



Centre of Phytosanitary Excellence
Protecting agriculture, supporting trade



c/o KEPHIS
Inconjunction with
JATAFF-MAFF-MYANMAR

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Name: Onsando Jared

Institution: KEPHIS

Title: PLANT VARIETY PROTECTION IN KENYA

(Historical perspective, PBR in Kenya, experiences and challenges)



1. Introduction



Innovation and IP: A plant breeding context

- Plant Variety Protection (PVP) System / Plant Breeder's Rights (PBR)

Why we need new improved plant varieties:

- Growing world population
 - ❑ Agricultural productivity needs to be increased - arable land and other resources are scarce
 - ❑ Biotic stress- Better resistance to pests and diseases
 - ❑ Abiotic stress-More efficient use of inputs
 - ❑ Improved quality - less waste, higher value, etc
- Economic development
 - In some countries , agriculture is the backbone of the economy

The main challenges necessitating the need for variety protection

- ❑ Plant breeding is long and expensive
- ❑ Plant varieties can be easily and quickly reproduced
 - ❑ Breeders need protection to recover investment



1. Introduction

The general role of IPRs regulatory regime in plant breeders rights

Linear flow of policy, laws, regulations & procedure in the innovation process



*Developed by
author*

1. Introduction

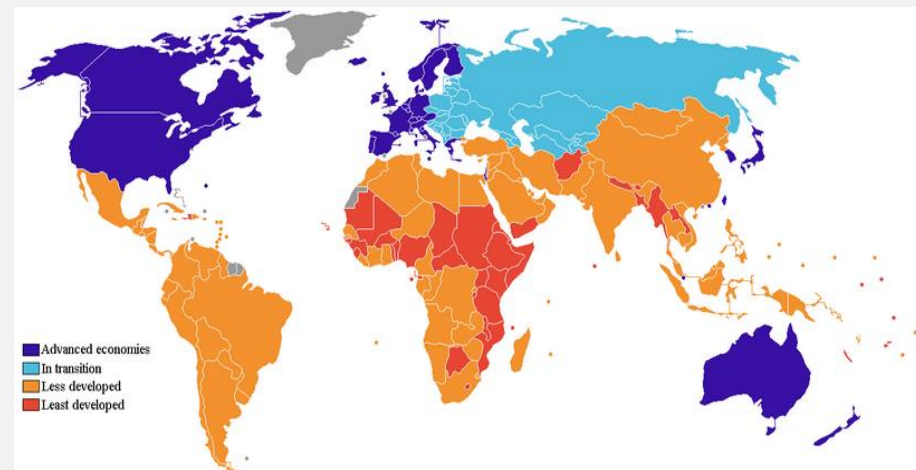
IP in developing countries or less developed countries

Developing countries described

A country with:

- relatively low standards of living,
- underdeveloped industrial base, and
- moderate to low human development index (HDI) (Sullivan & Steven, 2003)

Social and economic inequalities are rife, e.g. poverty, widespread illiteracy, unemployment etc



- How IPR systems are perceived in developing countries:
 - Encourage economic concentration
 - Threaten traditional agriculture and food security
 - Constrain free exchange of germplasm
 - Contribute to erosion of traditional knowledge and genetic resources
 - Threaten biodiversity
 - Lead to appropriation of what is otherwise common heritage for mankind (Mooney 1979)



1. Introduction

IP in developing countries or less developed countries

An overview of the Sub-Sahara countries and their uptake of IPRs

Country	WTO	UPOV	ITPGRFA	National PBR Laws
Angola	*		*	
Botswana	*			
DR Congo	*		*	
Djibouti	*		*	
Gambia	*			
Ghana	*		*	
Kenya	*	*	*	*
Lesotho	*		*	
Liberia			*	
Madagascar	*		*	
Malawi	*		*	
Mauritius	*		*	
Mozambique	*			
Namibia	*		*	*
Rwanda	*		*	
Seychelles			*	
Sierra Leone	*		*	
Somalia				
South Africa	*	*		*
Sudan			*	
Swaziland	*		*	
Tazania	*	*	*	*
Uganda	*		*	*
Zambia	*		*	*
Zimbabwe	*		*	*
Total	21	3	20	7



Table adopted from Munyi et al. 2016

2. Historical Perspective

- Kenya is a WTO member
- Article 27.3(b) of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement requires member countries to provide for protection of new plant varieties either by:-
 - Patents or
 - By an effective Sui generis system or
 - By combination thereof
- This implies that members provide for protection of new varieties of plants with some form of intellectual property rights (IPR), and which must be effective

