



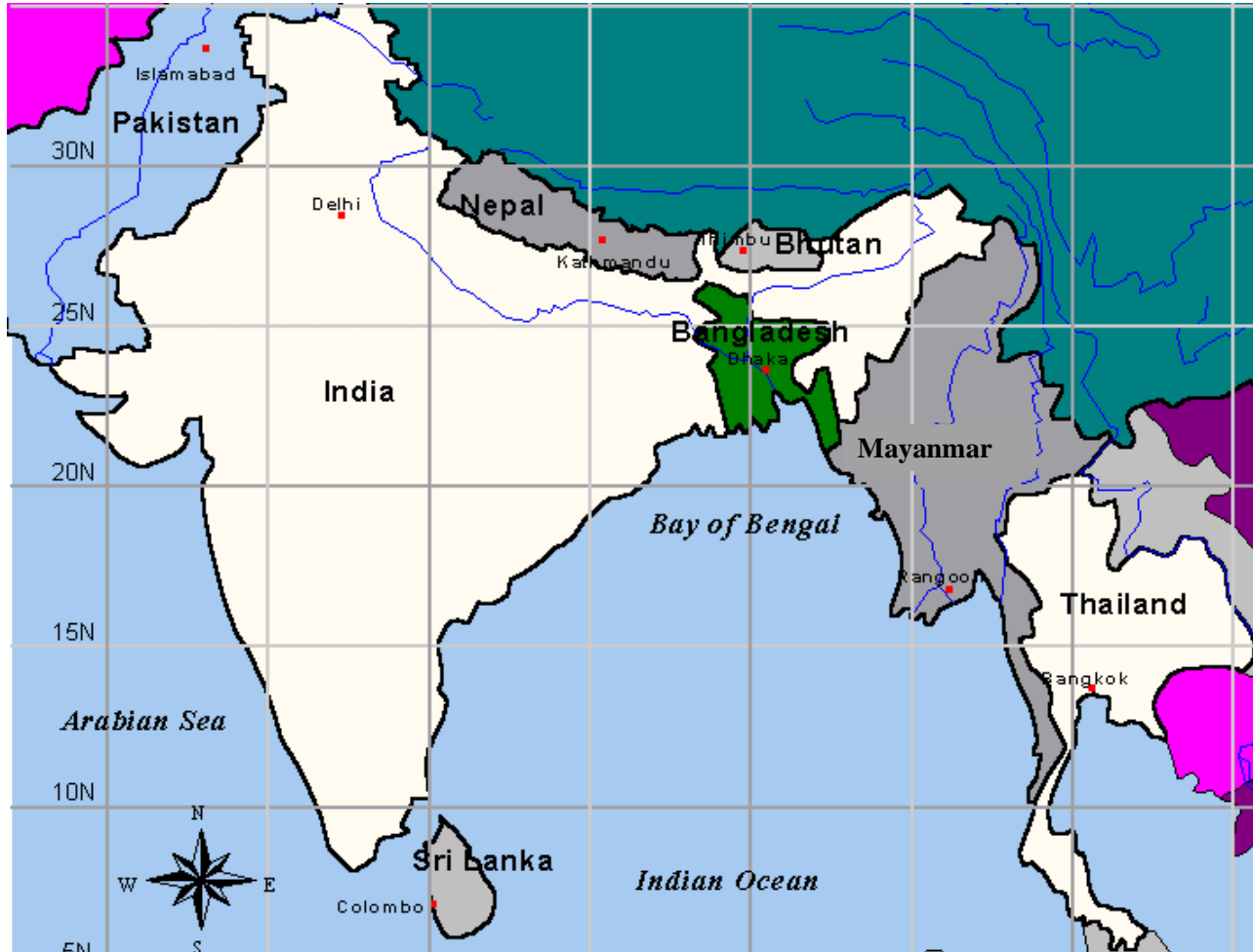
# Welcome to Bangladesh Presentation (Human Resources Development)

