

**REPORT ON A VISIT TO  
BANGLADESH TO INITIATE A  
RESEARCH PROJECT  
ENTITLED IMPROVEMENTS IN  
THE PRODUCTION OF  
LIVESTOCK PRODUCTS IN  
PERI-URBAN AREAS OF CITIES  
IN ASIA**

12 September to 4 October 1996

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## **Abbreviations**

AMOD	Aid Management Office, Dhaka
BARI	Bangladesh Agricultural Research Institute
BAU	Bangladesh Agricultural University
BBS	Bangladesh Bureau of Statistics
BRAC	Bangladesh Rural Advancement Committee
FIVDB	Friends in Villages Development Bangladesh
KI	Key informant/s
NGO	Non-Government Organisation
NRI	Natural Resources Institute
ODA	Overseas Development Administration
PhD	Degree of Doctor of Philosophy
RDP	Rural Development Programme
TCO	Technical Cooperation Officer (UK)
UNDP	United Nations Development Programme

## **Currency Conversion**

£1.00 = Tk 65 (September 1996)

## Summary

- 1 This project was established in 1995. It aims to characterise the market for livestock products, examine the outputs and efficiency of livestock production and marketing systems, determine the losses of livestock products in the systems and identify and analyse constraints to and opportunities for the increased supply of livestock products to urban markets.
- 2 David Silverside (Livestock Products Technologist) , John Sherington (Statistician) and Neil Marsland (Marketing/Socio-economist) of the NRI visited Bangladesh from 12 September to 4 October 1996 to exchange contracts between the BAU and NRI, meet and introduce two students to the project, identify study towns and develop methods including questionnaires for definition of the urban, peri-urban and rural areas within them.
- 3 Discussions were held with the Professors of Animal Husbandry and Agricultural Economics, Drs AMM Tareque and MA Sattar Mandal, at the BAU, the two students recruited to conduct the work programme, a number of government officials and many private persons. All aspects of the project were discussed and agreed. The contract was exchanged and the first advance of funds disbursed. The two students who will conduct the work joined up with the NRI researchers to form a team during this visit. Three study towns were selected. These are Sylhet, to represent a more prosperous town in Bangladesh, Mymensingh to represent an average town and Pabna, to represent a poor town. A system of definition of urban, peri-urban and rural areas within the towns was devised, based on statistical analyses of secondary and primary data, available respectively, from national statistics at Mauza level, (an administrative area of about 2-5km<sup>2</sup>) and from questionnaires developed during the visit. Details are to be found within the body of the report.
- 4 As the domestic situation in Bangladesh was uncertain between March and July 1996, and the two original students failed to complete their applications to the university to undertake the work programme, the project was delayed for several months. The new students will now collect data for town area definition between November 1996 and January 1997 and the results will be analysed in December 1996 and February 1997 during NRI supervisory visits. Market, farmer and community characterisation will be undertaken in March 1997 and the key participants for the full annual study will be chosen in May when the collection of detailed information will commence. Revised project milestones are given in Appendix 8.

## **Introduction**

5 The Livestock Department of NRI was commissioned in September 1995 to undertake a project to improve the production of livestock products in the peri-urban areas of cities in Asia. The project will characterise the market for livestock products, examine the outputs and efficiency of livestock production and marketing systems, determine the losses of livestock products in the systems and identify and analyse constraints and opportunities to increased supply of livestock products to urban markets. The analysis of constraints and options will be facilitated by the development of a simple model of the production, marketing and consumption patterns, if this proves feasible, and will aim to provide a planning tool for use by key planning, policy executing and research personnel of government, NARS and NGOs.

6 In November 1995, D Silverside visited Bangladesh to identify collaborators and locations of study, look at the probabilities of successful completion of the study and to reduce the costs of the project. In the report of the visit (NRI report R2300 (S)) it was recommended that the work should be conducted under a Memorandum of Understanding (later changed to a Secondary Contract) between the Bangladesh Agricultural University (BAU) at Mymensingh, and the Natural Resources Institute, Chatham, UK to commence 1 April 1996. The project should be used as a vehicle for two students to study for a PhD degree at the BAU. One student will undertake the work in animal production, the other in socio-economics and marketing. In February 1996, D Silverside and D Baker visited Bangladesh to develop terms of reference and milestones for the students, lay down criteria for the selection of study towns and areas within them, describe the types of data to be collected during field trials and to draft the terms of reference for the Contract. The report R2311(S) describes the outcome of the visit. Shortly after that visit, progress on the project ceased as Bangladesh faced a difficult time during which NRI personnel were advised not to visit. Also, the two students selected during February failed to register for their degrees and D Baker resigned from NRI. In August, the situation eased and the programme recommenced with recruitment of two new students and formation of a new UK team.

7 In September 1996, David Silverside, Livestock Products Technologist, John Sherington, Statistician and Neil Marsland, Marketing/Socio-Economist visited the Bangladesh Agricultural University with the following terms of reference:

### **Terms of Reference for the visit**

- To exchange contracts and advance the first tranche of funds for the study
- To introduce new students to the project
- To select towns which will be studied throughout the project
- To devise a system of definition of urban, peri-urban and rural areas within those towns
- To develop questionnaires as necessary

## **Project development**

8 Meetings were held with Dr AMM Tareque, Professor of the Department of Animal Husbandry, Dr MA Sattar Mandal, Professor of the Department of Agricultural Economics at BAU, the selected students and a number of other persons detailed in Appendix 1. An itinerary for the visit is given in Appendix 2. Wherever possible, the students and NRI staff attended appointments, field visits etc together as a team. Sometimes, however, the team was obliged to split into two or more parts. Morning and evening team discussions took place most days at which all members had ample opportunity to present ideas and views. This report indicates the progress of the project.

9 There is provision for a computer for each of the students to enter and analyse data and to assist with the development of the model in the third year of the project. A market survey of IT equipment was undertaken in Dhaka and compared with prices obtained in UK immediately before the visit. Prices in Bangladesh are approximately 45% higher than in UK, although import duty will reduce some of the advantage of buying in UK. Nevertheless, it is concluded that the IT equipment will be procured in UK from the Compaq or Toshiba ranges which have agents in Dhaka. **D Silverside to arrange**

10 Specifications for the computer were discussed. There is a need for a standard model, eg Pentium 75/100 MHz CPU, 16Mb RAM, 1 gigabyte HDD, Colour screen and a Modem to communicate within Bangladesh. (The cost of this is minimal when ordered as part of the package). Software should include DOS 6.0+, Windows 95+ MS Office Professional, SPSS for Windows and modem software. There may be a requirement to use linear programming software sometime in the third year and the software will be chosen nearer the time.

## **Contract**

11 The contract was signed by the Director of BAURES, BAU, M Shamsul Haque on 27 September 1996. BAURES is the contracting research wing of the BAU and the most appropriate body to manage the contract in Mymensingh. The first advance was made by depositing travellers cheques at the Pubali Bank Ltd, Foreign Exchange Branch, Motijheel Commercial Area, Dhaka 1000. The Bank exchange certificates and note of telex transfer to Bures at the Pubali Bank, BAU campus, Mymensingh account number CA-1823 BAU, were photocopied and the originals sent by post to BAU from Dhaka. Future sums should be advanced in sterling from NRI to the Sonali Bank, London, with instructions to remit in Bangladeshi Taka (**not sterling**) to the Pubali Bank BAU campus, Mymensingh. A new account for the project may be opened, the new number will be forwarded as soon as this has been done. **Mr S Dyson to note**

## **Students**

12 Two new students for the project had been selected before the visit. Mr MA Monayem Miah is a Scientific Officer from the Bangladesh Horticultural Research Institute, Gazipur, and is the prospective PhD candidate for the socio-economics and marketing aspects of the project. He is to take 'deputation' (similar to study leave) from the BARI to undertake the degree. His supervisor will speak to his Director General about leave of absence arrangements and their timing. Miss Momotaz Moholl is the prospective candidate who will study animal production and livestock processing. She is a

Thana Livestock Officer from the Directorate of Livestock Services, Dhaka and no difficulties are envisaged with her deputation to the University. Their theses and CVs were not to hand but both hold Masters degrees.

13 The target date for them to start the full programme of activities is 1 November 1996.

#### **Selection of towns**

14 Criteria for the selection of study towns were set out in paragraphs 12 to 15 of report R2311 (S), Silverside and Baker February 1996. During August 1996, one student, Momotaz, had collected demographic and other data on major towns and cities. She shortlisted 11 with a metropolitan population between 80,000 and 500,000 which were further than 50 km from the international borders and without interlocking hinterlands, particularly with the four Major towns of Dhaka, Chittagong, Khulna and Rajshahi. These are: Pabna, Sirajganj, Saidpur, Rangpur, Jamalpur, Mymensingh, Tangail, Narsingdi, Sylhet, Bogra and Comilla.

15 The team visited the Bangladesh Bureau of Statistics and offices of other organisations which collect statistical data to seek information outlined in paragraph 14 of R2311 (S). Although considerable quantities of data were available, its use was restricted for the following reasons:

- Datasets were not complete for the proposed study towns
- Datasets were collected at different times for different towns
- Data were available only at District level
- Datasets were available for an administrative area rather than the town/metropolitan area, thus mixing information about rural and urban areas

16 Available information was analysed statistically as appropriate but it soon became apparent that each town had some unique feature or other which made comparisons difficult. Although a visit to collect missing or other secondary data in each town was considered briefly, it was explained that all data would have been returned to Dhaka (making the visit unnecessary) and a visit to each town for collection of primary data would have been a project in itself, very time consuming, expensive and might not lead to a greater understanding of the town than that obtainable from existing data. A pragmatic approach was sought.

17 The original project document called for two towns to be studied. Students were to spend a week in each town studying either the production or marketing systems of selected commodities. After the week they would 'exchange towns' so that the other discipline is studied. The remaining two weeks of each month would be spent writing up the results and undertaking associated aspects of the study (following up leads from the towns studies, library work, visit programmes, teaching, supervision etc). Given that one day would be spent in travel between the towns and another day is the weekly holiday, this would leave five days study time in each town by each student each month. The team felt that it would be beneficial to collect less detailed information from more locations. It was decided, therefore, to study three towns which showed differing levels of intrinsic wealth. In the Bangladeshi context this is relative since there is no town of any marked wealth.



