

Benefits of the UPOV System of Plant Variety Protection for Farmers and Growers

Manabu Suzuki
Technical/Regional Officer (Asia), UPOV

*March 28, 2023
Venetian, Lao PDR*

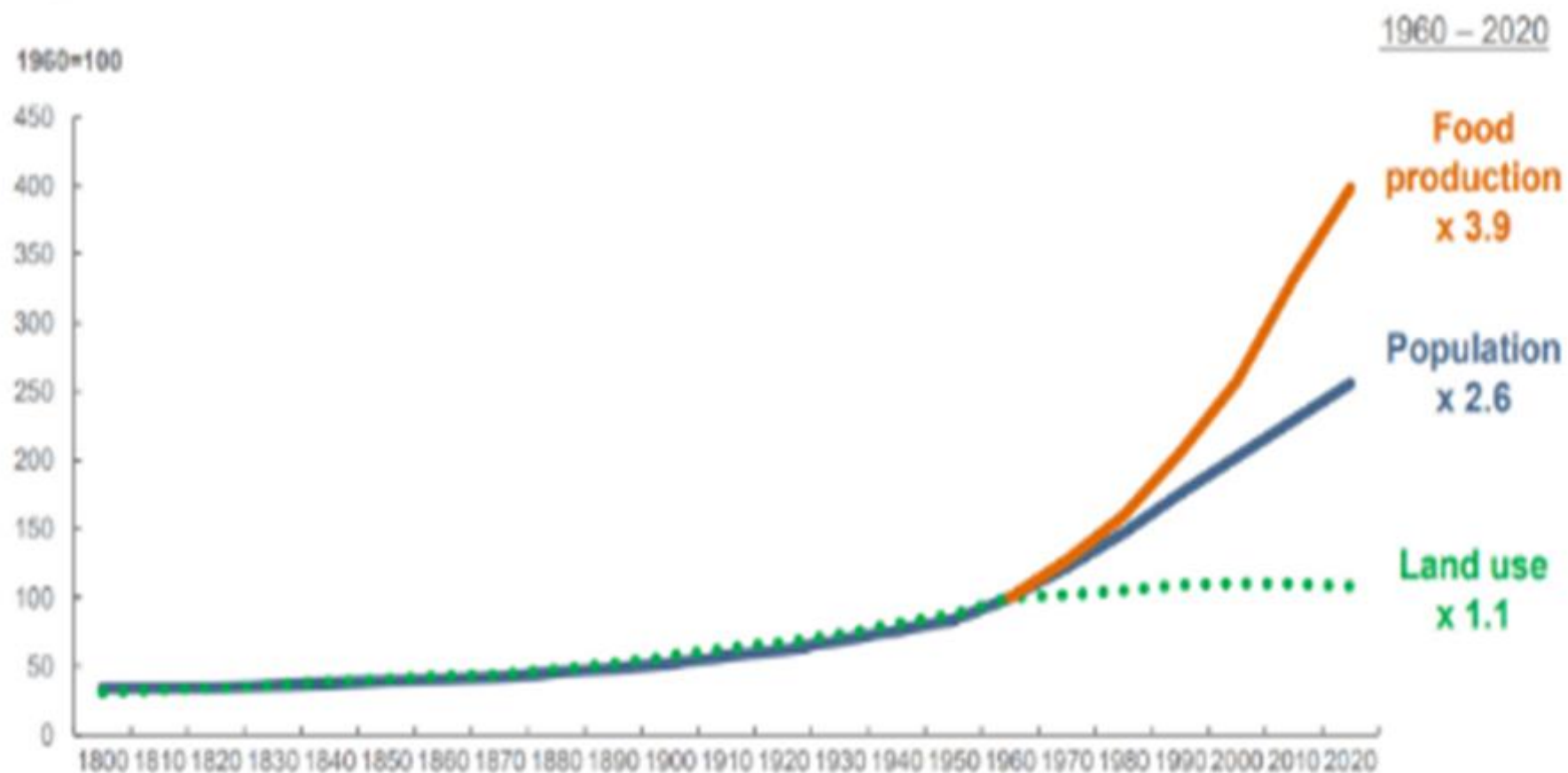


Preview

- 1. Importance of new improved plant varieties**
- 2. How to encourage the development of new improved varieties**
- 3. Example of benefits in UPOV system for society**
- 4. Services for UPOV members and users of the UPOV system**



Historically, greater food production meant greater land use;
but there has been a “decoupling” since about 1960



Source: Population data from Maddison's historical statistics for 1820-1940; UN Population Division for 1950-2030; 1890 and 1818 extrapolated from Maddison, Agricultural (crops and pasture) land data for 1800-2010 from the History Database of the Global Environment (HYDE 3.2); Klein Goldewijk et al. (2017), Global agricultural production data for 1860-2010 from FAOSTAT (Net Agricultural Production Index). 2020 values from the OECD/FAO Agricultural Outlook.

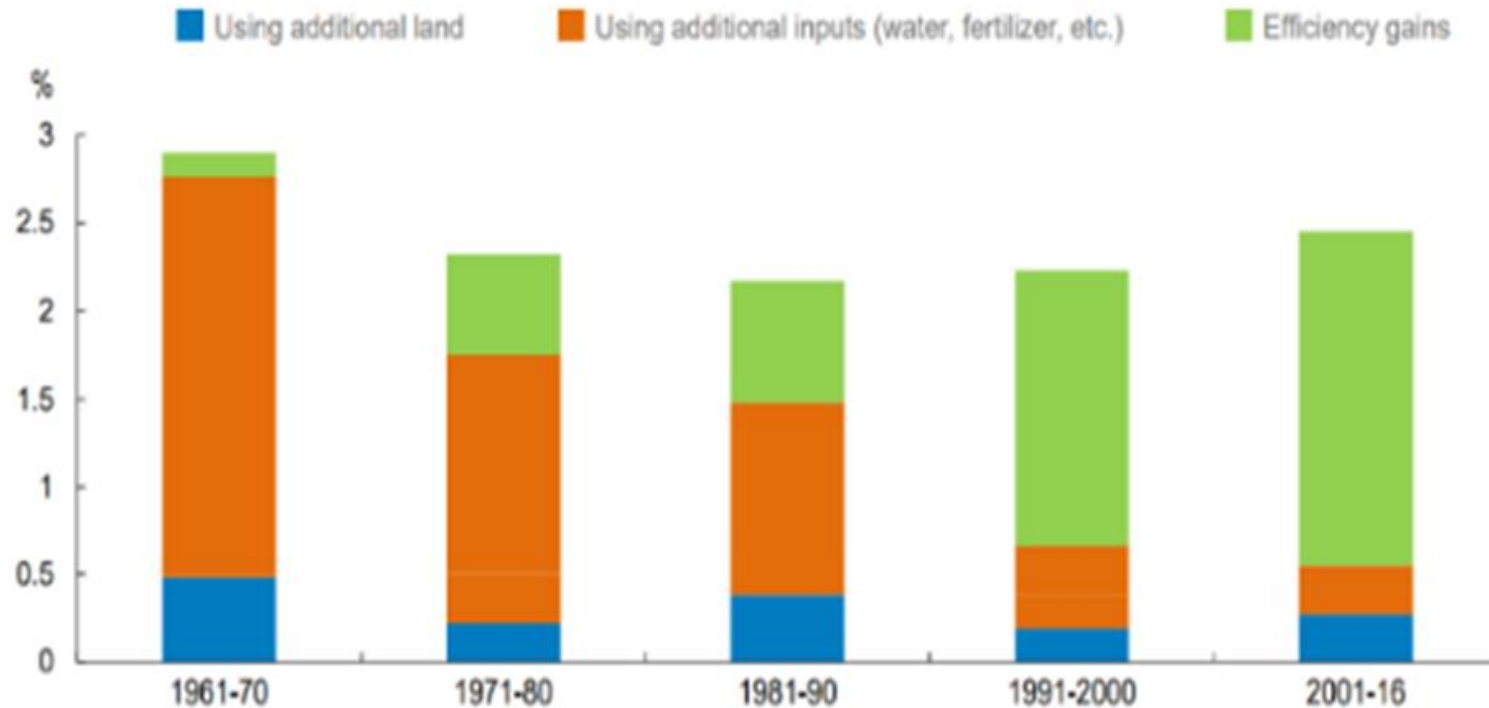
www.oecd.org/food-systems

How to produce more and better with less



This “decoupling” was initially driven by greater use of inputs, but production growth increasingly comes from efficiency gains