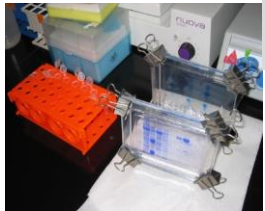


2. Historical Perspective

- ❑ The TRIPS agreement, however, fails to define the composition of an effective Sui generis system
- ❑ Dhar, (2002) outlined the following alternative interpretations of an effective Sui generis system of plant variety protection (PVP)
 - ❑ A system of PVP that allows for an effective action against infringement
 - ❑ A legal framework that can provide to the largest range of new varieties developed by formal plant breeders as well as those developed by traditional farmers



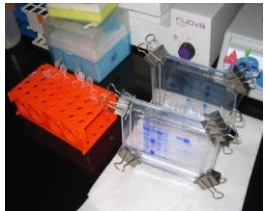
2. Historical Perspective



- ❑ UPOV framework which is considered adequate being the only internationally recognized Sui generis system for the protection of new varieties of plants
- ❑ The national protection in Kenya is provided under the Seeds and Plant Varieties Act (1972), which was revised in 1991, 2012 and 2016
- ❑ Official regulation to guide the implementation of the PVP service were put in place in 1994 and are currently under review



2. Historical Perspective



- ❑ The plant variety protection schemes were published in 1997
- ❑ 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 13th May 1999



