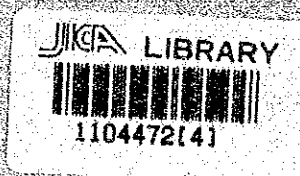


Government of the Peoples Republic of Bangladesh
Flood Action Plan

North West Regional Study (FAP-2)

DRAFT FINAL REPORT



VOLUME 2

REGIONAL DATA & PLANNING UNITS

October 1992

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Introduction

This volume contains the data used as the basis for regional planning.

Part 1 describes the regional data and its analysis using a geographic information system (GIS). The basis data are presented. Figure 1 shows the thanas for the region.

For comprehensive planning, the whole region has been divided into planning units. These are normally delineated by rivers, the international border or major infrastructure such as railway embankments. Planning units are not generally co-incident with the Planning Areas defined by WARPO, since these are primarily intended for resource assessment rather than FCD planning. Considerable use has nevertheless been made of the data on planning areas available in WARPO. The 15 planning units are listed below and shown in Figure 2.

<u>No.</u>	<u>Planning Unit Name</u>
1.	Thakurgaon
2.	Upper Atrai
3.	Teesta Right Bank
4.	Teesta Left Bank
5.	Kurigram
6.	Upper Karatoya
7.	Gaibandha
8.	Middle Bangali
9.	Joypurhat
10.	Western Barind Tract
11.	Mohananda Basin
12.	Atrai Left Bank
13.	Atrai Right Bank
14.	Lower Bangali
15.	Pabna

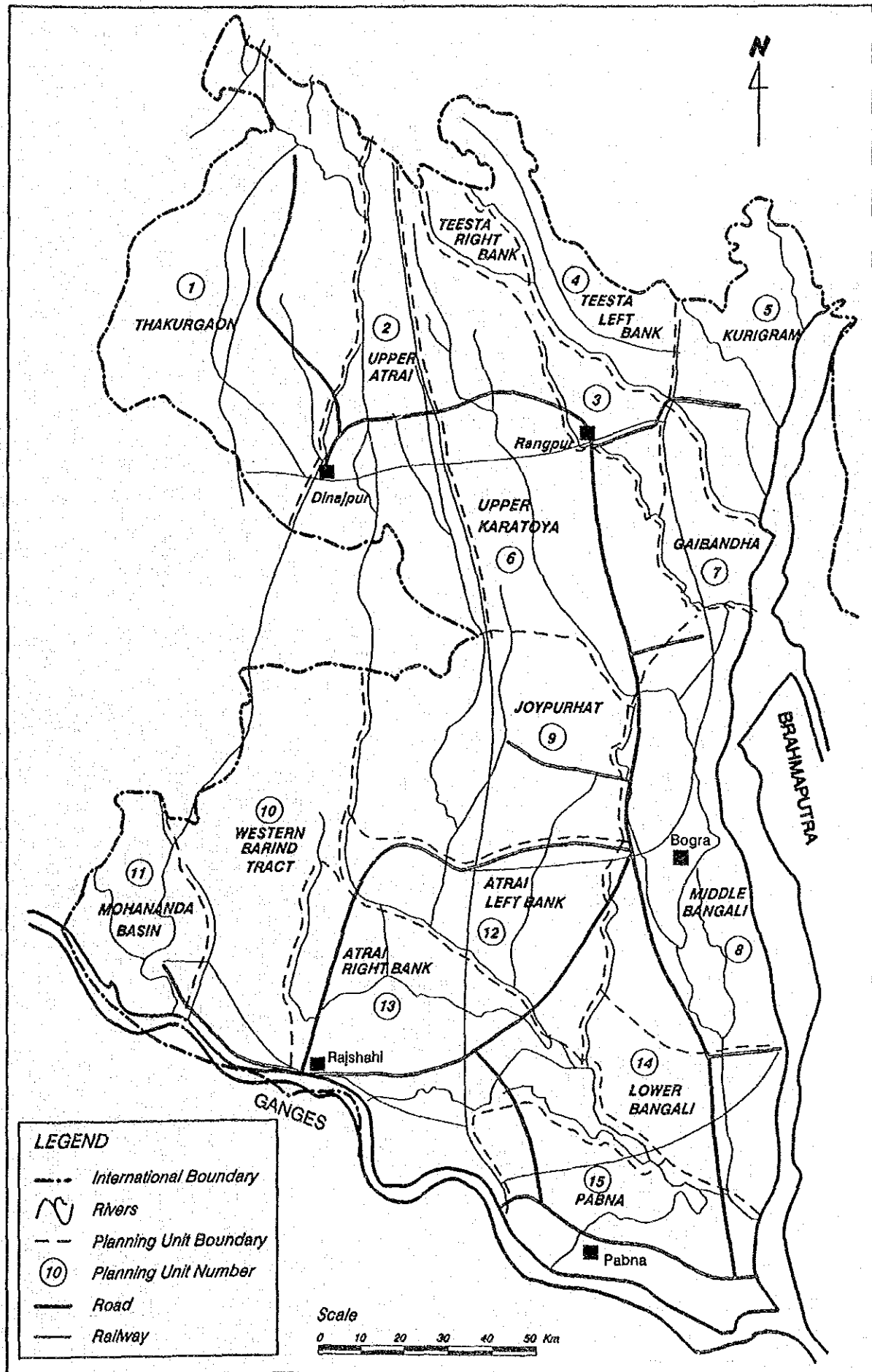
Part 2 describes the features of each planning unit and summarises the possible options for flood development within the unit. Details of existing flood control infrastructure and possible future options are given in volume 3, Regional Plan Engineering.

The possible options for each planning unit are integrated into the regional plan in Volume 1.

Figure 1
UPAZILA/THANA MAP



Figure 2
NWRS PLANNING UNITS



PART 1

REGIONAL DATA

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18.	Crop Damage 1987/91
19.	Soil Permeability
20.	Water Bodies

PART 1

REGIONAL DATA

1 Introduction

Regionally - available data was analysed using a geographic information system (GIS).

The objectives of the GIS component were:

- a) Presentation of existing thana data.
- b) Analysis and presentation of combinations of thana data.
- c) Analysis and presentation of information on soil associations.

The GIS has been used primarily for logical database queries rather than overlay analysis. This was because the majority of the available data was provided on the same spatial unit, the thana.

2 Data Sources and Quality

2.1 BBS Data

All BBS data was obtained on a thana basis.

2.1.1 Population

Population data was from the 1981 census, 1991 information was not available. Thus the population density map produced is only indicative.

2.1.2 Irrigation Development

This data came from the Ministry of Agriculture, AST project. Data was available for 1981 and 1989. This data is thought to be relatively reliable.

2.1.3 Crop Area and Crop Intensity Information

The crop figures were from surveys of 1980 and 1987. 1989 figures were obtained but not used because of inconsistencies in the data. Problems were found in using these statistics and this was evident in the initial anomalous results obtained when the data were mapped. The cropping intensities obtained were far too high in some cases and had to be adjusted on the basis of other years.

2.1.4 Inundation Classes

Land type classifications were available from BARC and MPO datasets. Both were used (see below for the BARC information).

The MPO thana based data was originally derived from SRDI 1:125 000 scale soil association mapping as was the Land Resource Appraisal mapping of BARC.

2.2 BARC/FAO Land Resources Appraisal

Digital spatial data relating to the BARC Land Resources Appraisal (FAO, 1988) was accessed from the National database of information compiled by FAP 19 (Geographic Information System). The AEZ map unit boundaries (coincident with soil association boundaries) were originally digitized by the AST project using a TYDAC SPANS system. The boundaries were converted to ARC INFO format by FAP 19 and the coverages produced were geo-corrected to match with one another correctly (the North West Region is covered by four different map sheets which were not originally edge-matched). FAP 19 also supplied the related database containing information on various soil properties.

The AEZ mapping is at a scale of 1:250 000 in an unknown projection (but probably Lambert Conformal). The maps are dated December 1985. Soil information was based on the reconnaissance soil survey reports published by the Soil Resources Development Institute (SRDI). The reports for the North West Region were published over the period 1968 - 77. District and thana boundaries were taken from thana maps of the Bangladesh Department of Land Records and Survey.

Because of edge-matching problems boundaries were adjusted by FAP 19 on the basis of identifiable features i.e. road junctions and relatively stable river intersections. Given the original scale and the geo-correction applied the estimated precision of the digital coverage is about 1 km at best. The data is suitable for a regional overview and can be used at planning unit level but interpretation at planning unit level should assume an error margin in area estimates of about 15%.

2.2.1 Base Map Data

The road network available from the Land Resources Appraisal mapping can assist in location of sites, but does not represent a complete network of major roads. The type of road is not indicated and the baseline date has not been established.

The river network is consistent with the soil mapping information and thus by implication is largely based on 1963 aerial photography. Obviously boundary rivers have changed in alignment considerably over the intervening period, but the data sets in use are roughly contemporary so that area analysis and cross tabulations should be representative.

No inconsistency in the rail network has been detected.

Extent of urban areas is approximate and appears to reflect the area designated as urban at the time of the soil survey.

2.2.2 AEZ Data

The database of soil parameters associated with the AEZ mapping includes information down to the level of variants of particular soil series. Thus for each soil association there are several records in the database with different values for various soil parameters for the same soil association. Since the mapping unit symbol is the AEZ code, linkage of the data was on the basis of the soil association and

consequently a single parameter value had to be assigned to the soil association. The single parameter value for each soil association was assigned by calculating the weighted average for each soil series/variant within the association. This has the effect of smoothing the data slightly but appears to give a reasonable representation at the regional level.

2.3 Water Bodies Survey - SPARRSO

The 1985 report on standing water bodies in Bangladesh (SPARRSO) produced for MPO was used to assemble statistics on water bodies in the North West. The catchment-wise delineation of standing water body areas was digitized and coded to link to the database prepared of water body areas.

Water bodies were identified from dry season satellite imagery circa 1980 and from colour infra red photography from 1983. The areas recorded were then planimetered from SoB 1:50 000 mapping.

2.4 FAP 2 Information

Information obtained directly from FAP 2 specialists included the delineation of planning units and the location of project boundaries. Both these items were digitized and coded to link to associated databases. In both cases the delineation of boundaries was approximate based on the best available information.

3. Tabulations and Mapping

The following tabulations were produced and are appended:

1. Thana, gross area, population (1981) and population density.
2. Thana, NCA, flood phase by percentage of NCA.
3. Thana, numbers of irrigation equipment (1989).
4. Cropping pattern (1989) and intensity by planning unit.
5. Standing water bodies by planning units.

In addition a table was produced for each planning unit giving the following information:

thanas in the planning unit
percentage of planning unit covered by each thana
percentage of each thana in planning unit
gross and NCA of the planning unit
1981 population and population density
flood phase area and percentage
irrigation equipment and coverage, 1981 and 1989.

