

## TRIBAL ENVIRONMENT OF CHHOTA UDAIPUR REGION IN GUJARAT

ABDOL HOSSEIN PARIZANGANEH & VIMALA RANGASWAMY, Baroda.

**ABSTRACT:** In this paper, an attempt has been made to study the present status of the environment and the impact of changing biophysical environment on the socio-economic development in Chhota Udaipur, the most backward taluka of Baroda district (Gujarat). The rural economy of the tribals, as conditioned by the physical and human environment is highlighted and finally, the constraints and potentialities for sustainable development of the area under study are discussed in detail.

### Introduction

The present study forms the core of a research work carried out by the authors on "Environment and Development of Chhota Udaipur taluka, Baroda District (Gujarat)" in which suggestions have been thrown for sustainable development (eco-development) of the area under investigation after analysing and assessing the physical, biological and socio-economic environments along with their present problems, state of utilization, constraints and potentialities for development.

### Study Area

Chhota Udaipur, (21°54' — 22°35' N and 73°51' — 74°17' E) the easternmost taluka of Baroda district lies in the tribal belt extending along the eastern periphery of Gujarat State, covering an area of 1373.2 Sq. Kms. On the east the the basaltic hills mark the State boundary with Madhya Pradesh, River Narmada forms the natural border in the south

across which is the State of Maharashtra. On the north, it is bounded by Panch Mahals district of Gujarat and on the west, by other talukas of Baroda district.

### Methodology

The following methods have been followed in the present study :

- (1) Collection and interpretation of the available literatures and maps (secondary data) relating to different aspects of the taluka's environment.
- (2) Collection of detailed information about socio-economic and landuse characteristics of the taluka (primary data) from the field. A stratified random sampling procedure was adopted and 14 villages were selected for detail survey (classifications and selection of villages was done according to population-size groups of the villages and regions).
- (3) Analysis of land use pattern and other environmental attributes based on the collected data and field experiences.

(4) Based on the physical, socio-economic and landuse potentiality, the constraints and potentiality for development of the taluka have been made for future developmental purposes.

### Factors of Environment

1) Physical environment: Chhota Udaipur taluka provides a unique picture of physiographic diversity in terms of ridges, hills, dissected plateaus, uplands, valleys and flood plains confined within the limits of a relatively small area. The most interesting feature is the significant altitude variation from 100 metres (a.m.s.l.) to 640 metres high Trappean hills.

The taluka can be broadly divided into two distinct regions on the basis of its geological formation. The northern region is mainly covered by deposits of granite, gneisses, dolomite, limestone and quartz and the southern region with wide spread exposure of Deccan traps. The taluka is rich in non-metallic minerals. Among the minerals worked in the area, dolomite and fluorspar account for the highest proportion.

The taluka is dissected by many east-west flowing streams, the important rivers which take part in shaping and reshaping the landscape of the taluka are Narmada, Orsang, Heran and their tributaries.

The taluka has a monsoonic type of climate. Comparatively high rainfall (max. in August 365 mm) and high temperature (max. in May — 41°C and minimum in January — 16°C) are the characteristics of the taluka. The average annual rainfall is 1040 mm. which is much higher than the rest of the district as a whole.

The soils in the two regions are strictly different mainly due to different geologi-

cal formations and parent materials. The soils of the northern region are mainly formed from heterogeneous parent materials, while the soils in the southern region are mostly basaltic in nature. In general, the soils are shallow, coarse and loamy and suffer from moderate to severe erosion hazard and at some places even the rocks are exposed. There are also natural deficiencies in soil, which could however, be remedied by suitable doses of fertilizers of the required nutrient content.

Chhota Udaipur taluka had a very high proportion of forest land. However, due to various reasons the area is depleted of its forest cover. The original forest and woodland cover have been removed either by felling or burning or indirectly by the prevention of seedlings regeneration by grazing, etc. and the pre-existing forest cover has been replaced by smaller, low density forest (0.1 to 0.4), agricultural crops, scrub and barren land.

