in the village dynamics.
- Many of the villages in the Dahej region have reserved seats for the local power structure which mean that there would be a considerable push of schemes for the community., Villages like Lakhigam (in Dahej) have communities separated geographically, which makes it even harder to disseminate the information.
- The awareness levels follow caste hierarchy. The level of households which are aware fails not a great share. This derives from the lower standard of living for people. Lack of participation is the result as well as the cause of exclusion of marginal communities like the Adivasis from the developmental process.
- Many of the households complain of political favouritism and discrimination in availing governmental schemes due to caste and political biases. The Adivasis, for example, remain isolated from the development process due to several factors ranging from lack of awareness to systematic discrimination and isolation from decision making process.
- The Developmental awareness within and outside the village is a sign of empowerment as this is directly related to the educational and the social status of a community, its potential for development and access to benefits, and participation and demand for representation in the village affairs.
- In addition to the relatively lower numbers of developmental awareness, the nature of awareness and subsequent participation in the development of the village by the Adivasis is poor. Mere information does not ensure access and even access to benefits of developmental programmes is far from uniform. The following charts reflect on the awareness levels among the social groups across the region.

3.3.7 Governance

- To understand the functioning of the three tiered level of governance, people's satisfaction with it has been recorded. A comparative observation shows that the SCs has the least satisfaction with all three tiers of governance in the Bhavnagar region. One of the reasons attributed to this is the low penetration of the government schemes. The dominant castes in charge of the Panchayat activities usually ignore the requirements and necessities of the SCs, thus their social mobility is obstructed. As a result, the state and central government schemes have reached a smaller section of the SC community and thus, a lower level of satisfaction was recorded.
- Among the STs, interestingly, a high level of satisfaction is seen. This can be attributed to their associations being active in the field of communication and making the schemes available to the community. The grievance of the marginalised is yet to be comprehensively addressed.
- The satisfaction of the people with the facilities and the functioning of the government at various levels is strong in the region. The people across the communities are highly satisfied with the way of posturing of the union government as recorded from the surveys.
- Some fragmented households complain for not being the beneficiary of the welfare schemes, few also question the criteria for qualification of households. The extent of (dis)satisfaction on the governance by the state government is largely affected by the electoral environment in the state.
- Schemes such as Vahli Dikri Yojana, Ma Vatsalya Yojana, functioning of ASHA under State health access has invited mixed reactions across communities. However, the poor households in all the regions have a good conclusion for the governance in the state and by the state in the region.
- The parameter where people are actually aware of the functioning is where they experience it, hence the local governance satisfaction becomes key in determining the success or limitations of governance in the region.
- To an extent the results can further be extended to draw governance satisfaction at higher level of functioning. Citizen grievances are spread across the lower caste groups.
- The women respondents particularly complained for delayed response for schemes, the dire requirement of documentation and the medium to apply for such measure. Lower castes pointed out the manipulation of infrastructural projects for personal satisfaction

extending to the community of the influential castes. The following charts reflect on the governance satisfaction level across three regions.

3.3.8 Civil Society Organizations

- The Civil Society Organisations (CSO) have a significant place in a large democracy like India. The CSOs function in multiple roles; as a service provider, watchdog for rights, encouraging participation and advocating active citizenship. The purpose of identifying the CSOs in the villages is to assess whether any well of ill meaning organisations exist, which may either help in communicating the development or disrupt the project for personal gains.
- In Bhavnagar, two main organisations, working for women are active. Utthan, an NGO providing para-legal air to women and organising awareness programmes regarding various schemes, and Vividhlakshi Mahila Kalyan Kendra, which provides paralegal help to women, organises skill development programmes and aid in organising Nari Adalats (in Ghogha taluka, and other parts of Bhavnagar). The two NGOs are actively engaged in different matters relating to women such as family conflict, domestic violence, aiding widows for pension.
- There are also the caste-based organisations functioning in the region. The Kolis have a Yuva Koli Samaj, which engages in the community welfare activities targeted for the upliftment of the youth. Similarly, the Bhil Adivasis in Ruva have a tribal union, which has constructed library facility and a temple for cultural and educational activities.
- The scope of all the above-mentioned organisations, except Utthan is limited in its reach. Their functions are limited to of Bhavnagar, and within the respective caste. In terms of the reach for women, Utthan and Vividhlakshi Mahila Kalyan Kendra have face challenges in approaching the targeted population.
- The Presence of the CSOs in the Dahej-Vagra provide alternative to the fragmented voices. Like the Bhavnagar region, presence of the CSOs in the Dahej region is virtually absent. Some social wings of the industries may function like the CSOs but these do not come under the category of CSOs.
- The CSR based intervention in the region like Deepak foundation, Adani foundation, Godrej, and the GACL works to support infrastructure building in education (supporting advanced facilities), health sector (medical aid vans with doctor on Wednesdays), skill building, supporting local business (women involved in sewing), paper dyeing, organic

kitchen farming, etc. Women irrespective to caste groups are welcome in these courses but rarely the tribal women join the skill centre.

- The self-help groups may be regarded as one subset of CSOs (registered and unregistered) which have considerable footprint. There are many small groups of women among the OBCs and the general castes who save marginal amount of money through the local micro level deposits.
- The Bharuch district with its significant Adivasi population and their occupational and locational vulnerabilities witnesses a number of CSOs. However, the selected villages in the Ankleshwar-Hansot region see limited role for such organizations restricted to mostly religious and political awareness.
- Some of the organizations provide education and health services including free medicines and ambulance services in these villages. The Kaka-Ba hospital located in Hansot also provides free nursing training to interest educated girl candidates.
- The presence of CSOs in safeguarding fishing practices in this region has mostly been limited to organization of protests and garnering support against the proposed canal diverting the Narmada water to the proposed dyke at the Gulf of Khambhat.

