

International Seminar on Protection of New Plant Varieties

Benefits of membership of UPOV

Manabu Suzuki, Technical/Regional Officer (Asia), UPOV

November 26, 2020 (Hanoi, Viet Nam, by virtual means)



International Union for the Protection of New Varieties of Plants

Preview

- 1. How farmers and society have benefited in UPOV members**
- 2. Making new varieties available to farmers**
- 3. Benefit of UPOV membership for implementing PVP**

Preview

- 1. Examples of how farmers and society have benefited in UPOV members**
2. Making new varieties available to farmers
3. Benefit of UPOV membership for implementing PVP



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”

Benefit of Society

Food
security

Climate
change

Economy

Environ-
ment

Technology
transfer

Better,
cheaper
food

Adapted
crops

Export
International
competitiveness
Reduce
high cost
imports

Sustainable
production
Less
inputs

Usable
technology
(varieties)
Public
Private
Partner-
ships

Farmer benefits

Rural
employ-
ment

New, improved varieties



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

**Food
security**

**Climate
change**

Economy

**Environ-
ment**

**Technology
transfer**

The economic, social and environmental value of plant breeding in the European Union

2000-2013

– Results achieved so far* –

Steffen Noleppa
HFFA Research GmbH



** This research has been initiated and financially supported by ETP. The results of the study are the sole responsibility of the author and have never been influenced by the initiator and supporter of the study.*

October 13th, 2015, Vienna

EU: 2000-2013

Without plant breeding:

EU would have moved from being net **EXPORTER** to net **IMPORTER** in all major agricultural crops (including wheat and barley)

PLANT BREEDING THE ECONOMIC IMPACT



1.2 million European
farmers and farm
workers would be

30% worse off
without plant breeding,
earning €7,000
less annually
(on average),
and putting
rural jobs at risk.



By 2030, this figure could
be up to €14,000.



PLANT BREEDING FOR SUSTAINABILITY

CO₂

Without plant breeding, Europe would need an extra 19 million hectares of farm land to produce the same amount of food.

CO₂

CO₂

CO₂

**Turning 19 million
hectares of forests,
wetlands and other
habitats into farmland
would release 3.4 bn
tons of CO₂.**

Annualised, that's the same as all the greenhouse gas **emissions from traffic in Germany**, or the annual CO₂ emissions of a **country like the Netherlands**.





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High Level Study Tour (Japan, July 2016)



Koshihikari (越光)
(1,580 ¥)

Tsuyahime
(2,480 ¥)

Rice variety “Tsuyahime”



- High quality variety (good taste)
- Yamagata prefectural government holds the plant breeder's right
- Royalty free for Yamagata farmers, royalty paid by other farmers
- Location and agronomy (less fertilizer and pesticide) controlled to maintain quality (= high market price)
- Increased farmers' income



