

IMPACT OF INDIAN PVP ACT ON CROP IMPROVEMENT SPACE



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- ❖ India is a signatory to both Convention on Biological Diversity CBD and World Trade Organization (WTO) conventions.
- ❖ TRIPS is an international agreement administered by WTO that **sets down minimum standards and regulations of many forms of IP** as applicable to WTO members
- ❖ **As per GATT agreement ratification is compulsory requirement of WTO membership to obtain easy access to the numerous international markets**
- ❖ **Must enact the strict IP laws mandated by TRIPS**

INTERNATIONAL OBLIGATION UNDER TRIPS ARTICLE 27.3(B)

Members shall provide for protection of plant varieties:

- ❖ **either by patents**
- ❖ **or by an effective *sui generis* system - one developed to suit each country's needs and priorities**
- ❖ **or by any combination thereof**

Countries free to choose their own effective *sui generis* regime for protection of plant variety rights

PPV & FR Act in 2001

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graph TD; A[PPV & FR Act in 2001] --> B[Rules in 2003]; B --> C[Establishment of PPV&FR Authority in 2005]; C --> D[First set of crop notification in 2006]; D --> E[Registration of crop varieties in 2007];
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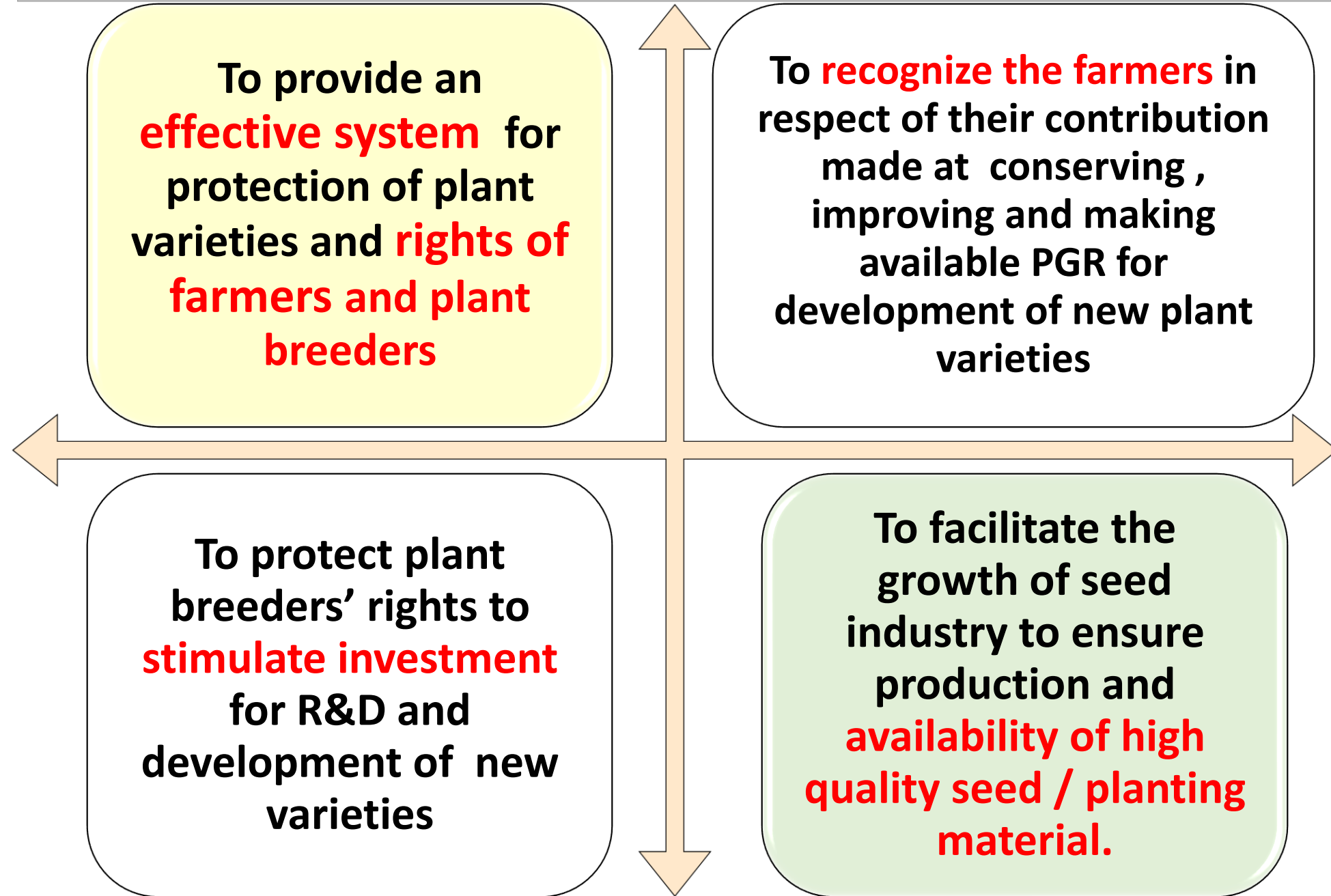
Rules in 2003

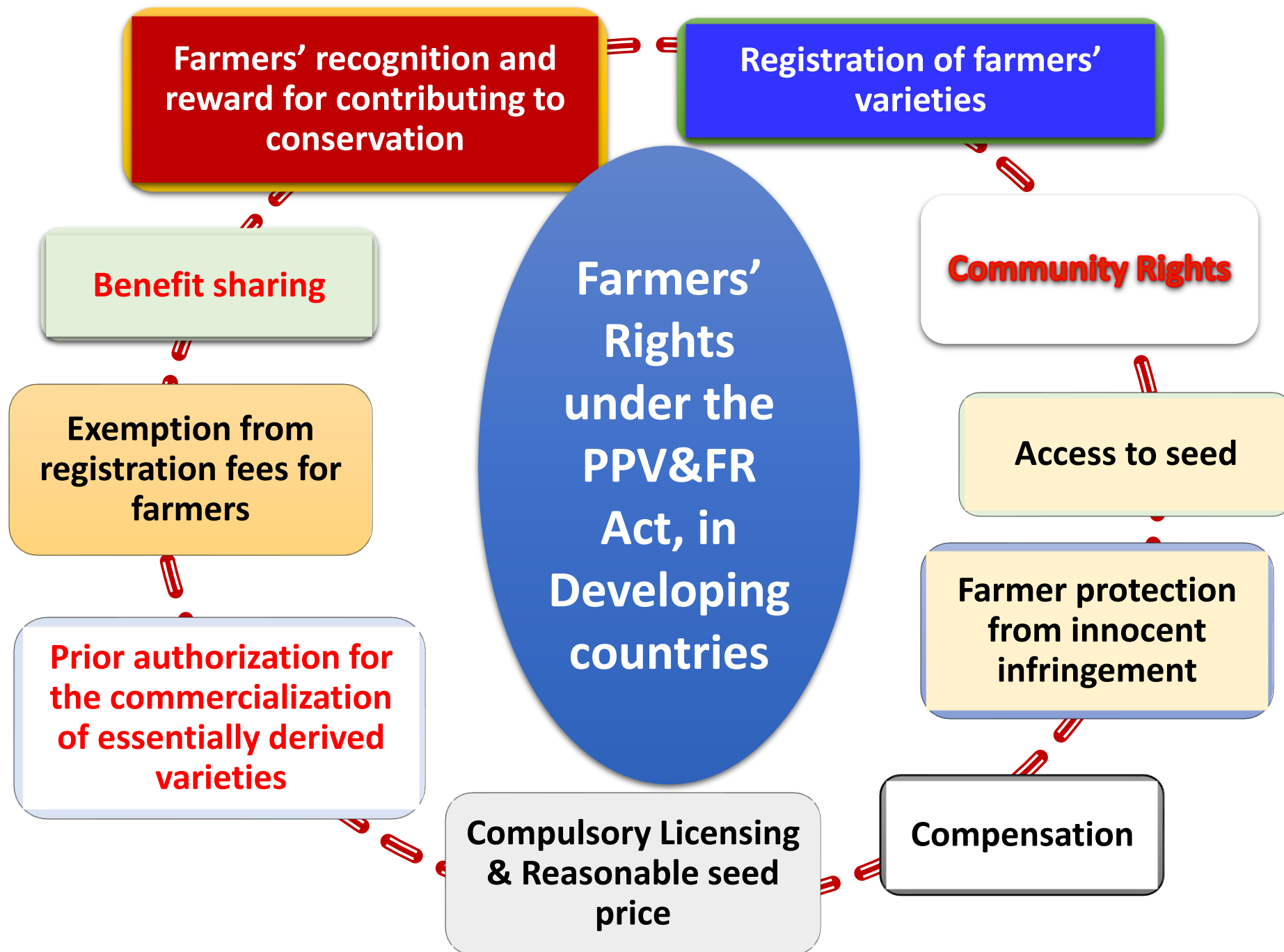
**Establishment of PPV&FR
Authority in 2005**