The planning unit tables are appended with each planning unit in the second part of this volume.

The following maps were produced and are appended.

Sl.	Map Title	Map Directory	Map Description
1.	Population Density 1981	MPOP81BW	Population density /Km2 shown as categories with increments of 200 people.
2.	Crop Intensity 1980	MCINT80	Population intensity by thana shown in 10% increments.
3.	Crop Intensity 1987	MCINT87	Cropping intensity by thana shown in 10% increments.
4.	Change in Cropping intensity, 1980-87	MCHNCINT	Change in cropping intensity by thana, shown in 20% increments.
5.	Transplanted Aman 1980	MTAMAN80	Cropped area of t. aman, 1980 as a percentage of NCA.
6.	Transplanted Aman 1987	MTAMAN87	Cropped area of t. aman, 1987, as a percentage of NCA.
7.	HYV Aman 1980	MHAMAN80	Cropped Area HYV aman, 1980
8.	HYV Aman 1987	MHAMAN87	Cropped Area HYV aman, 1987
9.	Change in crop area of HYV Aman 1980-87	MHACNG	Change in percentage of NCA cropped to HYV aman
10.	Broadcast Aman 1980	MBAMAN80	Cropped Area b. aman, 1980
11.	Broadcast Aman 1987	MBAMAN87	Cropped Area b. aman, 1987
12.	HYV Boro, 1980	MHBORO80	Cropped Area HYV boro, 1980
13.	HYV Boro, 1987	MHBORO87	Cropped Area HYV boro, 1987
14.	Change in crop area of HYV Boro 1980-87	MHBCNG	Change in percentage of NCA Cropped to HYV boro
15.	Irrigation Coverage 1989	MIRR89BW	Total irrigated area as % of NCA for 1989.
16.	Increase in Irrigation Coverage 1981 to 1989.		Change in irrigated area by thana, shown in 10% increments.
17.	Flood Phase	MFPBW	Percentage of F2-F4 land on the basis of the NCA of the thana.
18.	Crop Damage 1987/91		Average crop damage of 1987 & 1991 for t. aman and b. aman.
19.	Soil Permeability	MSPM	Soil permeability in region.
20.	Water Bodies	MPUSWB	Water body groupings from SPARRSO survey.

In addition the boundaries of planning units and existing projects were digitised and shown on working maps. Certain other maps were produced for the soio-economic survey.

4. Regional Data and Planning

Summarised regional data is given below. This shows that the region has a total gross area of 3456000 ha, total NCA of 3030000 ha, population in 1981 of 21.23 million resulting in a density of 6.14 p/ha gross.

It should be noted that planning unit 0 represents those areas identified within the region by the GIS but outside planning unit boundaries. Most of planning unit 0 consists of parts of thanas in or bordering the main rivers.

Summary Regional Data

Planning Unit	Gross Area (ha)	NCA (ha)	Population (1981)
0	216486	157313	1254217
1	421312	386431	1856666
2	189553	169902	1151344
3	131732	115592	945388
4	94036	82154	552732
5	166612	130900	1099125
6	379803	345452	2578777
7	73034	62294	582091
8	225431	191642	1736323
9	250955	229062	1626644
10	268532	242176	1184965
11	138834	123134	764322
12	201866	185920	1174297
13	300649	267872	2021637
14	181874	157310	1334040
15	215481	182867	1367332
	3456190	3030021	21229900

For flood planning the key indicators used were flood phase, cropping intensity and crops damage. A composite map combining these three indicators was produced. This map, and the discussion relating it to the overall regional plan, is given in Chapter 2 of the main report.

APPENDIX 1

GIS PROCESSING

1. Analysis

Once a coverage has been cleaned and built with no errors it can be used for the intended analysis. Such analysis will obviously vary between coverages but it usually entails comparison with other coverages.

The type of analysis which can be achieved is only limited by the functionality of dBASE in PC ARC INFO and this is not normally a serious limitation. Natural Resource analysis is typically confined to the production of various area statistics from defined combinations, but it can be extended to a modelling exercise if appropriate whereby the model is built on the relationships established between different coverages together with programming of dBASE. Network analysis to consider allocation of resources is also possible within the GIS.

Cross tabulations performed are summarised in the table below:

Output	Themes combined
By Planning Unit: Population Population Density Flood Phase Irrigation Equipment Crop area statistics	Planning Unit & thanas
By Planning Unit: Standing Water Bodies	Standing Water Bodies & Planning Unit
By Planning Unit: Flood phase data	Planning unit & AEZ
By Project: Population Density	Project boundaries & Population density.

When comparing different coverages some important points must be borne in mind:

- i) The coverages must be in the same units and projection.
- ii) Fields of interest in each coverage should have unique names since with duplicate names one field will be dropped in the coverage resulting from a JOIN operation e.g. IF soil coverage and a land use coverage each has a field called CODE the field will only be preserved from the first named coverage, thus names should be SOLCODE and LANDCODE, or similar.
- iii) For polygon coverages all polygons must be labelled correctly and this should be checked manually by inspection of a plot. Spatial JOINS are time consuming operations and are wasted if the initial labelling is incorrect.

The typical process of analysis can be illustrated by an example of two polygon coverages, say soil associations and thana boundaries:

Combination can be through Union, Intersection or Identity. In the case of the Soil - Upazila combination the most appropriate JOIN operation is IDENTITY, with features only preserved for the extent of the Upazila coverage. Combination with the IDENTITY command yields new boundaries for which the respective area figures should sum to the land area within the region.

The attribute information concerning soil parameters in the case of AEZ units and perhaps Irrigation information in the case of Upazilas, is held in dBASE files. The dBASE files are related to the coverage either directly on the basis of the User_id for the polygon which must be numeric, or more usually on the basis of the Soil code or Upazila code. In the latter case the Soil code would have to be added to the coverage polygon attribute table at the time of labelling.

After a spatial join operation the new Polygon Attribute Table contains both the soil code and the Upazila code. A new unique code for the combined coverage can then be formed from a combination of these two codes. The data can thus be grouped on significant values of the new code.

After the join operation and the addition of the new code field, the PAT file should be copied to another database file. Under this Project the nomenclature for that file is normally the first six letters of the combined coverage with the suffix DB e.g. SOLUPZDB. The AREA, PERIMETER, SOLUPZ_, and SOLUPZ_ID fields can then be deleted from the DB file to leave the SOLUPZCODE field and the SOLCODE and UPZCODE fields. Other information can be joined to this DB file on the basis of either the UPZCODE or the SOLCODE. For example assuming the area of different inundation classes was of interest, create the necessary fields in SOLUPZDB (INUNDATE1, etc) and after setting a relation to SOLQRY in work area 2:

REPLACE ALL INUNDATE1 WITH SOLQRY->INUNDATE1 FOR SOLCODE=SOLQRY->SOLCODE

An alternative is to add all fields of interest to the respective PAT's before combination of the coverages, but this is impractical in the case of Upazilas where many sets of data are related to the boundaries.

2. Mapping

Map production is accomplished with the ARCPLOT module which is also used for screen displays.

Map production is a complicated process to the extent that many commands have to be issued to achieve the desired result. This process is simplified by writing Simple Macro Language Commands in a program file (SML) which can then be run with in ARCPLOT with the syntax @progrname or by giving the SML name as an argument to ARCPLOT when initiating the module e.g. ARCPLOT MAPA1.

For the project, macros have been developed to plot maps.

Mapping has not been entirely automated in that polygon shading still requires command line work, as does the creation of some legends. Complete automation is difficult because of the extent of possible options which would make the respective macros clumsy as currently devised.

Database Structure

Structure for database: C:\NWR\ATT\POPULAT.DBF

Number of data records: 124

Date of last update : 07/16/92

Field	Field Name	Type	Width	Dec	Index	Description of Field
1	OLD_DIST	Character	9		N	Old District
2	NEW_DIST	Character	12		N	New District
3	UPZ_NAME	Character	14		N	Upzila/Thana name
4	GEOCODE	Character	6		N	BBS Geocode
5	AREAKM	Numeric	9		N	Gross Area in sq. km
6	AREACORKM	Numeric	9		N	Gross Area corrected in sq.km
7	NCACOR	Numeric	9		N	NCA corrected area
8	POP81	Numeric	14		N	Total population in 1981
9	POPJT91	Numeric	14		N	Projected population of 1991
10	PDEN81	Numeric	9		N	Population Density of 1981
11	PDEN91	Numeric	9		N	Population Density of 1991
12	PCLASS81	Numeric	9		N	Population classes of 1981
13	PCLASS91	Numeric	9		N	Population classes of 1991

Source : Bangladesh Bureau of Statistic (1981 Census)
December 1989

Structure for database: C:\NWR\ATT\NWEQPT.DBF

Number of data records: 124

Date of last update : 07/21/92

Field	Field Name	Type	Width	Dec	Index	Description of Field
1	OLD_DIST	Character	9		N	Old district
2	NEW_DIST	Character	12		N	New District
3	UPZ_NAME	Character	12		N	Upzila\Thana name
5	GEOCODE	Character	6		N	BBS Geocode
8	F0_HEC	Numeric	9		N	F0 Land in Ha
9	F1_HEC	Numeric	9		N	F1 Land in Ha
10	F2_HEC	Numeric	9		N	F2 Land in Ha
11	F3_HEC	Numeric	9		N	F3 Land in Ha
12	F4_HEC	Numeric	9		N	F4 Land in Ha
15	STW_OP_89	Numeric	9	2	N	STW operating in 1989
16	STW_DS_89	Numeric	9	2	N	STW Deepset in 1989
22	T_LLP	Numeric	9	2	N	Total LLP in 1989
23	STW_OP_88	Numeric	9	2	N	STW operating in 1988
24	STW_DS_88	Numeric	9	2	N	STW Deepset in 1988
36	DTW_RUN	Numeric	9	2	N	DTW Running in 1989
45	STW_OP_81	Numeric	9		N	STW operating in 1981
46	DTW_C_81	Numeric	9		N	STW operating in 1981
47	DTW_OP_81	Numeric	9		N	STW operating in 1981
48	AREACOR	Numeric	9		N	Gross Area corrected in ha
49	NCACOR	Numeric	9		N	NCA corrected in ha

Source : Richard Haack, Ministry of Agriculture, AST(CIDA)

