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IMPACT OF THE BANGABANDHU JAMUNA MULTIPURPOSE BRIDGE ON MARKETING OF AGRICULTURAL PRODUCTS OF NORTH WEST REGION OF BANGLADESH

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INTRODUCTION

North-West region of Bangladesh comprises 23% of its total area with 25% of total population. Country's one thirds of rice and one half of wheat are produced in this area. The region has attained commendable success in agriculture production and is called the granary of the country. During the past few years, rice production has expanded steadily with increased irrigation and shifts to new varieties. Production and acreage of other crops on the contrary do not yet show signs of achieving steady increases. Concentration of production on rice has increased and technology change has come about through the introduction of a "new product", the high yielding rice varieties. Improvement of farm management has proved difficult due to the prevalence of small, fragmented farms and the low literacy level of farmers. Overall performance (Gross Product) showing six years development of the agriculture sector in Bangladesh and Northwest Region is shown in the following table :

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Table 1 Gross Product : Crops

(Million Taka 1984/85 Prices)

Year	National Crops	Northwest Crops	% of national output
1988/89	134509	37352	27.7
1989/90	150828 (9.2)	42364 (13.0)	28.1
1990/91	152575 (1.2)	44667 (05.0)	29.3
1991/92	155101 (1.7)	44402 (-0.6)	28.6
1992/93	156392 (0.8)	45051 (01.0)	28.8
1993/94	153852 (-1.6)	43429 (-03.6)	28.2

Figures in brackets are percentage growth rate over the previous year.

Source : *Statistical* ***Yearbook of Bangladesh*** *,Sixteenth Edition, 1995* ***Bangladesh Bureau of*** *Statistics.*

The above table provides information of gross product originating (value added) in agriculture for the nation and for the Northwest region over the period 1988/89 - 1993/94. By 1993/94, the Northwest region accounted for over 28% of national crop output. From 1988/89 through 1993/94, the region's crop production expanded at an annual average growth rate of 2.6% compared with the national rate of 2.1%. The overall historical development of the value of agricultural production in the region is shown at Annexure-A. The gross product originating in agriculture (inclusive of fishery output at 1984-85 prices) has increased in the region at about 2.7% per annum over the period 1981/82 - 1993/94. This is about 1% per annum per capita basis (rural population). There is a substantial difference between the districts (large) with Rajsahi and Bogra growing rapidly while Pabna's agricultural growth has almost stagnated. The share of agriculture in gross regional product (GRP) has declined from 52% in 1981/82 to about 42% in 1993/94 following the expansion of non-agricultural economy. There is some evidence of slow down in growth from 4.1% (1981/72-1986/87) to 1.7% (1986/87-1993/94). Much of the slow down arises from Rangpur's agriculture declining from a peak in

1986/87. All districts (larger) witnessed an increase in production except Rangpur and the decrease in production in Rangpur was sufficently large as to reduce the divisional gowth.

Next, we turn to what is produced in the region. Agricultural crop produced in the region during *1992-93* is shown in annexure B. Production of surplus grain is the central feature of the regional economy. Rice production was *5.7* million ton *39%* of the national total. On the assumption that average consumption of 4 kg/day per person and 10% allowance for seeds we observe a surplus of 1.2 million ton. The surplus rice production is one of the key 'characteristics of the region. This surplus represents most of the exports from the region. Crop diversification projects have not had any major impact on the cropping pattern as thin and unreliable markets and price variations for other crops make them more risky, In addition, small farmers concentrate on rice for home consumption and resist diversification into cash crops with risky markets. Wheat is the second most important crop, assessed by area. The region produces *50%* of the national wheat output. Some 8% of the region's cropped area is used for wheat. Grain cultivation accounts for *80%* of the region. Other important crops are potatoes, sugar cane, mangoes, and tobacco. These six crops account for virtually all crop productions. This supports two important conclusions :

a. Grain and potatoes constitute the principal diet and there is very little diversification.

b. There is little exportable surplus except for these four crops : grain, tobacco, mangoes, and sugar.

