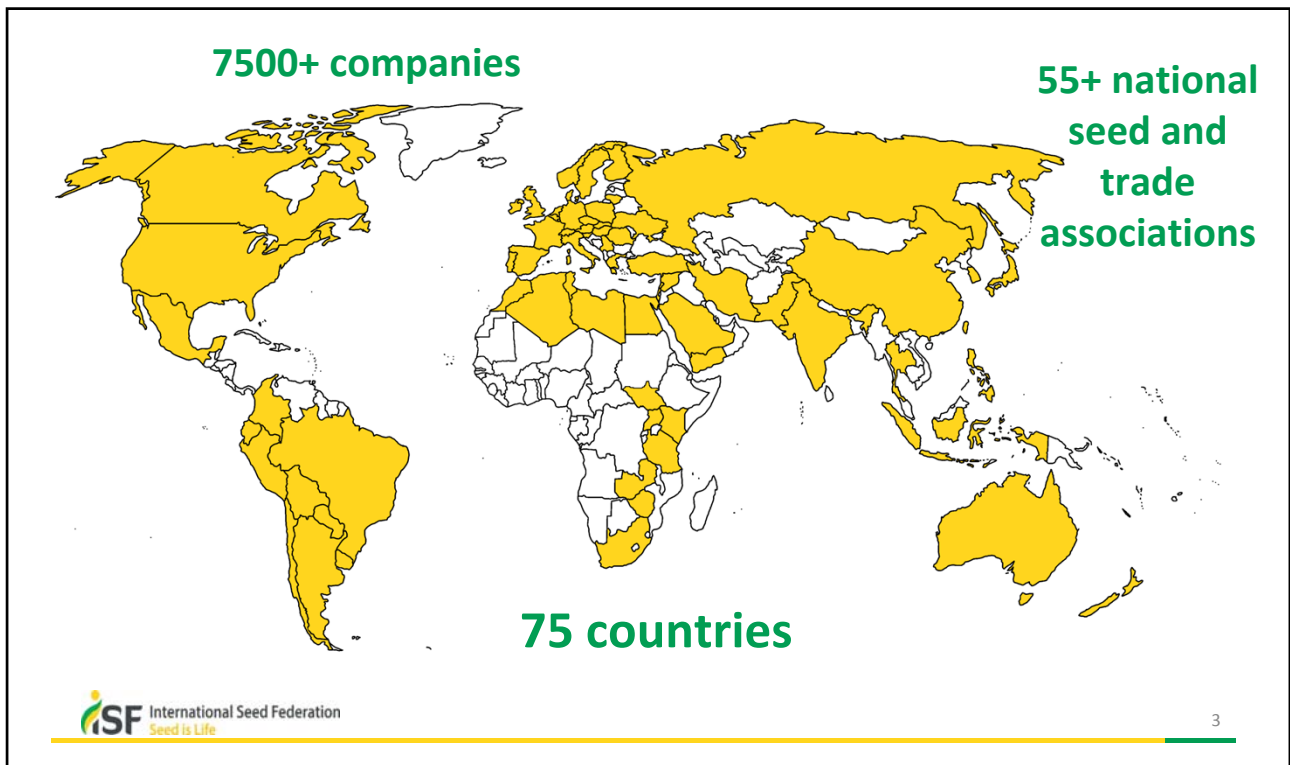


**TRAIN THE TRAINER
PLANT VARIETY PROTECTION UNDER THE UPOV
CONVENTION**

Michael Keller, ISF Secretary General
Geneva, May 16 2017

What is ISF?

- **Non-governmental, non-profit making organization**
- **“Voice of the global seed industry”**



Role of ISF

- Represent interests of the seed industry at a global level
- Facilitate free movement of seed within a fair framework
- Promote IP rights for seeds, plant varieties and technologies
- Inform members of industry developments and in the international regulatory environment

Vision and Mission

Vision

“A world where the best quality seed is accessible to all, supporting sustainable agriculture and food security.”

