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1. Plant Variety Protection Under The UPOV Convention
2. Introduction To National Performance Trials
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4. Plant Variety Protection

*Plant Variety Protection under the  
UPOV Convention*

**INTRODUCTION TO UPOV**

SEMI-CON

# PREVIEW

1. **About UPOV and Plant Variety Protection**
2. **Key Provisions of the 1991 Act of the UPOV Convention**
3. **Further information about UPOV**

# PREVIEW

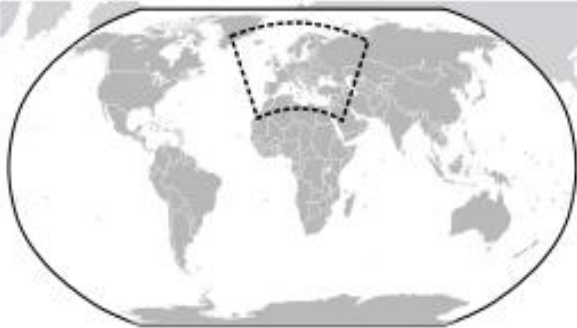
- 1. About UPOV and Plant Variety Protection**
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# UPOV: INDEPENDENT INTERGOVERNMENTAL ORGANIZATION

**The International Convention for the Protection of New Varieties of Plants**  
established in 1961

**The International Union for the Protection of New Varieties of Plants**

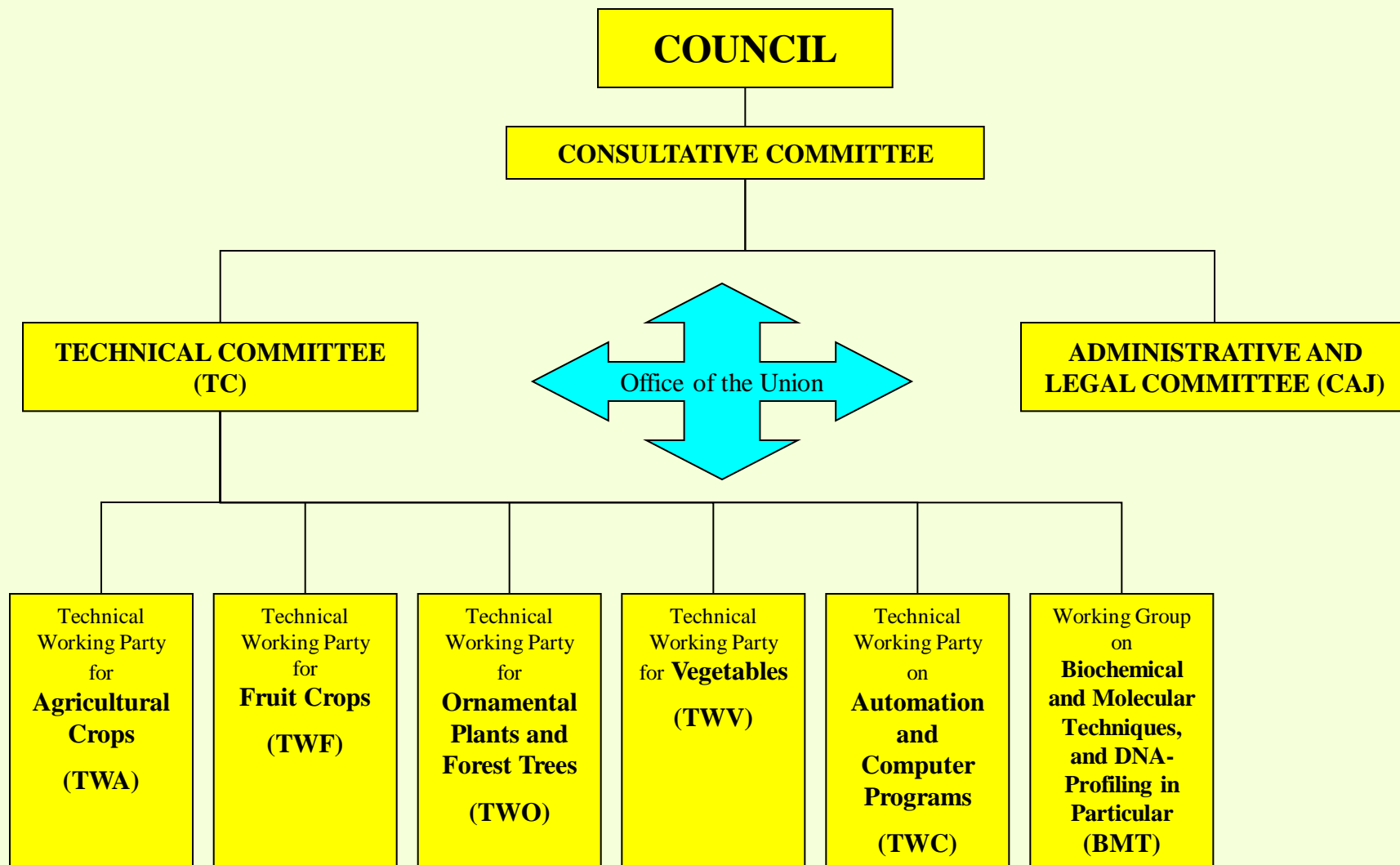
**Union internationale pour la protection des obtentions végétales**



10



- **Members of the Union**
  - States
  - Intergovernmental Organization(s)
- **Organs established by the Convention**
  - Council
  - Other Bodies
  - Office of the Union

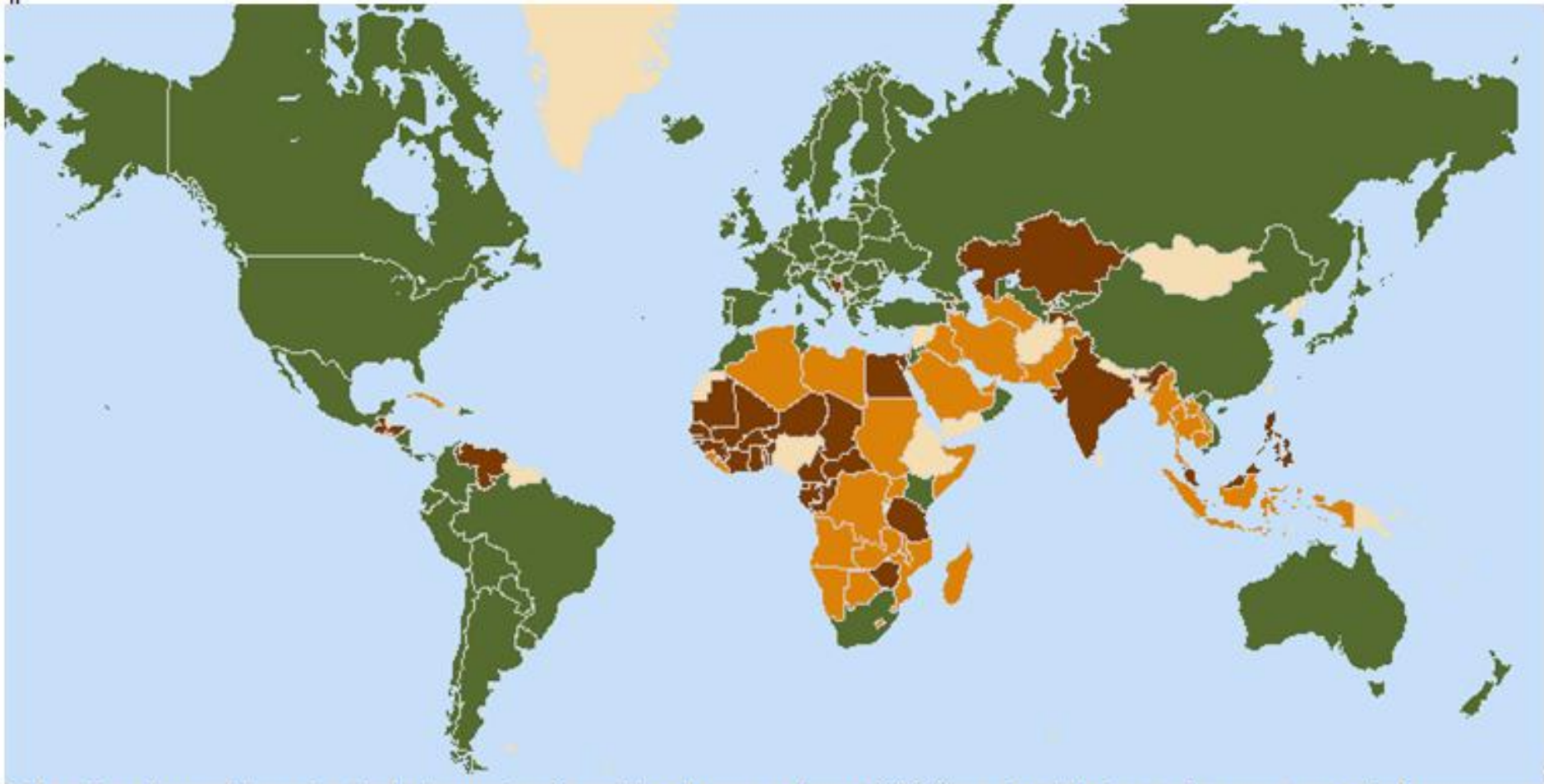




# PLANT VARIETY PROTECTION SITUATION

- **71 members of the Union (70 States and the European Union)**
- **16 States and 1 intergovernmental organization (OAPI: 16 States) have initiated the procedure for becoming members of the Union**
- **24 States and 2 intergovernmental organizations have contacted the Office of the Union for assistance in the development of legislation on plant variety protection**