3.3.9 Safety and Well-Being

- The societal conditions of an individual depend on the safety and wellbeing of the residents. The safety and well-being of the population in the surveyed region has been assessed on the lines of caste groups. The rationale being capturing the caste-wise safety is to bring forth the perceptions of these groups regarding safety and which further elaborates on the type of social interaction that exists.
- The tribals in some villages have better acceptance than the SCs in other villages. Despite the difference in the social status, the tribals have been integrated in the society. Moreover, the tribals with its strong community association experiences a sense of personal security. The strong presence of the tribal union and their collective role in providing aid to the aggrieved has proved effective in providing the social security.
- Perception and conception of safety in the neighbourhood, *gali*, *mohalla* (street and clusters) is best understood by the views of the caretaker of the household. Women have better understanding for safety in the neighbourhood as well as in the village.
- The overall, the perception of safety in the region is higher than average. Certain issues of safety and security for tribals and scheduled caste in villages such as Dahej, Padariya,

Jageshwar, Mahegam, Khojbal are of particular concern where abuse ranging from emotional to physical has been recorded. Since most of the villages have migrant population, the safety and security of these areas are challenged where the enmity between local and outsiders is strong for example Lakhigam and Dahej village.

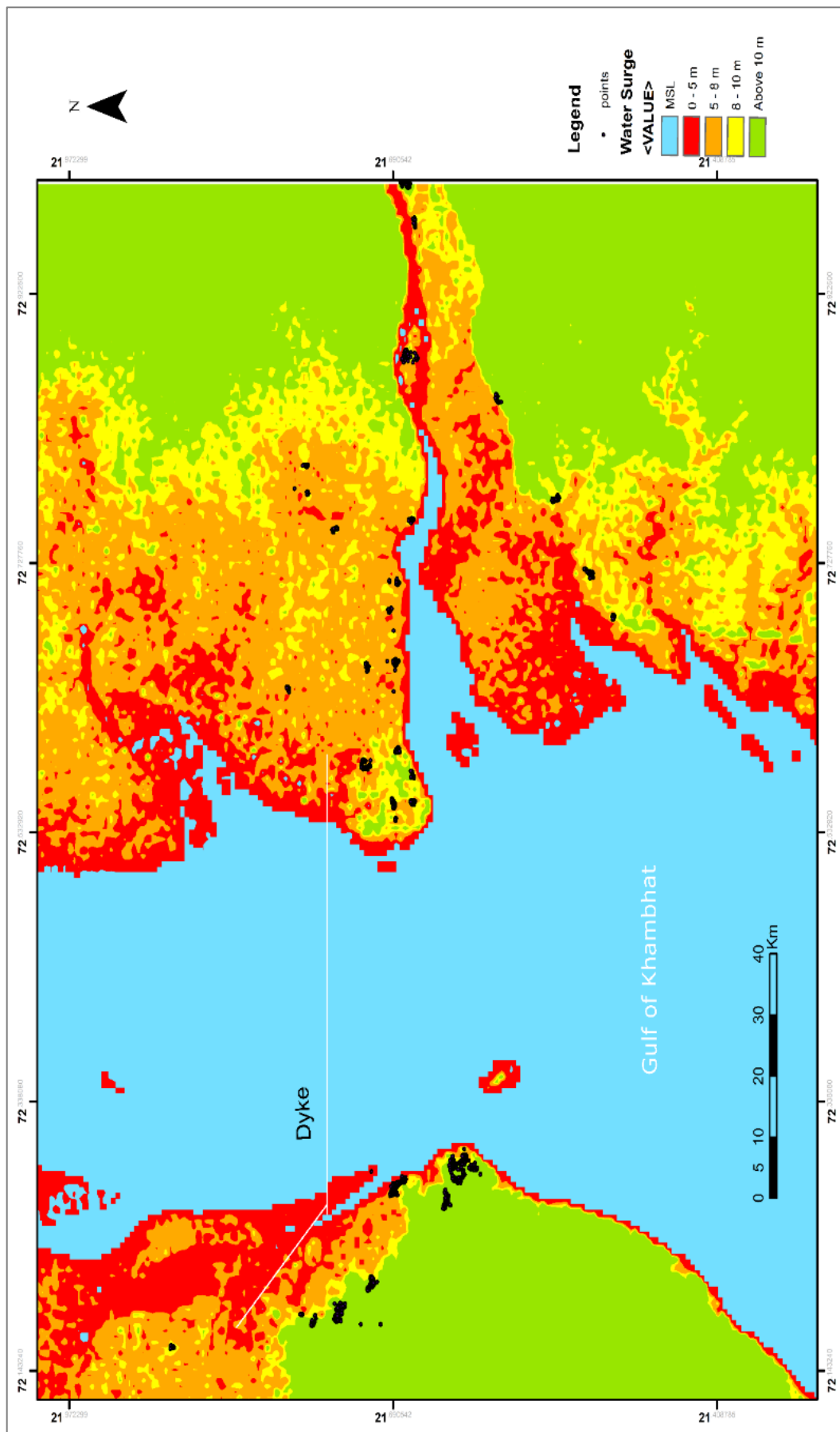
- The safety and security extend further to industries which at times act like ticking time bomb for the region nearby. The industrial accidents are common site to the western part of the region in the city. Villagers fear for their lives in the environment they live due to their proximity to the industries.
- The pollution levels have enveloped water, air, soil, livelihood as well as mental anxieties of the people. Diseases both vector-borne as well as cardio-vascular affect the households. All these signals environmental distress and degraded quality of living.
- The overall quality of the social and the political lives of the communities differ among the caste groups with differences in housing and basic amenities, occupational opportunities, and socio-political status being clearly visible.
- However, the perception on the village lives of these communities does not vary significantly despite of structural and social challenges in their day-to-day lives. The economic insecurity along with social discriminations has made the Adivasis look for opportunities for co-existence rather than confrontation.
- The perception about overall safety and well-being of the households reflects that most of the households (nearly 90%) feel safe in the neighbourhood and the community.
- The social ills of alcoholism, domestic violence, caste violence, etc. have remained as part of the lives of the villagers, especially of the Adivasis. Nearly 95% of both male and female respondents felt safe in their neighbourhood and the communities. With availability of fishing, wage labour, and independent works in the vicinity, the unskilled labour forces find it safe in the villages than migrating to other places.
- Hansot and Ankleshwar towns offer daily wage opportunities with good road connectivity to all the villages. Taria and Borbatha being unofficial settlements are aware of the vulnerabilities due to the proposed infrastructural project. However, these villages show optimism in finding governmental support in rehabilitation and employment to avert any negative impact.

