International Seed Federation
Seed is Life

Questions présentant un intérêt pour l'ISF concernant l'Afrique

Formation des Formateurs (UPOV)
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Michael Keller, Secrétaire Général, ISF

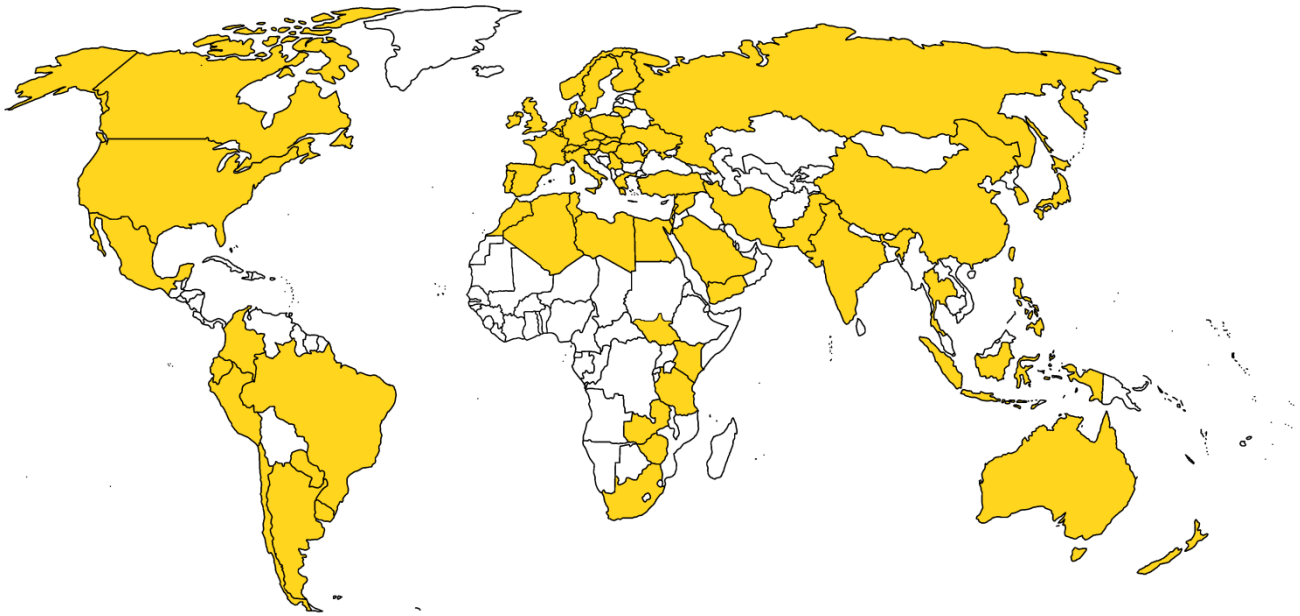
ASSINSEL + FIS = ISF

- **Fédération Internationale du Commerce des Semences (FIS)**
  - 1924 1st Congress London
  - International rules for sowing seeds
  - Importance of technology development
  - 1954 Stressed importance of IP

- **Association Internationale des Sélectionneurs pour la Protection de Obentions Végétales' (ASSINSEL)**
  - Established 1938
  - 1956 called for International Convention for variety protection
  - 1957 first UPOV Convention, First Act adopted 1961

- **2002 ASSINSEL and FIS merged to be International Seed Federation**

ISF Today



230 members

77 countries

97% int'l trade

7500+ co.s

~48bn USD

~12bn USD

ISF Membership

Ordinary members	• National Associations representing seed companies and enterprises within their countries • 56 members from 47 countries
Associate members	• Seed companies or enterprises • 101 members from 45 countries
Affiliate members	• Service providers to the seed industry • 26 members from 11 countries
Tree and Shrub Seed Group	• National Seed Associations of tree and shrub seed companies and/or individual companies active in this field • 41 members from 25 countries
Observers	• 6 Associations (Afghanistan, Bangladesh, Bolivia (2016), Russia (ongoing disucssion), Sudan, Nigeria (2016) and Venezuela)

The Role of ISF

- To facilitate the free movement of seed within a framework of fair and science-based regulations
- To promote the establishment and protection of IP rights for seeds, plant varieties and associated technologies
- To represent the interests of the seed industry at a global level
- To keep its members informed of developments within the industry and in the international regulatory environment

ISF Vision Statement

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

ISF Mission Statement

"To create the best environment for the global movement of seed and promote plant breeding and innovation in seed."