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**Food
security**

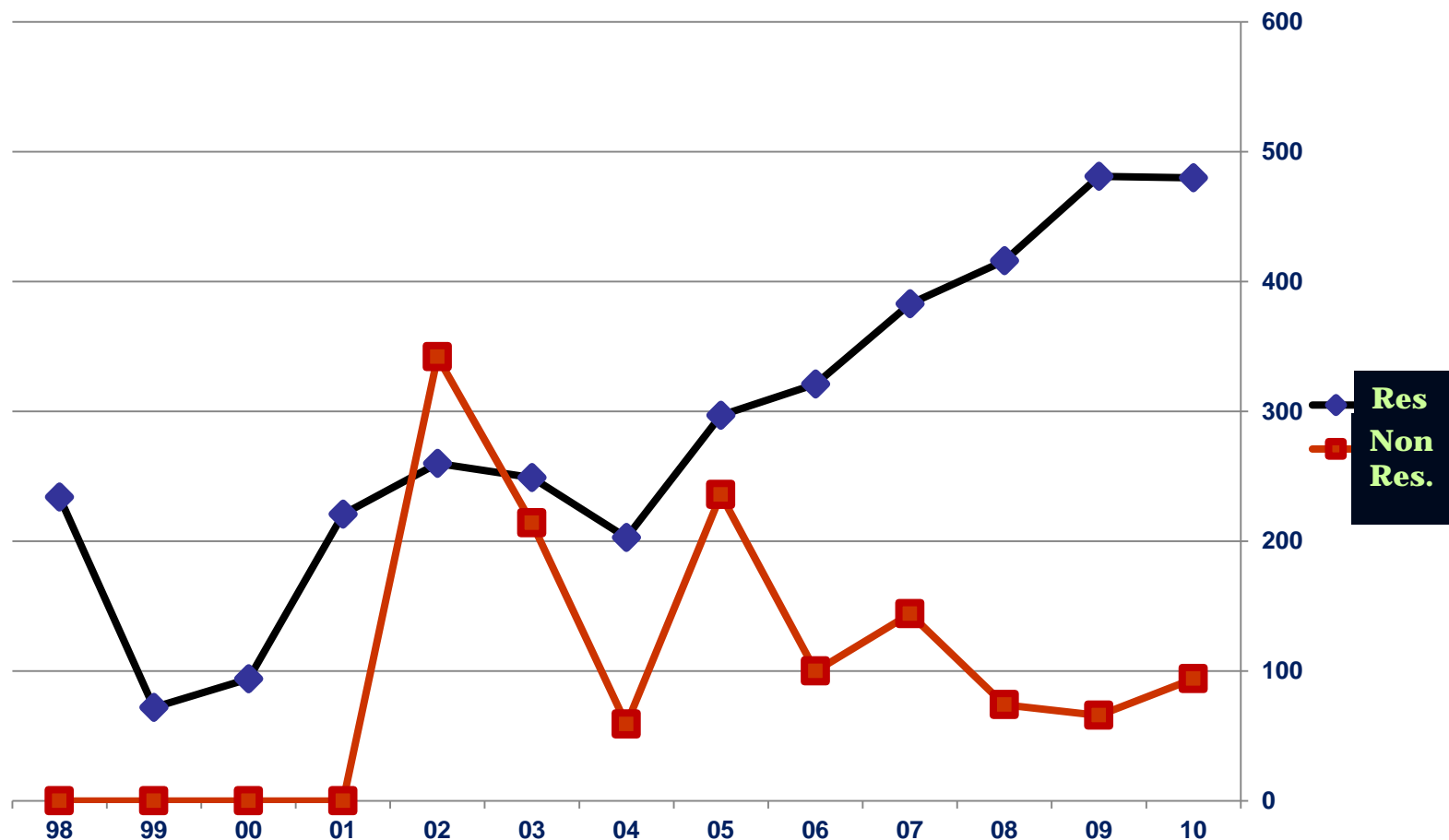
**Climate
change**

Economy

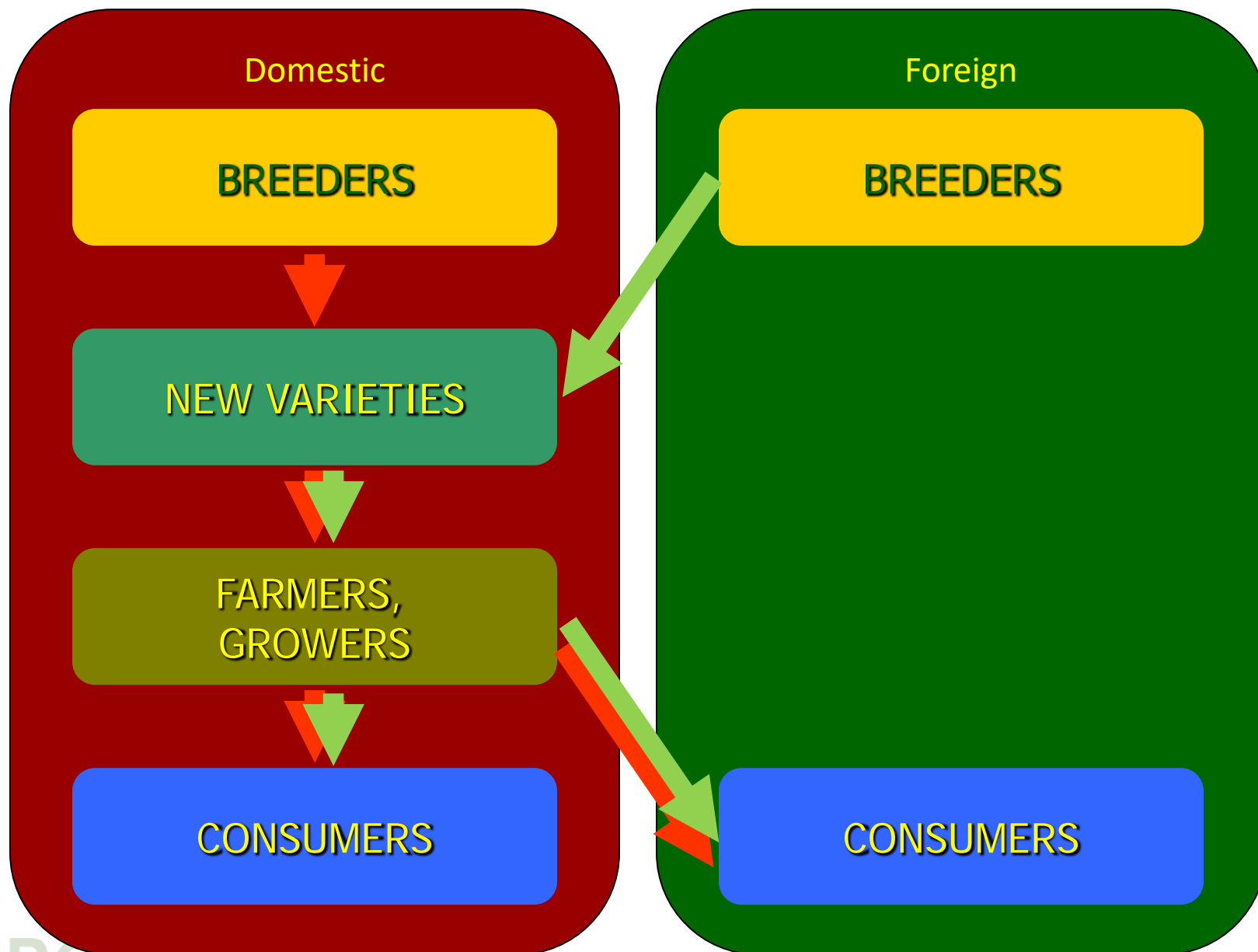
**Environ-
ment**

**Technology
transfer**

Application Ratio of Residents/Non Res.



