CHAPTER 6

RELATIONSHIP OF SELECTED INDICATORS

The Udalguri district in the Brahmaputra valley of Assam has rich natural resources having advantages for all-round development of the district. The climate and other physical characteristics including the types of soil as discussed in the preceding chapters reveal a picture of high potentiality and prospects for development. The study of resources on the selected indicators and their spatial distribution in the nine revenue circles (in chapter -3 & 4) and the selected villages (chapter – 5) shows the variability of resources among the circles of the district. The GIS integrated and classified index value of selected resources in nine circles of the district ranges from a minimum of 5.52 to a maximum of 7.26 (Fig. 4.3). Thus the highest range of resource index in the district is 1.74 which is seen in the Udalguri circle and the lowest range is 0.26 which is seen in the three circles of the district viz. Dhekiajuli, Mangaldai and Pathorighat. A classification of resource index map into three classes of the district shows that four circles of the district possess more than 50% area of the circles under the highest index class of above 6.68. Where, four circles have below 50% of circle's total area under this index class and one circle (Mangaldai) does not possess any area under this index class (4.2).

6.1 Correlation of resource and development index and linear regression

The analysis of relation between resource and development (Fig. 4.11) indicates an unparallel relationship. The circles like Mazbat, Khoirabari, Harisinga and even Udalguri circle posses' higher classes of resource but still legging behind to the Kalaigaon circle in development. A statistical analysis of the relationship between mean resource index and development index applying Karl Pearson Correlation using SPSS shows the negatively correlated with r = - 0.509 (Table 6.1). Which reveals no relationship between the selected resources and development (based on selected indicators) of the circles in the Udalguri district.

A linear relationship between development index (dependent variable) and the mean resource index (independent variable) is also carried out using SPSS. Here the trend of the line of regression is depicted (Fig. 6.1).

Table 6.1

Correlations

		Mean Resource Index	Development Index
Mean Resource Index	Pearson Correlation	1	-.509
	N	9	9

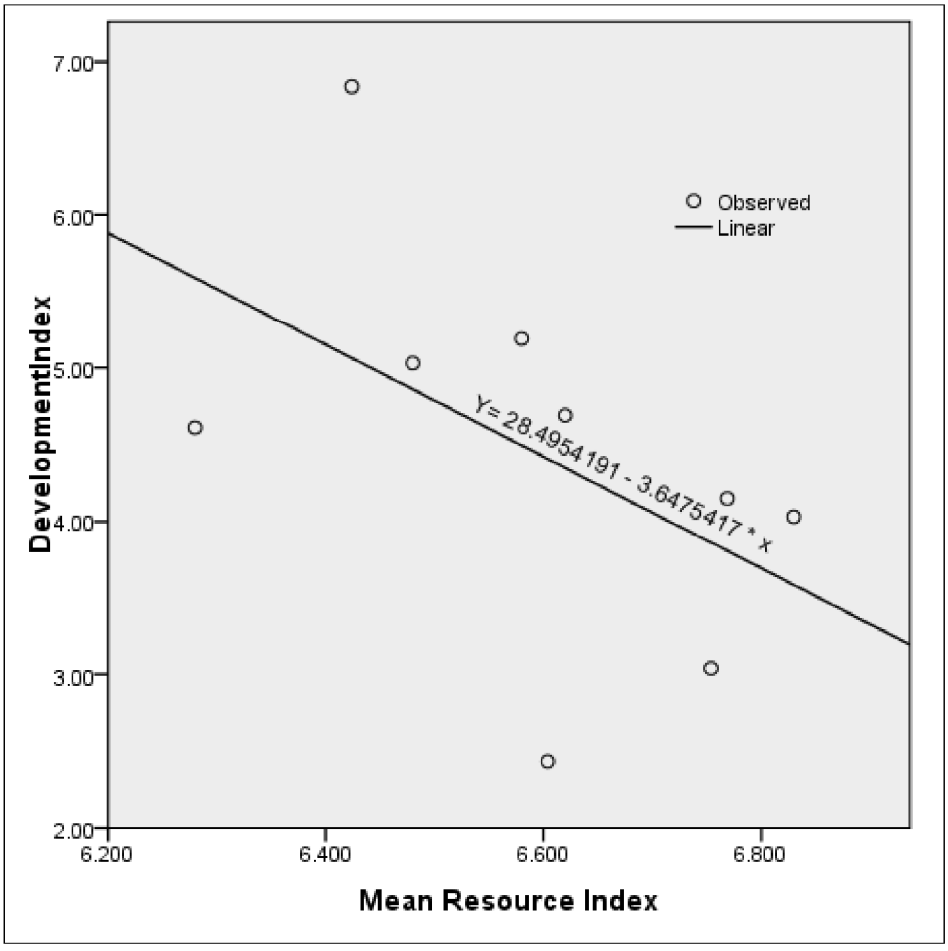

Fig. 6.1

The unparallel nature of resource and development and negative correlation of the variables indicate the in equal or under utilization of resources (selected resources) in the circles of the district. The Kalaigaon circle (Udalguri part) has five

classes of resource but the development index is topped (6.84) among the circles. On the other hand, the Mazbat circle has nine (9) classes of resource but the circle is credited by the least development index (2.43). These inequalities reveal the high prospect of development of the district through the proper utilization of the resources in each unit of the area in the district.

