

## WEST BENGAL: AGRICULTURAL HIGHLIGHTS

Profile 2010





**CONTENTS**

<b>CHAPTER</b>	<b>PAGE NO.</b>
<b>AGRICULTURE – FOCUS AREAS OF THE GOVERNMENT OF WEST BENGAL</b>	<b>3</b>
<b>POLICY OF THE GOVERNMENT OF WEST BENGAL</b>	<b>5</b>
<b>AGRICULTURAL HIGHLIGHTS</b>	<b>6</b>
<b>AGRICULTURAL STATISTICS</b>	<b>7</b>
<b>AGRICULTURAL MECHANIZATION</b>	<b>13</b>

## **AGRICULTURE – FOCUS AREAS OF THE GOVERNMENT OF WEST BENGAL**

- **Agriculture Mechanization**

- *The State Government has established Implement Hubs in rural areas which help farmers to take agricultural implements on hire to be used by farmers for a fee*
- *Various schemes started by the State and the Central Government help in the financial assistance for popularization of farm equipments*
- *The State Government through its agencies and Agricultural Universities promotes agricultural machinery through the demonstration of newly developed farm equipments*
- *The aim of the Government is doubling of Farm Power to 2.5 Kw / hour from 1.25 Kw / hour by 2011; the market would require small implements of low Horse Power*

- **Post Harvest Technology**

- *The State Government is focusing on small and mini cold storages which could be developed indigenously local technology; farmers could store produce to the magnitude of 5000-10000 Kilograms for 3-4 months; some subsidy schemes would be used for the same*

- **Organic Farming**

- *The State Government is promoting the use of Bio fertilizers and some Bio villages have been formed where demonstrations from Organic Farming experts are given to farmers*
- *Bio Fertilizer Laboratories are being planned in every sub division of the state*
- *The target is to bring 20% of the arable land under organic farming*

- **Soil rejuvenation**

- *Due to the extensive use of fertilizers, the soil loses some micro nutrients; Soil Testing Laboratories have been planned in every sub division of the state where farmers can bring soil from their fields and get it tested and a cure could be prescribed*



- **Seed**
  - *New varieties of seeds are being planned by the State Government which would be of high yielding variety*
  - *Seed Villages are being formed where farmers are imparted with training to produce quality certified seeds of Paddy, Pulses, Cereals, Oilseeds, Chilies and Green Vegetables*
  - *Seed Banks are also being formed where seeds would be made available to farmers whenever required and infrastructure would be created to develop and distribute quality seeds*
  
- **Crop Specific Focus**
  - *Rice: Increasing the yield through Seed Replacement*
  - *Wheat: Yield Increase and the use of Zero Tillage Equipments*
  - *Cereals: Area Expansion and increasing the yield*
  - *Pulses: Area Expansion and increasing the yield*

## **POLICY OF THE GOVERNMENT OF WEST BENGAL**

- Raising agricultural production and productivity through the wider adoption of appropriate eco-system-specific and cost effective technology since land is a finite resource
- Increasing the use and application of fertilizers
- Emphasizing the increased production of Pulses and Oilseeds in non-traditional areas and non-conventional seasons and utilizing residual moisture and improving productivity with the right application of available technology
- Encouraging small and marginal farmers to maintain the increased production by providing inputs at a reasonable price
- Encouraging farmers to adopt mechanization for timely farm operation and reducing the cost of cultivation
- Emphasizing on the maintenance of soil health, use of Bio-fertilizers, green manure balanced nutrition and judicious use of irrigation water
- To strengthen and activate Agricultural Extension Service including Training
- Managing crisis in the event of natural calamities
- Creating employment opportunities to improve the socio-economic status of farmers
- Exploitation of the surface water potential and reduction in the indiscriminate use of ground water
- Improving the level of Post Harvest technology
- Crop diversification
- Bringing cultivable waste land and fallow land under cultivation
- Emphasizing on the concept of Zero Tillage / minimum tillage in vulnerable areas
- Recycling rain water
- Application of low cost technology for increasing the production and productivity



### **AGRICULTURAL HIGHLIGHTS**

- West Bengal has 8% of India's population with 2.7 % of its total area
- Marginal & Small Farmers constitute 95% of the 5.7 Million farmers
- There are 7.3 Million Farm Workers
- Agriculture contributes nearly \$ 16 Billion or 24% to the State Domestic Product annually
- The population density at 903 persons per Kilometere (Km) puts immense pressure on the land
- The state is first in India in the production of Rice, Vegetables, Fishery (inland) and Pineapple, second in the production of Potato and Tea and third in production of flowers

## **AGRICULTURAL STATISTICS**

### **(i) Basic Demography**

<b>Total Population (2008)</b>	8,66,59,000
<b>Rural Population (%)</b>	72
<b>Urban Population (%)</b>	28
<b>Population Density (Persons per Square Km)</b>	903

