Seventh Asian Cotton Research and Development Network (ACRDN) Meeting
Sept 15-17, 2017 at Hotel Le Meridien, Nagpur, Maharashtra, India

Improving Sustainable Cotton Production through Enhanced Resilience to Climate Change

তুলা উন্নয়ন বোর্ড
COTTON DEVELOPMENT BOARD

VISION- 2025 of CDB

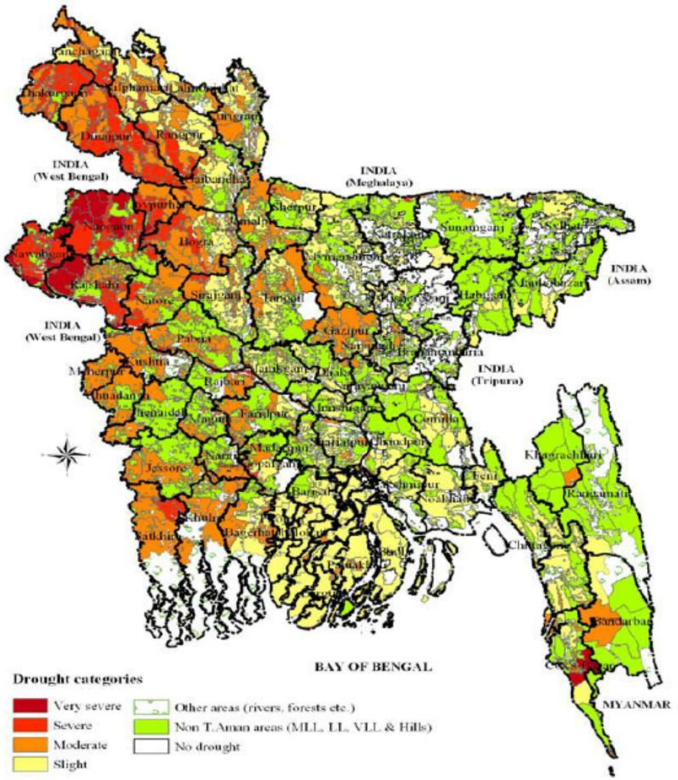
1.	Cotton acreage	100,000 ha
2.	Seed cotton production	300,000 ton