A comparative analysis of crop production based on data on areas grown, total production and yield per acre during 1992/93 for *17* crops was carried out through a project study by the Planning Commission in February *1997.* Main observations of trends on areas were that wheat, potato, sugarcane, groundnut, coconut and mango are increasing while areas of jute, rape and mustard, masur, gram, khashari, till and linseed are decreasing and the areas

of the rest of the crops have not much changed. On total production the following picture is shown :

a. Increased production has taken place for rice, potatoes, groundnut, sugarcane, coconut and mango.

b. Decreased production is recorded for wheat, jute, rape mustard, masur, gram, khashari, till, linseed and banana while the changes in production of other crops have been limited.

c. Yield increases are recorded for rice, masur, groundnut, jute, rape and mustard and mango.

d. Yield decreases are reported for wheat, potato, gram, till and coconut while very little change or irregular developments in yields are recorded for the rest of the crops .

Groundnut is the only crop which shows substantial increase in both area grown and yield per acre. Rice yields vary among the former districts from 972 kg/acre in Bogra to a low of 735 kg/acre in Pabna. Comparing the percent of area irrigated with yields in the following table, it is shown that there is a large variation in the percent of cropped area that is irrigated from a high of 49% in Bogra to a low of 19% in Dinajpur. Area irrigation with yield is shown below :

Table 2 Area Irrigated and yield : Districtwise

	% Irrigated	Yield
Bogra	49	972
Rajshahi	31	838
Pabna	30	735
Rangpur	26	773
Dinajpur	19	740

Source : *NWADSP, Interim Report, Volume—4, page 20,*

It also reveals that other than Pabna there is a clear linkage between extent of irrigation and average yield. Pabna, having a large area of low lands, has much greater acreage of deep water rice. The concentration on rice cultivation is seen from the following table :

Table 3 Extent of Irrigation

Region	Land Region Used for Rice
	84%
Dinajpur	*70%*
Pabna	*57%*
Rajshahi	*74%*
Rangpur	*74%*
Northwest Region	*72%*

Source : *NWADSP, Interim Report, Volume-4,* ***Page 21***

Overall development of agriculture appears to be quite good. The data indicate a quite satisfactory growth rate of agriculture. The region's crop production is characterized by steady growth of rice production along with stagnation in production of other crops. There may be some changes in this pattern in the past three years due to improved transport (more trucks, more competition, improvements in ferry service) and strong demand of Dhaka city (rapid economic growth in Dhaka urban area). Data available on crop production particularly of fruits and vegetables is very unsatisfactory. It is concluded that there is no satisfactory basis for determining the overall position. However, it can be said that the present position of agriculture is consistent with factor prices and the available infrastructure changing the current configuration of agriculture will require a shift in underlying factor prices.

Section-II

Present Marketing System

Inputs Marketing : Marketing of agricultural inputs has changed over time. Up to 1989 fertilizer and seed were marketed to the farmers by the Government through Bangladesh Agricultural Development Corporation (BADC). Since then the seed supply has been partly privatized and BADC only supplies part of the farmer'sseed requirement It is estimated that about 5% of wheat, HYV rice, and potato seeds come through BADC. Fertilizer marketing was handed over to the private sector, but the Government is intervening through the selection of fertilizer dealers and trying rather unsuccessfully to control retail prices.

Local Marketing of Products : Marketing of agri products are done by private dealers, who buy the product from the farmers and either sell it to consumers or wholesales or stock the produce awaiting increased price. The present system sometimes works to the disadvantage of the farmer as the prices paid by the dealers at harvesting time are usually low when most farmers want to sell their crop in order to get immediate cash. Inappropriate marketing arrangement, lack of storage facilities and low product prices discourage the farmers to produce. Further, inappropriate road network and poor rural transport facilities at thana and union level hinder farmers and dealers in efficient transport and marketing of farm produce. Credit services to private traders is insufficient and not encouraged to develop marketing and processing activities.