Structure for database: C:\NWR\ATT\CROP87.DBF

Number of data records: 124

Date of last update : 08/09/92

Field	Field Name	Type	Width	Dec	Index	Description of Field
1	OLDDIST	Character	12		N	Old District
2	NEWDIST	Character	12		N	New District
3	UPZNAME	Character	12		N	Upzila/Thana Name
4	GEOCODE	Character	6		N	BBS Geocode
5	AREACOR	Numeric	9		N	Gross area corrected in ha
6	NCACOR	Numeric	9		N	NCA corrected in ha
7	L_AUS	Numeric	9		N	Local Aus, area in ha
8	H_AUS	Numeric	9		N	HYV Aus, area in ha
9	PJM_AUS	Numeric	9		N	Pajam Aus, area in ha
10	LT_AMAN	Numeric	9		N	Local T. Aman, area in ha
11	H_AMAN	Numeric	9		N	HYV Aman, area in ha
12	PJM_AMAN	Numeric	9		N	Pajam Aman, area in ha
13	B_AMAN	Numeric	9		N	Broadcast Aman, area in ha
14	L_BORO	Numeric	9		N	Local Boro, area in ha
15	H_BORO	Numeric	9		N	HYV Boro, area in ha
16	PJM_BORO	Numeric	9		N	Pajam Boro, area in ha
17	L_WHEAT	Numeric	9		N	Local Wheat, area in ha
18	H_WHEAT	Numeric	9		N	HYV Wheat, area in ha
19	JUTE	Numeric	9		N	Jute, area in ha
20	TOBACCO	Numeric	9		N	Tobacco, area in ha
21	S_CANE	Numeric	9		N	Sugarcane, area in ha
22	POTATO	Numeric	9		N	Potato, area in ha
23	S_POTATO	Numeric	9		N	Sweet Potato, area in ha
24	GR_NUT	Numeric	9		N	Ground Nut, area in ha
25	MUSTARD	Numeric	9		N	Mustard, area in ha
26	GRAM	Numeric	9		N	Gram, area in ha
27	ARHAR	Numeric	9		N	Arhar, area in ha
28	MUNG	Numeric	9		N	Mung, area in ha
29	MASUR	Numeric	9		N	Masur, area in ha
30	KHESARI	Numeric	9		N	Khesari, area in ha
31	MOTOR	Numeric	9		N	Motor, area in ha
32	CHILLIES	Numeric	9		N	Chillies, area in ha
33	ONION	Numeric	9		N	Onion, area in ha
34	GARLIC	Numeric	9		N	Garlic, area in ha
35	GINGER	Numeric	9		N	Ginger, area in ha
36	TURMERIC	Numeric	9		N	Turmeric, area in ha
37	VEGETABLES	Numeric	9		N	Vegetables, area in ha
38	ORCHARD	Numeric	9		N	Orchard, area in ha
39	CROPSUM	Numeric	9		N	Sum of crop, area in ha
40	CROPINT	Numeric	9		N	Cropping intensity
41	CRINTCLS87	Numeric	9		N	Cropping intensity class

Source : Bangladesh Bureau of Statistics

Structure for database: C:\NWR\ATT\CROP80.DBF

Number of data records: 124

Date of last update : 08/09/92

Field	Field Name	Type	Width	Dec	Index	Description of Field
1	OLD_DIST	Character	9		N	Old District
2	NEW_DIST	Character	12		N	New District
3	UPZ_NAME	Character	14		N	Upzila/Thana Name
4	GEOCODE	Character	6		N	BBS Geocode
5	AREACOR	Numeric	9		N	Gross area corrected in
6	NCACOR	Numeric	9		N	NCA corrected in ha
7	L_AUS	Numeric	9		N	Local Aus, area in ha
8	H_AUS	Numeric	9		N	HYV Aus, area in ha
9	PJM_AUS	Numeric	9		N	Pajam Aus, area in ha
10	LT_AMAN	Numeric	9		N	Local T. Aman, area in h
11	H_AMAN	Numeric	9		N	HYV Aman, area in ha
12	H_WHEAT	Numeric	9		N	HYV Aman, area in ha
13	PJM_AMAN	Numeric	9		N	Pajam Aman, area in ha
14	B_AMAN	Numeric	9		N	Broadcast Aman, area in
15	L_BORO	Numeric	9		N	Local Boro, area in ha
16	H_BORO	Numeric	9		N	HYV Boro, area in ha
17	PJM_BORO	Numeric	9		N	Pajam Boro, area in ha
18	L_WHEAT	Numeric	9		N	Local Wheat, area in ha
19	JUTE	Numeric	9		N	Jute, area in ha
20	TOBACCO	Numeric	9		N	Tobacco, area in ha
21	S_CANE	Numeric	9		N	Sugarcane, area in ha
22	POTATO	Numeric	9		N	Potato, area in ha
23	S_POTATO	Numeric	9		N	Sweet Potato, area in ha
24	GR_NUT	Numeric	9		N	Ground Nut, area in ha
25	MUSTARD	Numeric	9		N	Mustard, area in ha
26	GRAM	Numeric	9		N	Gram, area in ha
27	ARHAR	Numeric	9		N	Arhar, area in ha
28	MUNG	Numeric	9		N	Mung, area in ha
29	MASUR	Numeric	9		N	Masur, area in ha
30	KHESARI	Numeric	9		N	Khesari, area in ha
31	MOTOR	Numeric	9		N	Motor, area in ha
32	CHILLIES	Numeric	9		N	Chillies, area in ha
33	ONION	Numeric	9		N	Onion, area in ha
34	GARLIC	Numeric	9		N	Garlic, area in ha
35	GINGER	Numeric	9		N	Ginger, area in ha
36	TURMERIC	Numeric	9		N	Turmeric, area in ha
37	VEGETABLES	Numeric	9		N	Vegetables, area in ha
38	ORCHARD	Numeric	9		N	Orchard, area in ha
39	CROPSUM	Numeric	9		N	Sum of crop, area in ha
40	CROPINT	Numeric	9		N	Cropping intensity
41	CROPINTCLS	Numeric	9		N	Cropping intensity class

Source : Bangladesh Bureau of Statistics

Structure for database: C:\NWR\ATT\CRDAM87.DBF

Number of data records: 124

Date of last update : 08/16/92

Field	Field Name	Type	Width	Dec	Index	Description of Fields
1	UPZ_NAME	Character	14		N	Upazila Name
2	GEOCODE	Character	6		N	BBS Geocode
3	AREACOR	Numeric	9		N	Gross Area in ha
4	NCACOR	Numeric	9		N	NCA Area in ha
5	TCATAMAN	Numeric	9		N	Total Culv. area of T Aman
6	TDATAMAN	Numeric	9		N	Total Damage area of T Aman
7	TCABAMAN	Numeric	9		N	Total Culv. area of B Aman
8	TDABAMAN	Numeric	9		N	Total Damage area of B Aman
9	AUS	Numeric	9		N	Total Damage area of Aus
10	TAMANSB	Numeric	9		N	Total Damage area of T Aman Seed Bed
11	JUTE	Numeric	9		N	Total Damage area of Jute crops
12	OTHER	Numeric	9		N	Total Damage area of Other crops

Source : Directorates of Agricultural Extension

Structure for database: C:\NWR\ATT\CRDAM91.DBF

Number of data records: 124

Date of last update : 08/09/92

Field	Field Name	Type	Width	Dec	Index	Description of Fields
1	UPZ_NAME	Character	14		N	Upazila Name
2	GEOCODE	Character	6		N	BBS Geocode
3	AREACOR	Numeric	9		N	Gross Area in ha
4	NCACOR	Numeric	9		N	NCA Area in ha
5	TCATAMAN	Numeric	9		N	Total Culv. area of T Aman
6	TDATAMAN	Numeric	9		N	Total Damage area of T Aman
7	TCABAMAN	Numeric	9		N	Total Culv. area of B Aman
8	TDABAMAN	Numeric	9		N	Total Damage area of B Aman
9	TCASCANE	Numeric	9		N	Total Culv. area of Sugar cane
10	TDASCANE	Numeric	9		N	Total Damage area of Sugar cane
11	TCAOTH	Numeric	9		N	Total Culv. area of Other crops
12	TDAOTH	Numeric	9		N	Total Damage area of Other crops

Source : Directorates of Agricultural Extension

Structure for database: C:\NWR\ATT\NW_SWB.DBF

Number of data records: 186

Date of last update : 06/02/92

Field	Field Name	Type	Width	Dec	Index	Description of field
1	CATCHMENT_NO	Numeric	2		N	Catchment no
2	NAME_SWB	Character	32		N	Name of standing water bodies
3	CAT_CODE	Numeric	5	2	N	Catchment code
4	AREA	Numeric	6	2	N	Area in Ha

Source : SPRRSO & MPO, February 1985

TABLE 1

POPULATION DENSITY IN NORTH WEST REGION

Thana	Gross Area (ha)	Population (1981)	Population Density (p/ha gross)
ADAMDIGHI	17092	132690	7.76
ADITMARI	19425	134567	6.93
AKKELPUR	13991	100436	7.18
ATGHORIA	18654	104798	5.62
ATRAI	25643	143259	5.59
ATWARI	21863	87067	3.98
BADALGACHI	21758	163846	7.53
BADARGANJ	30050	173252	5.77
BAGATIPARA	13989	86890	6.21
BAGHA	20202	125038	6.19
BAGMARA	37291	234816	6.30
BALIADANGI	28736	119391	4.15
BARAIGRAM	40668	170737	4.20
BELKUCHI	15541	187414	12.06
BERA	26689	163562	6.13
BHANGURA	12178	64678	5.31
BHOLAHAT	12432	54534	4.39
BHURUNGAMARI	23058	149454	6.48
BIRAL	35744	166485	4.66
BIRAMPUR	20982	103396	4.93
BIRGANJ	40671	179885	4.42
BOALIA	8819	146336	16.59
BOCHAGANJ	22539	101429	4.50
BODA	43010	181185	4.21
BOGRA	40672	439633	10.81
CHARGHAT	16571	133894	8.08
CHATMOHAR	32120	179368	5.58
CHILMARI	9067	89102	9.83
CHIRIRBANDAR	31346	184639	5.89
CHOWHALI	21982	106046	4.82
DEBIGANJ	30835	136831	4.44
DHAMOIRHAT	31082	122214	3.93
DHUNAT	24609	206455	8.39
DIMLA	32892	160207	4.87
DINAJPUR	36014	282008	7.83
DOMAR	25126	152388	6.06
DUBCHACHIA	16321	117778	7.22
DURGAPUR (NET)	19596	111427	5.69
FARIDPUR (PAB)	14242	90004	6.32
FULBARI (DIN)	19680	92831	4.72
FULBARI (RNG)	16321	103577	6.35
FULCHHARI	31339	116182	3.71
GABTALI	24119	221858	9.20
GAIBANDHA	32120	278180	8.66
GANGACHARA	21493	149429	6.95
GHORAGHAT	14759	68361	4.63
GOBINDHAGANJ	46355	321558	6.94
GODAGARI	45320	172618	3.81
GOMOSTAPUR	31860	153833	4.83
GURUDASPUR	20200	135899	6.73

