

# ***Opportunities/Challenges in commercialization of Plant Varieties***

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# 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 2016
- 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 the 1991 Convention in May, 2016.



# 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 investment from the breeding program.
- 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 Cont'

- By providing an incentive to breeders, Plant Breeders' Rights encourage investment and effort in plant breeding.
- The rights' scheme also allows Kenyans access 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 Cont'

- Plant Breeders' Rights therefore benefit not only the breeders, but farming communities and the general public.

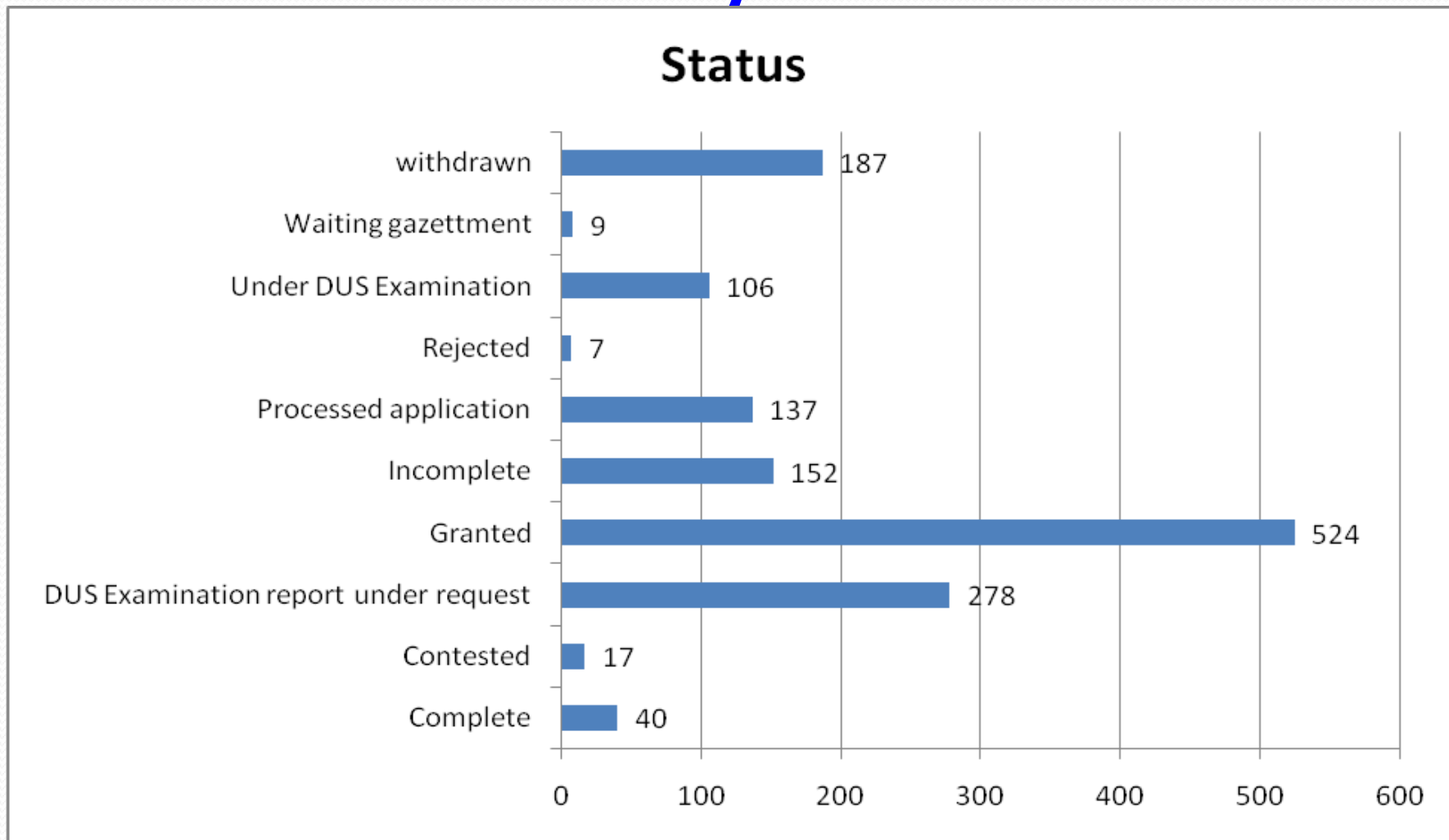


# Status of Plant Variety Protection

- A total of 1457 applications for PVP received by March 2016
  - 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 %
  - 49 grants in 2015/2016