18 The original eleven towns were re-examined and some rejected: For example, Comilla was thought to be too near to the border with India, Tangail was too near Mymensingh and Dhaka (interlocking hinterlands) and Rangpur and Dinajpur were too distant from other towns. The remaining towns were classified according to the experience of the local members of the team. Mymensingh has practical advantages, being near to the BAU and of 'medium' wealth, so was chosen. Sylhet was considered as the wealthiest town, having close connections with the Bangladeshi communities in London which operate most 'Indian' restaurants there. It is about five hours travel by bus from Mymensingh with just one ferry crossing making the town accessible within one day at relatively low cost. The poorest town of the group was thought to be Pabna. Bangladesh could be considered to be divided north/south by the great Jamna river which takes approximately three hours to cross by ferry thus providing a barrier to economic development. Pabna and Dhaka/Mymensingh are on opposite sides of the river separated by about three or so hours by road, six hours including the ferry journey but, in practice, much more than this as waiting time for the ferry itself may be considerable. A bridge is under construction over the river and should be completed within 12 months. The influence of the bridge should be reflected in the changing market profile of Pabna.

19 The choice of towns was discussed at meetings with persons of considerable local experience. All persons have opinions about choice of towns for any study and a good case was proposed for a town in the coastal region. The region was rejected however, as the towns did not directly fit other criteria chosen for the eleven original towns, for example, they were too small or, in the case of Khulna, too big. It was concluded that the three candidate towns were as good as any others which might be considered. A visit was made to the three towns in question to determine a 'feel' for intrinsic wealth, identify collaborative partners and the level of help which might be obtained from the production and marketing officials. Appendix 4 sums the visit programme.

20 Interestingly, a snapshot of prices for protein foods show marked differences between the three towns (Table 1 refers). These are in line with the albeit subjective classification of Sylhet, Mymensingh and Pabna as cities of above average, medium and below average wealth respectively as the prices generally increase with the assumed wealth of the town.

**Table 1****The prices of protein foods in the markets of three towns, in Taka, on 25 Sept 1996:**

Protein food	Sylhet	Mymensingh	Pabna
Buffalo meat/kg	65	na	35-40
Cow meat/kg	70-80	60-70	50-60
Goat meat (male) /kg	120-130	100-110	100-120
Goat meat (female) /kg	110-120	90	80
Sheep meat /kg	90 - 100	na	80
Chicken (live f/r local)	110-120	80	80
Chicken, (farmed)	70	75	72
Duck? (live)	125-130	na	na
Eggs deshi chicken/4	16	12	12
Eggs duck/4	16	13	12
Milk/l	24	16-20	14
Fish, Rui 1-2 kg/kg	110-120	120-160	50-70
Fish, Rui 2-3 kg/kg	155-160	na	100-140
Fish, Rui 3+ kg/kg	195-225	na	na
Fish, Katla /kg	145-155	100-140	100-120
Fish, Hilsa/kg	60-65	50-60	60-70
Fish, Prawn (middle)	225	na	na
Fish, Magur	150-170	130-160	na

21 Inspection of key 'wealth indicators' taken from the 1991 census support the view that Sylhet is the wealthiest of the three towns although differences between Mymensingh and Pabna are more difficult to observe

**Table 2****'Wealth Indicators' and other data taken from the 1991 census for the three 'municipal areas'**

Percentage	Sylhet	Mymensingh	Pabna
'Other' employment	44	38	39
Tap water	30	28	16
Sanitary toilet	72	60	57
Electricity	81	74	76
Landless	74	66	73
Thatch roof	5	15	na.
Hindu	13	16	8

**Conclusion**

22 It is concluded that the towns of Sylhet, Mymensingh and Pabna are suitable for study as they fit the original criteria for size and demonstrate a series of differences which will enrich the results of the study. Sylhet and Pabna are relatively easy to reach from Mymensingh. Appendix 4 indicates that project personnel have the promise of co-operation from some officials and NGOs and student accommodation if required.

## **Definition of urban, peri-urban and rural study areas**

### **a) Methodology**

#### *Choice of indicators:*

23 It was decided that indicators used to determine urban, peri-urban and rural study areas would cover three aspects:

- animal protein production
- animal protein marketing
- the more general socio - economic and physical environment (infrastructure, population density, housing, employment categories etc):

24 The impetus for this choice of sources for indicators came from a combination of Hall's work in Kumasi, the objectives of the present research project and the existing ODA conception of 'peri-urban'. In Hall's (1995) study, the indicators chosen for the definition of peri-urban, rural and urban were firmly related to a particular (horticultural) production system. Only those factors which impinged directly on the system - such as hired labour availability, farm size, prices for crops - were included. In this work, animal feed availability and use were chosen. The project is also concerned with marketing systems (for which market location, milk, fish, egg and livestock prices are examples of the chosen indicators) and obliged to include 'the criteria used in the RTG document' (Silverside and Baker 1996 NRI Report R2311(S) para 18). These criteria are concerned with the physical environment, including infrastructure, as is evidenced by ODA's definition of peri - urban: '...characterised by strong urban influences, easy access to markets, services and other inputs, ready supplies of labour, but relative shortages of land and risks of pollution and urban growth' (Silverside and Baker 1996 NRI Report R2311(S) para 16). More general factors like electricity and water supply, house construction materials, literacy levels and general employment types were added in this study to reflect the more general socio-economic and physical environment indicators.

#### *Geographical units of analysis:*

25 It was decided to derive definitions of urban, peri-urban and rural from information at 'mauza' level and, following analyses, to declare each of the studied mauzas as falling into one of the three categories. This is the smallest administrative unit in Bangladesh, usually comprising an area of two to five square kilometres. In order to obtain a good cross-section of mauzas to be studied, they were selected in a systematic fashion as follows: For each of the three towns, eight axes were drawn radiating from the centre at 45° angles (i.e. N, NE, E, SE, S, SW, W and NW directions). Points were marked at 2, 5, 10, 15 and 20 km intervals along each axis and the mauza in which the point fell was selected. In theory, this should give rise to 40 mauzas but in practice fewer were obtained since sometimes two points fall in the same mauza, particularly at the 2km distance on different axes.

#### *Data gathering instruments:*

26 Both secondary and primary data are needed. Census data were extracted for the selected mauzas and data on prices of relevant products, transport costs to town etc. will

be obtained from administration of a questionnaire with key informants and market traders. Data on intensity of production would also be useful but the latest agricultural census data were collected in 1983/4 and therefore too old to be relevant. To collect good data for each mauza would be too time consuming, since a survey of individual farm households would be required.

27 Preliminary statistical analysis of the census data for two of the towns (see Appendix 6) showed that two multivariate techniques (principal component analysis and cluster analysis) were effective in creating an urban/rural index and grouping mauzas into reasonable clusters according to their characteristics. When the questionnaire data have been collected, this can be analysed in two ways. Firstly, it can be incorporated into the principal component and cluster analyses along with the census data. Alternatively, it can be studied to examine how prices etc are correlated with the urban/rural index and vary between clusters of mauzas.

#### **b) Study of secondary data**

28 Mauzas were selected for Mymensingh and Sylhet as described in paragraph 25. For each of these, 75 items of data were manually extracted from the 1991 census results. These data items were used to calculate 19 variables (measurements) which were felt should show differences between urban and rural areas. These variables are all percentages and are listed in Appendix 6, Table 1. Population density was not used, since it could not be calculated for mauzas (mahallas) in the town centres. Also, data were not readily available for some of the selected mauzas, reducing the number of mauzas to 33 for Mymensingh and 34 for Sylhet.

29 A preliminary analysis was carried out on the data from both towns using both principal components analysis and cluster analysis.

30 Principal components analysis is a multivariate statistical technique which attempts to reduce a large number of variables to a much smaller number of 'components' or indices. The resulting components each consist of combinations of the original variables. The underlying idea is that if the information contained in a large number of variables can be summarised in two or three indices, it is likely that interpretation of the data can be simplified. The analysis can be carried out either on the untransformed variables or on variables standardised to give a mean of zero and a standard deviation of one. These correspond to analysing either the covariance matrix or the correlation matrix respectively. In this case, there were 19 original variables and the principal components analysis was carried out separately for each town. Since all variables were expressed on a percentage basis, the data were not standardised before analysis.

31 For Mymensingh, the first principal component accounted for 68% of the variation and the next three components for 9%, 9% and 5% respectively. For Sylhet, the first component accounted for 49% of the variation, the second accounted for 29% and the next two components for 6% and 4% respectively. This shows that for Mymensingh, a single index or component will describe well the differences between urban and rural areas, but for Sylhet, two indices are needed. This is caused by four mauzas at Sylhet being tea gardens, adding an extra dimension to the rural/urban continuum.

32 The coefficients for these indices are given in Appendix 6, Table 1. The index for Mymensingh and the first index for Sylhet are very similar, particularly when only coefficients with an absolute value greater than 0.2 are considered. A positive coefficient shows that a high value of the variable indicates a rural area. These variables are: % of houses with a straw roof; % of workers engaged in agriculture; % of house with no toilet; % of households whose main income is from farming; and, for Sylhet, % of houses using pond/river water. Conversely a negative coefficient is shows that a high value of the variable indicates an urban area. These variables are: % of houses with a sanitary toilet; % of houses with electricity; % of landless households; and % of household whose main income is 'Other'.

33 This analysis shows that an index can be derived from the census data to quantify where, on the rural/urban axis a particular mauza is placed. The index values were calculated for each mauza and for Mymensingh the value went from -161 for an area near the town centre to +61 for the most extreme rural area. For Sylhet the range was from -150 to +125. For the second index for Sylhet, all four tea gardens had values greater than +120 whereas virtually all other areas had values less than +5.

34 The second statistical approach to the analysis of the census data was to use cluster analysis. This technique first calculates the 'similarity' between all pairs of mauzas and then uses this to define a hierarchy or tree. At successive levels of this hierarchy, mauzas are grouped into clusters until finally all mauzas are in a single cluster. The hierarchy can be examined at different levels to see where reasonable groupings occur.

35 This analysis, when applied to the Mymensingh data gave an interpretable clustering with six groups. These will require further examination after the mauzas have been visited and the questionnaire data have been collected but, tentatively, three of the groups are rural, two are urban and one peri-urban.

36 For Sylhet, a clustering with seven groups gave interpretable results. Two of the groups appear to be rural; two groups are comprised of the four tea gardens; one group is urban, one group appears peri-urban and the final group of only two mauzas is difficult to interpret without local knowledge or detailed examination of data. (The tea gardens form two groups because of an apparently inconsistent definition of employment and income categories for the plantation labourers.)

37 The means of selected variables for the groups are given in Appendix 6 Table 2. Relative to the rural groups, the urban groups have a high literacy rate, low percentage of houses with straw roofs, high school attendance, low proportion of people engaged in agriculture, high proportion of households with a sanitary toilet and electricity. The peri-urban groups are intermediate between the rural and urban groups in many of these characteristics.

38 In both towns, the distinction between urban and rural is very clear from the principal components and cluster analyses. The definition of peri-urban is slightly less clear and will need corroboration from the data collected from key informants and market traders by the questionnaires.

