CONCLUSION

The province of Gujarat comes across as a region possessing a unique and complex environmental setting. The physiographic complexity ranges from an almost desert like conditions existing in the region of Rann to sparsely wooded and rocky terrain of Kathiawar peninsula, to the wooded highlands towards the north and the east of the province, to fertile and flat plains of Sabarmati, Mahi, Narmada and Tapti, and along the coastline. The climatic conditions in the region ranges from hot and sultry summers typical of a tropical climate, to a season of an almost continuous rainfall in some parts, to cold winters. Again the temperature differential across the province ranges from an almost bearable conditions along the coastline, which was cooled by the sea breeze, to hot and humid conditions in the interiors.

Similarly the Soil conditions in the province exhibited complex range and differential. Thus we find the soil along the region of southern Gujarat and in the flood plains of the central districts suited to cultivation of such dry weather crops as cotton and indigo. the water retention capacity of soil along the coast of Narmada and Tapti rivers suited the rice cultivation. however moving towards the north and northwest the soil becomes heavily saline due to frequent inundation of the area by sea water, thus made unfit for any sort of agricultural activities. The peninsula though heavily wooded towards the south, deoes at places exhibits soil conditions suitable for agricultural activities, though the ground conditions for the most part are rocky.

The material culture, which took shape in the region and the political and economic conditions in the region were to a large extent determined by the above mentioned environmental determinants, such as topography, soil conditions and rainfall distribution.
Thus we find activities related to commerce and trade being conditioned by the above mentioned environmental determinants.

The conditions of shipping and navigation during the period of discussion, in an age when the wind and the currents determined the course to be taken and the landscape decided the routes of commerce, we find the conditions across Gujarat not uniformly favourable. The annual monsoon determined the season of navigation along the coastal Gujarat, and during the season of southwest monsoon the shipping in the area almost becomes impossible, due to the rough nature of the currents and waves during the period along the coastline.

The coastline was geographically suited for commerce as the numerous creeks and inlets provided safe roadstead and harbours for the ships, from the rough tidal waves. The tidal waves and the numerous sand banks along the coastline created trouble for shipping in the region. The port of Cambay suffered in main due to its blockage over centuries by deposition of sand and the shifting nature of sand deposition in the Gulf of Cambay. Similarly, the port of Surat was also partially accessible to heavy ships and towards the end of the century only small barks were able to reach the city, with heavy ships anchoring at Swally hole.

Moving towards the interiors, we find that most of the important trade routes connecting the various important commercial and trading centres of North India and Deccan moved along the coastal plains of Gujarat, and the flood plains of Sabarmati, Mahi, Narmada and Tapti, and scarcely run though the interior of the peninsula or across high mountains along the eastern boundary of the province. However along these highways, the travelling was not always a pleasurable experience, since the various rivers and rivulets which criss-cross the plains of Gujarat, created the problem of fording them, and more especially during the season of rains, when most of them acquire a turbulent nature. This was especially true of the rivers of the peninsula which gets converted from small streams to big rivers during the times of rains, and
Sabarmati and Tapti, which during entire period of our study have exhibited frequent flooding, causing damages along their banks to life and property.

The agriculture in the region is largely rain dependent since most of the important rivers as Mahi, Narmada, and Tapti had high banks and hence were unsuitable for irrigation. Thus the dependence on rainwater for both irrigation as well as for drinking and other daily uses, was exhibited in the construction of numerous wells and tanks by the inhabitants and rulers for public as well as private use in the cities and countryside. The agricultural produce for which the region was famous for, during the period – cotton and indigo, were primarily rain dependent, and their seasons for sowing and harvesting were determined by annual rains.

Thus we realize that almost every aspect of the commercial life of Gujarat was dependent on environmental factors to a large extent. Any break in the regularity of the occurrences of natural phenomenon such as rains has created havoc and crisis in the social and economic life of the region. The region saw numerous famines during the course of seventeenth and eighteenth centuries. These famines not only had a negative impact on the commerce and economy of the region, but also proved to be social disasters. The shortcomings of food and rations at times reached to such alarming levels, that resorting to cannibalism was a common practice adopted for survival. The people were forced to sell their children at small coast so that they could get something in hand for survival and their children would at least get food and shelters.