**M A Matin**

**Director General, RDA  
Rural Development and Cooperative Division  
Ministry of LGRD & Cooperatives**

*3<sup>rd</sup> Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific  
3<sup>rd</sup> ASEAN Conference on Agricultural and Biosystems Engineering  
Co-located with the 12th Engineering Research and Development for Technology in Agriculture  
9-11 December 2015, Manila, the Philippines*

# Bangladesh with Regional Countries



Bangladesh is a South Asian country lies between  $23^{\circ} 34'$  and  $26^{\circ} 38'$  N latitude and between  $88^{\circ} 41'$  and  $92^{\circ} 41'$  E longitude. The country is bounded by India on the west, north, and northeast; Myanmar on the southeast; and the Bay of Bengal on the south.

## General Information of Bangladesh

### ■ Graphical Location:

Between 20° 34' and 26° 38' North Latitude  
and 88° 01' & 92° 41' East Longitude

■ **Total Area : 14.757 million ha.**

• **Cultivated Area : 8.74 million ha.**

• **Irrigated Area : 4.00 million ha.**

• **Cropping intensity : 1.76 %**

■ **Population : Total : 152.51 million**

**Density : 1069 per sq. km.**



- **Main Season** : **Winter (November to February)**  
**Summer (March to June)**  
**Monsoon (July to October)**

- **Principal Rivers:** Padma, Meghna, Jamuna, Brahmaputra, Teesta, Surma and Karnaphuli (Total 230 rivers including tributaries)

- **Climate** : **Tropical Monsoon**
- **Annual Rainfall** : **1429 to 4338 mm.**
- **Annual average** : **2300 mm**
- **Temperature** : Winter- 11° to 15° C  
Summer- 22° to 38° C



- **Bangladesh is an Agrarian country.**
- **Nearly 75% of the population is dependent on agriculture.**
- **Agriculture sector contributes about 22% to the national GDP.**

