

*Seminar on How the Private and Public Sectors Use
Intellectual Property to Enhance Agricultural Productivity*

The Importance of Public-Private Partnerships:

**Findings of the
International Union for the Protection of New
Varieties of Plants (UPOV)
Seminar in April 2011**

Peter Button (Vice Secretary-General, UPOV)

Geneva, June 14, 2011

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PREVIEW

- **Overview of UPOV**
- **Importance of Plant Breeding,
Plant Variety Protection and UPOV**
- **Findings of the UPOV Seminar**

UPOV SEMINAR ON
PLANT VARIETY PROTECTION AND
TECHNOLOGY TRANSFER:
THE BENEFITS OF PUBLIC-PRIVATE
PARTNERSHIP
Geneva, April 11 and 12, 2011

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**UPOV: INDEPENDENT INTERGOVERNMENTAL
ORGANIZATION**

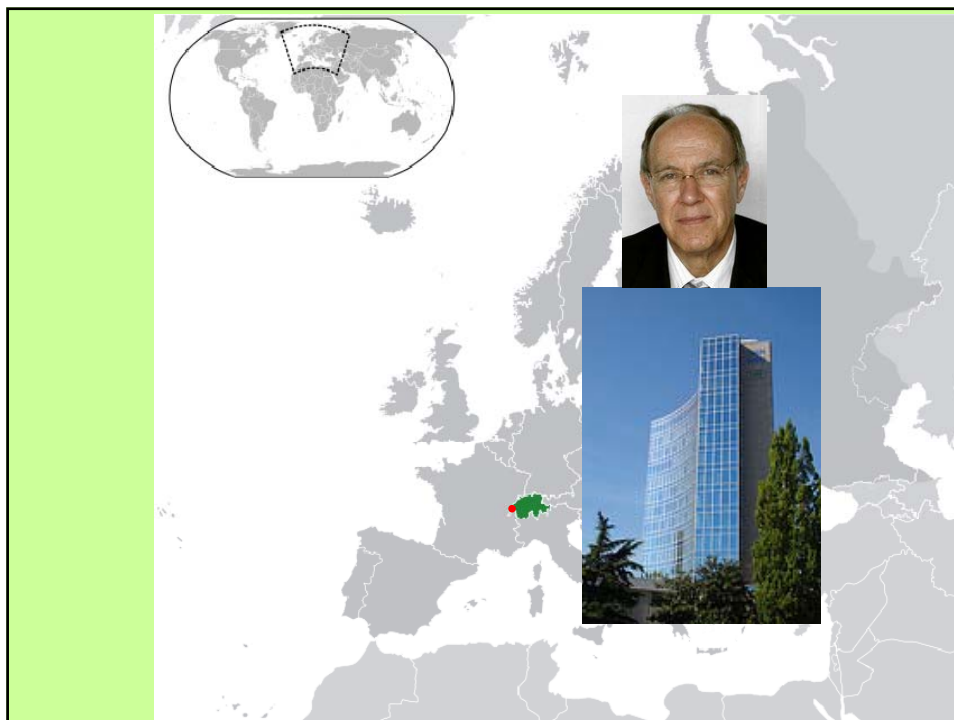
The International **Convention for the
Protection of New Varieties of Plants**

established in 1961

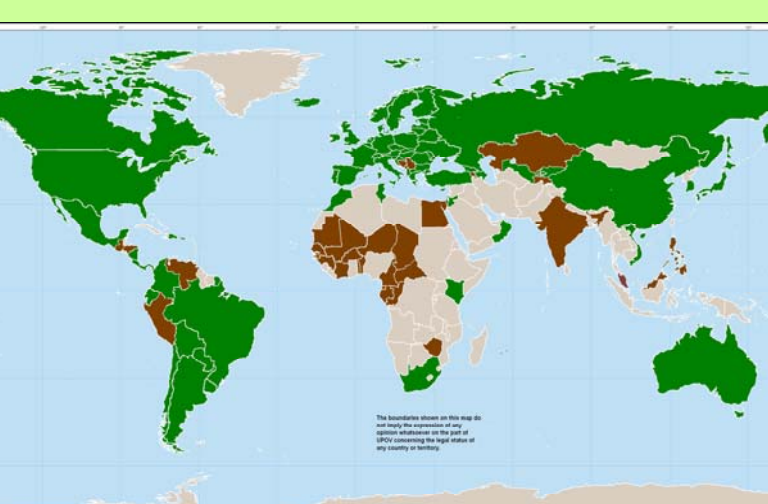
The International **Union for the
Protection of New Varieties of Plants**

Union internationale pour la
protection des **o**btentions **v**égétales

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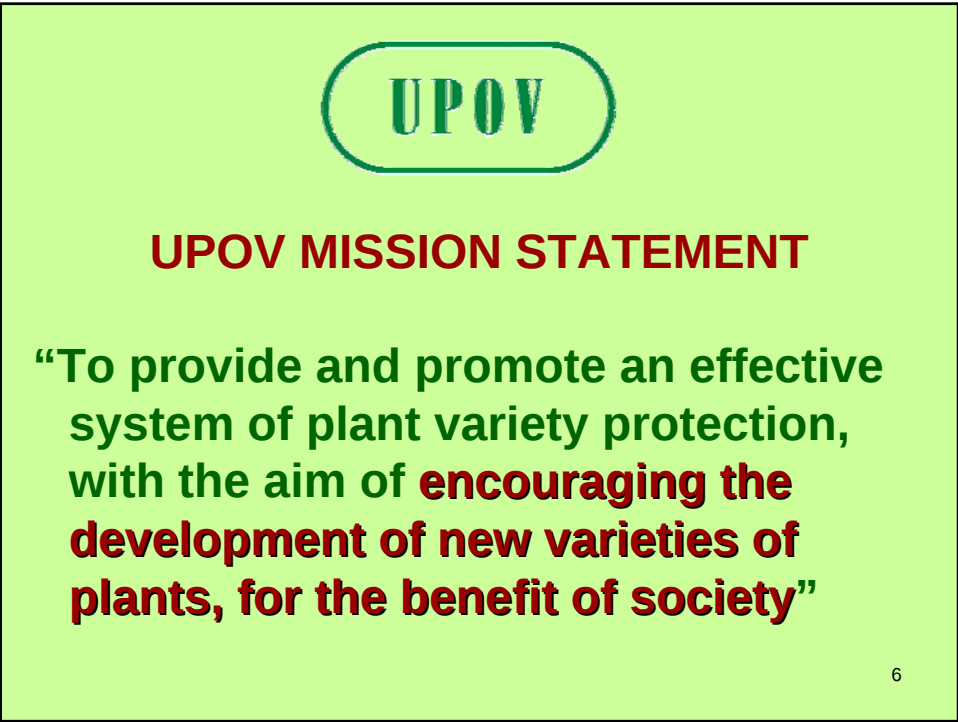