Export Marketing : Limited volumes of processed and fresh fruits and vegetables are exported. However, the value of exported fruits and vegetables has declined by 80% from 1987 to 1992 due to inability to satisfy international markets with adequate production standard, timely supply, grading and storage. High transport and transit costs for agricultural produce has been an obstacle to profitable export business. High charges official and unofficial, combined with uncertainties and delays at ferry, hat, air and sea port are factors limiting success to exporting to agricultural produce. High costs and poor air-freightarrangements are also major contributory factors.

Constraints : Among the constraints that prevail in the agriculture sector of the region, land constraint limits the expansion of the sector and farm fragmentation continues, while the number of landless rural households increase. There are also several policy, institutional, infrastructural and technological constraints for the advancement of the sector. Major constraints are :

a. **Land Availability** : During the past decade cropped area was able to expand steadily as irrigation equipment dramatically increased water supply. Now, practically all land is cultivated and the cropping intensity is about *200%* showing an increase over the last years. Thus the Northwest region will reach the practical limits of crop area during the next few decade. In addition, the urbanization process will take land away from farming activities. Industrial development, infrastructure for transport facilities and power stations will further encroach on cultivated land.

b. **Water and Flooding** : Water availability is a serious constraint. Ground water availability is a contentious issue and increased surface water is unavailable during the dry season. Improved storage of water is likely to prove very expensive. Flood risk in the rainy season remains an ever present condition of agriculture. These risks are unlikely to change during the next fifteen years.

c. **Institutional Aspects and Extension Service** : The delivery of extension service to farmers is a difficult continuing problem. Public Sector Agencies involved in extension and other agricultural support activities have by and large been geared towards increased rice production, giving other crops and activities little or no attention. Evidence suggests that existing government based delivery systems do not work well and other options must therefore be looked for and considered.

d. **Input Availability** : Inputs delivery systems are unsatisfactory, and is in transition. There are four inputs critical to the region: fertilizer, seeds, irrigation equipments, and pesticides.

e. **Credit Availability** : Credit availability and its management for delivery to farmers are unsatisfactory. The agricultural sector contributes around *40%* of GDP but receives only about 18% of formal credit.

f. **Market Access and Efficiency :** Inappropriate marketing arrangement, lack of storage facilities and low product prices discourage the farmer to produce. As such market development is important in that it reduces local monopolistic power. It is vital that this increased competition be encouraged. Government sponsored monopoly has proven to be just as repressive and exploitative as private. Market access remains a serious constraint on agriculture. Prices for input and output has sometimes been subject to Government intervention leading to uncertainties and sometimes also to sub optimized allocations.

g. **Land Ownership and Tenure :** The present structure of the agricultural sector as revealed in the size of land holdings, ownership and tenure arrangements give cause for concern considered for the long term development perspective.

h. **Supply of Fuel and Oil** : Supply of fuel and oil have never been smooth and easy due to River Jamuna. These two essential items are being carried to the region by water way and ferries.

i. **Electricity for Irrigation** : This is also not very easy and adequately available in the region.

j. **Transport and Communication** : Inappropriate road network and transport facilities for farm inputs and produce at thana and union level hinder farmers and dealers in efficient transport and marketing.

Section-III

Opportunities and Potential for Development

Natural Resources Condition : Before we see the crop potential and opportunities, we may take a look at the natural resources condition as prevailing in Northwest region. These are :

a. **Soils** : In general there are three types of soils in' the North-West region sandy, loamy and clay. District occurrence of soil types is given

in Annexure D. Typewise loamy land is the highest. The generally favourable land conditions in the region are indicated by the high percentage of highland (21%) and medium highland (63%) with reduced flooding propensity.

b. **Agro-ecological Zones** : Information classifying the land by Agro-Ecological Zones (AEZ) is also available and represents another more complex view of land availability and suitability. The AEZ data base of Bangladesh Agricultural Research Council contains relevant data and description and the extent of the AEZs in North-West. The soil and AEZ data are useful for detailed work at District and Thana level and provide an important field level tool for the district persons responsible for agriculture (It should be noted that most of this material is not available locally and is not widely used by District and Thana officers.)