**First set of crop
notification in 2006**

**Registration of crop
varieties in 2007**

Objectives of PVP :





Take it to the Plant Breeder – The Breeders' Rights through Awareness



Group	No	Crop Species Notified till Date For Registration: 157-Impact
Cereals	21	Bread wheat, Rice, Pearl millet, Sorghum, Maize, Durum wheat, Dicoccum wheat, Other Triticum species, Barley, finger millet, foxtail millet, Common/ Sweet Buckwheat, Tartary/ Bitter Buckwheat, Proso millet, Barnyard millet, Kodo Millet, Little millet, Ramdana (four species), Oat
Legumes	8	Chickpea, Mungbean, Urdbean, Field pea, Rajmash, Lentil, Pigeon pea, Faba bean
Fibre Crops	6	Diploid cotton (two species), Tetraploid cotton (two species), Jute (two species)
Oilseeds	12	Indian mustard, Karan rai, Rapeseed, Gobhi sarson, Groundnut, Soybean, Sunflower, Safflower, Castor, Sesame and Linseed, Jatropha
Sugar Crops	1	Sugarcane
Vegetables	20	Tomato, Brinjal, Okra, Cauliflower, Cabbage, Potato, Onion, Bottle gourd, Bitter gourd, Pumpkin, Cucumber, Paprika, Chili, Bell Pepper, Vegetable Amaranth, Ridge gourd, Spinach beet, Elephant foot yam, Taro, Giant Swamp Taro, Sweet Potato, Cassava
Flowers & Ornaments	19	Rose, Chrysanthemum, Bamboo Leaf Orchid, Spray Orchid, Vanda or Blue Orchid, Orchids (Cattleya, Phalaenopsis), Bougainvillea, Orchid (Oncidium), Canna, Gladiolus, Jasmine, Tuberose, China Aster, Carnation, Orchid (Paphiopedilum), Mogra, Marigold, Jasmine,
Spices	8	Black pepper, Small cardamom, Coriander, Fenugreek, Turmeric, Garlic, Ginger, Nutmeg
Fruits	28	Mango, Almond, Walnut, Cherry, Apricot, Apple, Pear, Pomegranate, Grape, Ber, Acid lime, Mandarin, Sweet orange, Banana, Muskmelon, Watermelon, Papaya, Peach, Japanese Plum, Strawberry, Beal, Jamun, Sitaphal, Gvava, Litchi, Mulberry, Datepalm, Custerd Apple
Medicinal and Aromatic plants	9	Isabgol, Menthol mint, Damask Rose, Periwinkle, Brahmi, Noni, Kalmegh, Indian gooseberry, Betelvine,
Plantation crop	24	Coconut, Eucalyptus (two species), Casuarinas (two species), Cashewnut, Chironji, Arecanut, Tea (3 spp.), Deodar, Chir Pine, Tamarind, Poplar, Karni, Neem, Villow (7spp)

Applications being filed for diverse crops-IMPACT



Impact of PVP on public Sector

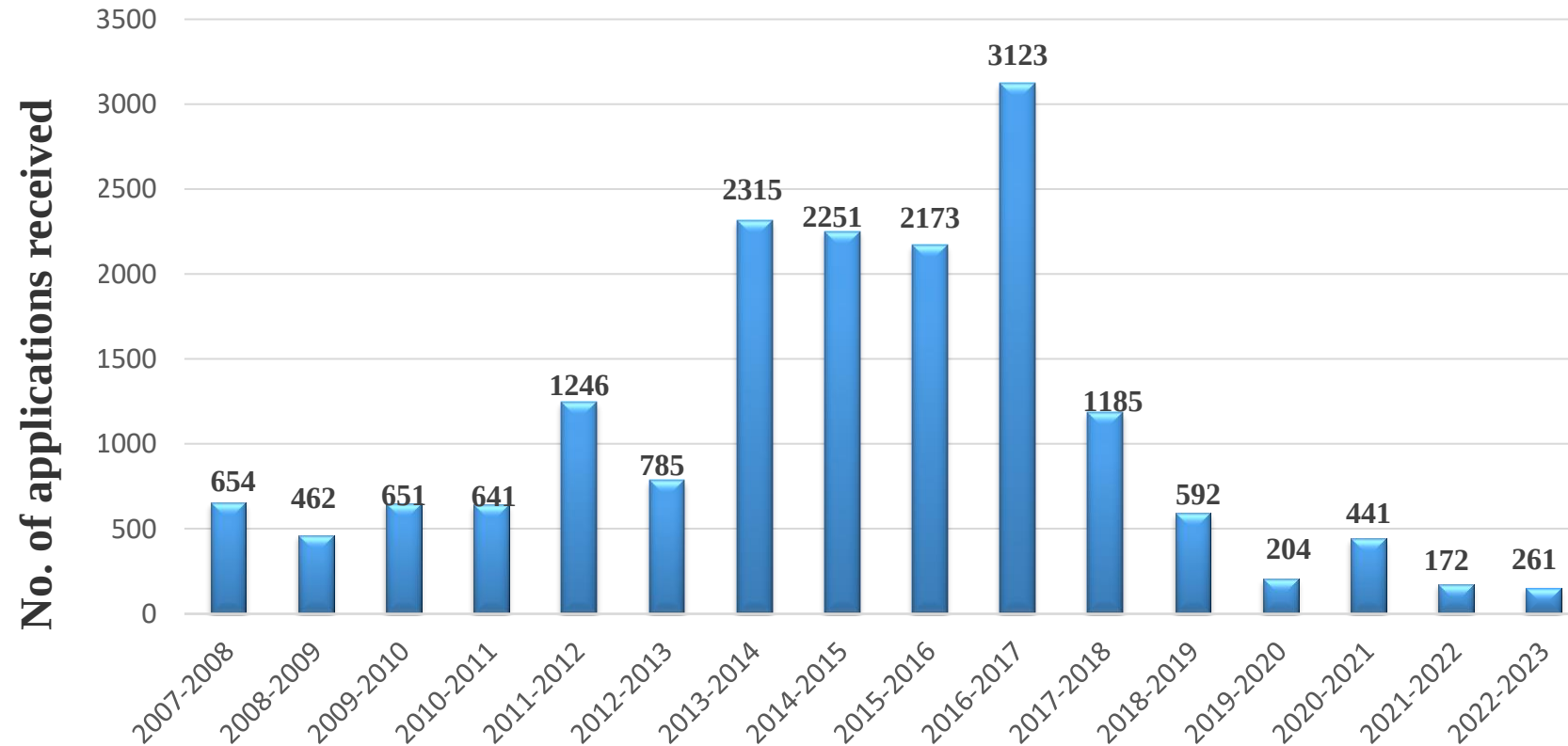
- ❖ **Licensing** of IPR products to private sector companies and seed corporations and other organizations for commercialization
- ❖ **Revenue generating** through royalty and Benefit Sharing
- ❖ **Moving towards self sustenance** for technology development and high-end research
- ❖ **Conserving PGR for sustainable use**
- ❖ **Strengthening public research for basic and strategic research**