Drawing from the above mentioned existing socio-economic and the political status, the next section of the report offers potential socio-economic impacts of the proposed Kalpasar Dyke on these villages.

4. Assessment of the Socio-Economic Impacts of the proposed Kalpasar Dyke

4.1 Extent of Water Level Rise and Impact Scenario

- The construction of the dyke is likely to increase the water level in the downstream areas. Therefore, three possible scenarios might emerge. First, in which the rise in water level might induce possible relocation of some households (Where there is very less scope of mitigating the threats that may arise). A second scenario where the rise in water level would degrade the quality of available resources in the region on which people are currently dependent (here the scope for adaptation exists but it requires necessary policy interventions in immediate to short term); and third scenario, where the rise in water might not cause significant negative impacts and may contribute positively in improving the livelihoods of the people.
- In the first case scenario, the coastal villages in all the three regions would have higher exposure to risks due to rise in the water level in the post-dyke construction. These villages are Ghogha and Kuda in the Bhavnagar region; Lakhigam, Luvara, Jageshwar and Mahegam in the Dahej-Vagra region. In the Hansot-Ankleshwar region, Taria, Borbatha, Borbatha Bet, Vamleshwar and Katpor would be having the high exposure to risk due to the water level rise. In second case scenario, the villages that are relatively away from the coast would have comparatively moderate risks due to rise in water level. These villages are Avaniya, Akwada, Ruva, Nava Ratanpar and Kala Talav in Bhavnagar region and Suva, Vegani, Koliad and Padariya are in the Dahej-Vagra region. In the Hansot-Ankleshwar region, the potential villages are Shera and Badodara. In the third scenario, the villages like Jovla, Dahej, Sadathala, Kothia, Narbad, Vasnoli, Ambheta might be partially affected which is an exception as despite on the coast it is on higher altitude comparatively. [See Map 2.3]
- As the project proposing to develop various economic infrastructure, the development will be likely to cause direct and indirect impacts as the impacts likely percolate from creation of various economic infrastructure. It is primarily likely to affect the economic/income aspects.



Map 2.3: Extent of Water Level rise and Exposure of the villages to the risk of water level rise. (Cluster of black dots represents villages in different risk zones)

4.2 Potential Impacts on the Existing local Economy

- As the reservoir is likely to provide irrigation facilities to the Bhavnagar region, the farmers may adopt diversification of the crops with improvement in soil productivity. Due to the efficiency of connectivity, the distance between the market hubs will possibly be reduced. The reduced distance between different markets would offer a profitable fair price for the agricultural products. Specifically, in the Bhavnagar region, 29% of the households own agricultural land and 19% of households in the Dahej-Vagra region own agricultural land. In both of these regions, due to the lack of irrigation facilities (presently), cultivation is carried out only during the monsoon season. The irrigation facility, after the construction of the proposed dyke, would not only increase the number of cultivation seasons but also provide the farmers to diversify their crops pattern and maximize the benefit.
- On the flip side, with the rise in the water level, some of the villages would also lose their farmlands to the project directly and indirectly. The villages that fall under the downstream areas of the proposed dyke will have enhanced salinity in their farmland which would make the lands unsuitable for agriculture purposes. On the direct front, the villages that are close to the coast will have their farmland inundated leaving the farmers land alienated.
- The fishing activities have not been developed comprehensively in all three regions due to various factors such as pollution, lack of availability of mechanization and cold storage. Two possible contrarian theories regarding the fishing in Narmada Estuary emerges in case of the proposed dyke: a) the increase in the water level might dilute the existing pollution level as well as reduce turbidity levels in the gulf. In this scenario, the fishing activity might increase in the Dahej-Vagra region with the rise in the water level and with the dilution of the existing pollutants. While in the second scenario, the pollution levels at Ghogha, Taria, Borbatha and Borbatha Bet might not be affected by the water level rise. Hence, there would be hardly any improvement in the fishing activities.
- The salt production, as an extractive Industry, is going to be negatively affected in terms of production. However, the salt industries have not employed many local people and they are not much dependent on it. However, since the salt is used as a basic raw material

in the pharmaceutical and chemical industries, the industries are going to be at a risk of lower production.