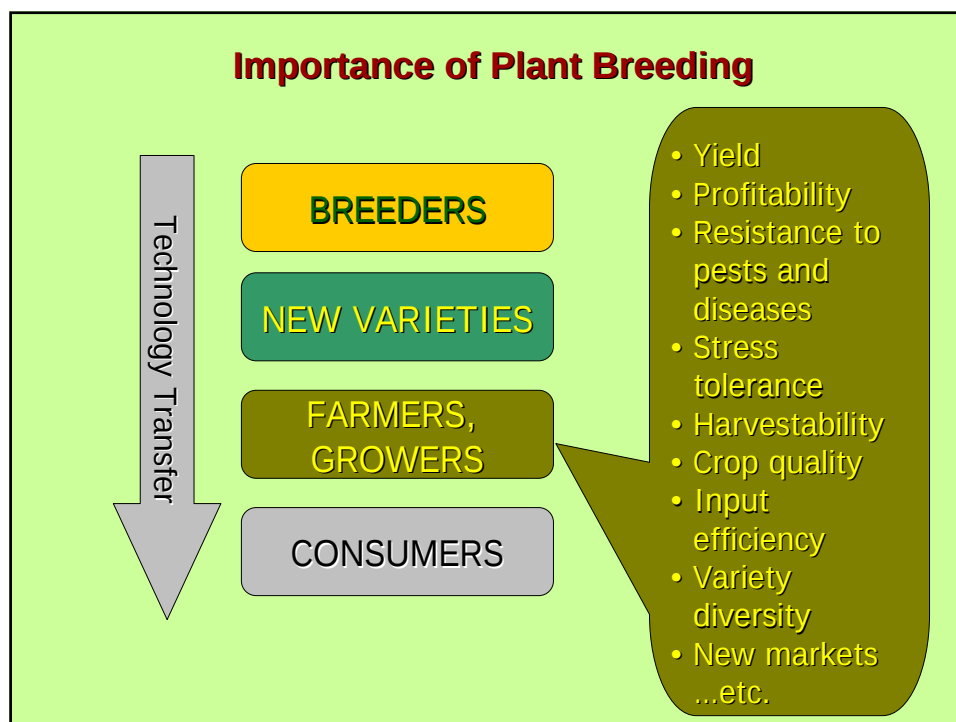
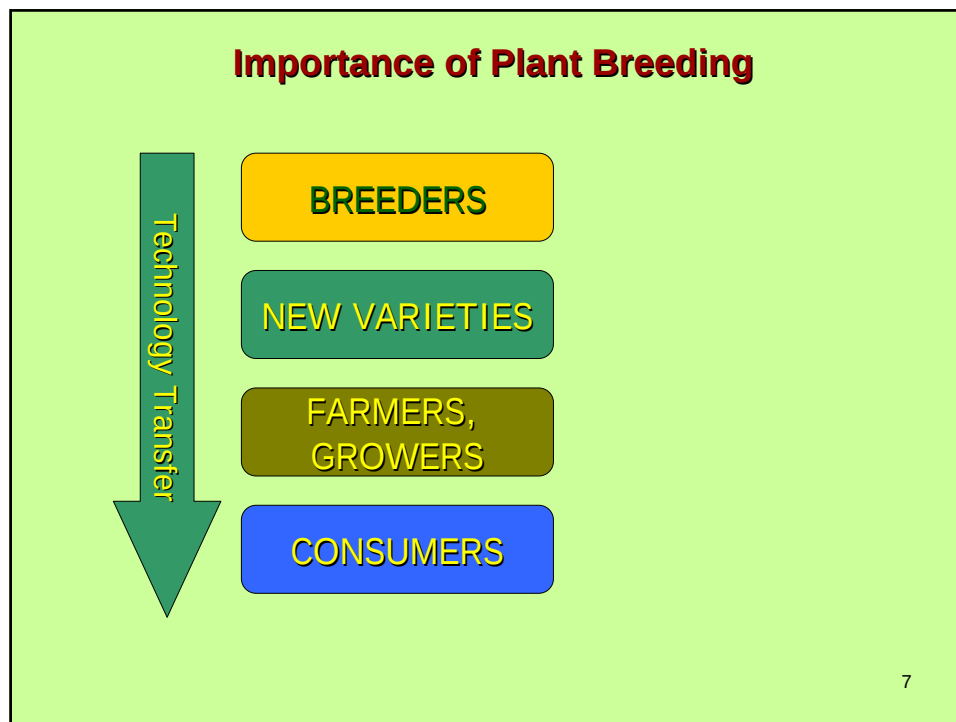
Members of UPOV (green) & initiating States & organizations (brown)



The map displays the global distribution of UPOV members and initiating states. Green-shaded regions include North America, South America, Europe, Russia, China, India, and Australia. Brown-shaded regions include various countries in Africa, the Middle East, and parts of Asia. A disclaimer in the bottom right corner states: "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."

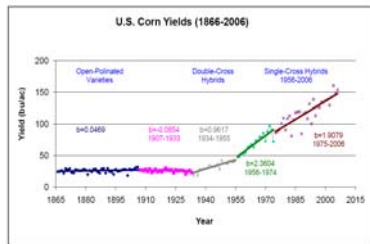
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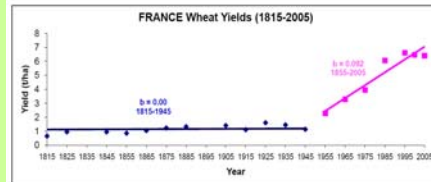