Impact of PVP on Private Sector

- **Enhanced the participation of the private sector in varietal development research –**
- **PVP Provides the incentive of exclusive control for a specific period and thereby enabling to recover research investment**
- **Providing plant varieties IPR has led to a clear-cut demarcation:**
 - **Upstream research sector**
 - **Downstream seed market**
 - **Technology commercialization (IPR licensing) market in the seed sector**

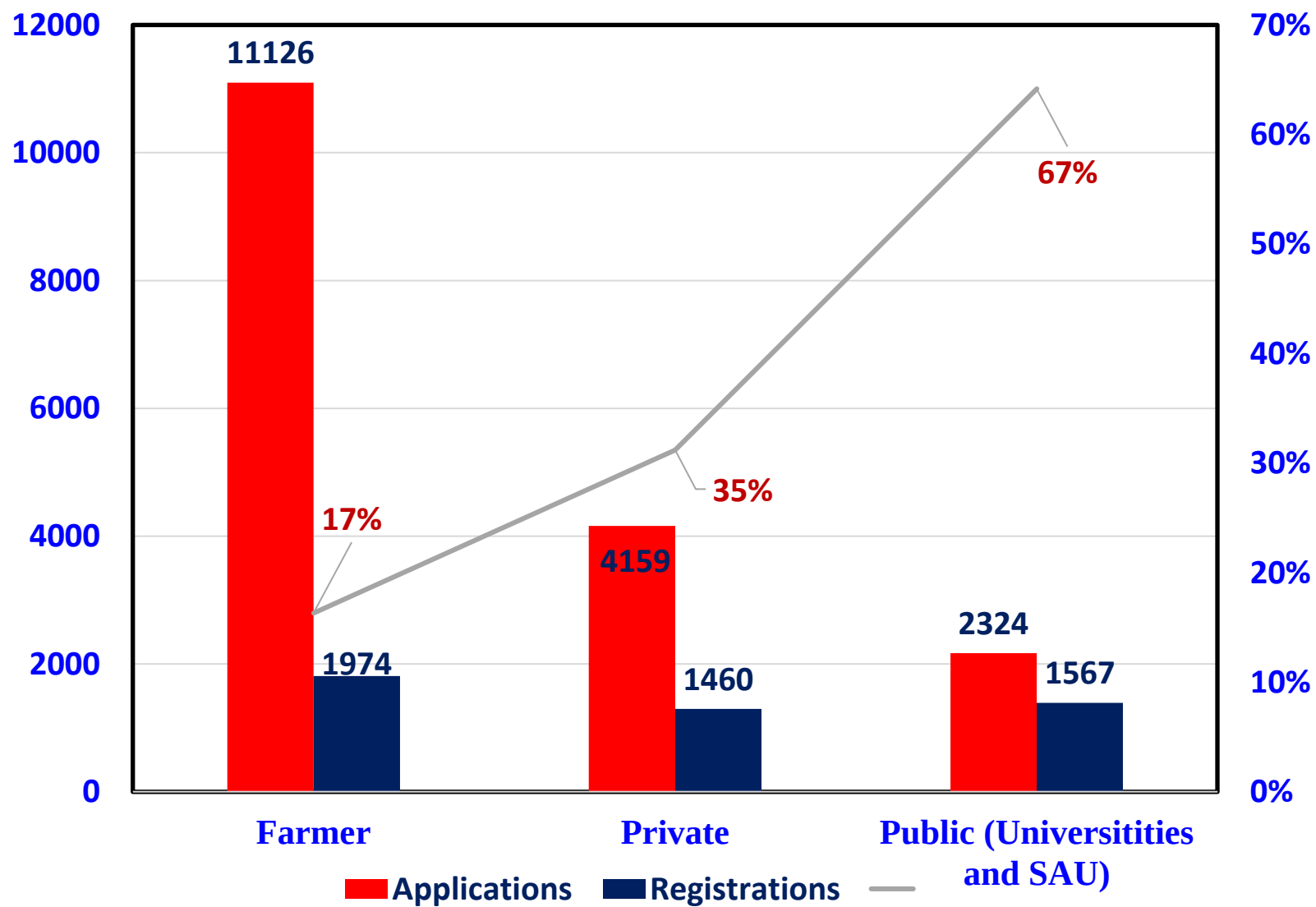
Overall progress of Registry since commencement of Plant Breeders' rights on PVP in India

Number of applications (17609) received Year wise:

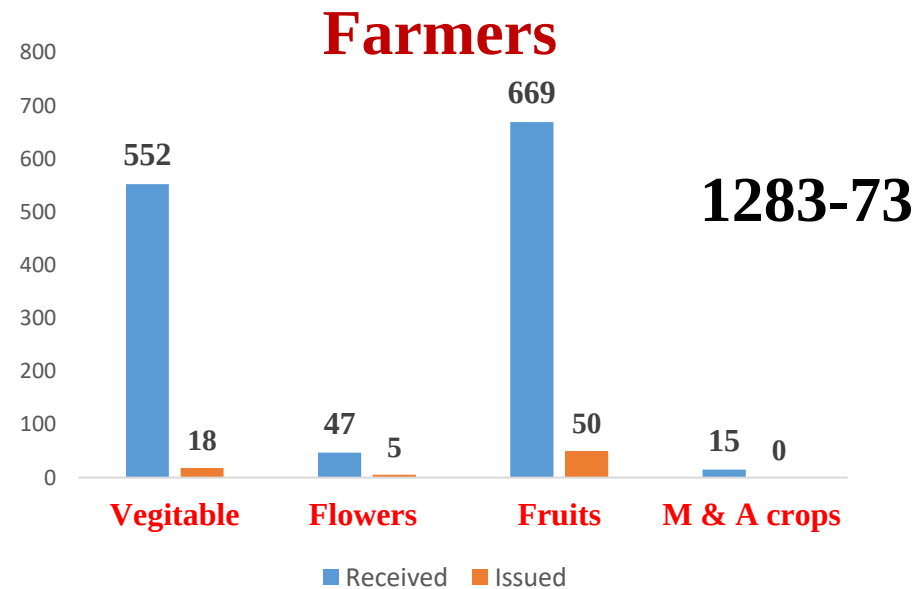
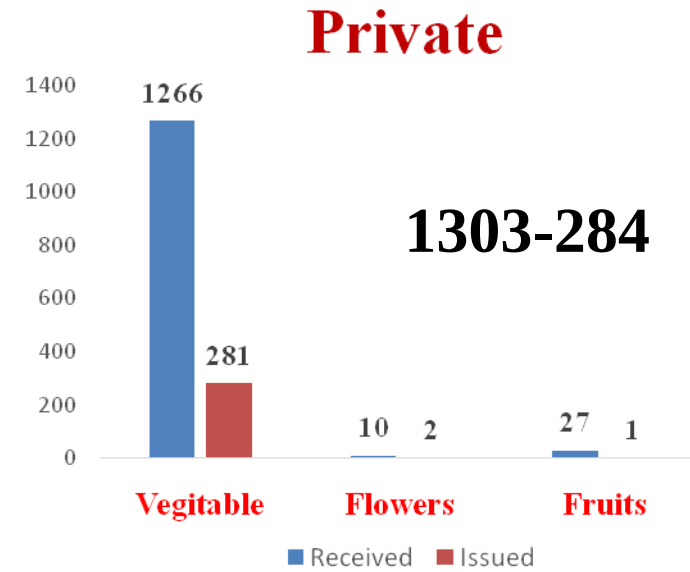
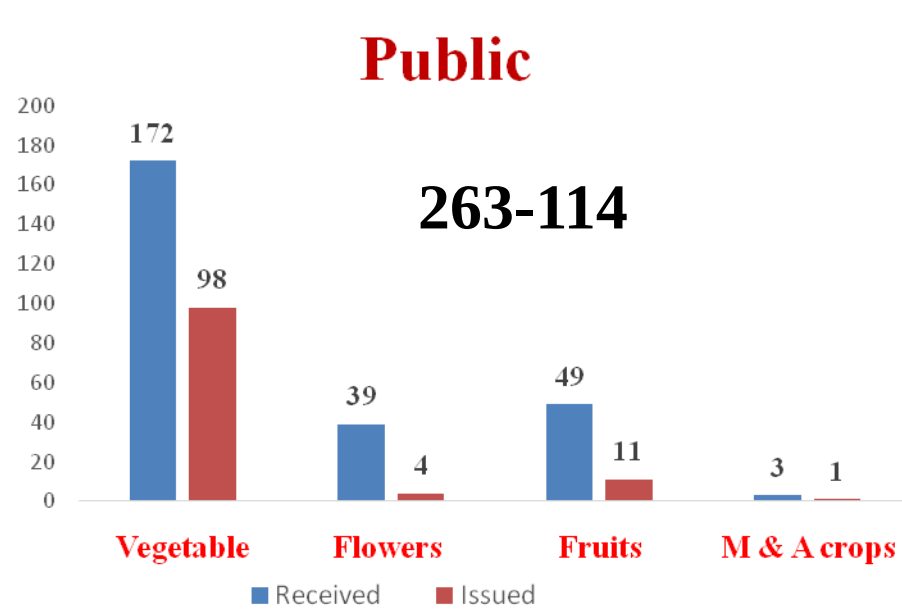