Our Strategy

Not to replace the food crops growing in the fertile land areas

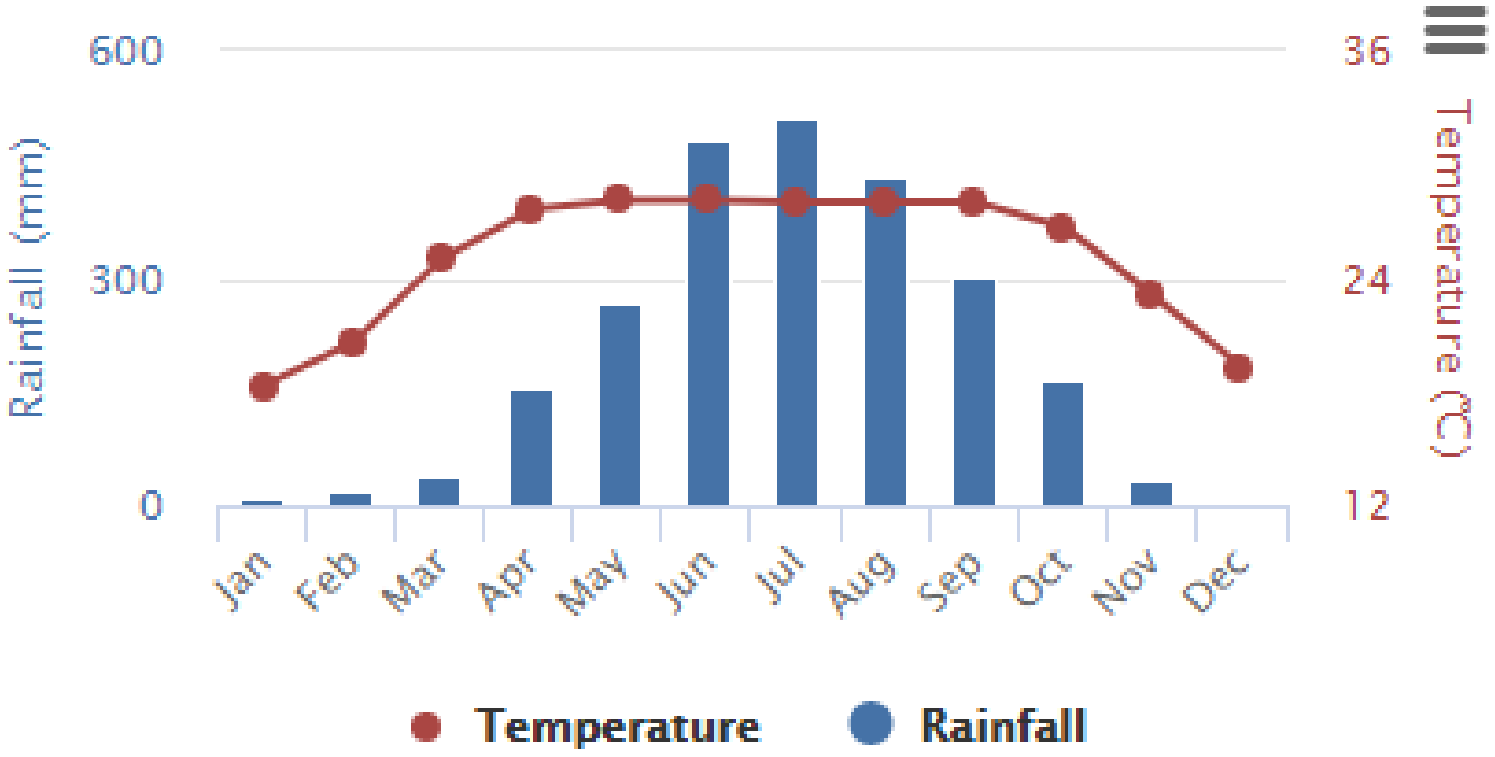
THRUST AREA FOR COTON

- The total area covers 7545.2 square kilometer
- Characterized by very high temperate and low rainfall
- The annual temperature and rainfall range between 8°C to 44°C and 1500mm to 2000mm