**Literacy rate : 63%**

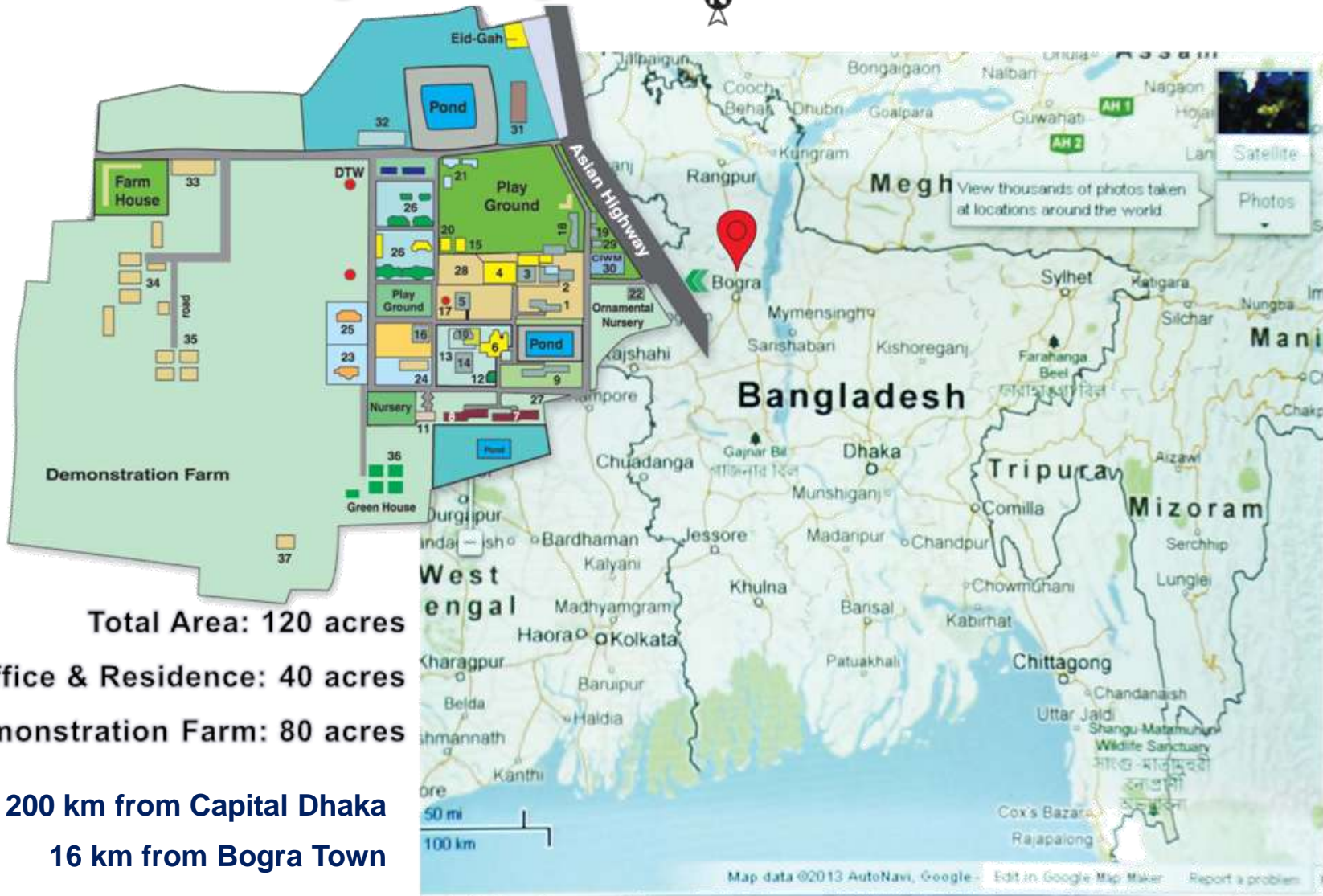
**Per capita annual income : 1314 USD**

**Population below poverty line : 27%**

**Rural economy largely depends on  
Agricultural Development**



# RDA Campus Map



# Mandated Functions





**Self Sponsored**



**Joint Sponsored**



**External Course**



**PGDRD**



**RD Technician Courses**



**Foreign Training Courses**



# Training



Total Participants: 3,47,622  
(upto June 2015)

**Human Resources Development for  
Rural Development**

## General Statistics on Bangladesh

Area of Bangladesh	1,47,570 sq.km
Total population	144.05 million
GDP	US \$ 118.42 billion
GDP Growth rate*	6.03%
Per capita Income	US \$ 1044
Manufacturing Sector contribution to GDP	18%
Manufacturing Sector Growth rate	5.73%
Small and Cottage Industries	6.3%
Medium and Large Industries	5.5%
Agriculture contribute to GDP	18.70%
Agricultural Growth rate	2.17%
No. of Farm Household	15.18 million
No. of Non-Farm Household	13.51 million
Cultivated Area	8.52 million ha
Cultivated Area per Household	0.51 ha
Cropping Intensity	190%
Irrigated area	62.96%

**Source:** Statistical Year Book of Bangladesh (BBS, 2013; \*Global Finance, 2012, [www.gfmag.com](http://www.gfmag.com))

## Farm Machinery Statistics in Bangladesh

Sl. No.	Farm Machinery	Number of unit
1	Power tiller	About 7,00,000
2	Tractor	> 60,000
3	High speed rotary tiller	> 4,000
4	Weeder	> 2,50,000
5	Seeder Transplanter	➤ 1000 ➤ 150
6	Sprayer	12,50,000
7	Combine harvester	130
8	Reaper	500
11	Open drum thresher	> 2,80,000
10	Closed drum thresher	> 50,000
11	Winnower	> 3,000
12	USG Applicator	> 16,000
13	Hand maize sheller	12,000
14	Power maize sheller	30,000