c. **Land use** : Summary of land utilisation for 1992/93 in NW region is shown in the following table :

Table 4 Land Utilization

(Thousand acres)

Utiligation	Bogra	Dinajpur	Pabna	Rajshahi	Rangpur	Total
Total area	960	1644	1201	2333	2377	8515
Forest	1	80		22	19	122
Culturable waste	4	35	14	31	34	118
Current fallow	40	78	44	80	91	333
Net cropped area	613	1039	644	1560	1544	5400
Single cropped	79	380	180	854	275	1768
Double cropped	400	510	347	595	1001	2853
Triple cropped	134	149	117	111	268	779
Total cropped	1280	1847	1224	2377	3080	9808
Irrigated area	623	360	362	728	813	2886
Cropping Intensity	209	178	190	152	199	182

Some: Statistical Year book of Bangladesh, 1994

Of the *8.5* million acres, some *5.4* million acres *(63%)* are cultivated. Of this cultivated area *2.9* million acres *(53%)* are irrigated; of the total cropped area *33%* is single cropped, *53%* is double cropped, and 14% triple cropped. Cropping intensity is *182%* for the region. The past decade has k e n characterized by a steady increase in cropping intensity. There is virtually no forest area in the region. However there has been major success in tree plantation programs. Some 4% of the area is fallow and another 1% is potentially cultivable. Thus only 5% of the land is not used, *67%* is cropped at least twice. The land utilization data clearly indicates that the land in this region is fully used, and the only prospect for increased land use is to raise the cropping intensity through increased irrigation. The possibility of such continued increase in intensity is one of the major issues of the future of agriculture.

Crop Production Potential : Based on the soil survey and the AEZ, the Soil Resources Development Institute has estimated the area suitable for various crops for the regions *16* districts. The areas are developed for each crop with and without irrigation. The estimates should be interpreted so that the indicated figures are the maximum area suitable for each individual crop and the figures cannot be added as different crops may be suitable for the same area. A summary of the available information is presented in Annexure E, which gives the maximum suitable area. In most cases much of the area will require irrigation. There are large areas suitable for cabbage and cauliflower in all districts except Pabna ; for jackfruit Diajpur and Rangpur, lentils, mustard, Rabi Chillies, Rabi groundnut, Rabi maize, Rabi soyavin, sugar-cane and potato in all districts, mango in Dinajpur and finally onion and garlic in Bogra, Dinajpur and Pabna. The region does have potential for production of vegetables and fruits for export out of the region as both fresh and processed food products. Identification of thana with specific potential for vegetables and fruit production can be done by use of available computerized information.

Opportunities and Potential : We turn next to the opportunities and potential. The most important issue in the agricultural sector is to support sustainable growth in crop production as that is the primary source of income for the population. The overriding issue when discussing the development

potential and opportunities for the agricultural sector in the Northwest Region are the extremely small farm holdings and the high growing population pressure on the land. Substantial regional economic growth can only be realized if the labour productivity is increased, which by necessity require productive employment opportunities outside the agricultural sector. Only when the land holdings can be managed in a manner that will allow some type of specialization, mechanization and production methods, benefiting from economics of scale combined with improved business competence among the "farm managers" can there be a real growth in per capita income among the agricultural population. The high population density, small farm environment of the region raises questions about what is an appropriate approach to diversification and farm management. The evolving population density and fragmentation of farms is an unusual, perhaps unique, socio-technical environment for agriculture. Technology adoption must be understood within this environment. Arable land is practically already used for crop production. The potential for increased crop production through area expansion is therefore limited to increased use of irrigation, but even this potential is very limited. For future crop production increase in the Northwest Region, there are five potential sources of increased production :

a Increased crop intensity via expanded irrigation and or introduction of early maturing crops and varieties;

b. Continued change from local to HYV crops;

c. Change in cropping pattern and crop diversification with increased cultivation of crops that gives higher per hectare yield for example shift from rice to maize;

d. Narrow the gap between known technology and presently applied technology by the farmers for the HYVs.

e. Technological development raising the level of known technology.