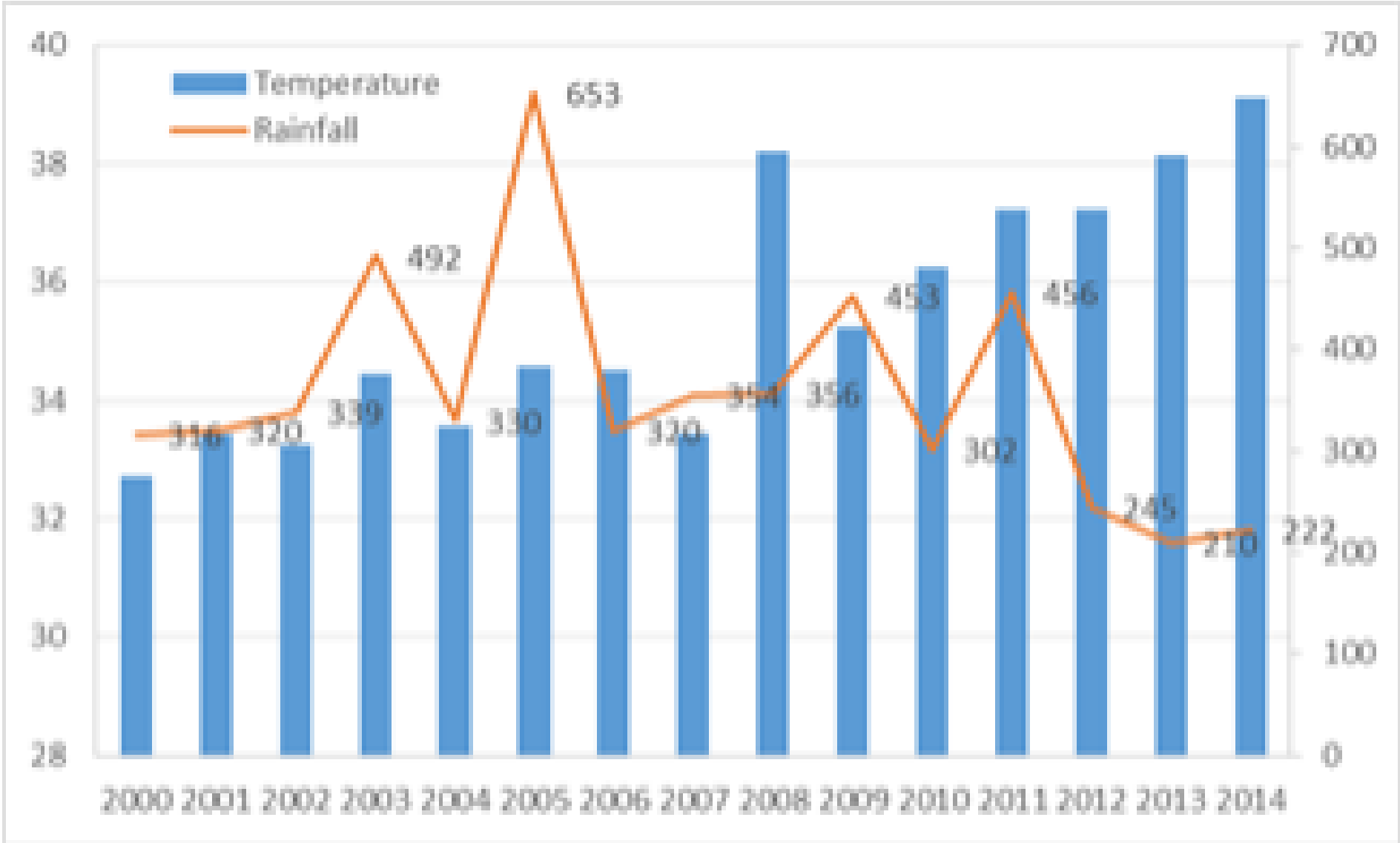


Drought Prone areas (High Barind Tract)

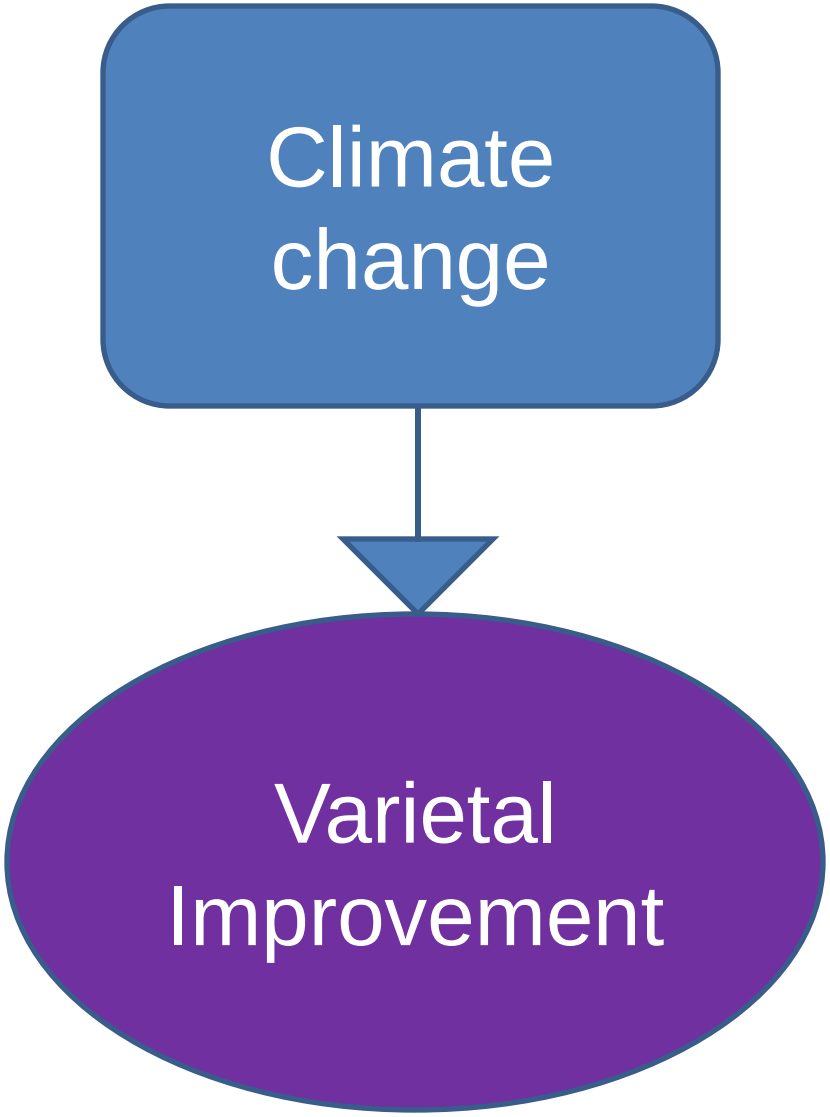
Average Monthly Temperature and Rainfall for Bangladesh from 1901-2015