39 Further analysis of the data will be carried out when the questionnaire data are available. Possible options to be considered include the omission of tea gardens from the

Sylhet data and re-definition of some variables to see if more relevant figures can be derived.

### **c) Collection of primary data, development of questionnaire**

40 The design of primary data collection instruments was an iterative process. Initially, it was intended to use an informal checklist approach to gather marketing information. This was modified however, over the course of successive field tests. It was finally decided to use a structured questionnaire approach, with separate questionnaires for community key informants (farmers) and market traders. This was done to facilitate comparison, and if necessary amalgamation, of primary data with the secondary BBS census data at mauza level.

41 The farmer questionnaire is to be administered to groups of key informants in selected communities. The communities chosen will be as close as possible geographically to the points which have already been marked out on the maps of the three study towns. In most cases, this will result in one set of key informants per mauza being interviewed, although in some mauzas there may be two or exceptionally three, groups of informants. A key informant approach was taken to obtain community level and market information in a cost-effective manner. The aim will be to gather groups consisting of dairy, poultry and fish farmers and to administer the Community Key Informants Questionnaire (see Appendix 7). The Questionnaire covers several areas: cost and time taken to reach the centre of the study town (from the community); chicken and cattle feed costs and availability; location and frequency of local meat, chicken and livestock markets; milk, fish, chicken, egg and livestock marketing, and an indication of the proportion of locally sold milk and fish which finds its way to the centre of the study town.

42 The Market Questionnaire is to be administered to traders in markets close to the Key Informant communities. It is shorter than the Community Key Informant Questionnaire, although similar in structure. In brief, it covers: frequency of meat, chicken and livestock markets; milk, fish, chicken, egg and livestock marketing and an indication of the proportion of marketed fish and milk that finds its way to the centre of the study town. The full questionnaire is attached in Appendix 7.

### **Communications within the project**

43 The new digital telephone exchange has now been opened between Dhaka and Mymensingh. The University is now being connected to this exchange and telephone conversations with the supervisors of the students will rapidly become easier. Bangladesh is now alert to the benefits of Email and the Internet which will result in rapid information exchange between NRI and the BAU. The need for fax will soon be minimised.

### **Timetable of activities and return visits**

44 Unavoidable delays to the project were sustained as a consequence of the uncertain domestic situation in Bangladesh. These are now resolved but there are implications for achievement of project milestones and the NRI visit programme. These have been recast and appear in Appendix 8.

45 Appendix 8 should be self-explanatory. Essentially the programme has been delayed by six months. During programme revision, however, a three month delay has been allowed for completion of the practical work and an extra three months given for drafting the PhD thesis. The schedule is tight but it is hoped that there will be no need to request funds for ODA financial year 1999/2000.

46 The next steps for the project are as follows:

- Complete registration formalities for the students (BAU)
- Students to collect field data on the questionnaire for Town 1 (assumed to be Mymensingh) (BAU)
- NRI researchers to discuss a checklist of criteria for selection of farmers, communities and markets to participate in the full year-long study, market characterisation and the nature of the information to be collected during the full study (NRI)
- NRI/BAU team to meet in Bangladesh (December?) to analyse data from Town 1 and modify, if necessary, the questionnaire to be used for Towns 2 & 3. Plan data collection for Towns 2 & 3 (BAU/NRI)
- Discuss farmer selection, market characterisation, full study in preparation for decisions to be made during the following visit to Bangladesh in February 1997 (BAU/NRI).

47 There are three events which should be reported by Email, fax or letter from BAU to NRI and, apart from responses, one from NRI to BAU as follows:

- That the two students are registered with the University for their PhD degree and have deputation for leave of absence from their parent departments
- That the two students are fully underway with collection of the data on the questionnaires which are associated with the definition of urban, peri-urban and rural areas within the first town (assumed to be Mymensingh)
- That progress on data collection is such that the return visit to Bangladesh by the NRI researchers can be scheduled
- That the NRI researchers will inform the BAU of their travel programme associated with analyses of the data collected by questionnaire from the first town.

## **Conclusion**

48 During a visit to Bangladesh in September 1996, D Silverside, J Sherington and N Marsland exchanged contracts between the BAU and NRI, advanced the first tranche of funds, introduced two new students, Momotaz Moholl and Monayem Miah, to the project, selected Sylhet, Mymensingh and Pabna as study towns, devised a method to determine urban peri-urban and rural areas in those towns based on available secondary data, set up questionnaires to collect primary data to assist with this definition, trained the students in the use of the questionnaires and set a programme to collect and report these data. Project inputs, their timing and milestones were revised to fit in with the unavoidable delays sustained before the project could commence in earnest. The project now looks set to be completed within the spirit of the Project Memorandum and Framework.

## Appendix 1

### Persons Met

Mr Tom Barrett	Senior Natural Resources Adviser, AMOD, Dhaka
Dr AMM Tareque	Bangladesh Agricultural University, Mymensingh
Dr S Mandal	Bangladesh Agricultural University, Mymensingh
Dr A Akhbar	Bangladesh Agricultural University, Mymensingh
Momotaz Moholl	Animal Nutrition Student, BAU, Mymensingh
Md Abdul Monayem Miah	Economics Student, BAU, Mymensingh
Julfika Rahman	Statistics Officer, Bangladesh Bureau of Statistics, Dhaka
Dr Rezaul Karim	Institute of Nutrition and Food Science, Dhaka
Md Naseem Khan	Senior Administration and Protocol Officer, Helen Keller International, Dhaka
Dr S Baker	Project Manager, Helen Keller International, Dhaka
Nasreen	Helen Keller International, Dhaka
Francis Narayan	Senior Programs officer, Asian Development Bank, Dhaka
Bruce Curry	Long term resident of Bangladesh
M Osman Ghani	Chief, Programme Support Unit UNDP, Dhaka
Eddie Yee Woo Guo	Asst Resident Representative, UNDP, Dhaka
Chris Price	TCO, Bangladesh Aquaculture & Fisheries Resource Unit
Abul Hassem	President of the market committee, Joydebpur
ATM Fazlul Quadermallick	Thana Livestock Officer, Pabna
Mr Chaudhury	BRAC Regional Manager, Pabna
Mr Reja	BRAC Programme Organiser, Prawn hatchery, Pabna
Mr Tapass	BRAC, Human Resource Manager, Pabna
Samul Kumar Kabiraj	BRAC Regional Programme Manager, Pabna
S M Islam	Grader-in-Charge, District Marketing Office, Pabna
Abdul Matin	Farmer, Abdul Matin Milk and Dairy Complex, Pabna
Samik S Jahan	FIVDB, Co-ordinator, Sylhet
Dinaj Zaman	FIVDB, Logistics Officer, Sylhet
Dr Habibur Rahman	District Livestock Officer, Sylhet
Md Habibur, Rahman	Grader-in-Charge, District Marketing Office, Sylhet
Prof Nazrul Islam	Dept of Geography, University of Dhaka
Enam ul Haque	Program Head, RDP, BRAC, Dhaka
Mohd Shamsul Alam	Professor of Geography, Jahangirnagar University, Dhaka
Nazem Nurul Islam	Professor of Geography, Jahangirnagar University, Dhaka
Sadrul Ula Chowdery	Deputy Chief (Planning and Development), Department of Agricultural Marketing, Dhaka
Hamidur Rahman	Director, Agricultural Census Project, BBS, Dhaka



## Appendix 2

### Work schedule and organisations visited

13 September	Arrive Bangladesh
14 September	Tom Barrett, AMOD Drive to BAU, Mymensingh
15 September	All day discussions with BAU staff and students Compilation of checklist to determine Urban, Peri-urban and Rural locations
16 September	Field visit to four dairy farmers to test checklist
17 September	Return to Dhaka, Arrangements for visit programme
18 September	Bangladesh Bureau of Statistics Institute of Nutrition and Food Science Helen Keller International Asian Development Bank UNICEF AMOD Bruce Curry
19 September	University of Dhaka UNDP Helen Keller International (2nd visit)
20 September	Note writing ( Friday - Bangladesh weekly holiday)
21 September	Bangladesh Aquaculture & Fisheries Resource Unit Questionnaire/checklist preparation Party administration
22 September	Joydebpur Market Assessment Urban/Peri-urban/Rural differentiation development Bangladesh Aquaculture & Fisheries Resource Unit (2nd visit)
23 September	Travel to Pabna (DS) ATM Fazlul Quadermallick, Thana Livestock Officer, Pabna Mr Chaudhury Regional Manager, Mr Reja, Programme Organiser, Prawn hatchery, Mr Tapass, Human Resource Manager, BRAC, Pabna Travel to Mymensingh (JS & NM) Drs Tareque and Mandal, BAU
24 September	Samul Kumar Kabiraj, Regional Programme Manager, BRAC, Pabna S M Islam, Grader-in-Charge, District Marketing Office, Pabna Abdul Matin, Farmer, Abdul Matin Milk and Dairy Complex, Pabna Travel to Dhaka (D Silverside) In Mymensingh (JS & NM) Drs Tareque and Mandal, BAU Data entry and analysis Farm and market visits to develop questionnaires/checklists
25 September	Travel to Srimangal (DS) In Mymensingh (JS & NM) Drs Tareque and Mandal, BAU Data entry and analysis Farm and market visits to develop questionnaires/checklists

26 September	<p>Travel to Sylhet (DS)          Samik S Jahan, Co-ordinator, and Dinaj Zaman, Logistics Officer,          FIVDB, Sylhet          Dr Habibur Rahman, District Livestock Officer, Sylhet          Md Habibur, Rahman, Grader-in-Charge, District Marketing Office,          Sylhet          Travel to Srimangal          In Mymensingh (JS &amp; NM)          Data entry and analysis          Farm and market visits to develop questionnaires/checklists</p>
27 September	<p>Travel to Mymensingh (DS) to rejoin JS &amp; NM          Data entry and analysis</p>
28 September	<p>Morning team progress meeting          Afternoon presentation to Drs Tareque and Sattar Mandal</p>
29 September	<p>Travel to Dhaka          Project Administration          Data collection          Questionnaire development</p>
30 September	<p>Prof Nazrul Islam          Data entry          Questionnaire development          Sadrul Ula Chowdery          Hamidur Rahman</p>
1 October	<p>Enam ul Haque, BRAC          Data collection and entry          Questionnaire development          Tom Barrett, AMOD</p>
2 October	<p>Questionnaire testing          Jahangirnagar University</p>
3 October	<p>Questionnaire testing          Report writing</p>

## Appendix 3

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## Appendix 4

### Description of study towns

#### *Sylhet*

1 The 50 km road approach to Sylhet from the south demonstrated flat 'parkland' trees standing amongst vistas of rice as far as the eye could see, with forests on the horizon. There were a few towns increasing in prosperity towards the main centre inasmuch as there were increasing proportion of shops, although the actual shop quality changed little. The livestock were in very poor condition, there being virtually no formal grazing and few roadside and rice-walk areas to graze. There were many goats, a few sheep, a handful of buffalo, many cattle and calves, no pigs, the odd horse and an ass. There appeared to be little horticulture but the roadside stalls were plentiful with apples and oranges. The final approach showed a gradual build up to the town but not as sharply as that of Mymensingh but more than Pabna.