Applications received year-wise (2007-08 to 2022-23)

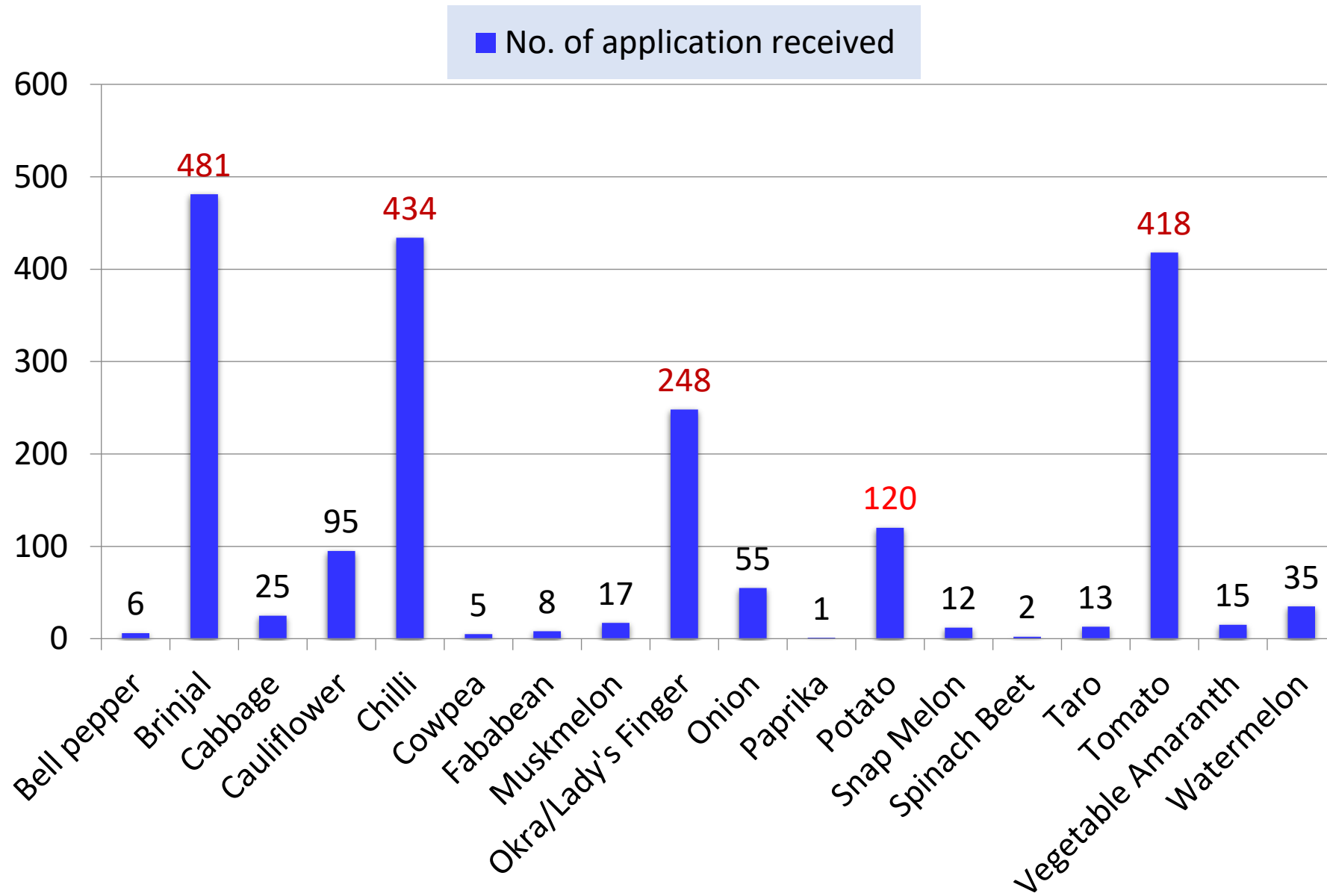
DETAILS OF APPLICATIONS FILED AND IPR GRANTED TO FARMERS, PRIVATE SECTOR AND PUBLIC INSTITUTIONS