TEMPERATURE AND RAINFALL IN HIGH BARIND TRACT IN JULY



Constraint and Key Way in increasing domestic production



Varietal Improvement

- **Conventional Program**
  - **Germplasm exploitation**
  - **Selection breeding**
  - **Hybridization**
- **Innovative Program**
  - **Mutation breeding**

Mutation Breeding

- Technical Support from IAEA, Austria
- Financial Support from MOA, Bangladesh
- Mutant variety from NIAB, Pakistan

Current Status of RAS5075 on

Improving Sustainable Cotton Production through Enhanced Resilience to Climate Change

- **Project started: 2016**
- **Project duration : 4 years**

- **Objectives:**
  - **human capacity building**
  - **initiate mutation breeding programme in participating counties**
  - **networking**

Current Status of RAS5075 on Improving Sustainable Cotton Production through Enhanced Resilience to Climate Change

- **Bangladesh,** Cotton Development Board, Ministry of Agriculture
- **China,** Institute of Crop Sciences, Agronomy Department, College of Agriculture and Biotechnology, Zhejiang University
- **Iran,** Nuclear Science and Technology Research Institute
- **Myanmar,** Biotechnology Research Department. Kyaukse. Mandalay Division Ministry of Education Myanmar
- **Pakistan,** Nuclear Institute for Agriculture and Biology
- **Syria,** Atomic Energy Commission of Syria
- **Viet Nam,** Nhaho Research Institute for Cotton and Agricultural Development
- **Open for other ACRDN countries……**

Current Status of RAS 5075 Participants:

- 1st Regional Coordination Meeting

  Goiania, Brazil, 2 – 6 May 2016

- Regional Training Course on Mutation Breeding and other Related Techniques for the Development of Heat Tolerant Cotton Mutants,

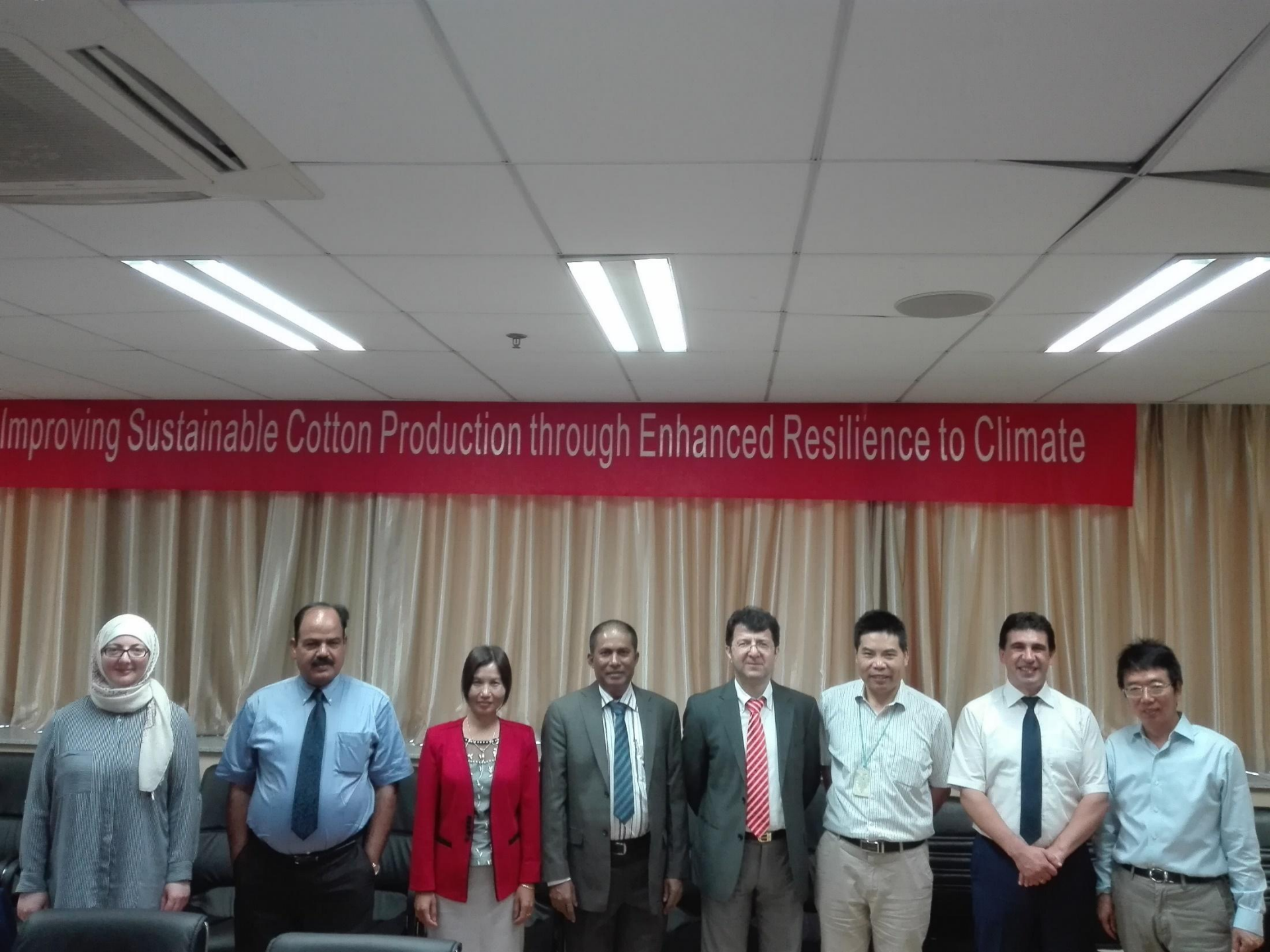
  Faisalabad, Pakistan, 7-18 November 2016