# Status of Plant Variety Protection Cont'

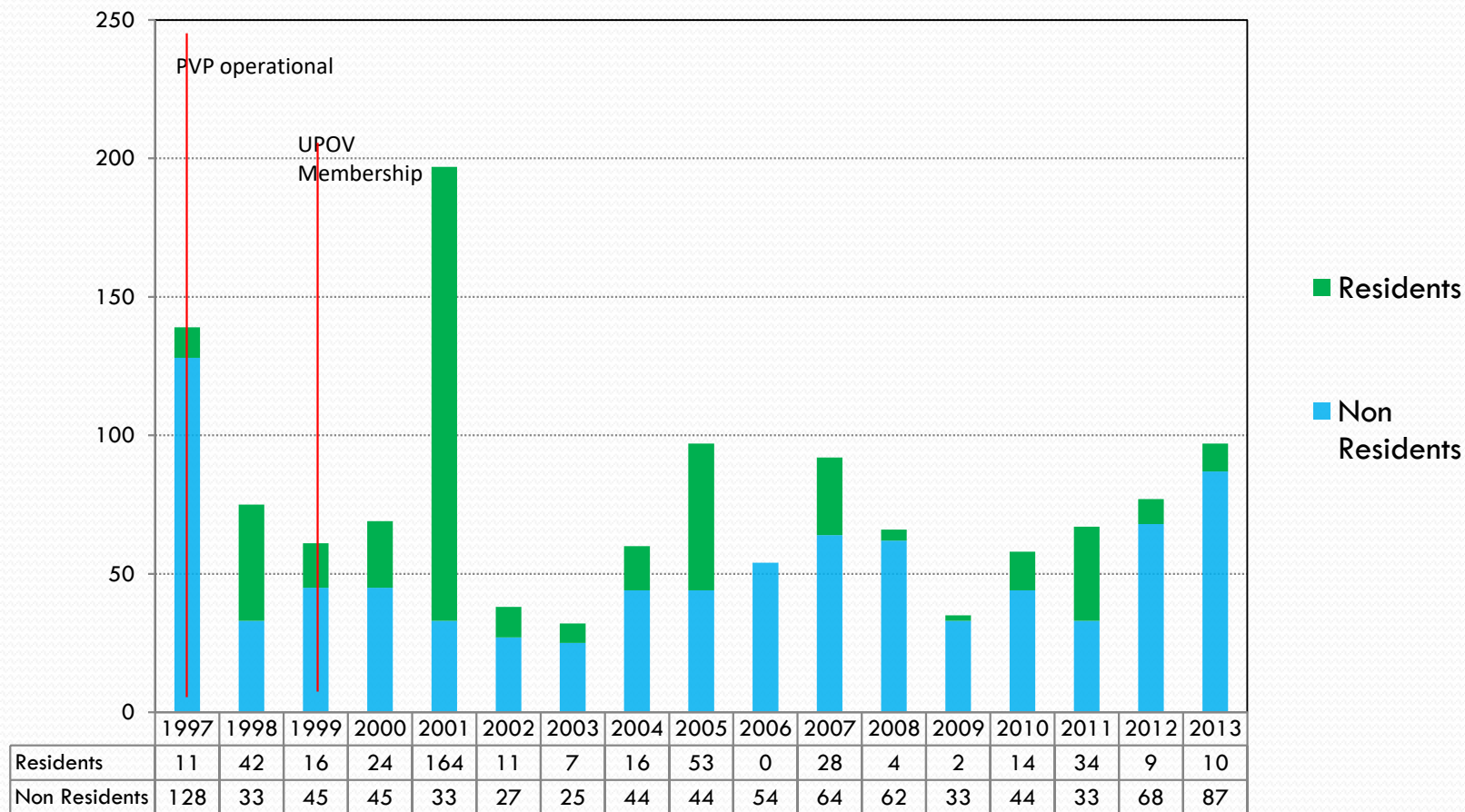


**Table 1. Distribution of PVP Applications by Country**

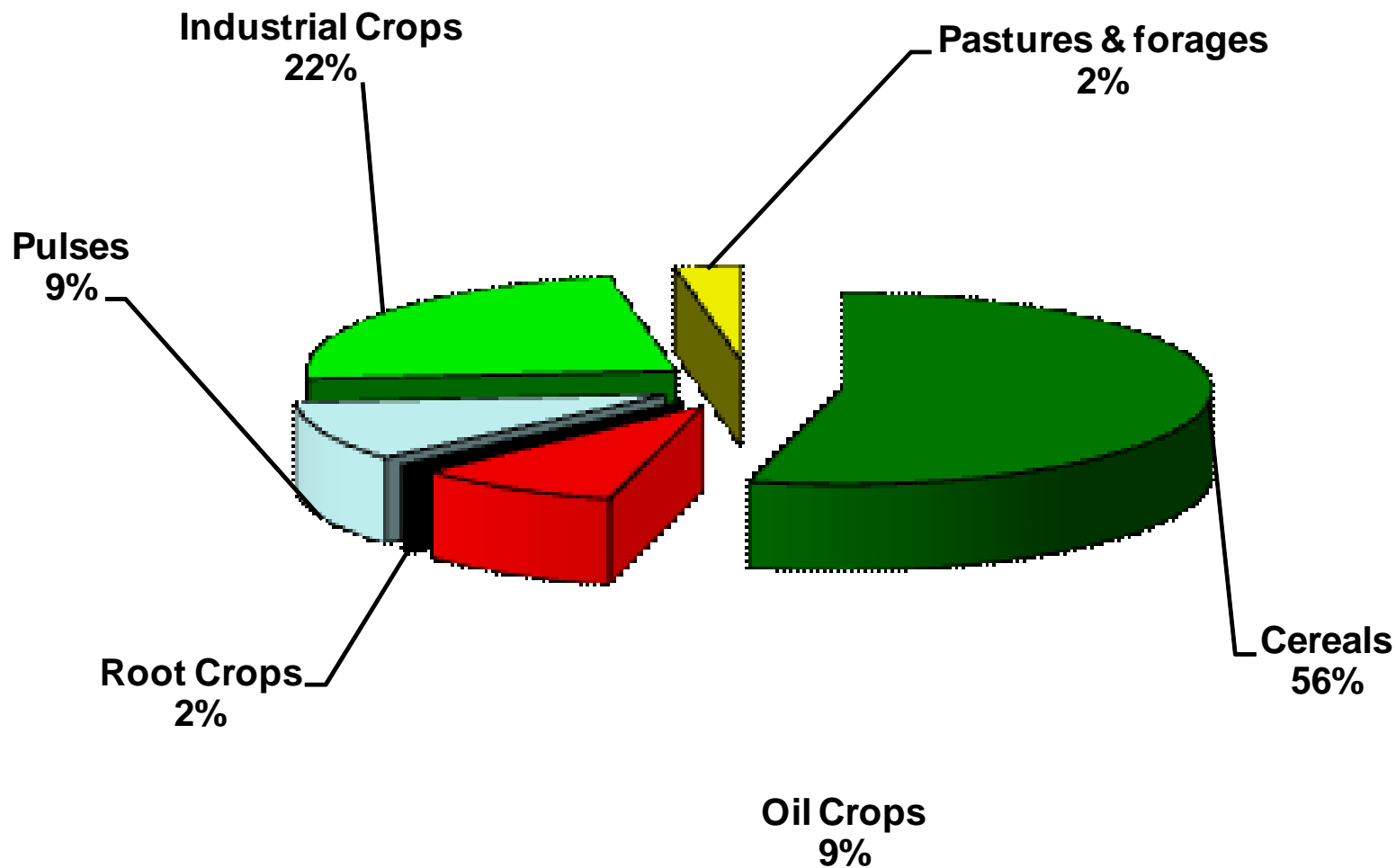
<b>Country</b>	<b>Percentage of Applications</b>
Kenya	35.3
Netherlands	33.6
Germany	11.8
France	7.1
United States	1.1
Israel	0.9
Italy	0.6
South Africa	0.6
Zimbabwe	0.6
Japan	0.6
New Zealand	0.6
United Kingdom	0.6
Mexico	0.1
Australia	0.4
Paraguay	0.2
Korea	0.1
Others	5.82
<b>Total</b>	<b>100.00</b>