Mission

“To create the best environment for the global movement of seed, and promote plant breeding and innovation in seed”

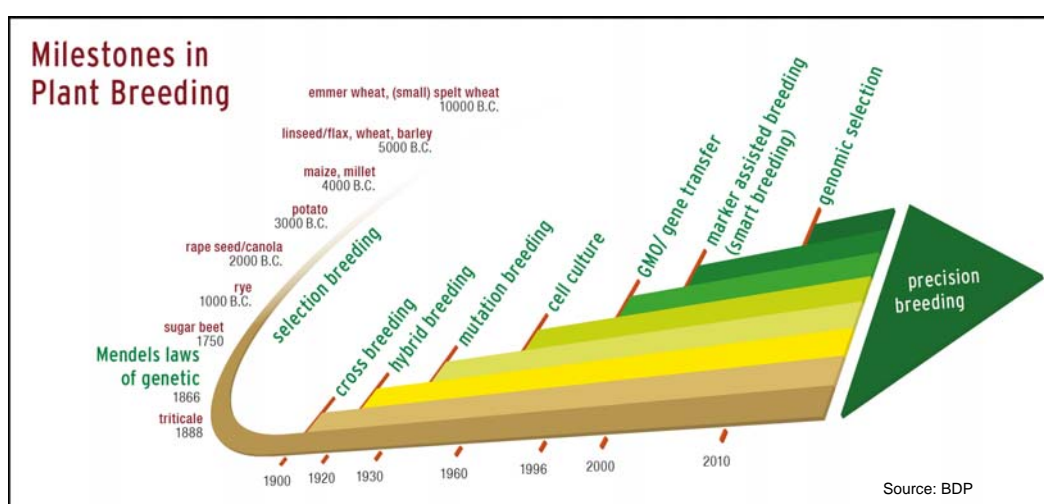
Trends concerning the Seed Sector

- global seed market
- number of regulations
- faster breeding and commercial processes
- plant breeding & seed production by private sector
- counter season breeding and production
- focus on abiotic tolerance
- flow of diseases
- re-export
- regulatory oversight
- climate fluctuations
- use of plant variety protection
- availability and adoption of international certificates : varietal identification
- quality testing
- awareness on phytosanitary measures
- illegal Seed Practices
- use of ISF Trade Rules,...

Illegal Seed Practices

- Reproduction and marketing of PVP or patented Seed (Hybrids and OP varieties)
- Theft of parental Lines
- Fraudulent Labelling of varieties
- Vegetative propagation of hybrids
- Non- declaration / misuse of FSS
- OECD/ National Seed Certification Schemes at stake
- Misuse of Grain as Seed and using of discarded Seed
- Trademarks

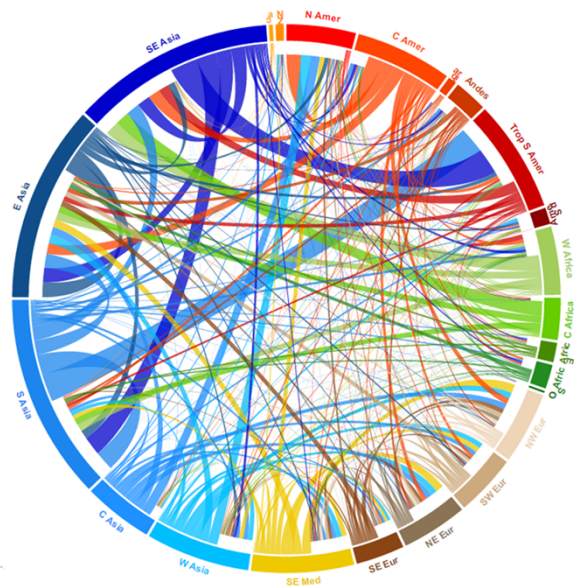
Evolution in Plant Breeding



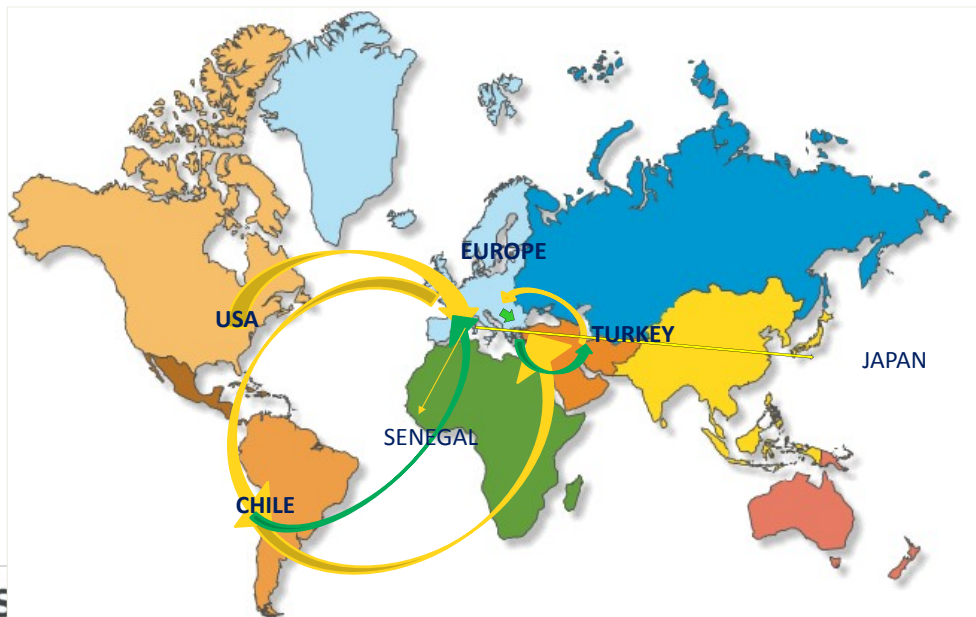
Genetic Resources: global interdependency!

