CHAPTER III

METHODOLOGY

Methodology is an important and integral part of research which determines whether a scientific research will be fruitful or not. It deserves a very careful consideration to organize methodology in scientific research. A proper methodology helps a researcher collecting valid and reliable data and arriving at fruitful decisions. The methods and procedures followed in conducting this study has been described in this chapter.

3.1 Locale of the Study

The study was conducted in Biral upazila under Dinajpur district. Three unions of this upazila, namely Biral, Azimpur and Ranipukur were selected randomly for this study. The map of the Biral upazila has been presented in Figure 3.1 and the map of the study area has been presented in Figure 3.2.

3.2 Population and Sample of the Study

The total numbers of CIG farmers were 1050 in the study area. These farmers constituted the population of this study. A total 10 percent of the CIG farmers of 105 CIG farmers were randomly selected as sample by using simple random sampling method for the purpose of this study. Thus, 105 CIG farmers were selected as the sample of the study. Table 3.1 shows the sample distribution of the study area.

Table 3.1 Name of the unions and distribution of the sample of the study area

Name of upazila	Name of Unions	Total CIG participants	Sample	Reserve list
Biral	Biral	350	35	4
	Azimpur	350	35	4
	Ranipukur	350	35	4
	Total	1050	105	12

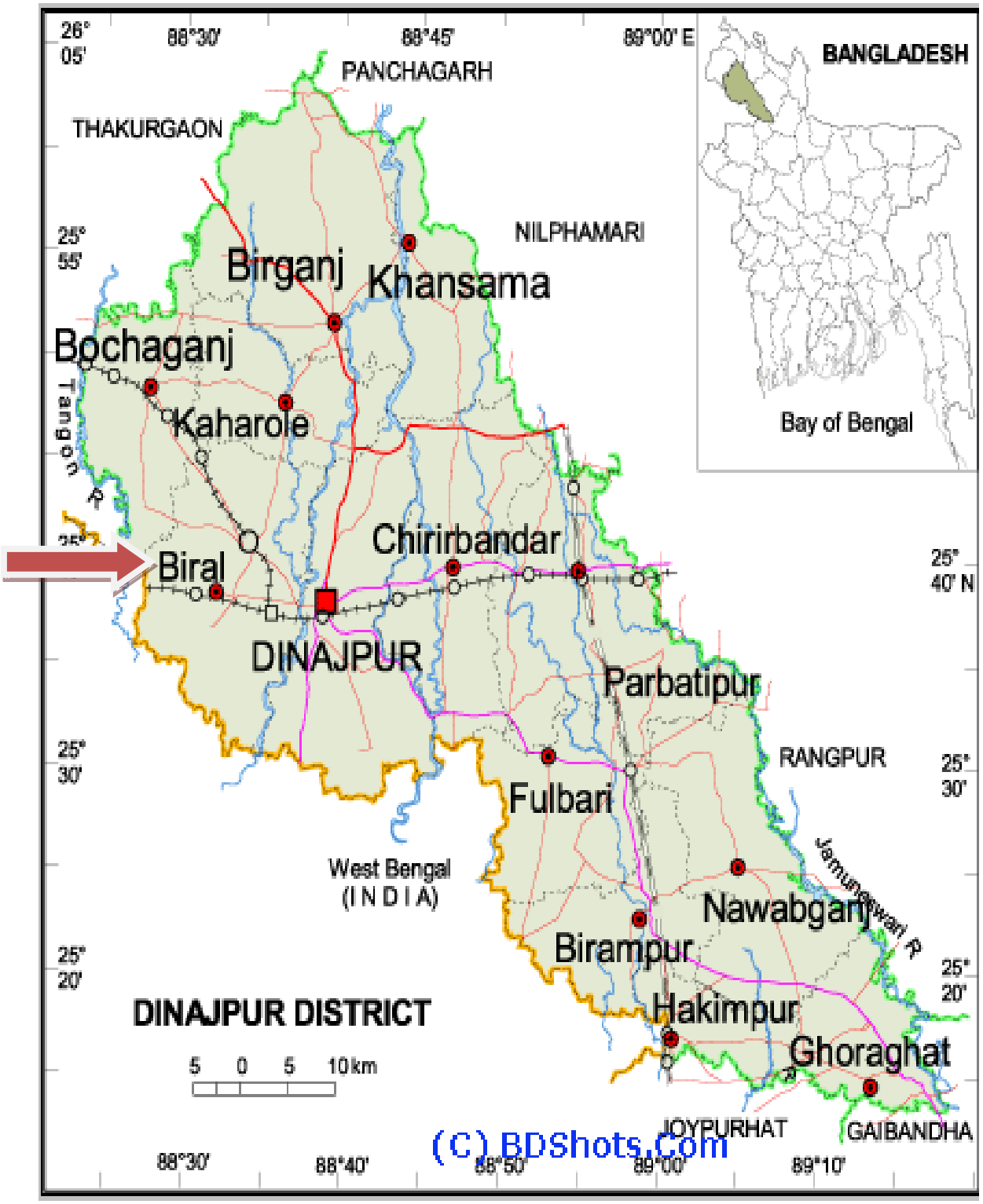

Figure 3.1 Map of Dinajpur district showing Biral upazila (Bangladesh inset)