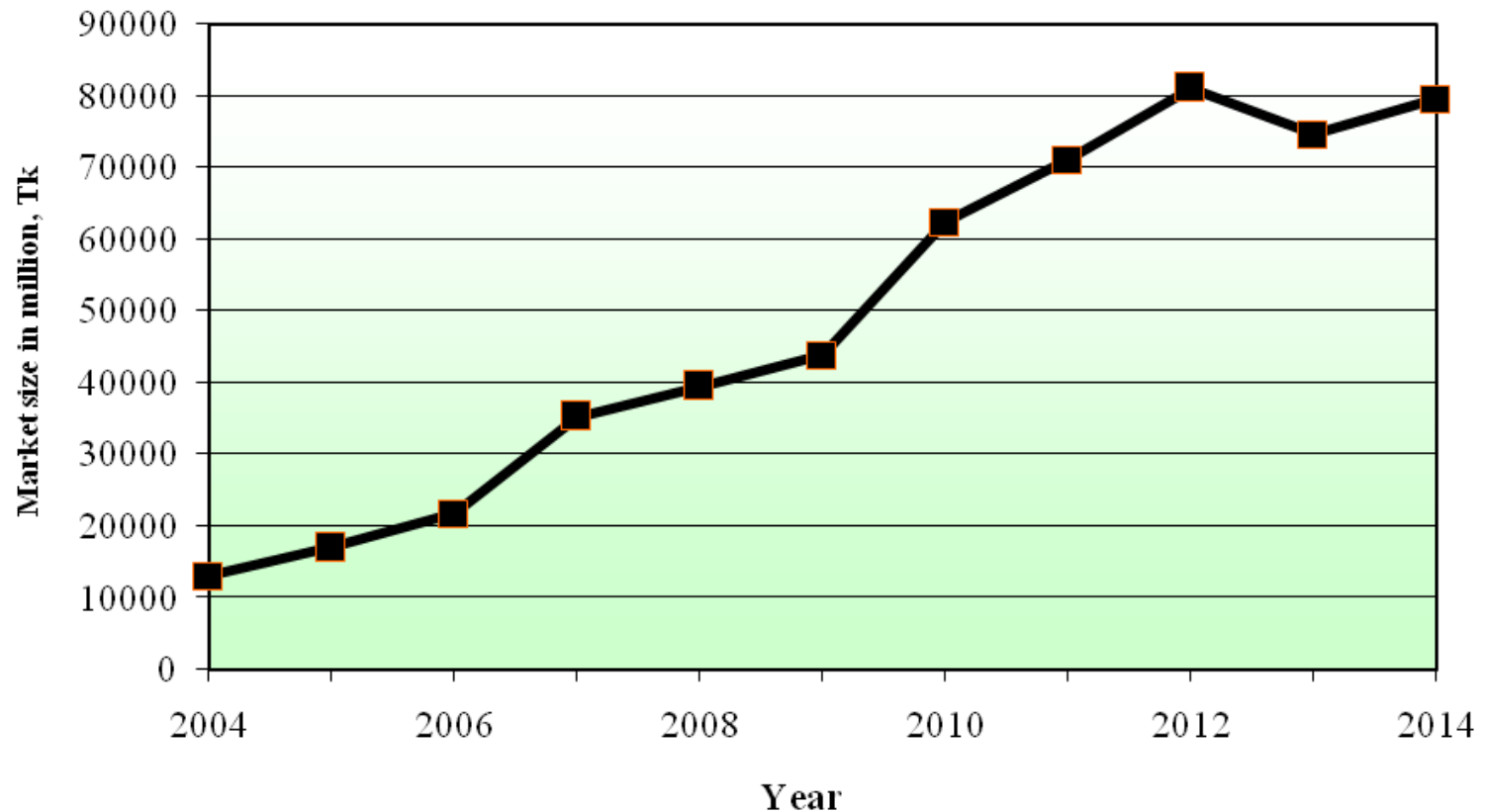
## Status of Agri-Machinery Manufacturing in Bangladesh