*Source: Department of Agriculture, Government of West Bengal*

### **(ii) Agricultural land**

<b>Total Geographic Area (Hectares)</b>	88,75, 200
<b>Gross cropped Area (Hectares)</b>	97,51,000
<b>Net Sown Area (Hectares)</b>	52,95,000
<b>Cultivable Area (Hectares)</b>	71,14,000
<b>Irrigated Area (%)</b>	62
<b>Average Land Holding (Hectare)</b>	0.82
<b>Number of Agricultural Holdings (Units)</b>	69,53,922
<b>Agro Climatic Regions</b>	6
<b>Cropping Intensity (%)</b>	184

*Source: Department of Agriculture, Government of West Bengal  
(1 Hectare=10000 Sq.m)*

**(iii) Categories of Farmers**

<b>Category of Farmers</b>	<b>Individual Land holdings</b>	<b>Percentage in the category</b>
Marginal	0-1 Hectare	76
Small & Semi Medium	1-4 Hectares	23
Medium	4-10 Hectares	0.82
Large	Above 10 Hectares	0.18

Source: Agricultural Census (1995-96)  
(1 Hectare=10000 Sq.m)

**(iv) Production of Food Grains (Million Tonnes)**

	<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
<b>Rice</b>	14.74	14.71	15.03
<b>Cereals</b>	15.82	15.90	16.16
<b>Wheat</b>	0.80	0.91	0.76
<b>Pulses</b>	0.15	0.16	0.13
<b>Oilseeds</b>	0.65	0.70	0.58
<b>Potato</b>	5.05	9.90	4.12

Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms)

**(v) Percentage of Production of Major Crops vis-a-vis All India production**

	<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
<b>Rice</b>	16	15.2	15.10
<b>Wheat</b>	1.05	1.15	0.94
<b>Pulses</b>	1.05	1.08	0.88
<b>Oilseeds</b>	2.67	2.34	2.06

(1 Tonne=1000 Kilograms)

**(vi) Yield Of Major Crops (Kg / Hectare)**

	<b>2007 – 08</b>	<b>2008 – 09</b>	<b>2009 – 10</b>	<b>2010 – 11 (Target)</b>	<b>2011 – 12 (Target)</b>
<b>Food Grains</b>	2521	2581	2770	2881	2996
<b>Rice</b>	2573	2533	2872	2986	3106
<b>Cereals</b>	2578	2545	2843	2957	3075
<b>Wheat</b>	2602	2490	2476	2575	2678
<b>Pulses</b>	786	705	872	915	961
<b>Oilseeds</b>	998	1005	28	1069	1112
<b>Potato</b>	24704	10677	22500	23000	23200

Source: Department of Agriculture, Government of West Bengal  
(1 Hectare=10000 Sq.m)

**(vii) Production & Requirement of Major Food Grains (2008 – 09)**

<b>Food Grains</b>	<b>Production (Million Tonnes)</b>	<b>Requirement (Million Tonnes)</b>
<b>Rice</b>	15.03	13.70
<b>Cereals</b>	16.16	15.79
<b>Pulses</b>	0.13	1.21
<b>Oilseeds</b>	0.58	0.07
<b>Potato</b>	4.12	4.34

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms )*

**(viii) Composition of Gross State Domestic Product (GSDP) (\$ Bn)**

	<b>2005 – 06</b>	<b>2006 – 07</b>	<b>2007 – 08</b>
<b>GSDP</b>	51	60	67
<b>Agriculture</b>	11.22	12.60	16
<b>Percentage of GSDP</b>	22	21	24

*Source: Central Statistical Organization*

**(ix) Production of Fruits (Tonnes)**

<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
2640000	2766000	2854000

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms )*

**(x) Productivity of Fruits (Tonnes per Hectare)**

<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
14.11	14.25	14.05

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms ) (1 Hectare=10000 Sq.m)*

**(xi) Production of Vegetables (Tonnes)**

<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
12087960	12555950	12803450

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms )*

**(xii) Productivity of Vegetables (Tonnes per Hectare)**

<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
13.38	13.76	13.88

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms ) (1 Hectare=10000 Sq.m)*

**(xiii) Use of Biofertilizer (Million Tonnes)**

<b>Year</b>	<b>Availability</b>	<b>Requirement</b>
<b>2007 – 08</b>	690	790
<b>2008 – 09</b>	800	910
<b>2009 – 10</b>	950	1050
<b>2010 – 11</b>	1050	1170 (Projected)

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms ) (1 Hectare=10000 Sq.m)*

**(xiv) Consumption of Fertilizer (Tonnes)**

<b>Year</b>	<b>Consumption</b>
<b>2006 – 07</b>	1340000
<b>2007 – 08</b>	1350000
<b>2008 – 09</b>	1500000

*Source: Department of Agriculture, Government of West Bengal  
(1 Tonne=1000 Kilograms )*