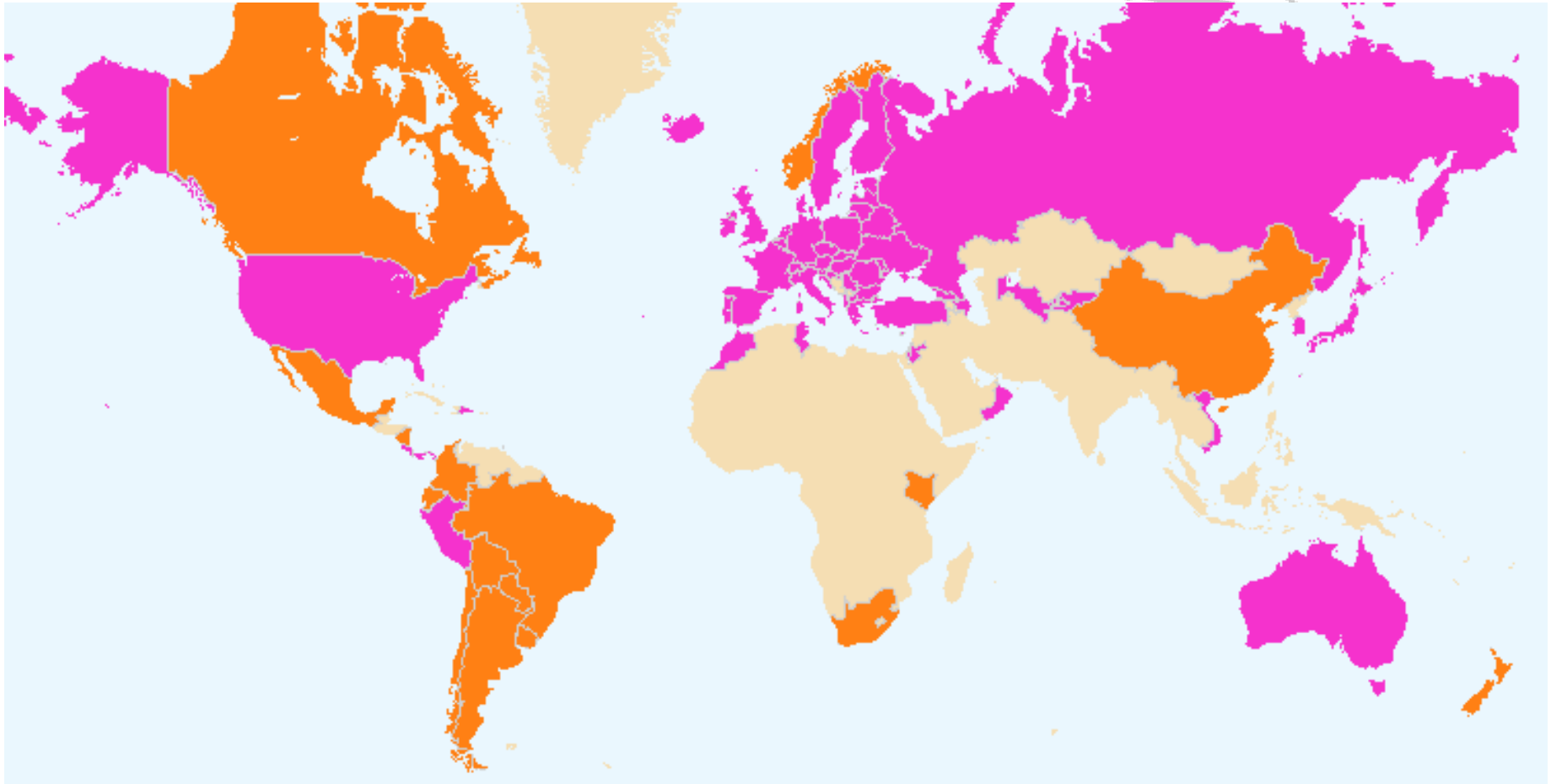
**71 members of UPOV (green)**  
**16 initiating States + 1 organization (brown)**  
**24 States + 2 organizations in Contact with the UPOV Office (orange)**



The boundaries shown on this map do not imply the expression of any opinion whatsoever on the part of UPOV concerning the legal status of any country or territory.

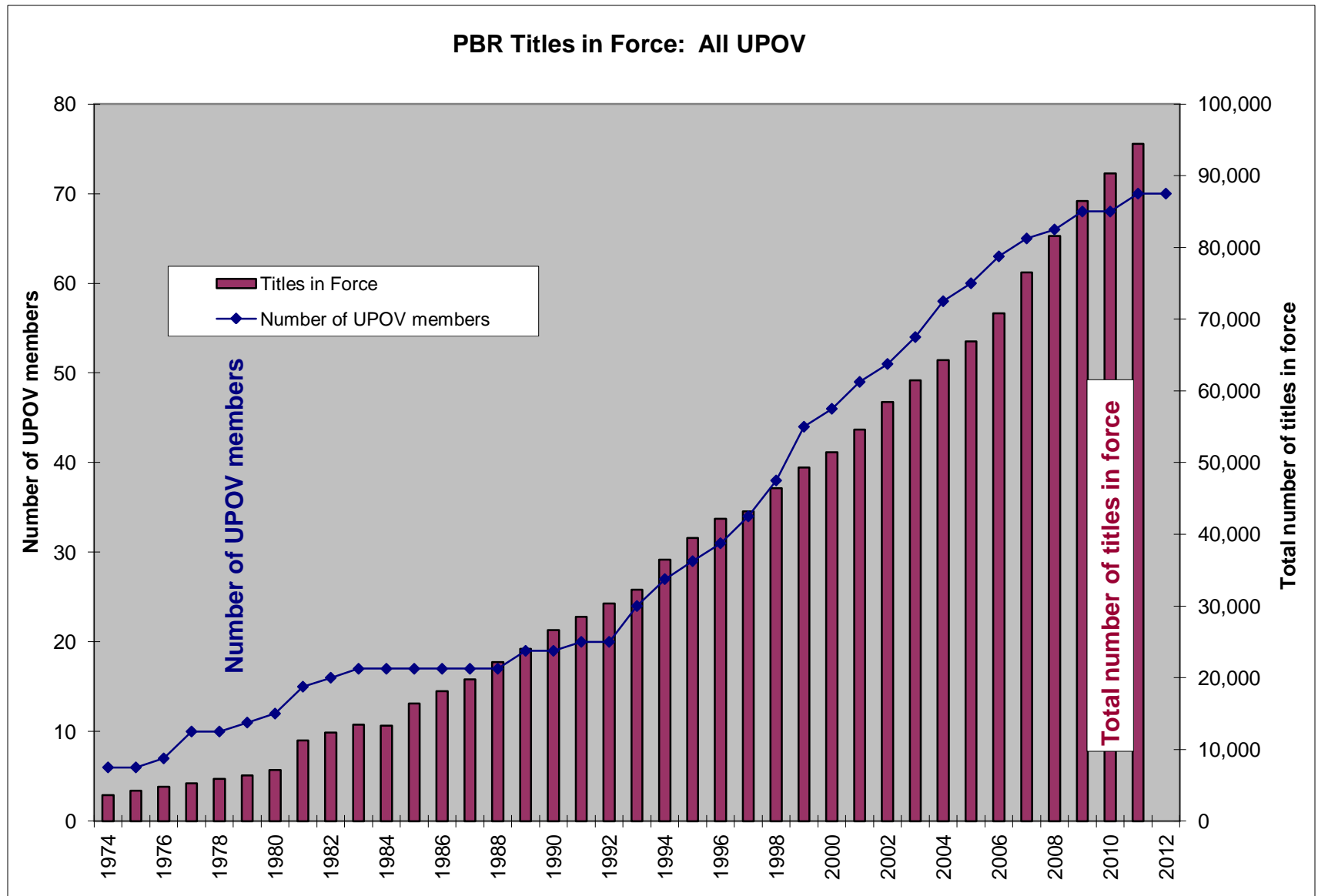
# UPOV Membership Territories covered

**1991 Act:** 51 members – **Other Acts:** 20 members

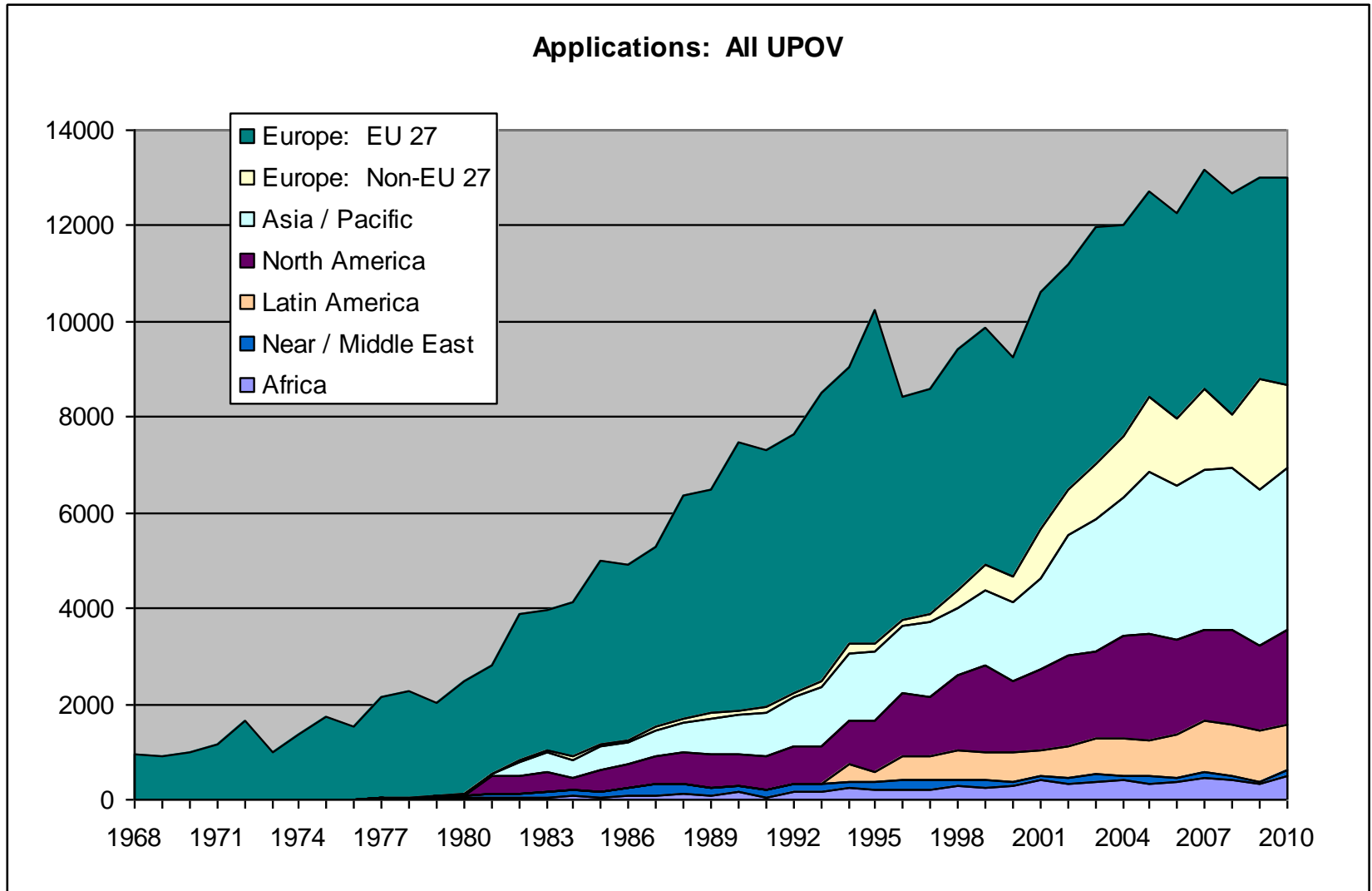


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# Development of Plant Variety Protection