2 Sylhet appears a wealthy town, there being many proper shops, restaurants and an elite residential area. Although the houses were grand, the surroundings were scruffy and many houses lay unfinished. The streets were narrow and the many cars could travel at little more than rickshaw speed as there were very many of this ubiquitous tricycle.

3 The collaborator of choice is the Friends In Villages Development Bangladesh (FIVDB). FIVDB is the biggest NGO in Sylhet and concentrates on livestock and poultry, handicrafts etc supporting vaccination and treatment. Credit is given to the very poor men and women, after they have proven a family income to enable repayment of their loan which they use for bulls, cows, goat, sheep, and poultry. First payment is one week after the loan is taken. Training in animal husbandry, health, medical, postnatal care, latrine management etc is given to the landless poor but the whole community may take part to benefit from the education. FIVDB organises its villages into 'clusters' situated from 10 to 80 miles from Sylhet. There are 6 Branches in the Sylhet area. Each cluster has modest hostel facilities if the BAU students wish to stay in the rural areas, but they must pay a small fee for board and lodging. One of the hostels was examined and it was adequate, although multi-occupancy. Graduates (often from the BAU) stay for weeks and travel to villages on foot or by motor cycle, which our students were invited to use. FIVDB also has small boats to reach villages. Our students may visit any farmer while staying at the hostel, not just the FIVDB villages. ODA supports FIVDB as part of its multi-donor activity.

4 The District Livestock Officer volunteered to co-operate with the BAU students and their project. He would like a copy of the project documentation (which will be arranged for all collaborators) and would then be able to introduce the students to farmers of which there were more than 400 mini farms in the urban, peri-urban and rural areas of Sylhet. He felt sure that he could convince the farmers of the value of the work.

5 The Grader-in-Charge of the District Marketing Office in Sylhet collects market prices of all agricultural products and consumer goods on a daily, weekly, fortnightly and monthly basis, depending on commodity. He works all markets in the district and makes returns to the Marketing Office in Dhaka and, additionally, those for livestock products to the Directorate of Livestock Services. The exact method he used for price collection

needs to be determined eg where a negotiated price is expected, he will record the range of prices on his returns form. The returns form is a universal document in use throughout the country, including Mymensingh and Pabna. He was delighted to offer information at the time and will do so for the students.

### *Pabna*

6 The west side of the ferry revealed some differences in 'outlook' from the east. In the 50 km approach to Pabna there were many more buffalo used for draught than to the east of the river and the scenery was even flatter, looking more like parkland apparently giving an appearance more like east Bengal. There appeared to be plentiful horticultural crops. Jute had just been harvested and there were numerous bare patches of land and a lot of activity in ponds where the fibre was being stripped from the cane. The cows were as lean as anywhere else and a herd of 30-40 pigs was seen walking along the road.

7 Pabna is more spread than either Mymensingh and Sylhet, its transition from the urban centre to the rural agricultural areas changing very gradually. It is an open town and far less busy than the other two and the pace of life is slower. The town is poor indeed, a single car was not observed and the number of rickshaws less than seen elsewhere.

8 The collaborators of choice is the NGO Bangladesh Rural Advancement Committee (BRAC). The NGO was set up to help the landless poor (including women) in the rural areas. It is partially funded by ODA as part of a donor consortium. It has three programmes:

- Rural Development Programmes
- Health and Population Programmes
- Non-formal Primary Education

9 The RDP is the largest programme and directed mainly at women who have only their labour to sell. One of its functions is to create income from many different activities of which livestock, milk and egg production is included. BRAC offers training credit and technical support. It has officials in 235 rural districts and each official has 6-7000 beneficiaries. BRAC has offered to exchange research and other information freely. It has guest house accommodation in town.

10 The Thana Livestock Development Officer knows the BAU and its key staff including Momotaz, the production student, from college days. He was most co-operative, prepared to help with the project and offered to introduce the students to farmers in his region.

11 The Grader-in-Charge, like his counterpart in Sylhet, offered all assistance and was prepared to share information recorded in his market returns sheet

### *Mymensingh*

12 Mymensingh is best known to the staff of the project as it is the home of the Bangladesh Agricultural University. The local approaches are the ubiquitous vistas of rice, light forest and horticultural crops with small farms dotted here and there. Although fish ponds are to be seen everywhere, there seem to be more on the approaches to Mymensingh than either Sylhet or Pabna.

13 Mymensingh is a bustling town with a past of some character. Colonial-style housing is to be found in the centre but it is often in need of renovation. There are many shops and most goods appear to be available but the roads are broken, drainage poor and there are not as many motorised vehicles as there are in Sylhet. The high density buildings quickly thin out to reveal the rural countryside, an almost abrupt transition not seen in the other two towns.

14 There appears to be no real need for a collaborating NGO other than the BAU itself which is able to offer support to the two students. The Professors are well known to the officials of the town and are therefore able to help in as many ways as possible. Accommodation for the students in the area is not required, the University has all that is required.

15 During the visit, the District Livestock Officer accompanied the team on farmer visits and is prepared to help further with the project. Similarly, the Marketing Officer was also prepared to offer full support.

## Appendix 5: Maps

Bangladesh has a hierarchy of administrative units which are also used for census results. From top to bottom, the levels generally are:

Division  
District  
Thana  
Union  
Mauza

For large towns there is an extra level: the Union becomes a Paurashava, which is divided into Wards which are further divided into Mahallas (corresponding to Mauzas).

Maps 1 to 3 show the lower levels of this hierarchy for Mymensingh

Map 1: Mymensingh District, divided into Thanas and Unions

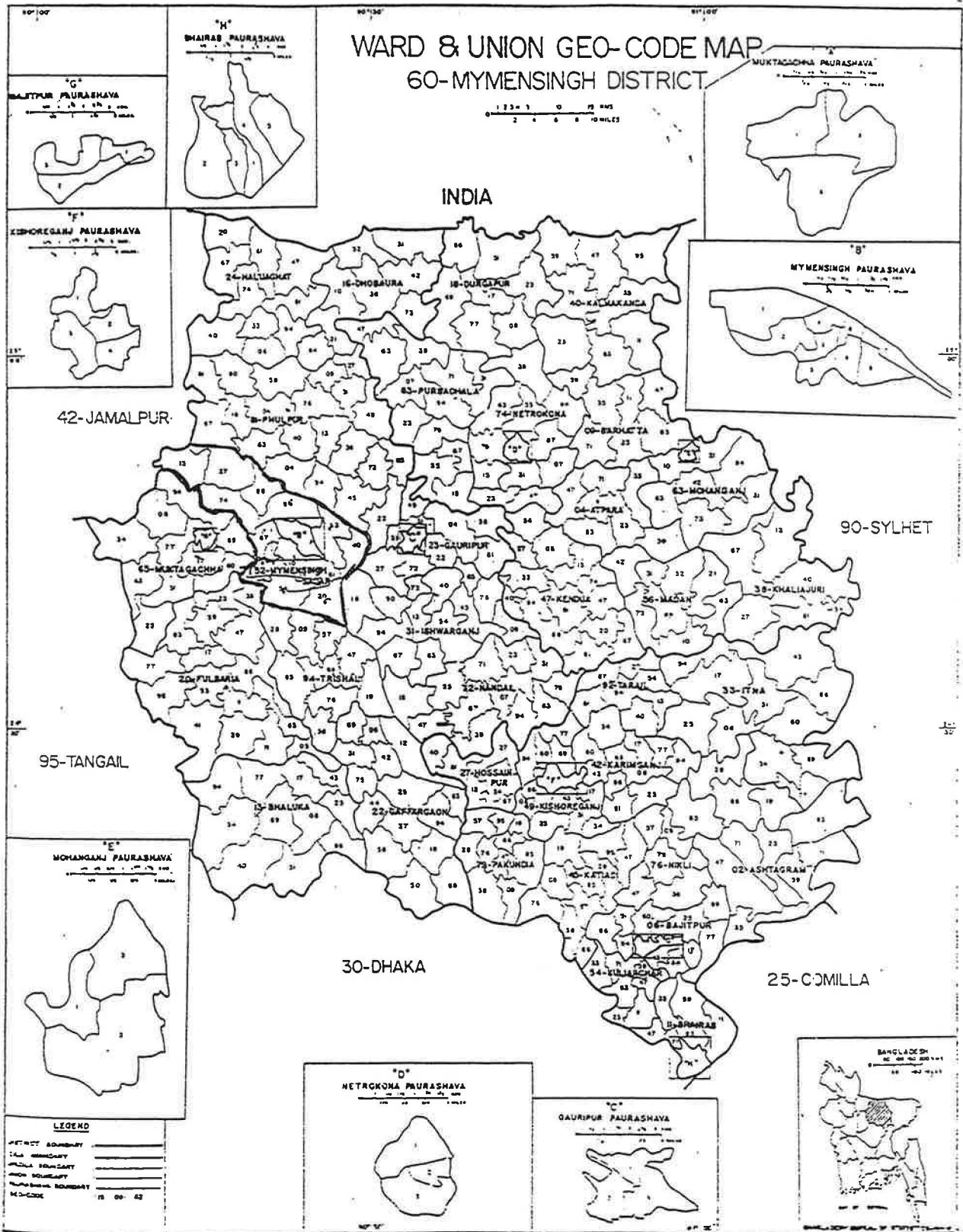
Map 2: Mymensingh Sadar Thana, divided into Unions and Mauzas

Map 3: Mymensingh Paurashava, divided into Wards and Mahallas

Maps 2 and 4 for Mymensingh and Sylhet Sadar Thanas respectively, include shadings to indicate the tentative allocation of selected mauzas to urban, peri-urban and rural categories.