The GIS and SPSS quantitative analysis of the resources (selected) and development (based on the selected data) has indicated no relation. There are other indicators of resource and development. Consideration of those indicators and changing the weightage of indicators may vary the result.

6.2 Correlation of literacy rate and development index

For further inquiry correlation and regression analysis of literacy rate (one of the selected indicator of development) and percentage of SC & ST population with the development index is carried out using SPSS. The correlation analysis between the literacy rate and the development index is found here positive (r = 0.697) and it is also found significant at 5% level of significance (Table 6.2).

Table 6.2

Correlations

		Development Index (from fig. 4.9)	**% of Literate population (2011)**
Development Index	Pearson Correlation	1	.697*
	N	9	9

*. Correlation is significant at the 0.05 level

The regression line between the literacy rate (independent variable) and development (dependent variable) reveal the positive trend which means a higher percentage of literacy rates. There is also higher level of development in the circles of the district (Fig. 6.2). Therefore, the level and disparities of development in the circles of the district depend on the human resource than the available resources. This relation shows the need of generation of awareness and extension of trainings on technological know-how to the people in the district from the planner and decision makers' side in addition to the attention on education.

CIRCLE-WISE LINEAR REGRESSION
BETWEEN LITERACY RATE AND DEVELOPMENT IN UDALGURI DISTRICT

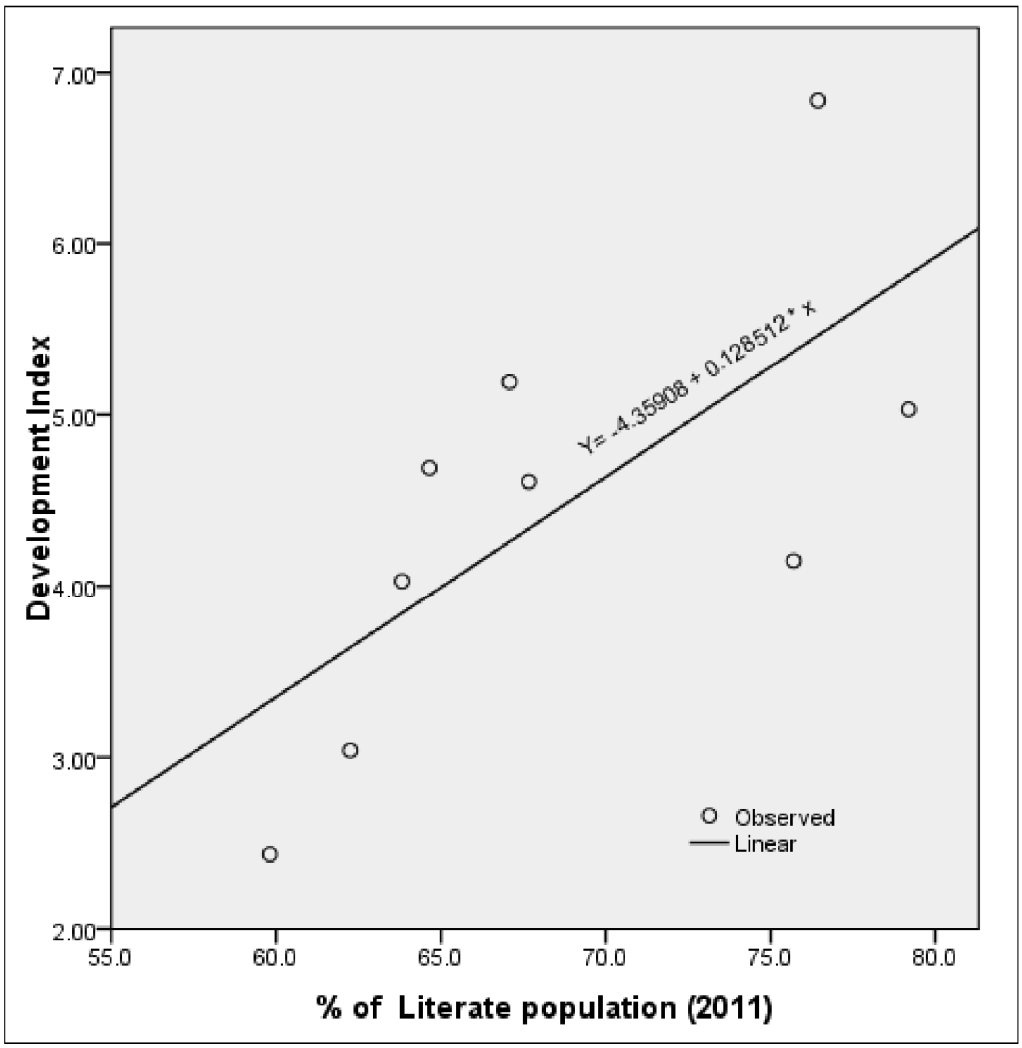

Fig. 6.2

6.3 Correlation of percentage of SC & ST population and development index

Another set of correlation and regression analysis is carried out between circle-wise percentages of SC & ST population and development index (Table 6.3 & Fig. 6.3). The correlation (r) between these variables shows a weak positive relation (r = 0.394). The weak correlation is found insignificance as the calculated value of t (1.134) is lower than its tabulated value at 10% levels of significance for 9 (9-2) degrees of freedom. This finding shows the concentration of circle-wise SC & ST population by

percentage in the district has no relation with the level of development in the circles. Such a state reflects itself as the cause of backwardness in the district.

The line of regression between the percentage of SC & ST population and development index among the circles of the district has also show a positive trend. This also indicates the absence of negative relation between the percentage of SC &ST population and development of the circles in the district.

Table 6.3

Correlations

		Development Index (from fig. 4.9)	**SC & ST Population (in %) (2011)**
Development Index	Pearson Correlation	1	.394
	N	9	9

