

CHAPTER - VI

C O N C L U S I O N

The foregoing analysis reveals that rural electrification plays vital role in the uplift of agrarian economy. For rural electrification provides energy to agricultural pumps, agro-based industries, domestic and public purposes. As compared to oil engines, due to its cheap rate per unit of consumption, the farmers prefer to utilise electricity widely.

Rural electrification is one of the important tools in the hands of cultivators to augment agricultural production. It also enables to utilise the available water resources for irrigation purposes. This leads to remarkable changes in agricultural landuse. Since irrigated farming responses the use of chemical fertilizers resulting into the substantial increase in crop production, the farm income of cultivators is multiplied. Subsequently the increased income is reinvested from which agricultural developments take place, mainly in the improved implements. The farmers become innovative and modernisation of agriculture takes place. However, water is the mother factor to bring the agricultural prosperity in the region. The rural electrification indirectly influences agricultural landuse.

Although the changes in agricultural landuse pattern are caused from the combined effect of physical, social, economic and organisational setting of the region, the rural electrification can be considered as basic input in irrigated

farming in bringing about the changes in cropping pattern. The nature and extent of rural electrification is however, depended upon fevourability of above setting. Panchganga basin presents varied physiography consiting of hilly terrain in the west and fertile riverine tracts bordered by the offshoots. The rolling flood plains are gradually culminated into the broad plains of 'Krishna' in the east. The alternate vallyes and ridges have characterised the physiography of the west. The rugged character of this part has limited the scope of agricultural activities. The flood plains, owing to their fertile character, are devoted to different crops. The irrigation facilities are developed in such zone. The vallyes within western ghats have been used as reserviors by constructing dams across them. The problem confronting agriculture in the western section of the study area is the rugged hilly topography which seem to have conditioned the development of irrigation and consequently the poor consumption of rural electrification.

The water regime of the region is largely controlled by the intensity of rainfall (Chapter I). It's uneven distribution in time and place has lead to spatio-temporal variations in irrigation facilities and agricultural developments too. The alluvial tracts of Panchganga basin in the east offer suitable pedological conditions to grow different crops. This part therefore, possesses divercified

cropping pattern. However, the topography and high intensity of rainfall in the west have aggravated the problem of soil erosion whereas excess use of water and fertilizers in the east has created saline problems hampering the development of agriculture.

The socio-economic environment too influences the nature and magnitude of rural electrification in the region as highlighted in Chapter two. The fertile river plains have high intensity of irrigation and require rural electrification for energisation of pumps in greater quantity. The central and eastern parts of the region have high density of population consuming more electricity for domestic, industrial and agricultural purposes. Contrasting to this, owing to the physical constraints, the western zone has low density of population and poor irrigation facilities which further consumes less electricity for different purposes. Thus the physico-socio-economic environment of the region influences the agricultural development and thereby determines the spatial pattern of rural electrification.

Presently, Koyana Hydro-Electric Works supplies electricity to the region through 220 KV double circute transmission lines (Chapter 3). The last 25 years have witnessed remarkable increase in the length of grid lines in the region. The tahsils of Karveer, Shirol and Hatkanagale have close network of transmission lines providing electricity

to agricultural pumps. This is because of the development in rural electrification, irrigation and agriculture. Besides emerging industrial complexes in and around Kolhapur and Ichalkaranji have maximised the demand for more electricity.

The number of villages electrified is more confined to the central and eastern tahsils. These villages have the agricultural base. From 1976 onwards the tahsils of Karveer, Panhala, Hatkanagale and Shirol have recorded 100 percent villages electrified. Per capita consumption of electricity is also more in this part. The region as a whole has experienced an increased use from 1.61 KWH in 1961 to 23.5 KWH in 1981 percapita consumption of electricity. This may be an important indicator of rural development. The region has 17,318 agricultural pumps and 203 jackwells consuming larger quantity of energy mainly for irrigation purposes. The regional pattern of agricultural pumps is uneven in the region. The western part hwever, has less number of pumps due to physical constraints.

