

Topic 5

Benefits of UPOV membership and how can UPOV membership and plant variety protection contribute to achieving national development goals in the agriculture sector



Plant Breeding and New Plant Varieties for Agricultural Value Chains





Challenges

- **World population**
 - 2025 around 8 billion
 - 2050 around 10 billion
- **The overwhelming part of food comes from agriculture /plants**
 - New eating habits in emerging economies
 - Climate changes
- Innovation and investments in technology are often mentioned as essential to find sustainable solutions

Challenges

- The cost of Breeding

Development of lettuce or tomato variety:

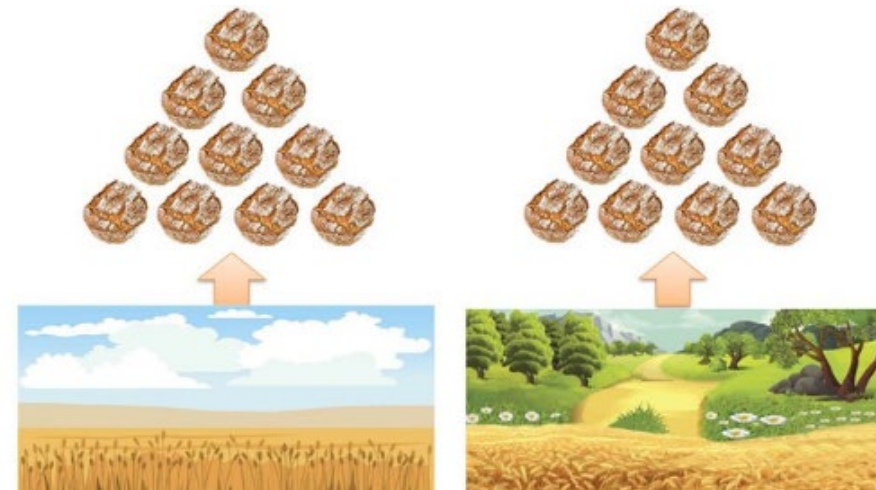
Duration of the breeding process:	± 7 years
Development Costs:	± 500.000 Euro
Life Span of a variety:	6 years





Producing more... with less

And in more challenging conditions



More than **8 in 10 farmers** surveyed by the World Farmers' Organization have identified improved plant varieties as an important tool in responding to climate change

- Plant breeding requires long time and resources
 - How can the time be shortened
 - How can breeding activities be financed?