Section–IV

Impacts of BJMB

Having examined the constraints vis-a-vis opportunities and potential for development in agriculture sector it can safely be said that JMB will act as a catalyst for the overall development of NW region including agriculture by providing major infrastructural support The bridge will offset many of the constraints relating to marketing of agri-products both inputs and outputs. Impacts that the bridge will offer for promotion of agriculture in NW region are:

a *Fair Price of farm produce* : Farmers are likely to get fair price of their farm produce since marketing of products will be easier and prices will be competitive for exports.

b. *Procurement of inputs easier* : Farmers will get their required inputs comparatively easily and at competitive prices as the supply of inputs, its carrying cost and time will change from its existing mode due to the bridge.

c. *Easier and even flow of gas and power* : As the bridge will slso facilitate transmission of gas, power and telecommunication facilities, infra-structure for storage, preservation, processing products will come up in the region. This will have positive impact on trading and marketing.

d. *Easy and direct transportation* : Since this bridge will connect the region with capital city, Dhaka and port city, Chittagong, communication will be easy and direct. This will induce many entrepreneur to invest in agro based industry which will draw plant, machinaries and allied equipment for processing agri product to export. This will have a positive impact on trading and marketing of agri produce, which will rise up the traffic flow. As estimated by a consultant, this will effect increasing 8,200 tons of agricultural products by 2000 and 18,500 tons in 2020.

- Encouragement: The bridge will provide encouragement to many small/medium farmers and traders to get increasingly involved in production with crop diversification, processing and trading.

The overall performance of the region's agriculture is quite satisfactory. The development has been achieved almost completely through yield increases concentrated in grain production. It is clear that the sector has managed a major expansion within the framework of the existing transport system. With the commissioning of BJMB, transport system will be easier and transport cost will be lower. Lower transport cost alone will have limited impact on overall development of agriculture. As such, there is no reason to believe that the improved position following the opening of BJMB, will itself cause a major change in agriculture situation. However, the potential for complementary expansion is strong and the conduct of a strong agricultural development program will be supported by improved transport system, increased land productivity, improved credit services and infra-structural network including telecommunications, supply of gas and electricity and development of small and medium scale industries to absorb the surplus agricultural produces.

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Annexure–A

Northwest Region : Agriculture Contribution to Gross Regional Product

(Billion Taka, 1984–85 Prices)

	1981182	1986187	1991192	1993194
Rajshahi	8.578	10.200	12.863	13.590
Dinajpur	6.310	6.849	8.491	8.941
Rangpur	11.322	16.915	15.410	14.966
Bogra	5.338	6.065	7.608	7.988
Pabna	5.737	5.555	6.243	5.905
Total	37.285	45.584	50.615	51.390
	% of GRP			
Rajshahi	49	47	46	44
Dinajpur	52	48	47	44
Rangpur	52	54	47	42
Bogra	49	47	46	44
Pabna	51	43	40	35
Total	51	49	46	42

(Growth rates percent per annum)

	81/82-86/87	86187-93194	81/82-93/94
Rajshahi	3.5	4.2	3.9
Dinajpur	1.7	3.9	2.9
Rangpur	8.4	-1.7	2.4
Bogra	2.6	4.0	3.4
Pabna	-0.6	0.9	.2
Total	4.1	1.7	2.7

Source : Statistical Year Book of Bangladesh, 1995 ; Twenty Years of National Accounting of Bangladesh, Bangladesh Bureau of Statistic.