The changes in agricultural landuse are observed during the post electrification period in the region. Infact, the changes are attributed to the combined effect of physical ~~socio~~-economic and organisational factors. However, rural electrification has generated the influences of different inputs to agriculture. Thus the changes in crop landuse correspond with the extension of rural electrification.

The general landuse of the basin presents certain salient features. The proportion of net sown area is about 49.38 percent of the reporting area. The proportion of such land is high in the plains and is associated with the fertile soils, irrigation and rural electrification facilities. The land not available for cultivation is largely confined to the western tahsils. However, except Gagan Bavada, all the tahsils have registered marked decrease in non-agricultural lands. The proportion of agricultural land is high in the eastern tahsils due to favourable ecological conditions. The potential agricultural land occupies 17.2 percent of total geographical area in 1980-81. Gagan Bavada tahsil has recorded drastic decrease (21.9 percent) under this category. The basin records 5.5 percent increase in agricultural land over the period 1960-81.

The cropping pattern of the region is dominated by food crops accounting for 48.8 percent which is less than that of districts average (15.81 percent) in 1982-83. The period under investigation has witnessed overall reduction in the area under food grains. Most of these lands have been brought under irrigation and devoted to sugar cane cultivation. Obviously there has been substantial increase in irrigated area during 1960-81. The rice and wheat are also grown on irrigated lands seasonally. However, major part of irrigated area has been devoted to sugarcane crop.

The positive changes in irrigated area during the period under investigation may be attributed to rural electrification. There is close relationship between irrigated area and the number of pumps energised for irrigation purpose in the region. Since the non-irrigated area has been brought under irrigation during post electrification period the proportion of rainfed crops is decreased. The western tahsils show negative co-relation whereas tahsils in the central and eastern parts have shown positive co-relation. The entire basin presents positive co-relation due to assured supply of water and emphasis on rural electrification.

Three villages have been selected by employing stratified sampling which represent the region. (Such micor-level study may give a precise view of the subject under study). The micro-level study of rural electrification conducted in these villages reveals that the rural electrification provided energy to agricultural pumps thereby increasing the area under irrigation. It has also facilitated to utilize available water resources prevailing in the village areas. In addition, the extension in the area under irrigation, has brought about changes in agricultural landuse. The farmers are inclined to take cash crops like sugarcane suitable to prevailing ecological conditions. There was dominance of rainfed crops during pre-electrification period. The income level of the farmers is increased which in turn utilised for strengthening infrastructure of agriculture and other amenities to improve

the socio-economic status. The farmers are able to start subsidiary activities due to increase in their overall income level. Thus socio-economic transformation is also related to rural electrification. The micro-level analysis also represents that the yield per hectare in terms of money value is increased considerably. Besides the changes in cropping pattern are more vivid during post electrification period. Thus agricultural transformation has been influenced by rural electrification.

In general; the region under study may be dividide into three parts;

1. The western hilly region with poor developments in rural electrification and irrigation. This part has witnessed less changes in agricultural landuse.

2. The central part adjoining to western boarder areas has moderate electrification and less number of pumps energised compared to eastern parts. The changes in agricultural landuse are however, relatively more than the western zone. The eastern boarder areas of this zone have however, substantial rural electrification and considerable changes in cropping pattern have taken place which are associated with high density of electric pumps.

3. This zone comprises the areas of Karveer, Shirol, Hatkanagale and Panhala tahsils; having 100 percent rural electrification. The changes in agricultural landuse are

found on large scale in this part. The number of agricultural pumps energised is also more leading to the development of irrigation. This part possesses a large number of jackwells consuming considerable quantity of rural electricity. These jackwells have acquired an extensive cultivated areas providing assured water supply mainly to sugarcane. The rural industrialization has taken sound footing in this parts for which rural electrification is essential. Thus, rural electrification promotes the changes in agricultural landuse and thereby strengthens socio-economic structure of the region.

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