TABLE 1

POPULATION DENSITY IN NORTH WEST REGION

Thana	Gross Area (ha)	Population (1981)	Population Density (p/ha gross)
HAKIMPUR	9321	54502	5.85
HARIPUR	19962	78507	3.93
HATIBANDHA	29009	140582	4.85
ISWARDI	26942	204845	7.60
JALDHAKA	32891	199226	6.06
JOYPURHAT	23832	194040	8.14
KAHALOO	24087	141298	5.87
KAHAROLE	20721	93423	4.51
KALAI	15803	94129	5.96
KALIGANJ (RNP)	23830	157067	6.59
KAMARKANDA	9325	85557	9.18
KAUNIA	15022	136521	9.09
KAZIPUR	37033	213885	5.78
KHANSAMA	17872	99794	5.58
KHETLAL	15026	76532	5.09
KISHOREGANJ	26415	201880	7.64
KURIGRAM	27710	175945	6.35
LALMONIRHAT	25652	192532	7.51
LALPUR	23576	175862	7.46
MANDA	41699	248891	5.97
MITHAPUKUR	51803	328680	6.34
MOHADEVPUR	39101	198572	5.08
MOHONPUR	16324	100540	6.16
NACHOLE	29267	75031	2.56
NAGESWARI	41697	235338	5.64
NANDIGRAM	26674	112428	4.21
NAOGAON	28490	260117	9.13
NATORE	40399	272820	6.75
NAWABGANJ (RAJ)	48437	315462	6.51
NIAMATPUR	45069	152252	3.38
NILPHAMARI	34707	242133	6.98
NOWABGANJ (DIN)	33160	140319	4.23
PABA	26165	395267	15.11
PABNA	37309	345010	9.25
PALASHBARI	19440	172247	8.86
PANCHAGHAR	24092	105710	4.39
PANCHBIBI	28228	154214	5.46
PARBATIPUR	42729	236943	5.55
PATGRAM	25900	122530	4.73
PATNITOLA	37561	153670	4.09
PIRGACHA	26681	210323	7.88
PIRGANJ (DIN)	39370	168367	4.28
PIRGANJ (RNP)	41455	240839	5.81
PORSHA	25904	79584	3.07
PUTHIA	19429	126979	6.54
RAHUMARI	26159	114564	4.38
RAIGANJ	26675	181280	6.80
RAJARHAT	18141	132622	7.31
RANGPUR	31867	384711	12.07
RANINAGAR	25638	123379	4.81

TABLE 1

POPULATION DENSITY IN NORTH WEST REGION

Thana	Gross Area (ha)	Population (1981)	Population Density (p/ha gross)
RANISANKAIL	28492	123014	4.32
RAZIBPUR	19835	63399	3.20
SADULLAPUR	23311	199544	8.56
SAGHATTA	22540	169488	7.52
SAHJADPUR	32642	341806	10.47
SAIDPUR	12177	196285	16.12
SANTHIA	33149	213454	6.44
SAPAHAR	24611	86238	3.50
SARIAKANDI	43772	202833	4.63
SHERPUR	29800	172236	5.78
SHIBGANJ (BOG)	31598	251722	7.97
SHIBGANJ (RAJ)	53619	334231	6.23
SINGRA	52848	221963	4.20
SIRAJGANJ	31610	339629	10.74
SONATALA (BOG)	13208	109700	8.31
SUJANAGAR	36262	177793	4.90
SUNDARGANJ	41968	318180	7.58
TANORE	30561	112460	3.68
TARAGANJ	12950	83589	6.45
TARASH	30047	108586	3.61
TETULIA	19168	67425	3.52
THAKURGAON	64501	328453	5.09
ULIPUR	45585	272089	5.97
ULLAPARA	41433	288386	6.96

TABLE 2

FLOOD PHASE DATA OF NORTH WEST REGION

Thana	NCA (ha)	F0	F1 (% of NCA)	F2	F3	F4
ADAMDIGHI	15652	71	9	20	0	0
ADITMARI	17812	36	61	3	0	0
AKKELPUR	12853	29	64	7	0	0
ATGHORIA	16846	17	27	25	27	5
ATRAI	24310	6	11	24	58	0
ATWARI	20484	73	27	0	0	0
BADALGACHI	19867	60	30	10	0	0
BADARGANJ	28138	33	66	0	0	0
BAGATIPARA	12918	61	28	8	4	0
BAGHA	16504	59	34	6	2	0
BAGMARA	34166	30	23	34	14	0
BALIADANGI	27246	66	34	0	0	0
BARAIGRAM	37925	32	30	16	22	0
BELKUCHI	12264	25	38	25	11	0
BERA	18468	7	20	32	33	8
BHANGURA	10771	6	20	39	29	6
BHOLAHAT	11180	52	17	28	3	0
BHURUNGAMARI	19410	22	73	5	0	0
BIRAL	32469	63	36	1	0	0
BIRAMPUR	19228	34	63	3	0	0
BIRGANJ	37220	64	34	2	0	0
BOALIA	5381	32	57	7	3	0
BOCHAGANJ	20489	57	42	1	0	0
BODA	35599	63	37	0	0	0
BOGRA	36641	63	30	7	0	0
CHARGHAT	13981	75	23	2	0	0
CHATMOHAR	27643	12	23	34	29	2
CHILMARI	6491	15	73	9	2	0
CHIRIRBANDAR	28068	56	43	1	0	0
CHOWHALI	15165	2	23	48	27	0
DEBIGANJ	26305	68	32	0	0	0
DHAMOIRHAT	28345	86	10	3	2	0
DHUNAT	21798	32	57	11	0	0
DIMLA	29233	29	71	0	0	0
DINAJPUR	31422	66	33	1	0	0
DOMAR	23913	34	65	1	0	0
DUBCHACHIA	14909	86	9	5	0	0
DURGAPUR(NET	17312	26	34	29	11	0
FARIDPUR(PAB	13078	5	10	28	37	20
FULBARI(DIN)	17908	31	65	4	0	0
FULBARI(RNG)	14909	86	9	5	0	0
FULCHHARI	21286	8	64	18	10	0
GABTALI	22120	27	55	18	0	0
GAIBANDHA	27643	12	23	34	29	2
GANGACHARA	17567	36	64	0	0	0
GHORAGHAT	13284	50	47	3	0	0
GOBINDHAGANJ	42325	46	51	2	0	0
GODAGARI	42134	88	5	7	1	0
GOMOSTAPUR	27980	66	7	14	13	0
GURUDASPUR	18206	24	26	37	14	0

TABLE 2

FLOOD PHASE DATA OF NORTH WEST REGION

Thana	NCA (ha)	F0	F1 (% of NCA)	F2	F3	F4
HAKIMPUR	8405	25	70	5	0	0
HARIPUR	19003	69	29	2	0	0
HATIBANDHA	26143	35	65	0	0	0
ISWARDI	20705	35	44	18	4	0
JALDHAKA	30179	41	58	0	0	0
JOYPURHAT	21486	37	57	6	0	0
KAHALOO	21809	88	10	2	0	0
KAHAROLE	19019	60	38	2	0	0
KALAI	14638	38	62	0	0	0
KALIGANJ (RNP)	20310	33	63	4	0	0
KAMARKANDA	8262	41	47	11	1	0
KAUNIA	12717	32	68	0	0	0
KAZIPUR	30367	15	28	35	21	0
KHANSAMA	15607	48	51	1	0	0
KHETLAL	14061	34	64	2	0	0
KISHOREGANJ	23429	41	58	0	0	0
KURIGRAM	18769	22	72	5	1	0
LALMONIRHAT	20854	37	59	4	0	0
LALPUR	20417	57	35	7	1	0
MANDA	38964	46	16	23	14	0
MITHAPUKUR	47904	38	61	1	0	0
MOHADEVPUR	35823	83	9	5	2	0
MOHONPUR	14683	42	23	26	9	0
NACHOLE	27508	92	3	5	1	0
NAGESWARI	31927	22	65	11	1	0
NANDIGRAM	24457	85	4	11	0	0
NAOGAON	26330	41	20	15	24	0
NATORE	36606	32	30	23	16	0
NAWABGANJ (RA)	40628	51	38	9	3	0
NIAMATPUR	41389	98	0	0	2	0
NILPHAMARI	32067	34	65	1	0	0
NOWABGANJ (DI)	30190	41	57	2	0	0
PABA	20607	56	32	11	1	0
PABNA	31078	38	38	19	4	0
PALASHBARI	17403	41	53	5	0	0
PANCHAGHAR	21935	58	42	0	0	0
PANCHBIBI	25447	34	62	5	0	0
PARBATIPUR	38657	60	39	1	0	0
PATGRAM	22239	33	67	0	0	0
PATNITOLA	34169	95	3	1	0	0
PIRGACHA	24581	25	75	1	0	0
PIRGANJ (DIN)	36866	60	39	1	0	0
PIRGANJ (RNP)	38085	45	55	0	0	0
PORSHA	23165	87	0	2	10	0
PUTHIA	17506	55	32	13	1	0
RAHUMARI	18311	0	0	0	0	0
RAIGANJ	24002	28	51	19	2	0
RAJARHAT	16306	20	71	9	0	0
RANGPUR	27944	44	56	0	0	0
RANINAGAR	23447	44	10	17	29	0

TABLE 2

FLOOD PHASE DATA OF NORTH WEST REGION

Thana	NCA (ha)	F0	F1 (% of NCA)	F2	F3	F4
RANISANKAIL	26745	62	37	1	0	0
RAZIBPUR	13885	0	0	0	0	0
SADULLAPUR	20901	32	62	5	0	0
SAGHATTA	19275	19	68	10	4	0
SAHJADPUR	27222	22	47	19	9	2
SAIDPUR	10688	25	75	0	0	0
SANTHIA	29239	14	17	18	38	13
SAPAHAR	21707	85	1	2	12	0
SARIAKANDI	32318	23	56	14	7	0
SHERPUR	26197	63	27	10	0	0
SHIBGANJ (BOG	28850	68	31	2	0	0
SHIBGANJ (RAJ	48301	45	39	13	2	0
SINGRA	49362	25	10	25	40	0
SIRAJGANJ	22751	33	42	18	7	0
SONATALA (BOG	11712	29	60	10	0	0
SUJANAGAR	29556	12	29	21	24	15
SUNDARGANJ	34494	21	71	6	1	0
TANORE	27921	92	1	3	4	0
TARAGANJ	11852	30	70	0	0	0
TARASH	27167	1	19	34	44	2
TETULIA	18430	66	33	1	0	0
THAKURGAON	60790	69	31	0	0	0
ULIPUR	30908	15	73	9	2	0
ULLAPARA	36607	26	44	18	11	0