“Origins of food crops connect countries worldwide”

International Center for Tropical Agriculture (CIAT)



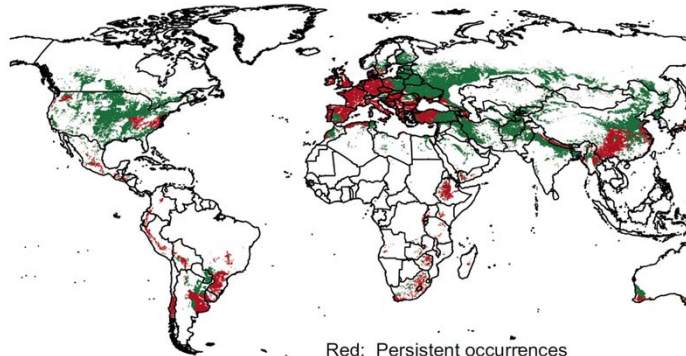
Potential pathway of a corn variety



Crops Pests and Diseases - a global issue

Global vulnerability for yellow rust

(Modelled by Pardy et al. 2015)



Seed supply - Main stages

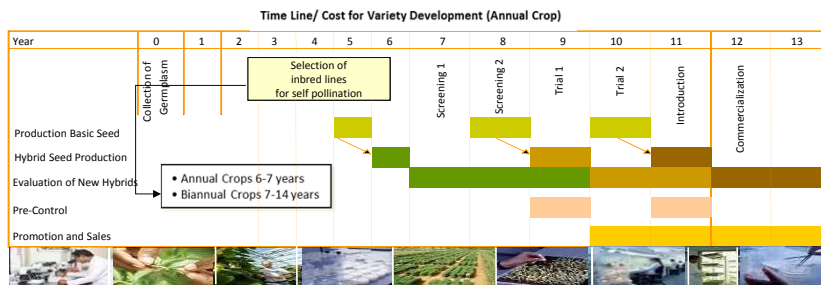
- Pre-breeding
- Breeding
- Variety testing (company level, growers trials, Official; DUS, VCU)
- Variety registration, PVP
- Production of basic seeds
- Production of Hybrid (commercial seed)
- Promotion and selling (international and national trade)

Breeding is long and expensive

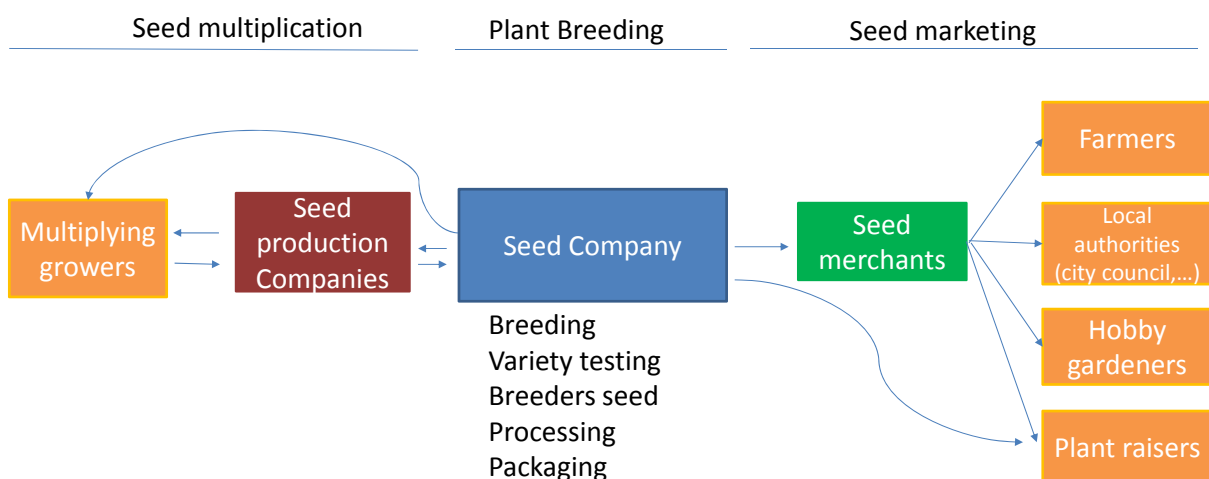
Accumulated R&D costs for a variety to market range 1.5 – 2.5 M€ in US/ Europe,