# Development of Plant Variety Protection

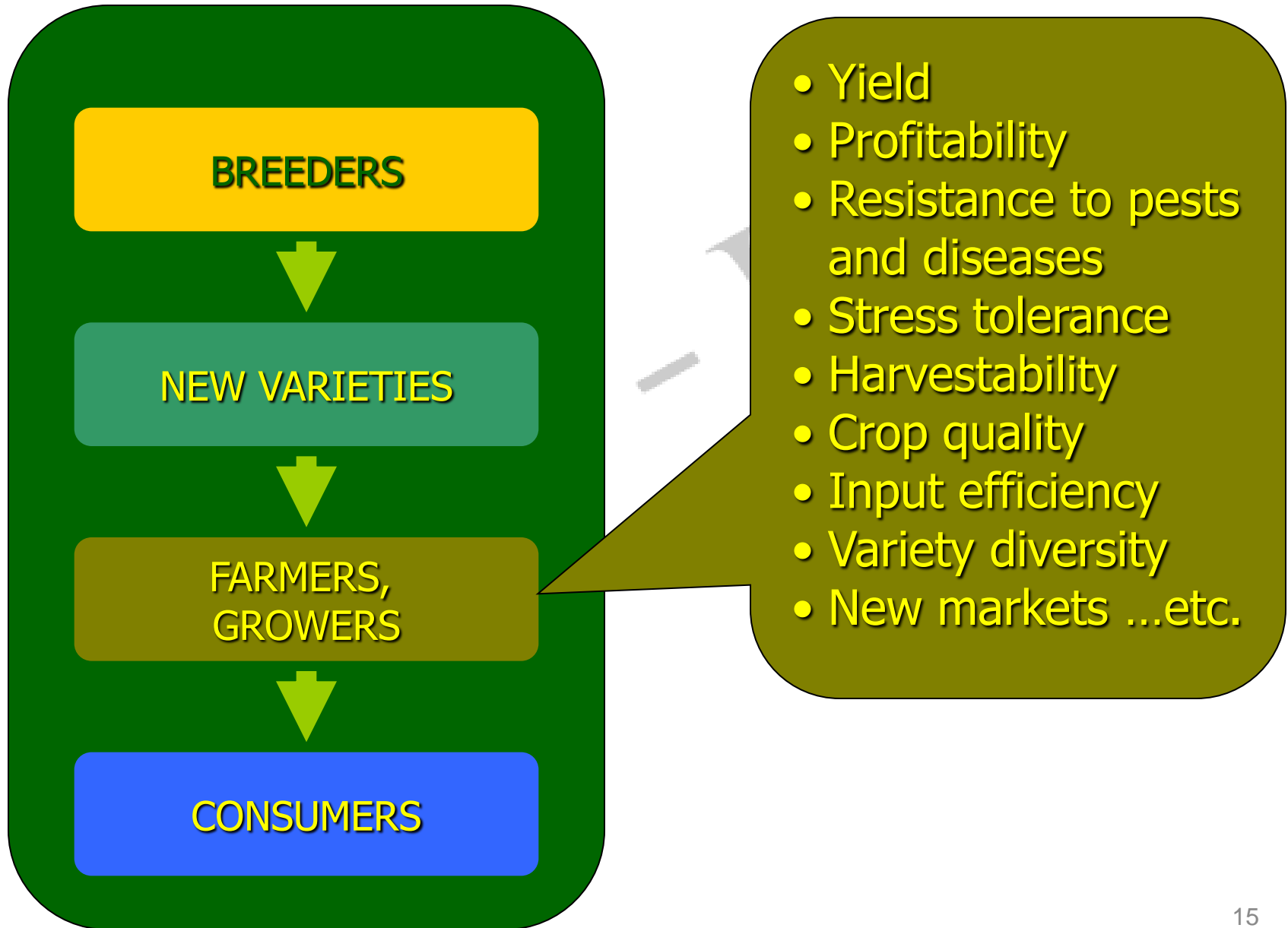




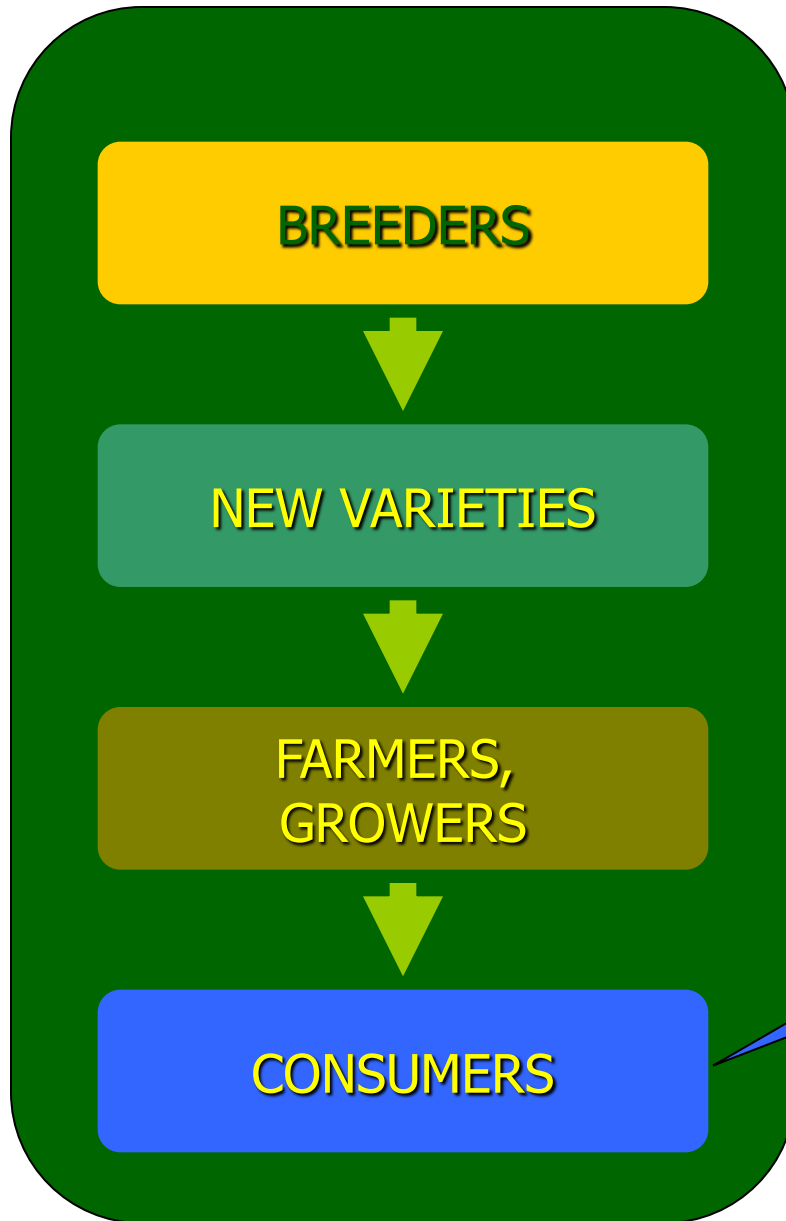
## UPOV MISSION STATEMENT

“To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, **for the benefit of society**”

# Impact of Plant Variety Protection



# Impact of Plant Variety Protection



- Reduced food cost
- Efficient land use
- Nutritional quality, taste etc.
- Storage quality
- Diversity of products





## UPOV MISSION STATEMENT

“To provide and promote an effective system of plant variety protection, with the aim of **encouraging the development of new varieties of plants**, for the benefit of society”

- Plant breeding is long and expensive

**BUT**

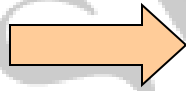
- Plant varieties can be easily and quickly reproduced

**→ Breeders need protection to recover investment**

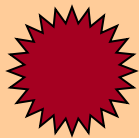
# UPOV

## UPOV MISSION STATEMENT

“To provide and promote an **effective system of plant variety protection (PVP), [...]**”



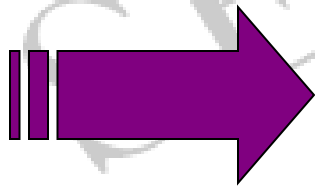
**Plant Breeder's Right (PBR)**





## UPOV MISSION STATEMENT

**“[...] with the aim of encouraging the development of new varieties of plants, for the benefit of society”**



Impact of Plant Variety Protection  
and UPOV membership

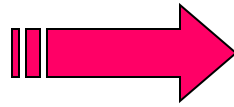
# PREVIEW

- 1. About UPOV and Plant Variety Protection**
- 2. Key Provisions of the 1991 Act of the UPOV Convention**
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# **SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)**

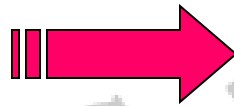
- (a) Breeders and varieties**
- (b) Genera and species**
- (c) National treatment**
- (d) Conditions of protection**
- (e) Breeder's right and exceptions**

**BREEDER**



**THE ONE ENTITLED TO PROTECTION**

**VARIETY**



**THE SUBJECT MATTER OF PROTECTION**

## **BREEDER**

- **the person who bred, or discovered and developed, a variety**
- the person who is the employer of the aforementioned person or who has commissioned the latter's work, where the laws of the relevant Contracting Party so provide, or
- the successor in title of the first or second aforementioned person.



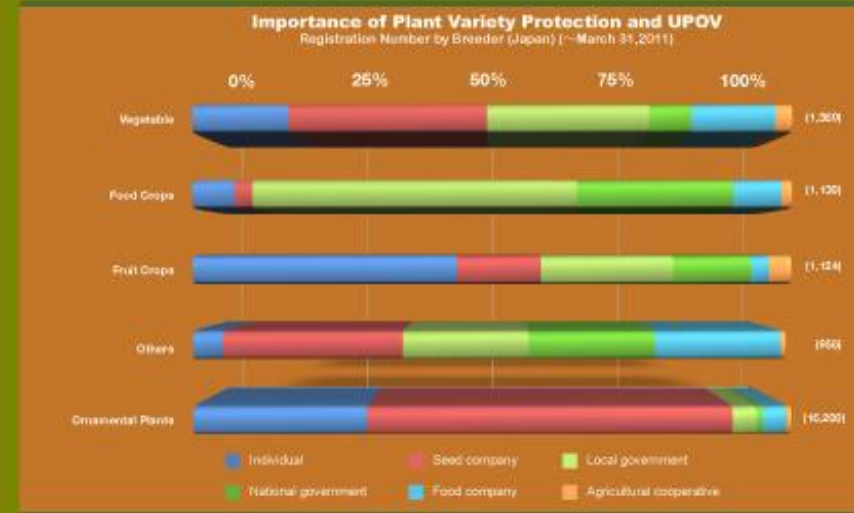
# **BREEDER**

The person who bred, or discovered and developed, a variety

SEMI - JOHN

## Who can protect a plant variety?

There are no restrictions on who can be considered to be a breeder under the UPOV system: a breeder might be an individual, a farmer, a researcher, a public institute, a private company etc.