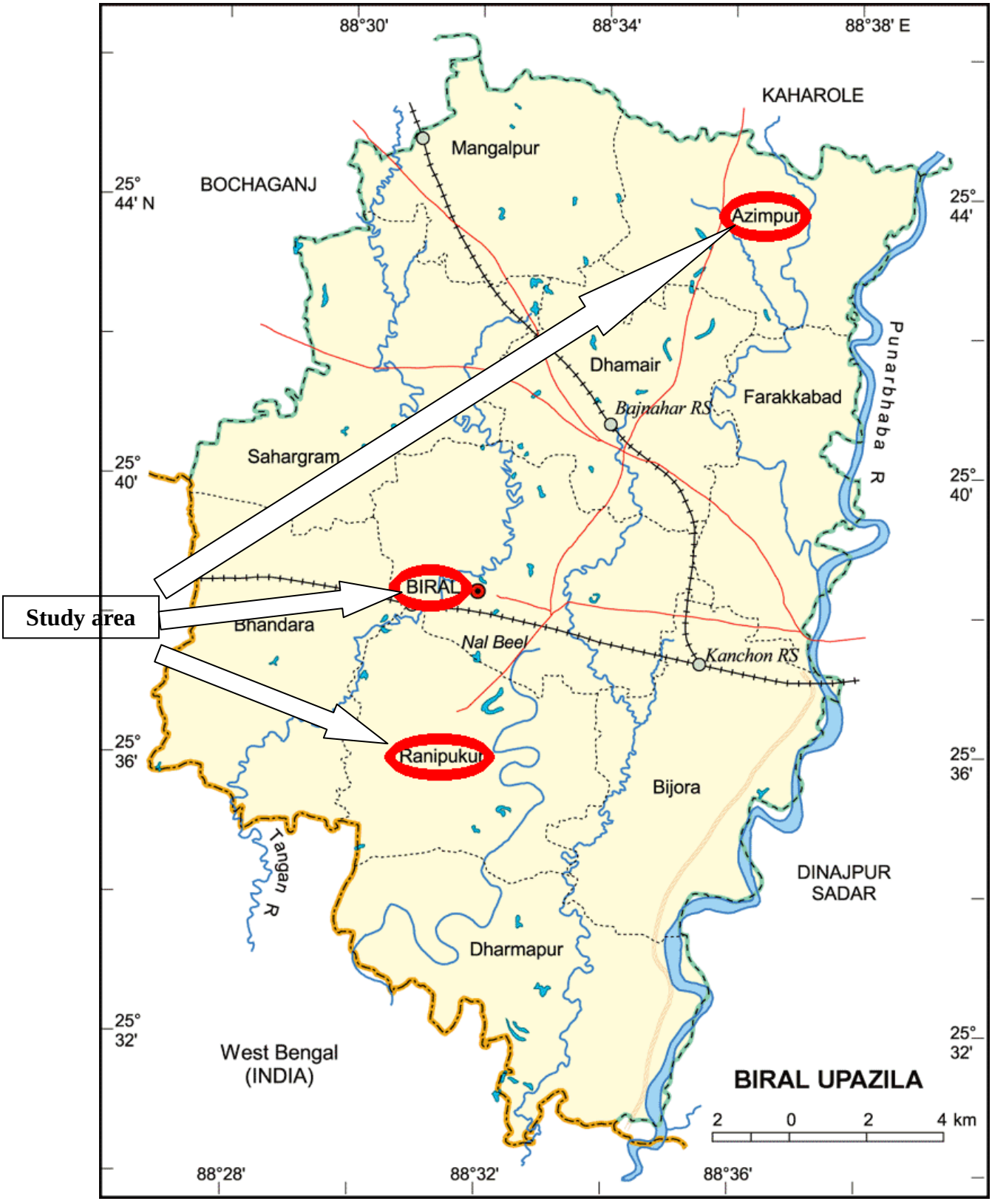

Figure 3.2 Map of Biral upazila showing study area

3.3 Data Collection Instruments

In order to collect relevant data, an interview schedule was carefully prepared, keeping the objectives of the study in mind. The interview schedule contained both open and closed form of questions. The draft interview schedule was pre-tested in actual field situation before using the same for collection of data. This pre-test facilitated the researcher to identify faulty and ambiguous questions. Ten respondents from different parts of the study area were interviewed for the pre-test. Necessary alteration, additions and adjustments were made in the schedule on the basis of the pre-test result. The interview schedule was then printed in its final form for collection of data.

3.4 Collection of Data

The prime task in materializing objectives of the study was to collect data by interviewing 105 respondents. Data were collected by the researcher herself using structured interview schedule through face-to-face contact. The researcher first established rapport with the respondents and clearly explains the objectives of the study by using local language as far as possible. As a result, the respondents were furnished proper responses to the questions and statements without any hesitation. Data were collected during the period from 20 December, 2018 to 25 January, 2019.

3.5 Variables of the Study

Measurement of the variables constitutes an important task of any social research. In this study, the selected characteristics of sample farmers were considered as the explanatory variables of the study. These were age, education, family size, farm size, farming experiences, annual income, training experience, organizational participation, desirability, and use of information sources and the improvements of socio-economic status of the farmers were the focus issue of this study.

3.5.1 Measurement of selected characteristics

3.5.1.1 Age