Annexure--B

Crop Production 1992-93

Area in thousand acres
Production in thousand tons

Yield in kg/acre

	Bogra	Dinapur	Pabna	Rajshahi	Rangpur	Total
Rice						
Area	1077	1292	702	1736	2287	7094
Production	1047	957	516	1455	1767	5742
Yield	972	740	735	838	773	809
Wheat						
Area	39.59	230.76	204.58	149.52	177.73	802.18
Production	35.39	171.45	139.11	124.40	112.86	583.21
Yield	894.00	143.00	680.00	832.00	635.00	727.00
Sugarcane						
Area	11.45	44.72	16.40	109.47	32.76	214.80
Production	204.33	617.58	295.36	1869.28	689.70	3676.25
Yield	17845	13809	18009	17076	21053	17115
Tobacco						
Area	.07	.71	.06	.19	61.31	62.34
Production	.051	.16	.02	.05	26.36	26.62
Yield	214	225	330	263	430	427
Potato						
Area	37.78	31.74	11.09	28.15	23.81	132.57
Production	114.68	93.410	28.80	79.49	72.57	388.95
Yield	3035	2943	2579	2823	3048	2940
Sweet Potato						
Area	3.45	1.90	3.12	2.28	4.02	14.77
Poduction	11.16	5.70	10.37	8.44	11.67	47.64
Yield	3235	3000	3324	3720	2978	3226

Banana						
Area	3.05	4.43	2.63	3.27	5.18	18.56
Production	19.4	21.2	16.3	18.8	29.1	104..8
Yield	6361	4786	6198	5749	5618	5647
Mango						
Area	3.92	8.82	5.45	24.07	8.01	50.27
Production	5.35	9.44	8.49	53.67	12.21	89.16
Yield	1365	1070	1558	2229	1524	1774
Jackfruit						
Area	1.62	3.72	2.39	2.21	5.18	15.12
Production	4.93	16.63	8.73	7.27	19.14	56.7
Yield	3043	4407	3653	3890	3695	3750
Pineapple						
Area	0.16	0.48	0.02	0.21	0.47	1.34
Production	0.33	0.82	0.08	0.35	0.90	2.48
Yield	2063	1708	4000	1667	1915	1851
Lichi						
Area	0.30	0.79	0.35	0.70	0.81	2.95
Production	0.38	1.09	0.38	1.00	1.00	3.85
Yield	1267	1380	1086	1429	1235	1305
Coconut						
Area	0.41	0.52	0.80	1.27	2.65	5.65
Production	0.39	0.47	0.88	1.16	2.47	5.37
Yield	951	904	1100	913	932	950
Til						
Area	0.56	14.89	10.67	4.10	0.98	31.2
Production	0.13	3.19	2.51	0.45	0.26	6.54
Yield	232	214	235	110	265	210
Groundnut						
Area	2.55	0.11	1.27	0.47	10.05	14.45
Production	1.47	0.03	0.79	0.3	4.2	6.72
Yield	576	272	675	489	418	465

Overall Production of Vegetables in Bangladesh in the Year of 1992193 (thousand m.ton)

Pumpkin	-	88	Brinjal	-	189
Patal	-	21	Lady's finger	-	14
Jhinga	-	22	Karala	-	20
Puisak	-	09	Cucumber	-	15
Cabbage	-	76	Cauliflower	-	68
Watergroud	-	69	Tamato	-	86
Radish	-	179	Beans	-	38
Arum	-	92	Other Vegetables	-	138

Overall Production of Condiments and Spices of Bangladesh (19921 93) thousand m.tons

Chillies	-	54mt
Onion	-	140 mt
Garlic	-	40 mt
Others	-	87 mt

Source : *1994* statistical Yearbook of Bangladesh.

Annexure–C

Soil Texture by District (Thousand Hectares)

DISTRICT NAME	SANDY	LOAMY	CLAVEY
BOGRA	9.4	104..6	142.5
DINAJPUR	9.2	168.0	134.8
GAIBANDHA	10.3	148.5	24.2
JAIPURHAT	0	23.6	64.9
KURIGRAM	23.1	146.4	11.2
LALMANIRHAT	17.9	902.4	.9
NAOGAON	0	90.8	226.7
NATORE	1.0	74.0	10.4
NAWABGANJ	.4	79.0	76.6
NILPHAMARI	32.1	114.7	26.7
PABNA	5.2	95.6	96.6
PANCHAGARH	23.1	104.2	2.8
RANGPUR	9.4	153.0	46.3
RAJSHAHI	0.3	112.5	98.6
SIRAJGONJ	31.0	97.4	70.0
THAKURGAON	12.9	133.5	23.7
TOTAL	**185.3**	**2548.2**	**1056.6**