<b>Manufacturing Units</b>	<b>Number</b>
<b>Foundries</b>	<b>70</b>
<b>Agri-Machinery Manufacturing Workshops and Industries</b>	<b>800</b>
<b>Spare Parts Manufacturing Workshops</b>	<b>1500</b>
<b>Repair and Maintenance Workshops</b>	<b>20,000</b>
<b>Mechanics</b>	<b>5,00,000</b>
<b>Village Artisans</b>	<b>1,00,000</b>

## Existing (annual) market size of agri-machinery

Agri-machineries	Annul market size (million Taka)			
	2011	2012	2013	2014
Power Tiller	4200.00	4025.00	3000.00	4200.00
Tractor	5525.00	4140.00	3996.00	4025.00
Pump (STW)	1400.00	1600.00	1050.00	1225.00
Engine (STW, Thresher, Corn Sheller)	21600.00	30000.00	21750.00	22500.00
Thresher (ODT & CDT)	3320.00	4070.00	5216.00	5302.00
Corn Sheller (Spike Pinion type & Spiral Rasp-bar Cylinder type)	107.00	142.00	215.00	268.00
Sprayer (Local)	126.00	420.00	428.00	450.00
Sprayer (Imported)	30.00	45.00	47.00	56.00
Spare Parts (local)	20000.00	20600.00	20800.00	21000.00
Spare Parts (imported)	6000.00	5400.00	5400.00	5300.00
<b>Sub-total</b>	<b>62308.00</b>	<b>70442.00</b>	<b>61901.00</b>	<b>64326.00</b>
<b>Repair &amp; Maintenance</b>	<b>8841.00</b>	<b>10609.00</b>	<b>12731.00</b>	<b>15277.00</b>
<b>Total market size</b>	<b>71149.00</b>	<b>81051.00</b>	<b>74632.00</b>	<b>79603.00</b>

**Fig. 1 Agro-Machinery market trend in Bangladesh**



## Issues :

- Presently country is self sufficient in cereal production as though it's population is increasing.
- 90% of tillage & 95% of irrigation operations are mechanized.
- Farmers are getting solvence day by day.

## Challenges:

- Increasing labor shortage in reaping & transplanting is a great concern.
- Farmers are suffering from appropriate and accurate machinery related to soil condition.
- Creating plough pan in shallow depth of soil is a matter of great concern.
- Irrigation water & fertilizer use efficiency is low.
- Post harvest loss is very high.

# Prime mover

Type of Tractor	HP	Numbers	<u>Issues:</u>
2WT	Less than 10	10,000	➤ Mostly 2WT covers 80% of tillage operation all over the country, which are also used in multipurpose operation.
	10-20	6,90,000	
4WT	Less than 30	3,000	➤ Owners and operators of 2WT can successfully manage the repair & maintenance of their machinery. ➤ Custom hiring sustained both in 2WT & 4WT. ➤ Safety is still under control to the farmers.
	31-40	24,000	
	41-50	13,000	
	51-60	5,000	
	60-80	50	
	81-100	150	
			<u>Challenges :</u>
			➤ Prime movers are totally imported.



<b>OPERATIOIS</b>	<b>%</b>
Land Levelling	80%
Land preparation	80%
Ditching	10%
Bunding	0%
<b>Crop establishment</b>	
Transplanting/ Seeding	1%
Drill (dry)	2%
Drill (wet)	2%
Broadcast	1%
<b>Crop care</b>	
Sprayer	95%
Broadcaster	95%
Water pump	99%
Weeder	5%
<b>Harvesting</b>	
Cutting	1%
Threshing	70%
Cleaning	5%
Combine	<1%
Drying (mechanical)	<1%

## Issues :

➤ Presently 90% tillage , 68% threshing , 95% irrigation , 5% harvesting , 1% transplanting & 5% weeding are mechanized.

➤ Spare parts demand of Engine and other machineries are meeting from local manufacturing.

## Challenges :

➤ Appropriate harvesting & drying machinery is essential to introduce.

➤ Perfection is still a great concern for most of the machinery.