Importance of Plant Breeding

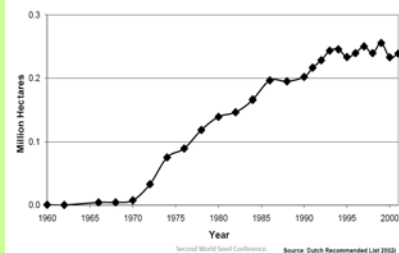
Evolution of Maize Yield in USA



Evolution of Wheat yield in France



Adaptation of Maize to Temperate Climate: the case of the Netherlands



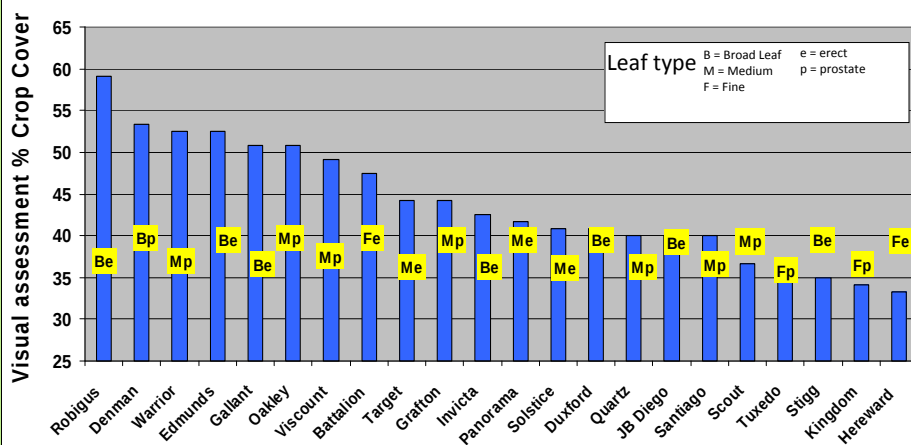
Bernard Le Buanec,
Second World Seed Conference (Rome, September 2009)

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Geneva, April 11 and 12, 2011

Barry Barker
Masstock Arable UK Ltd

Trial 10039 - WW Blackgrass Crop Competition Trial, Stow Longa Visual % Crop Cover by Variety - March 2010



Glucosinolate content

from 100 μ moles ('Jetneuf') to 12 μ moles ('Samourai')

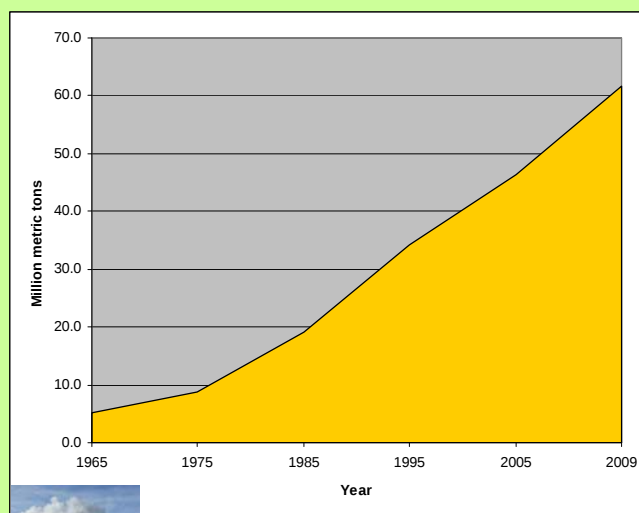
LEAR: Low Erucic Acid

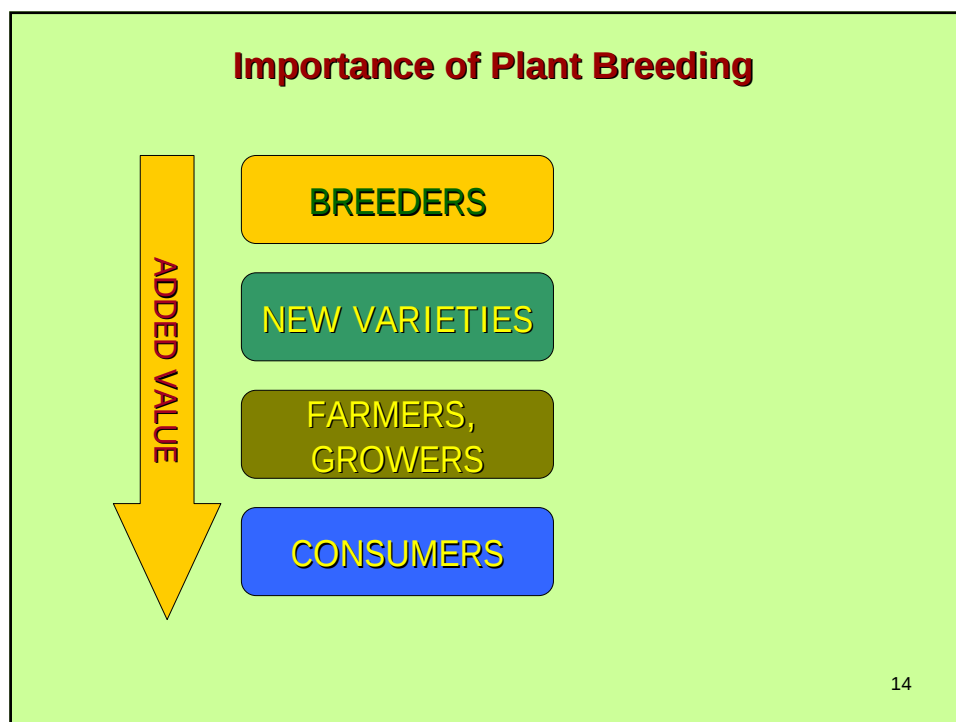
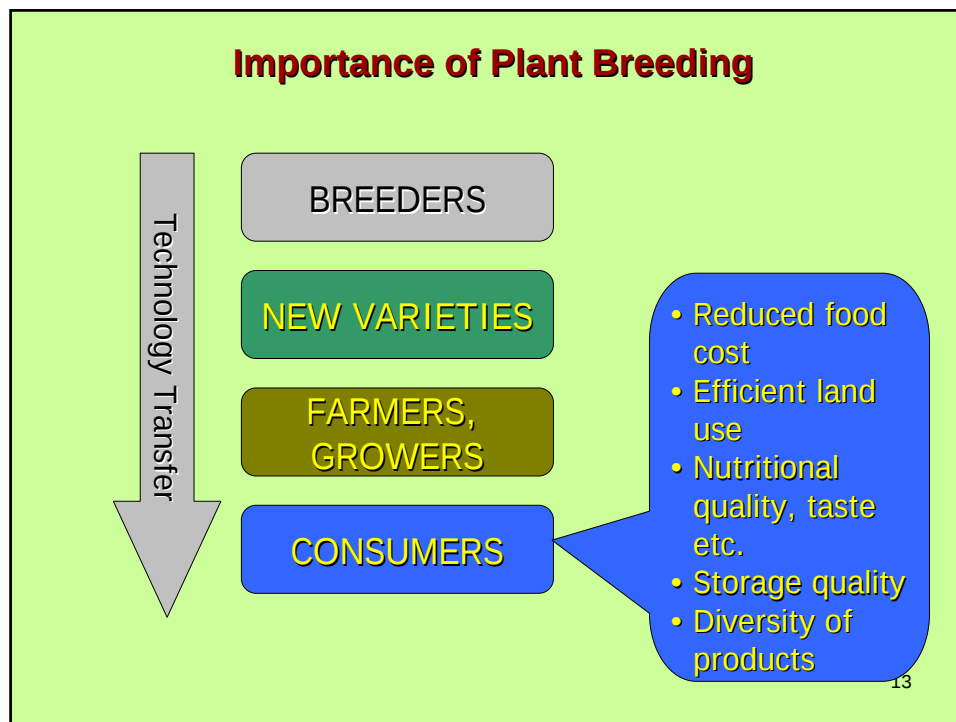