Dr. CHO, Il Ho (Symposium on Plant Variety Protection - Future Strategy for Enhancing the Effectiveness of the PVP System, Seoul July 13, 2011)



KSVS Symposium on Plant Variety Protection Seoul, Republic of Korea (September 3, 2015)

Korean Rose Breeding Converts a Royalty Payer into a Receiver

Charlie Jeong/wonwoo trading

Becoming Royalty Receiver

1. Korean pay rose royalty abroad about 1,040,000plants in year 2014
2. GARES rose varieties are sold about million in year 2014
3. Korea change from royalty payer to royalty receiver



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Food security

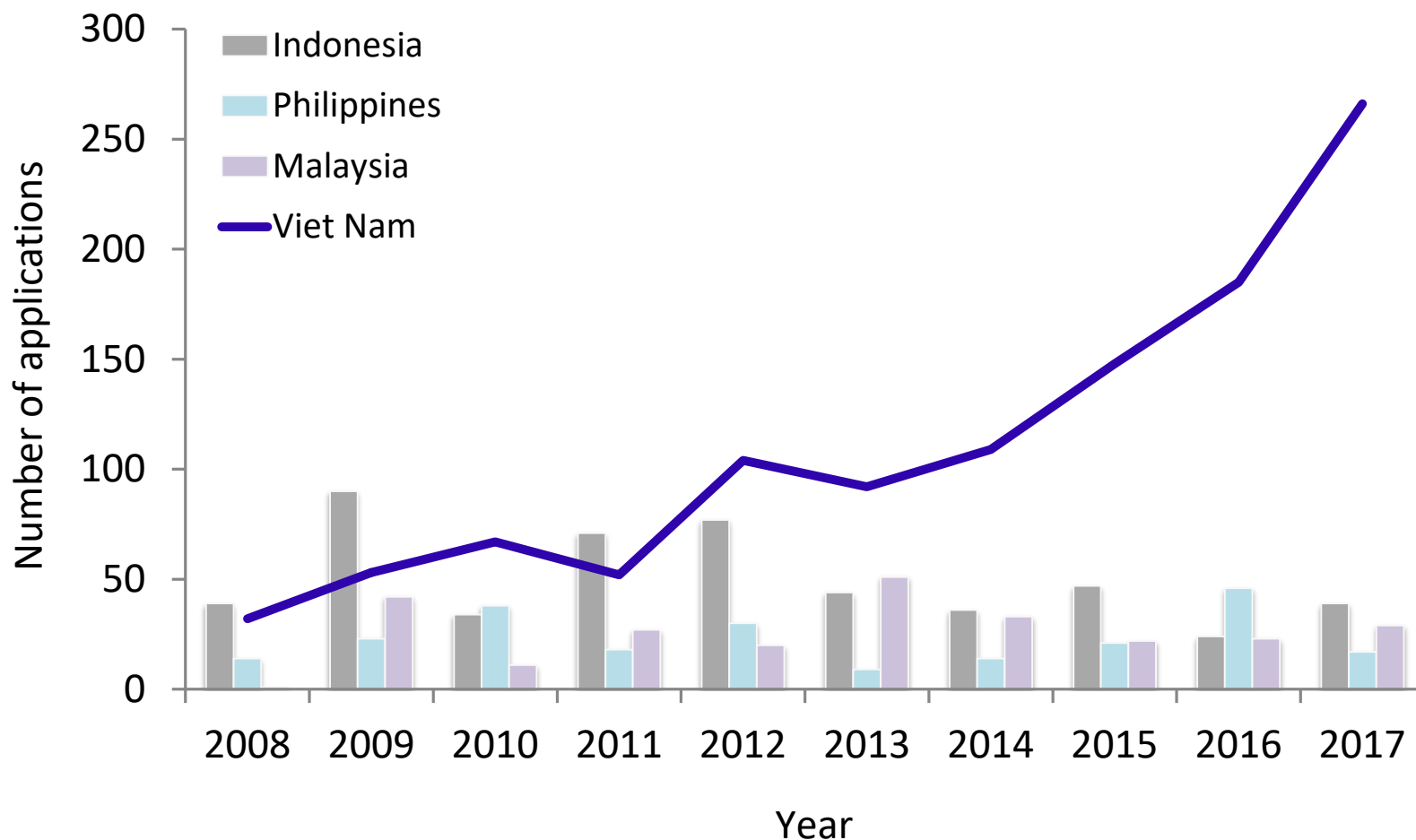
Climate change

Economy

Environment

Technology transfer

Applications for Plant Breeders' Rights



1. Erizal Jamal, Director, Center for Plant Variety Protection & Agriculture Permits, Indonesia. 10th East Asia Plant Variety Protection Forum Meeting
2. Dr. Mary Ann P. Sayoc, President, Philippine Seed Industry Association. National Seminar on Benefit of The Plant Variety Protection System, Philippines (11th EAPVP), August 2, 2018
3. Sri Ikarostika Rahayu Binti Muhammad Ghazi. Department Of Agriculture, Malaysia. National Seminar on Benefit of The Plant Variety Protection System, Philippines (11th EAPVP), August 2, 2018
4. Nguyen Thanh Minh, PVPO, Mard/Viet Nam. National Seminar on Benefit of The Plant Variety Protection System, Philippines (11th EAPVP), August 2, 2018

STUDY in VIET NAM*

Annual land productivity developments since Viet Nam joined
UPOV in 2006 in

Rice, Corn (maize) and Sweet Potatoes

- **1995-2005:** increase in yield mainly through increased level of inputs – no detectable increase due to plant breeding
- **2006-2016:** annual land productivity increase due to plant breeding
 - Rice 1.7 %
 - Corn 2.1 %
 - Sweet potatoes 3.1 %