## Status of Institutional support

**Public R&D institutes are:** BRRI, BARI, BSRI, BINA, BAU, RDA, BCSIR & DAE. Private workshops/manufacturers/importers are: Alim Industries, Sylhet; Janata Machine, Jessore; Sarker Engg; Kamal Machine Tools; Mahbub Engg, Jamalpur; ACI Motors Ltd., Dhaka; Corona Industries Ltd., Dhaka; The metal Pvt.ltd., Dhaka and others .

### **Rural Development Academy (RDA), Bogra,**

Special type national training and research institution established in 1974.

RDA is providing training of human resources development under different training courses to the technicians of related field, govt. officials, students and farmers like

Farm Machinery Repairing and management;

Irrigation Pump and Engine management;

Plumbing and Electrical;

Internship program for Agricultural Engineering students of different universities

## ***RDA-KMT workshop***

RDA-KMT workshop is an action research project under public private partnership (PPP). It is one of the R & D stations of RDA.

Liner ; Open Drum thresher ; Close Drum thresher ; Cow-dung crushing Machine ; Chopper Machine; Grass cutting Machine  
Bed former (Single); Bed former (Double); Power Winnowing; Hand Weeder; Standard cow feed mixing machine etc are manufactured here.

## ***Agro Processing, Preservation and Marketing Unit***

APM unit of RDA is working to minimize post harvest losses of agricultural products.

## ***Agro Tech International Exhibition***

It is a PPP concept under RDA-LIMRA brand

## **Issues :**

- ❑ BAU is the highest authority to produce agricultural engg. graduates.
- ❑ Farm machinery dept. of BARI, BRRI and RDA are contributing in R&D as Bangladesh condition.
- ❑ DAE is providing extension services on agricultural machinery to the farmers & popularizing the newly introduced machinery.

## **Challenges:**

Research & extension dept.'s is needed to be more dynamic with time demanding.

Research & Need Based Education

Transparent Recruitment

Teacher and Staffs Evaluation

## Status of machinery manufacturing and or machine acquisition

### Issues:

- ❑ Almost centrifugal pumps are being used in all Shallow Tube Wells (STW) and Low Lift Pumps (LLP) are manufacturing in the country.
- ❑ Paddy and Wheat threshers, Maize shellers, hand and foot-pump sprayers, weeders, of spare parts engine and machine are also being manufactured locally
- ❑ There are about 70 foundries, 800 agri-machinery manufacturing workshops, 1,500 spare parts manufacturing industries and workshops and about 20,000 repair and maintenance workshops are engaged in agri-machinery sub-sector of the country.
- ❑ RI's & Extension Department are trying to help farmers to choice appropriate machinery.
- ❑ Farmers directly purchase machine through bargaining from nearby local market.
- ❑ Recently government is giving 25% subsidy to the farmers in purchasing machinery.

**Challenges:** No government policy support remains for the manufacturer.

- More linkage should develop between researchers & manufacturers.

## Status of machinery testing center

- ❑ There was a testing center in Bangladesh 1972 to 1988.
- ❑ Presently it is suspended. No specific testing centers for agricultural machinery is exist at present.
- ❑ It was arranged by public ownership and supervisory institutes were BARI, BAU and BUET. Both laboratory and field testing of agricultural machinery/ engines were accomplished in that time.

## Policy matters

- ❑ Formulate Agricultural Mechanization policy government should regulate & impose obligation of testing for locally manufactured & imported items.
- ❑ Establishment of a ‘Central Institute of Agricultural Engineering (CIAE)’ for continuation of innovation through R&D;
- ❑ Establishment of national level “Agricultural Mechanization Advisory Committee
- ❑ Establishment of a “National Center for Testing Agricultural Machinery (NCTAM)” for development, testing and evaluation of farm machinery.
- ❑ In recent years government is giving special emphasise on mechanization & identifying policy issues for testing machinery and other relevant issues.

**Thank You Very  
Much.....**