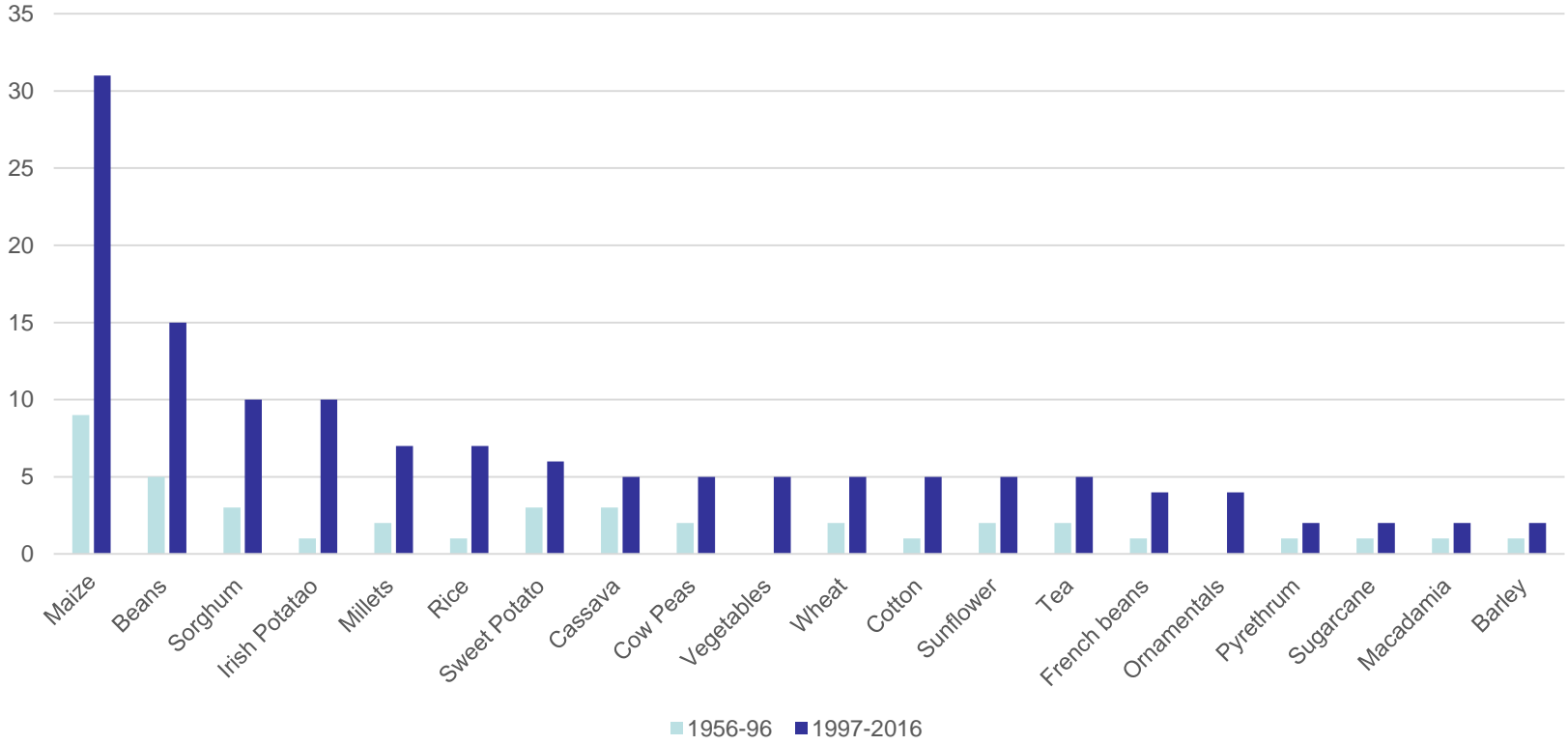
2. Historical Perspective

- ❑ The 2012 revised seed Act the 1991 Act of the UPOV convention
- ❑ Kenya acceded to UPOV 1991 convention in May 2016
- ❑ Kenya grants PBR for all plant genera and species, other than algae and bacteria
- ❑ The Kenyan PBR Act enshrine the principal of national treatment
 - ❑ Allows all nationals of other state members of UPOV to be treated as Kenyan nationals as far as PVP is concerned