- The industries near Luvara, Lakhigam and Jageshwar might be affected by the rise in water levels, since they are situated at a lower elevation. In such a case, there might be a need for the relocation of these industries considering the potential land inundation or taking proactive steps to prevent the inundation.
- The Plantation of mangroves and revetment of the shore may prevent any potential erosion of the land. In case of an impact on the industries, alternate employment options must be kept ready to employ the local industrial labour force and prevent loss of employment. However, the proposed project might reduce the distance between different industrial centers and markets, and improve the transportation mobility.
- With the increase in the agricultural production, various Agro-based industries might also be developed. Various food and processing units and storage centers can be developed which will benefit the farmers and create employment opportunities as well. With the enhanced connectivity across the Gulf, the diamond polishing and other cottage industries, might get a boost.
- The improved connectivity might also positively impact the tourism sector. An enhanced network of roads and the railways might usher more tourism in these regions. Bhadbhut Barrage as a part of Kalpasar Project is already under construction which would provide additional connectivity in the Bharuch region. The added connectivity would converge with other proposed projects in the Saurashtra region like PM GATISHAKTI, a coastal road project, giving impetus to development of numerous tourism hubs in the coastal Gujarat. With these initiatives tourism, the hospitality and transport sector-based opportunities might also improve. With policy intervention, the development of other tourism-supporting infrastructure such as eco-parks might create a blue tourism-based ecosystem in the Bhavnagar region.
- There might be an increase in migration in these villages across the three regions as an increase in economic opportunities might attract people from and outside the state. The villages like Akwada and Ruva in Bhavnagar, Jolva and Dahej in the Dahej-Vagra region which are at present acting as urban centres might merged and become independent larger urban centres. They might attract inward migration from the surrounding rural areas. The impact on the economic status in regions may trickle down to the impact on existing

social status and promote upward mobility among the vulnerable (majorly SCs and STs) in the region.

4.3 Impact on the Social Status

- The rationale for studying the impact on social status is to explore the potential changes that might be experienced in these villages with the coming up of the proposed dyke. As mentioned before, the social status in the regions is determined by the caste hierarchy and by the economic and the educational status of the households and social groups. The utilisation of the economic benefits is dependent on the social status of the groups. Across the three regions, the dominant castes hold the majority of the agricultural land which reflects their position in society. With the increased productivity in the case of the availability of irrigation facilities, agricultural production will thrive, contributing to the strengthening of the existing status. However, development agencies should take care of the distribution of these benefits to uphold the cohesive harmony within the society and instances of casteism, due to the asymmetric distribution may be reduced.
- In terms impact on the gender relationship, a case of empowerment can be anticipated, with the integration of women into economic activities. With the increase in the economic opportunities, women may have better financial independence and decision-making power. In Bhavnagar, better participation might be seen in the diamond and cottage industry. In the Dahej-Vagra region, where women are employed in non-technical roles in the industries at marginalised wages, the proposed project might open up new avenues in the field of hospitality and tourism for women. In the Hansot-Ankleshwar region, women are exploited as bonded labourers. The availability of better economic opportunities with development, and providing training may improve their financial condition and make them less susceptible to exploitation. On the contrary, there is a possibility of upper caste women not benefitting from the new avenues as they face social restrictions in participating in the economic activities. The women from the OBCs, STs and SCs may utilise the available opportunities more since they are already employed in various areas. This will improve the position of women in society by empowering them financially and providing better exposure.

4.4 Impact on Health and Education

- With the rise in the income level among the social groups, the capacity to avail better education would increase. If the benefits are maximised for the backward classes, their upward mobility will be rendered possible. Presently, Bhavnagar has limited employment which pays low wages. Compared to Bhavnagar, the Dahej-Vagra region presents more industrial opportunities. However, due to the lack of education, the households across social groups are unable to bag higher-paying jobs. In the Hansot-Ankleshwar region, employment is available in the form of agricultural labour. The potential diversification provided along with the proposed project will be most utilised by the higher castes due to their relatively higher educational status and economic strength. The Enhancement of education within the dominant caste will happen with less deterrence. However, the backward caste will require policy intervention to promote education and make them capable of absorbing the opportunities.
- The project has the potential to improve the health facilities with better sanitation, construction of healthcare infrastructure, and the possible dilution of pollutants. The accessibility to healthcare institutions will also increase with the increase in income. The freshwater from the newly developed reservoir can be diverted to the water-scarce areas in these three regions which will reduce the existing vector born disease. A regular supply of potable drinking water was found only in a few villages. In some villages, like Jageshwar and Luvara, the supplied water contained particulate matter with high levels of salt (as informed by the locals) which is unfit for drinking and cooking. The women have to procure water either from the filtration plant from the nearby industries or use the supplied pipeline water. The availability of freshwater in the region will reduce the health risks and the perils of women. This may result in a decline in confining women only to the domestic sphere.