HOLLI: High Oleic and Low Linolenic



World Total Rapeseed Production





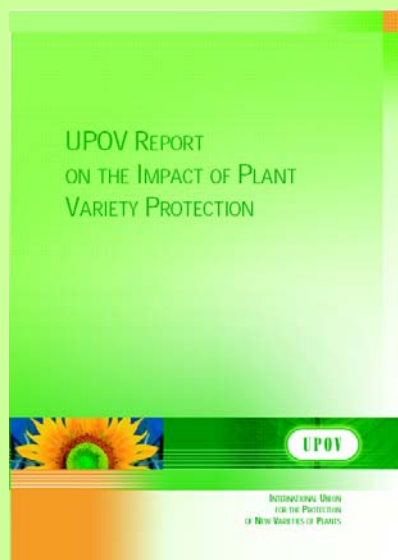
- Plant breeding is long and expensive

BUT

- Plant varieties can be easily and quickly reproduced

→ Breeders need protection to recover investment

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FINDINGS

Introduction of
UPOV system

Diverse types of breeders
(private breeders, researchers)

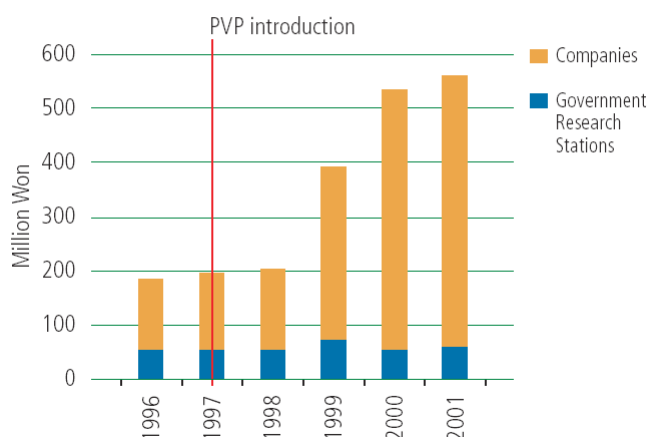


Increases breeding activities

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Importance of Plant Variety Protection and UPOV

Figure 55. Republic of Korea: Breeding Investment-
Chinese Cabbage



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Importance of Plant Variety Protection and UPOV

Figure 29. China:
Number of Breeders in
Henan Province
(Maize)

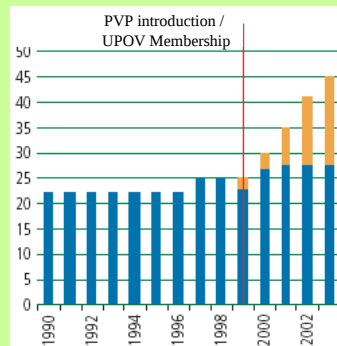
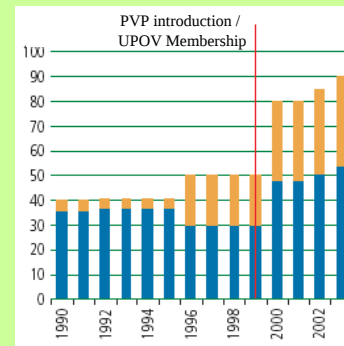


Figure 30. China:
Number of Breeders in
Henan Province
(Wheat)

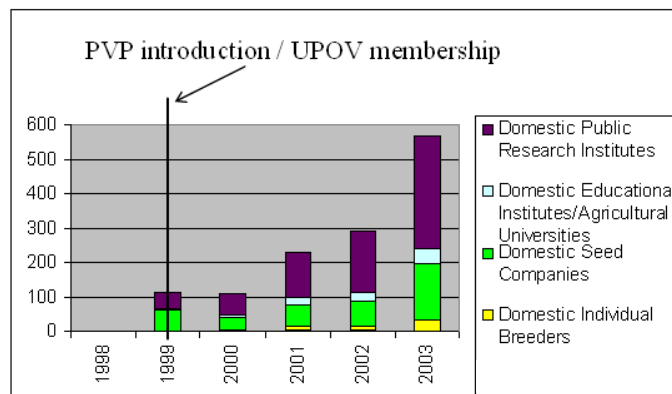


Number of other breeders
Number of breeders at the Provincial Research Institute

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Importance of Plant Variety Protection and UPOV

Figure 33. China: Number of Applications by
Categories of Applications (Agriculture)



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Importance of Plant Variety Protection and UPOV

Figure 52. Republic of Korea: Number of Rose Breeders



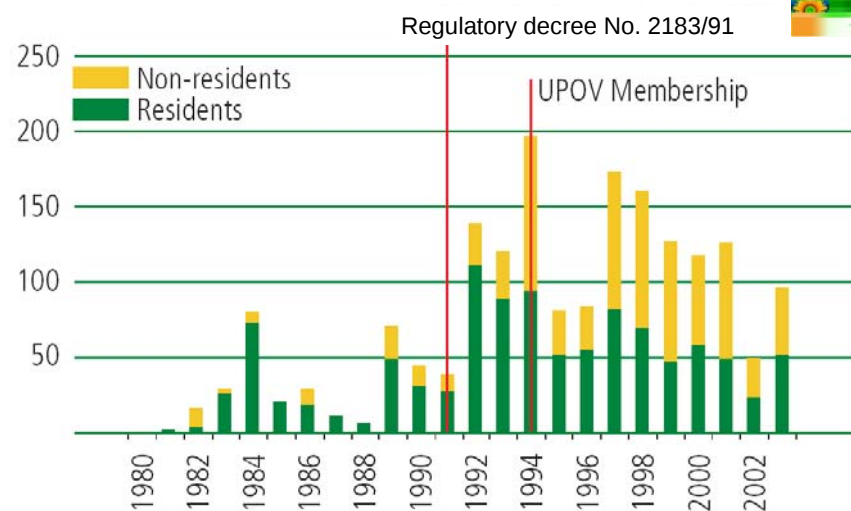
Figure 53. Republic of Korea: Number of Rice Breeders