* “The socio-economic benefits of UPOV membership in Viet Nam; An ex post assessment on plant breeding and agricultural productivity after 10 years” (Corresponding author: Steffen Noleppa) by HFFA Research GmbH

**The socio-economic benefits
of UPOV membership in Viet Nam:**

An ex-post assessment on plant
breeding and agricultural productivity
after ten years

Corresponding author: Steffen Noleppa



HFFA Research Paper 03/2017

STUDY in VIET NAM



Photo: iStock / Rawpixel

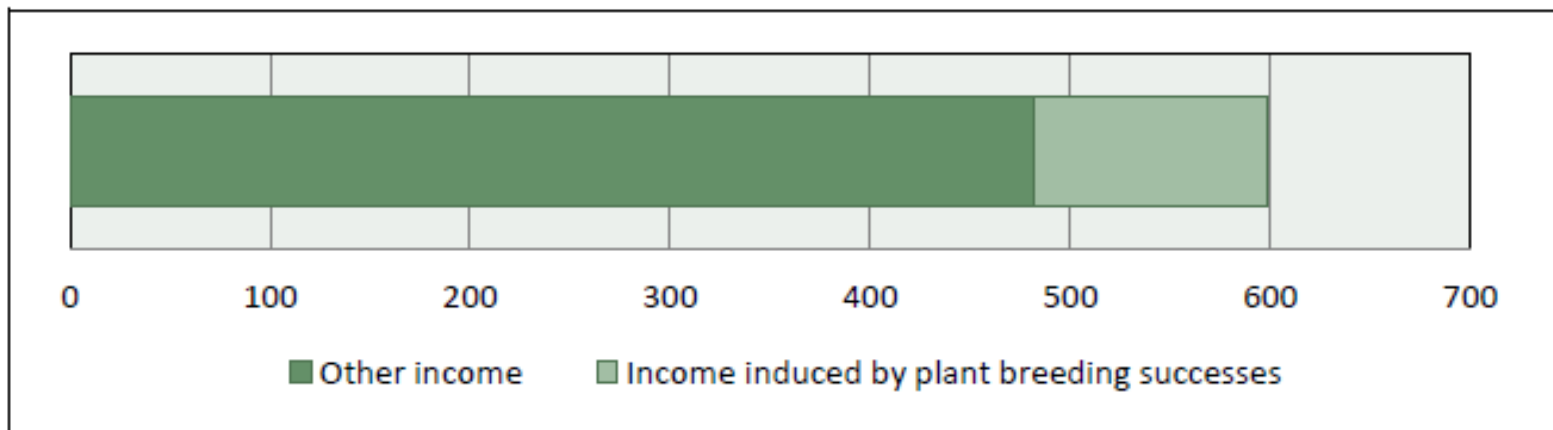
Without those developments since 2006,
current annual yields in Viet Nam would be lower by:

- | | |
|------------------|------|
| – Rice | 16 % |
| – Corn | 19 % |
| – Sweet potatoes | 27 % |

STUDY in VIET NAM

INCOME of Vietnamese farmers has increased by 24% since 2006

Figure 4.6: Income of a Vietnamese farmer induced by plant breeding successes for major arable crops since UPOV membership vs. other income in arable farming (in USD)



Source: Own figure and calculations.

STUDY in VIET NAM

Annual value added:

- Arable farming \$2.3 billion
- Horticulture \$1.0 billion
- Floriculture \$ 0.2 billion
- GDP added upstream/downstream (value chains)
\$1.5 billion

TOTAL ADDED: \$5 billion

(> 2.5% GDP)