TABEL 3

IRRIGATED EQUIPMENTS IN NORTH WEST REGION

Thana	Nos of Irrigated Equipment (1989)		
	STW	DTW	LLP
ADAMDIGHI	1833	96	0
ADITMARI	481	28	48
AKKELPUR	1059	82	1
ATGHORIA	718	135	26
ATRAI	2659	1	528
ATWARI	39	1	5
BADALGACHI	1111	123	32
BADARGANJ	564	147	23
BAGATIPARA	157	36	17
BAGHA	252	6	3
BAGMARA	2752	53	653
BALIADANGI	135	19	6
BARAIGRAM	1581	73	15
BELKUCHI	959	2	6
BERA	558	4	30
BHANGURA	1463	4	15
BHOLAHAT	87	128	9
BHURUNGAMARI	775	24	23
BIRAL	922	95	141
BIRAMPUR	265	140	5
BIRGANJ	851	76	29
BOALIA	0	0	0
BOCHAGANJ	531	71	10
BODA	189	7	20
BOGRA	3154	112	37
CHARGHAT	174	5	2
CHATMOHAR	2873	23	13
CHILMARI	314	28	1
CHIRIRBANDAR	622	84	88
CHOWHALI	289	0	2
DEBIGANJ	429	15	42
DHAMOIRHAT	803	167	9
DHUNAT	2707	13	71
DIMLA	551	8	18
DINAJPUR	1300	79	27
DOMAR	223	44	13
DUBCHACHIA	1179	147	0
DURGAPUR (NET)	1140	15	150
FARIDPUR (PAB)	1236	2	132
FULBARI (DIN)	304	113	5
FULBARI (RNG)	538	17	7
FULCHHARI	386	31	17
GABTALI	2341	85	21
GAIBANDHA	2306	172	86
GANGACHARA	457	30	3
GHORAGHAT	232	82	34
GOBINDHAGANJ	1690	93	67
GODAGARI	606	184	47
GOMOSTAPUR	540	114	283
GURUDASPUR	1657	15	21

TABEL 3

IRRIGATED EQUIPMENTS IN NORTH WEST REGION

Thana	Nos of Irrigated Equipment (1989)		
	STW	DTW	LLP
HAKIMPUR	145	64	2
HARIPUR	379	16	2
HATIBANDHA	239	20	2
ISWARDI	295	121	9
JALDHAKA	299	14	0
JOYPURHAT	881	163	42
KAHALOO	985	225	0
KAHAROLE	412	68	35
KALAI	552	153	4
KALIGANJ (RNP)	311	21	2
KAMARKANDA	658	11	0
KAUNIA	544	43	13
KAZIPUR	1177	139	6
KHANSAMA	157	17	12
KHETLAL	472	190	4
KISHOREGANJ	310	15	4
KURIGRAM	515	32	13
LALMONIRHAT	560	40	47
LALPUR	210	53	2
MANDA	1603	187	233
MITHAPUKUR	1445	236	83
MOHADEVPUR	1245	263	25
MOHONPUR	525	38	73
NACHOLE	116	104	76
NAGESWARI	1015	66	58
NANDIGRAM	2586	120	0
NAOGAON	3460	47	64
NATORE	3389	34	65
NAWABGANJ (RAJ)	457	128	140
NIAMATPUR	593	138	42
NILPHAMARI	377	58	5
NOWABGANJ (DIN)	313	124	26
PABA	613	43	99
PABNA	534	212	30
PALASHBARI	885	68	17
PANCHAGHAR	10	1	5
PANCHBIBI	673	112	10
PARBATIPUR	1245	102	8
PATGRAM	101	4	11
PATNITOLA	841	177	33
PIRGACHA	1194	141	43
PIRGANJ (DIN)	635	23	8
PIRGANJ (RNP)	867	126	33
PORSHA	127	79	150
PUTHIA	906	43	235
RAHUMARI	759	0	44
RAIGANJ	1505	180	143
RAJARHAT	537	32	4
RANGPUR	962	137	42
RANINAGAR	2638	97	119

TABEL 3

IRRIGATED EQUIPMENTS IN NORTH WEST REGION

Thana	Nos of Irrigated Equipment (1989)		
	STW	DTW	LLP
RANISANKAIL	608	20	17
RAZIBPUR	142	0	2
SADULLAPUR	1022	71	21
SAGHATTA	1493	50	51
SAHJADPUR	3080	30	47
SAIDPUR	243	58	28
SANTHIA	1146	37	12
SAPAHAR	139	77	208
SARIAKANDI	1324	17	71
SHERPUR	2904	8	110
SHIBGANJ (BOG)	1604	278	5
SHIBGANJ (RAJ)	1019	232	21
SINGRA	6243	34	137
SIRAJGANJ	931	191	17
SONATALA (BOG)	1166	30	27
SUJANAGAR	412	17	6
SUNDARGANJ	1481	59	28
TANORE	371	195	25
TARAGANJ	278	28	47
TARASH	2544	6	0
TETULIA	11	1	4
THAKURGAON	569	55	39
ULIPUR	1011	67	6
ULLAPARA	2981	197	64

Table 4

Cropping Pattern and Intensity by Planning Unit

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS (1989)

Planning Unit 0

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																	Intensity
			Haboro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	
SARIAKANDI	22054	16283	4597	7640	245	0	349	4071	68	610	1107	44	3	15	486	48	73	244	5	120
SONATALA	686	608	586	5	12	0	1	2	0	60	36	2	12	3	97	2	25	19	0	142
BELKUCHI	3602	2843	999	28	1521	507	0	760	62	903	20	228	102	137	48	0	324	625	2	213
BERA	11324	7836	1522	0	0	5463	0	1366	183	544	394	52	42	19	151	57	77	1343	5	143
CHOWHALI	19579	13507	0	0	0	4191	0	5403	0	0	0	118	101	3	301	0	1332	1346	190	95
ISHARDI	2083	1600	33	313	96	229	0	710	1	86	178	49	67	81	37	90	47	111	1	130
KAZIPUR	8260	6773	1653	1540	2386	746	0	1896	178	48	245	92	2	212	232	45	138	543	5	146
PABNA	171	142	10	59	24	29	0	55	0	10	20	2	2	6	6	5	6	14	0	174
SANJADPUR	2068	1724	658	67	445	165	0	617	16	118	514	7	1	0	36	95	89	543	1	195
SIRAJGANJ	6836	4920	1062	1938	1400	0	0	1411	42	163	1208	82	10	300	327	90	165	527	4	176
SUJANAGAR	6804	5546	315	26	180	2028	0	1242	81	229	324	130	27	0	212	97	376	483	64	103
BAGHA	2210	1806	43	29	13	376	0	1397	0	113	116	56	5	2	17	420	28	111	1	148
BOALIA	5757	3513	0	117	43	52	260	246	0	0	0	964	782	284	30	1024	144	283	67	95
CHARGHAT	1275	1076	0	45	25	347	18	307	0	39	110	29	0	468	17	493	15	83	1	183
GODAGARI	494	460	45	133	266	17	4	33	0	1	34	2	4	1	2	1	26	35	6	133
LALPUR	3043	2636	131	213	51	442	6	588	0	69	149	173	23	804	30	872	378	189	2	150
PABA	342	269	22	43	41	46	7	68	0	12	33	6	0	41	2	50	13	23	0	149
SHIBGANJ	1462	1317	21	5	2	41	6	552	0	14	66	15	3	3	4	0	56	325	130	93
RAZIBPUR	19044	13331	870	2754	6132	96	38	3987	24	2665	583	3848	0	159	112	226	836	85	0	140

CHILMARI	1402	1004	386	338	40	322	41	477	13	429	336	12	6	15	18	0	29	86	1	253
GAISANDHA	3949	3399	1299	471	1183	37	68	1054	5	509	149	15	1	5	94	11	65	219	3	152
KURIGRAM	7306	4948	1086	975	2720	13	202	1127	20	1158	296	29	4	0	45	2	49	136	4	158
FULCHHARI	23595	16026	3997	1054	5878	376	108	5288	24	479	1196	234	83	62	395	53	133	381	87	122
NAGESWARI	9619	7366	975	3342	2747	7	127	1549	25	1485	720	24	6	0	29	8	108	152	3	153
RAHMARI	26159	18311	1779	10108	254	1400	106	6427	329	7445	1425	228	20	476	110	67	168	2625	6	179
SAGHATTA	3511	3003	827	431	1594	16	21	450	3	440	279	11	3	24	67	43	47	62	1	143
SUNDARGANJ	3308	2719	988	990	1318	6	64	380	3	517	246	3	7	16	19	0	48	67	1	172
ULIPUR	17941	12164	1843	10531	1460	69	325	3649	25	532	1255	35	9	63	74	87	73	233	6	166
NAVABGANJ(RAJ)	2602	2183	184	419	311	68	107	894	35	19	99	0	0	0	0	7	0	0	0	98
PU Total	216486	157313	25931	43614	30387	17089	1858	46007	1137	18697	11138	6490	1325	3199	2998	3893	4868	10893	596	4324
																			PU Average	146

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS (1989)

Planning Unit 1

Thana Name	Gross Area (ha)	Nca Area (ha)	Boro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping Intensity
ATWARI	21861	20482	378	1737	10700	10	35	12494	0	1564	5263	1272	43	0	323	1285	1434	434	289	176
BALIADANGI	28736	27246	646	2494	10134	0	360	7628	0	219	1688	803	200	805	594	332	1422	1443	693	105
BIRGANJ	36698	33584	5038	2647	16668	0	1393	0	0	0	0	1188	14	730	602	998	4629	2406	9	105
BIRAL	35380	32138	2830	6990	12614	0	1146	4412	0	683	4060	931	16	80	254	954	2539	614	5	116
BOCHAGANJ	22539	20489	1401	7198	8977	0	370	2139	0	193	3506	1083	21	2076	324	2505	99	1306	5	147
BODA	43005	35595	680	19537	7112	94	108	10358	0	1618	5853	233	49	971	498	1019	363	2446	11	142
DEBIGANJ	19653	16766	1301	3390	13041	164	491	4214	19	1253	2347	654	52	145	336	84	105	611	4	164
HARIPUR	19959	19000	1554	1048	11355	1814	45	950	622	451	4811	1033	176	81	224	64	813	1576	91	135
KAHAROLE	17294	15874	0	2773	7028	0	711	4062	0	232	2723	863	11	603	370	658	127	1184	4	129
KHANSAMA	246	214	10	54	82	0	6	43	0	34	62	2	1	4	6	4	3	12	0	150
DINAJPUR	321	280	27	118	160	0	12	51	0	11	64	17	0	2	6	2	6	15	4	171
PANCHAGHAR	24092	21935	62	5090	11819	2349	94	4892	124	794	1357	4252	109	152	194	507	656	666	277	133
PIRGANJ	39367	36863	2169	8729	9842	91	807	2831	0	1397	1028	2541	28	0	531	2386	2139	2213	9	93
RANISANKAIL	28492	26745	1493	2792	11815	0	1011	3442	0	0	1688	675	37	486	323	567	141	3331	6	101
TETULIA	19168	18430	1290	2787	5300	243	1290	4608	0	646	833	2742	162	9	244	1483	372	23	168	106
THAKURGAON	64501	60790	3259	10663	39669	81	67	3442	0	2915	722	1033	27	3018	851	2838	197	4714	17	119
PU Total	421312	386431	22138	78047	176316	4846	7946	65565	765	12010	36005	19322	946	9162	5680	15686	15045	22994	1592	2092
																			PU Average	128