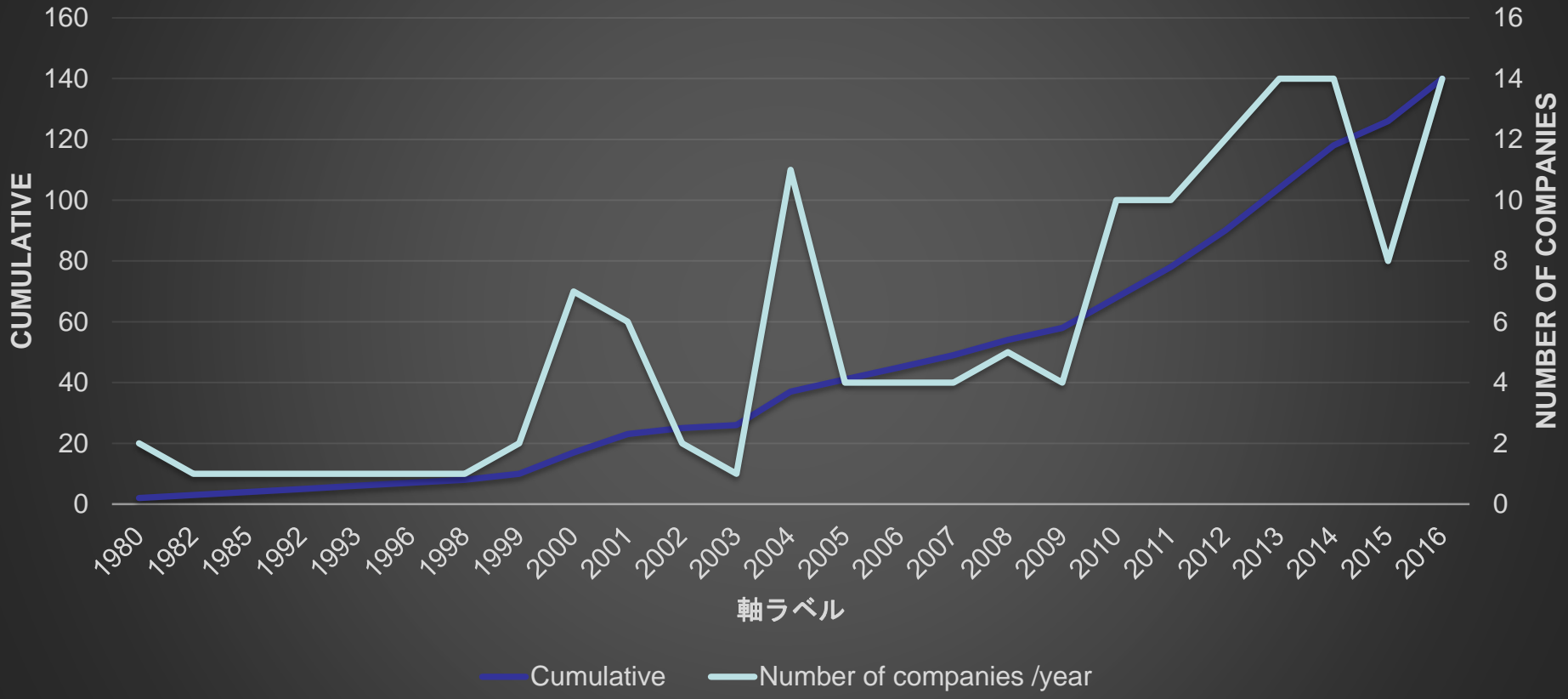
2. Experience

1. Increase in the number of breeding entities



2. Experience

Number of Registered Seed Companies

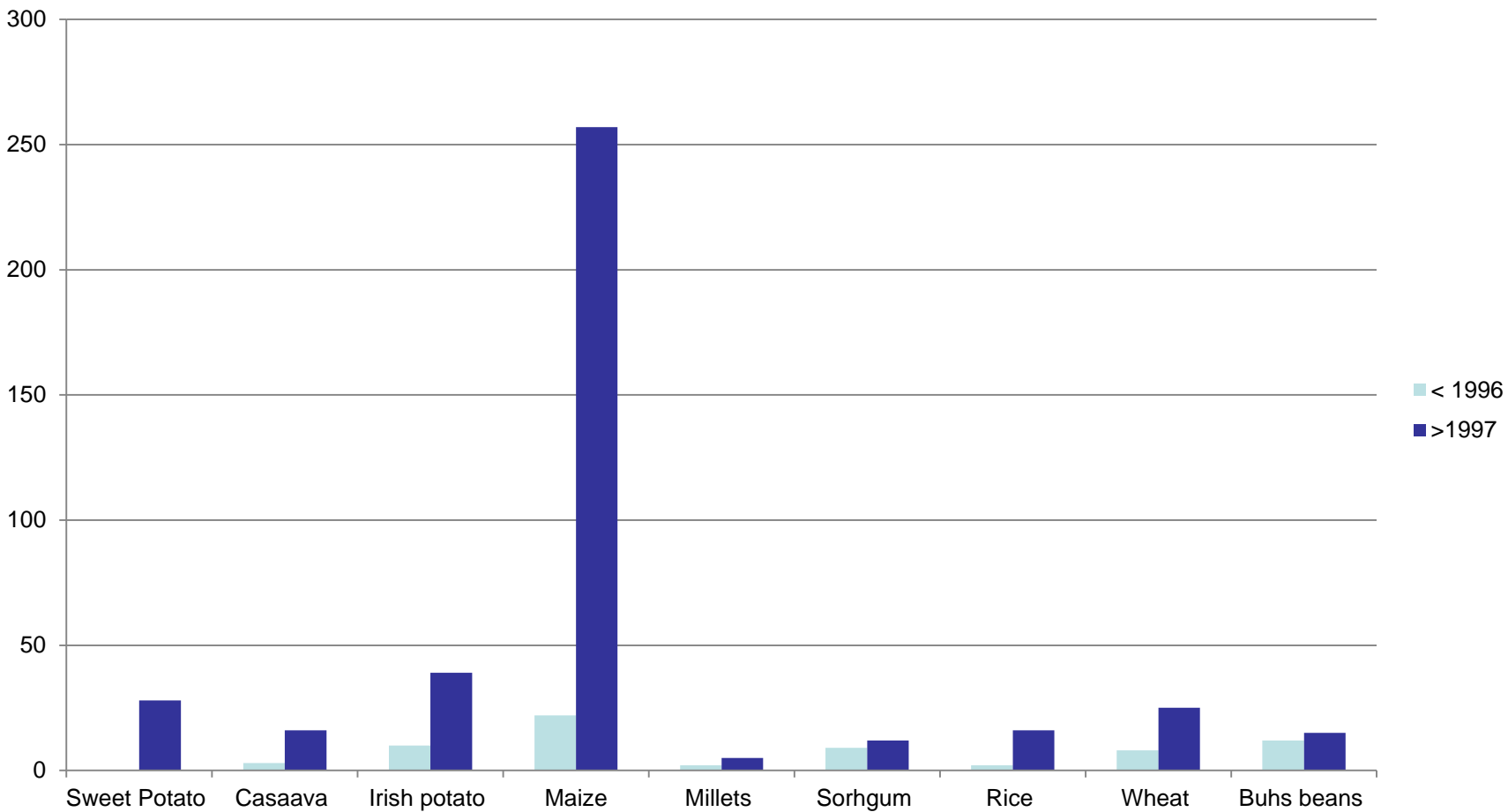


2. Experience

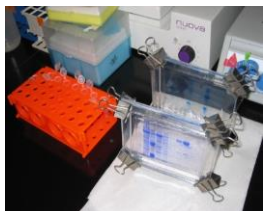
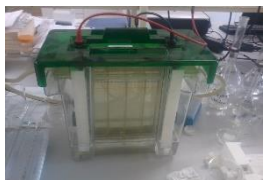
- ❑ Initially most breeding work was done by National Agricultural Research Institute
- ❑ With advent of PVPO and liberation of the seed industry in the country several new breeding entrants have come on board namely:-
 - ❑ University scientists: Lines previously developed for purpose of academic research have been improved to varieties for protection and commercialization