Map 5: Bangladesh, position of the major towns considered for the study



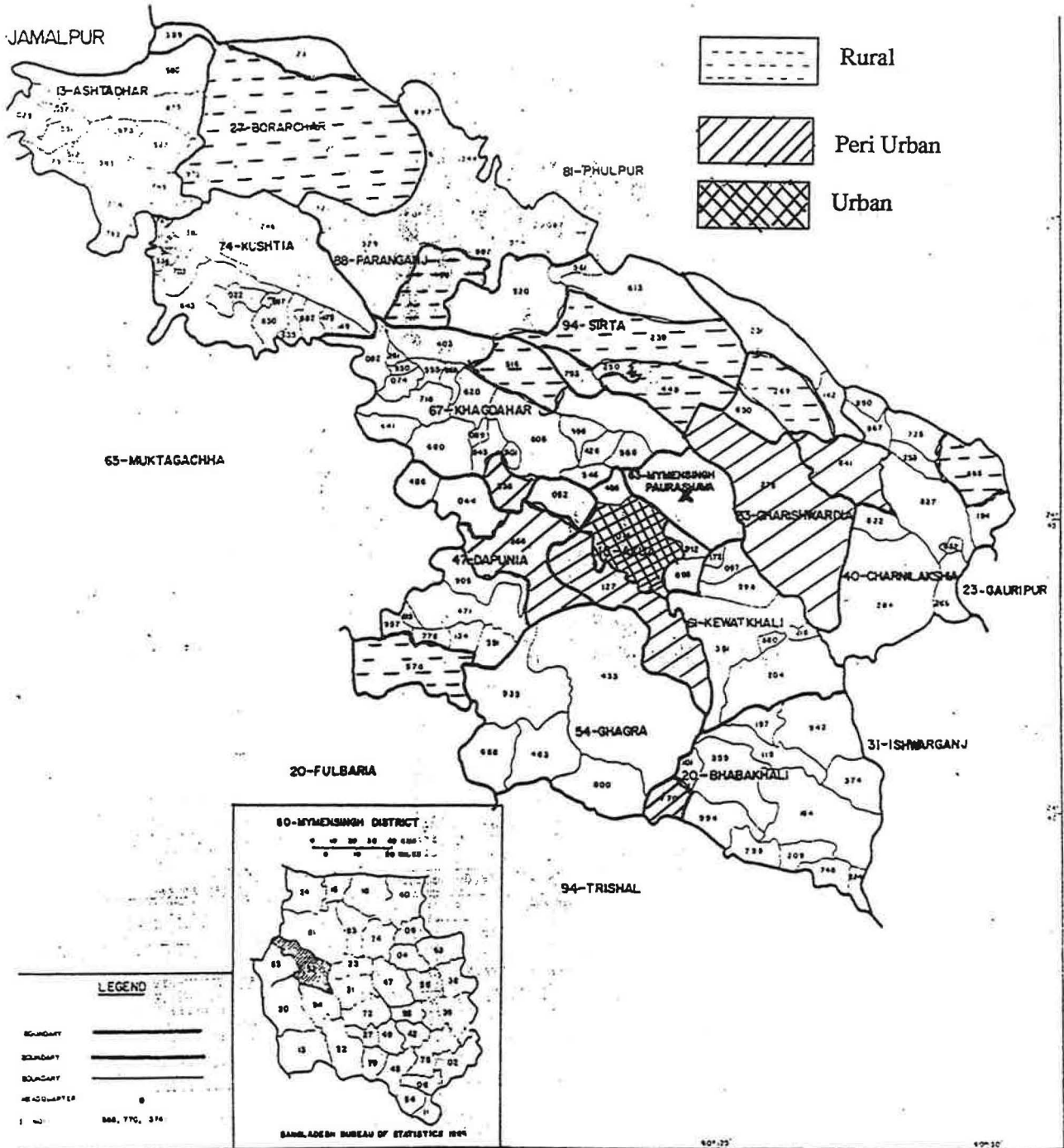
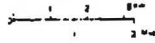


Map 1

Mymensingh District  
(Showing Thana Union Boundaries)

# MAUZA GEO-CODE MAP

52-MYMENSINGH SADAR UPAZILA  
60-MYMENSINGH DISTRICT



**LEGEND**

BOUNDARY —————

BOUNDARY —————

BOUNDARY —————

HEADQUARTER ○

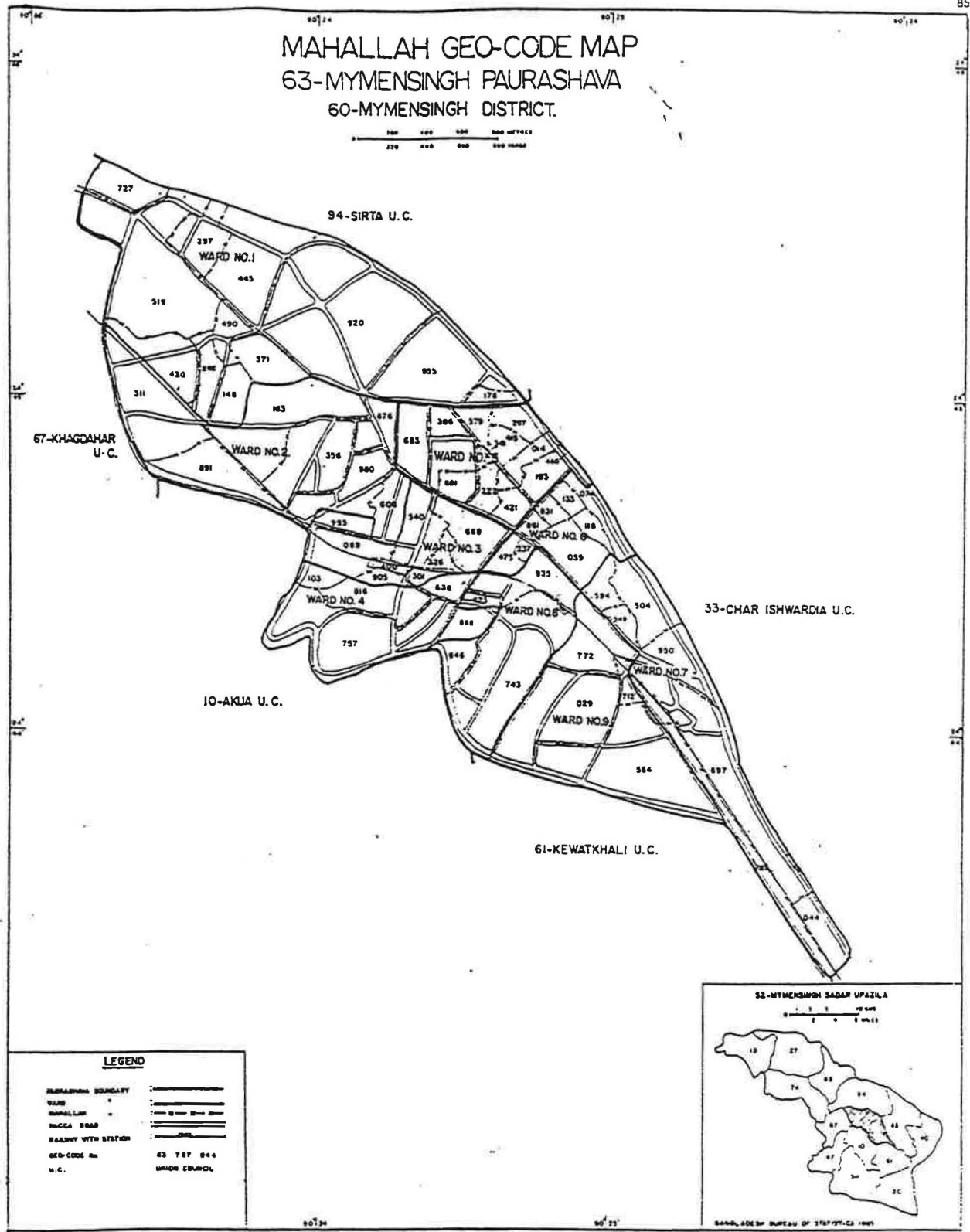
1:50,000

806, 770, 374



Map 2

Mymensingh Sadar Thana  
(Showing Union Mauza Boundaries)

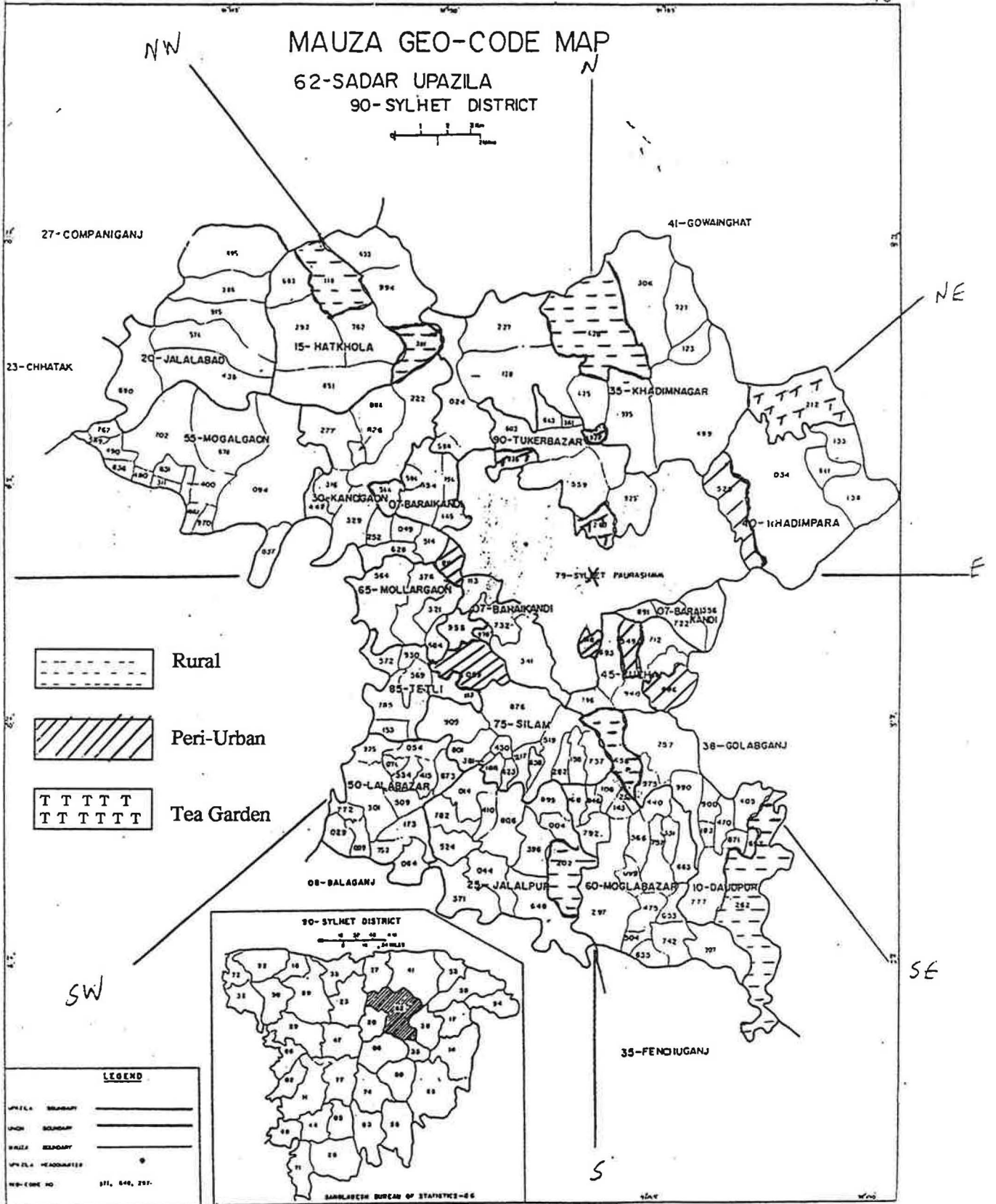
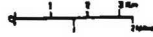