**(xv) Credit to the Agricultural sector (\$ Mn)**

	<b>2005 – 06</b>	<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>
<b>Commercial Banks</b>	320	492	653	563
<b>Rural Banks</b>	40	71	97	109
<b>Cooperatives</b>	140	233	285	194
<b>Total</b>	500	796	1035	866

*Source: Department of Agriculture, Government of West Bengal  
Data for 2008-09 is till December 2009*

### **AGRICULTURAL MECHANIZATION**

- The State Government has established Implement Hubs in rural areas which help farmers to take agricultural implements on hire for a fee
- Various schemes started by the State & the Central Government help in the financial assistance for popularization of farm equipments
- The State Government through its agencies and Agricultural Universities promote agricultural machinery through the demonstration of newly developed equipments
- The aim of the Government is doubling of Farm Power to 2.5 Kw / hour from 1.25 Kw / hour by 2011

#### Use of Farm Implements (Units)

<b>Implements</b>	<b>2006 – 07</b>	<b>2007 – 08</b>	<b>2008 – 09</b>	<b>2009 – 10</b>	<b>2010 – 11 (Estimated)</b>
Manually Operated / Bullock Drawn	14941	29852	35071	49310	61520
Power Drawn	2409	5716	27332	38330	54325
Tractor & Power Tiller	3540	3860	5625	6175	7150
<b>Total</b>	<b>20890</b>	<b>39428</b>	<b>68028</b>	<b>93815</b>	<b>122995</b>

*Source: Department of Agriculture, Government of West Bengal*

### **ITALIAN MACHINERY IN INDIA – THE WAY FORWARD**

- The percentage of import of Agricultural Machinery from Italy is low but growing at a very impressive rate; it has increased from 5% of the total import of agricultural machinery in 2007 to 9% in 2009
- Indian agricultural machinery manufacturers are extremely interested in working with Italian companies due to the high quality of Italian products and technology
- They are in favour of the following arrangements:
  - **Joint Venture:** Import of equipment from Italy attracts high import duty so the Indian and the Italian company could form a Joint Venture to manufacture machinery in India as India offers several advantages like low cost of production. This could also open up opportunities of re-exporting to Europe
  - **Technology Transfer:** The Italian company could supply technology to Indian companies for a royalty payment
  - **Importing critical parts:** The Indian company could import highly specialized parts from Italy in Semi Knocked Down / Completely Knocked Down condition and assemble them in India

### **Important Points for Italian Companies**

- Farmers in West Bengal have small land holdings; 76% of farmers have land holding 0-1 Hectare and 0.82 Hectare is the average land holding
- The following implements would be very successful in West Bengal:

*Power Tiller: The annual sales is approximately 10000 units with price of \$ 2800-\$3200; the demand for 18-20 HP is in high demand and Chinese manufacturers contribute to 50% of the sales*

*Rotavetor: These are attached with tractors of 40-50 HP; the price is approximately \$1700-\$ 2500*

*Mini Harvester: High demand is due to purchases from the Government under various subsidy schemes*

*Rice Transplanter: Though the sale volume is very low, the machine is gradually becoming very popular; annual sales of 100 machines is being planned by the Government; the approximate price is \$ 3500-\$ 5000*

*Mini Harvester: This would be the smaller variety of the Combine Harvester as the size of the farms in West Bengal is less than 1 Hectare*



- The State Government, through various subsidy schemes, has drawn up an ambitious plan to distribute farm machinery; the table denotes the target drawn up by the Government

<b>Machinery</b>	<b>Units Existing</b>	<b>Target</b>
Rice Thresher	550000	800000
Drum Seeder	8000	12000
Rice Transplanter	500	1000
Rotavetor	400	1000

*Source: Department of Agriculture, Government of West Bengal*

*Note:(Target pertains to the next 2 years)*

*(Units distributed as per the subsidy scheme of the Government and does not include non subsidy purchases which are very small) )*

- Companies in West Bengal are very keen on Joint Manufacturing or Joint Development of agricultural machinery and distribution of Italian farm machinery
- A tie up is very important as local knowledge is very important and it is extremely critical to know the psyche of the local farmers. This would help in establishing distributors in the interiors
- There could be an opportunity of cross selling products if a company owns more than one product in case of a strong brand name
- Long term relationship with Indian companies should be looked at as returns would be generated only after trust has been established between the farmers, distributors and the company
- Too many distributors should not be appointed; this could cut into the sales of other distributors due to price cuts and cause problems for them
- After sales service is very important to farmers; local manufacturers are better positioned to reach out to the farmers due to their high penetration level
- At the lower end, there is stiff competition from China and Taiwan as a number of Indian companies have a tie up with them for importing their machinery
- Italian companies have to first demonstrate machinery to the farmers; this could be done through Agricultural Universities in West Bengal which could mobilize farmers and explain the working of the machines; this partnership would also help develop new products / features in the future
- Some Indian companies feel that Italian companies are slow in communicating to partners as a result of which the entire project gets delayed