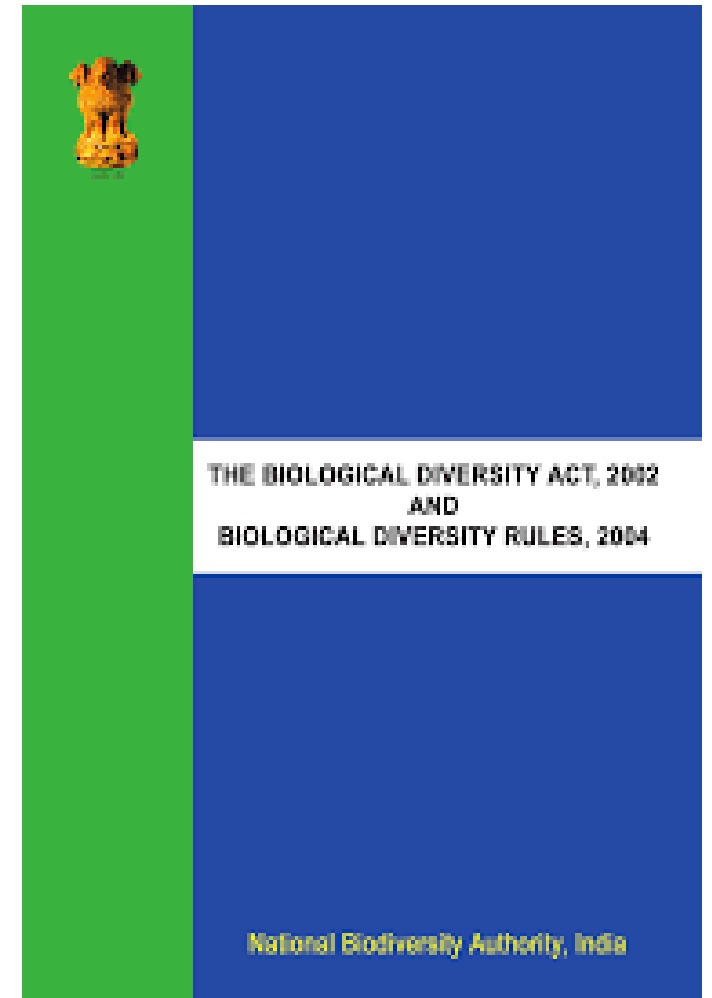


Germplasm distribution to Pvt. Sector – Major challenges

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Challenges so far

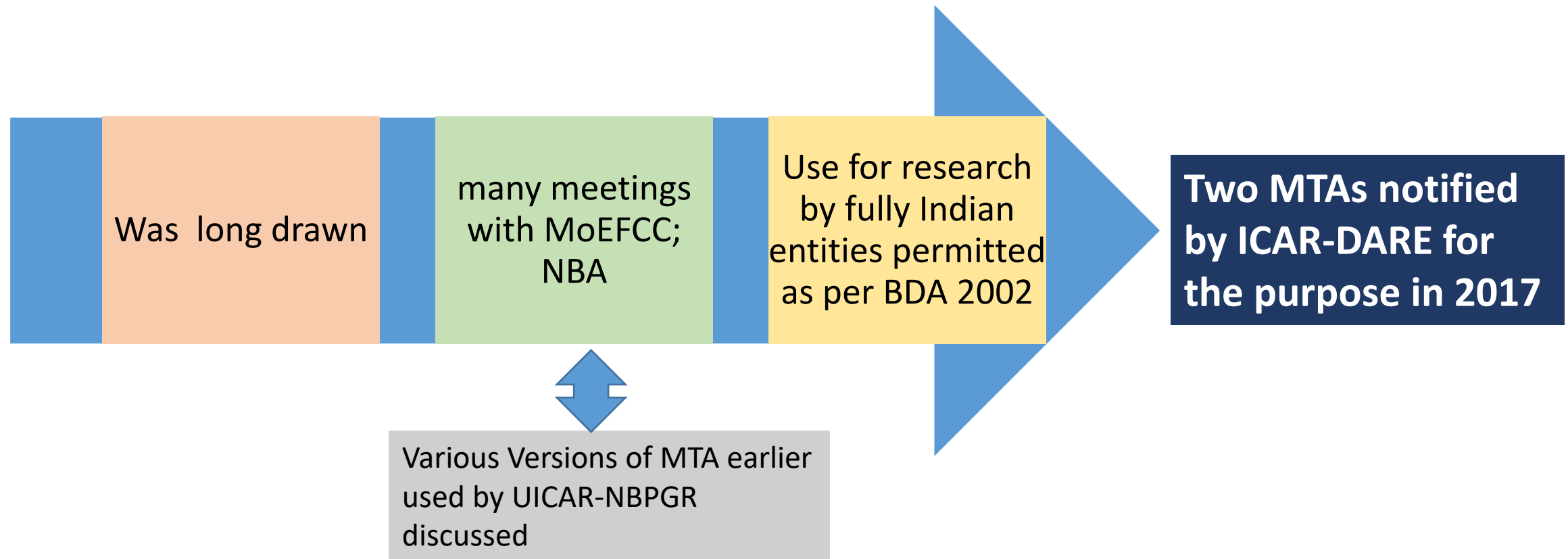
- BDA 2002 came into existence; Rules notified in 2004 (CBD Compliance)
- Germplasm flow from NBPGR to private sector almost ceased after 2004
- Sec 3 (2) regulation required non-Indian entities to take permission from NBA for accessing any germplasm from India
- Definition of Non-Indian entities?