Where does ISF represent?

- **UPOV** (International Union for the Protection of New Varieties of Plants)
- **OECD** Seed Schemes / WG Regulatory Oversight in Biotech
- **FAO**
  - International Treaty on PGRFA
  - International Plant Protection Convention (IPPC)
  - Committee on World Food Security (CFS)
  - Codex Alimentarius
- **CBD** (Sanitary and Phytosanitary Measures) ; Cartagena Biosafety Protocol (CBP) / Nagoya Protocol
- **ISTA** (International Seed Testing Association)
- **WIPO** (World Intellectual Property Organisation)
- **WTO** (World Trade Organisation)/ Sanitary and Phytosanitary Measures Agreement

International Seed Federation

Seed is Life

Seed Trends in Changing Times

Changing Times

more efficient breeding

political decisions

society

CHALLENGES

consumers

tastes

climate change

increasing trade

legal uncertainties

OPPORTUNITIES

market access issues

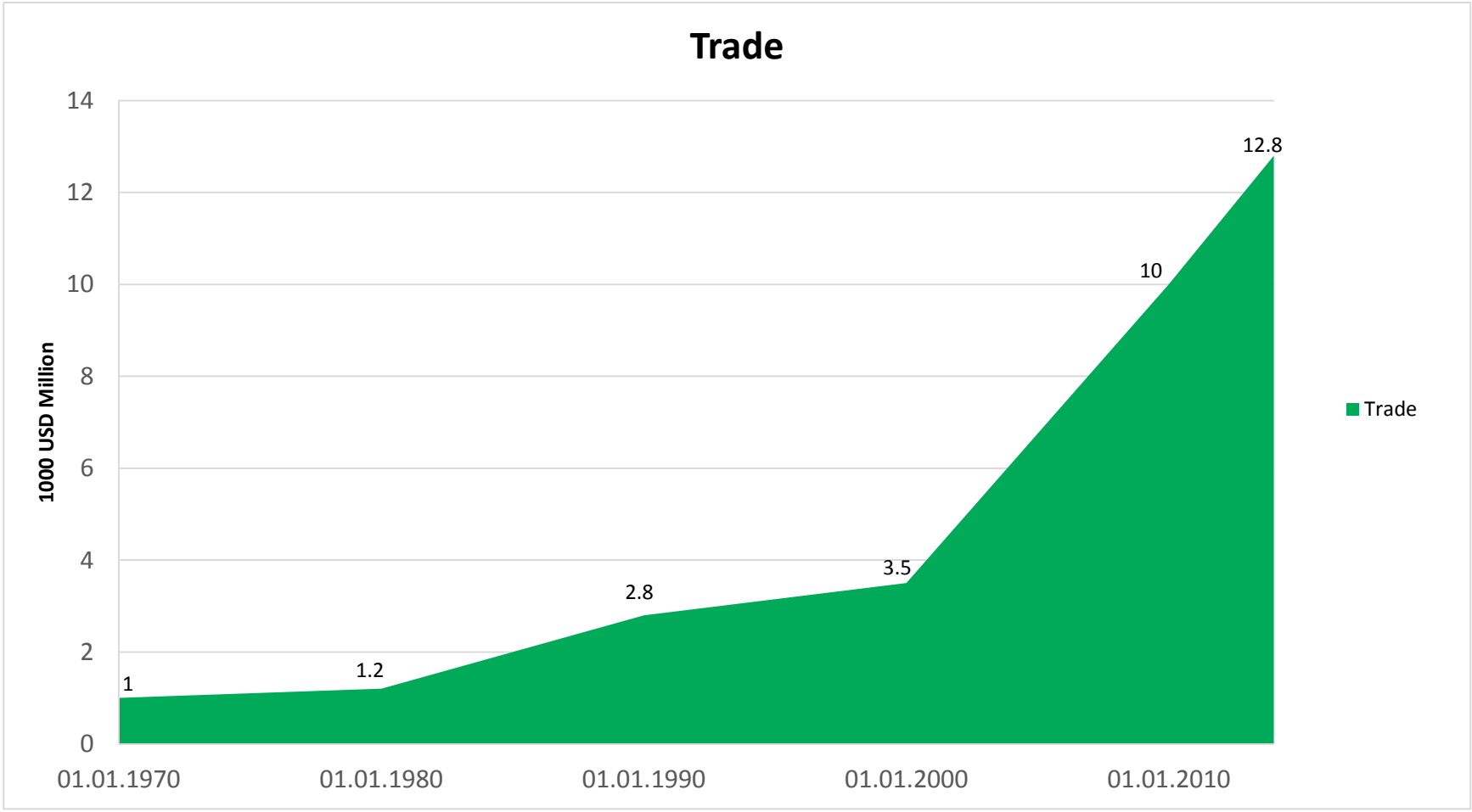
agriculture back on agenda

more regulatory oversight

Seed Trends

- Faster breeding and commercial processes
- More plant breeding & seed production by private sector
- Counter season breeding and production
- Cheaper, faster transportation
- Shorter variety life time
- Increased focus on abiotic tolerance
- More crops converted to hybrids