Growth of global agricultural output, by source



Source: USDA Economic Research Service, International Agricultural Productivity estimates (November 2019 revision)
www.oecd.org/food-systems

Source: Koehn Deconinck Food Systems Webinar, OECD Trade and Agriculture Directorate

Preview

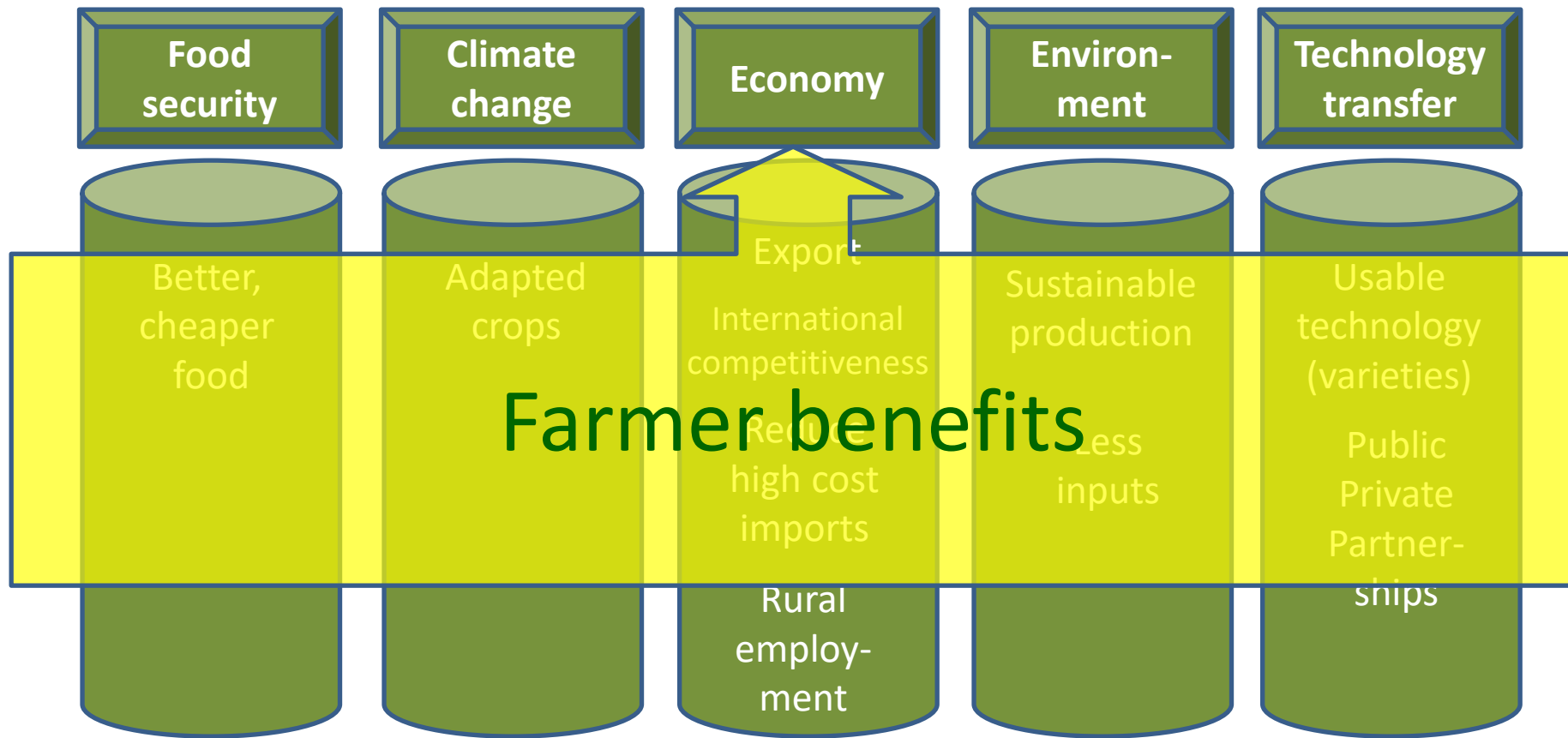
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MISSION STATEMENT

“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





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”

Why is **effective PVP** and **UPOV membership** important?



UPOV

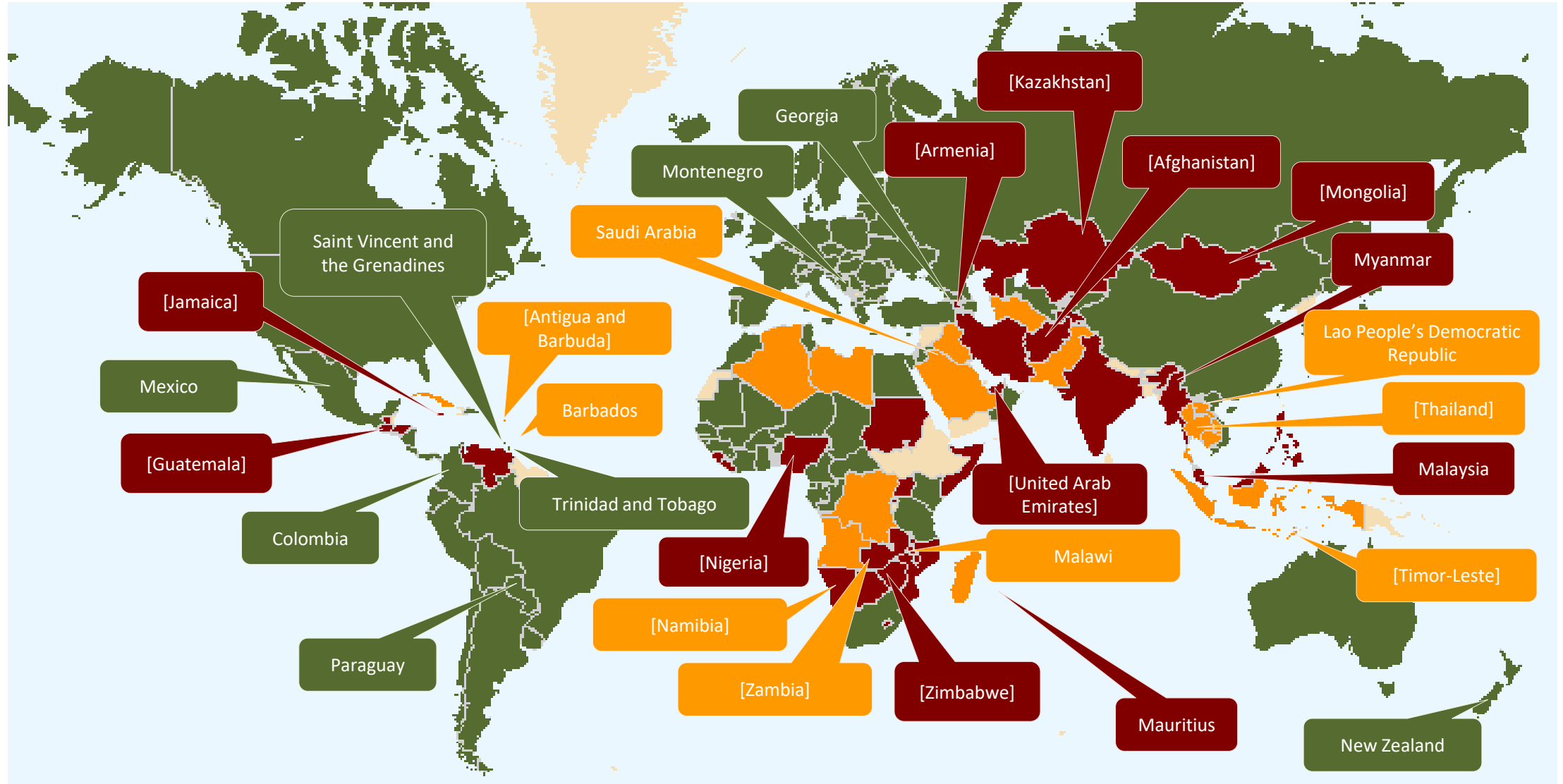
How to become a member of UPOV

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**

States and organizations that requested comments on [Draft] Laws (2020-2022)

status as of January 31, 2023



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

- Members of UPOV (78) (covering 97 States)
- Initiating States (19) and Organization (1)
- States (24) and Organization (1) in contact with the UPOV Office

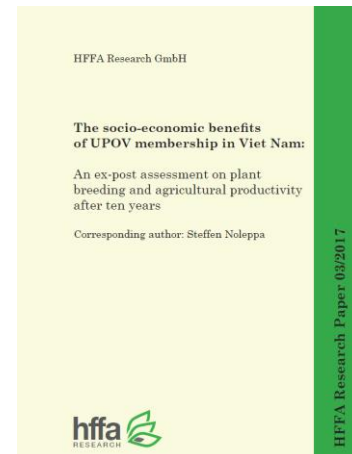
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STUDY in VIET NAM*