The age of a respondent was determined in terms of the actual years passed from his/her birth to the day of interview. A score of 1 was assigned to each year of age.

3.5.1.2 Education

The education was measured on the basis of grade (class) passed by a respondent. A score of 1was assigned for each year of schooling in formal institution. For example, if a respondent passed the final exam of class five, his education score was taken as 5. Score 0.5 was given to the respondent who could sign his/her name and a zero (0) was given to the respondent who could not read and write.

3.5.1.3 Family size

The total number of the family members measured by assigning a score of 1 for each member of the family. For example, if a family contained three members, the score of the family was 3.

3.5.1.4 Farm size

Farm size of the respondent referred to the total area of land on which his/her family carried out farming operations. It measured in the hectares for each respondent using the following formula:

$$FS = F_1 + F_2 + \tfrac{1}{2}(F_3 + F_4) + F_5 + F_6$$

where, FS = Farm size

F_1= Homestead area

F_2 = Own land under own civilization

F_3= Land given to others on *borga*

F_4 = land taken from others on *borga*

F_5 = land taken from others on lease.

F_6 =others (if any)

3.5.1.5 Farming experience

Farming experience of a respondents was measured by the total number of years he/she involved in crop production. A score of 1 was assigned for each year of production.

3.5.1.6 Annual income

Annual income was the total financial return of a household from farming (crops, forestry, fisheries, livestock and poultry) and from non-farm sources (service, small business and others) in last year. The earnings from these sources were added together for computation of annual income score. Annual household income was expressed in (000) thousand Taka.

3.5.1.7 Training experience

Training experience was determined by total number of days of training received by the farmers from any organization in their entire lifetime.