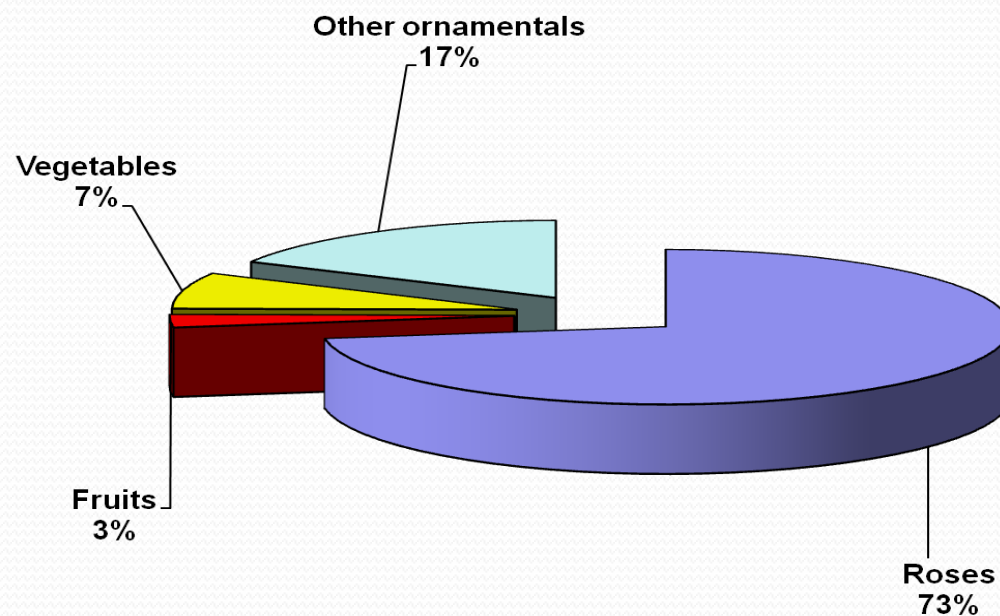
# Number of PBR applications per Year



## *Distribution of PVP Applications for Agricultural Crops in Kenya*



# Distribution of Applications for Horticultural Crops in Kenya





# Successes/Impact Resulting from PVP

## 1. Increase in the number of breeding entities

CROP	1990-96	1997-2016
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	52
Pyrethrum	1	2
Sunflower	2	5

# Successes/Impact Resulting from PVP cont'

CROP	1990-96	1997-2016
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



# Successes/Impact Resulting from PVP 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
  - Foreign seed companies
  - Domestic companies
  - Breeding entrants in horticultural industry

# Successes/Impact Resulting from PVP 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 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.

# Successes/Impact Resulting from PVP 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
  - **Stem rust resistance in wheat,**
  - **Fibre quality in cotton**
  - **Brewing quality in barley**
  - **Processing quality in potato**
- 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.