A global portfolio average of accumulated R&D costs per variety currently is in the range of 1 M€

Average time to market of 12 year



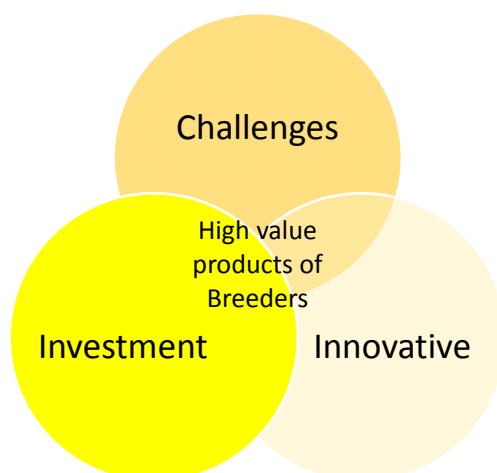
Seed supply (general model)



Lengthy and costly undertaking

- Investment of the seed sector: **10-15%** of its turnover in R&D (< 20% in vegetables)
- R&D costs to launch a new variety: **€1.5 – 2.5m** in US/ Europe
- Average time to market a new variety: **12 years**

Importance of IPP for breeders



- Creation of such products needs incentives
- IP → allows a fair return on investment and stimulates innovation

PBR and Patents

- PBR and patents: effective protection systems to stimulate the full scope of innovation in agricultural species.
 - *Preferred form of protection for varieties is through PBR*
- Right balance between **protection** as an incentive for innovation and **access** to enable others to further improve and innovate.
- Benefit of breeder's exception under PBR needs to be preserved even when patents are involved.

PBR: Handling of Germplasm

- Samples of germplasm provided to the examination office: trade secrets.
- Material should be transferred with a Material Transfer Agreement (MTA) that fully protects the PBR-holder's ownership of the material, following the explicit consent of the PBR-holder

PBR : Electronic Application Form

ISF wish list for future development of EAF Standard :

- single application for several countries
- single application fee for several countries
- standard application fee paid to a single bank account
- standard check of novelty

PBR : Parental lines of hybrids

- Material used in breeding should only be accessed in a manner that respects the legal rights of the owner.
- Extraction of parent seed from hybrid seed is not considered legal access.
- Proprietary parental lines developed solely for the purpose of producing hybrids should not be used by third party without the consent of the owner.

PBR : Farm Saved Seeds (FSS)

- FSS of protected varieties erodes incentives for further breeding by reducing the appropriate share of value the breeder created.
- ISF believes that FSS of protected varieties should not be permitted
- However, if authorities choose to include the optional exception, as described in Art 15 (2) of the UPOV 1991 Act, the implementation should include an obligation to pay reasonable remuneration to the breeder.

PBR : Essentially Derived Varieties

- The EDV principle appropriately strengthen PBR, yet does not restrict the breeders' exception which is a key feature of the UPOV Convention.
- The concept of EDV has drastically decreased plagiarism in plant breeding because all plagiaristic varieties are also EDVs.

PBR: DNA markers

- ISF endorses the use of DNA-based markers for variety identification purposes and to help determine genetic similarity between varieties to help resolve disputes on essential derivation.
 - Use for improvement of the management of reference collections and planning of DUS trials
 - Use when fully predictive of the expression of DUS characteristics to simplify the testing of these characteristics.
- ISF supports the work of UPOV Working Group on BMT to find new and acceptable applications of DNA-based markers in the field of DUS testing.

PBR: some questions

- PVP is not without its problems – lack of harmonization and enforcement possibilities
 - Hesitation to sell or produce best varieties

Conclusions

- Critical role of improved varieties in global agricultural productivity
- Plant breeding : time and money consuming
- IP rights are indispensable to protect and sustain breeder's efforts and investments.
- UPOV constitutes the international standard system for *sui generis* PVR.
- Need of national laws and regulation to create an effective PVR environment
- Breeders have to make use of every form of legal protection and other existing tools to protect their varieties and seeds.



Seed is Life