(2) Socio-economic environment : The overall economic development of the taluka is mainly governed by the physical environment. The socio-economic and cultural factors have also exerted strong influence on the ruralty, land utilization pattern and economic conditions of the people mainly due to its tribal organization.

The Census of 1981 registered a total population of 2.4 lakhs for Chhota Udaipur taluka with a decadal growth rate of 27.4 and an average density of 175 persons per Sq. Km. The taluka is predominantly rural with little more than 90 per cent of its total population living in rural areas spread unevenly over 99.6 per cent of the taluka's total area in 276 villages. Factors like even land, fertile

soil, availability of water, etc. have attracted people to certain areas resulting in excessive concentration of population on one hand and sparse population on the other. The rural population lives in scattered houses quite away from one another. There is a close relationship between the topography of land and the dispersed pattern of habitation. Besides physical factors, socio-economic and cultural factors have also been found to be responsible for such peculiarity in settlement pattern. The tribal farmers prefer to reside in their fields as the area is unsafe and thefts of livestock and crops from the fields are common. This factor of dispersion has been so much rooted that it has effected the morphology of the rural houses. Provision is made in every house to accommodate the livestock within the premises to keep a closer watch on them.

In its social class structure, the taluka is quite homogeneous as it is predominantly inhabited by a tribal group called Rathwas.

The area is wedded primarily to an agrarian economy and about 85 per cent of the total workers in the taluka are engaged in agriculture of which 61 per cent are cultivators. Of the tribal population 94 per cent are engaged in agriculture. The area under cultivation is the lowest in the taluka as compared to other parts of the district. This is because of large tract of forests, mines and rocky outcrops. The condition of agriculture is also poor and productivity of land is low mainly due to shallow, coarse and poor large tract of forests, mines and rocky soil cover, undulating land, dependence on erratic and uncertain monsoon rain and practice of old and traditional agriculture. In spite of a comparatively good amount of rainfall in the taluka, even

rainfeeding of crops is not enough because of excessive run-off due to undulating nature of the terrain and extensive deforestation. Excessive run-off prevents percolation, hence underground water potential remains low, making irrigation wells not widely feasible.

With complete dependence on monsoon and absence of adequate irrigation facilities, the emphasis is on kharif crops and particularly, those kharif crops which can withstand scarcity of water and other adverse conditions and can survive without heavy doses of other inputs like irrigation, fertilizers, etc. Jowar, maize and other millets are the important crops grown here.

Staggering dimensions of inequalities can be seen in respect of distribution of land holdings and other assets. The marginal farmers account for about 22 per cent of the total landholders and cultivate only 4.4 per cent of the area. In contrast, big farmers account for 15.5 per cent of the total but cultivate more than 40 per cent of the area.

With the present insignificant proportion of land under irrigation (7.5%), it is not surprising that there is not much difference in net/gross area cultivated. However, with a substantial increase in irrigation potentials, in near future in the taluka, the present landuse, cropping pattern and production may change considerably.

Unemployment rate is high and it is highest among non-tribal population (65.5%) and the lowest among tribals (53.5%), whose rate of migration is higher. Variation in unemployment is, however, no indicator of variation in poverty and living conditions. Infact, the families of non-tribals with less employed members lead a better life than those

families of tribals where employed members are more.

More than 21 per cent of the total population surveyed migrate seasonally seeking work at other places. Uneconomical holdings, low productivity of land, inability of the tribal farmers to give more inputs because of their economic conditions, absence of irrigation facilities and non-availability of other sources of income compel the tribal farmers to opt for subsidiary employment. Earlier, the tribals were engaged in the collection of forest products, however, with the depletion of forests, they are forced to migrate to eke out their living

Rural poverty in Chhota Udaipur taluka is the consequence of combined forces of underdevelopment, depletion of natural resources, growth of population and a social structure rooted in inequality. There is widespread poverty among all the agricultural based classes of people in this area. Quite a significant extent of poverty exists even among big farmers. The prevalence of poverty among big farmers is corroborated by the fact that members of families in this group also look for wage paid work as farm labourers and also migrate outside the taluka in search of work. Poverty also seems to be correlated positively with the size of the family, i.e. the poorer ones have generally larger households. Simple but the most important reason for the widespread poverty in this region appears to be low productivity of land and lack of irrigation facilities.