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 2

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																	Intensity
			Hboro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	
PANCHSIBI	306	276	51	218	1	0	8	42	0	23	53	1	0	13	4	12	1	6	0	157
BIRAMPUR	13083	11990	5956	3208	7996	0	144	1099	0	248	764	583	8	668	249	66	39	3488	5	200
BIRGANJ	3967	3630	545	286	1802	0	151	0	0	0	0	89	2	79	65	108	500	260	1	105
BIRAL	347	315	28	69	124	0	11	43	0	7	40	1	0	1	2	9	25	6	0	116
BODA	4	3	0	2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	167
CHIRIRBANDAR	31346	28068	5276	21828	0	0	909	3348	0	704	5879	460	10	115	688	260	249	1223	10	144
DEBIGANJ	11176	9535	740	1928	7416	94	279	2397	11	713	1335	232	29	82	191	48	60	347	3	164
FULBARI	18963	17255	2141	15846	1277	0	2243	4659	0	452	1910	891	17	118	432	132	90	758	9	174
HAKIMPUR	2287	2062	364	1768	0	0	80	6	0	4	194	10	6	5	47	0	6	171	1	129
KAHAROLE	3428	3146	0	550	1393	0	141	805	0	46	540	71	2	119	73	130	25	235	1	129
KHANSAMA	17631	15397	704	3882	5908	0	399	3096	0	2421	4453	1689	59	279	399	305	206	879	4	149
DINAJPUR	35703	31151	2961	13137	17836	0	1282	5642	0	1262	7161	2808	18	188	681	203	670	1701	478	171
PARBATIPUR	24941	22564	4422	9444	10106	255	855	1727	0	76	2262	654	21	200	360	226	19	639	6	136
DOMAR	9136	8695	806	2144	4987	9	192	1110	7	1507	533	28	63	65	1848	3	43	161	86	156
NILPHAMARI	14878	13746	1232	9069	275	34	907	4811	17	2038	891	39	38	25	151	27	41	204	4	144
SAIDPUR	2357	2069	298	1018	937	1	128	579	2	445	312	5	7	0	28	1	18	30	1	184
PU Total	189553	169902	25524	84397	60059	393	7729	29364	37	9946	26328	7561	280	1957	5218	1530	1992	10108	609	2425
																			PU Average	161

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 3

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																	Cropping Intensity
			Hbora	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard		
KISHOREGANJ	12872	11417	965	4087	228	40	387	4281	8	1838	6964	50	276	0	124	0	52	230	3	171
DIMLA	32414	28809	1830	15781	2881	99	369	9218	20	3880	1695	103	60	0	176	7	139	342	9	127
DONAR	332	316	29	78	181	0	7	40	0	55	19	0	2	2	67	0	2	6	3	156
GANGACHARA	19215	15705	2056	9120	4062	134	614	1970	14	2285	1045	80	9	7	63	4	84	149	5	138
HATIBANDHA	9177	8270	1310	1969	4947	47	458	3068	0	756	439	14	19	5	54	7	41	176	2	161
JALDHAKA	11843	10866	943	5482	978	23	428	4346	15	151	735	27	127	0	133	0	42	107	3	124
KALIGANJ	4611	3930	502	1383	2454	15	53	2201	3	519	341	6	6	4	34	0	45	113	2	195
KAUNIA	9917	8396	1856	4548	3315	48	262	1379	11	1603	718	46	5	5	69	5	62	191	3	168
RANGPUR	17072	14971	4031	6943	6251	13	991	2152	12	2433	1265	120	28	234	139	289	175	310	5	169
LALMONIRHAT	876	712	123	644	0	1	17	377	1	131	48	1	1	21	10	23	5	19	0	199
MITHAPUKUR	97	90	17	32	40	1	4	14	0	2	9	0	0	3	1	3	1	1	0	142
PATGRAM	316	272	10	185	0	0	4	122	0	11	5	0	0	0	2	0	1	3	0	126
PIRGACHA	11680	10761	333	8655	3943	44	752	1477	33	2652	1386	104	21	135	62	164	123	634	3	190
SUNDARGANJ	1310	1077	391	392	522	2	25	150	1	205	97	1	3	6	7	0	19	27	0	172
PU Total	131732	115592	14396	59299	29802	467	4371	30797	118	16501	14766	552	557	422	941	502	791	2308	38	2238
																			PU Average	153

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 4

Thana Name	Gross Area		Nca Area		Crop Area (ha)																Intensity
	Area (ha)	Horo	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegtables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping		
ADITHARI	19425	17812	2113	12671	4453	15	1189	5165	33	1312	1658	108	10	12	81	20	419	319	6	165	
DINLA	98	87	6	48	9	0	1	28	0	12	5	0	0	0	1	0	0	1	0	126	
GANGACHARA	483	395	52	229	102	3	15	50	0	57	26	0	0	0	2	0	2	4	0	137	
HATIBANDHA	19836	17877	2832	4255	10694	103	989	6632	0	1591	948	55	42	11	118	16	88	380	5	161	
KALIGANJ	19221	16382	2091	5765	10228	60	221	9174	13	2164	1423	76	24	16	141	0	188	470	9	195	
KAUNIA	6	5	1	3	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	180	
LALMONIRHAT	9382	7628	1313	6892	0	5	177	4043	9	1403	518	30	9	222	104	251	52	206	3	199	
PATGRAM	25585	21968	835	14941	0	5	300	9886	18	852	400	104	16	0	129	10	92	271	7	126	
PU Total	94036	82154	9243	44804	25488	191	2892	34978	73	7392	4978	373	101	261	576	297	841	1651	30	1289	
																			PU Average	163	

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS

Planning Unit 5

Thana Name	Gross Area (ha)	Nca Area (ha)	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping Intensity			
SHURUNGAMARI	23058	19410	3063	5601	14739	50	582	3856	21	3735	0	206	24	16	230	109	234	435	6	168
RAZIBPUR	741	519	34	107	239	4	1	155	1	104	23	8	0	6	4	9	33	3	0	139
CHILMARI	7664	5487	2107	1847	220	1762	223	2608	68	2347	1838	183	36	84	98	0	159	471	6	253
FULBARI	16319	14907	3179	8774	4635	100	530	7121	0	469	1982	9	3	0	172	42	0	13	4	181
KAUNIA	1688	1429	316	774	564	8	45	235	2	273	122	2	1	1	12	1	11	32	0	168
KURIGRAM	20398	13817	3032	2723	7595	37	564	3146	57	3232	825	221	12	0	126	5	138	378	10	158
LALMONIRHAT	15399	12518	2156	11312	0	9	291	6635	15	2303	850	78	14	364	170	412	85	337	5	199
NAGESWARI	32075	24559	3250	11142	9159	23	423	5166	83	4950	2402	244	20	0	97	27	358	508	8	153
PIRGACHA	1106	1019	31	819	373	4	71	140	3	251	131	3	2	13	6	15	12	60	0	190
RAJARHAT	18141	16306	1948	6886	815	25	964	1285	17	3669	1416	404	16	8	113	14	72	249	6	107
SUNDARGANJ	3979	3270	1189	1190	1585	8	77	457	4	622	295	4	9	19	22	0	57	81	1	172
ULIPUR	26044	17659	2676	15288	2119	100	471	5297	37	772	1823	71	14	91	107	126	106	338	8	166
PU Total	166612	130900	22981	66463	42043	2130	4242	36101	308	22727	11707	1433	151	602	1157	760	1265	2905	54	2054
																			PU Average	166

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS (1989)
Planning Unit 6

Thana Name	Gross Area (ha)	Nca Area (ha)	Haman	Tanan	Banan	Haus	Laus	Lboro	Crop Area (ha)														Orchard Cropping Intensity			
			Hboro						Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar Cane	Oilseed	Pulses									
BIRAMPUR	7893	7233	3593	1935	4824	0	87	663	0	149	461	268	5	403	150	40	24	2104	3	200						
FULBARI	715	651	81	598	48	0	85	176	0	17	72	3	1	4	16	5	3	29	0	174						
GHORAGHAT	12653	11388	2292	6808	0	569	1030	861	0	118	1376	1092	19	137	189	149	58	455	3	124						
HAKIMPUR	4279	3858	681	3308	0	0	149	11	0	8	363	18	11	9	88	0	12	321	2	129						
NOWABGANJ	33160	30190	2359	6847	16317	54	430	866	325	471	1849	5793	29	118	279	1478	1008	4852	10	124						
PARBATTIPUR	17788	16093	3153	6735	7208	182	609	1232	0	54	1613	404	15	142	257	162	13	455	5	136						
KISHOREGANJ	13550	12018	1016	4302	240	42	407	4506	8	1934	7331	56	291	0	150	0	54	243	4	171						
BAOARGANJ	30046	28134	3380	12896	12210	207	665	7063	0	2327	2741	110	24	1218	228	1555	186	495	11	161						
DIMLA	360	320	20	176	32	1	4	103	0	43	19	0	1	0	2	0	2	4	0	127						
DOMAR	15656	14900	1382	3674	8546	16	330	1902	12	2583	914	80	107	111	3167	6	73	276	147	156						
GAIBANDHA	13311	11456	4377	1588	3987	124	229	3551	17	1715	503	135	3	16	317	36	220	740	11	152						
GANGACHARA	1779	1454	190	844	376	12	57	182	1	212	97	1	1	1	6	0	8	14	0	138						
GOBINDHAGANJ	14459	13202	3953	4689	3078	23	191	4753	12	1291	1433	51	39	396	130	981	109	170	4	161						
JALDHAKA	21058	19322	1677	9748	1739	40	761	7728	27	268	1306	85	225	0	237	0	76	191	5	124						
RANGPUR	14789	12968	3492	6014	5415	12	859	1864	10	2108	1096	91	25	202	120	251	151	268	4	169						
MITHAPUKUR	51732	47838	9282	17201	21354	295	1884	7442	38	1019	4849	207	81	1624	419	1669	489	672	13	143						
FULCHHARI	1636	1111	277	73	408	26	7	367	2	33	83	2	6	4	27	4	9	26	6	122						
NILPHAMARI	19833	18325	1642	12090	366	46	1209	6413	23	2717	1187	69	51	34	202	36	54	271	5	144						
PALASHBARI	19440	17403	6147	3382	9007	310	384	2249	12	3960	1899	210	20	2427	353	981	211	452	5	183						
PIRGACHA	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150						
PIRGANJ	41455	38085	10140	25062	10235	125	1586	6571	40	6157	3108	410	40	1308	471	1741	245	686	10	177						
SAOULLAPUR	16884	15138	5508	2769	8303	98	154	1816	20	1853	1462	119	35	603	149	159	101	201	4	154						
SAIDPUR	9815	8615	1240	4241	3904	4	533	2412	8	1855	1301	68	29	0	118	3	76	124	2	184						
SAGHATTA	4444	3800	1047	545	2018	20	26	570	4	557	353	17	4	30	85	54	60	78	1	144						
SUNDARGANJ	116	96	35	35	46	0	2	13	0	18	9	0	0	1	1	0	2	2	0	171						
TARAGANJ	12950	11852	1272	8776	118	63	660	1089	0	1178	751	102	69	0	255	0	46	307	4	123						
PU Total	379803	345452	682361	44337	119780	2269	12338	64402	559	32645	36176	9391	1131	8788	7396	9310	3290	13436	259	3941						
																		PU Average		155						