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

- **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 %



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

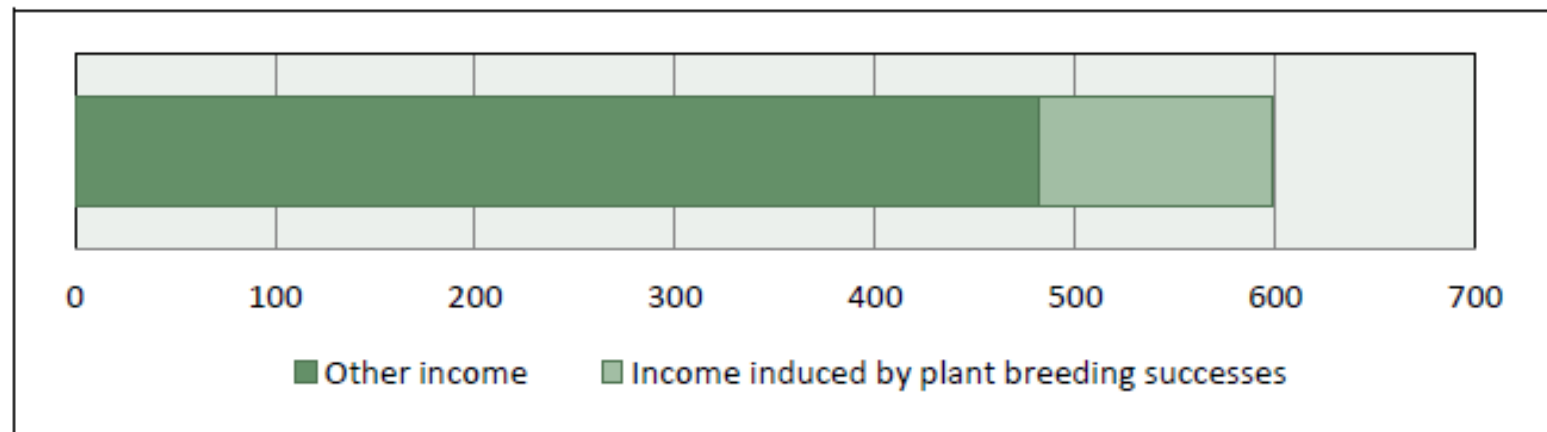
TOTAL ADDED: \$5 billion

(> 2.5% GDP)

STUDY in VIET NAM

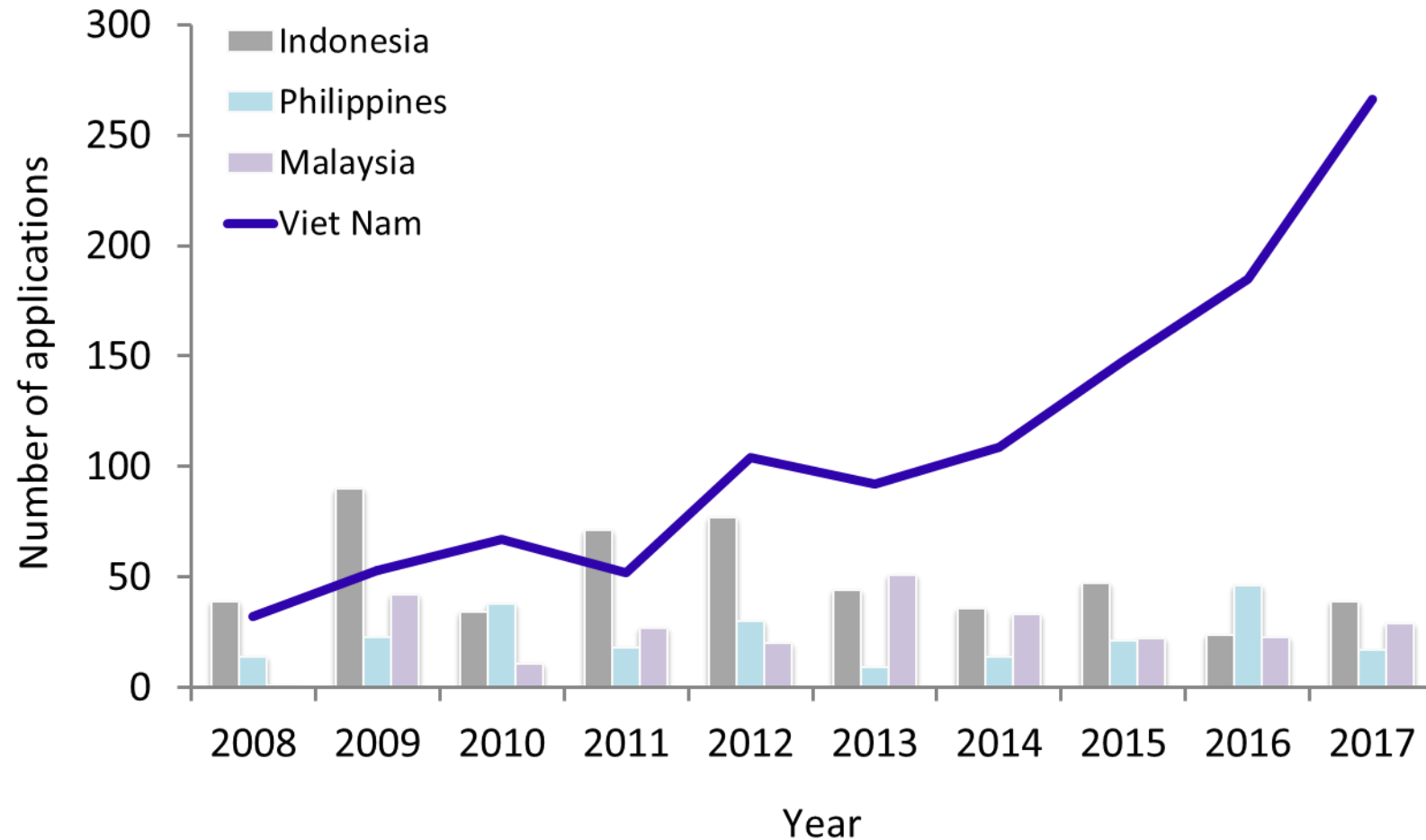
INCOME of Vietnamese farmers has increased by **24%** since 2006

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)



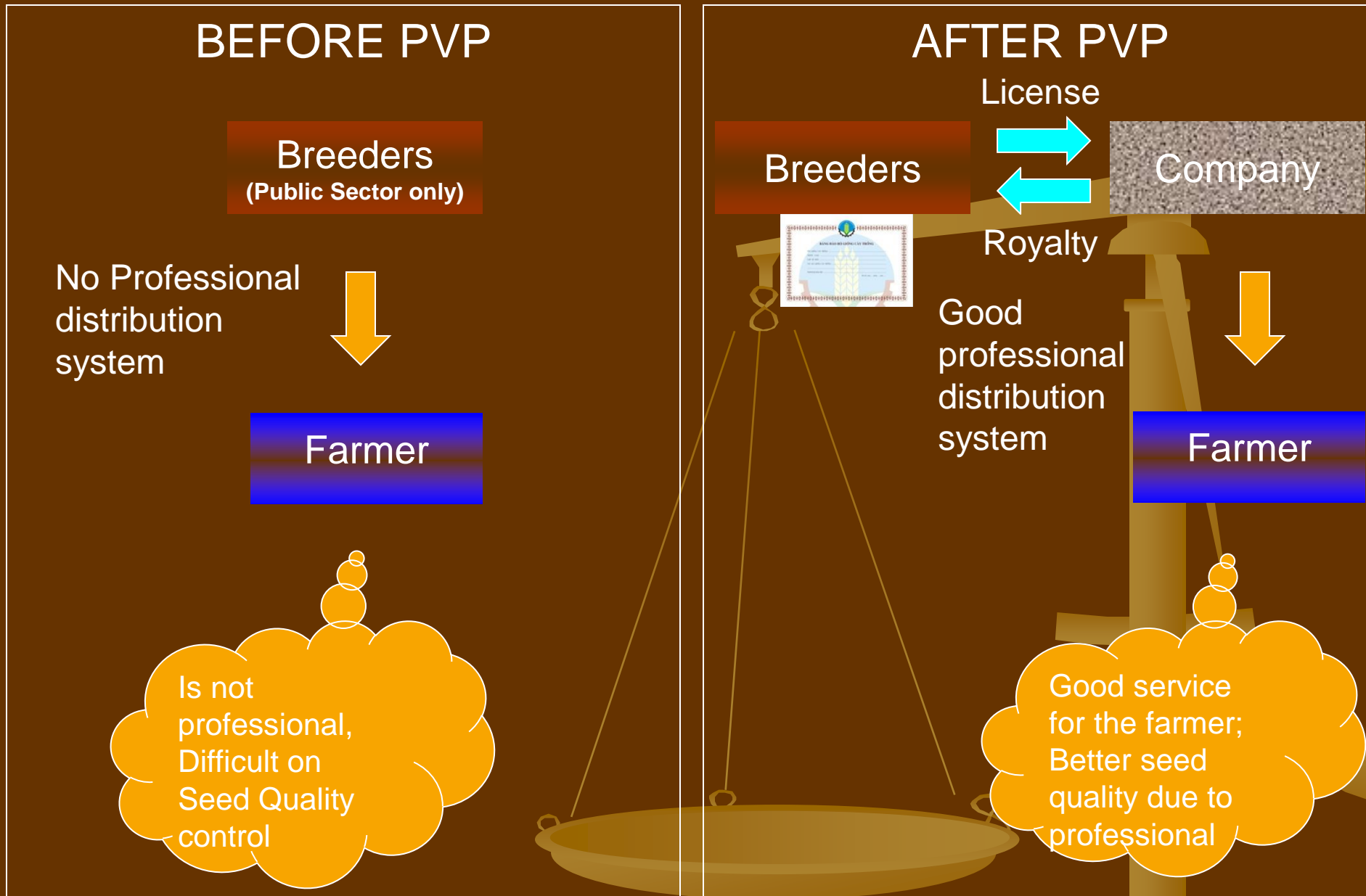
Source: Own figure and calculations.