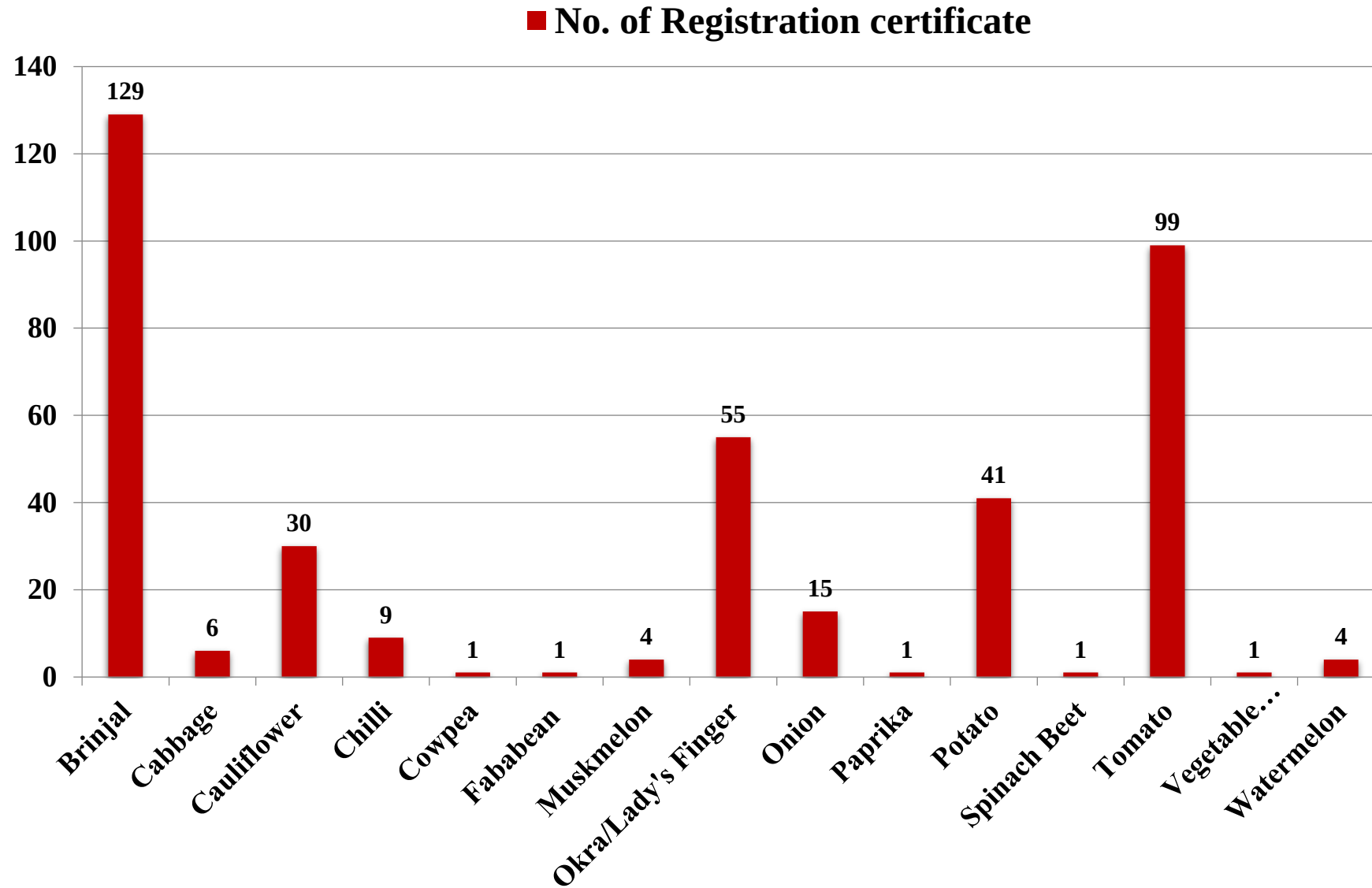
Applications received (2849) and IPR granted (471) category wise in Horticulture



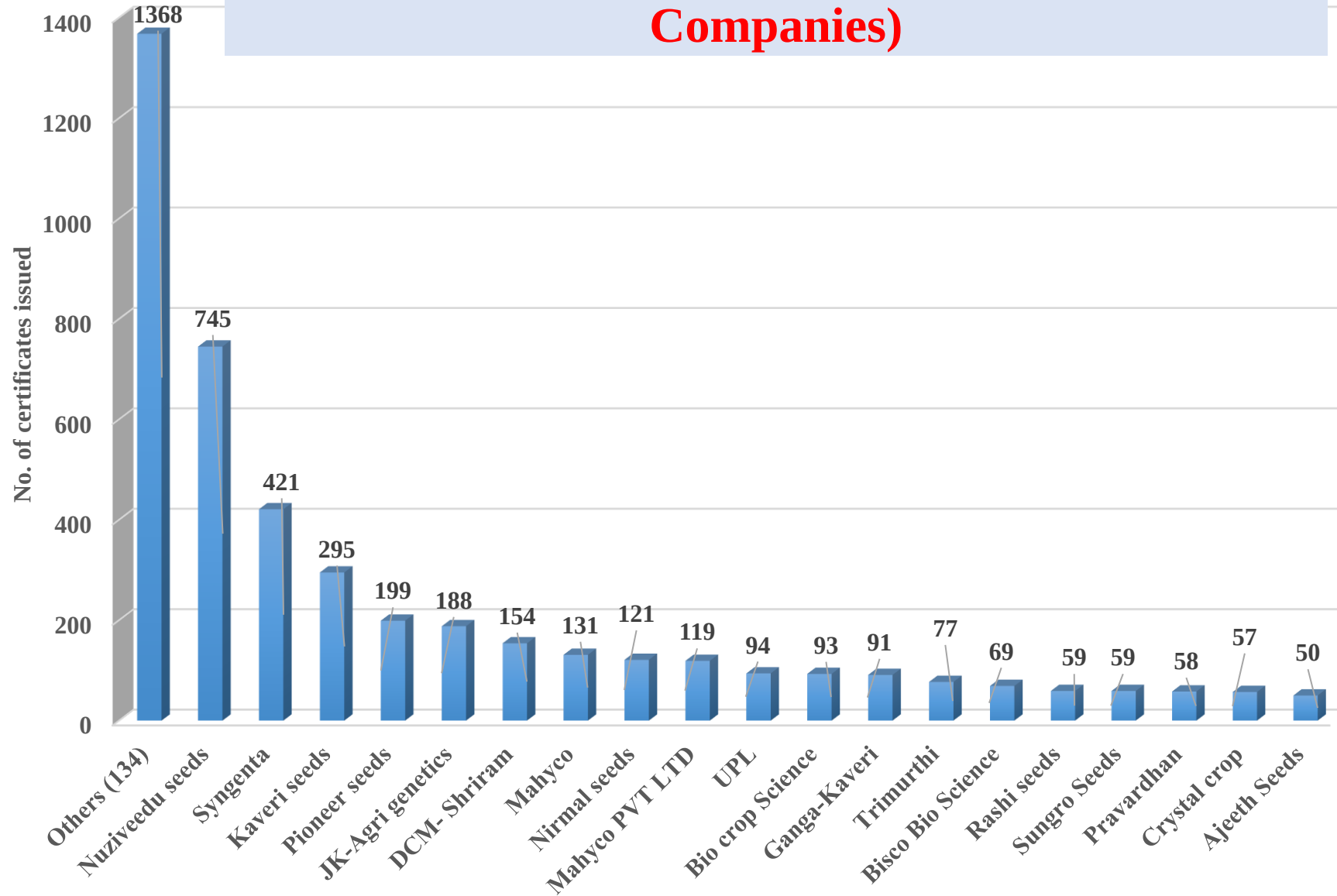
Application received - crop wise in vegetable (1990)



IPR granted in Vegetable crops (397)