4.5 Impacts on the Cultural Sphere

- The littoral areas like Ghogha and Kuda in Bhavnagar, Jageshwar, Suva and Ambetha and in the Dahej-Vagra region and Vamleshwar in the Hansot-Ankleshwar region would be impacted in case of water level rise. Some of the important sites of cultural importance such as the Ghogha Dargah, the Ramapir Temple and the CNI Church are the three main religious sites which might be affected by water incursion. Alongside, there are several

small *dargahs* that are located near the coast which would be affected. In Kuda, the Shikotar Maa temple is revered among the village locals as well as the people from other villages of Bhavnagar would also be impacted with the coming up of the proposed dyke. The temple holds a high cultural significance. The deity is also revered as *Kuldevi* by a few social groups. In villages of Jageshwar, Suva, Ambetha (in the Dahej-Vagra region) and Vamleshwar (in Hansot-Ankleshwar region) are hubs for the *Narmada Parikrama* which may be affected. Water incursion might affect the temples which are located near the coast. In case of the rise in water level in the Narmada estuary, the ferry services from the northern shore to the southern shore may benefit. These services connect to the hubs of the *Narmada Parikrama*.

4.6 Impact on the existing Nature of Social Interaction

- The project may have a positive impact on how marginalised communities are presently positioned in their everyday life. The marginalised communities in Bhavnagar are heavily dependent on the upper castes in economic and in the political spheres. By giving these communities a better chance to generate revenue, their dependency on the landowners and on the daily wage labour might reduce. It would promote their empowerment, by offering economic benefits, which translate to improving their social status as well. It may also establish a more thorough connection between the leaders of the marginalised castes (as seen in Ruva where the STs have established a socio-political organisation to support their community). In the Dahej-Vagra region, the STs present in Luvara and Lakhigam are empowered through socio-political organisations.

4.7 The Potential Political Resistance(s) to the Proposed Project

- The magnitude of the project may attract some socio-political hindrances based on the possible negative impact it may create. As seen in the case of the construction of the Sardar Sarovar dam, hindrances were created by the Narmada Bachao Andolan. This study shows that in case of any potential loss of land and displacement of the households in the process of the construction of the dyke, the lack of an effective communication with the local people if the grievances of the people are not addressed satisfactorily, there

would be strong resistance against the project (both by the local people and by the politically motivated agencies from outside). The potential resistances would take the form of violent conflicts if not addressed timely. In the Bhavnagar region, two important villages such as Ghogha and Kuda, where the possibility of water inundation is high, strong resistance by the villagers can be expected. The local issues may transpose into a regional issue, which might result in the mobilisation of different social groups in Bhavnagar.

- Dahej-Vagra region is the most sensitive region because of the possibility of displacement of the existing industries and the social marginalised Adivasis (STs) households. The three villages viz. Lakhigam, Luvara, Jageshwar and the Dahej town may face water inundation due to the water level rise. In all four areas, the settlement of the Adivasis are in the close proximity to the coastline. A possibility of rehabilitation thus might emerge in these four villages. A potential resistance can be expected from the Adivasi groups. It is important to highlight here that some of the Adivasi leaders, from these villages, had supported the Narmada Bachao Andolan and are currently protesting against the construction of the Bhadbhut Barrage. There is also a possibility of some ill-meaning CSOs or social may hinder the developmental project for personal gains. In the aforementioned four specific areas, there is higher possibility of resistance against the project. Additionally, since the agricultural land are going to be adversely affected in Khojbal, Kothia and Sadathala, as the Narmada Feeder Canal passes through these areas, there would be resistance to the project from these villages as well.
- In the Hansot-Ankleshwar region, villages such as Katpor, Borbatha and Borbatha Bet are already sensitive to the possible adverse impacts of the project. In Katpor, the aquaculture projects located along the Narmada River may be disturbed due to a rise in the salinity and in the water level. During the study, it was found that disturbance to the aquaculture in the past has invited conflict in the village. It is important to mention that the Borbatha and Borbatha Bet villages are susceptible to flooding. These villages are usually flooded during monsoon. In the past, major events of erosion have taken place. It is anticipated that the Bhadbhut Barrage might increase the chances of flooding in these villages. A possibility of resistance can be anticipated in these regions as some of the ill-meaning organisations might capitalise these situations to protest against the proposed dyke.

5. Social Impact Management Plan

5.1 Need for a Management Plan

- The impacts of the development projects, their planning and implementations, invariably contributes benefits, as well as, burdens on the society. It has been observed that, in the absence of a detailed plan in effectively dealing with the burdens and equitably distributing the benefits of the development projects, conflicts have emerged and are pursued by some sections of the society or the other that either subverts the implementation of these projects or further add to the vulnerabilities of certain sections. In both the cases, the role of a detailed social impact management plan (SIMP) becomes critical for an inclusive conception and implementation of development projects. It is one around this objective the summary of a detailed SIMP for the proposed Kalpasar Dyke project is highlighted below.
- One of the first step of a management plan for a development intervention is effective communication of development with the people. In the case of the proposed Kalpasar dyke, there is an urgent need to communicate the plan and the details of the project with the surveyed villages. While the mandatory village meetings are going to be must, the agencies need to focus on certain specific aspects in communicating with the people. While conducting the village meetings to communicate, the specific social condition of a specific village needs to be factored in. As in most villages, the marginalized communities are deprived from the developmental information, efforts must be made to reach out to them. Failing to democratically communicating to all the sections of the society would invariably invite resistance against the project. Moreover, in the process of communication, the agencies should also share the detailed mechanism of grievance redressal that would take care of the genuine anxiety and the grievances of the local people. While the detailed plan for the impact management is part of the main report, the following section highlights only on the rehabilitation and resettlement plan for the proposed project.

5.2 Rehabilitation and Resettlement Plan

- Large-scale development often invariably brings in elements of near-term disruption to local lives. These changes are carefully required to preserve and minimise the negative implication which arises from them and help the benefits translate meaningfully into the

lives of the affected social groups. An efficient and just resettlement and rehabilitation plan therefore can be put as a safeguard so that the interventional changes brought in by the development be taken care of. The displacement and the resultant remedy due to the Proposed Kalpasar Dyke project can be seen as a point of intervention to not only minimise the burdens but actually as a point which brings in reinforced social growth.