Applications for Plant Breeders' Rights

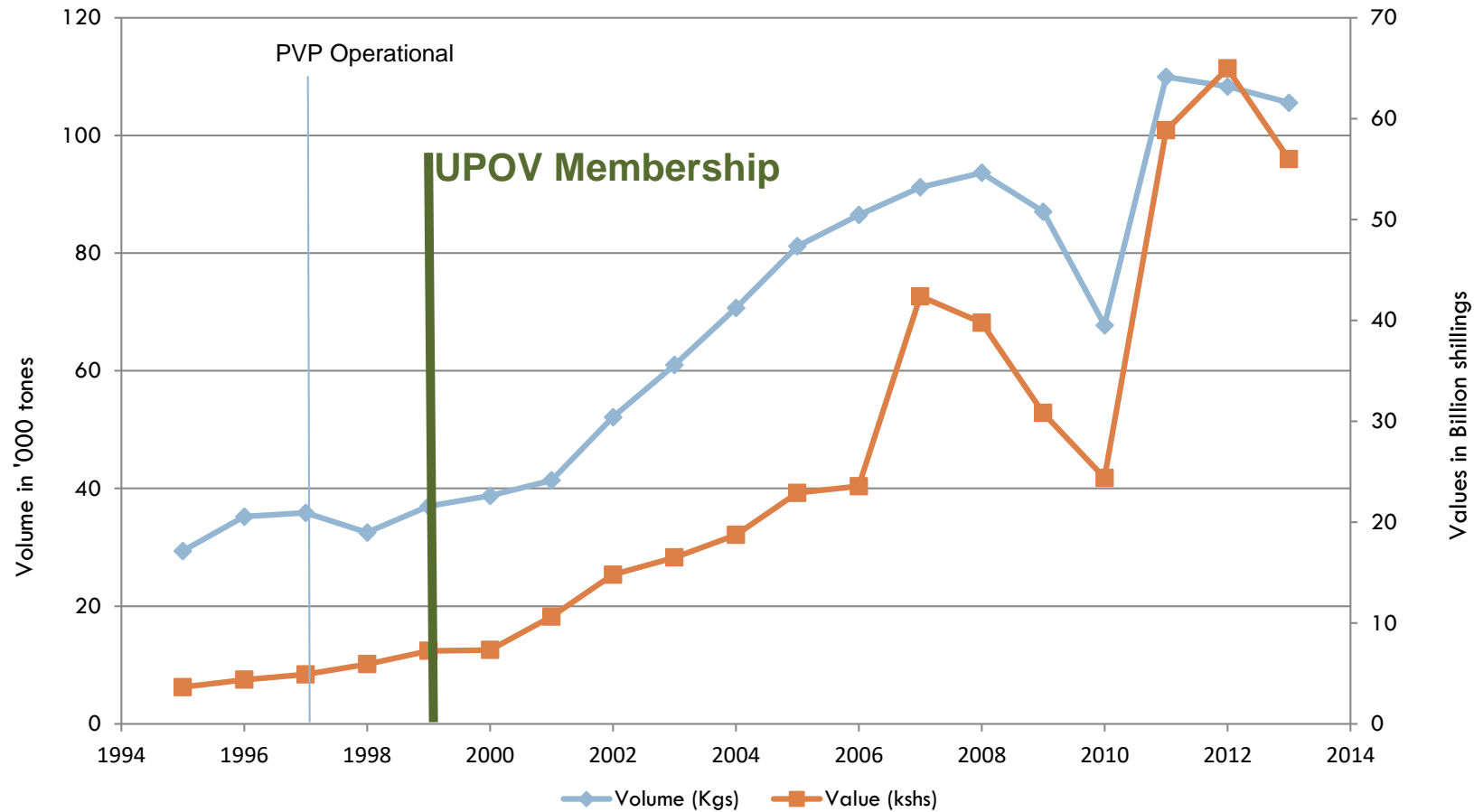


1. Erizal Jamal, Director, Center for Plant Variety Protection & Agriculture Permits, Indonesia. 10th East Asia Plant Variety Protection Forum Meeting
2. Dr. Mary Ann P. Sayoc, President, Philippine Seed Industry Association. National Seminar on Benefit of The Plant Variety Protection System, Philippines (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

Seed Quality and Service is improved by a new system



Impact of Plant Variety Protection in Kenya



CUT FLOWER EXPORTS 1995 - 2013



Source: HCDA

Simon M. Maina,
Head, Seed Certification and Plant Variety Protection,
Kenya Plant Health Inspectorate Service (KEPHIS)
(website: www.kephis.org)

March 2021

Employment creation

- It is estimated that the floriculture industry **employs over 150,000 people directly** and **more than 500,000 indirectly** who supply goods and services