# Successes/Impact Resulting from PVP 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.



# Successes/Impact Resulting from PVP 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.



# Successes/Impact Resulting from PV P cont'

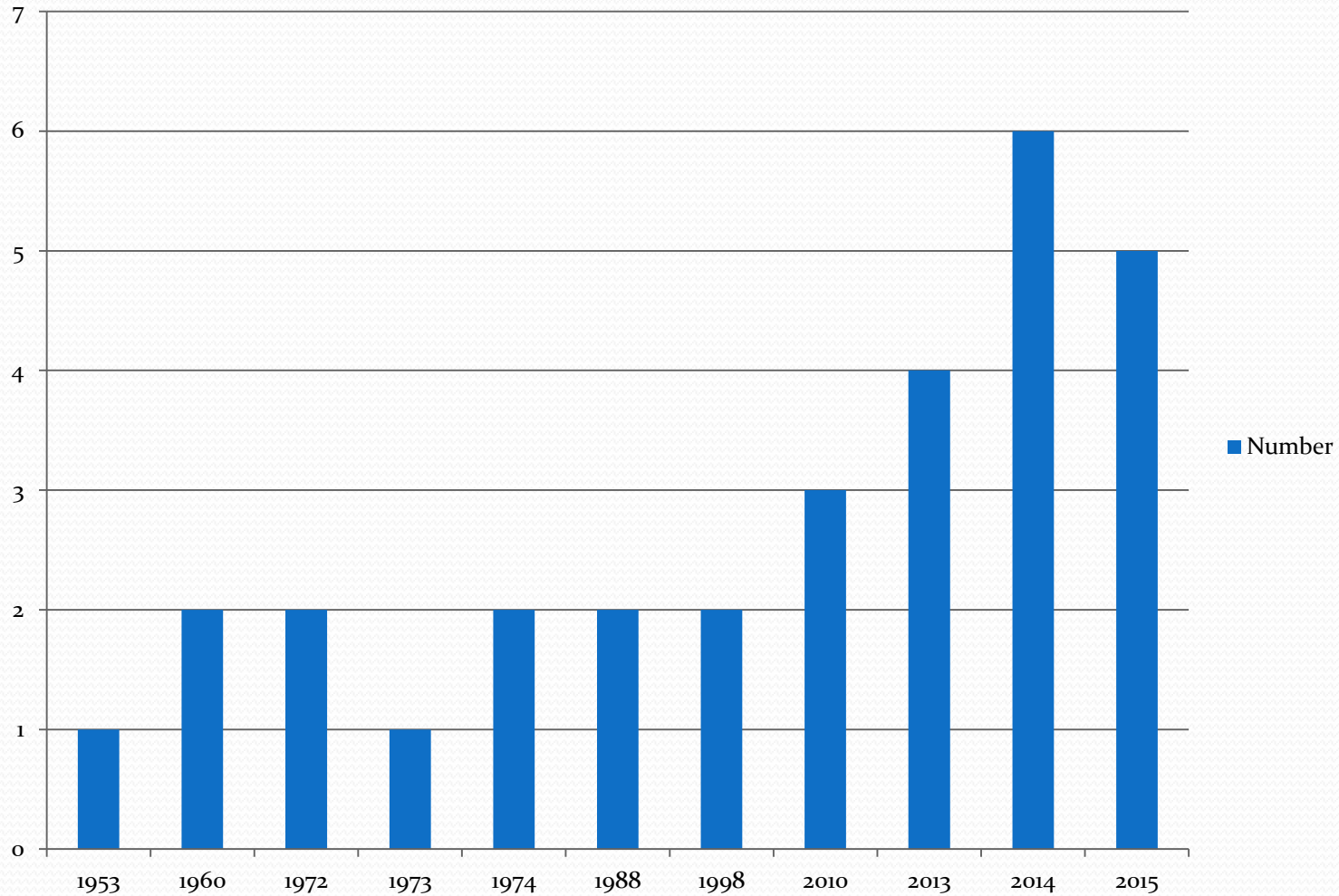
## 5. Enhanced Access to Foreign Bred Materials

- A PVP regime has encouraged foreign breeders to introduce their varieties into Kenya.
- This has improved farmer access to elite varieties, with increased productivity especially in ornamentals.

## 6. Generation of Foreign Exchange and Employment

- More than half 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.