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Food security

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Technology transfer

(Kenya) Rose Industry Blooming Kenya



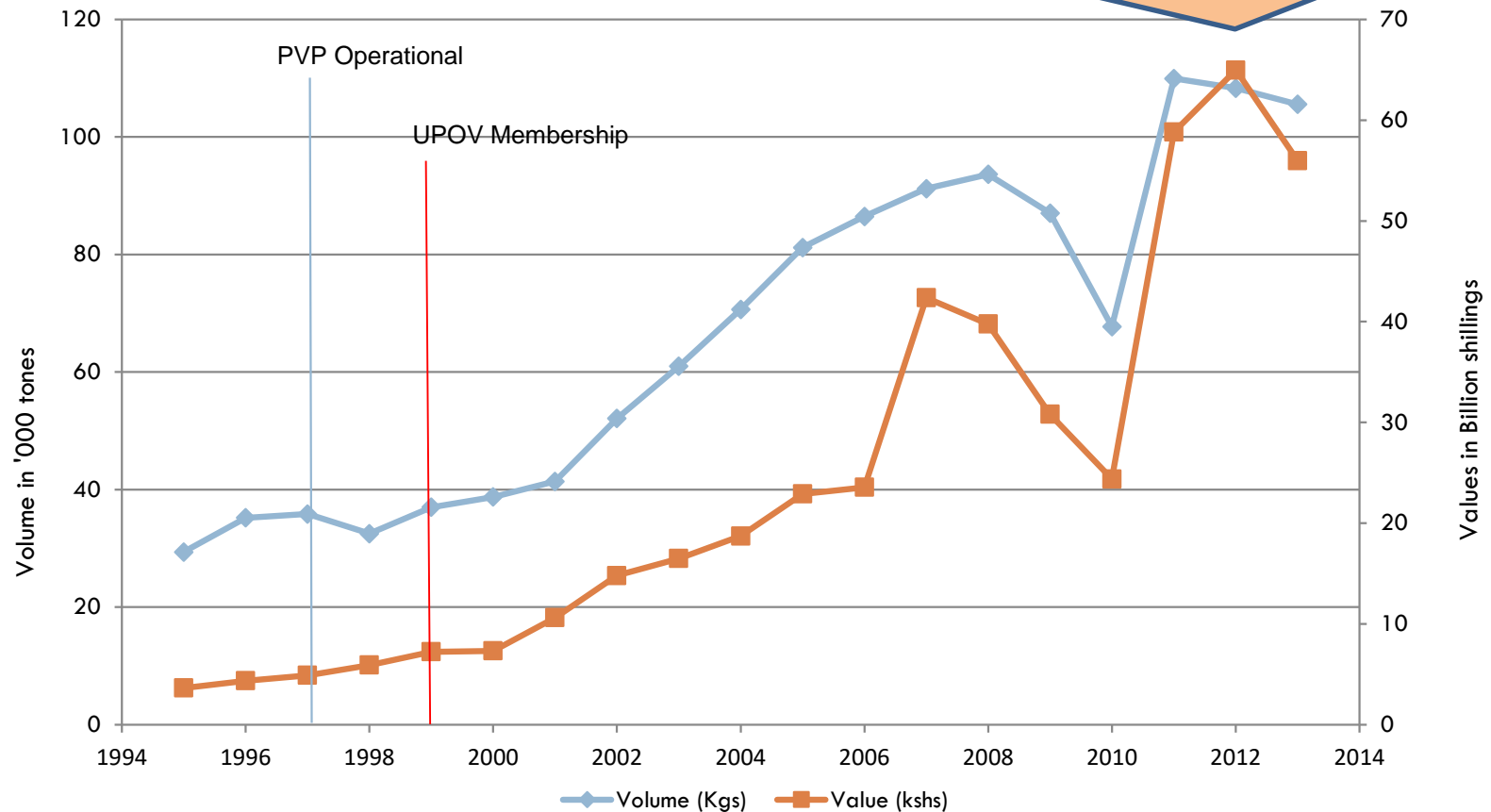
Esther KIMANI

Managing Director,
Kenya Plant Health Inspectorate Service
(KEPHIS)

“Because of the fact that we acceded to UPOV, we are able to access varieties of any plant cultivar from any part of the world because the breeders are confident that they will get their rights protected.”

Impact of Plant Variety Protection in Kenya

65 Billion Kenya Shillings = \$645 million (approx. Aug. 2018)



CUT FLOWER EXPORTS 1995 - 2013

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.





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Using the UPOV System to benefit custodians of native wild germplasm in Argentina



“The royalties derived from commercialization of the variety are shared between the breeder and the provinces that contributed the native plant genetic resource.”

“A large part of the profits, basically, 50 per cent, that are generated from the commercialization return to those provinces.”

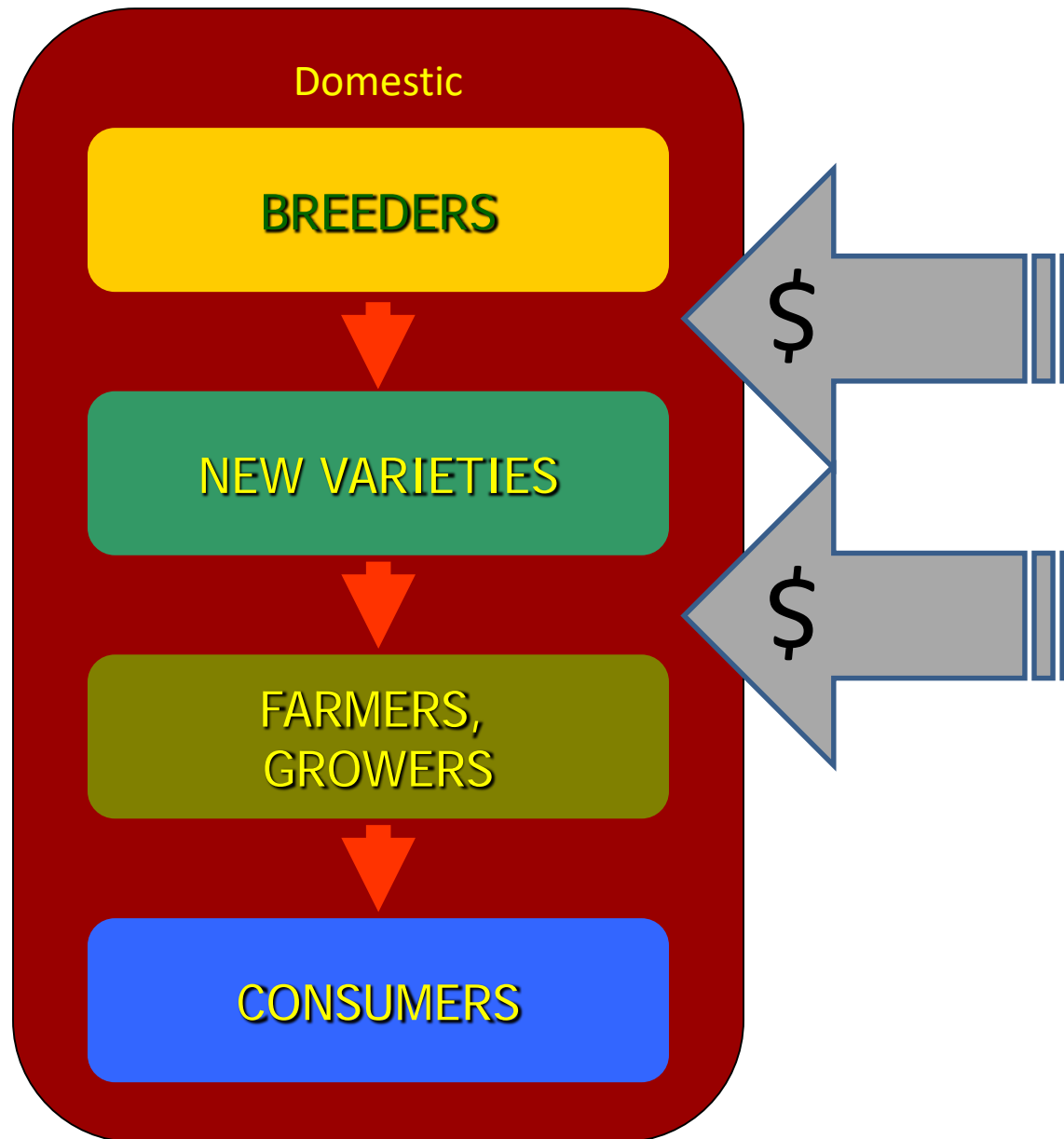
“the erosion/loss from their natural habitat is reduced and this is therefore our own contribution, working together with INTA, for the conservation of our native natural resources.”