- The Resettlement and Rehabilitation plan for the project, arguably, to be guided jointly on the salient features of the National Rehabilitation and Resettlement Policy, 2007 and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 primarily focussing on minimising the damage and converging the gap between the land acquired and the land required as a bare necessity.

5.3 Extent of Displacement

- Minimising Displacement should not conflict with the need for displacement. Therefore, the plan needs to incorporate the aspirations and capabilities of the affected households. The extent of necessary displacement may include exposed communities in coastal villages as well as the sandwiched villages surrounded by large-scale industries on one side and sea on the other. Forms of displacement may be direct (involuntary and voluntary) as well as induced.

5.4 Approach of Resettlement and Rehabilitation in the affected regions

- One of the widespread and pragmatic approach to R & R is the compensatory framework. The approach by which the framework is adopted may be different but the plan is generally guided by principles graphically explained by the following;

Action Plan

Policies to be adopted across all interventions through R & R

- Household (not Family) as a unit for compensation reward,
- Comprehensive Socio-Economic Value against the limited economic valuation of the household,
- If the assets at present are jointly held, solatium should be dependent upon the full asset value for each nuclear household attached.
- Caution to compensate households with limited capacities with cash.
- Reward Option decision on the informed choices of the Household,

- Flexibility to modify compensation reward mix² till the project is enforced³,
- Identification of affected households must adhere to direct as well as induced effects of the project in its operational life.
- Provision to support immediate division of the Household tree.
- Provision to forego land for monetary compensation if desired by youth departing from agricultural practices.
- In case of losing livelihood, stress on providing alternative livelihood choices of the same nature and equitable pay in addition to monetary reward.
- Provision to consider women for regular employment. Additional support to women-headed households.
- Ensuring that the right to land should converge with principles of the right to livelihood (dependence principle).
- Ensuring that the resettlement is based on the degree of the existing cohesion, coercion and cooperation among social groups.
- Provision for housing allowance as a part of compensation.
- Provision for governance (Common Service Centres) and banking facilities.

Table 2.5: Affected Social Groups –Probable Displacement Design (Risk to Residence)

Region	Vulnerable Social Groups	Suggested Intervention
Bhavnagar	STs - Bhils, (Ghogha) SC – Devipujaks, OBC – Kolis (Id. By class) in Vadi-Vistaar (Kuda), Ghogha, and the Jats Muslims – Id. By reference contour line (Ghogha)	<ol style="list-style-type: none"> 1. Pucca Housing (not limited to Patra system) with at least 2BHK system. 2. Subsidized clean cooking fuel in the near term. 3. Potable, Continuous Tap water connectivity to all facilities inside of the residence. 4. Residence location to more vulnerable – near the existing village. 5. Option to shift to town/city with minimum HRA 6. Ghogha is to be intervened by both spatial⁴ as well as social aspects.

² Reward Mix is share of cash to land to solatium as decided by the household.

³ Present amendments (2015 first and second) to The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, of 2013 limit the modification period up to six months from the announcement of the award.

⁴ Low lying lands below seven-meter contour heights from the mean sea level are likely to be affected, however differential impacts on different social groups within may persist.

Dahej-Vagra	STs – Adivasi Rathod and Vasava SCs – Rohit,	<ol style="list-style-type: none"> 1. Villages (Ambheta, Luvara, Jageshwar, Lakhigam around industries should be provided with an option to shift as a village. 2. Likely overcrowding in Dahej-Lakhigam-Jolva is to be managed by affordable housing schemes. 3. Enhanced Health and Sanitation in Industrial region 4. Enhanced transportation and Last mile connectivity around villages. 5. Jageshwar – Housing Colonies facing the sea to be severely hit. (Resettlement advised irrespective of a social group). 6. Mahegam and Lakhigam Separate cluster– STs (Resettlement⁵ advised).
Hansot-Ankleshwar	STs- Vamleshwar, Taria, Borbatha OBCs- Low-lying flood plain of Borbatha Bet.	<ol style="list-style-type: none"> 1. Resettlement is advised for all STs in the Villages listed. 2. Machi Patel Kolis facing the river – Resettlement is not necessary⁶ but advised.

Table 2.6: Suggested Rehabilitation Measures (Alleviating Risk to livelihoods)

Region	Near Term (Project Announcement till Construction Phase)	Extended Term (Operational Stage of the project)
Bhavnagar	<ol style="list-style-type: none"> 1. Enhanced Soil treatment Facilities and promotion of organic farming⁷. 	<ol style="list-style-type: none"> 1. Land for Landless (those employed in agriculture) (<= 2 Ha per Household)
Dahej-Vagra	<ol style="list-style-type: none"> 2. Farm Produce procurement by the government (if required) on C2⁸ + 50% methodology of Swaminathan Commission. 	<ol style="list-style-type: none"> 2. Land for Land (Reclaimed Land in Upstream)
Hansot-Ankleshwar	<ol style="list-style-type: none"> 3. Marketing local Artisanry (Cottage services) 4. Expanding Diamond Polishing Units to absorb farm labour. 5. Utilise Non-Farm labour in the Construction of the project. 6. Last-mile transportation Connectivity 7. Improving and provisioning functional toilets and potable drinking water facilities. 	<ol style="list-style-type: none"> 3. Construction of Cold Storage and Logistics facilities with the defined serviceable area. 4. Preparing local communities for skills relevant to the tourism and hospitality sector. 5. Affordable Financing (Farm and Non-Farm) 6. Option to invest in Government Infrastructure Investment Schemes as a security measure. 7. Retention and promotion of traditional knowledge and grassroots innovations.