- 2nd Regional Coordination Meeting,

  Hangzhou, China, 27– 30 June 2017


INTERNATIONAL
cotton
INITIATIVE
World Cotton
Research


REGIONAL TRAINING COURSE
On
MUTATION BREEDING AND OTHER RELATED TECHNIQUES FOR
THE DEVELOPMENT OF HEAT TOLERANT COTTON MUTANTS
IAEA TC Project C7-RAS-5075-001
7-18 November, 2016
IAEA
Joint FAO/IAEA Programme
NIAB


Improving Sustainable Cotton Production through Enhanced Resilience to Climate

CDB Activities on Mutation Breeding

- Evaluation of the Cotton Mutant Varieties Obtained from IAEA
- 3 local varieties were radiated at 25, 30 and 35 Gy at Bangladesh Institute of Nuclear Agriculture
- M1 generation was grown at Cotton Research Farm Sreepur, Gazipur during 2016-2017.
- M2 generation is in the field now.
- Organizing national level workshop

Evaluation of the Cotton Mutant Varieties Obtained from IAEA

Objective:

To know the performances of the mutant varieties obtained from IAEA incomprision with CDB developed varieties

Genotypes/Lines

Sl. No.	Genotypes	Source of seeds
1.	NIAB-KIRON	NIAB, IAEA, UN
2.	NIAB-414	NIAB, IAEA, UN
3.	CB-12	CDB, Bangladesh
4.	CB-14	CDB, Bangladesh

Design: RCBD with three replications.

Plot size: 5.4 m × 3.0 m

Plant spacing : 75 cm. × 45 cm .