UPOV



Preview

1. Examples of how farmers and society have benefited in UPOV members
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Change the mode on the agriculture production (Viet Nam (Minh 2017))

Seed distribution system of new varieties

BEFORE PVP

Breeders

No Professional
distribution
system

Farmer

Not professional
Seed quality
control difficult

AFTER PVP

Breeders

License



Company

Royalty



Good professional
distribution
system

Farmer

Good service for the
farmer;
Better seed quality
due to professional
distribution



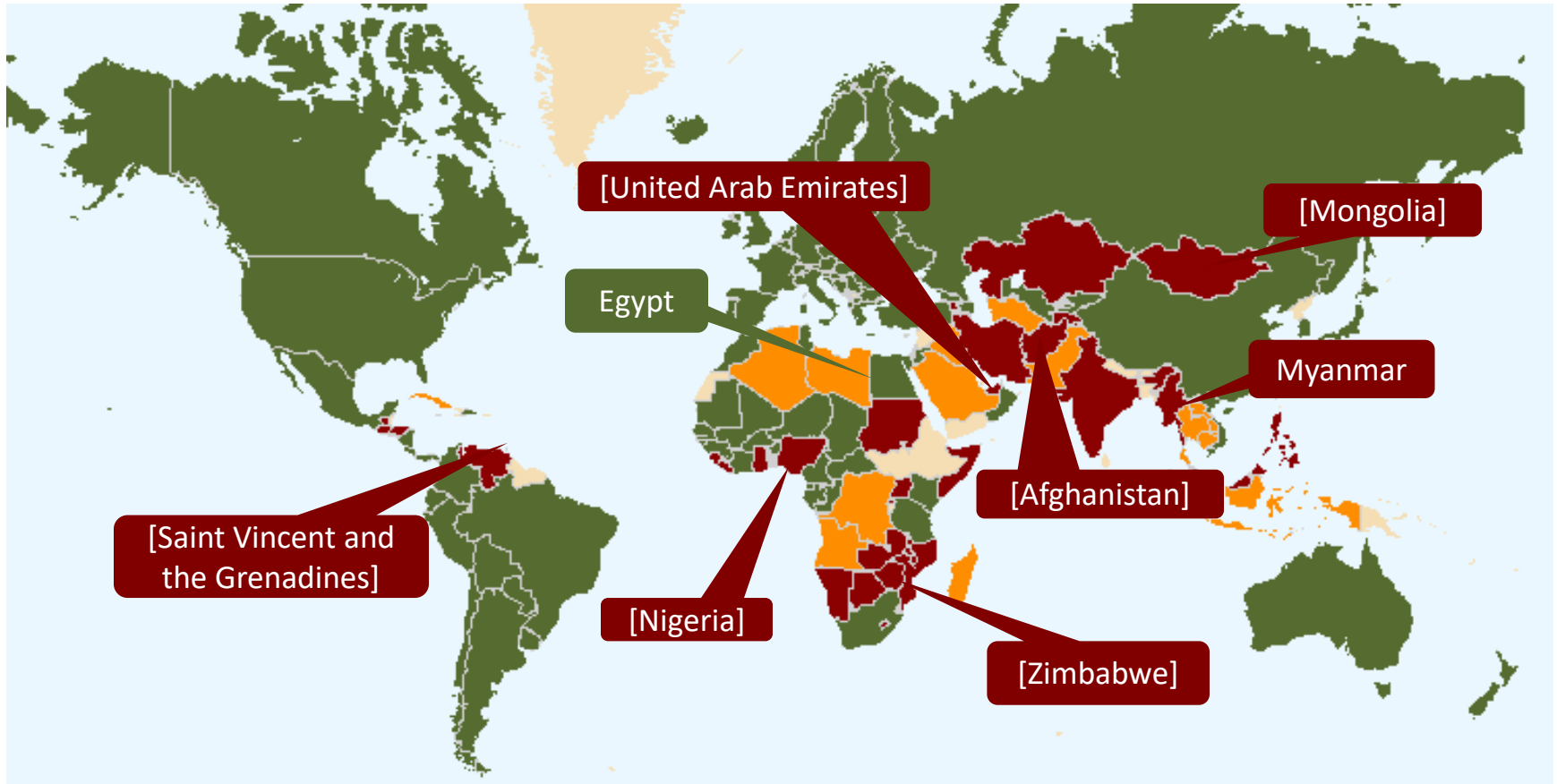
Preview

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3. **Benefit of UPOV membership for implementing PVP**