3.5.1.8 Organizational participation

Organizational participation of a respondent was measured on the basis of the nature of his/her involvement and duration of participation in different organizations. Organizational participation was operationalized using the following formula:

Organizational participation score = $P_{om} \times N_1 Y_1 + P_{em} \times N_2 Y_2 + Peo \times N_3 Y_3$

where, P_{om} = Participation as ordinary member

P_{em} = Participation as executive committee member

P_{eo} = Participation as executive officer

The scoring strategies were as follows:

Nature of participation	**Score assigned**
Participation as general member	1
Participation as executive committee member	2
Participation as executive officer (chairman/president)	3

The N_1, N_2, N_3 referred to the number of organizations to which a subject had been associated as a ordinary member, executive committee member and executive officer respectively; and Y_1, Y_2 and Y_3 referred to duration of participation in years in the same order respectively.

3.5.1.9 Desirability

For measuring desirability six statements have chosen for getting the opinion of the respondents. For agree, undecided and disagree response of the statement, the scores given as 2, 1, 0 respectively. Thus the possible desirability score of the respondent could range from 0 to 12, where 0 indicate very low desirability and 12 indicate very high level of desirability.

3.5.1.10 Use of information sources

Use of information sources score was computed for each respondent on the basis of his extent of use with fifteen selected information sources. Each respondent was asked to indicate the frequency of his use each of the fifteen selected information sources. The procedure of assigning scores for each source was done based on a four-point rating scale (frequently=3,

occasionally=2, rarely=1 and not at all=0). Total use of information sources score of the respondents was measured by summing all of the use of information sources scores. The possible score of use of information sources could range from 0 to 45, where 0 indicate no use of information sources and 45 indicated the highest level of use of information sources.

3.5.2 Measurement of focus issue

Improvement of socio-economic status of the CIG (Common Interest Group) farmers is the focus issue of this study. This issue was measured by computing a composite socio-economic status improvement score based on each of the four aspects: (i) social aspects (ii) economic aspects (iii) technological aspects, and (iv) food security aspects. Each of the aspects was measured against four items. Each of the items was put against 4- point rating scale: unchanged, little improved, moderately improved and highly improved, and score given as 0, 1, 2, and 3 respectively for each item. The total scores for each of the socio-economic status improvement for each aspect could range from 0 to 12, where 0 indicated no improvement and 12 indicated high improvement regarding the concerned socio-economic status improvement aspects. The overall score for improvement of socio-economic status was computed by adding the scores obtained by all of the items (16 items) of improvement. Thus, total scores for overall improvement of socio-economic status could vary from 0 to 48, where 0 indicated no improvement and 48 indicated very high improvement of overall socio-economic status of the farmers through participation in CIGs.

3.6 Processing and Analyzing of Data

The collected data were coded, categorized, tabulated and analyzed in scientific way. The local units were converted into standard units. Qualitative data were converted into quantitative data by means of suitable scoring whenever necessary. For this the collected data were given numerical coded values. The coded data were put into the computer for statistical analysis. The SPSS 22.0 software was used for analyzing the data. Various descriptive statistical measures such as range, frequency, number, percentage, mean, and standard deviation (SD) were used for categorization and describing the variables. Pearson's product moment correlation coefficient (r) was applied for data evaluation and hypothesis testing.

3.7 Hypothesis

A hypothesis is a proposition, which can be put to a test to determine its validity (Good, 1981). According to Kerlinger (1973) a hypothesis is a conjectural statement of the relation

between or more variables. In broad sense hypothesis are divided into two categories: (a) Research hypothesis and (b) Null-hypothesis.

3.7.1 Research hypothesis

Research hypothesis (H_a) states anticipated relationships between concerned variables. Based on review of literature and development of conceptual framework, the research hypothesis was: 'there are relationships between 10 selected characteristics of the farmers with their improvement of socio-economic status.

3.7.2 Null hypothesis

Null hypothesis (H_o) states that there is no relationship between the concerned variables. Therefore, the null hypothesis of this study is 'there are no relationships between 10 selected characteristics of the farmers with their improvement of socio-economic status.