CIRCLE-WISE LINEAR REGRESSION
BETWEEN SC & ST POPULATION AND DEVELOPMENT IN UDALGURI DISTRICT

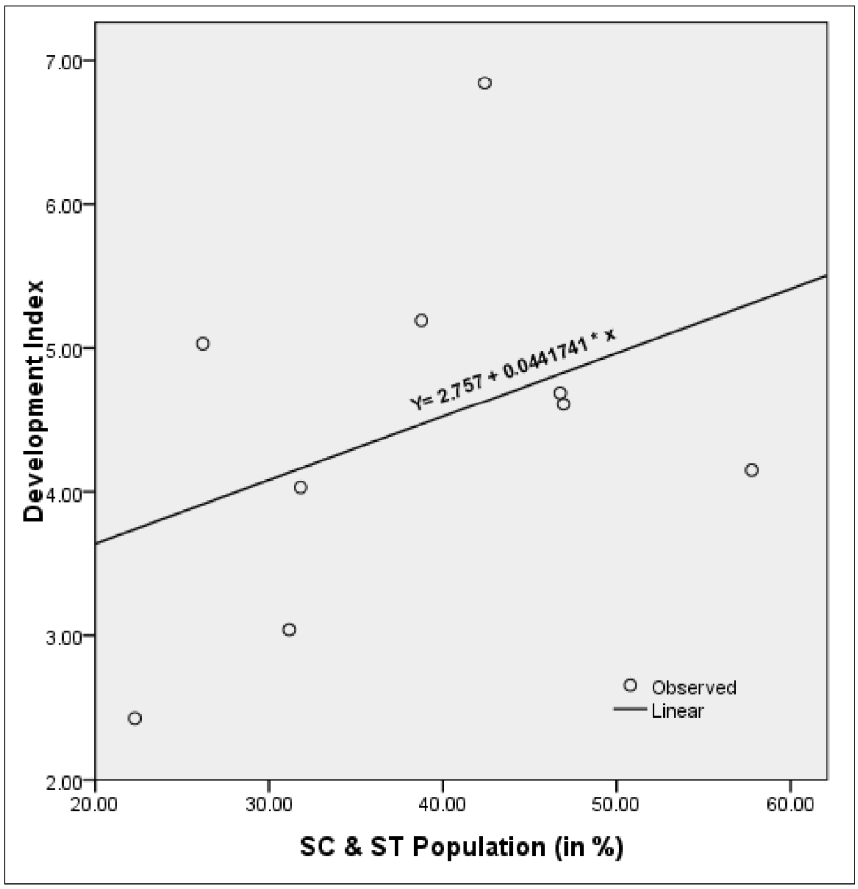

Fig. 6.3

The study and analysis of different facts and characteristics involved in physical and resource elements and their relations in the Udalguri district in tems of relief (Figs. 2.3, 2.4 and 2.5), slope and dissection (Figs. 2.6 & 2.7), rainfall and temperature (Fig. 2.8), vegetation type (Fig. 2.10), population distribution (Figs. 2.12 & 2.13), LULC (Fig. 3.1); soil types (Fig. 3.2), river streams and their characteristics (Figs. 3.4 & 3.5), flood hazard area (Fig. 3.6), irrigation canals (Figs. 3.7 & 3.8), ponds/tanks (Figs. 3.9), ground water (Fig. 3.10), rock types (Fig. 3.12), literate population (Figs. 3.13 & 3.14), layers of resources and resource index (Figs. 4.1 & 4.2). variation of resource (Fig. 4.3), relation of LULC and types of soils (Fig. 4.4), Circle-wise LULC (Fig. 4.5), relation between agricultural types and soil types (Fig. 4.6), roads and railways (Figs. 4.7 & 4.8), indicators of development and development index (Fig. 4.9), distribution of workers (Table 3.4), relation between resource and development (Fig. 4.11), financial abstract data of Udalguri district (Table 4.4), analysis of selected villages (Chapter 5), resource and development correlation and regression (Table 6.1 & fog. 6.1), Literacy rate and development correlation and regression (Table 6.2 & Fig. 6.2), percentage of SC&ST population and development correlation and regression (Table 6.3 & Fig. 6.3); etc. all have clearly reflectd the nature and distribution of resources and the development of circles in the Udalguri district of the Brahmaputra valley.

6.4 Causes of backwardness

Regarding the backwardness and level of development in the district the following points can be added which are visualized by the study based on data collected from field works and field observations at different locations of visiting selected villages and circles of the district.

Agricultural backwardness

i) Use of resource (mainly the soil resource) is not at proper planning form. It has been observed that majority of the cultivators cannot exactly decide how much land under their possession will be used for what kind of rice in the coming years and how much of land will be used for more than one crop. They have no exact time schedule for starting and harvesting of crops because almost all of them depend on the natural rainfall.

ii) Almost all the agricultural fields in the district are yet to enter into modernized form of agriculture. Majority of the users of land are still in traditional in mood with mono cropping practices (plate – 3).

iii) Only 5.196% of the district's total area equivalent to the 8.554% of the total agricultural land is found under two-crop area in the district (Fig. 3.1 & Table 3.1). The average area of agricultural land under two-crop practice in selected villages (Table 5.3) is recorded at 12.17 percent.

iv) There is a large number of streams (Fig. 3.4) in the district. But there is no major irrigation project other than the Bhairabkunda multi-purpose irrigation project. The rivers and streams flowing from the Bhutan Himalaya are highly fluctuated. Except the rainy months majority of the streams remain either dry or with very low water. The ground water irrigation system is not seen in the villages surveyed.