The topography of the coastline as well as of the interior played a determining and influential role in conditioning the nature of political control over the region. The broken nature of the coastline characterized by numerous creeks, sand banks and islands suited the local inhabitants in their piratical activities. In a similar manner, the control over important ports and islands also shaped the nature of interaction between various political powers, primarily
the European companies, who were engaged in competitive military rivalry against each other, so as to gain ascendency and control over the trade of the east.

In a similar manner the broken nature of topography, especially in the region of peninsula and along the eastern and southern boundary of Gujarat had a defining influence on the political contours of the region during the course of two centuries. The tough terrain and almost inaccessible jungles and mountains cut through by ravines and river channels made it extremely difficult for the Mughal governors and officials to keep a check on the marauding and depredating activities of local rajas, zamindars, and the roving bands of Kolis and Kathi tribesmen. Similarly the Marathas in course of their forays into the region made full use of the difficult terrain to surprise the Mughal commanders, and thus ultimately eroded the base of Mughal political authority and supplanting it by the mid of the eighteenth century.

The influence of environment was all too apparent in material culture, which evolved in the region during the course of two centuries under survey. Such aspects of daily life as food, clothing and shelter were all decided by climatic conditions and natural resources available in the region. Thus we find that hot conditions prevailing in the region was in primary way responsible for the extensive reliance on the cotton clothing and other stuff, which suited the climate. The nature of houses constructed and the architecture was to a large extent determined by the raw material available in the region. As we had already seen that the houses were generally built of lime and bricks, since stone was not readily available in the region. The dietary habits of the people were also influenced by the weather and food items available, thus we come across description of such dishes as Dahi and Kitcheree which were considered to be the speciality of the province, since they suited the bodily requirements in hot and humid conditions.
At another level the forces of environment also influenced the cultural sphere. In an age, when scientific knowledge regarding the occurrences of such phenomenon as lightening, earthquakes, among others were limited, people sought explanations and refuge in prayers to gods and goddesses, who were often identified with these forces of nature. Another phenomenon which captured the imagination of the people, especially the sailors and cultivators was monsoon winds and rains and we find various epithets being addressed to rain god and the ceremonies performed so as to ensure proper harvest and good rainfall.

However, as said in the beginning, the interaction between humans and natural environment is a two way process, we find that humans were the primary agencies behind bringing in changes to the natural environment.

The agricultural pattern across two centuries had a detrimental impact on the environment and ecological balance of the region. The reduction in forest cover of the province and in the wild life of the region was the direct result of clearing of forests by the cultivators and by Mughal officials for the dual purpose of increasing the areas under cultivation and for gaining access to the stronghold of the Koils and Kathis. That clearing of forests had clear impact on the wild life of the province, can be made out by Jahangir's statement that he 'went to Gujarat, because he wanted to hunt lion and wild life,'¹ however British records explicitly states that the tiger has retreated before the advance of civilization and is now found only in remote jungles.²

Again the pattern of Human habitation and style of living remains the primary determining agent behind the spread of diseases, such as plague. Ovington remarking on the occurrence of plague informs us of the filthy habitations of eh most of the inhabitants, and during the course of rain this filth and dirt becomes the residing place for the disease causing agents.

Thus we may conclude after going through the evidences placed before us that the interaction between material culture, socio-economic formations and political systems and the networks of commerce which operated in the region of Gujarat, were shaped to a large extent by the environmental factors which existed in the region. The pattern of interaction was however not a unidirectional one and human activities played a major role in shaping the immediate natural environment of the area.
Map 1

Ecoregions of Gujarat

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Physiographic Map of Gujarat

Ground Slope Map of Gujarat

Drainage Map of Gujarat

Geological Map of Gujarat

Sea-Land Position through Geological Times in Gujarat

Seismicity Map of Gujarat

Map 8

Gujarat State showing Agro-Climatic Zones and Sub Zones

Source: Degraded Lands in Gujarat, Gujarat Ecology Commission

Agro-Climatic Map of Gujarat

Agro-Ecological Sub regions of Gujarat

Soil Map of Gujarat

Ground water Resource Map of Gujarat

Map 12

Water Table Map of Gujarat

Map 13

Forest Map of Gujarat

Location Map of Rann and Banni