Map 3

Mymensingh Paurashava  
(Showing Ward & Mahalla Boundaries)

# MAUZA GEO-CODE MAP

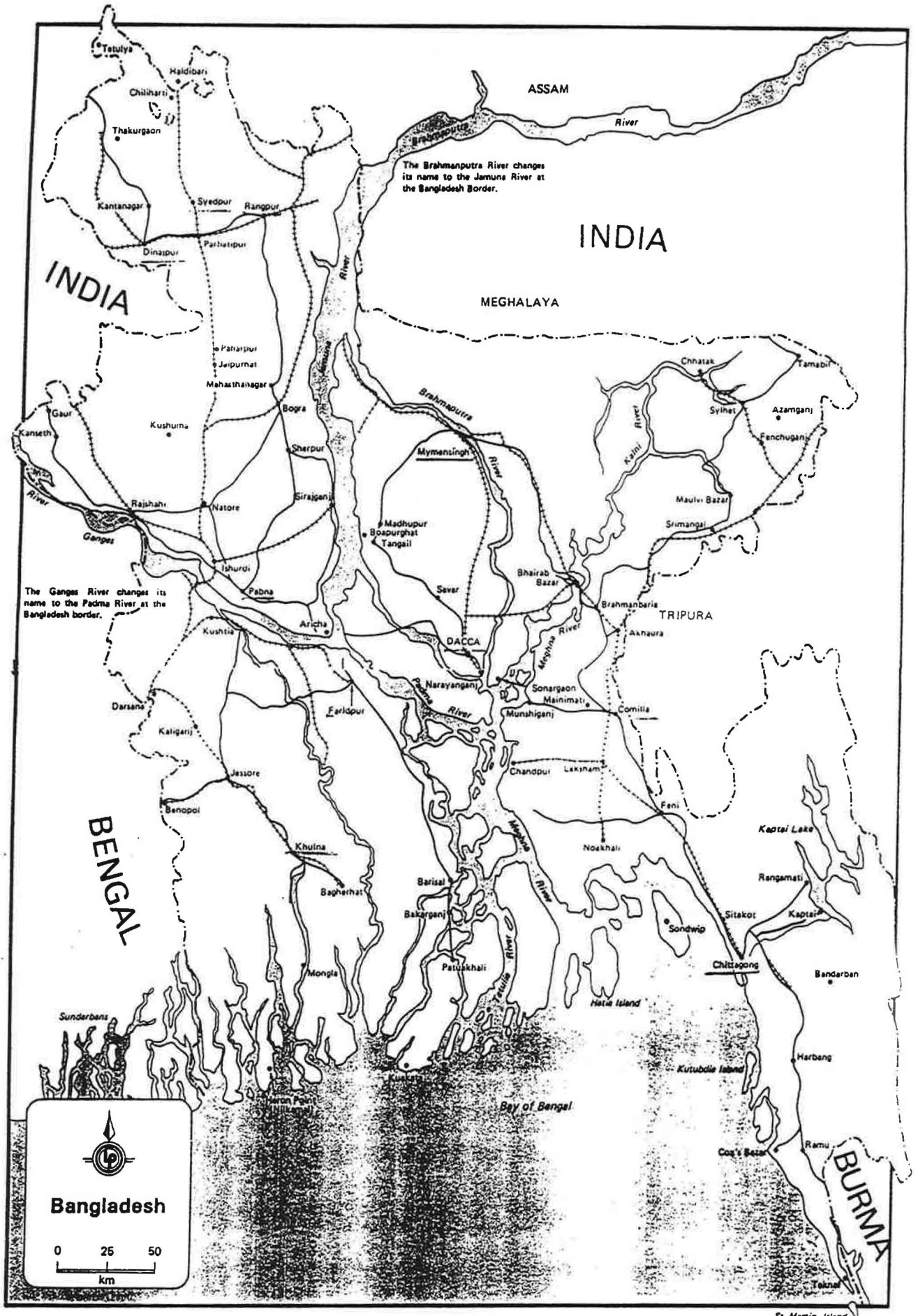
62-SADAR UPAZILA  
90-SYLHET DISTRICT



Map 4

Sylhet Sadar Thana

**Map 5**  
**Bangladesh: Position of major towns considered for the study**



St. Martin Island

## Appendix 6

### Results from statistical analyses of secondary data

**Table 1: Coefficients from principal components analysis for two towns based on 1991 census data.**

Variable (percentage)	Mymensingh	Sylhet	
	Index	Index 1	Index 2
Literacy rate	-.18	-.18	-.19
Houses with straw roof	.29	.23	.35
Houses with cement roof	-.12	-.07	-.09
School attendance rate	-.13	-.09	-.18
People engaged in housework	.06	.07	-.12
People not working	-.08	-.05	-.01
Workers engaged in agriculture	.41	.40	-.06
Houses with tap water	-.14	-.18	-.10
Houses using pond/river water	.02	.41	-.22
Wells which are tube wells	-.13	.00	-.24
Houses with sanitary toilet	-.28	-.25	-.24
Houses with no toilet	.28	-.04	.50
Houses with electricity	-.38	-.35	-.18
Landless households	-.18	-.21	.28
H/hs main income is farming	.31	.31	-.18
H/hs main income is agric. labour	.14	.11	.15
H/hs main income is non-ag. labour	-.02	.01	.00
H/hs main income is other	-.43	-.44	.03
Hindu	-.03	-.07	.42
% Variation accounted for	68	49	29

**Table 2: Groups derived from cluster analysis and mean values of selected variables. (See Table 1 for expanded variable descriptions)**

Mymensingh			Percentage											
Group	No. of mauzas	Index	Lite racy	Straw roof	Attend school	Work in agric.	Pond/ river	Sanitary toilet	No toilet	Elect- ricty	Income farming	Income ag. lab.	Income 'Other'	Hindu
1	14	32	23	63	30	69	3	3	61	3	50	26	21	1
2	4	44	29	65	33	78	11	8	58	6	67	16	16	7
3	4	19	18	75	24	58	3	3	22	0	46	19	29	4
4	7	-23	29	40	32	37	1	6	47	13	26	17	49	4
5	2	-111	46	27	49	5	1	39	10	52	5	1	90	1
6	2	-160	65	10	58	1	0	69	2	89	1	0	96	14

Tentative interpretation: Groups 1 to 3 - Rural ; Group 4 - Peri-urban ; Groups 5 & 6 - Urban

Sylhet			Percentage											
Group	No. of mauzas	Index	Liter acy	Straw roof	Attend school	Work in agric.	Pond/ river	Sanitary toilet	No toilet	Elect- ricty	Income farming	Income ag. lab.	Income 'Other'	Hindu
1	12	50	29	41	33	56	82	13	10	0	42	27	25	6
2	3	121	15	79	15	97	92	3	2	0	93	5	0	0
3	2	-62	12	72	7	0	0	0	96	7	0	0	100	84
4	2	5	18	87	18	66	0	2	90	2	0	68	31	87
5	2	23	46	6	53	78	50	54	2	7	58	8	33	4
6	8	-32	40	18	42	23	41	21	6	28	18	8	69	6
7	5	-129	67	4	48	0	1	78	1	80	0	0	98	9

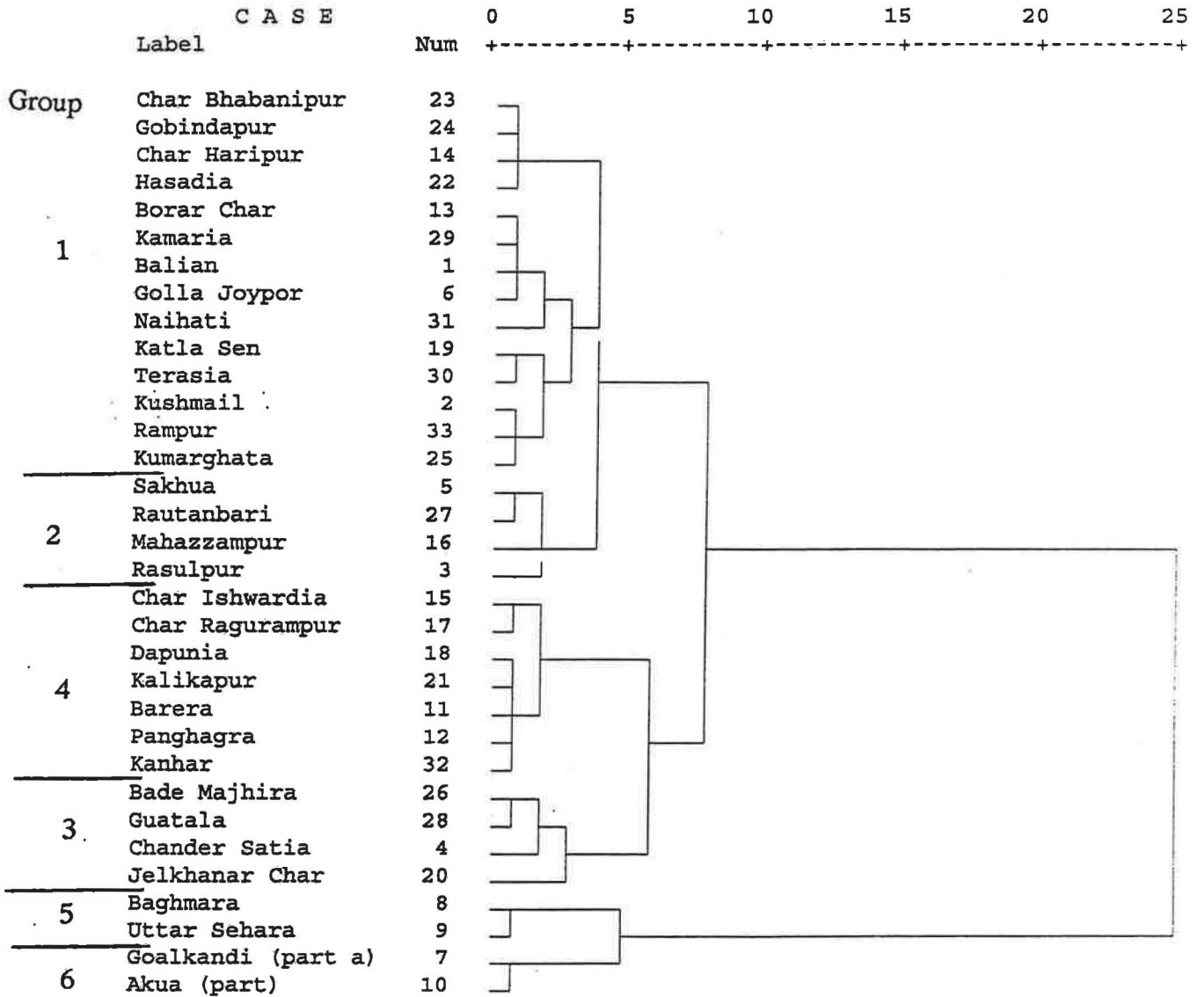
Tentative interpretation: Groups 1, 2 - Rural; Groups 3 & 4 - Tea gardens; Group 5 - to be determined; Group 6 - Peri-urban; Group 7 - Urban.