Plant Breeding and New Varieties of Plants

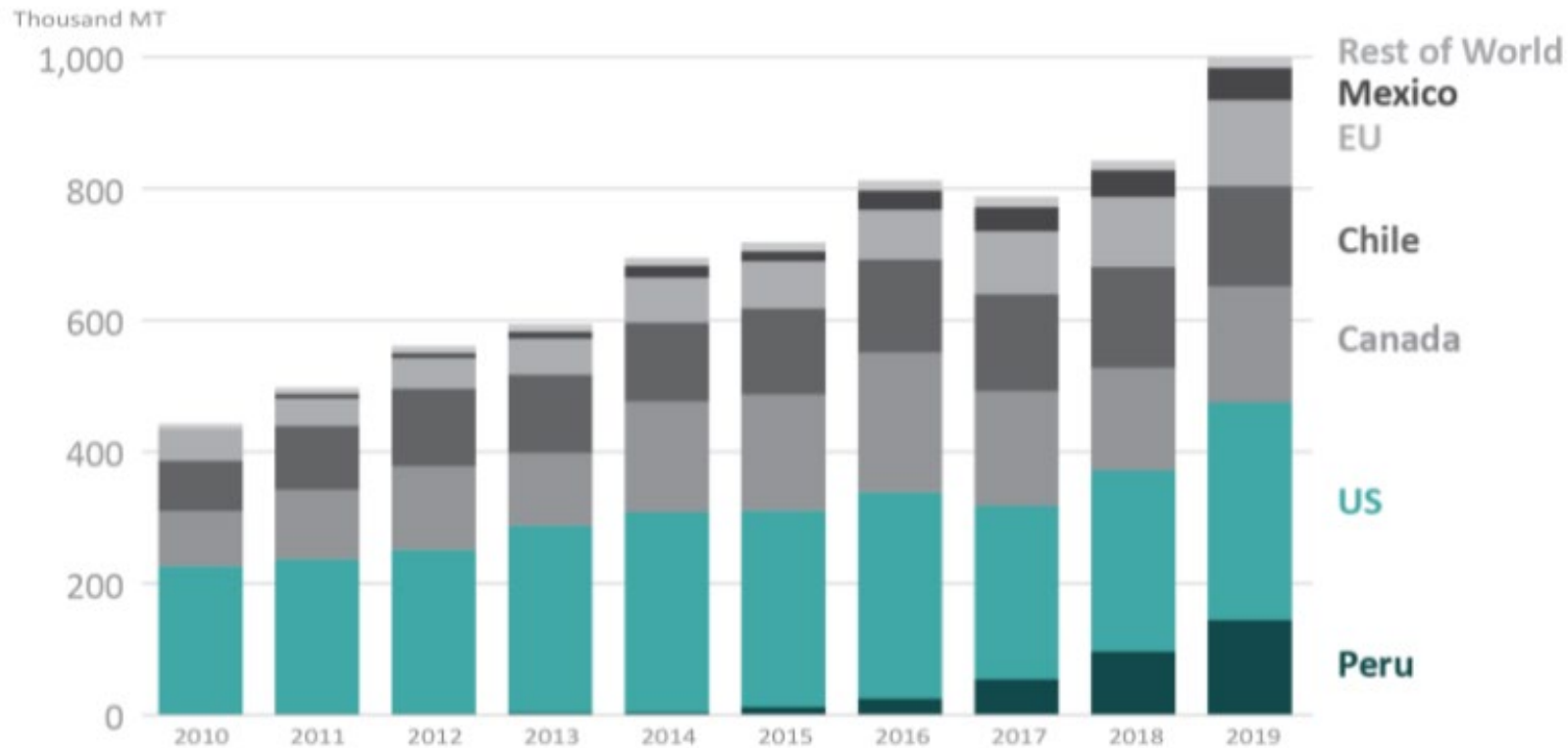


<https://www.bioeconomia.info/2020/07/20/peru-se-consolida-como-primer-exportador-de-arandanos/>