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 7

Thana Name	Gross Area		Nca		Crop Area (ha)														Cane	Intensity									
	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard		Cropping									
RAZIBPUR	51	36	2	7	16	0	0	11	0	7	2	0	0	0	1	2	0	0	0	139									
GAIBANDHA	14445	12432	4750	1723	4327	135	249	3854	18	1861	546	157	3	18	344	39	238	803	12	152									
KAUNIA	3404	2881	637	1561	1138	16	90	473	4	550	246	6	2	2	24	2	21	65	1	168									
PIRGACHA	13889	12795	396	10292	4689	52	894	1756	40	3153	1648	141	26	161	73	195	146	754	4	190									
SADULLAPUR	6425	5761	2096	1054	3160	37	58	691	8	705	556	21	14	230	57	60	39	77	2	153									
SUNDARGANJ	33222	27305	9927	9939	13236	63	642	3816	32	5194	2467	257	72	157	188	0	479	678	9	172									
ULIPUR	1598	1084	164	938	130	6	29	325	2	47	112	1	1	6	7	8	7	21	0	166									
PU Total	73034	62294	17972	25514	26696	309	1962	10926	104	11517	5577	583	118	574	693	305	932	2398	28	1140									
																			PU Average	170									

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 8

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																Intensity	
			Hbora	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses		Orchard
BOGRA	22940	20667	7869	13617	0	0	195	721	0	1768	1905	54	43	72	804	54	54	330	37	133
DHUNAT	24609	21798	12207	14169	0	436	872	1308	218	4796	1962	618	3	0	943	218	290	867	7	176
GABTALI	24116	22117	15376	15856	1992	0	214	81	30	4446	2683	415	21	427	1881	269	85	608	11	199
SARIAKANDI	21720	16037	4527	7524	242	0	343	4009	66	600	1090	44	2	15	479	48	72	240	4	120
SHERPUR	11891	10454	3559	3020	3612	0	175	334	0	674	1051	98	25	13	244	4	58	164	3	124
SHIBGANJ	9963	9096	5176	2902	4908	0	123	246	0	1402	846	212	14	329	149	398	1822	229	3	204
SONATALA	12528	11109	10708	90	211	0	23	41	0	1094	661	40	222	50	1778	34	463	343	6	142
KAMARKANDA	1295	1189	613	310	287	61	0	144	0	0	0	11	4	8	34	41	75	195	1	149
KAZIPUR	28785	23604	5762	5366	8316	2600	0	6608	619	167	855	793	5	739	809	157	481	1891	19	146
RAIGANJ	10092	9081	2805	4262	3000	892	0	1090	0	369	1353	165	2	115	206	149	340	371	7	165
SIRAJGANJ	18976	13658	2948	5381	3887	0	0	3917	115	454	3355	480	26	834	908	250	458	1464	12	176
ULLAPARA	46	41	16	4	2	5	0	3	0	1	7	0	0	0	1	0	2	2	0	107
GAIBANDHA	410	353	135	49	123	4	7	109	1	53	15	1	0	0	10	1	7	23	0	152
GOBINDHAGANJ	17372	15862	4750	5633	3698	28	229	5710	15	1551	1721	73	47	476	157	1178	131	205	4	161
FULCHHARI	6106	4147	1034	273	1521	97	28	1368	6	124	309	17	21	16	102	14	34	99	22	122
SAGHATTA	14582	12470	3435	1788	6622	65	85	1870	13	1828	1159	171	13	98	279	177	197	257	4	143
PU Total	225431	191683	80920	80244	38421	4188	2294	27562	1083	19327	18972	3192	448	3192	8784	2992	4569	7288	140	2419
																			PU Average	158

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS (1989)
Planning Unit: 9

Thana Name	Gross Area (ha)	Nca Area (ha)	Hboro	Hanan	Taman	Baman	Haus	Laus	Lboro	Crop Area (ha)				Oilseed	Pulses	Orchard	Cropping Intensity			
										Jute	Wheat	Potato	Vegetables					Tobacco	Spices	Sugar Cane
ADAMDIGHI	4935	4519	3190	3412	1246	0	165	27	0	1	14	5	2	0	19	0	5	7	3	179
AKKELPUR	13991	12853	4508	11352	4453	0	535	443	0	210	1284	49	11	283	93	367	47	88	4	184
BOGRA	7095	6392	2434	4211	0	0	60	223	0	547	589	10	13	22	249	17	17	102	12	133
DUBCHACHIA	11563	10562	8210	9211	0	0	60	14	0	9	298	0	0	0	0	0	0	0	0	169
JOYPUKHAT	23829	21483	8498	25687	0	0	651	1328	0	424	487	561	30	1943	687	1437	29	858	7	196
KAHALOO	7657	6933	4233	5934	0	0	38	1205	0	61	120	3	2	13	91	2	5	63	2	170
KALAI	15803	14638	0	13433	0	0	1113	0	0	0	0	8	4	20	109	16	9	53	5	101
KHETLAL	15026	14061	10822	10405	0	0	781	0	0	1444	1102	410	2	42	169	38	9	60	9	177
PANCHBISI	27926	25175	4672	19879	79	0	750	3823	0	2069	4813	451	21	1205	374	1075	123	554	8	157
SHIBGANJ	21630	19749	11237	6301	10655	0	266	535	0	3044	1837	662	31	715	323	864	3955	498	6	204
GHORAGHAT	2101	1891	381	1131	0	95	171	143	0	20	229	80	3	23	31	25	10	76	1	124
HAKIMPUR	2756	2485	439	2131	0	0	96	7	0	5	234	12	7	6	56	0	8	207	1	129
BADALGACHI	21758	19867	6671	2006	7916	749	763	5991	7	10	1827	3767	93	761	362	839	382	2385	7	155
DHAMOIRHAT	23296	21245	3559	6536	11059	0	2172	9660	75	579	646	1041	1990	95	3513	863	47	774	6	196
MOKHADEVPUR	16351	14980	2901	2152	8476	168	751	500	0	393	701	1000	1	1303	109	432	150	1559	5	131
NAOGAON	8628	7974	6058	1722	2554	252	483	610	0	547	381	699	11	34	161	41	131	516	3	170
PATNITOLA	12088	10996	1645	3297	6575	22	880	493	0	386	333	173	5	211	45	145	22	418	4	132
GOSINDHAGANJ	14522	13259	3971	4709	3091	23	191	4773	13	1297	1439	52	39	398	131	985	110	171	4	161
PU Total	250955	229062	834291	33509	56104	1309	9926	29775	95	11046	16334	8983	2265	7074	6522	7146	5059	8389	87	2868
																		PU Average		169

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 10

Thana Name	Gross Area (ha)	Nca Area (ha)	Haboro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping Intensity
SOALIA	1012	618	0	21	8	9	46	43	0	0	0	34	137	50	5	180	25	50	12	95
DHAMOIRHAT	7790	7104	1190	2186	3698	0	726	3230	25	194	216	148	665	32	1175	288	16	259	2	196
GODAGARI	35502	33006	3203	9576	19070	1245	281	2371	0	79	2472	712	295	92	157	102	1897	2510	421	133
GONOSTAPUR	21332	18734	2732	10944	5101	474	143	1284	68	196	308	4156	7	29	888	47	752	2923	2229	150
MANDA	5504	5143	1552	692	974	343	137	1120	5	283	573	85	78	13	116	12	158	250	26	123
MOHADEVPUR	12663	11601	2247	1667	6564	130	582	387	0	304	543	619	1	1009	85	334	116	1207	4	131
MOHONPUR	190	171	35	31	38	20	24	74	1	3	20	8	1	0	2	0	6	8	0	154
NACHOLE	15101	14194	198	12490	0	200	217	1488	5	8	231	122	1	0	43	2	2	352	5	107
NIAMATPUR	44993	41319	4476	29794	0	109	666	5276	0	23	1102	26	0	0	202	413	0	1138	13	105
PABA	12782	10067	809	1600	1519	1708	258	2530	0	466	1246	724	13	1524	91	1869	501	858	4	149
PATNITOLA	25465	23166	3465	6946	13852	46	1854	1039	0	812	702	750	9	445	94	306	45	881	7	132
PORSHA	25904	23165	2254	2270	14496	767	210	2551	6	22	259	704	4	0	131	0	0	941	13	103
SAPAHAR	24611	21707	2637	5850	14329	88	191	402	19	63	285	184	150	92	351	0	387	1272	7	120
TANORE	30078	27480	5224	7198	16240	683	1120	1927	320	24	1338	8	4	0	100	0	13	778	9	127
NAWABGANJ(RAJ)	5605	4701	397	904	670	148	231	1927	76	42	214	0	0	0	0	16	0	0	0	98
PU Total	268532	242176	30419	92169	96559	5970	6686	25651	525	2519	9509	8280	1365	3286	3440	3569	3918	13427	2752	1923
																			PU Average	128

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 11

Thana Name	Gross		Nca		Crop Area (ha)																Intensity
	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Banan	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegtables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping		
BHOLAHAT	12429	11177	1830	7165	1515	2958	145	1262	19	16	108	7451	10	26	55	32	418	630	4	146	
GODAGARI	9321	8665	841	2514	5007	327	74	623	0	21	649	80	77	24	41	27	498	659	110	133	
GOMOSTAPUR	10525	9243	1348	5400	2517	234	71	634	33	97	152	1064	4	15	438	23	371	1442	1100	150	
NACHOLE	14167	13316	186	11718	0	187	203	1396	5	7	216	108	1	0	41	1	2	331	4	107	
SHIBGANJ	52163	46989	760	161	66	1461	197	19679	16	510	2342	15331	98	93	159	0	1984	11602	4643	93	
NAUABGANJ (RAJ)	40229	33744	2850	6486	4809	1059	1656	13829	548	300	1536	0	0	0	0	111	0	0	0	98	
PU Total	138834	123134	7815	33444	13914	6226	2346	37422	621	951	5003	24034	190	158	734	194	3273	14664	5861	727	
																			PU Average	127	