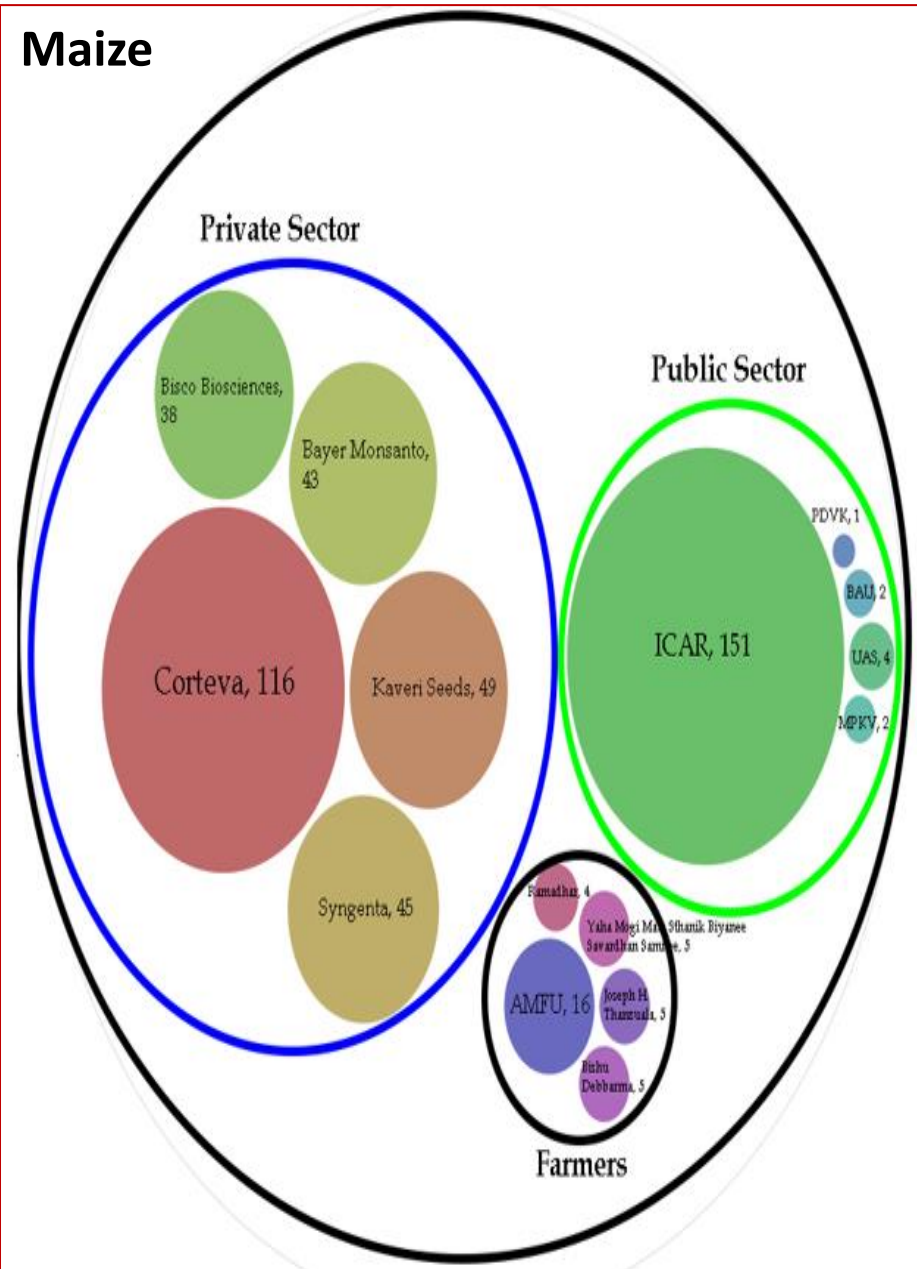


Progress of MNCs and domestic companies in filing PVP applications in horticulture (153 Seed Companies)