Impact of PVP in Kenya



Impact of PVP in Kenya

Cut Flower Industry

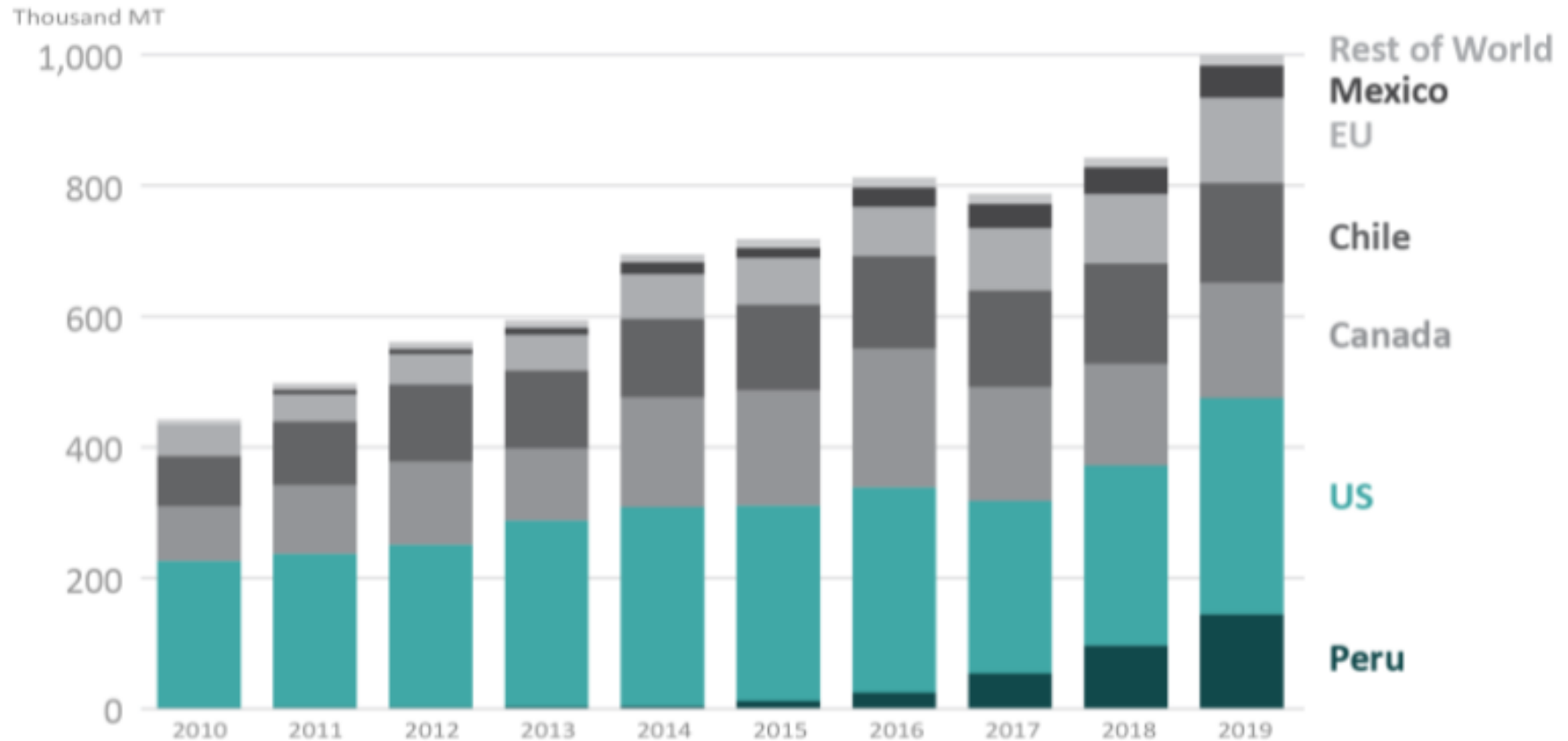
- The Kenyan floriculture market was valued at USD 861.6 million in 2018, and is projected to register an annual growth of 4.7% during the forecast period (2020-2025).
- In the year 2020, 142,477.8 MT of fresh flowers **valued at USD 1.09 billion** was produced in Kenya.



High quality varieties are key for high value crops

More than sixty new varieties of blueberries protected since membership

Peru Accounts for Increasing Share of Rising Global Blueberry Production



Note: Chile data for 2011, 2013, 2015, 2017 are estimates

Source: USDA-Foreign Agricultural Service, Food and Agriculture Organization of the United Nations, International Blueberry Organization



ARANDANOSPERU.PE

Arandanos Perú

Informativo y plataforma de negocios de berries en Perú

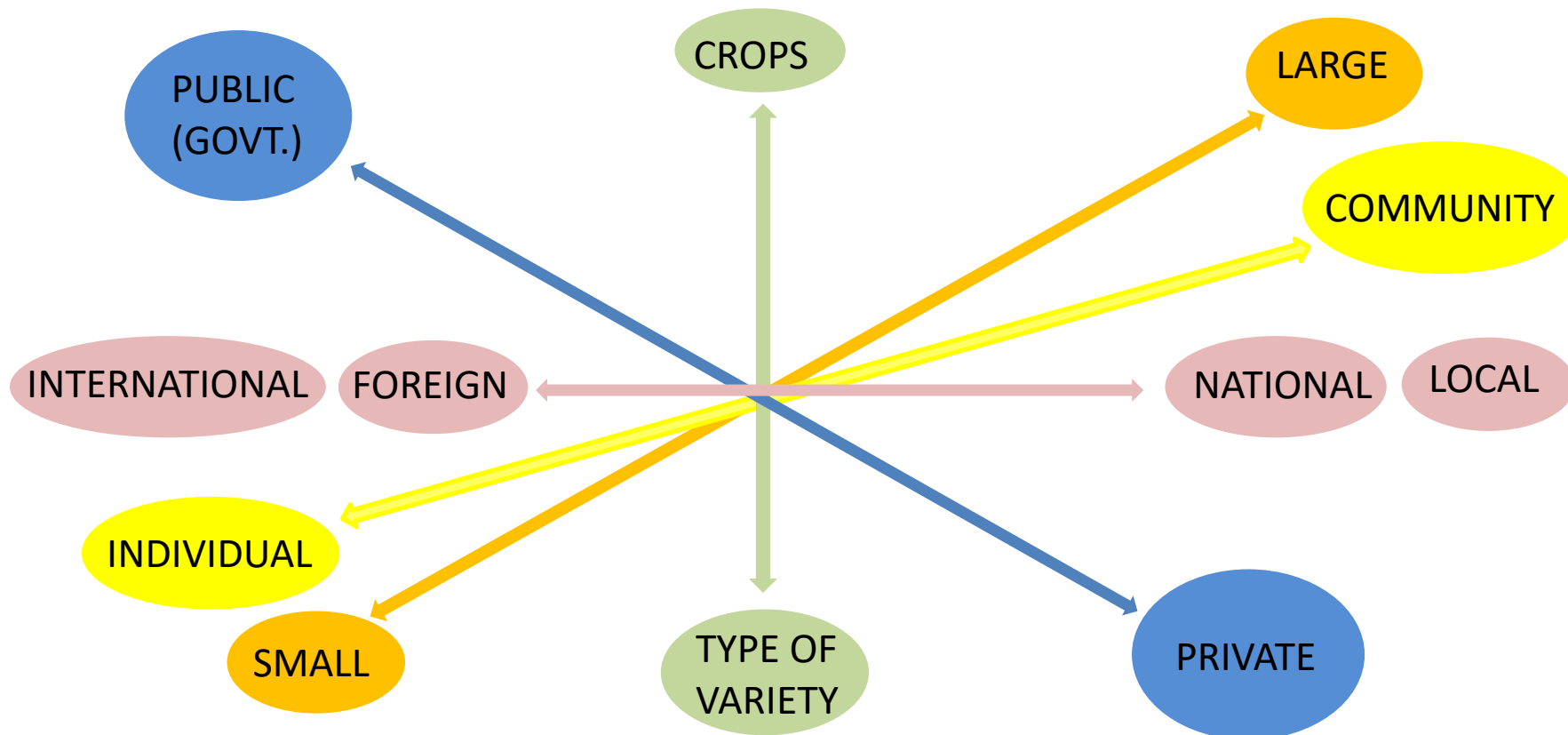
Inicio Berries ▾ Proveedores Compro/Vendo ▾ Publicidad Recetas ▾ Videos AgroNegociosPerú

JUNIO 17, 2021

NORMA ROJAS MARROQUIN

Perú exportó arándanos por US\$
1,000 millones y fue el principal
exportador del mundo por
segunda vez







The role of the Agricultural Research Council in delivering high performance varieties to subsistence or smallholder farmers

Vuyisile Phehane



- Local licensing agreement with a South African company
 - for the commercialization of some of the ARC's citrus varieties.
 - A condition of the license: ensure the participation of smallholder citrus producers in the commercialization value-chain.
- Facilitated partnership with the Citrus Growers' Association to access ARC

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
- Location and agronomy (**less fertilizer and pesticide**) controlled to maintain quality (= high market price)
- Increased farmers' income
- Royalty free for Yamagata farmers, royalty paid by other farmers

Farmers: income is increased

Example on benefits of Protected Varieties

Items	Protected Varieties	Non protected varieties
Price of Seed (rice, USD/1 kg)	<u>1.39</u>	0.64
Price of commercial grain is sold by farmer (rice, USD/Ton)	<u>292</u>	236
Average income in 1 ha for farmer (rice); USD	<u>1897</u>	1298
Benefits from seed of protected varieties	<ul style="list-style-type: none">✓ Better quality, productivity✓ Better tolerance in bad climate and diseases, insect	? ?
* Source: VINA Seed Corporation (report on Nov. 2020)	for production	?

UPOV = more choice for farmers...