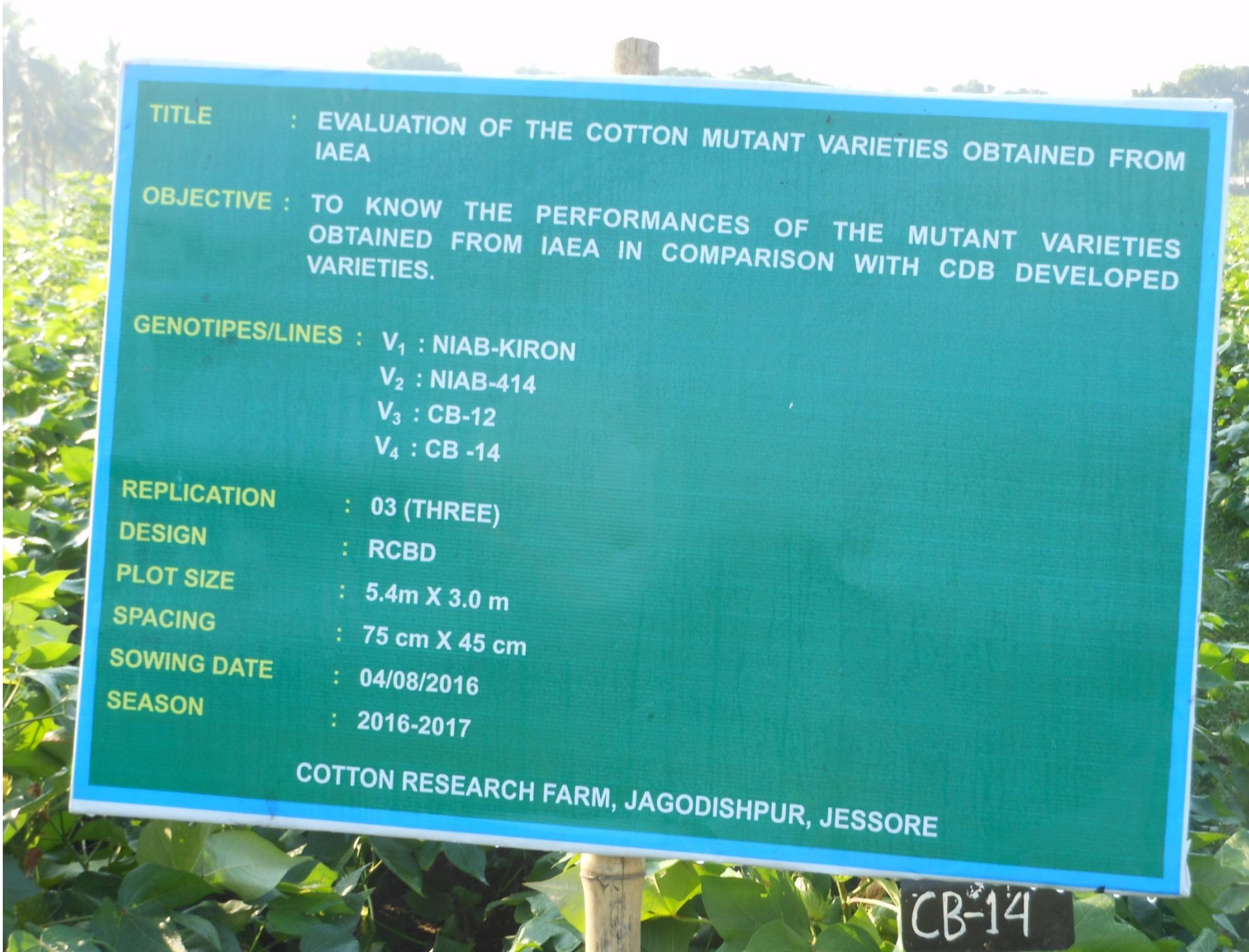
Season: 2016-17

RESULTS

Yield and yield contributing characters of studied varieties

Variety	BN	BW	YLD	FL
NIAB-KIRON	24.67	3.73	2.48	32.47
NIAB-414	18.03	3.90	1.91	33.41
CB-12	16.33	4.67	2.20	31.44
CB-14	19.07	4.43	2.25	30.85
CV%	8.37	2.60	6.06	8.66
LSD (5%)	7.93	0.32	0.74	1.04

BN- Number of bolls/Plant, **BW**- Single Boll weight (g), **YLD**- Yield (t/ha), **FL**- Fiber length (mm)


TITLE : EVALUATION OF THE COTTON MUTANT VARIETIES OBTAINED FROM IAEA
OBJECTIVE : TO KNOW THE PERFORMANCES OF THE MUTANT VARIETIES OBTAINED FROM IAEA IN COMPARISON WITH CDB DEVELOPED VARIETIES.
GENOTIPES/LINES : V_1 : NIAB-KIRON
V_2 : NIAB-414
V_3 : CB-12
V_4 : CB -14
REPLICATION : 03 (THREE)
DESIGN : RCBD
PLOT SIZE : 5.4m X 3.0 m
SPACING : 75 cm X 45 cm
SOWING DATE : 04/08/2016
SEASON : 2016-2017
COTTON RESEARCH FARM, JAGODISHPUR, JESSORE
CB-14


3
NIAB-KIRON


2
NIAB-414


4
CB-12


1
CB-14


9
NIAB-KIRON


10
NIAB-4141


11
CB-12


12
CB-14


তুলা উন্নয়ন বোর্ড
COTTON DEVELOPMENT BOARD
Workshop on
Prospects of Mutation Breeding in Upland Cotton Improvement
Venue : Cotton Development Board Khamarbari, Farmgate Dhaka-1215
Date: 01 June 2017
MoA Special Fund: Cotton Mutation Breeding for Improving Tolerance to Drought
সভাপতি
পেপার উপস্থাপক

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THANK YOU