⁵ Displacement and Resettlement should be in proximity to the village, probably to the other side of the sea and the village but not separate.

⁶ Proposed plan carries a provision to construct flood retention wall along both banks of river Narmada.

⁷ The acquisition of the land should strive to acquire wastelands first.

⁸ MS Swaminathan recommended a 50% margin over the C2 is the imputed cost of family labour, rent of the land and imputed interest on owned capital to arrive at MSP.

8. Health and Sanitation Awareness
9. Schooling Education Support to the affected households
10. Reviving Affordable health and diagnostic facilities
11. Enhanced PDS support through ONOR to affected locals and migrants alike.
12. Social Support Groups
13. Network of dedicated public libraries in the villages.
14. Incentives to diversify from water intensive crops (Sugarcane) to salt resistant varieties.
15. Fishing communities may be given additional income support.
16. Development of common Gaushalas for livestock rearing.

8. Development of local pre-processing Food parks
8. Development of sea economy (fishing)
9. Provision to access the reservoir waters for fishing.
10. Easy Financial Support to buy Tractors, Boats.
11. Instituting local places of worship as places of importance for cultural preservation.

5.4 Socially and Economically Disadvantaged Groups

- Certain socially and economically disadvantaged groups which transcend the social hierarchy are more vulnerable than others of the same social group. These include Women, Children, Aged, Disabled and (Partially to Whole). The Resettlement and Rehabilitation of households with these members need to be strengthened (and safeguarded) which starts by acknowledging them in the Rehabilitation process. Women are in general, the worst victims of displacement-led processes. They are the primary caretakers in addition to some who also earn for their households. Better measures must be placed to safeguard such women workers. Likewise, basic amenities need to be synchronised with welfare options available to them. Pregnant and Lactating women, women with more than two children, and malnutrition must be checked and monitored in the project affected households. ASHA and Anganwadi workers can be the primary force for the intervention which can be provided expanded resources and responsibility to check up on the affected households regularly. Department of Food distribution, Health, and the Social empowerment should function in harmony with the implementing agency to ensure a streamlined flow of information, awareness and resources. Jat community has a significant footprint in the possibly affected region. The isolation which these communities prefer cannot be the reason for their exclusion from basic welfare

schemes. Thus, certain basic amenities (water, power, sanitation) should be provisioned in a way that these are not supplied to, but can be generated in a place where they stay. The transhumance does not permit these communities to stay for long at a location, thus these facilities must be mobile and easy to use. The products they generate and the culture they have with nature can be promoted through TRIFED to larger markets by labelling them as Transhumance Indication (TI-Tag) just as GI-Tags.

5.5 Migrant Resettlement Measures

- A contingency plan for creating different jobs must be placed before the compensatory reward is given to the affected households on a pilot basis. The duration of distress has to be minimum during this process. This requires urban centres like Bhavnagar, Bharuch, and Ankleshwar to be prepared for housing a lux of migrants, provisioning them with basic facilities and the employment choices. Many such employment opportunities can be leveraged through the construction works of various constituents of the project; therefore, the contract-awarded companies must prefer these households for their work according to the skill they possess and acquire them during such work.
- Along with it, minimising large-scale reverse migration is a challenge in the rehabilitation phase. Since the whole process is limited to the local population, the migrant population is left to fend for or taken into account after the locally affected persons are taken care of. By the time the focus is on these groups, there are no migrants left to rehabilitate since they move out. Thus, it must be ensured that the intervention for migrants is at par with the locals. This is also essential since many businesses exist in the regions for the demand created by these groups. Although the demand fluctuates, it sustains. Reverse migration on the other hand cripples the whole demand and supply ecosystem. Rent-controlled residences and the possibility to expand the affordable housing schemes to develop rental apartments along with various welfare schemes can help in the distress period. A dedicated migrant welfare department within the implementation agency can take care of the affected households with the collaboration of both the source state and destination state since the remittance flow is not restricted to one state.

5.6 Rehabilitating the household co-dependent on industries

- NIRMA chemical complex plant in north of the Bhavnagar urban region is a challenge for the resettlement and rehabilitation process for varieties of reasons. For one, the industry faces a high risk due to the proposed project since the location is raw material (i.e., salt) centric. Second, the industry is a producer of finished consumer goods as well as raw materials for several agglomeration industries in the region. Third, the local employment (which although at present does not deliver good workmen's compensation) provides substantial employment in the region. The leased nature of land over which the industry mines the salt is probably going to be affected and thus the industrial operations. Barring raw materials, the industry controls a lot of labour in the region as well as in its other plants which makes it difficult to identify the rehabilitation measures to be adopted in case of substantial disturbance.
- Another set of industries which faces similar challenges is located in the Dahej region. The nature (agglomeration) of these industries makes it difficult to shift them as the degree of dependency in between the industries within the industrial region is far more complex. Basically, four kinds of industries exist in the region namely – Petrochemicals, Pharmaceuticals, Metal and Alloys, and Electronics. Villages in the vicinity of the industries have the desire to shift away but options put forth are generally unacceptable. A better management plan taking care of the living (residential complex in the peri-urban region), employment (through skilling and reskilling), and sustenance (incentivized through expanded government cum industrial welfare support) can help develop a range of holistic rehabilitation plans. Since the nature of the land over industries operate is privately acquired, there is no scope for forced shifting of the conglomerate. The co-dependency between industries and the villages around them is based on survival (but to an unequal degree). To equate the dependence, appropriate government support to the villages should be encouraged. Only an incentivised nudge to compensate for the revenue foregone (if not sought to shift the villages) can ensure that the existing support in terms of CSR funds reaches the villages dependent upon these industries. For compliance, a set of non-governmental committees represented by local experts can be utilised. The following table explains the industrial rehabilitation options which should be opted as guiding measures;
- Since the farming households are largely impacted by their loss of livelihood which is agriculture, the transitional phase is likely to add distress which goes beyond financial