High quality varieties are key for high value crops

Peru: 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



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



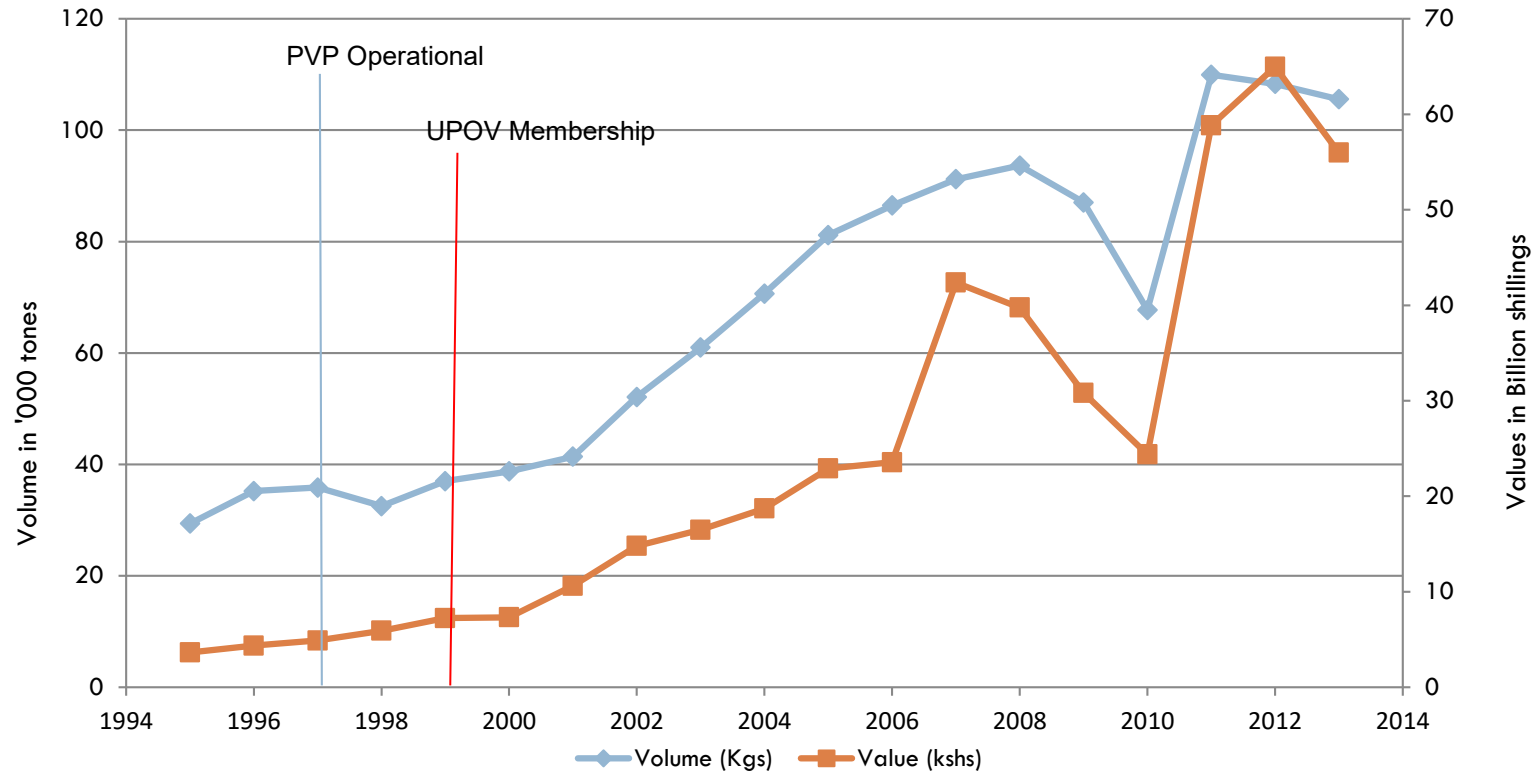
Examples



Delayed pinking of fresh cut lettuce (Leaf wound-induced discoloration)

- Extended shelf life
- Less waste
- Suitable for Food Service
- Stronger against cracking
- Less sensitive for leaking seals

Impact of Plant Variety Protection in Kenya



CUT FLOWER EXPORTS 1995 - 2013

Source: HCDA



Kenya: the Floriculture Industry

Wealth Creation

- The Kenyan floriculture market was valued at **USD 861.6 million** in 2018, and;
- **USD 1.1 billion** in 2020



Kenya: the Floriculture Industry

Employment creation

- It is estimated that the floriculture industry employs over **500,000** people and impacts more than **2 million** livelihoods indirectly.



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 %

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

UPOV

* “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

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)

➤ CPVO/EUIPO study 2022

- Without breeding the past 20 years,
 - the EU would have become net importer of all major agriculture species
 - The arable land would need to be increased by 21,5 million hectares in the EU

- Plant breeding contributes to save arable land by producing higher yields per hectare