UPOV



WIPO Seminar on Intellectual Property, Innovation, and Exports: A Look at the Cocoa Industry in Trinidad and Tobago

Port of Spain - August 2, 2017

Best Practices of Plant Variety Protection (case study)

Michael D. Carriere, Ph.D.
UC Davis InnovationAccess



Connecting research to market

The World

\$16.50/1000 plants royalty¹

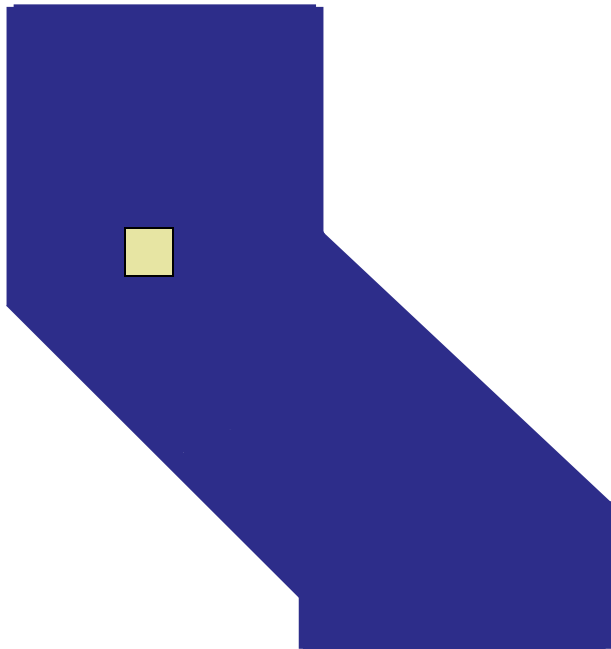
¹royalty shared between UC and master licensees

United States

\$9.00/1000 plants royalty

California

\$8.00/1000 plants royalty



UPOV Plant Breeders' Rights (PBR) Filings for UC Davis Strawberry Varieties 'Benicia' and 'Mojave'

Argentina	PBR
Australia	PBR
Belarus	PBR
Brazil	PBR
Canada	PBR
Chile	PBR
China	PBR
Columbia	PBR
Ecuador	PBR
EU	PBR
India	wait for UPOV PBR availability
Israel	PBR
Japan	PBR
Jordan	PBR
Lebanon	wait for UPOV PBR availability
Mexico	PBR
Morocco	PBR
New Zealand	PBR
Peru	PBR
Republic of Korea	PBR
Saudi Arabia	wait for UPOV PBR availability
South Africa	PBR
Switzerland	PBR
Tunisia	PBR
Turkey	PBR
Uruguay	PBR

Republic of Korea

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

Korean Rose Breeding Converts a Royalty Payer into a Receiver

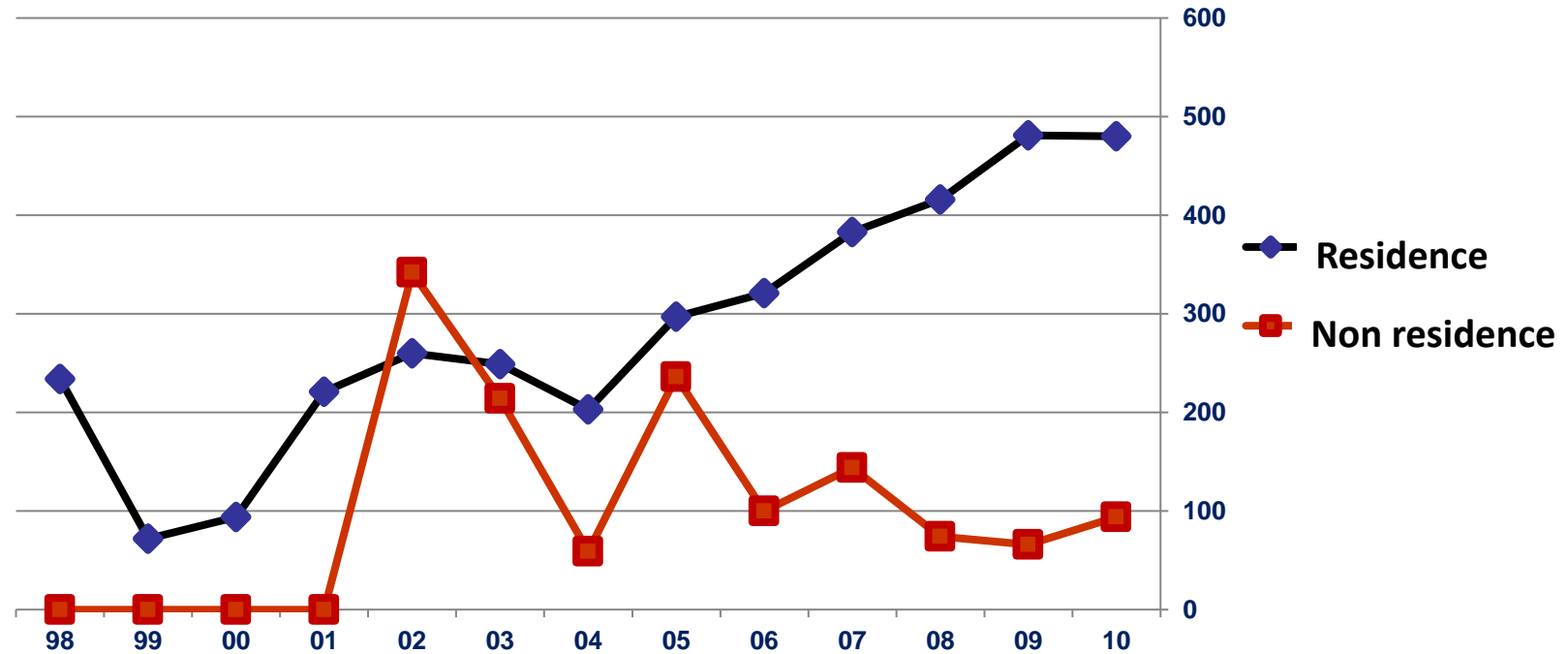
Charlie Jeong/wonwoo trading

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**

Republic of Korea

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)

Benefits of the UPOV System: **latest VIDEOS**



Chile

Improved options for raspberry growers in Chile



Brazil

Common Bean: Impact achieved by EMBRAPA through PVP of new varieties

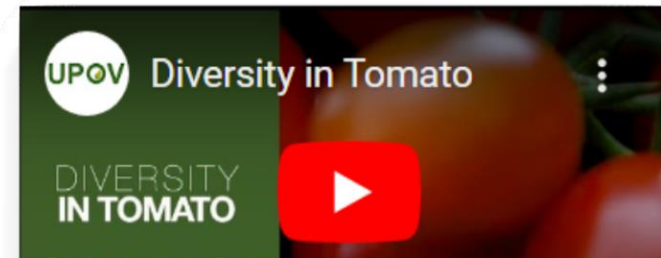


China



Netherlands

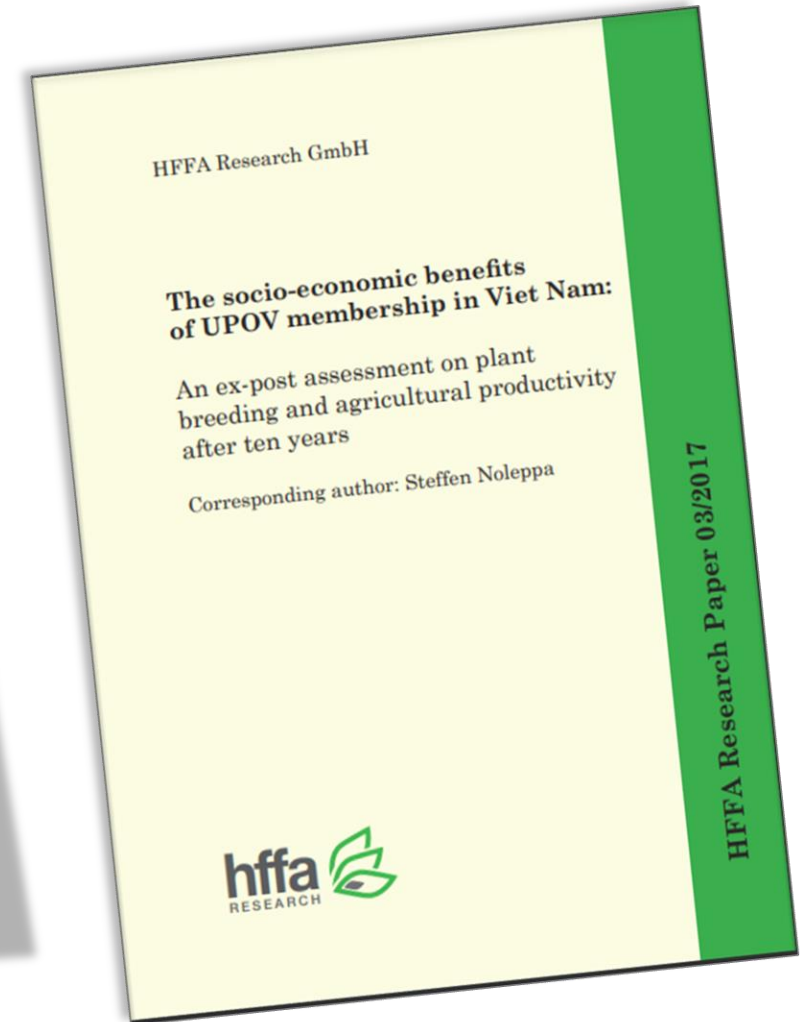
How UPOV helps a family plant breeding business to operate globally