Growth of Seed Trade



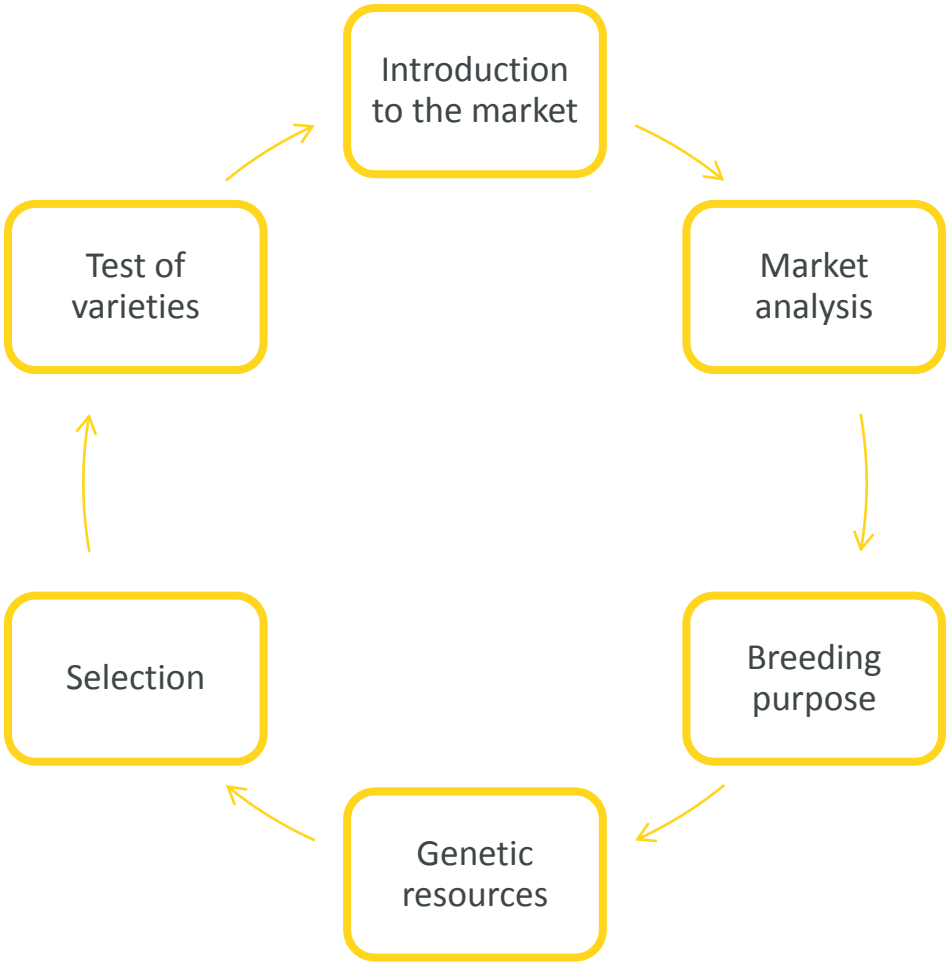
Movement of Seed