### Japan Registration Case Study

(click to see full view)



# BREEDER

The person who bred, or discovered and developed, a variety

SEMI - JON

**DISCOVERY  
OR FIND**



**DEVELOPMENT  
IS NECESSARY**

# SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)

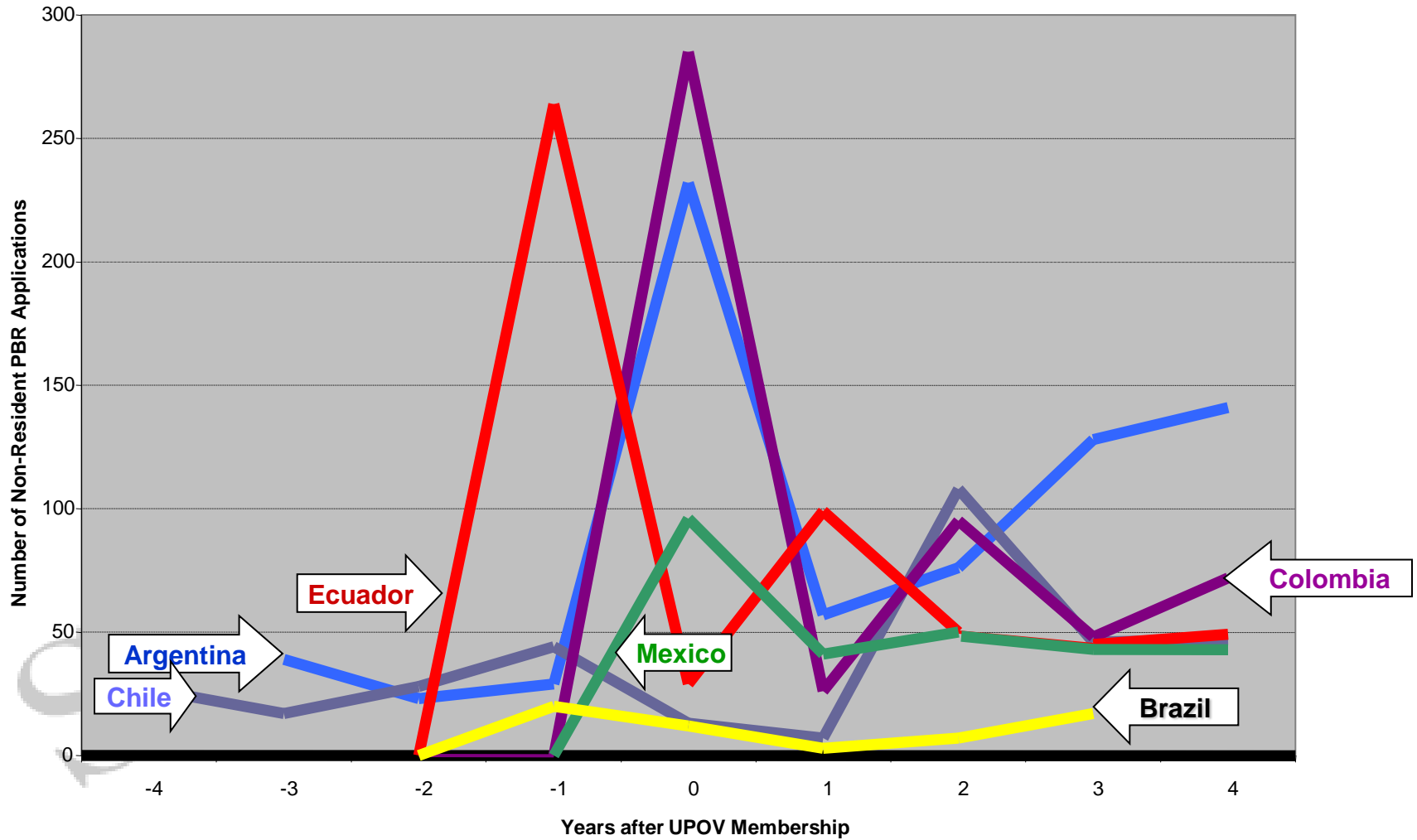
- (a) Breeders and varieties
- (b) Genera and species**
- (c) National treatment
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- (e) Breeder's right and exceptions

# GENERA AND SPECIES TO BE PROTECTED

(1991 ACT: New members of the Union)

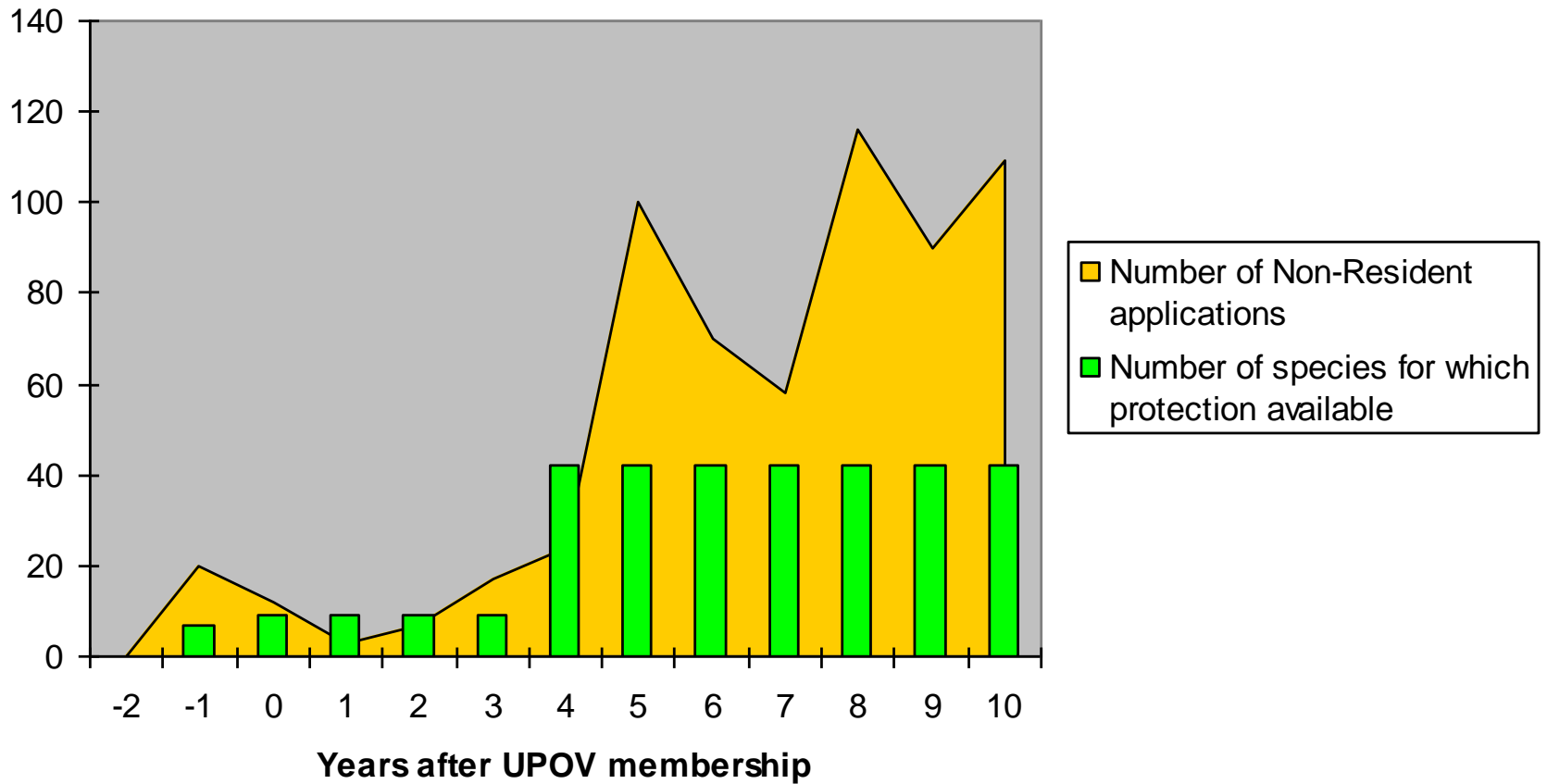
- At least 15 plant genera or species on becoming bound by the UPOV Convention
- ALL plant genera and species within 10 years

**NON-RESIDENT PBR APPLICATIONS  
(Selected Countries in Latin America)**



Argentina, Chile, Colombia, Ecuador and Mexico provide protection for all genera and species of the plant kingdom.

## BRAZIL: Applications filed by Non-Residents





# MEETING the CHALLENGE

- Cooperation between Authorities can involve:
  - **purchase of DUS Test Reports** from other Authorities
  - **bilateral arrangements** to remove the need for duplication of DUS Tests
  - **centralized DUS testing** at regional or global level
- Cooperation with Breeders
- Support from UPOV
  - other members of the Union
  - UPOV Office

# SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)

- (a) Breeders and varieties
- (b) Genera and species
- (c) National treatment**
- (d) Conditions of protection
- (e) Breeder's right and exceptions

# NATIONAL TREATMENT

- National treatment, within the territory of a member of the Union, for nationals and residents of any other members of the Union

# **SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)**

- (a) Breeders and varieties
- (b) Genera and species
- (c) National treatment
- (d) Conditions of protection**
- (e) Breeder's right and exceptions

# CONDITIONS FOR GRANTING A BREEDER'S RIGHT

## *Criteria to be satisfied*

- NOVELTY
- DISTINCTNESS
- UNIFORMITY
- STABILITY

**“DUS”**

...

# Nature of the DUS Examination

The “DUS Test” (field trial)



# CONDITIONS FOR GRANTING A BREEDER'S RIGHT

## ... Other requirements

- VARIETY DENOMINATION
- FORMALITIES
- PAYMENT OF FEES

**NO OTHER CONDITIONS!**

# SOME KEY PROVISIONS OF THE UPOV CONVENTION (1991 Act)

- (a) Breeders and varieties
- (b) Genera and species
- (c) National treatment
- (d) Conditions of protection
- (e) Breeder's right and exceptions**



# HOW TO BECOME A MEMBER OF UPOV

see documents UPOV/INF/13/1 and UPOV/INF/6/2 at  
[http://www.upov.int/members/en/upov\\_membership.html](http://www.upov.int/members/en/upov_membership.html)

## State/Intergovernmental Organization must:

- **Have a law which conforms to the UPOV Convention**
- **Ask advice of the Council of UPOV**
- **If advice positive: deposit instrument of accession**

# PREVIEW

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## New Member: Serbia

The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva (Switzerland).

UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and it was revised in 1972, 1978 and 1991.

UPOV's mission is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.

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GENIE Database



UPOV Lex



Plant Variety Database (PLUTO)

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Serbia becomes a member of UPOV



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## Test Guidelines available in Word

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**UPOV**INTERNATIONAL UNION FOR  
THE PROTECTION OF NEW VARIETIES OF PLANTS

### Mission Statement

The mission of UPOV is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.

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<b><u>BENEFITS</u></b>	<b>How are new plant varieties of benefit to society?</b>
<b><u>PROTECTION</u></b>	<b>What is Plant Variety Protection?</b>
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**Dr. Shadrack R. Moephuli**  
(South Africa / English)

Chief Executive Officer  
Agricultural Research Council (ARC)

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**Dr. Evans Sikinyi**  
(Kenya/ English)

Executive Officer  
The Seed Trade Association of Kenya (STAK)

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**Mr. Michel Cormier**  
(Canada / English)

Commissioner Plant Breeders' Rights Office  
Canadian Food Inspection Agency (CFIA)

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**Dr. Stephen Mbithi Mwikya**  
(Kenya / English)

Chief Executive Officer  
Fresh Produce Exporters Association of Kenya (FPEAK)

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**Mr. Ruaraidh Sackville Hamilton**  
(English)

Head, Genetic Resources Center  
International Rice Research Institute (IRRI)

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**Mr. Marcel Bruins**  
(English)

Secretary General  
International Seed Federation (ISF)

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**Dr. Choi Keun-Jin**  
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Director Seobu Office  
Korea Seed & Variety Service (KSVS)  
Ministry for Food, Agriculture, Forestry & Fisheries (MIFAFF)

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Directeur  
Institut national de la recherche agronomique (INRA)

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## UPOV Collection

## Introduction

The purpose of the UPOV Collection is to provide a set of guidance and information materials concerning plant variety protection under the International Convention for the Protection of New Varieties of Plants (UPOV Convention). The only binding obligations on members of the Union are those contained in the text of the UPOV Convention itself, and the materials must not be interpreted in a way that is inconsistent with the relevant Act for the member of the Union concerned.