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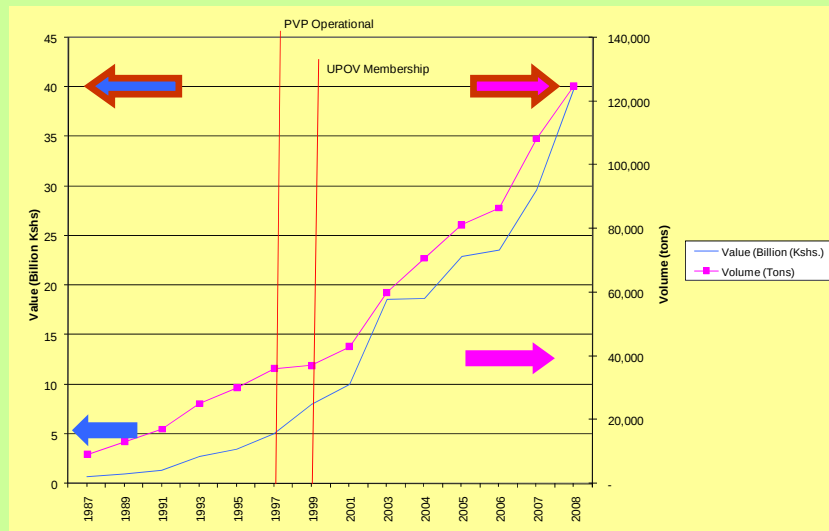
Importance of Plant Variety Protection and UPOV

Figure 13. Argentina: Number of Titles Granted



Importance of Plant Variety Protection and UPOV

Export of Kenyan Cut Flowers

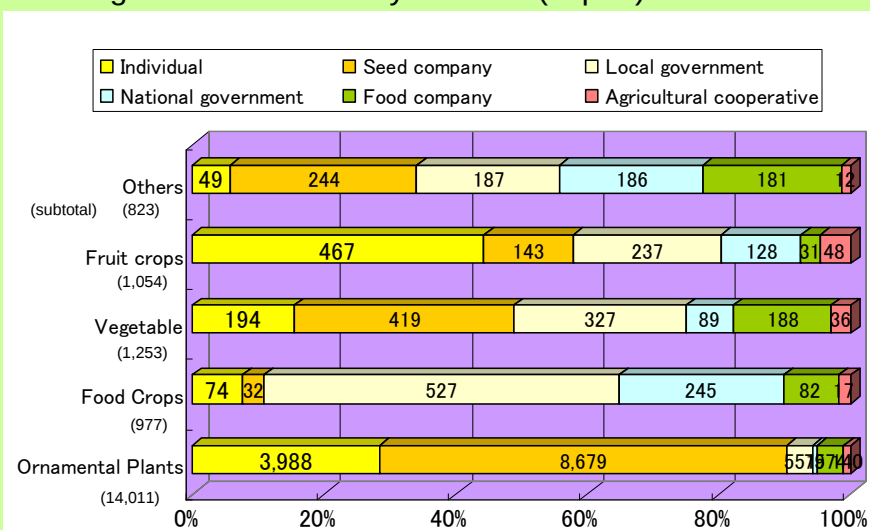


Evans Sikinyi, Second World Seed Conference

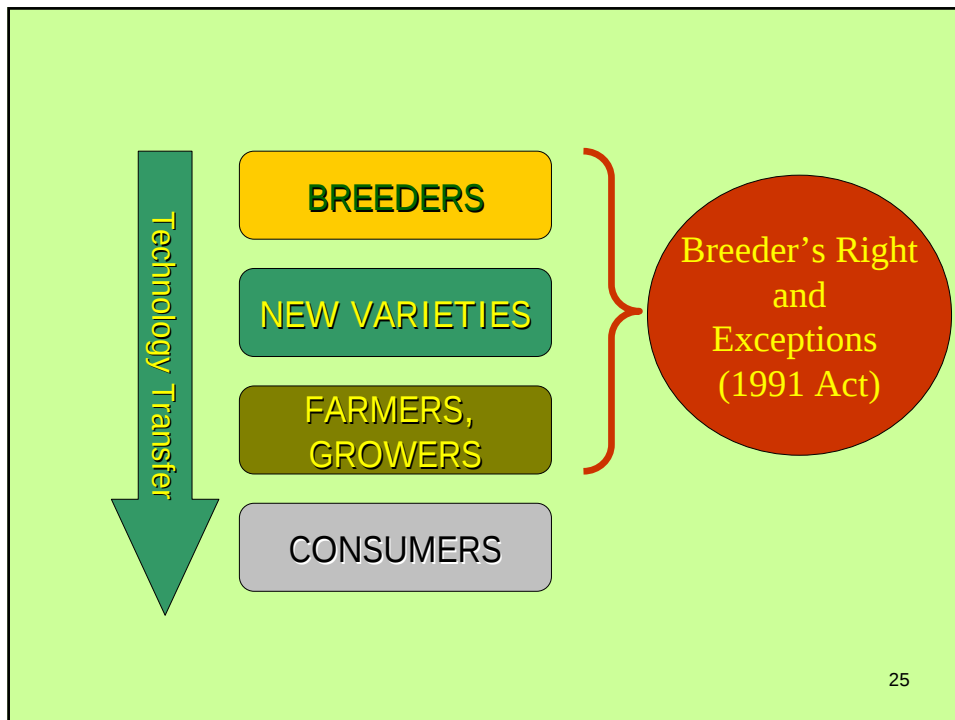
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Importance of Plant Variety Protection and UPOV

Registration Number by Breeder (Japan) (~March 31, 2009)



Yasunori Ebihara, International Symposium (Seoul, August 2009)



Breeder's Right

[1991 Act of UPOV Convention]
Article 14
Scope of the Breeder's Right

(1) *[Acts in respect of the propagating material]*

(a) Subject to Articles 15 and 16, the following acts in respect of the propagating material of the protected variety shall require the authorization of the breeder:

- (i) production or reproduction (multiplication),
- (ii) conditioning for the purpose of propagation,
- (iii) offering for sale,
- (iv) selling or other marketing,
- (v) exporting,
- (vi) importing,
- (vii) stocking for any of the purposes mentioned in (i) to (vi), above.