Diversity in Tomato

How plant breeding has increased diversity in tomato

Benefits of the UPOV System: publications



International Union for the Protection of New Varieties of Plants

UPOV



**SEMINAR ON STRATEGIES THAT ADDRESS
POLICIES INVOLVING PLANT BREEDING
AND PLANT VARIETY PROTECTION**

OCTOBER 20, 2021
(GENEVA, SWITZERLAND)

UPOV

International Union for the Protection of New Varieties of Plants

Seminar on the role of plant breeding and plant variety protection in enabling agriculture to mitigate and adapt to climate change

**Geneva, October 11 and 12, 2022 (virtual meetings)
and October 26, 2022 (hybrid meeting)**

SEMINAR ON THE ROLE OF PLANT BREEDING AND PLANT VARIETY PROTECTION IN ENABLING AGRICULTURE TO MITIGATE AND ADAPT TO CLIMATE CHANGE



Thematic Session 1: Climate change and its impact on agricultural production

Thematic Session 2: Strategies to address climate change in agriculture

Thematic Session 3: Plant breeding for climate change adaptation and mitigation in agriculture:
Crop perspectives

Thematic Session 4: Plant breeding for climate change adaptation and mitigation in agriculture:
breeding strategies and techniques

Thematic Session 5: Role of plant variety protection in the development of new varieties to
mitigate and adapt to climate change

October 11, 12, and 26, 2022



https://www.upov.int/meetings/en/details.jsp?meeting_id=71391

Preview

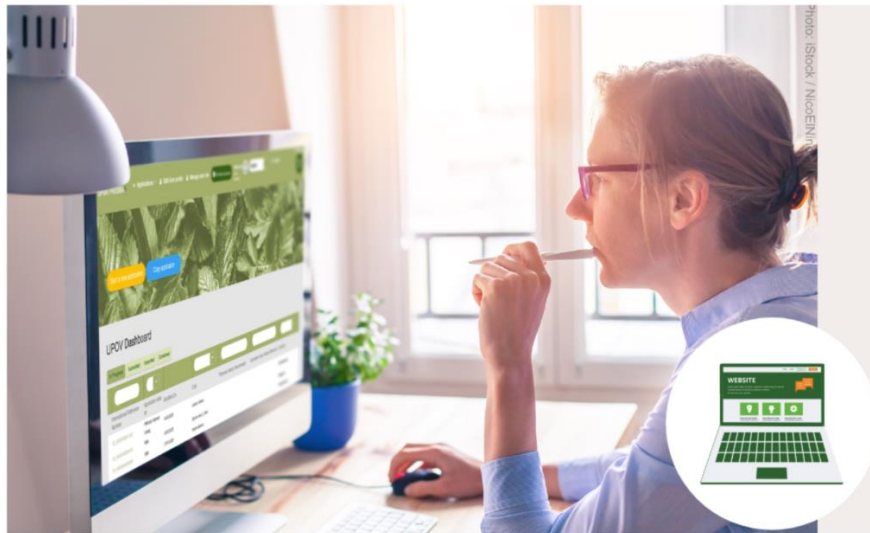
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UPOV PRISMA

Online PBR Application Tool



A tool to facilitate submission of
Plant Breeders' Rights applications



UPOV PRISMA 

UPOV PRISMA
PBR Application Tool

Quick and easy online tool for
transmission of application data
for Plant Breeders' Rights