Source : Statistical Year Book of Bangladesh *1994*

Annexure–D

District Distribution of Agricultural Land Types, 1993 (sq.km)

District	Highland	Medium Highland	Medium lowland	Lowland	Very lowland	Total
Bogra	384.7	1911.5	245.7	22.1	0.0	2564.0
Chapai Nawabgonj	193.9	481.9	190.7	116.3	0.0	1982.8
Dinajpur	1213.5	1900.5	36.6	20.4	0.0	3171.0
Gaibandha	49.6	1588.3	139.3	51.3	0.0	1828.5
Joypurhat	104.4	743.9	36.4	0.0	0.0	884.7
Kurigram	73.8	1272.9	135.4	28.7	0.0	1510.8
Lalmorinhat	233.6	822.6	21.6	0.0	0.0	1077.8
Noagaon	219.7	1870.2	273.2	340.8	0.0	2703.9
Natore	123.7	984.7	364.5	374.0	0.0	1846.9
Nilphamari	352.9	1139.0	6.2	0.0	0.0	1498.1
Pabna	363.7	543.6	511.2	481.7	143.5	2043.7
Panchagarh	811.5	538.5	4.5	3.1	0.0	1357.6
Rajshahi	310.4	1447.8	289.0	84.2	0.0	2131.4
Rangpur	400.2	1669.0	8.4	0.0	0.0	2077.6
Sirajgonj	438.1	765.5	542.3	332.7	11.2	2089/8
Thakurgaon	1061.4	622.4	11.4	10.7	0.0	1705.9
Total	6335.1	19302.3	2816.4	1866.0	154.7	30474.5

Source : Statistical Year Book of Bangladesh, *1994.*

Annexure–E

Area Suitable for Selected Crops by District (Hectares)

Crop	Bogra	Dinajpur	Pabna	Rajshahi	Rangpur	Total
Banana	614	0	0	14413	0	19027
Cabbage	74995	179075	1431	10833	135703	402037
Cauliflower	149990	358150	2862	21666	271406	804074
Coconut	3165	0	0	18413	0	21578
Ginger/ Turmeric	535	1449	0	0	7580	7564
Jackfruit	3373	48394	0	18551	50909	121221
Kharif						
Chillies	535	1449	0	0	7580	7564
Groundnut	535	1449	0	0	7580	7564
Maize	27	806	0	0	5580	6413
Soy-beans	535	1449	0	0	7580	
Brinjal	535	1449	0	0	7580	
Lentil	114034	187987	81356	109390	143327	636094
Mango	535	25093	0	392	558	26578
Mangobean/Blackgram/ Cowpea	1070	2898	0	0	11160	15128
Mustard	136389	206530	97790	115514	147561	713784
Onion/garlic	88540	152599	68454	0	1584	311177
Potato	215312	388268	146290	187896	370594	1308360
Rabi						
Chillies	95398	126401	30961	12367	112486	377613

Crop	Bogra	Dinajpur	Pabna	Rajshahi	Rangpur	Total
Cotton	91269	84264	32493	98728	396	307150
Groundnut	107589	152599	63506	106254	15843	445791
Maize	79154	183189	3796	55262	136120	457521
Soy-beans	73583	174671	42056	37192	17752	345254
Sugar cane	45398	12787	33826	73189	78681	35924
Tobacco	59549	75560	27	19939	15109	170184
Tomatoes	166018	45226	4972	0	30488	246704
Water melon	19110	156135	0	86858	2659	264762
Wheat	90657	206211	68454	66690	202532	634544

Note : The above figure represent possible crop production areas in one calender year, meaning that presented figures for cauliflower, mangoeban, blackgram, cowpea, potato, and tomato are based on two crops per year, for all other crops only one crop is counted with except otherwise stated as for some crops where both Kharif and Rabi growing is presented separately.

Source : Computed from crop suitability figures supplied by Soil Resourses Development Institute.