(b) The breeder may make his authorization subject to conditions and limitations.

BREEDERS decide their policy on authorization, including conditions/limitations

Exceptions to the Breeder's Right

Compulsory

Acts done:

- privately and for non-commercial purposes
- for experimental purposes
- breeding other varieties (breeder's exemption)

Optional

Farm-saved seed

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Exceptions to the Breeder's Right

Compulsory

Acts done:

- **privately and for non-commercial purposes**
- for experimental purposes
- breeding other varieties (breeder's exemption)

Optional

Farm-saved seed

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Exceptions to the Breeder's Right

- Compulsory

(i) Acts done privately **and** for non-commercial purposes

- propagation of a variety by a **farmer exclusively** for the production of a **food crop to be consumed entirely by that farmer and the dependents of the farmer** living on that holding
therefore
“**subsistence farming**” where these constitute acts done privately and for non-commercial purposes, may be considered by a UPOV member to be excluded from the scope of the breeder's right

Acts **Possibly falling** within the scope of the exception



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Exceptions to the Breeder's Right

Compulsory

Acts done:

- privately and for non-commercial purposes
- for experimental purposes
- breeding other varieties (breeder's exemption)

Optional

Farm-saved seed

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Exceptions to the Breeder's Right

A Contracting Party may restrict breeder's rights in order to **permit farmers to use for propagating purposes on their own holdings the product of the harvest obtained on their own holdings** from the protected variety **within reasonable limits** **subject to safeguarding legitimate interests of the breeder**

[Article 15(2) and Recommendation of the Diplomatic Conference]

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Exceptions to the Breeder's Right

Compulsory

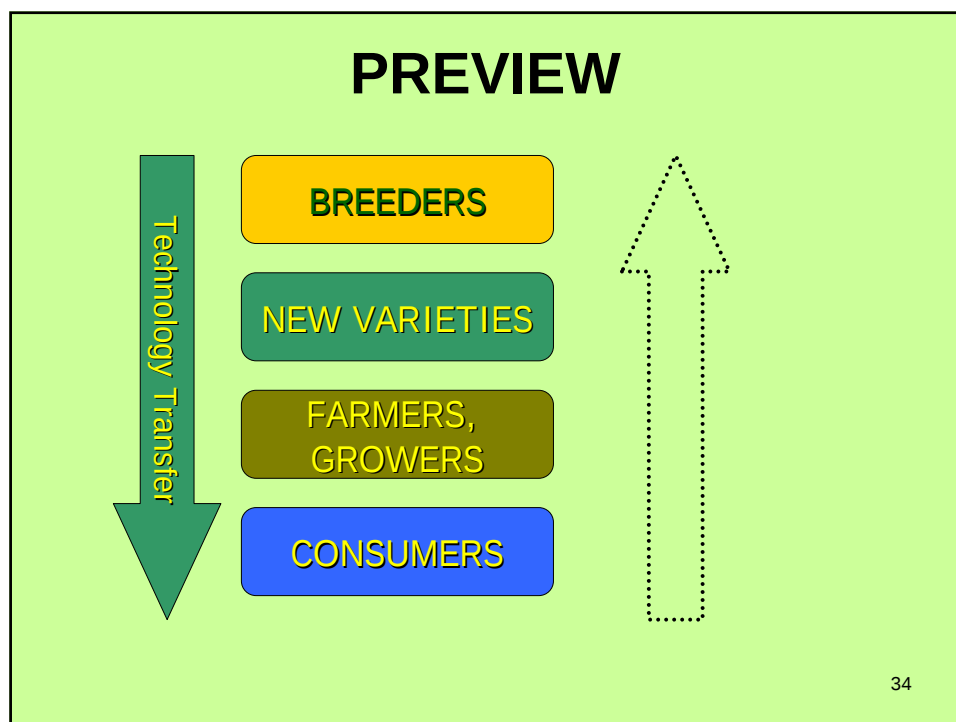
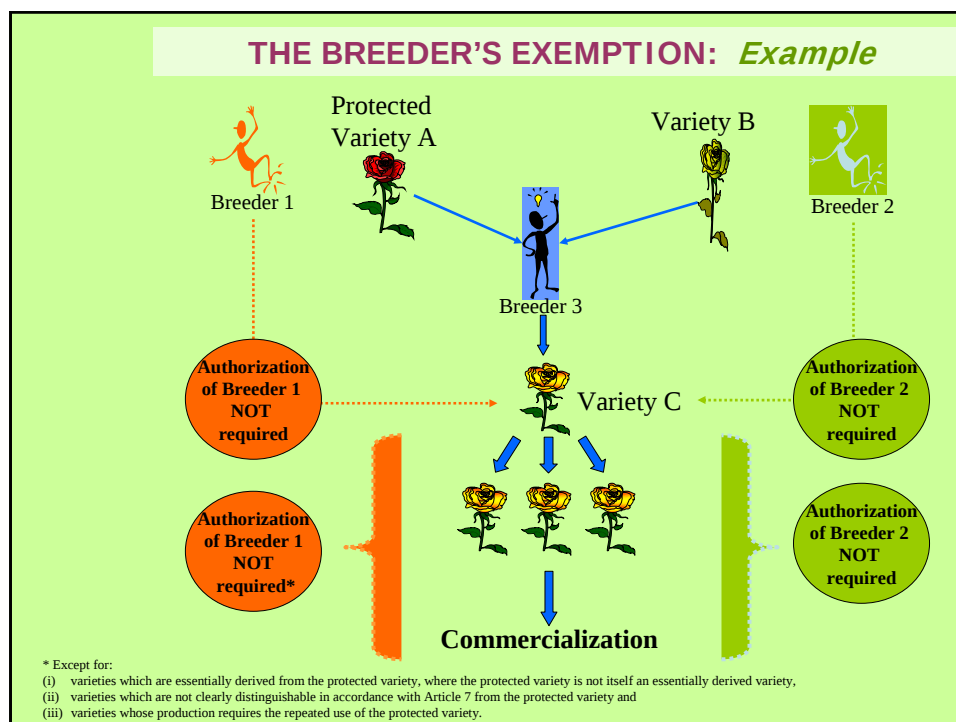
Acts done:

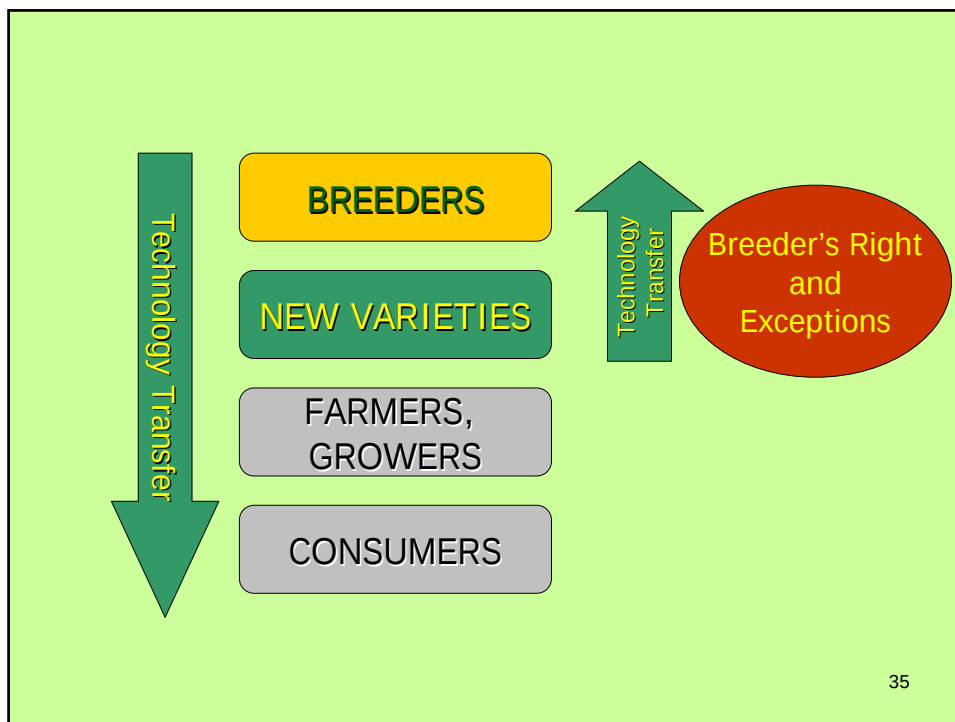
- privately and for non-commercial purposes
- for experimental purposes
- **breeding other varieties (breeder's exemption)**

Optional

Farm-saved seed

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**Seminar on PVP & Technology Transfer:
the Benefits of Public-Private Partnership**
April 11-12, 2011

Closing remarks by the Chairs

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Use of Plant Variety Protection by National Research Centers

Chair: Enriqueta Molina Conclusions – Session 1

Plant Variety Protection:

- Promotes private sector involvement in research and development
- A tool for technology transfer
- Provides a legal framework for financial investment
- Encourages innovation in breeding aims, particularly for the development of new or niche markets
- Focuses investment on meeting the needs of farmers and consumers

Chair: Enriqueta Molina

1. Ryudai Oshima, NARO
2. Jenn James, Grasslanz
3. Shadrack R. Moephuli, ARC
4. Filipe de Moraes Teixeira, EMBRAPA
5. Yves Lespinasse, INRA

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Filipe Geraldo de Moraes Teixeira
Head, Technology Innovation Office, Embrapa, Brazil



Ministry of
Agriculture, Livestock
and Food Supply



PVP: Returns on Research Investment

Every US\$ 1.00 invested at Embrapa generates an average return of US\$ R\$ 6.40 for Brazilian society

Embrapa generates a social surplus of US\$ 11.62 Billion

85,725 jobs generated by Embrapa Technologies

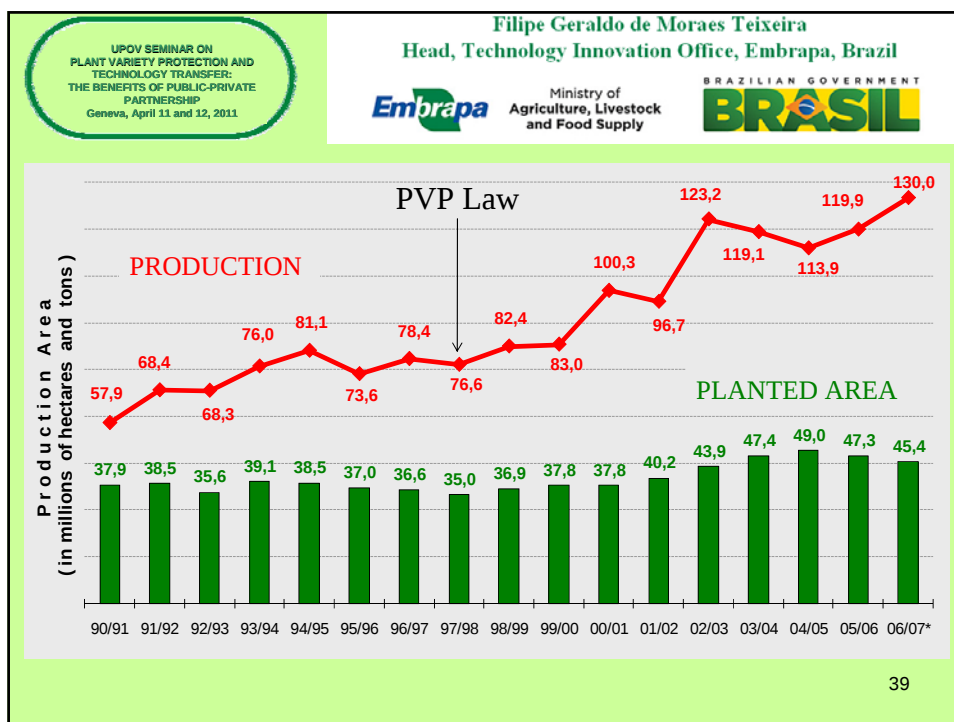
710 relevant social initiatives

Brazilian agribusiness handles about 750 billion dollars per year

Agriculture represents 28% of Brazilian GDP

Agribusiness in Brazil generates more than 17 million jobs (37% of Brazilian workforce)

In the agriculture sector Brazil is the 3rd largest exporter country in the world