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 12

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)										Cane					Orchard Cropping Intensity				
			Haman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Sugar					
ADAMDIGHI	12155	11131	7857	8405	3069	0	406	65	0	4	34	11	4	0	47	0	11	17	8	179		
BOGRA	10627	9574	3646	6308	0	0	90	334	0	819	882	17	20	33	373	25	25	153	17	133		
DUBCHACHIA	4753	4342	3375	3787	0	0	24	6	0	4	123	0	0	0	0	0	0	0	0	169		
KAHALOO	16433	14879	9085	12736	0	0	81	2587	0	132	258	7	4	29	195	5	11	135	5	170		
NANDIGRAM	26673	24456	18635	5847	16665	0	263	65	0	0	271	1376	1	0	87	0	64	85	6	172		
SHERPUR	1570	1381	470	399	477	0	23	44	0	89	139	6	3	2	32	1	8	22	0	124		
TARASH	6233	5635	451	526	342	3099	845	564	0	0	0	468	1	2	102	0	52	264	4	111		
ATRAI	14661	13899	8130	0	26	7366	0	70	0	149	591	130	5	0	81	0	217	702	5	125		
GURUDASPUR	3030	2731	959	973	68	868	45	315	3	210	243	41	26	8	29	9	94	287	1	152		
MANDA	12261	11457	3458	1540	2169	764	305	2494	12	630	1276	232	174	28	258	27	351	557	57	123		
MOHADEVPUR	10068	9224	1786	1325	5219	104	462	308	0	242	432	405	1	803	67	266	92	960	3	131		
NAOGAON	19865	18359	13947	3965	5881	581	1113	1405	0	1259	876	3616	24	78	372	96	303	1188	6	170		
RANINAGAR	25323	23159	5078	8251	3250	5953	503	721	6	203	684	955	14	7	155	9	175	587	7	111		
SINGRA	38214	35693	15645	8476	506	13264	160	105	17	410	970	330	22	9	231	12	596	770	9	115		
PU Total	201866	185920	92522	62538	37672	31999	4320	9083	38	4151	6779	7594	299	999	2029	450	1999	5727	128	1985		
																			PU Average	144		

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS (1989)
Planning Unit- 13

Thana Name	Gross Area (ha)	Nca Area (ha)	Hboro	Haman	Taman	Baman	Haus	Laus	Lboro	Crop Area (ha)											Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	Cropping Intensity
CHATMOHAR	5895	5073	2181	661	2740	152	0	877	0	460	399	0	0	0	0	0	7	0	0	0	0	0	0	0	147						
ISHARDI	4024	3092	63	606	185	442	0	1371	2	167	345	149	129	157	71	174	91	214	3	130	3	130	3	130	3						
TARASH	219	198	16	18	12	109	30	20	0	0	0	4	0	0	4	0	2	9	0	112	0	112	0	112	0						
ATRAI	10980	10410	6089	0	20	5517	0	53	0	112	443	79	3	0	61	0	163	525	3	125	3	125	3	125	3						
BAGATIPARA	13989	12918	1404	3435	425	2023	69	5130	0	508	1433	981	183	0	292	4791	532	741	156	164	156	164	156	164	156						
BAGHA	17993	14699	348	236	110	3058	0	11369	0	922	944	2823	44	14	136	3417	230	907	4	148	4	148	4	148	4						
BAGHARA	37291	34166	10638	4926	2317	13872	1739	5431	133	1504	1629	559	74	0	592	0	665	1845	9	133	9	133	9	133	9						
BARAIGRAM	9999	9325	1671	1781	88	3619	13	2059	6	278	504	6	74	11	227	191	305	426	28	121	28	121	28	121	28						
BOALIA	2031	1239	0	41	15	18	92	87	0	0	0	126	276	100	11	361	51	100	24	95	24	95	24	95	24						
CHARGHAT	15296	12905	0	537	305	4166	216	3680	0	469	1323	3783	0	5619	206	5920	175	996	10	183	10	183	10	183	10						
DURGAPUR	19596	17312	3712	1333	1959	6666	544	3698	70	1183	2693	2296	57	128	160	1362	258	2013	7	149	7	149	7	149	7						
GURUDASPUR	16850	15187	5335	5409	380	4829	248	1751	14	1170	1351	454	143	46	163	52	524	1596	5	152	5	152	5	152	5						
LALPUR	18027	15612	778	1263	304	2620	35	3481	0	411	881	1755	137	4761	177	5163	2241	1121	9	150	9	150	9	150	9						
MANDA	23935	22365	6751	3007	4234	1492	595	4869	23	1230	2491	597	340	55	503	52	685	1087	112	123	112	123	112	123	112						
MOHADEVPUR	25	23	4	3	13	0	1	1	0	1	1	0	0	2	0	1	0	2	0	130	0	130	0	130	0						
MOHONPUR	16143	14520	2952	2676	3234	1701	2013	6309	113	265	1674	2286	68	13	150	29	497	640	4	154	4	154	4	154	4						
NATORE	40398	36605	11344	11149	293	0	817	4749	28	1752	3740	5282	0	3439	774	4175	1049	5016	11	132	11	132	11	132	11						
NIJAMATPUR	70	64	7	46	0	0	1	8	0	0	2	0	0	0	0	1	0	2	0	105	0	105	0	105	0						
PABA	13063	10288	827	1635	1553	1745	264	2586	0	476	1273	752	13	1557	93	1910	512	877	4	149	4	149	4	149	4						
PUTHIA	19423	17501	1231	1096	538	7727	430	3102	8	943	1460	2746	183	2746	262	3186	1408	3297	6	158	6	158	6	158	6						
RANINAGAR	315	288	63	102	40	74	6	9	0	3	9	1	0	0	2	0	2	7	0	110	0	110	0	110	0						
SINGRA	14625	13660	5987	3244	194	5076	61	40	6	157	371	52	8	4	89	4	228	295	4	115	4	115	4	115	4						
TANORE	462	422	80	111	249	10	17	30	5	0	21	0	0	0	2	0	0	12	0	127	0	127	0	127	0						
PU Total	300649	267872	61481	43315	19208	64916	7191	60710	408	12011	22987	24731	1732	18652	3975	30796	9618	21728	399	3112	PU Average	399	3112	399	3112	151					

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 14

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																	Intensity
			Area Hboro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard	
SHERPUR	16338	14363	4890	4150	4963	0	241	459	0	925	1445	168	34	18	335	6	80	226	4	124
BELKUCHI	11938	9420	3309	92	5040	1681	0	2518	206	2993	65	1662	340	453	160	0	1072	2072	6	213
BERA	731	506	98	0	0	353	0	88	12	35	25	2	3	1	10	4	5	87	0	142
BHANGURA	9785	8655	1870	0	2939	1998	0	3106	23	405	992	264	10	133	440	30	1260	2391	14	180
CHATMOHAR	7586	6529	2807	850	3525	196	0	1128	0	592	513	0	0	0	0	9	0	0	0	147
CHONHALI	2396	1653	0	0	0	513	0	661	0	0	0	6	12	0	37	0	163	165	23	95
FARIDPUR	7045	6469	1726	0	0	2428	0	1941	5	132	794	19	2	31	198	5	813	1373	7	146
KAMARKANDA	8028	7371	3802	1921	1778	377	0	894	0	0	0	194	25	51	213	256	467	1206	5	149
RAIGANJ	16580	14919	4608	7001	4929	1465	0	1790	0	607	2223	301	4	189	339	245	558	610	12	165
SAHJADPUR	30075	25081	9577	968	6477	2394	0	8974	230	1713	7481	175	18	4	528	1387	1301	7894	21	195
SANTHIA	284	250	39	42	66	65	0	50	1	10	27	6	1	11	17	13	23	37	0	160
SIRAJGANJ	5788	4166	899	1641	1186	0	0	1195	35	138	1023	62	8	254	277	76	140	447	4	176
TARASH	23591	21330	1706	1990	1295	11732	3199	2133	0	0	0	5763	5	9	385	0	198	1000	16	111
ULLAPARA	41390	36569	14821	3189	1710	4818	0	2935	247	901	6446	340	20	165	802	34	1356	1849	33	108
GURUDASPUR	319	287	101	102	7	91	5	33	0	22	26	3	3	1	3	1	10	30	0	152
PU Total	181874	157568	50253	21946	33915	28111	3445	27906	759	8473	21060	8965	485	1320	3744	2066	7446	19387	145	2263
																			PU Average	152

CROPPING PATTERN AND INTENSITY BY PLANNING UNITS
Planning Unit 15

Thana Name	Gross Area (ha)	Nca Area (ha)	Crop Area (ha)																	Intensity	
			Area Hboro	Haman	Taman	Baman	Haus	Laus	Lboro	Jute	Wheat	Potato	Vegetables	Tobacco	Spices	Sugar	Oilseed	Pulses	Orchard		Cropping
Cane																					
ATGHORIA	18651	16843	3365	5106	535	3894	0	2695	68	1455	9670	2217	104	202	404	171	376	917	12	172	
BERA	14633	10126	1966	0	0	7060	0	1765	236	703	509	74	55	25	196	73	99	1736	7	143	
BHANGURA	2398	2121	458	0	720	490	0	761	6	99	243	53	2	33	108	7	309	586	4	180	
CHATMOHAR	18643	16045	6899	2090	8664	481	0	2773	0	1454	1262	0	0	0	0	21	0	0	0	147	
FARIPOUR	7193	6605	1762	0	0	2479	0	1981	6	134	811	20	3	31	203	6	830	1402	8	146	
ISHARDI	20834	16011	326	3136	957	2291	0	7099	9	865	1784	3231	669	813	370	903	472	1107	14	130	
PABNA	37135	30933	2226	12762	5324	6235	0	12080	25	2252	4386	3412	365	1329	1232	1176	1387	3008	23	174	
SAHJADPUR	510	425	162	16	110	41	0	152	4	29	127	2	0	0	9	24	22	134	0	195	
SANTHIA	32861	28985	4492	4849	7606	7536	0	5739	92	1193	3164	942	116	1319	1945	1528	2642	4232	23	160	
SUJANAGAR	29456	24009	1364	114	778	8780	0	5377	350	993	1403	2035	116	0	918	422	1628	2091	277	103	
BAGATIPARA	5	5	1	1	0	1	0	2	0	0	1	0	0	0	0	2	0	0	0	160	
BARAIGRAM	30662	28594	5125	5462	269	11098	40	6314	18	852	1546	17	226	35	697	586	934	1306	87	121	
LALPUR	2500	2165	108	175	42	363	5	483	0	57	122	139	19	660	24	716	311	155	1	150	
PU Total	215481	182867	28254	33711	25005	50749	45	47220	814	10086	25028	12142	1675	4447	6106	5635	9010	16674	456	1981	
																			PU Average	152	