or social. These phases of development may stretch from 10 to 15 years if delayed and prolonged shifts in ways of earning livelihood changes the whole living pattern of a household. Restoring these communities then again to their traditional ways should not be desirable or acceptable, thus compensatory rewards should go for land-based compensation only if the household is provided the same level of assets, market, inputs and credence to continue it. This requires the overall guiding framework of rehabilitation measures to be constructive rather than mere restorative. Overall, the mode of compensatory framework needs to be holistic with multitudes of interventions during as well as post-construction of the dyke-

- It should provide measures to maximise voluntary resettlement where rehabilitation measures are contextually guided to uplift the households.
- It should provide for land and land rights to landholders and landless alike,
- The landless (Agricultural Wage labour and the leased workers) and the sharecroppers (in joint agriculture whether familial or not) be assured of land entitlements,
- It should provide for preferential displacement based on the choice of location (for extended family support) and compensate accordingly.
- It should provide informed choices for different compensation portfolios,
- It should provide for freedom to choose from monetary and non-monetary (land and solatium) economic compensation,
- It should provide ample space for houses along with the provision of making usable facilities,
- It should strive to move to Social Compensation involving compensating for the way of lives of the people beyond taking care of their livelihood.
- Social Compensation funds can provide for the establishment of social support groups, and leisure activities, compensate for the loss of environment, and tree cover and may introduce skills to adapt to the new normal.
- It should provide accessible and approachable means to receive such gains,
- For those villages which are not getting displacement but are substantially affected by the induced impacts, the project can provide compensation for environmental degradation in the near term.

Table 2.7: Suggested Rehabilitation Pathways for Industries and Livelihood dependencies in three regions

Region	Nature of Industry	Nature of Threat	Employment Support	Village Support/Adoption	Suggested Resettlement/Rehabilitation
Bhavnagar	Salt and Chemical	Salt Pan Inundation	<p>Direct unskilled-semi-skilled jobs, Indirect - Logistics (Trucks)</p>	<p>Narbad (Narmad), Kala Talav, Khetakhathi (Employment Support + basic necessities limited to water tanker), local infrastructure</p>	<p>In case of no major resettlement of the industry -</p> <ul style="list-style-type: none"> • Basic Raw Materials (Salt) can be sourced from Kachch and downstream small salt pans near Akwada and Avaniya. • Increase in logistic cost for salt-derived components can be compensated by involving the industrial products in dyke construction or increasing fertiliser output. <p>In case of shifting the industry –</p> <ul style="list-style-type: none"> - Option for labour to merge with one of the other plants of Nirma. This would require the displacement of employed households in view of existing provisions suggested in the document. - Need to restore Panchayati Framework with inclusion in Accelerated development programs. <p>If Industry continue in the region with reduced capacity and labour lay-offs –</p> <ul style="list-style-type: none"> - Provision of shifting migrants to other plants with similar nature of work. - Provision to train the layoff labour to work in the city. - Active scientific and financial support to villages for shifting to agriculture (in long term)

Table 2.7: Suggested Rehabilitation Pathways for Industries and Livelihood dependencies in three regions

Region	Nature of Industry	Nature of Threat	Employment Support	Village Support/Adoption	Suggested Resettlement/Rehabilitation
Dahej	Petrochemicals, Pharmaceuticals, Metal and Alloys, Electronics	Service Road cut off, Effluent Stagnation ,	<p><u>Direct</u> - Contractual Labour</p> <p><u>Indirect</u> – Container and cargo shipping, Road side hotels, Industrial complex maintenance</p>	<p><u>Villages</u> - Jageshwar, Luvara, Ambetha, Lakhigam (Separate Cluster). Provisioning rehabilitation infrastructure in Dahej – Lakhigam – Jolva Villages.</p>	<p>In case of no major resettlement of industries-</p> <ul style="list-style-type: none"> • Operations can be shifted to other units for Industries with multiple units in the region. • Merging of non-technical functions of industries with similar nature. • Reinforcement of highway connecting the LNG port terminal to Dahej-Bharuch Expressway. <p>In case of shifting the industry for operational cum revenue risk –</p> <ul style="list-style-type: none"> • GIDC- PPP (& hybrid models) developed infrastructure sustainable and green operations • Incentivised Nudge to shift to Green Hydrogen and better emission control technologies. <p>In case of shifting (also not shifting) the industry –</p> <ul style="list-style-type: none"> - Option to shift at least four villages (Jageshwar, Ambetha, Luvara, Lakhigam) as a township complex. Rent controlled apartments for migrant families can be developed at Dahej and Jolva. - Smart urban development for Jolva-Dahej-Lakhigam linear tract. - A dedicated hub for industrial employment and skill upgradation. - Leveraging existing government welfare programs for financial and social support. - Leveraging wellness centres to include specialised diagnostics and support groups.