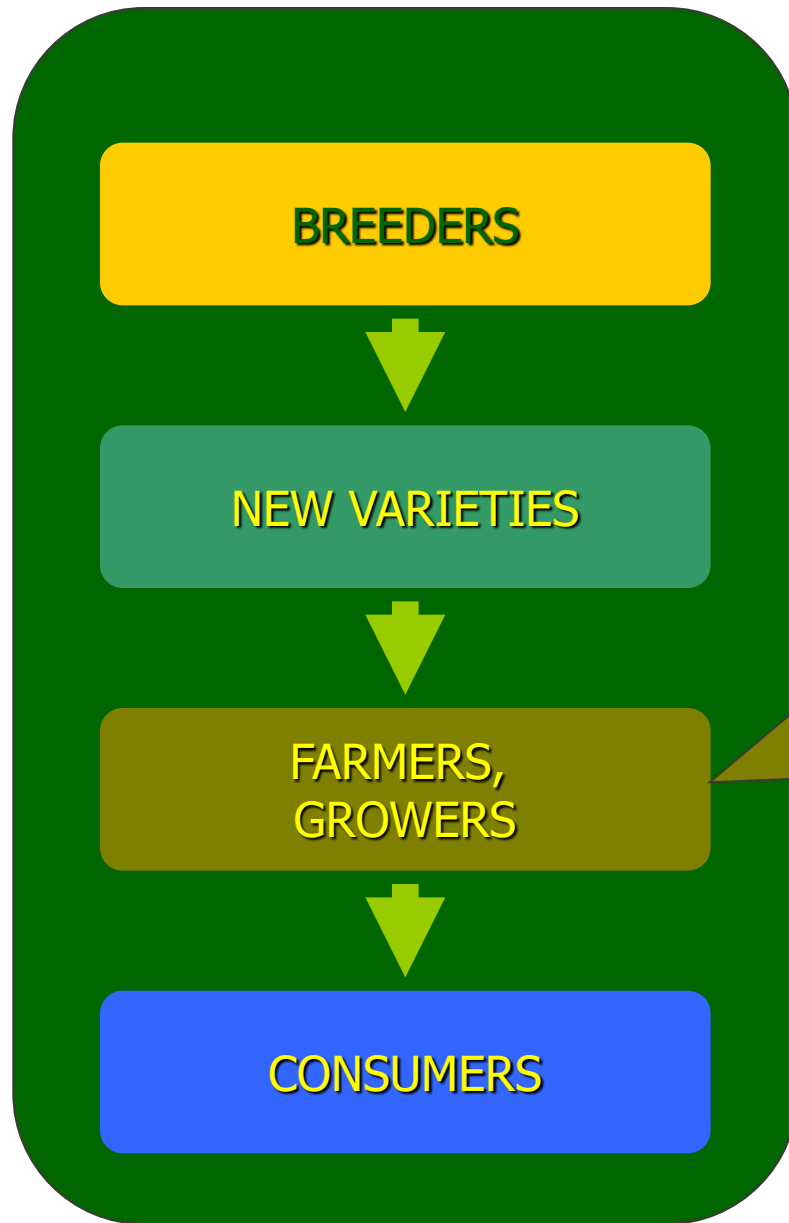
New plant varieties are key for sustainable production



BENEFITS OF PLANT VARIETY PROTECTION SYSTEM AND UPOV MEMBERSHIP

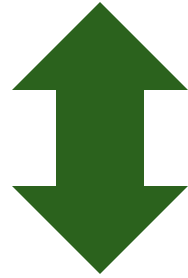
- Diversity and number of breeders
- Investment in breeding
- Delivering improved varieties to farmers, growers and consumers
- Development of business opportunities in foreign markets
- Access to foreign varieties and enhanced domestic programs



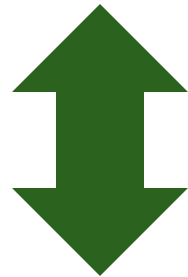


- Yield
- Profitability
- Resistance to pests and diseases
- Stress tolerance
- Harvestability
- Crop quality
- Input efficiency
- Variety diversity
- New markets ...etc.