v) The cropping of rice and alternative agriculture e.g. vegetables, fishery, animal rearing in the district is of self-sustaining in nature. The concept and practice of commercialization of agriculture is yet to get due importance. The use of land resource at optimum level in the district can change the economic scenario.

High percentage of dependent population

vi. The percentage of dependent population in the district is high. The average percentage of dependent population in the seven selected villages is 51%. At the same time a large numbers of family members are working in the fragmented small area of agricultural field. Thus average production and earning of the cultivators are very low.

Communication Backwardness

vii. Road communication is yet to be improved. This is mainly in the northern part of the district along the foothill. A large number of villages are far away from the all weather roads.

Water crisis

viii. The villages along the foothill zone have been facing crisis of water for daily use including potable water mainly in the winter months because of high depth of aquifer

zone and lithology. The inhabitants of the northern area of the district have to collect water from sufficiently large distance (Plate - 2). The water is collected from the PHE run water stations located in the south.

Educational Backwardness

ix) The literacy rates in the district and that on average of the selected villages are found respectively to be 66.6% and 68.74%. Both the figures are lower than the national and state averages. Furthermore, the percentage of Graduates and Post graduates are found to be very low in the selected villages. The majority of the literates in the selected village are below matriculate. In the sampled households of seven selected villages only 8 persons are found to be post graduates which accounts for only 1.9% of the total literate population among the villages.

Industrial Backwardness

x) The district is industrially too much backward. The prospects of industry based on local resources are yet to get due importance. The industries like the agro base, forest base including medicinal plants, etc. have prospect in the district.

Backward in Tourism industry

x) The district has a number of spots for promotion of tourism industry. But there is still the lack of tourist facilities and policies for attraction of tourists. The spots like Bhairabkunda, Barnadi R.F., Rowta R.F., Rajiv Gandhi (Orang) National Park, etc. can be converted as parts of ecotourism development in the district along with the other important spots in the state.

Lack of government policies

xii) Even after more than six decades of Independence of the country the government could not frame an integrated development planning in true sense for the area. The Bhairabkunda multi purpose project is the only remarkable project in the district. But it is still incomplete even after more than three decades of its initiation (work started in 1975).

Therefore, the formulation of integrated developmental planning in the coming years based on the physiographic conditions and the resources and culture in the area may bring a large scale change socio-economically in the area.