# Irish Potato release in Kenya

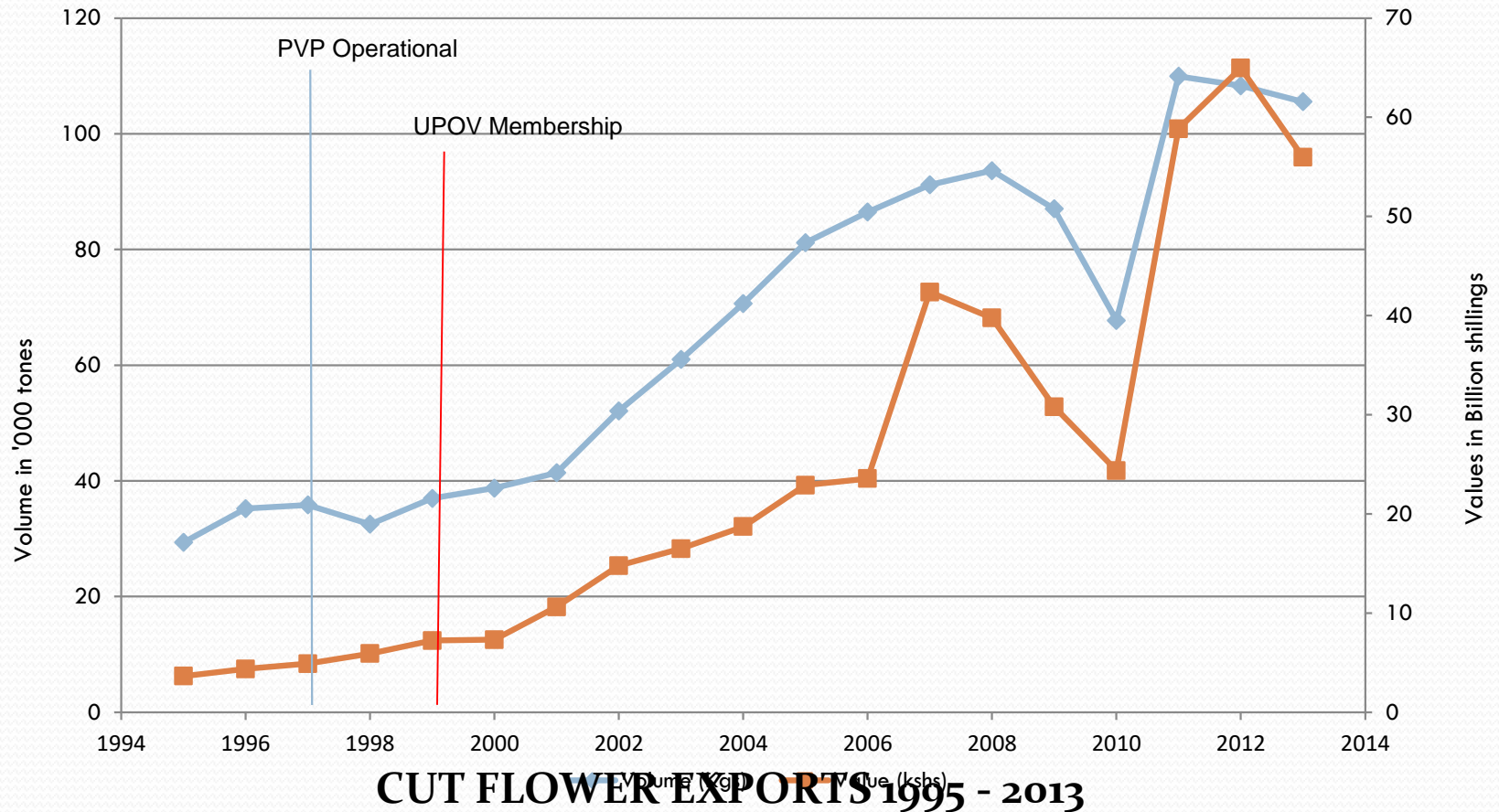




## Successes/Impact Resulting from PVP cont'

- Agriculture sector accounts for 22% of GDP.
- The national GDP from the horticulture sub-sector is 3% of which 1.6% is from the flower industry.
- The floriculture industry has recorded growth in volume and value of cut flowers exported every year. According to Kenya National Bureau of Statistics in 2013, the floriculture industry exported 124, 858 tons valued at Kshs 46.3 billion (USD 463,000,000)

# Successes/Impact Resulting from PVP cont'



Source: HCDA

# Successes/Impact Resulting from PVP cont'

## Cut Flower Industry

- Kenya leads in the export of rose cut flowers to the European Union (EU) with a market share of about 38%.
- The most popular flowers we have in Kenya are;
  - Roses
  - Carnations Spray and Standard
  - Statice
  - Alstromeria
  - Lilies
  - Hypericum



# Successes/Impact Resulting from PVP cont'

## Employment creation

- It is estimated that over 500,000 people (including over 90,000 flower farm employees) depend on the floriculture industry.