BREEDERS' RIGHTS

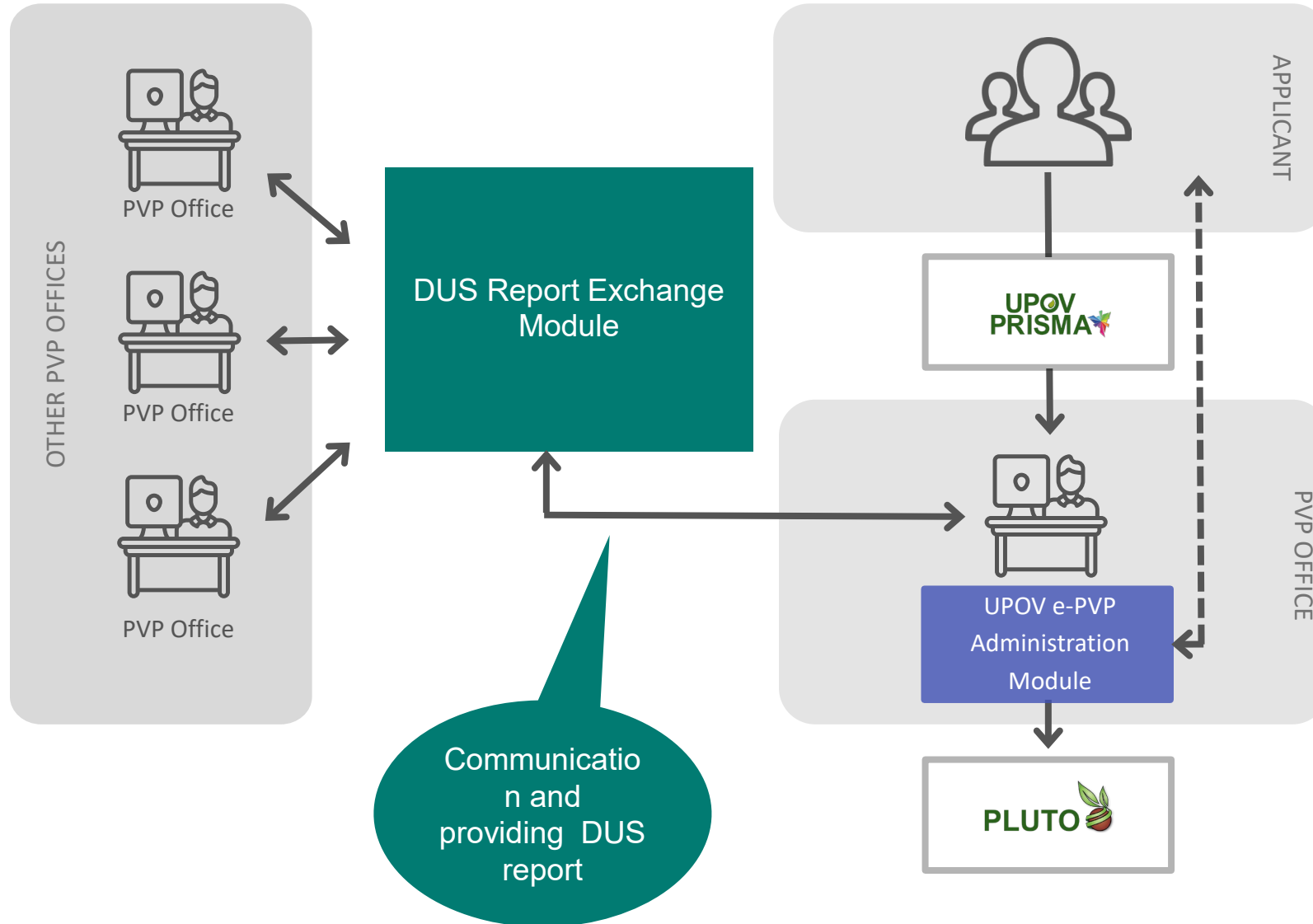


FARMERS' BENEFITS



NEEDS OF SOCIETY

UPOV e-PVP

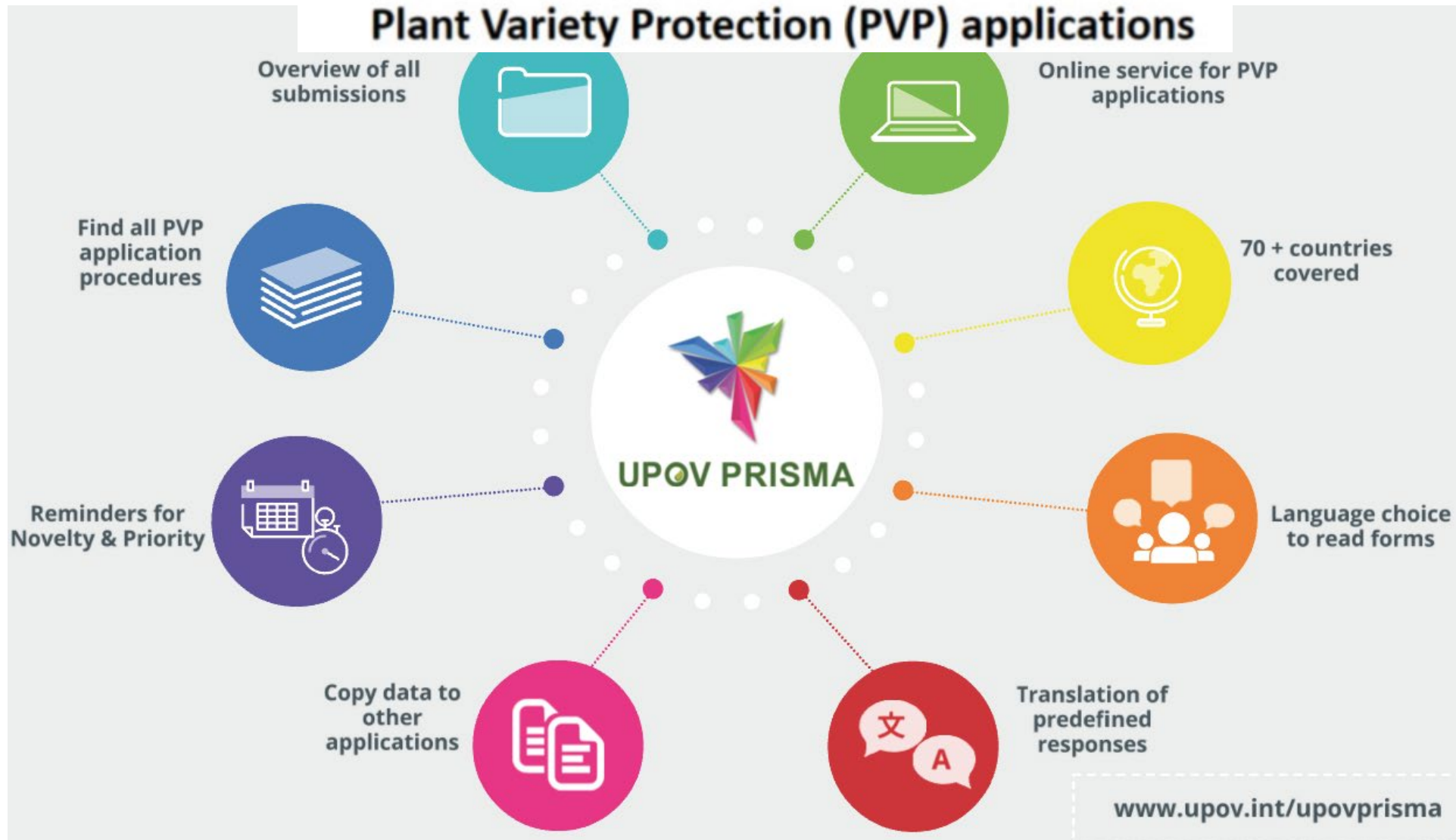


A simple and harmonized application system

UPOV PRISMA

The on-line service for making