A current list of the contents and status of materials in the UPOV Collection is provided in the [Table of Contents](#) published on the UPOV website. All designated persons in UPOV bodies will receive an electronic notification each time the UPOV Collection is updated. Other users can [register](#) to receive an electronic notification each time the UPOV Collection is updated.

UPOV does not issue printed documents for the UPOV Collection. All users are invited to download updated materials from the UPOV website upon electronic notification.

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- (d) [General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants](#)
- (e) [TGP documents](#)
- (f) [Test Guidelines](#)

## INFORMATION MATERIALS ADOPTED (reminder)

### ***Guidance for the preparation of laws based on the 1991 Act of the UPOV Convention (document UPOV/INF/6)***

*PART I: EXAMPLE TEXT FOR ARTICLES*

*PART II: NOTES BASED ON INFORMATION  
MATERIALS*

(available in English, French, German, Spanish, Arabic,  
Chinese, Russian, Bahasa Indonesian)

**THANK YOU**

# INTRODUCTION TO NATIONAL PERFORMANCE TRIALS

*Presented at:*

SEMIs International Training Course on Seed Production, August 10 – 15, 2015

Simeon K. Kibet

General Manager, Quality Assurance

Kenya Plant Health Inspectorate Service

*([www.kephis.org](http://www.kephis.org))*

# DEFINITION OF NPT

- National Performance Trials (NPTs) are experimental trials designed to test new plant varieties for performance compared to varieties currently in the market
- Otherwise termed as Value for Cultivation and Use (VCU) trials
- The trials are done across the country at specific agro-ecological zones where the full potential of the variety can be expressed.

# PURPOSE OF NPTs

- NPT is the basis for testing the agricultural value and potential of a new variety before its listed on the National variety list
- Candidate varieties are planted alongside existing varieties (checks) and performance gauged by data collection and statistical analysis to ensure only superior varieties are released for commercialization

# Eligible crops

- Crops under compulsory certification – agricultural crops.
- Cereals – Maize, Wheat, Barley, Sorghum, Millet, Oats, Triticale
- Pulses – Beans, Peas, Cowpeas, Pigeon peas
- Oil crops – Sunflower, Oilseed rape, Linseed, Soyabeans, Sesame.
- Grasses – Setaria, Rhodes + 4 others,
- Root crops – Irish potatoes

# EXECUTION OF NPTs

- NPT tests are done as multi-locational trials: same trial replicated in many locations
- The tests are done for at least two growing seasons
- Experimental designs employed vary with size of trial based on number of entries involved
- The designs are usually done in a minimum of 3 replications, each entry randomly distributed in each rep.



# EXECUTION OF NPTs...

- Each trial or kit is planted in recommended agro-ecological zones where an appropriate site is selected
- These are sites where climatic conditions are optimal for the varieties' full potential expression
- General principles of setting up experimental trials followed.

# EXECUTION OF NPT: Steps

- Site selection
- Seed bed preparation
- Verifying the received samples
- Trial layout
- Planting
- Trial management
- Data collection
- Data analysis and preparation of report

# VARIETY RELEASE PROCEDURES

1. Application for NPT and submission of Seed samples for planting
2. Variety is tested for 2 or 3 seasons
3. Data is analysed each year of testing, with combined data analysis at 2/3 yrs of tests
4. NPT report is prepared by KEPHIS after data analysis at the end of each season
5. National Performance Trials' committee (NPTC) is convened discuss the report

# Release procedure steps cont'd

6. NPTC recommends for release varieties that meet the release criteria to the National Variety Release Committee (NVRC)
7. NVRC deliberates on the recommended varieties
8. Released varieties are gazetted
9. The breeder can now multiply and sale a variety

# Collaboration with Breeders/Seed Companies

## Membership to committees

- NPTC –
  - KEPHIS MD
  - Representative, Ministry of Agriculture
  - Representative, Seed Traders Association of Kenya
  - 2 representatives, Plant Breeders' Association of Kenya
  - Crop experts – Maize, Small cereals, Sorghum and millets, Legumes, Oil crops. These are breeders from research institutes (e.g. KARI), CGIARs and Universities.

# Collaboration with Breeders/Seed Companies

- NVRC
  - Agriculture Secretary (State Department of Agriculture) - Chair
  - MD KEPHIS – Secretary
  - Director, Extension - State Department of Agriculture
  - CEO, Seed Traders Association of Kenya
  - Chair, Plant Breeders' Association of Kenya
  - Representative, Institution offering training in seed science and technology

# Collaboration with Breeders/Seed Companies

- CEO, Kenya National Federation of Agricultural Producers
- Representative of consumer industry
- Joint KEPHIS/Breeder NPT Evaluation visits
- Breeders (Experts) provide technical advise in drafting of testing protocols.
- Breeders (Experts) train KEPHIS staff on some technical aspects.
- Client-managed NPTs
- Special tests

**END.**

**THANK YOU!**



# DUS TESTING IN KENYA

*Presented at:*

SEMIs International Training Course on Seed Production, August 10 – 15, 2015

Simeon K. Kibet

General Manager, Quality Assurance

Kenya Plant Health Inspectorate Service

*([www.kephis.org](http://www.kephis.org))*

# DUS testing

A DUS test seeks to establish if a new variety is:

- **Distinct** - from all commonly known varieties existing in one or more characteristics
- **Uniform** - The variety must be sufficiently uniform in essential characteristics
- **Stable** - The variety must remain true to its description after repeated propagation

# DUS testing cont'd

## Definition of Plant Variety

- a plant grouping within a single botanical taxon of the lowest known rank,
- defined by the expression of the **characteristics** resulting from a given **genotype** or **combination of genotypes**
- distinguished from any other plant grouping by the expression of at least one of the said characteristics and
- considered as a unit with regard to its suitability for being propagated unchanged;

# Purpose of DUS testing

In Kenya, DUS is undertaken to achieve three purposes:

- Plant Variety Protection – to qualify for protection, a new variety needs to be Distinct, Uniform and Stable
- Variety Release – a system of listing of varieties exists and for a variety to be listed, it needs to be Distinct, Uniform and Stable in addition to being agronomically superior to existing varieties (VCU = NPT)
- Seed Certification – Kenya has a system of compulsory certification and generates descriptors for use in the process

# Designing the DUS trial

- Depends on method of examination based on kind of crop, capacity and available information
- Three methods:
  - Growing test – establishment of a growing trial, mostly applies to annual crops e.g. maize, beans, wheat etc
  - On-site inspection – uses materials on breeders' fields, applies to perennial crops e.g. coffee, tea, sugarcane
  - Purchase of DUS reports from UPOV members that have registered the variety – for ornamentals

# Setting up of the DUS test cont'd

Set-up/ design of trial determined by:

- No. of entries
- No. of plants to observe
- Observation method
- Growing cycles

Varieties subjected to same treatment

# Observations & Data Recording

- DUS data taken from same plants
- Off-types noted and used in determination of uniformity
- Observations made strictly at defined stages

# Analysis & Interpretation

Analysis with/without statistics depending on:

- Trial layout (randomized vs side-by-side)
- Type of expression of characteristic – Qualitative (QL), Pseudo-qualitative (PQ) or Quantitative (QN)
- Method of observation – Measurement (M) or visual (V)
- Features of propagation of variety



# Preparation of DUS Report

- Includes all characteristics used to describe the variety
- Characteristics distinguishing the new variety from similar varieties are highlighted
- Report used:
  - To make a decision on whether or not to grant plant breeders' rights.
  - To make a decision whether the variety should be released for commercialization and included in the national variety list
  - As a variety descriptor during seed certification.

# Development of national test guidelines

- UPOV test guidelines used in most cases
- National test guidelines developed for crops without UPOV TGs
- Important characteristics not included in UPOV TGs identified for inclusion in national test guidelines
- Is an ongoing process as application for new crop varieties keep coming

# Example – Maize DUS

- UPOV Technical guideline applied
- Material required
  - 1,500 grains – inbred lines
  - 1 kg hybrids and OPVs
  - Meeting minimum requirements for germination, purity, health & moisture content.
  - Not to have undergone dressing that would affect expression of characteristics

# Maize DUS

- Method of examination
  - Two independent growing cycles
  - Testing conducted at one place
  - Under conditions ensuring satisfactory growth for expression of relevant characteristics
- Trial population
  - ❖ 40 plants inbred lines and single hybrids
  - ❖ 60 plants other hybrids and open pollinated varieties
- At least 2 replicates per trial

# Maize DUS

## Stage of characteristic development

- Indicates the **optimum** stage of development when that character **must** be scored
  - Seedling growth
  - Inflorescence emergence
  - Anthesis
  - Milk development
  - Dough development
  - Ripening

# Type of observation

- Expression of characteristics can be observed
  - Visually (V)
  - By measurement (M)
  - Method used depends on the nature of the characteristic and the type of variety, i.e. whether it is an inbred line, single cross, 3-way cross, double cross or open pollinated variety (OPV)

# Example, TASSEL:- ATTITUDE OF LATERAL BRANCHES

**Time:** halfway anthesis

**Place:** in lower third of tassel



*Slightly recurved*



*Moderately  
Recurved*



*Strongly recurved*

SCALE

**3** slightly recurved

**5** moderately recurved

**7** strongly recurved

# DUS testing staff and stations

- 15 DUS examiners distributed in 5 stations. Undertake other duties in addition to DUS examination
- There are 5 DUS testing stations, established based on crops and agro-ecological conditions
  - ▣ Kisumu – Sesame, sorghum, millets, sugarcane
  - ▣ Kitale – Pasture crops, maize (high altitude)
  - ▣ Nakuru – Wheat, barley, oats, vegetables
  - ▣ Nairobi – Legumes, maize (low altitude), root crops
  - ▣ Embu – Rice, maize (medium altitude)
  - ▣ Other crops allocated to suitable locations as applications come



# Areas of collaboration with breeders

- Testing sites on breeders' fields/facilities
- Trial management by breeder
- Information/experience sharing and training
- Special tests

END

• THANK YOU

# PLANT VARIETY PROTECTION

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# Introduction

- Plant variety protection, “plant breeder’s right” is a form of intellectual property right granted to the breeder of a new plant variety, **by the state**, in relation to certain acts concerning the exploitation of the protected variety which require the prior authorization of the breeder.

# Key Components of Plant Variety Protection

- Variety protection is the protection of a plant variety against unauthorised or unlawful use without the consent or authorisation by the owner of the variety who has been granted plant breeders' rights.
- The breeders' rights (for protected varieties) are granted exclusively to persons or institutions discovering, breeding or developing new varieties of plants.
- They are proprietary rights granted by the state to a breeder who has filed an application for protection of a variety and
- They are granted for a specific period of time and on meeting certain conditions.
- Variety protection is applicable to new varieties of all plant species.