Examination of [draft] Laws (2019-2020) (all positive)

UPOV STATUS

on November 12, 2020









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- Members of UPOV (76) (covering 95 States)
- Initiating States (20) and Organization (1)
- States (23) and Organization (1) in contact with the UPOV Office

Cooperation between UPOV members is a key benefit of UPOV membership



Harmonization, Resources and Assistance

		Harmonization/Guidance	Resources	Training & assistance
IMPLEMENTATION	PVP Law	<ul style="list-style-type: none">• UPOV Convention• Explanatory Notes	 UPOV Lex	
	PVP Office	<ul style="list-style-type: none">• Guidance for Members of UPOV (INF/15)		
	➤ Application	<ul style="list-style-type: none">• Model Application Form (TGP/5/Section/2)	 UPOV PRISMA	
	➤ Variety Denomination	<ul style="list-style-type: none">• Explanatory Notes on Variety Denominations (INF/12)• UPOV Code	 PLUTO database	
	➤ Novelty	<ul style="list-style-type: none">• Explanatory Notes on Novelty (EXN/NOV)		
	➤ DUS	<ul style="list-style-type: none">• General Introduction• TGP Documents• Test Guidelines• Model Agreement (cooperation)	 GENIE Database  Exchangeable software	
	➤ Publication	<ul style="list-style-type: none">• UPOV Model Plant Breeders' Rights Publication (INF/5)	 PLUTO database	