Importance of Plant Breeding

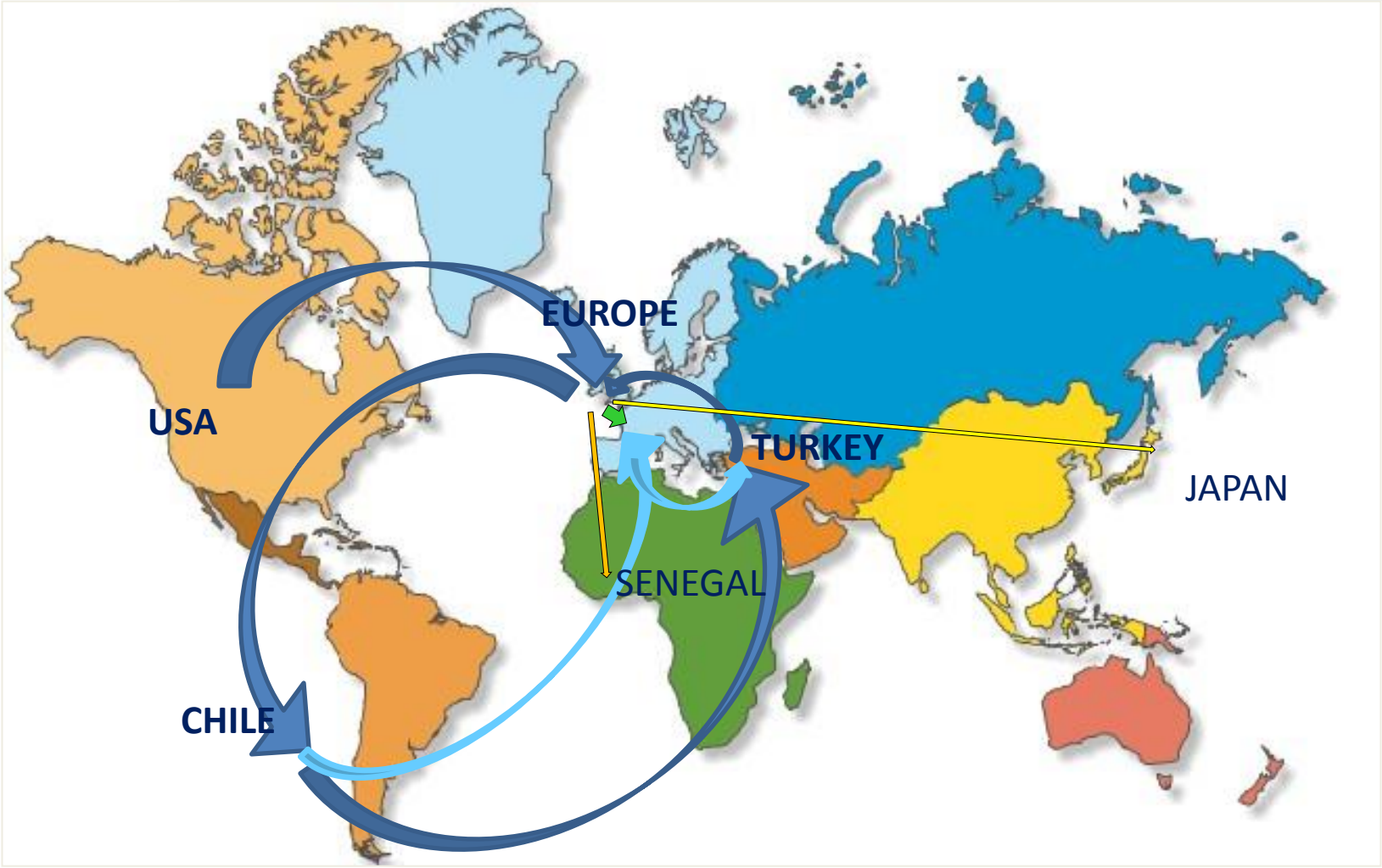
Some examples:

- Yield
- Profitability
- Resistance to pests and diseases
- Tolerance to abiotic stress
- Easy harvest (with machineries)
- Crop quality
- Input efficiency
- Nutritional quality
- Storage quality
- Reduced food cost
- More efficient land use

Breeding program design



Potential pathway of a corn variety



Lengthy and costly undertaking

- On average the sector invests 10-15% of its turnover in R&D (can exceed 20% in vegetables)
- Accumulated R&D costs for a variety to market range €1.5 – 2.5m in US/ Europe,
- A global portfolio average of accumulated R&D costs per variety is currently in the range of €1m
- Average time to market: 12 years

Importance of IPP for breeders

Products of plant breeding are of

high value

investment innovative challenges

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

IP stimulates innovation

ISF principles of PVP system

- Maximize innovation potential for new plant varieties and for patentable inventions.
- Facilitate the global movement of seed
- Balance protection as an incentive for innovation and access to enable further improvement.
    - *Breeder's exception is one of the cornerstones of the PBR system*
- Ratify the UPOV 1991 Act, or take up as many provisions as possible
- Need for enhancement of the reproducibility, efficiency and harmonization of DUS process

ISF views on patents for plant-related innovations

- PBR and patents are effective protection systems – needed to stimulate the full scope of innovation in agricultural species.
  - *Preferred form of protection for varieties is through PBR*

- Key requirement for any IP system is to achieve the 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

- All samples of germplasm provided to the examination office should be treated as trade secrets.
- Material should not be transferred without 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: EAP

Standard electronic application process (*under development*) will be streamlined by the following features:

- 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: FSS

- FSS of protected varieties erodes incentives for further breeding by reducing the appropriate share of value the breeder created.

- ISF believes that farm-saved seed 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: EDV

- 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)
- No good PVP infrastructure & enforcement possibilities => hesitation to sell or produce best varieties

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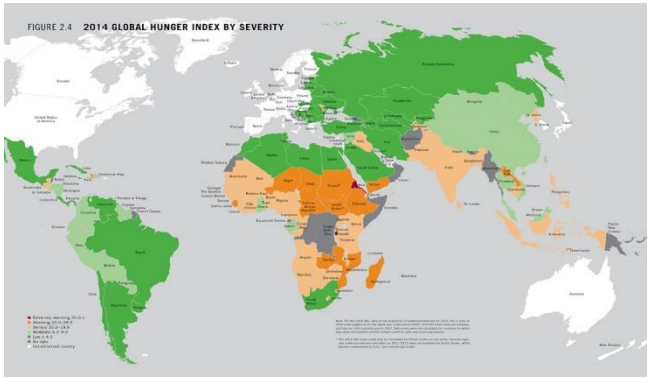
Focus on Africa