# PVP Legislative Framework

- Legislation for protection of plant varieties in Kenya is contained in the Seeds and Plant Varieties Act (1972), which became operational in 1975 and was revised in 1991 and amended in 2012
- Official regulations to guide the implementation of PVP were finalised and gazetted in the supplementary issue of the Seeds and Plant Varieties Act (Cap 326) of November 1994
- The office to administer the PVP was established in 1997 and has functioned under KEPHIS since 1998
- Kenya acceded to UPOV under the 1978 Convention in May 1999 and has initiated the process of acceding to UPOV 1991 Act.

# PVP Legislative Framework

- Under the Kenyan Seeds and Plant Varieties Act (Plant Breeders Rights) applications for Plant Breeders Rights are required to be published in the Kenya gazette, to allow those opposing any applications or grant of rights, to make the objections and make representations to the Authorized Officer – KEPHIS.

# PVP Legislative Framework

- The Authorized Officer determine the hearing of such representations but any applicant aggrieved by the decision of the Authorized Officer may appeal to the Seeds and Plants Tribunal and if further aggrieved by the decision of the Tribunal, final appeal to the High Court.



# Purpose of Plant Variety Protection

- The development of a new variety is usually a long and costly undertaking.
- The Plant Breeders' Rights gives breeders a chance to recoup costs and profit from the breeding investment.
- Without the legal protection of rights, breeders can lose control of the commercialization of new varieties to persons who did not contribute towards the breeding costs.

# Purpose of Plant Variety Protection

- By providing an incentive to breeders, Plant Breeders' Rights encourage investment and effort into plant breeding in Kenya.
- The rights scheme also allows Kenyans access to internationally bred varieties which would not be available to them without legal protection of these varieties.
- The result is that farmers gain access to an increased number and range of improved varieties.

# Purpose of Plant Variety Protection

- Plant Breeders' Rights therefore benefit not only the breeders, but also the public in general.

SEMI - UON

# Rights of Grant Holder

- Plant Breeder's Rights confer exclusive ownership of the :-
  - Protected variety
  - propagating material of the protected variety
  - Essentially derived varieties
  - harvested material of the protected variety and
  - products made directly from the harvested material of the protected variety

# Rights of Grant Holder

- When a variety is protected in Kenya, authorization is required from the holder of the plant breeder's rights for the purpose of :-
  - Production or reproduction (multiplication);
  - Conditioning for the purpose of propagation;
  - Offering for sale, selling or any marketing activity;
  - Exporting or importing; and
  - Stocking for any of the purpose mentioned above.

# Exceptions to variety protection

- Use of plants or parts of the protected variety for human consumption or other non-propagating purposes;
- Use of plants or parts of the protected variety for experimental purposes.
- Acts done for the purposes of breeding other varieties
- Farmers privileged to save and replant or exchange seeds harvested from protected variety.

# Qualification for PBR

## The Applicant

- Breeder
- Discoverer
- Employer or successor in title

# Qualification for PBR Cont'

## The Variety

- **New:** if it has not been sold or offered for sale with the agreement of the owner in Kenya for more than 1 year before the date of application or 4 years outside the country (woody plants) 6 years (for trees & vines).
- **Distinct** – a variety clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application.



# Qualification for PBR Cont'

- **Uniform** – deemed so if, subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its essential characteristics.
- **Stable** - if its essential characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.
- **Proper denomination** - i.e. designated by a denomination which is destined to be the generic designation. The denomination must enable the variety to be identified and must not consist solely of figures

# Exploitation of Rights

1. Exclusive exploitation
2. Transfer of Breeder's Rights (Licencing)
  - Non-exclusive licensing
  - Exclusive licensing
  - Compulsory Licensing

# Exclusive exploitation

- PBR holder himself exercises exploitation rights on the protected variety
- E.g. undertaking exclusive and direct production and sales of the variety to consumers/ utilizers.
- The profits from such sales accrue directly to the rights holder

# Transfer of Breeder's Rights

- PBR holder transfers his rights over the protected variety to a second party under a written agreement
- The individual/company to whom the transfer has been made exploits the rights subsisting in the variety
- Original rights owner may share the gains accruing from exploitation of the variety, depending on the transfer terms

# Non-exclusive licensing

- PBR holder licences several individuals/companies to exploit the protected variety
- The licensees pay royalties to the grant holder
- Grant holder still retains all rights over the variety

# Exclusive licensing

- Rights holder licenses only one individual/company to exploit the protected variety
- The licensee in turn pays royalty to the PBR holder
- Grant holder still retains all rights over the variety

# Compulsory Licensing

- Given by the state to ensure adequate availability of protected variety
- Can be given under special circumstances e.g. drought, famine
- PBR holder retains the rights over the variety and receives royalty from exploitation of the variety

# Infringement

- Refers to unauthorized exploitation of protected variety
- Adequate evidence is required to establish PBR infringement
- Actioned through criminal or civil prosecution



# Evidence for infringement

Facts collected on suspect material to establish infringement:

1. Identity/characteristics
2. Name
3. Origin
4. Commercial routes, and
5. Quantity of the material involved

# Actions against infringement

- Warning to the owner/trader of the infringing variety to stop his activities
- *Unintentional infringement*: Infringer unaware and had no adequate grounds to be aware of the PBR subsisting in the variety
- Ordered to stop his infringing activities
- Advised to seek authorization to exploit the protected variety from the rights holder

# Actions against infringement cont'

- *Intentional infringement*: infringer aware or had sufficient grounds to be aware of the PBR subsisting in the variety
- PBR holder may institute civil suit or criminal prosecution against infringer seeking compensation for the damages

# Actions against convicted infringer

1. Permanent interdict restraining the infringer from conducting his infringing activities anymore
2. Payment of damages adequate to compensate the rights holder for the injury suffered
3. Removal of all the offending plants or parts of the variety held by the infringer from his possession.
4. Any combinations of 1 to 3 above.

# Cancellation of PBR

- The variety did not meet the criteria when the rights were granted
- The person granted the rights was not entitled to the rights, and the rights have not been subsequently transferred to him or to his successor in title
- The variety does not meet the protection criteria any more
- The rights holder can no longer provide the propagating materials of the variety.
- Failure to pay the prescribed fees to keep the Right in force

# Cooperation in Examination

- As per UPOV Article 32 on Special Agreements, The PVP office in Kenya has entered into international cooperation with other UPOV Member States and Intergovernmental Organizations in the utilization of the existing DUS examination reports notably,
  - European Community – Community Plant Variety Office
  - RaadVoorPlantrassen (Board for Plant Varieties) – Netherlands
  - The Plant Breeders' Rights Council – Israel

# Cooperation in Examination

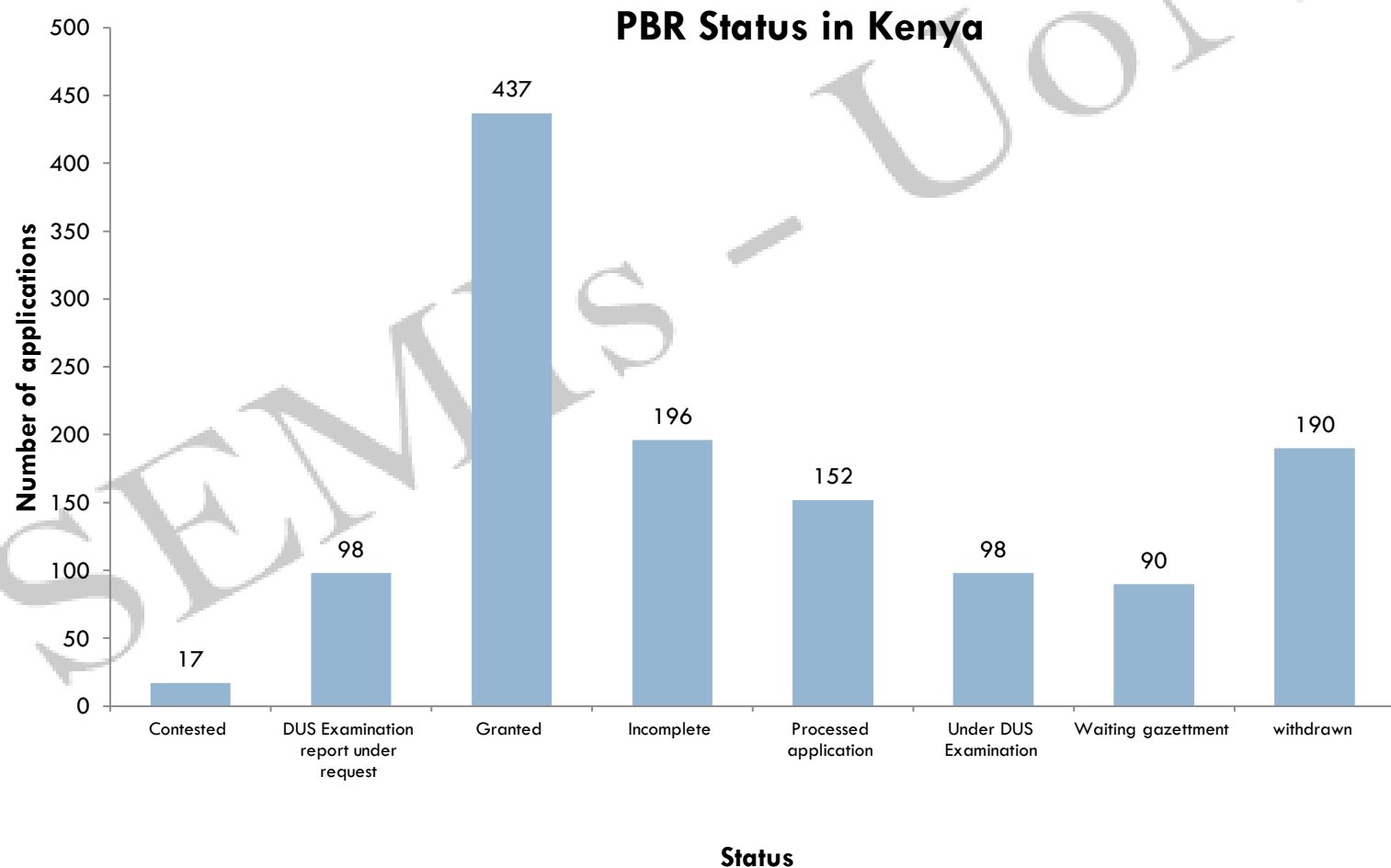
- Commissioner of Plant Variety Rights - New Zealand
- The registrar, National Department of Agriculture
  - South Africa
- Bundessortenamt - Germany

# Status of Plant Variety Protection

- A total of 1278 applications for PVP have been received to date
  - Local (Kenyan) = 37.5% applications
  - Foreign = 62.5% applications
- Local applicants are from:
  - Public institutions = 88 %
  - Private institutions = 12 %
- Out of the total applications
  - Food crops = 22 %
  - Cash crops = 77 %
  - Forest Trees (Eucalyptus) = 1 %
  - 22 grants in 2012/2013