Technology Transfer by the Private Sector

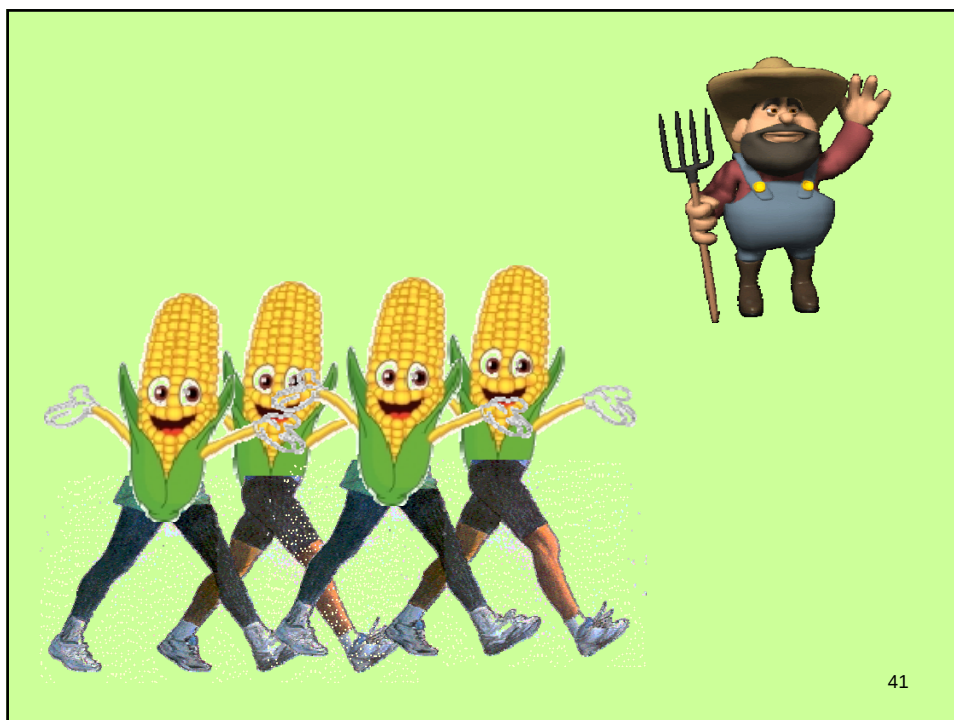
Chair: Kitisri Sukhapinda Conclusions – Session 2

Private sector:

- An effective means of delivering varieties to farmers

Chair: Kitisri Sukhapinda

- Willi Wicki, DSP
- Barry Barker, Masstock Arable
- Diego Risso, URUPOV
- Evans Sikinyi, KY



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Technology Transfer by the Private Sector

Chair: Kitisri Sukhapinda Conclusions – Session 2

Private sector:

- An effective means of delivering varieties to farmers
- Assessment of the market potential of varieties
- Link between public research and the needs of farmers
- Provides a channel for income for public sector research
- Facilitates strategic associations and coordinated technology transfer

1. Willi Wicki , DSP
2. Barry Barker, Masstock Arable
3. Diego Risso, URUPOV
4. Evans Sikinyi, KY

Chair: Kitisri Sukhapinda

Task sharing and part of public and private funding of the Swiss wheat breeding program

Public funding (Agroscope)

Variety development



Final Evaluation



Final Evaluation

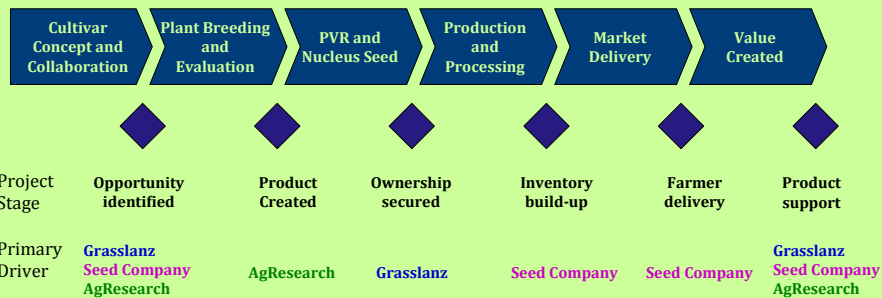


Maintenance breeding,
Basic seed production,
PVR protection,
Variety representation in
Switzerland, in Europe and
worldwide

Private funding (DSP Ltd), source: Royalty fees from protected varieties

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Plant Variety Development



Project Contributions

AgResearch: Plant Breeding and innovation, education

Grasslanz: Plant Variety Protection, nucleus seed, finance, project coordination, stewardship.

Seed Company: Seed production and processing, marketing, finance, royalties, knowledge transfer.

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International Research Centers

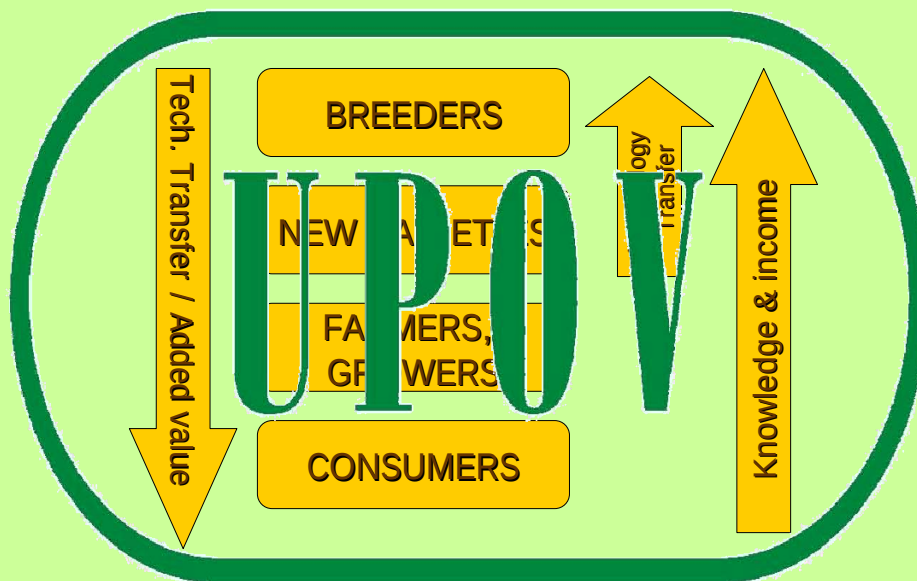
Chair: David Boreham Conclusions – Session 3

- PVP provides a mechanism to facilitate dissemination of varieties to farmers: open access does not ensure widespread dissemination or use 
- PVP provides a system to increase availability of varieties suited to farmers' needs
- PVP provides incentives for SME's, particularly local breeders and seed distributors 
- The breeders' exemption provides a mechanism to facilitate access to germplasm
- The use of PVP is consistent with the ITPGRFA and SMTA

1. Lloyd Le Page, CGIAR
2. Ruairaidh Sackville Hamilton, IRRI
3. Ian Barker, Syngenta

Chair: David Boreham

SUMMARY



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THANK YOU

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