# MYMENSINGH

\*\*\*\*\* H I E R A R C H I C A L C L U S T E R A N A L Y S I S \*\*\*\*\*

Dendrogram using Complete Linkage

Rescaled Distance Cluster Combine



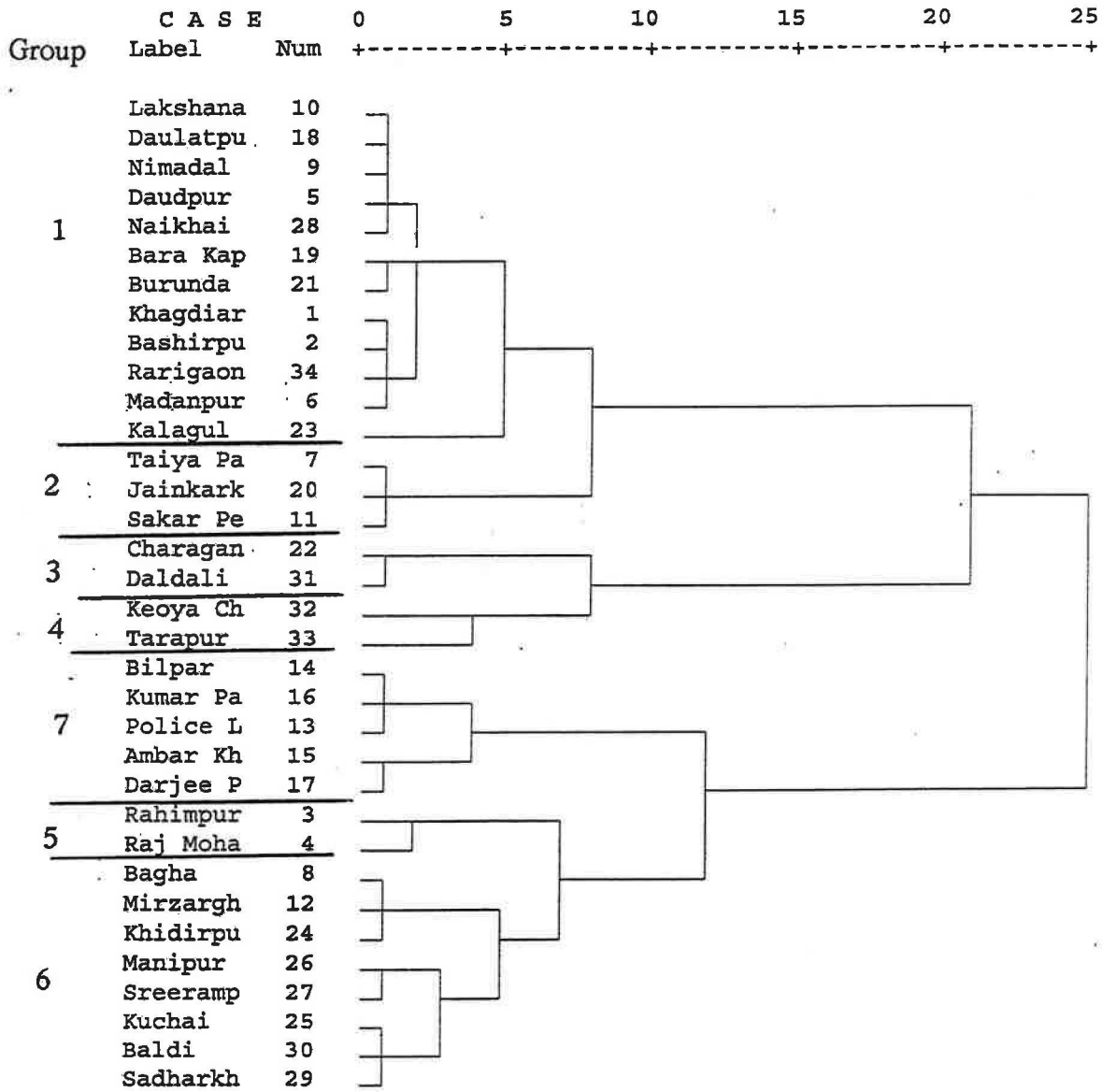


# SYLHET

\*\*\*\*\* H I E R A R C H I C A L C L U S T E R A N A L Y S I S \*\*\*\*\*

Dendrogram using Complete Linkage

Rescaled Distance Cluster Combine



## **Appendix 7**

### **Questionnaires developed during the visit**

**DELINEATION OF PERI-URBAN AREAS:  
KEY INFORMANT QUESTIONNAIRES**

**DHAKA: 3 October 1996**

## CONTENTS

- I. OBJECTIVES
- II. METHOD
- III. COMMUNITY KEY INFORMANT QUESTIONNAIRE
- IV MARKET QUESTIONNAIRE
- V EXPLANATORY NOTES

### I. OBJECTIVES

Objectives:

There are four basic objectives behind collection of data from the mauzas:

- a. To add price data for animal products to the data base which is being set up to help define urban, peri-urban and rural areas around Mymensingh, Sylhet and Pabna.
- b. To add information on transport costs and market types to the data-base.
- c. To gain information on the destinations of animal products produced in any given mauza. This may be added to the database also.
- d. To derive a preliminary marketing profile of mauzas which, and farmers who, may be included in subsequent stages of the project.

## II. METHOD

1 Data will be collected through administration of questionnaires to key informants (KI) in 40 locations around each town. Maps of the town will be used to locate the communities of key informants. Eight lines will be drawn from the centre of the town in the following directions: N, NE, E, SE, S, SW, W, NW. Points will be marked on these lines at 2, 5, 10, 15 and 20 km from the centre of the town making a total of 40 points. Questionnaires will be administered to KIs of one community and one market closest to the point on the map. Unless there are exceptional reasons for doing otherwise, the markets chosen will be those nearest to the particular community visited.

2 Visits should be made to the specific study location a day or two before the planned interviews to meet the Ward Commissioner (in urban areas) or the Union/Mauza Chairman/Member (in rural areas). After appropriate introductions and explanation about the objectives of the exercise, he should be asked to make adequate arrangements to meet KIs in an appropriate situation eg a wide variety of different types of farmers/market traders on days which coincide with operation of the market. There are two sets of key informants, farmers and traders. Key Informants are expected to be able to answer questions about the knowledge and behaviour of others in the community not that which necessarily applies only to themselves.

3 The next step is to conduct the interviews. Questions should be asked by one interviewer and written on the questionnaire by another. Please use the correct questionnaire, there is one for farmers, another for the market traders. Pay particular care to the notes which accompany each questionnaire

4 Ensure that any uncertainties which arise in the course of the questioning are resolved in the field, as there will not be a second chance.

5. Please ensure that you communicate with us at NRI every two weeks by e-mail to report on progress. Remember that any suggestions for further improvement of the questionnaire will be welcomed. Such suggestions can be discussed by e-mail. Our addresses are as follows:

David.Silverside@NRI.org

John.Sherington@NRI.org

and

Neil.Marsland@NRI.org

# COMMUNITY KEY INFORMANTS QUESTIONNAIRE

## IDENTIFICATION

Town: Mymensingh/Pabna/Sylhet      Questionnaire Number: \_\_\_\_\_

Form completed by : \_\_\_\_\_

Interview conducted by : \_\_\_\_\_      Date: \_\_\_\_\_

Mauza: \_\_\_\_\_      Community/Village Name: \_\_\_\_\_

## INTERVIEW DETAILS

(The enumerator should describe the circumstances of the meeting, including a brief description of the key informants)

## TRANSPORT TO TOWN

1. How far is this community from the nearest pukka road?  
(state miles or km.) \_\_\_\_\_
2. How far is it by road to the centre of town from this community? (dry season)  
(state miles or km.) \_\_\_\_\_

3 (a). How do people in the community travel to town in the dry season?

Method	Cost (Taka)	Time	Remarks

3 (b) Are there any differences in the rainy season?

Method	Cost (Taka)	Time	Remarks

NOTES:

#### FEED COSTS AND SOURCES (CATTLE AND CHICKENS)

4. How do most dairy farmers in this community obtain their rice straw?

Source	Main method (Tick only one)	% of farmers	Remarks
Own straw produced locally			
Own straw transported from other areas			
Purchased			

NOTES (including the reasons for transporting/purchasing rice straw)

- 5 (a) Could you please tell me the types of animal feeds that are locally available  
 (b) Are they available all year or only sometimes?  
 (c) What is the current price for these feeds?

Feed Type	Local availability (tick one box per row)			Current Price	Units	Remarks
	Never	Sometimes	Always			
Rice straw						
Mustard oil cake						
Rice bran						
Wheat bran						
Molasses						
Til oil cake						

- 5 (d). Is there variation in the price of feed and if so, what are the lowest and the highest prices.

Feed Type	Is there variation	Price		Remarks
		Lowest	Highest	
Rice straw				
Mustard oil cake				
Rice bran				
Wheat bran				
Molasses				
Til oil cake				

NOTES:



## MARKETING

6. Where are the nearest local markets and on what days do they operate?

Location	Distance	Number of days				Remarks
		Days Open	Days selling			
			Meat	Chicken	Livestock	

NOTES:

### Milk Marketing:

- 7 (a) Which of the following systems of milk sales are used by local farmers?  
 (b) Can you rank the importance of these systems and give the prices received by the farmer?.