# Status of Plant Variety Protection

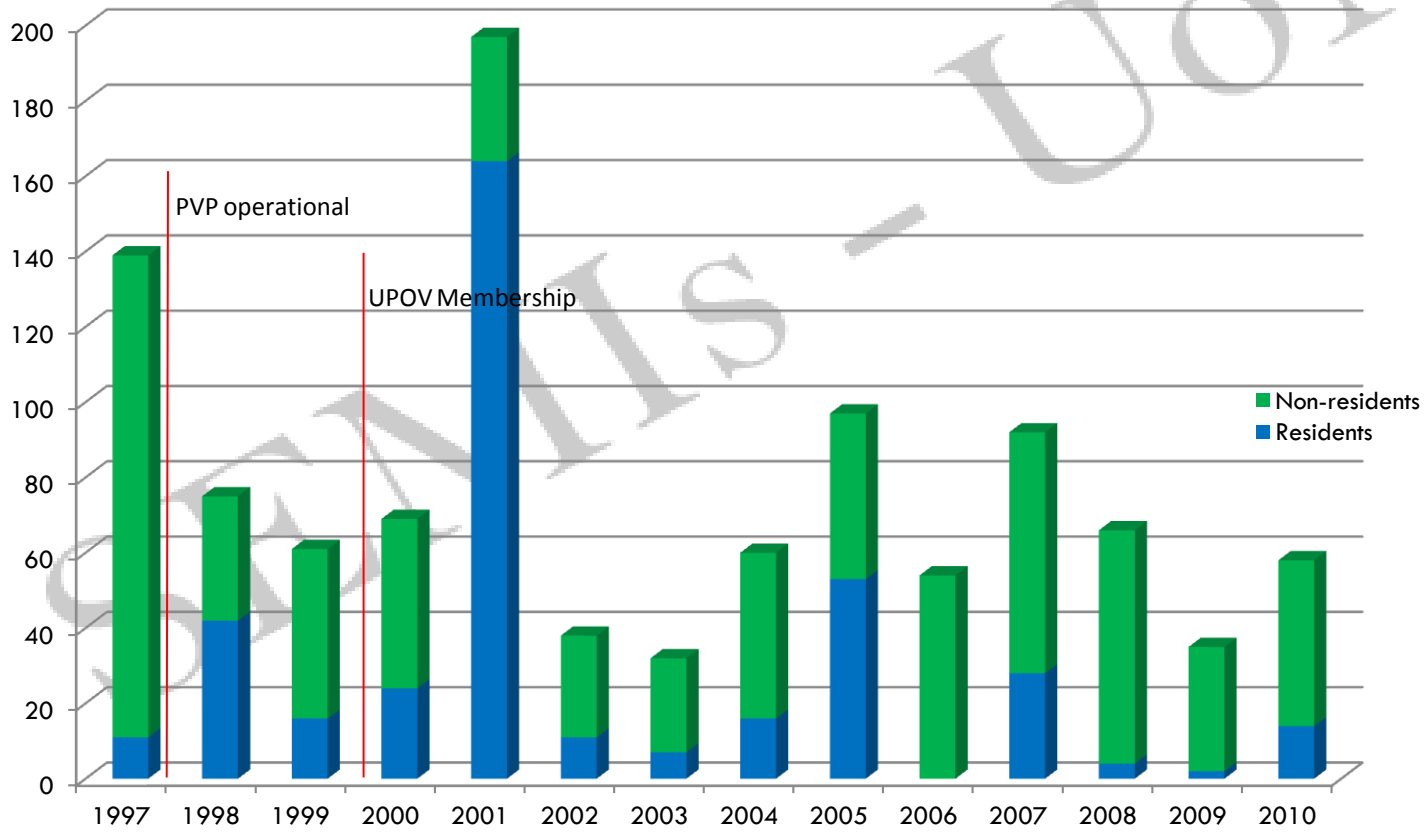


**Fig 1: Status of PBR applications**

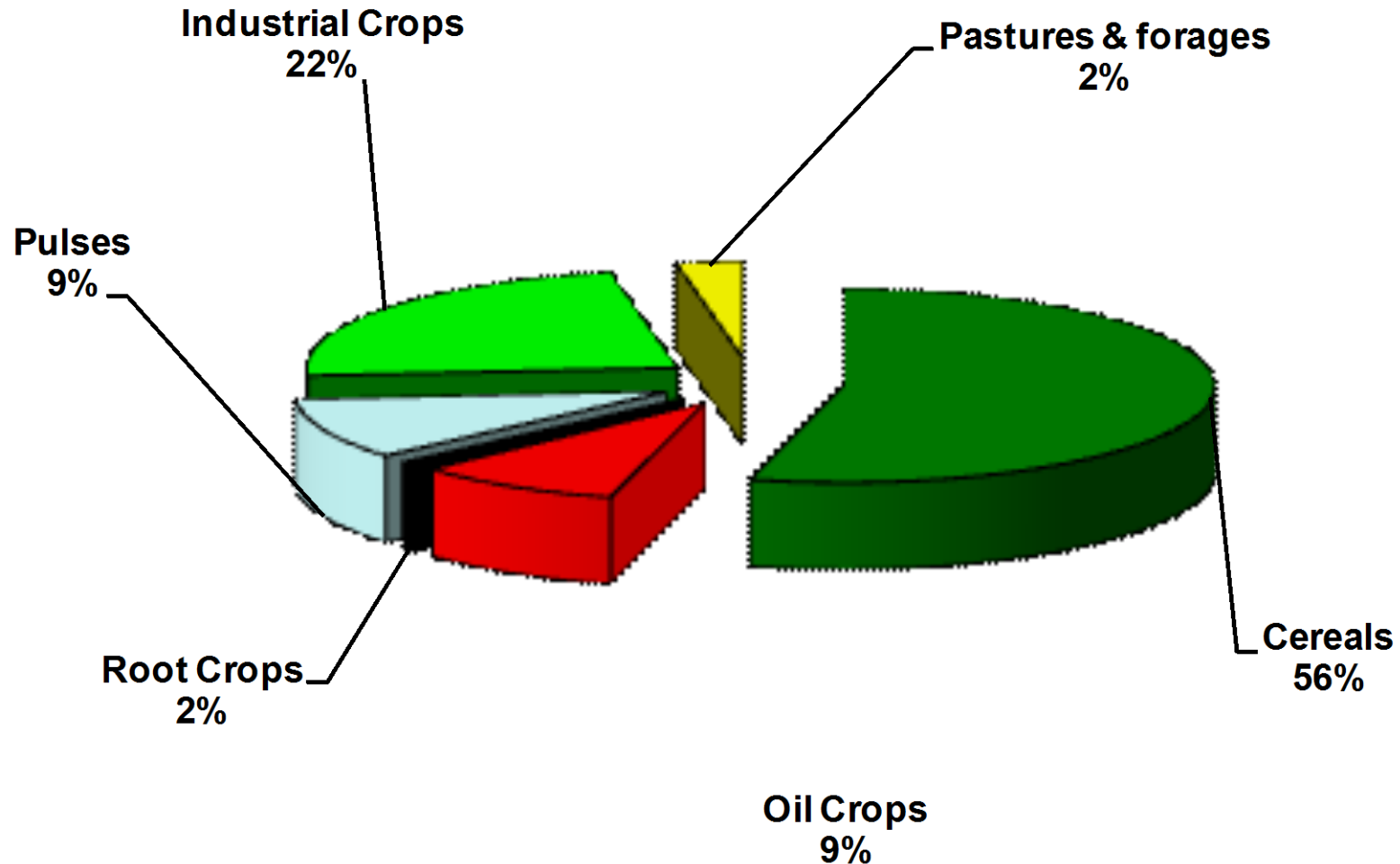
**Table 1. Distribution of PVP Applications by Country**

<b>Country</b>	<b>Percentage of Applications</b>
Kenya	35.3
Netherlands	33.6
Germany	11.8
France	7.1
United States	1.1
Israel	0.9
Italy	0.6
South Africa	0.6
Zimbabwe	0.6
Japan	0.6
New Zealand	0.6
United Kingdom	0.6
Mexico	0.1
Australia	0.4
Paraguay	0.2
Korea	0.1

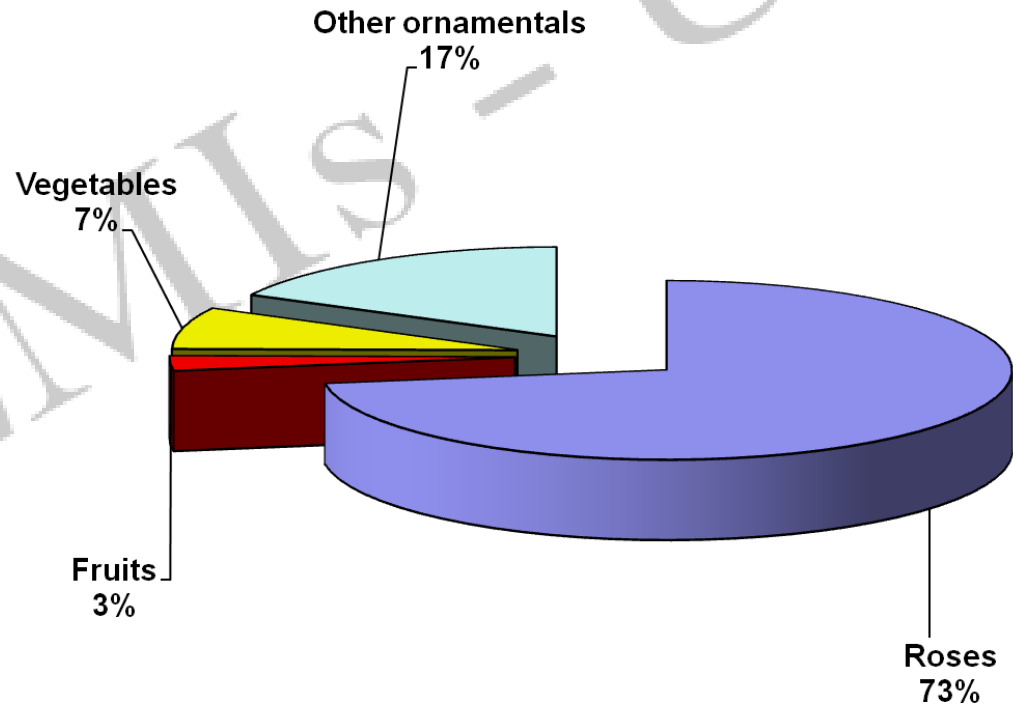
# Number of applications per annum



**Figure 1: Distribution of PVP Applications for Agricultural Crops in Kenya**



**Figure 2. Distribution of Applications for Horticultural Crops in Kenya**



# Impact of setting up PBR office

## 1. Increase in the number of breeding entities

CROP	1990-96	1997-2010
Maize	9	24
Dry Beans	5	12
French Beans	1	4
Macadamia	1	2
Tea	2	5
Sweet Potato	3	6
Sugar cane	1	1
Cassava	3	5
Irish Potato	1	3
Pyrethrum	1	2
Sunflower	2	5