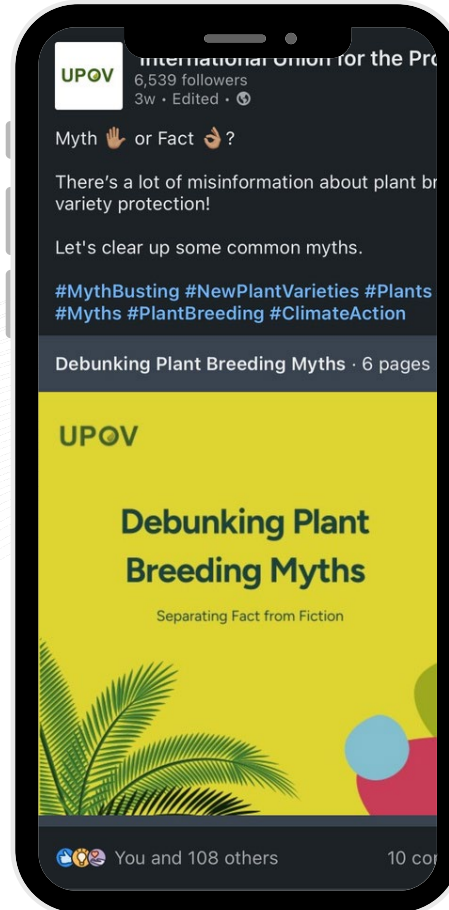
Plant Variety Protection (PVP) applications



www.upov.int/upovprisma



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Thank you !

martin.ekvad@upov.int

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