Challenges

- To navigate through the provisions of BDA 2002;and restart the process; earlier done unhindered.
- National Advisory Board on GR Management established in 2010 constituted to advise the Government of GR Management
- Decision taken by the Board Chaired by Dr R S Paroda to re-start the process of sharing plant genetic resources with the private sector breeders and seed companies

The Process



Material Transfer Agreement (MTA)

For use in India with public and private entities and;

Material Transfer Agreement for Research Use within Country for Public and Private Entities

PREAMBLE

Being signatory to the Convention on Biological Diversity, 1993¹ (CBD), the Government of India enacted the Biological Diversity Act, 2002 (BDA) hereinafter referred to as BDA, 2002 and notified the Biological Diversity Rules, 2004. The access to biological resources of India is now regulated by BDA, 2002.

Whereas, the National Bureaux of Genetic Resources under the aegis of Indian Council of Agricultural Research² hereinafter called ICAR have the mandate for collecting, conservation, characterization, evaluation and exchange of genetic resources (GR) in a network mode, the Bureaux encourage the researchers in the country to make use of germplasm for their effective utilization. Reiterating the fact that GR are the essential raw materials for all improvement programmes and, hence, extremely important for food and nutritional security, their exchange and utilization need to be promoted in accordance with national laws and regulations and in compliance with international agreements.

Emphasizing the fact that the purpose of supply of GR under this agreement would be solely for research and no deviation from the proposed objectives is permitted. Access shall be provided for the germplasm available with the National Agricultural Research System (NARS), which is duly designated by concerned institute/ National Active Germplasm Sites (NAGS). Such exchange shall be done under the conditions of the following Material

For bilateral exchange with other countries for exchange of material under Collaborative Research programmes/ Projects.

Material Transfer Agreement for International Bilateral Exchange under Collaborative Research Programmes/Projects

PREAMBLE

Being signatory to the Convention on Biological Diversity, 1993¹ (CBD), the Government of India enacted the Biological Diversity Act, 2002² (BDA) hereinafter referred to as BDA, 2002 and notified the Biological Diversity Rules, 2004. Access to genetic resources from India is now regulated by BDA, 2002. Reiterating the fact that genetic resources (hereinafter referred to as GR) are the essential raw material for all genetic improvement programmes and facilitating their exchange would promote their use in developing better diversity aimed at ensuring food and nutrition security.

The purpose of transfer of GR here is only for research. This MTA shall be executed by Indian Council of Agricultural Research (hereinafter referred to as ICAR)/ Department of Agricultural research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India for transfer of GR covered under International Collaborative Research Programmes/ Projects, as per the provisions of Section 5 of BDA, 2002 and its Guidelines notified by Ministry of Environment, Forest and Climate Change (MoEFCC), S.O.1911 (E)³.