 - ❑ International Seed companies: Breeding work carried outside Kenya but release their varieties in the National protection and or testing and release systems
 - ❑ Domestic companies: Have access to new developed by international research institutes the latter not permitted to officially release this varieties in Kenya
 - ❑ Breeding entrants in horticultural industry: traditionally carried outside Kenya but of late substantial increase in the level of domestic breeding for vegetables and ornamentals



2. Experience



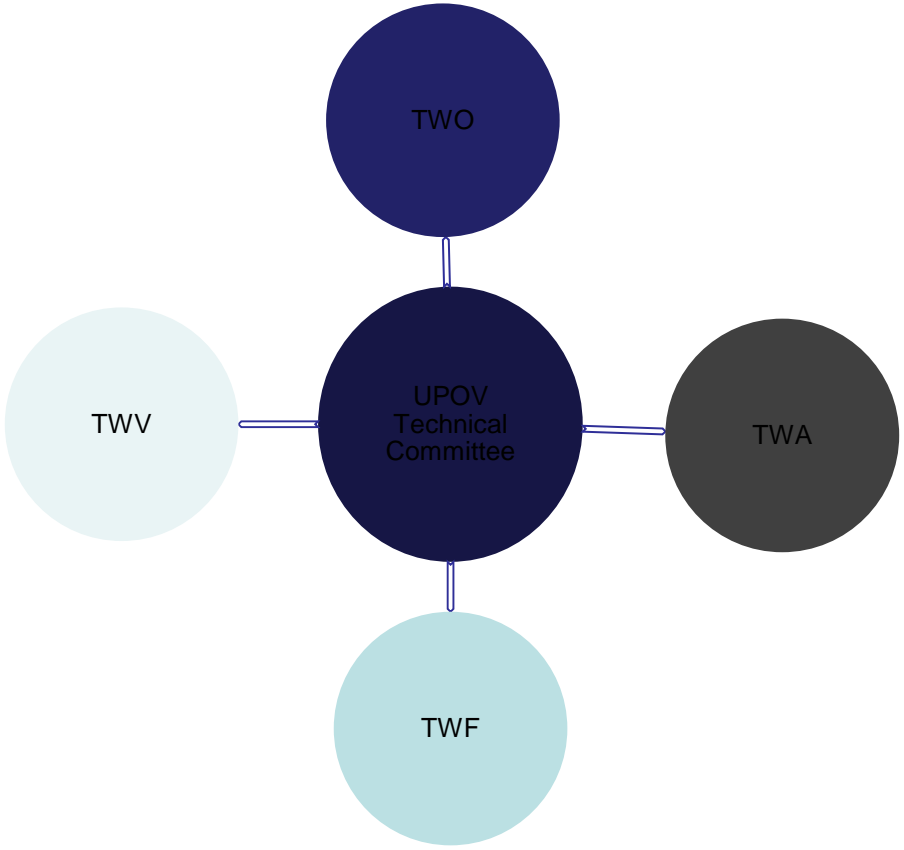
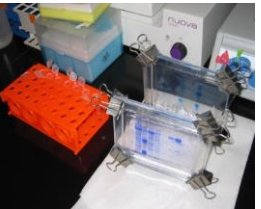
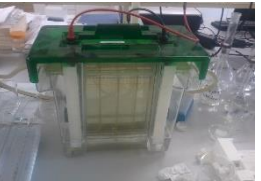
2. Experience