### Environmental Problems

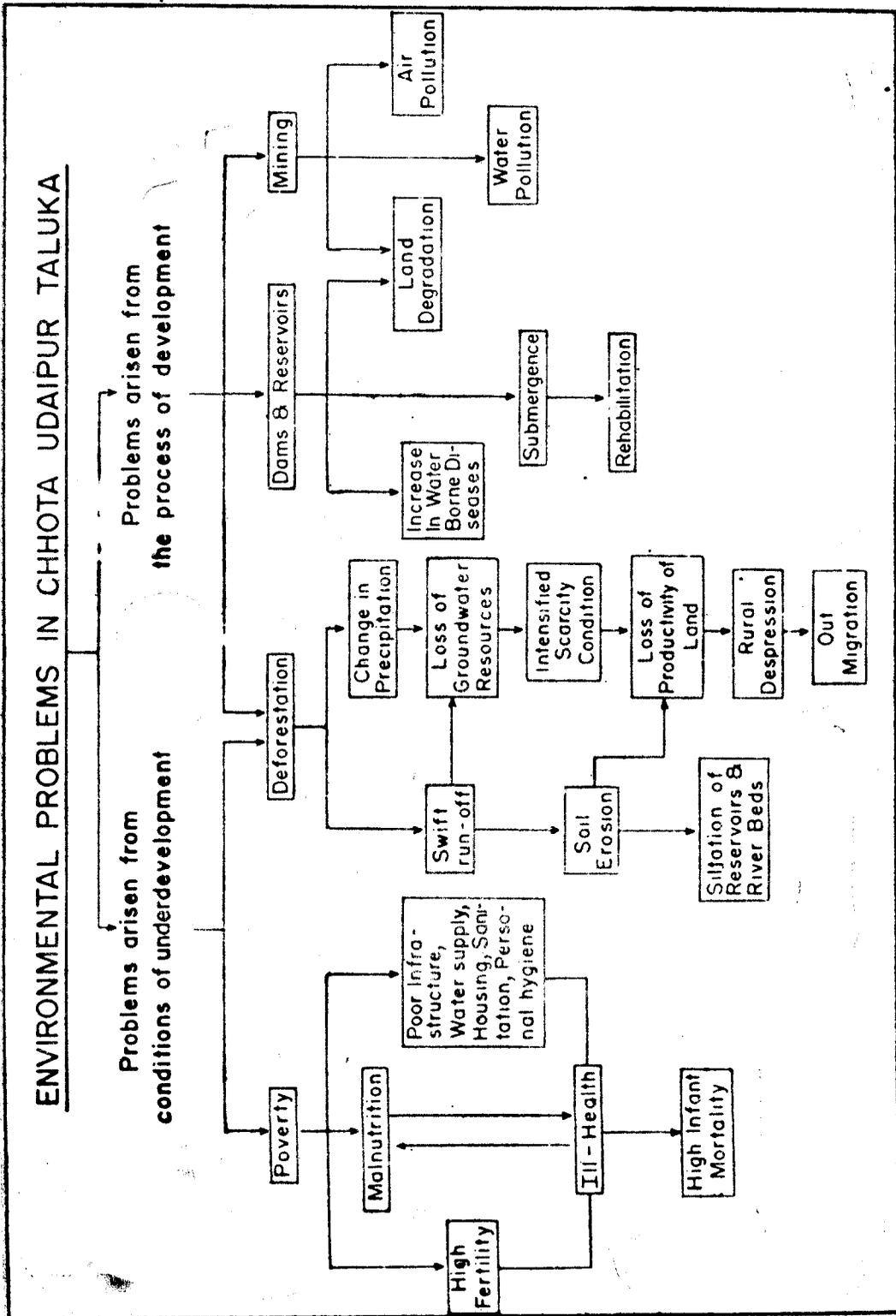
In Chhota Udaipur taluka, major environmental problems are those which arise out of poverty and underdevelopment and the problems arising out of the