# Successes/Impact Resulting from PVP cont'

- **The increase in introduction of crop varieties in the country is as a result of enhanced variety description the latter made possible by:-**
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# Successes/Impact Resulting from PVP cont'

- **Increased interest in Kenya by foreign breeders**
  - Breeders outside Kenya but submit their varieties in the national protection system
  - International Breeders have incorporated their companies domestically to produce and market their varieties. Allowing for capacity building, funding, germplasm exchange and commercialization of varieties in Kenya.

# Successes/Impact Resulting from PVP cont'

## Vibrant Flower Industry

- **Domestic companies;**
  - have access to enhanced Foreign Bred Materials of ornamental varieties developed by international breeders.
  - Domestic entities receive and market new materials from foreign breeders on their behalf or under license
  - Domestic Companies have also extended partnerships with farmers for on-farm production of newly bred varieties.





# Successes/Impact Resulting from PVP 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

# Successes/Impact Resulting from PVP cont'

## 8. International cooperation

- Technical support e.g. training of examiners
- Exchange of test reports – shortens time for DUS examination and reduced cost

## 9. Mutual exchange of information

- Access to data through UPOV
- Exchange of journals on PVP
- Exchange of training materials

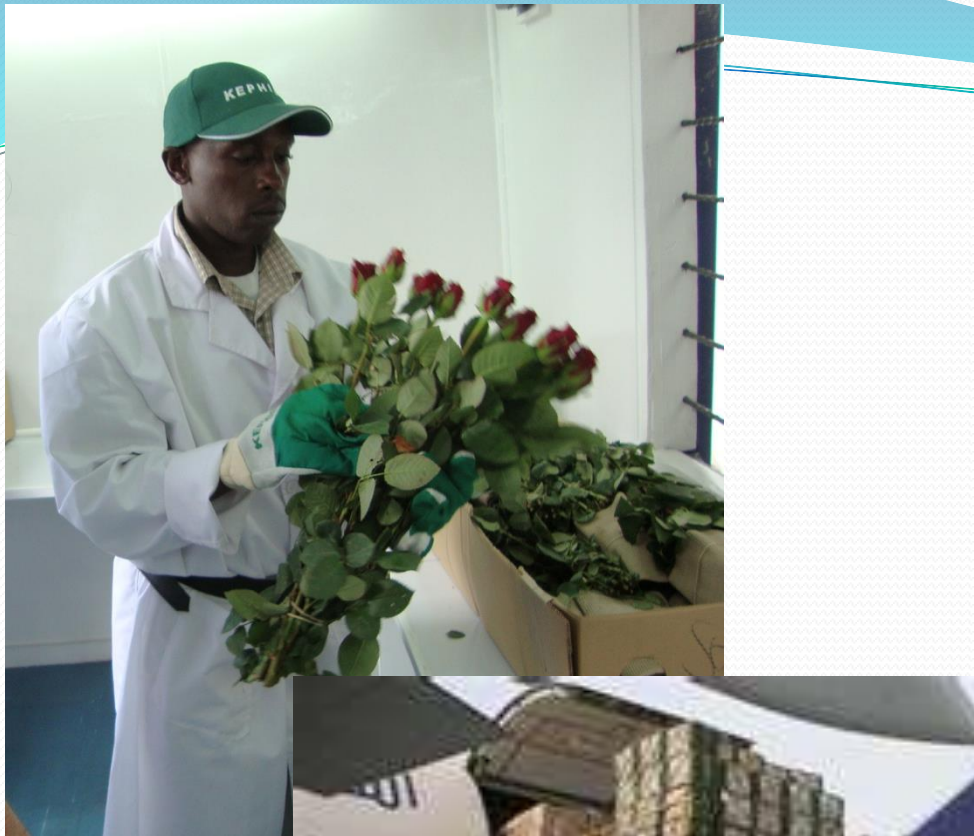
# Plant Breeder's Rights Enforcement

- 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.







THE END

- THANK YOU