www.upov.int/upovprisma

Benefits of using UPOV PRISMA



Online service for PVP applications



70+ countries covered



Language choice to read forms



Translation of predefined responses



Copy data to other applications



Reminders for Novelty & Priority



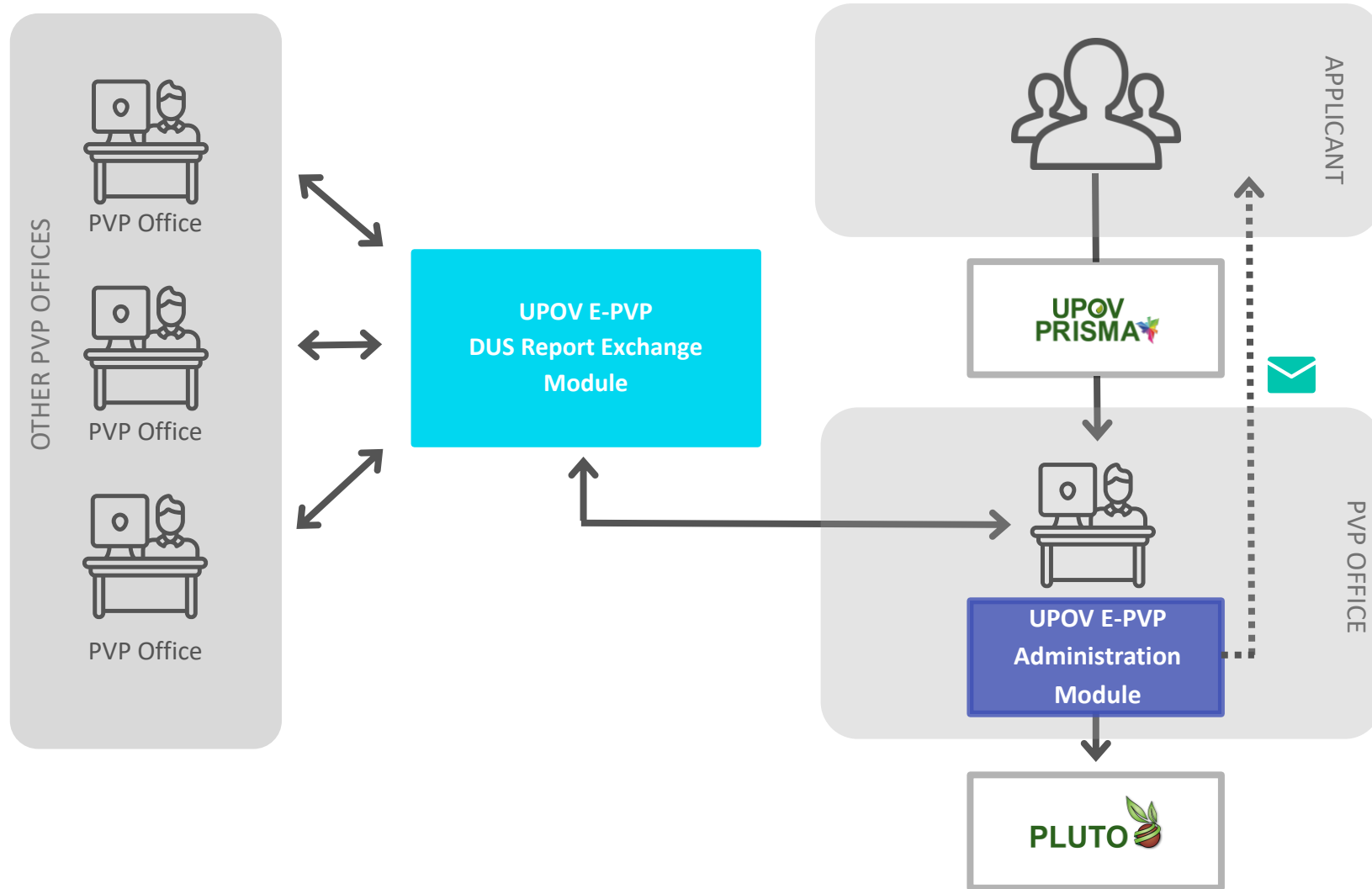
Find all PVP Office procedures



Overview of all submissions

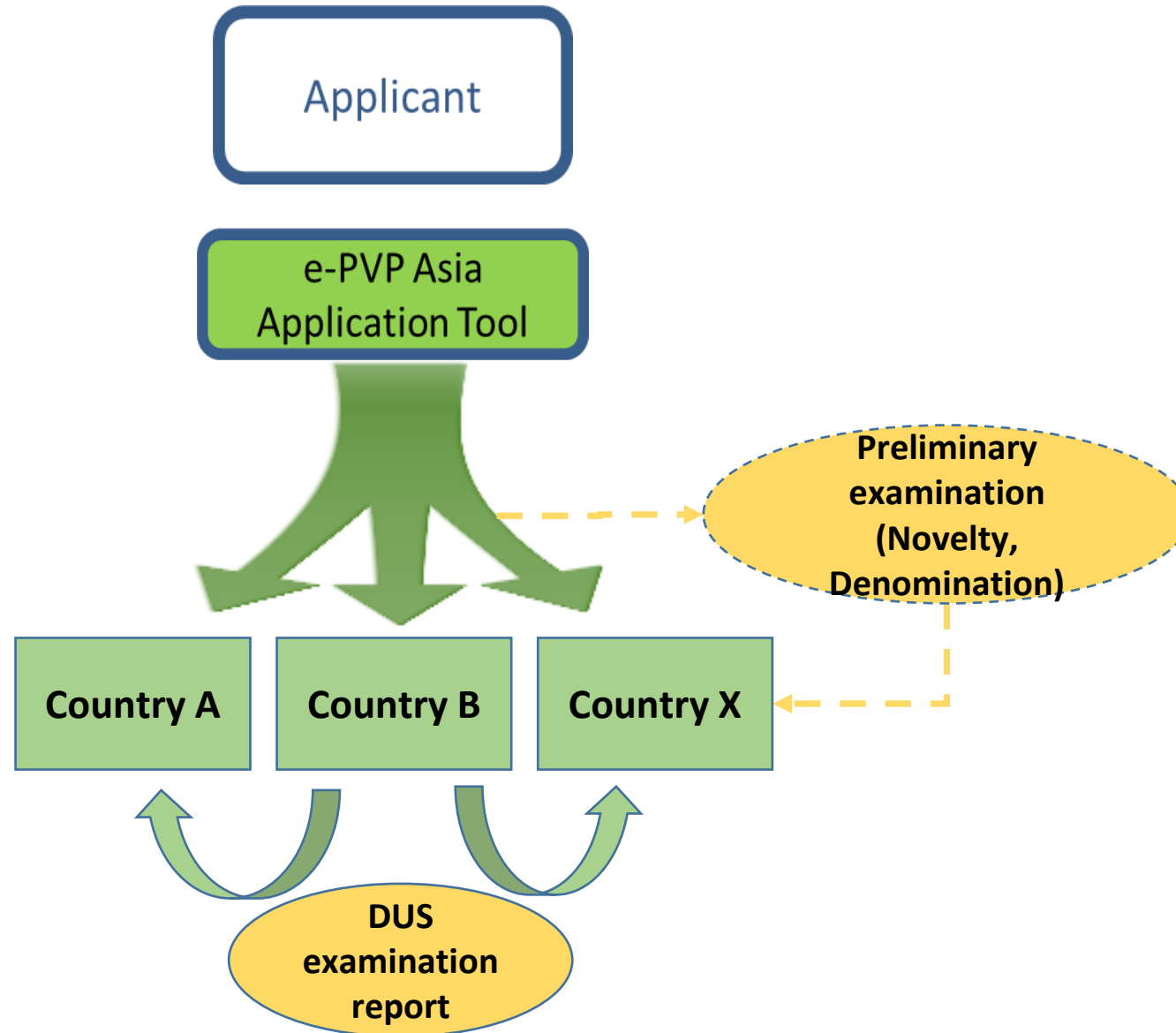
UPOV e-PVP

Standard options



Member Cooperation Platform

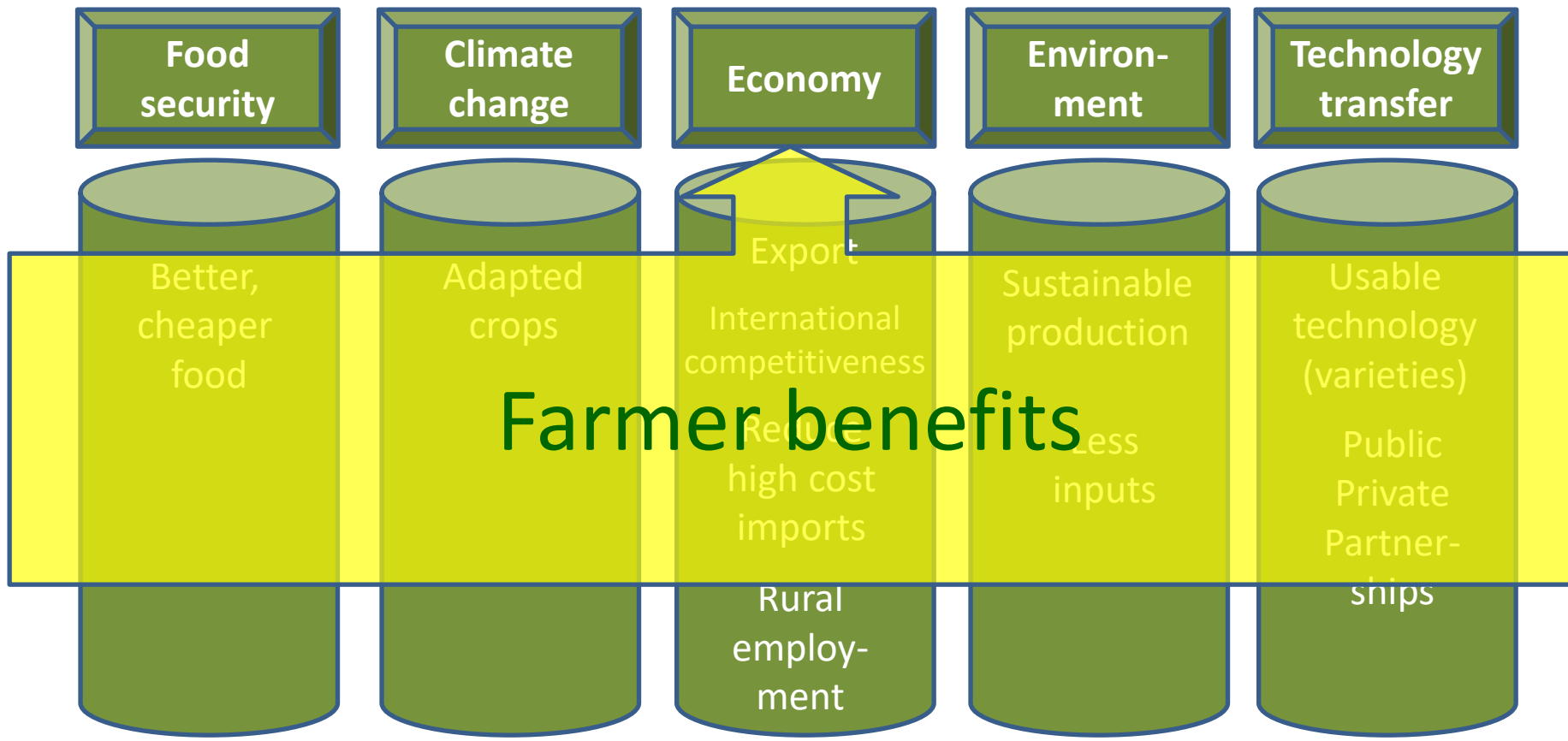
e-PVP Asia (EAPVP Forum Pilot Project)



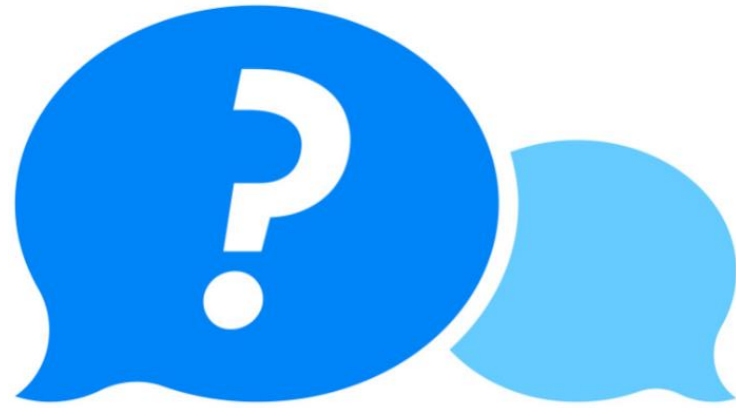
Who can participate in e-PVP Asia and the Pilot Project?

- ✓ **e-PVP Asia Participating countries** must be a UPOV member
 - Japan and Viet Nam
- ✓ **PP Provisional Participating countries:**
 - EAPVPF countries which have initiated the procedure to become a UPOV member
 - Brunei Darussalam, Malaysia, Myanmar
- ✓ **PP Observer countries:**
 - Other EAPVPF countries
- ✓ **PP Resource partner:**
 - UPOV Office

Benefit of Society



New, improved varieties



www.upov.org