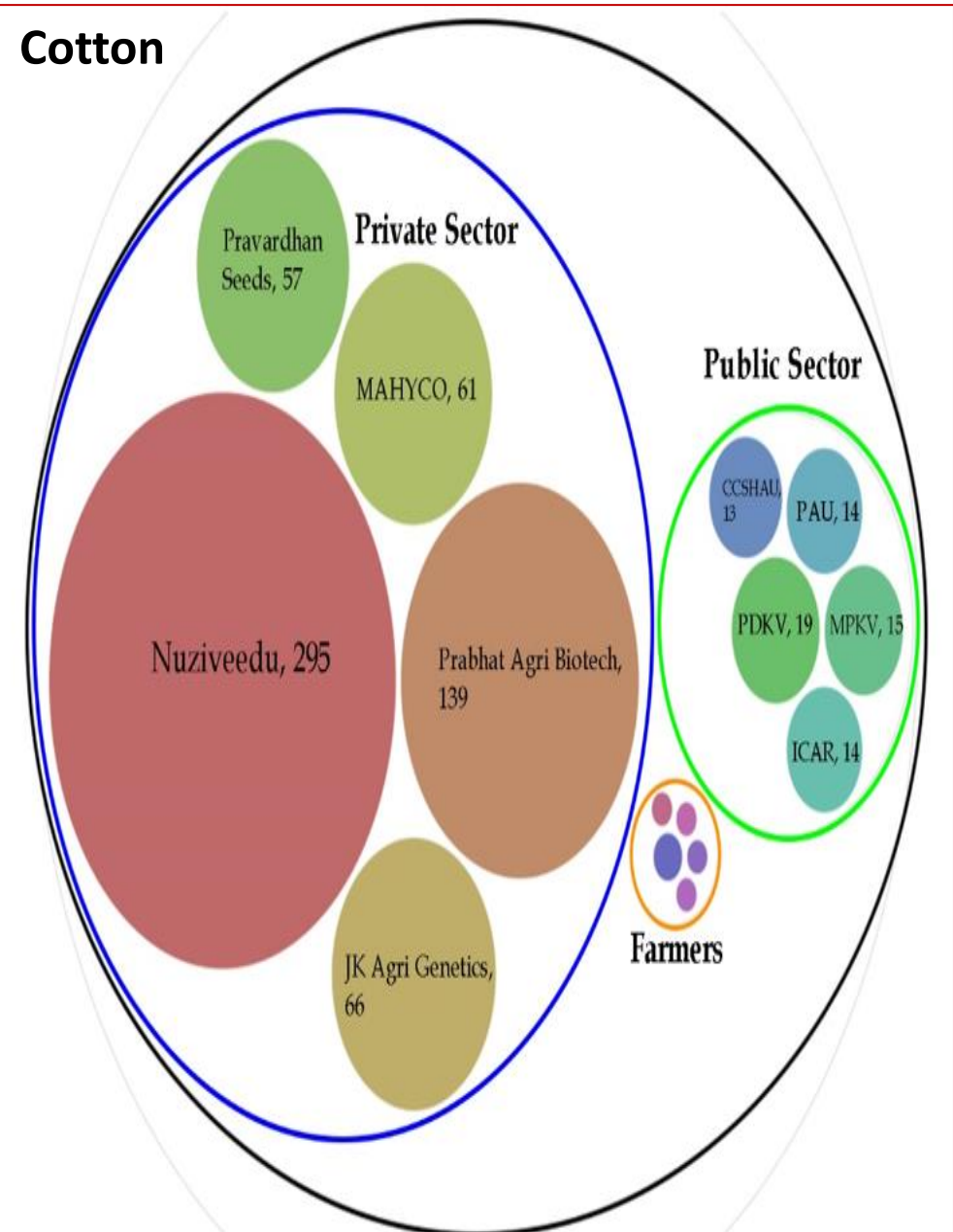


Maize and cotton dominated by private sector

Maize

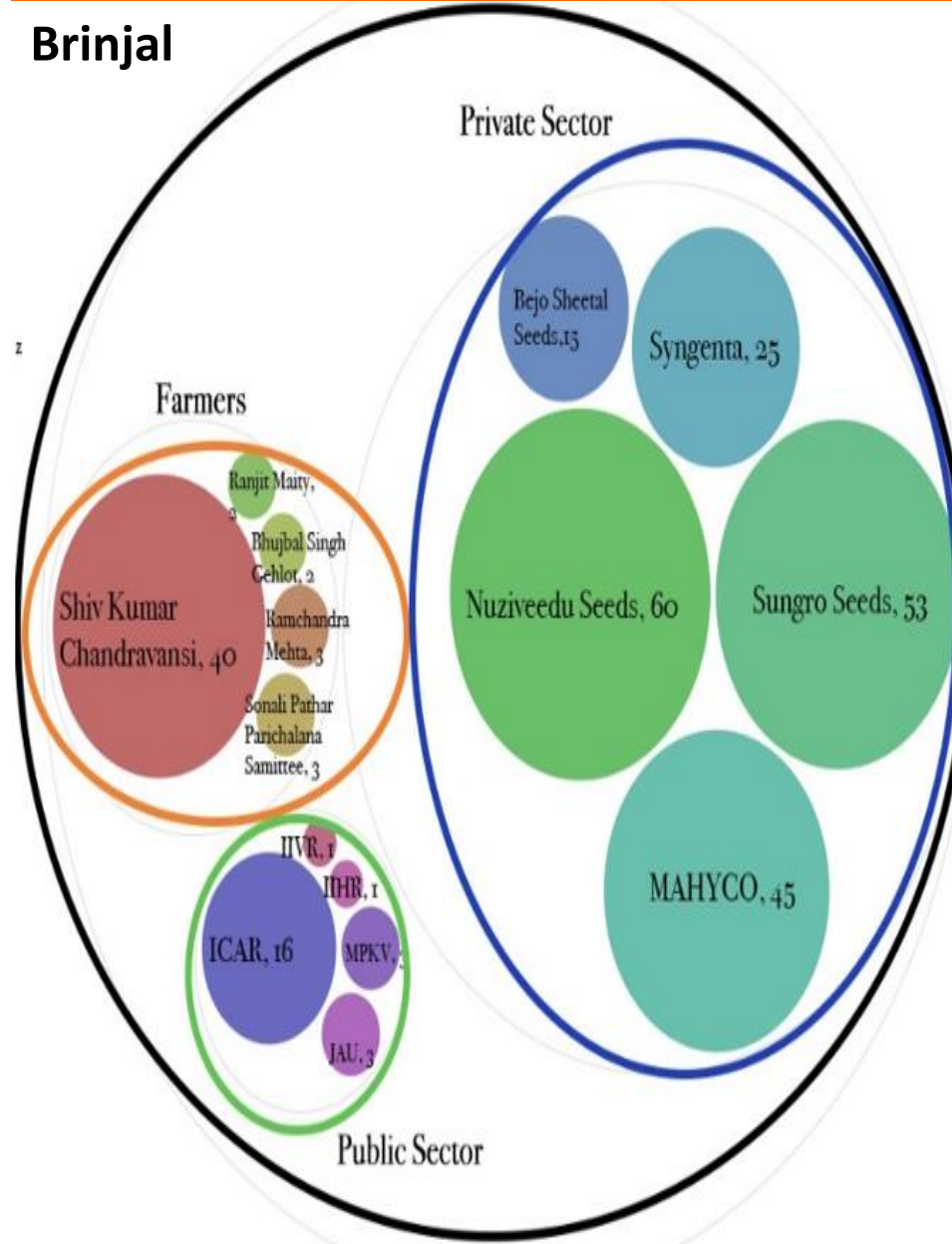


Cotton

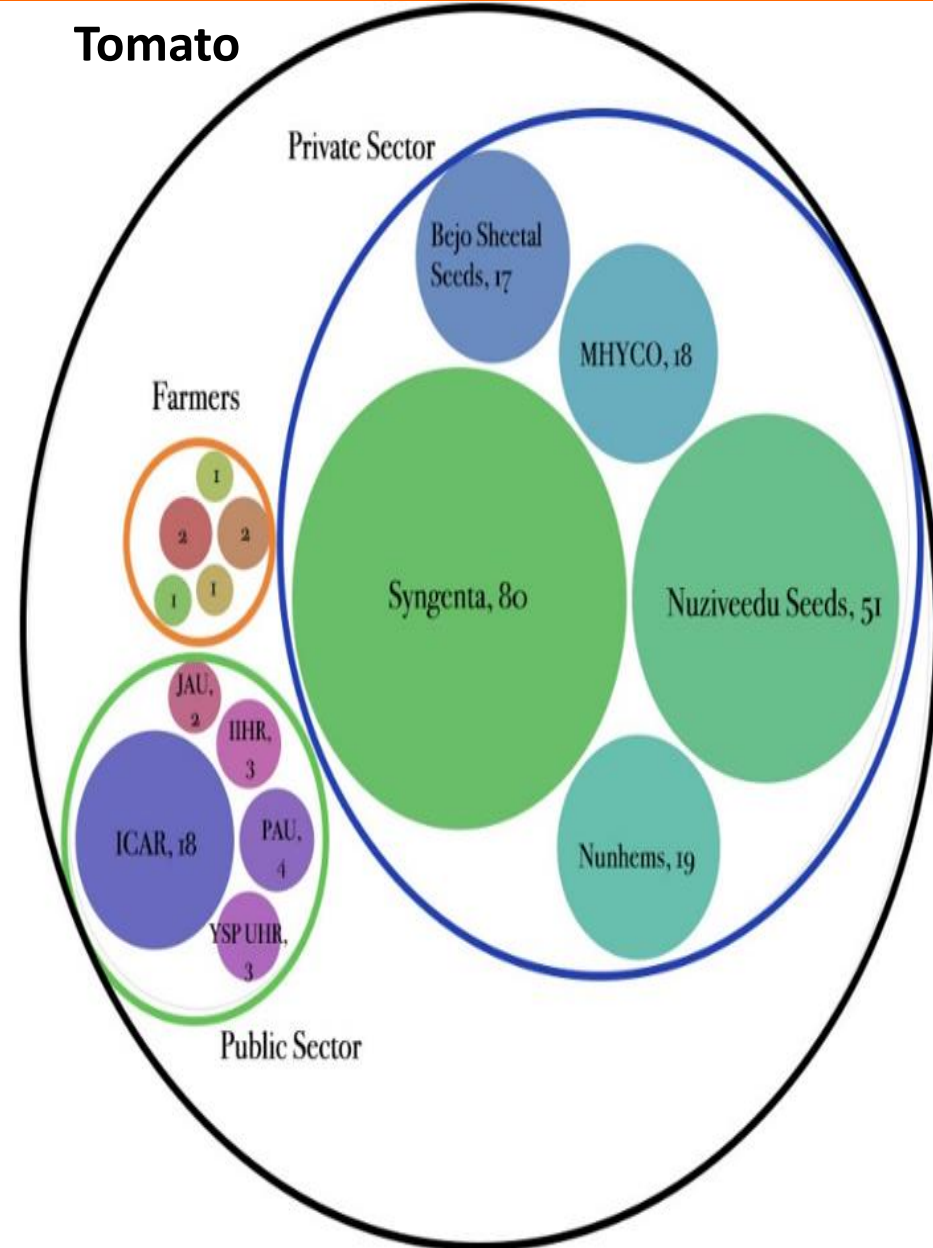


Private sectors filing more applications for vegetables

Brinjal



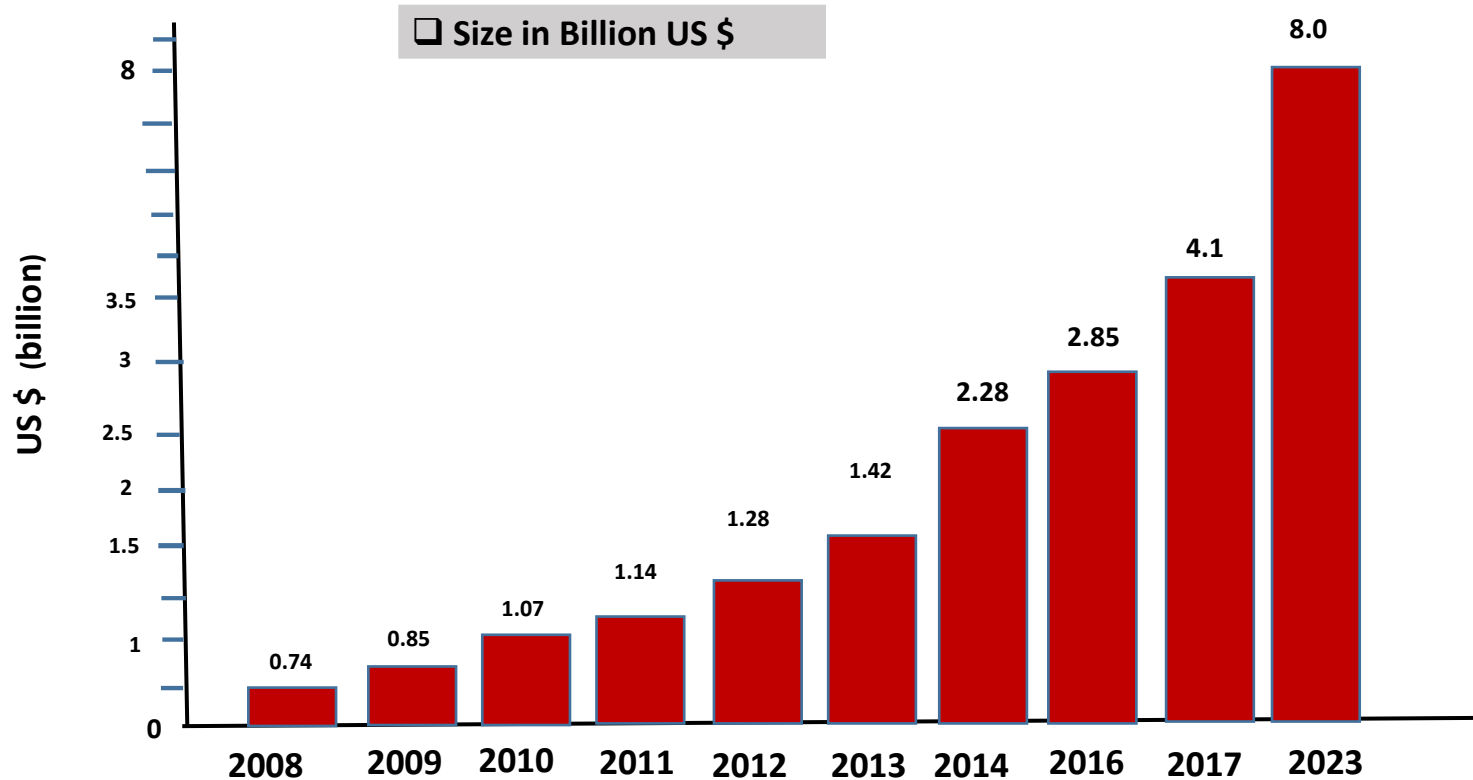
Tomato



Revenue generation strategy- Public Sector

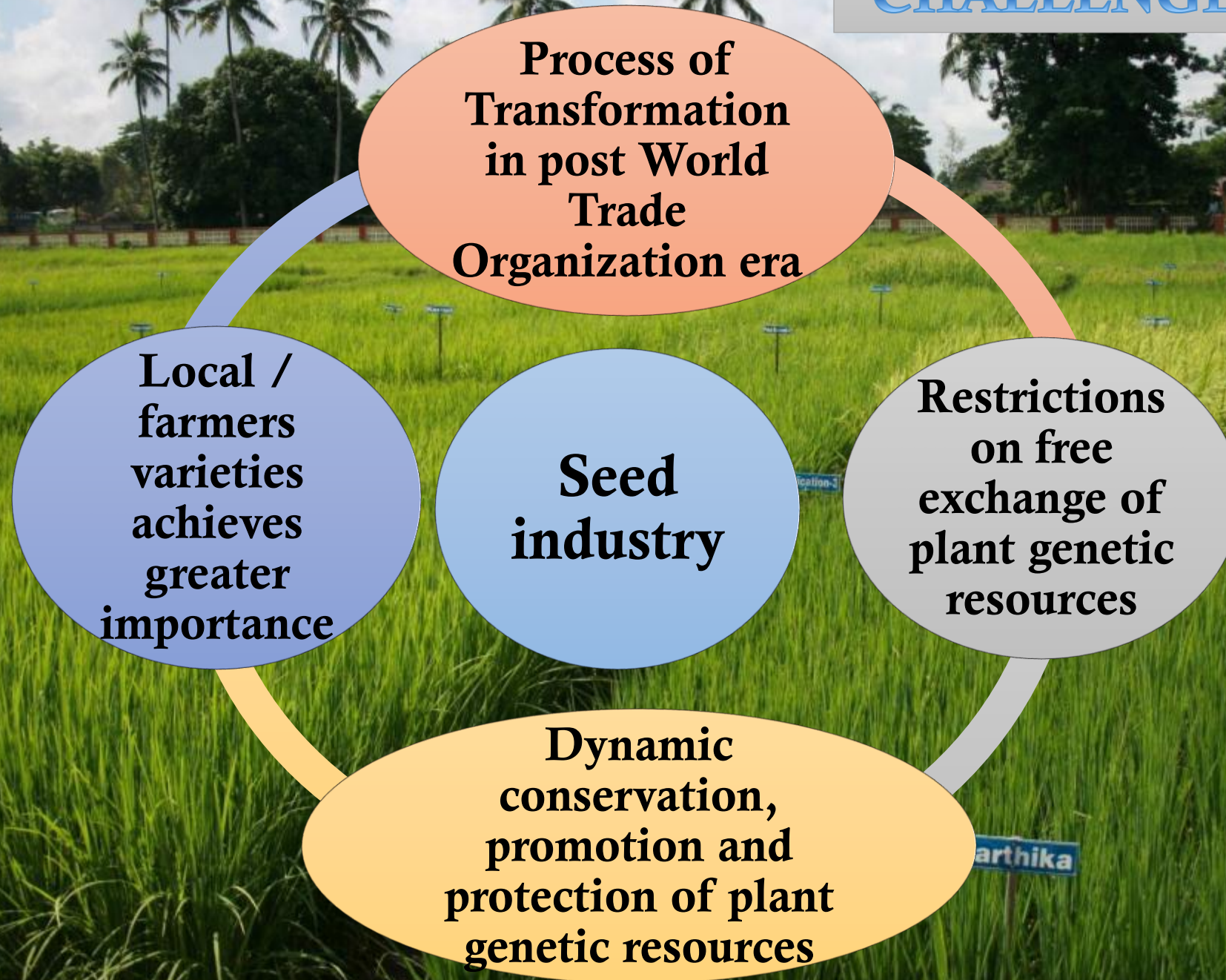
- **PVPs offer possibilities for public institutes to generate revenue**
- **Institutes may collect revenue by selling source seed (breeder's or foundation seed) of public varieties to seed producers**
- **Following the guidelines set by ICAR few Public institutes/universities have also entered into **nonexclusive agreements** that give seed companies access to breeding lines**
- **An additional possibility to generate revenue is through interaction with MNCs (**AFTER GETTING APPROVAL FROM NBA**) where germplasm may be shared in return for a share of royalties on any varieties eventually marketed (nationally or internationally)**

SEED MARKET GROWTH PATTERN OF INDIA



Average growth rate is 14-17% from 2010 to 2017 Projected Growth rate 14% during the 2018-2023
(IMARC market search company)

CHALLENGES





THANK YOU FOR YOUR KIND ATTENTION