# Impact of PBR cont'

<b>CROP</b>	<b>1990-96</b>	<b>1997-2010</b>
Cotton	1	4
Millets	2	7
Sorghum	3	10
Barley	1	2
Rice	1	6
Wheat	2	5
Cow Peas	2	5
vegetables	0	5
Ornamentals	0	several

# Impact cont'

- Initially most breeding work was done by National Agricultural Research Institute
- With advent of PVP and liberation of the seed industry in the country several new breeding entrants have come on board namely:-
  - University scientists :- Lines previously developed for purpose of academic research have been improved to varieties for protection and commercialization
  - Foreign seed companies:- breed outside Kenya but submit their varieties in the national testing, protection and release system
  - Domestic companies:- have access to new varieties developed by international research institutes
  - Breeding entrants in horticultural industry:- traditionally carried outside Kenya but of late substantial increase in the level of domestic breeding especially vegetables and ornamentals



# Impact cont'

## 2. Number of Released Varieties

year	maize	Bush beans	Climbing beans	Sweet potato	cassava	Pearl millet	Rice	sorghum	kales	Chick pea	Ground nuts	Soy beans	wheat	irish potato
1998	-	1	-	3	3	-	-	3	-	-	-	-	3	2
1999	2	-	-	1	-	-	-	-	-	-	-	-	3	-
2000	8	-	-	-	-	2	-	3	-	-	-	-	-	-
2001	13	-	-	4	-	1	-	-	-	-	-	-	3	-
2002	10	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	21	-	-	-	-	-	-	-	-	-	-	-	-	-
2004	22	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	4	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	11	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	7	-	-	-	-	-	-	-	-	-	-	-	2	-
2008	42	11	3	-	6	-	4	4	-	-	-	-	4	-
2009	27	-	-	4	3	-	7	1	2	4	3	2	-	4

# Impact cont'

- The number of varieties introduced by breeders within the period subsequent to the establishment of PVP is significantly higher than in the preceding period, especially for maize.
- Between 1990 and 1996, only 39 new varieties were released, as compared to 167 between year 1997 and 2009
- In the country, DUS test is a mandatory requirement for any variety to be released.
- These tests are conducted using UPOV and National test guidelines.
- The breeder generates the breeders descriptor the latter is confirmed to official descriptor by the seeds and plant varieties testing authority.
- The increase in introduction of crop varieties in the country is as a result of enhanced variety description the latter made possible by:-
  - Readily available UPOV test guidelines for most of the Agricultural crops
  - Trained personals by UPOV on development of national test guidelines
  - Collaboration and co operation between the breeders and the testing authority on variety description.

# Impact cont'

## 3. Improvement of Released Varieties

- Previously varieties were assessed for release on the basis of their yield performance. However, in the recent past varieties are released on attributes other than yield. For instance
  - quality protein in maize,
  - baking quality in wheat,
  - disease and pest tolerance in French beans
  - brewing quality in barley
- These requirements have demanded improvement on the already released and or protected varieties.
- The provision of the breeder's exemption has allowed the Kenyan breeders to develop improved new varieties using the released or protected varieties as sources of variation.

# Impact cont'

**New varieties of French beans tolerant to leaf rust developed using a protected variety.**

## Box 16



Inspection of newly bred lines of snaps beans by prospective seed merchants

A French bean researcher working at the Moi University developed a successful commercial variety "Line 10" (right) on the basis of the variety "Amy" introduced from the Netherlands. Amy was granted a provisional protection title in Kenya on July 26, 1999. An application for protection for "Line 10" has been filed.



# Impact cont'

## **4. Increased breeding activities, commercialization and Collaboration**

- An increased level of activity has been observed in the seed market amongst domestic breeders and foreign breeders.
- At the same time, an increased collaboration of domestic breeders with foreign breeders and international institutions has been noted.
- This involves capacity building, funding, germplasm exchange and commercialization of foreign varieties in Kenya.
- Domestic breeders have also extended partnerships with farmers for on-farm testing of newly bred varieties.
- Domestic entities receive and market new materials from foreign breeders on their behalf or under license.
- Alternatively these breeders have incorporated their companies domestically to market their new varieties.

# Impact cont'

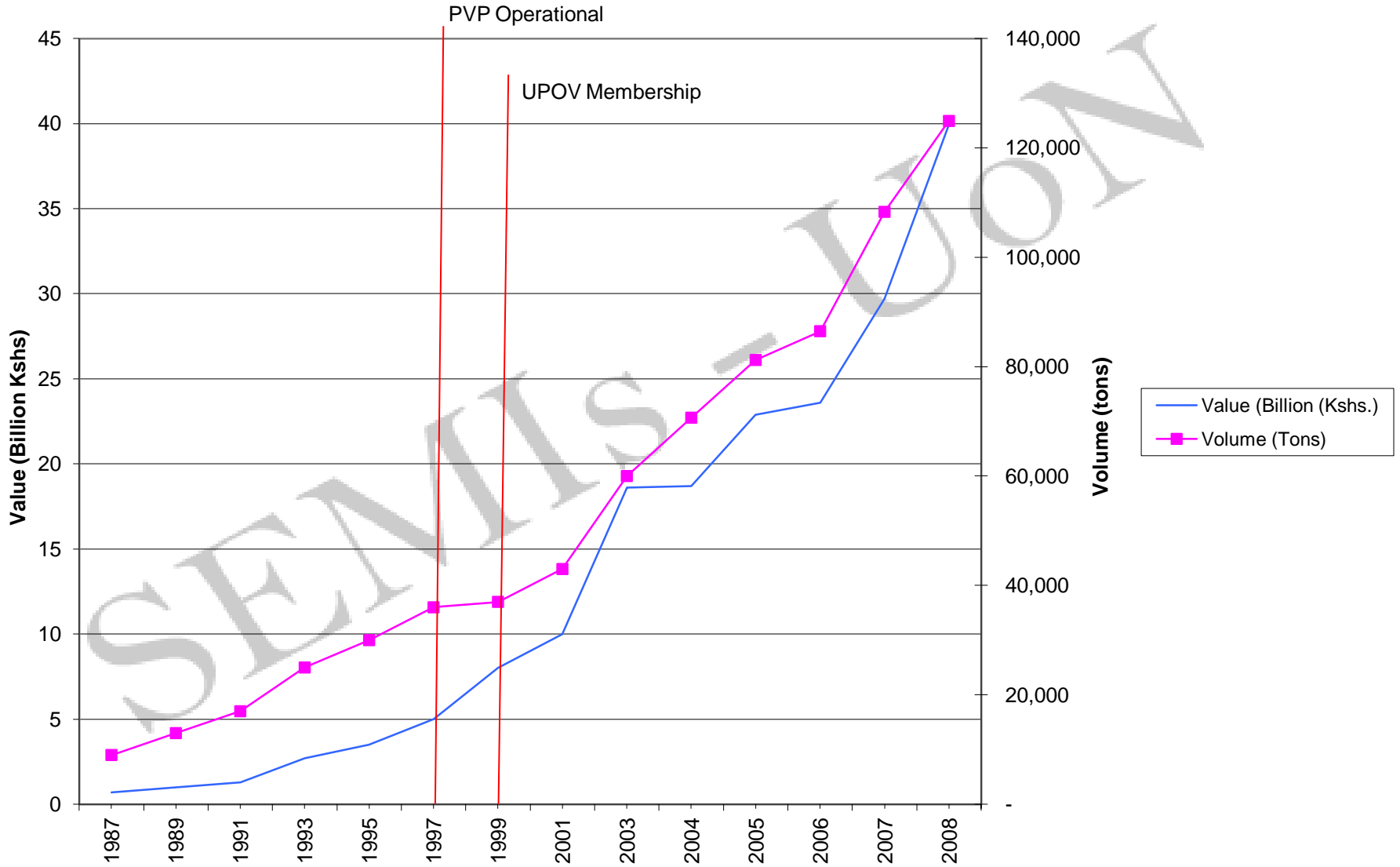
## 5. Enhanced Access to Foreign Bred Materials

- Most of the applications for PVP in Kenya are from foreign breeders (62.5%).
- This demonstrates increased availability of foreign germplasm, which can be used further in developing improved varieties in accordance with the breeder's exemption in the UPOV Convention

## 6. Generation of Foreign Exchange and Employment

- More than half (58%) of the varieties for which PVP has been applied in Kenya are ornamentals.
- Given the conducive weather conditions for flower and ornamental plants production, Kenya has continued to attract a number of breeders to grow their new varieties for the European market.
- Kenya remains the largest single source of floriculture imports into the European Union.
- To sustain the production for the market, the floriculture industry employs a large labor force, which is an important source of income for the small scale farmers located in the rural areas.

# Export of Kenyan Cut Flowers



# Impact cont'

## **7. Increased level of awareness of PVP service**

- Has been achieved through elaborate outreach programme to sensitize stakeholders the objectives and processes of PVP
- Tangible and measurable indicators:-
  - development of institutional IP policy by most of institutions doing research in plant sciences.
  - National Seed policy where the plight of breeders on royalties has been addressed.



# Impact cont'

## **8. International cooperation**

- Technical support e.g training of examiners
- Exchange of test reports on low fees
- Contracting of DUS testing services

## **9. Mutual exchange of information**

- Access to UPOV CD – Rom data base for search of variety denomination
- Exchange of journals on PVP

# Plant Breeder's Rights Enforcement

- The enforcement of rights is by the owner of the rights.
- The Act has provision for the Plant Breeder whose rights are infringed to seek remedy in the courts of law by means of damages, injunction, account or otherwise.
- The Act also provides for Plant and Seed Tribunal to determine any dispute arising from PVP.
- Additionally, KEPHIS being the designated Authority for phytosanitary, seed certification and PVP matters, has the added advantage of helping the enforcement of PBR through the licensing and certification process

# Challenges

1. Facilities to test ornamental varieties (which form the bulk of PVP applications)
  - As a result, most of the PVP titles for ornamentals have been based on results taken over from other UPOV member states or authorities
2. Changing of laws takes a long time especially at this time when the process of implementation of a new constitution is on and several laws are lined up for approval by parliament.

# PBR Fee schedule

- 1. **Application for a grant of plant breeders rights USD 200**
- 2. Application for an extension of period of grant USD 100
- 3. Application for a compulsory license USD 70
- 4. **Application for protective direction USD 40**
- 5. **Certification for protective direction USD 120**
- 6. Application for surrender of a grant USD 30
- 7. Application for an opportunity to make representations USD 120
- 8. Inspection of register and documents USD 40
- 9. **For technical evaluation of a variety USD 600**
- 10. **Grant of Plant Breeder's Rights Certificate USD 240**
- 11. For a duplicate copy of the register or other document USD 0.50/page
- 12. **Annual fees for grant USD 200**
- 13. Purchase of a report from a testing authority in another country USD 320
- 14. Replacement of lost or destroyed certificate USD 40
- 15. Claim of priority from a preceding application outside Kenya USD 20
- 16. For change of an approved denomination USD 80
- 17. Reinstatement of an abandoned application on petitions USD 80
- 18. Surcharge for late payment USD 60

END

• THANK YOU