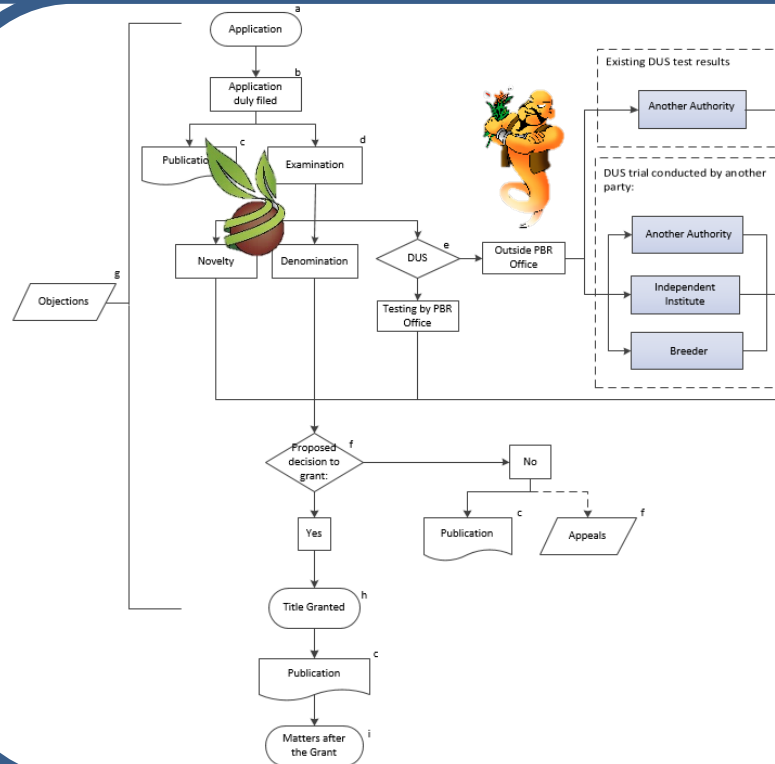
UPOV resources - present

Applicant

PVP Office

UPOV

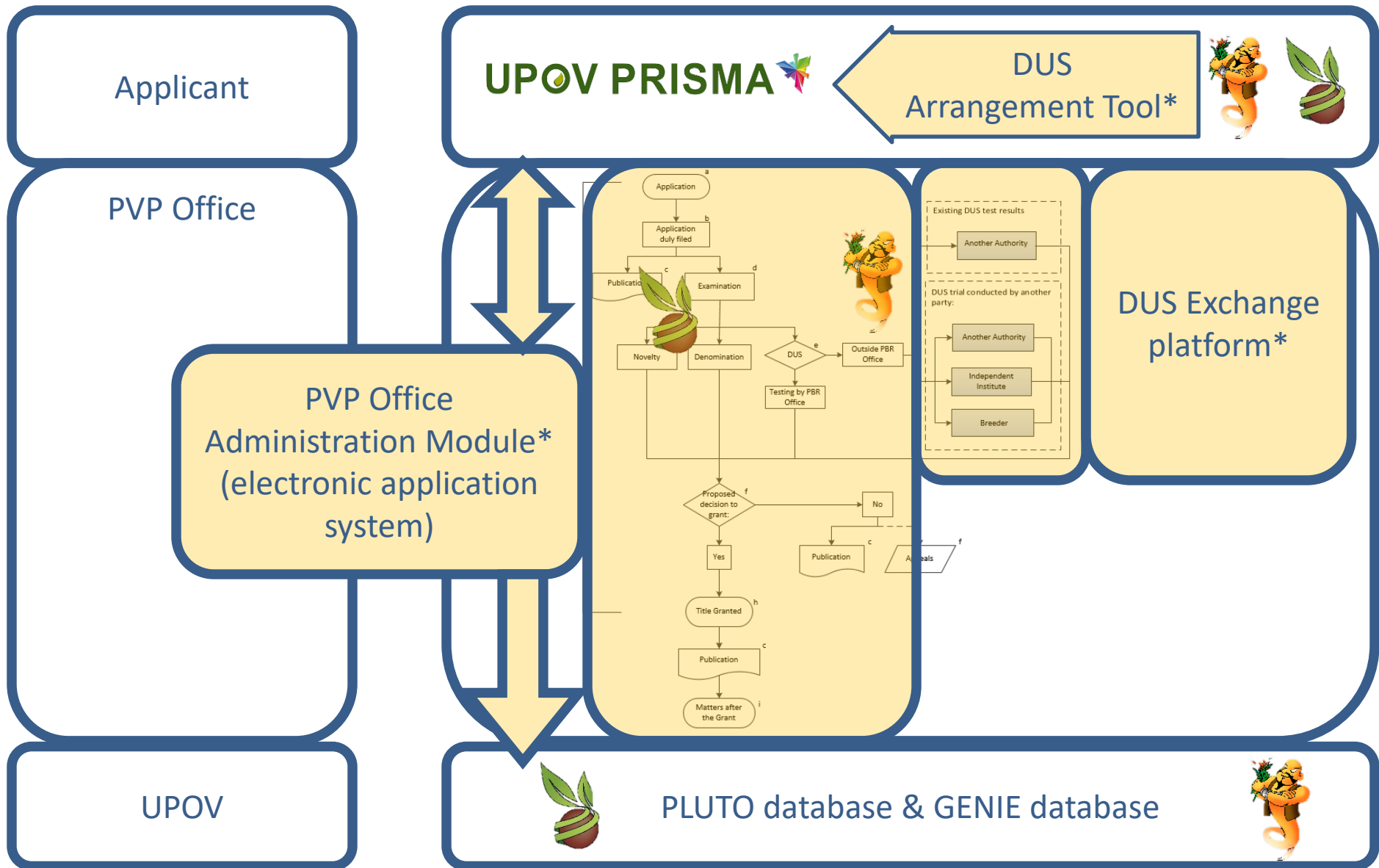
UPOV PRISMA 



PLUTO database & GENIE database



UPOV resources – future?

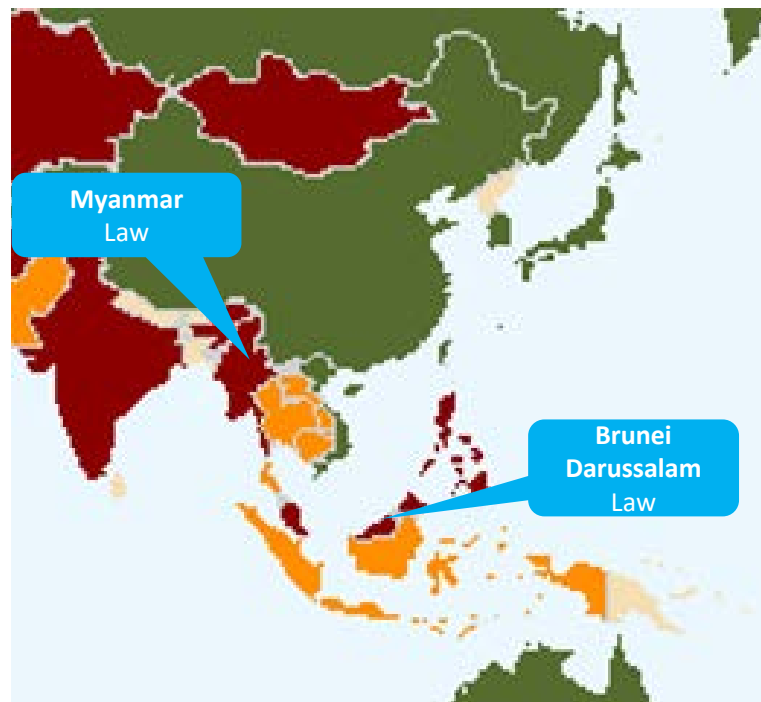


*Under development for the EAPVP Forum Pilot Project

Overview of EAPVP Pilot Project

(EAPVP Forum: East Asia Plant Variety Protection)

UPOV status in EAPVP Forum countries



EAPVP Forum (Established in 2007)

= **ASEAN Member States (10)**, China, Japan and Republic of Korea

Members of UPOV:

China (CN), Japan (JP), Republic of Korea (KR), **Singapore (SG)**, **Viet Nam (VN)**

Initiating States:

Brunei Darussalam (BN), **Malaysia (MY)**, **Myanmar (MM)**, **Philippines (PH)**

States in contact with the UPOV Office:

Cambodia (KH), **Indonesia (ID)**, **Lao People's Democratic Republic (LA)**, **Thailand (TH)**

Positive decisions on conformity with the 1991 Act of the UPOV Convention

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UPOV

www.upov.int

upov.mail@upov.int

manabu.suzuki@upov.int

UPOV