process of development are relatively of less importance and are mostly confined to certain localities. Poverty, improper agricultural practices, over exploitation of natural resources, lack of appropriate technology and unintended side effects of constructional activities like dams and reservoirs and mining and quarrying, are the major contributors to environmental degradation in the study area. A host of environmental problems encountered in the taluka may be attributed to degradation and depletion of its forest resources. Accelerated soil erosion, siltation of river beds and reservoirs, intensified scarcity conditions, loss of productivity of land, rural depression and outmigration for employment are, in fact, interrelated problems and are the consequences of deforestation (Fig. 1).

### DEVELOPMENT

Level of Development: Chhota Udaipur taluka is the most backward when compared with different talukas of Baroda district in respect of almost all the indicators of development, such as :

- i) Demographic factors; indicated by literacy rate (15.2%), Urbanization (9.9%), non-agricultural workers (13.5%), density of population (175 persons/Sq.Km.) and tribal concentration (82.0%).
- ii) Agricultural factors; indicated by net area sown (42.0%), double cropping (2.8%), irrigation (7.5%), non-food crops (18.2%) and fertilizer/pesticides use (negligible).
- iii) Infrastructure and social factors; including availability of health services (15.0% of the villages), metalled road (35%), schools (73.2%), bus services (42.0%),



(Fig. 1)

post offices (20.3%), cooperative societies (19.9%).

In the last two decades, the area has been receiving considerable attention of the State Government in respect of its overall development. Broadly, those activities which have direct impact on the prevailing environment could be categorised as : alleviation of poverty and provision of minimum standard of living, agricultural development, afforestation, mining activities and engineering projects (like dams, check dams, roads, etc.). A large number of new roads have either come up or are planned. With an increase in the network of roads, different parts of the taluka tend to provide faster means of communication, thereby accelerating the pace of development.

The economy of the taluka being primarily based on agriculture and forests, a major part of the developmental efforts is, thus, devoted to land improvement, agricultural and forest development, animal husbandry and provision of irrigation facilities. Under minimum needs programme, there are programmes of extending education, drinking water supply, health and nutrition and housing.

**Impact of on-going developmental activities:** Massive investments in a wide range of developmental activities are bound to have significant impact on the taluka's economy in near future. As yet, there is no significant impact on literacy, family income and above all, the productivity of land. The main reason is that, such developmental activities in high magnitude were really started during the last decade. Further, looking to the extent of the problems of unemployment, illiteracy and poverty, such programmes

could have little impact on the taluka's total environment. However, one definite impact of these developmental activities, especially education programme is that now there appears to be quite a good level of awareness among the tribal population of the area. They have become more conscious of the needs and possibilities and do not present the traditional picture of isolated tribal communities and they do respond positively to progress. This awareness of the tribals would be an asset in future developmental activities.

**Constraints for Development:** Rapid increase in population makes it difficult for planners to provide basic social amenities, education, employment, per capita income, etc. However, rapid growth of population is not the only constraint impeding the growth of the economy of the taluka. There are other constraints as well :

1. The taluka lags behind many other parts of the district in respect of some of the basic amenities which are prerequisites for development, such as, roads, power supply, etc. Scattered nature of the houses in the rural areas of the taluka is one of the hindrances to the development of social and physical infrastructure and also to carry out effective planning in rural areas.
2. Erratic rainfall has been causing frequent scarcity conditions with shattering impact on agriculture, fodder and availability of drinking water.
3. Irrigated area accounts for insignificant proportion of cultivated area and depletion of ground water resources, threatens the future of irrigated agriculture.