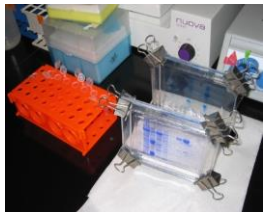
- ❑ The number of varieties introduced by breeders within the period subsequent to the establishment of PVP is significantly higher than in the preceding period
- ❑ Between 1980 and 1994, only 22 new maize varieties were released, as compared to 279 between the year 1997 and 2015
- ❑ In the country, DUS test is a mandatory requirement for any variety to be released
- ❑ These tests are conducted using UPOV and National test guidelines



2. Experience



2. Experience



2. DUS cooperation

- The breeders generate the breeders descriptor the latter is confirmed to official descriptor by the seeds and plant variety testing authority
- The increase in introduction of crop varieties in the country is as a result of enhanced variety description this made possible by:
 - Readily available UPOV testing guidelines for most of the Agricultural crops
 - Trained personnel by UPOV on development of national testing guidelines
 - Collaboration and cooperation between the breeders and testing authority on variety description



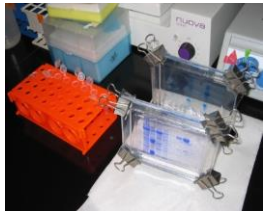
2. Experience

3. Improved release 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:
- Disease and pest tolerance (French beans and maize)
- Brewing quality in barley
- Drought tolerance in maize and bush beans
- Bread baking quality in wheat
- Canning quality in canning beans
- Dry matter content in Irish and sweet potato
- Nutritional attributes (bush beans, sweet potato)



2. Experience

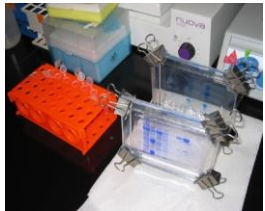


3. Improved release varieties

- ❑ These requirements have demanded improvement on the already released and protected varieties
- ❑ The provision of the breeder's exception has allowed the Kenyan breeders to develop improved new varieties using the released or protected varieties as a source of variation e.g. Transgenic Gypsophilla



2. Experience

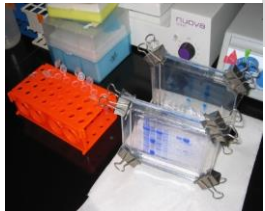


3. Increased breeding activities, commercialization and collaboration

- An increased level of activity has been observed in the seed market amongst domestic and international breeders
- At the same time, an increased collaboration of domestic breeders with international breeders and breeders working for international research institutions has been noted through:
 - Capacity building programmes
 - Germplasm exchange and
 - Commercialization of varieties bred outside Kenya



2. Experience



- ❑ Domestic and international breeders have extended partnerships with farmers for on-farm testing of newly bred varieties
- ❑ Domestic entities receive and market new varieties from international breeders under license
- ❑ Alternatively these breeders have incorporated their companies domestically to market and commercialize their varieties



2. Experience

5. Enhanced Access to International Bred varieties

- Most of the applications for PVP in Kenya are from international breeders (62.5%)
- This demonstrates increased availability of international germplasm which can be used further in developing improved varieties