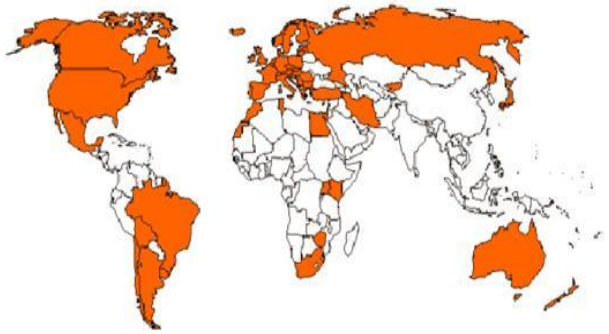
Comparison

ISTA

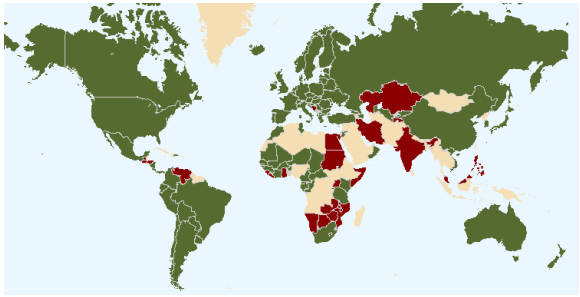
Global Hunger Index by severity



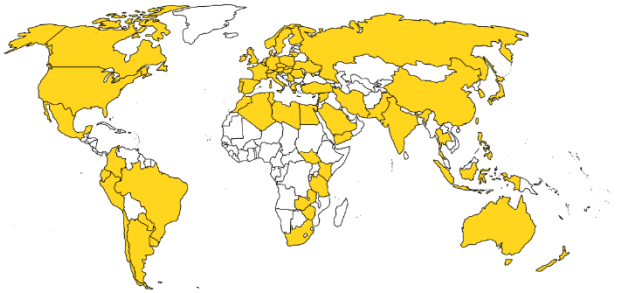
OECD SS



UPOV



ISF



The African Seed Industry

- Plant breeding is primarily public sector driven (with more reduced budget – inadequacy of public research and farmers' needs)
- Few countries have a dynamic research system that involve private sector with well established variety release (South Africa, Tunisia, Kenya, Morocco, Zimbabwe)
- Few integrated companies (approx. 20), some recent important acquisitions of African companies by international players
- Needs better organized seed associations

Market Issues

- Lack of reliable statistics on farming profiles and seed markets limits adequate planning
- National segmentation of markets prevents regional seed exchanges, thus limiting investment interest
- Market disturbance due to seed donations and unequal playing field between public/private sectors
- Weak/no breeding for important crops
- Low adoption of improved varieties
- Counterfeit seed
- Seed quality
- Inadequate investment/limited supply capacity

Regulatory Issues

- Lack of clarity on the role of public/private sectors
- Lack of IP protection but important recent developments with implementation of regional PVP systems such as OAPI (and forthcoming ARIPO)
- Regulation in most countries not adapted to farming structure
- National segmentation prevents regional exchange of seeds => limits investments & opportunities for adequate seed supply
- Phytosanitary requirements – complex, impractical and sometimes unjustified but important work in progress via sub-regional harmonization efforts

What is Needed Now

- Adapted & harmonized seed laws & regulations, common seed catalogues
- IP protection=> UPOV 1991 as mimimum
- Facilitate Access to Germplasm – under FAO International Treaty
- Investment & collaboration in development /use of locally-adapted seed products
- Public-private partnerships / cooperative seed action plans
- Investment in capacity building
- Use of trade and arbitration rules Strong and independent Seed Trade Associations

General Conclusion

- Tremendous progress in agricultural productivity in various parts of the world is largely based on improved varieties.
- Plant breeding is a very costly activity in both time and money.
- IP rights are indispensable to protect and sustain breeder's efforts and investments.
- UPOV constitutes the international standard system for *sui generis* PVR.
- Effectiveness of PVR greatly depends on national laws and supportive regulatory framework.
- Breeders have to make use of every form of legal protection and other existing tools to protect their varieties and seeds.