System	(a) Tick	(b) Rank	Price (Taka/kg)			Remarks
			Present	Lowest	Highest	
Sell to Goala						
Sell at local market						
Sell at farmgate						
Deliver to regular customers						
Sell to trader/piker						
Other (specify)						

NOTES:

**Fish Marketing:**

8. Please indicate the **retail** price per kg of the following fresh pond fish sold in the local market: Rui; Katla; Hilsa and Carpio.

Fish Species	Price (Taka/kg)			Remarks
	Present	Lowest	Highest	
Rui (2-3kg size)				
Katla				
Hilsa				
Carpio				

NOTES:

**Egg (Chicken) Marketing:**

9. What is the present price of 4 deshi chicken's eggs sold locally?

Price (Taka/4 eggs)			Remarks
Present	Lowest	Highest	

NOTES

**Livestock marketing: price per live animal**

10. What are the prices and liveweight of a typical chicken and goat?

Animal	Typical Weight	Price (Taka per animal)			Remarks
		Present	Lowest	Highest	
Chicken					
Goat					

NOTES:

**Indication of proportion of produce sold in urban centre**

11. Can you please estimate the proportion of **locally sold** milk/fish that goes to the urban centre. (Tick the relevant boxes)

Proportion going to urban centre	Commodity		Remarks
	Milk	Fish	
None/very little (0 - 10 %)			
Less than half (10 - 33%)			
About half (33% - 67%)			
More than half (67% - 90%)			
All/nearly all (90% - 100%)			

Notes:

**AND FINALLY.....**

**Note the names of any useful persons met; any special circumstances of the area; and whether you would you describe this area as Rural, Peri-Urban or Urban?**

# MARKET QUESTIONNAIRE

## IDENTIFICATION

Town: Mymensingh/Pabna/Sylhet                      Questionnaire Number: \_\_\_\_\_

Form completed by : \_\_\_\_\_

Interview conducted by: \_\_\_\_\_                      Date: \_\_\_\_\_

Mauza: \_\_\_\_\_                      Market Name: \_\_\_\_\_

## INTERVIEW DETAILS

(The enumerator should describe the circumstances of the meeting, including a brief description of the key informants)

### Market Days

1. On which days does the market operate?

Number of days				Remarks
Days Open	Days selling			
	Meat	Chicken	Livestock	

### Milk Marketing

2. What is the present retail price of raw milk (Taka/kg)? (include seasonal variation)

Price (Taka/kg)			Remarks
Present	Lowest	Highest	

NOTES:

### Fish Marketing:

3. What is the present retail price of the following fresh fish sold in this market: Rui; Katla; Hilsa and Carpio (Taka/kg)?. (include seasonal variation)

Fish Species	Price (Taka/kg)			Remarks
	Present	Lowest	Highest	
Rui (2-3 kg size)				
Katla				
Hilsa				
Carpio				

NOTES:

### Chicken and Egg Marketing:

4. What is the price and weight (kg) of a typical deshi chicken? (include seasonal variation)

Typical Weight	Price (Taka/bird)			Remarks
	Present	Lowest	Highest	

5. What is the retail price of deshi chicken eggs (Taka/4 eggs)

Price (Taka/4 eggs)			Remarks
Present	Lowest	Highest	

NOTES

### Meat marketing:

6. What are the present, lowest and highest retail prices for mutton and beef (Taka/kg)

Meat Type	Price (Taka/kg)			Remarks
	Present	Lowest	Highest	
Mutton				
Beef				

NOTES:

### Goat marketing

7. What is the price and weight (kg) of a typical goat? (include seasonal variation)

Typical Weight	Price (Taka/animal)			Remarks
	Present	Lowest	Highest	

NOTES

### Indication of proportion of produce sold in urban centre

8. Can you please estimate the proportion of milk/fish sold at this market that goes to the urban centre. (Tick the relevant boxes)

Proportion going to urban centre	Commodity		Remarks
	Milk	Fish	
None/very little (0 - 10 %)			
Less than half (10 - 33%)			
About half (33% - 67%)			
More than half (67% - 90%)			
All/nearly all (90% - 100%)			

NOTES:

## V. EXPLANATORY NOTES:

These notes have been prepared to assist completion of the questionnaire correctly and relate to specific questions in the questionnaires. In addition to this, please remember to try and get 'colour' in the course of the interviews. If there is sufficient time, and the respondents are interested, pursue interesting findings eg the relationship between meat prices and the availability of fish. Such types of information will assist the design of future stages of the study.

### i. COMMUNITY KEY INFORMANTS QUESTIONNAIRE

General: The heading 'highest' price means the highest **non-festival price** in questions 5 (d), 7, 8 and 9.

1. Identification Section: Please complete the identification section fully before starting the interview
2. Interview Details: This should be brief but accurate.
3. Transport to Town: Please complete the distance in miles or kms.
4. Feed Sources (Qn 4): Place only one tick in the main column 'main method'. If possible, fill in all boxes in the '% of farmers' column.
5. Feed Sources (Qn 5a, b, c): Complete for animal feeds that are **locally** available: Are they **locally** available all year round?; what is the current **local** price for these feeds? The 'Availability' column refers to **local** availability.
6. Marketing (Qn. 6): Note that there are separate columns for: number of days open; number of days on which meat is sold; number of days on which chicken is sold; number of days on which livestock (goats and /or cattle) is sold.
7. Fish Marketing (Qn. 8): Fill in the **retail** prices for fish sold in the local market. Thus this question should be addressed to the whole group of farmers as fish consumers and **NOT** to fish farmers only as fish producers.

Please note the following points:

- For Rui fish, record the price/kg of the **2-3 kg** size
  - Record the present price of '**good**' quality fish **before any discount** for end of day
8. Livestock marketing (Qn 10): Note revised layout of the table for this question
  9. Produce sold in urban centre (Qn 11): Attempt to get accurate results with this question but do not dwell on the question if the farmers are obviously having difficulties.
  10. Names of any useful persons met: Record any particularly informative KIs. They may prove to be useful points of contact later on in the study.

11. Urban, Peri- Urban or Rural: Please take time to think about this last question and make sure that you justify your answer.

## ii MARKET QUESTIONNAIRE:

1. Identification Section: Please complete the identification section fully before starting the interview

2. Interview Details: This should be brief but accurate.

3. Market Days (Qn 1): This is very similar to question 6 in the Community key informant questionnaire.

4. Fish Marketing (Qn 3): This is in the same format as question 8 in the Community key informant questionnaire.

Please note the following points:

- For Rui fish, record the price/kg of the 2-3 kg size
- Record the present price of 'good' quality fish **before any discount** for end of day
- Record any abnormal factors behind the price eg abnormally large quantities at the market for the time of year

5. Goat Marketing (Qn 7): This question has a similar format to question 10 from the Community key informant questionnaire.

6. Indication of proportion sold in the urban centre (Qn 8): Please note that whilst this question is similar to question 11 in the Community Key Informant Questionnaire, **there is one small but important difference**. Whereas in the Community Questionnaire we are asking for an estimate of the proportion of **locally sold milk/fish** that goes to the urban centre, in the market questionnaire, we are asking for an estimate of the proportion of **milk/fish sold at this particular market** which goes to the urban centre.

**GOOD LUCK IN THE FIELD!**



## **Appendix 8**

Revised project milestones and NRI visit programme

## Appendix 8

### NRI VISIT PROGRAMME/TOTAL INPUT

Date	Discipline	Overseas duration mm	Total time input	Function
1995/6				
Nov 95	Coordinator	0.5	1.0	To identify collaborators and discuss project
Feb 96	Coordinator	0.25	0.5	Assist with student selection /Firm TOR/Firm contract detail
Feb 96	Socio-economist	0.25	0.5	Assist with student selection
1996/7				
Sept 96	P/H Scientist	0.75	1.0	Select towns/sign contract/questionnaire design and testing
Sept 96	Socio-economist	0.75	1.0	To set up questionnaire/questionnaire testing
Sept 96	Statistician	0.75	1.0	To set up questionnaire/questionnaire testing
Dec 96	P/H Scientist	0.25	0.5	Analyse data from Town 1/Plan data collection in Towns 2&3/Plan further inputs
Dec 96	Statistician	0.25	0.5	Analyse data from Town 1/Plan data collection in Towns 2&3/Plan further inputs
Feb 97	P/H scientist	0.75	1.25	Analyse data from Towns 2&3/Initiate market & producer characterisation studies
Feb 97	Socio-economist	0.5	0.75	Analyse data from Towns 2&3/Initiate market & producer characterisation studies
Feb 97	Statistician	0.5	0.75	Analyse data from Towns 2&3/Initiate market & producer characterisation studies
Feb 97	Microbiologist	0.25	0.5	Discuss data to be collected on production losses
1997/8				
Oct 97	P/H Scientist	0.25	0.5	Technical inputs
Oct 97	Socio-economist	0.25	0.25	Technical inputs
Oct 97	Modeller	0.25	0.5	Technical inputs
Feb 98	P/H Scientist	0.25	0.5	Technical inputs
Feb 98	Statistician	0.25	0.25	Technical inputs
1998/9				
Oct 98	P/H Scientist	0.25	0.5	Technical inputs
Oct 98	Modeller	0.25	0.5	Technical inputs
Jan 99	Modeller	0.25	0.5	Technical inputs
Feb 99	P/H Scientist	0.25	2.25	Workshop + regional modifications
Feb 99	Socio-economist	0.25	0.25	Workshop

**Milestones (relating to the Activities stated in the Project framework (see report R2311 (S)))**

Planned date of delivery	Milestone	PF: Related to Activity No:
1 April 1996	Project Start (aborted)	
1 September 1996	Project Start/students selected/NRI team assembled	1,2
31 December 1996	Questionnaires for area definition work drafted and tested	1,2
	Study towns selected	1,2
	Data collected and analysed for Town 1 for area definition	1,2
31 March 1997	Data collected and analysed for Towns 2 & 3 for area definition	1,2
	Detailed plan of the project completed	1,2,3,4,5
	Experimental protocols finalised	1,2
30 June 1997	Farming and marketing systems characterised	1,2
	Farmers and markets chosen for the full study	1,2
30 September 1998	Field data collection completed	1,2
31 December 1998	Analysis of data in first draft	1,2,3
	Computer model ready for testing	4
	Two scientific papers submitted for publication	1,2,3
31 March 1999	Data analyses completed	3
	Computer model tested & modified if necessary	4
	Workshop held with key stakeholders to disseminate findings and determine further inputs	5
30 June 1999	Workshop proceedings published	5
	Regional programme prepared	1,2,3
	PhD thesis in first draft	1,2,3
30 September 1999	PhD thesis in final draft	

## Improvements in the production of livestock products in the peri-urban areas of cities in Asia