4. Rapid deforestation continues to cause serious problems of swift runoff, soil erosion and siltation of river beds and costly reservoirs.
5. Soil erosion is one of the major environmental problems in the area which needs immediate attention. Topography, excessive cutting of trees, especially in hilly areas, improper agricultural practices and cultivation in hillsides without proper management of land are responsible for heavy soil erosion in the area.
6. Poverty is one of the most important cause of environmental deterioration in this region. It degrades the human environment and in doing so obstructs development. Bad housing, poor water supply, inadequate sanitation, nutritional deficiencies and disease pattern, poor health and high rate of illiteracy in the taluka are, in fact, consequences of poverty or inadequacy of development.
7. Low literacy and unskilled labour force restrict the development of industries which require more skilled labour.
8. Addiction to toddy (country liquor) is very common among the tribal people. This often leads to non-punctuality and frequent absenteeism from work.
9. Small landholdings and exploitation by vested interests are other important barriers to socio-economic development in the rural areas of Chhota Udaipur taluka.

According to the scheme of developing industries in industrially backward

districts of the country various fiscal incentives are given to entrepreneurs who start industries in such districts. As Baroda district as a whole cannot be considered to be an industrially backward district, this scheme is not applied to Baroda district. However, it is necessary to declare Chhota Udaipur taluka as industrially backward area.

**Potentialities for Development:** The taluka is potentially agriculture based and development of the area primarily lies in the development of potentialities in agriculture and other allied activities and any significant improvement in work opportunities and living conditions in the taluka cannot be achieved except through an overall improvement in the agricultural sector. As a long term measure with a view to reduce the dependence of the tribals on land husbandry, dairy development, poultry and agriculture, schemes like animal farming, fresh water fishery and non-agricultural activities may be developed. There is ample scope for mineral based and forest based industries. Based on the available mineral resources such as fluorite, dolomite and dolomitic limestone, there is good scope for the development of ceramic and tile manufacturing units.

### **Concluding Remarks**

Attempts for successful environmental conservation and development of the taluka may primarily take into account the provision of basic human needs and alleviation of poverty. For sustainable development and environmental conservation, people's participation and awareness is basic. Education, thus, plays an im-

portant role and should be the main objective for development. Population control and family welfare may form an integral part of resource conservation and environmental protection. The second

objective may be management of the environment and conservation of natural resources, as development cannot be sustained on a deteriorating resource base.

#### R E F E R E N C E S

- District Rural Development Agency (1986) *Integrated Rural Development Programme : Annual Plan Proposals for 1986-1987*, Narmada Bhavan, Baroda.
- Government of Gujarat (1975) *Working Plan for the Forests of Baroda District — Chhota Udaipur Division*, Chief Conservator of Forests, Baroda.
- Government of Gujarat (1984) *Reconnaissance Soil Survey Report of Chhota Udaipur Taluka, District Baroda*, Technical Bulletin No: 85, Department of Agriculture, Gujarat State, Ahmedabad.
- Government of Gujarat (1989) *Towards the Eighth Plan 1990-95*, An Approach paper by Planning Division, General Administration Department, Gandhinagar, March 1989.
- Maharaja Sayajirao University (1980) *Block Development Plan for Chhota Udaipur Taluka — Baroda District*, a project sponsored by the government of Gujarat, M.S.U., Baroda.
- Pari Zanganeh, A. H. (1991) *Environment and Development of Chhota Udaipur Taluka, Baroda District (Gujarat)*, unpublished thesis, M.S.U., Baroda.
- District Panchayat Office (1988) *Socio-Economic Review (1985-86)*, Baroda District Panchayat office, Statistical Branch, Baroda.
- Address or the authors:* Dr. (Mrs.) Vimala Rangaswamy, Reader and Head, Department of Geography, Faculty of Science, M. S. University of Baroda, and Abdol Hossein Pari Zanganeh, a Ph.D. student.