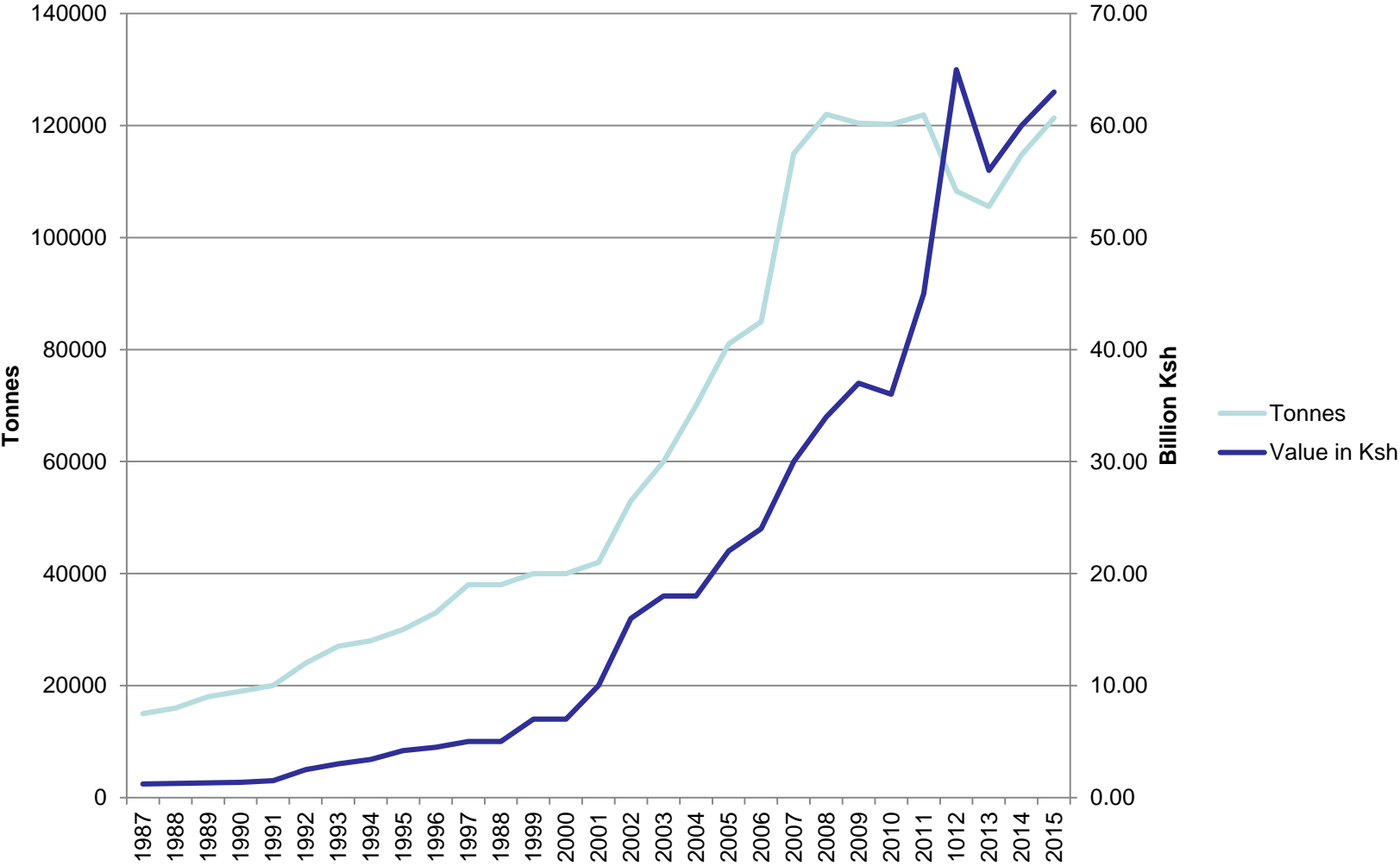
2. Experience

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 vegetable and ornamental production, Kenya has continued to attract breeders to commercialize their varieties for the European, Asian, Americas and Oceanic markets
- ❑ Kenya remains the largest single source of floriculture imports into the European Union
- ❑ To sustain the production for these markets, the horticulture industry employs a large labor force thus improving livelihoods



Export of Kenyan Cut Flowers



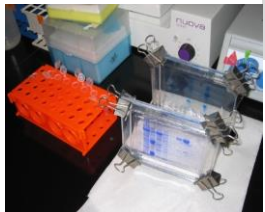
2. Experience

7. Increased level of awareness of PVP service

- This has been achieved through elaborate outreach programme to sensitize stakeholders the objective and processes of PVP
- Tangible impact:
 - Development of institutional intellectual Property Policy by most institutions engaged in plant science research
 - National Seed Policy where the plight of breeders on royalties has been addressed



2. Challenges



- ❑ Domestication of the UPOV Test Guidelines
 - ❑ A lot of resources (majorly financial) is needed to evaluate local varieties which will serve as reference and example varieties in the DUS trials
- ❑ Intellectual property more so PBR is a new concept in Kenya whose adaptation has been slow especially among the public sector institutes
- ❑ The National Intellectual Property Policy remains in its draft form to date
- ❑ The challenge for African countries is to strike a balance between protecting the interests of breeders through the incentive function of plant breeder's rights for the commercial market, and the leeway that needs to be provided to smallholder farmers that depend on informal sources for their seed security and survival. And to do so in a practical and legally enforceable manner



Questions?



Contact details

COPE Secretariat

c/o Managing Director, KEPHIS Headquarters

P.O. Box 49592-00100, Nairobi, Kenya

Tel.: +254-20-3536171/2

Fax: + 254-20-3536175

Email: director@kephis.org; info@africacope.org

Website: www.kephis.org; www.africacope.org