MTA agreed between

Requirements to access Germplasm – from ICAR- NBPGR

Use of Research by fully Indian entities permitted

Requirements from Private entities

- R&D recognition certificate issues by Department of Science and Technology
- Undertaking as to certify that Company is Fully Indian as specified in Section 3 (2)
- MTA signed by researcher/ authorized signatory
- Section 3(2) companies can access with approval of NBA

Since 2017 NBPGR has shared

More than 2,500 accessions of various crops

Mainly vegetables, oilseeds and cereals to 22 private companies

	Name of the Seed Company	Crops supplied
1.	<u>Acsen Hyveg Pvt. Ltd, Gurugram</u>	Cucumber, <u>Chilli</u> , Tomato, Onion, Carrot, Cauliflower
2.	<u>Ambrocia Seed Producer Company Ltd., Bhopal</u>	wheat
3.	<u>Ananya Seeds Private Limited, Ambala</u>	<u>Brinjal</u> , Tomato, Chilli
4.	<u>Arizona Seeds Private Limited, Patiala</u>	Tomato
5.	<u>Arjuna Natural Extracts Ltd, Research & Development Laboratory, Alua-Kerala</u>	Amaranth
6.	<u>Basant Agro Tech (I) Ltd, Kaulkhed, Akola</u>	Soybean
7.	<u>Daftari Agro Bio-tech Pvt. Ltd., Nagpur</u>	<u>Brinjal</u> , Bitter gourd, <u>Brassica carinata</u>
8.	<u>Eagle Seeds & Biotech Ltd, Indore</u>	Wheat
9.	<u>Goldking Biogene Private Limited, Sabarkantha</u>	Okra, <u>mungbean</u>
10.	<u>Mali Agri Tech Private Limited, Nadia</u>	<u>Brinjal</u> Mustard, Tomato
11.	<u>Mansoon Crop Science LLP, Nashik</u>	Chilli Tomato
12.	<u>Noble Seeds Private Limited, Delhi</u>	Okra , Ridge gourd
13.	<u>Nuziveedu Seeds Limited, New Delhi</u>	Mustard , Wheat
14.	<u>Pahuja Seeds Private Limited, Delhi</u>	Cucumber
15.	<u>Rasi Seeds Private Limited, Coimbatore & Salem</u>	Mustard, Rice, Wheat, Cotton
16.	<u>Seed Works International Private Limited, Telangana</u>	Mustard, <u>Chilli</u>
17.	<u>Shreeoswal Seed and Chemical Ltd., Neemuch (Madhya Pradesh)</u>	Mustard, wheat
18.	<u>Somani Kanak Seedz Pvt. Ltd., New Delhi</u>	Bottle gourd, Sponge gourd, <u>Luffa acutangula</u> , <u>Binjal</u>
19.	<u>Super Seeds (P) Ltd., Hisar</u>	Maize
20.	<u>Tierra Agrotech Private Limited, Hyderabad</u>	Mustard, Rapeseed, Cauliflower
21.	<u>UP L Limited, Hyderabad</u>	Cauliflower, <u>Chilli</u> , Tomato , Okra
22.	<u>VNR Seeds Private Ltd., Hyderabad</u>	<u>Brinjal</u> , Tomato, Cucumber , Okra and Bitter gourd

Challenges still remain

- Multiplication of valuable germplasm and sharing with researchers is the mandate of NBPGR
- Maintenance of MTS modules (LTS is not for germplasm supply)
- Although it is the mandate; NBPGR alone is not able to fulfill
- NAGS need to contribute
- Continuous resources required to meet the requirements.

Concerns

- **Its a one way process; NO FEED BACK from private sector;**
- **Only demands make it unsustainable**
- **Constant Dialogues required to understand each other;**

Areas of collaborations be explored

- **Specific Joint Evaluation Programme (very cost intensive and labor intensive).**
- **Evaluation for biotic or abiotic stresses (crop and trait specific in hotspots); Private sector may invest in crops of their interest, potential germplasm identified be jointly registered/used in further breeding with sharing of benefits as per pre signed agreements.**
- **Seed production of ICAR varieties is already being done. Other area of collaboration could be introduction and establishment of new potential crops.**
- **Some quarantine issues for import and export of seed/planting material be worked out together.**
- **NBPGR can also offer to hold Safety duplicates of Seed collections of private sector as a black box arrangement with pre signed agreements,**
- **Private sector may partner with NBPGR for developing the Safety Duplicate Facility for India or help establish community seed banks in semi urban areas.**

Opportunities

- BDA 2002 Amendment bill (Under Revision)

We at NBPGR try to do our best to meet the challenges and evolve.....

THANK YOU