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SEMIS - UJON

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# Existing Regional and International Agreements Facilitating Seed Trade

**National Plant Protection Organizations and Seed Quality  
SEMIS Course; Nairobi University  
14-19 September 2015  
Kabete  
Kenya**

**GRACE GITU  
SEED EXPERT  
AFSTA**

# AFSTA

## AFSTA - AFRICAN SEED TRADE ASSOCIATION

- Africa's representative body for private seed industry
- Established in 2000 to promote development of private seed enterprises in Africa
- Secretariat hosted in Kenya with regional office in Dakar, Senegal
- Membership;
  - National Seed Trade Associations(NSTA)
  - Individual seed companies
  - Others; ISF, APSA, AATF, CIMMYT etc



# AFSTA Goal

To promote trade in improved quality seeds and technologies in Africa for the benefit of members and farmers



# AFSTA Objectives

- **Facilitate communication and coordinate the diverse actors in the seed sector for increased availability of quality seeds to farmers in Africa**
  - establishment of NSTAs
  - representing Africa seed industry in key seed fora; observer status UPOV, OECD, ISTA, IPPC among others
  - networks with seed related institutions at national regional and international levels
- **Provide advice to the governments regarding seed policy and regulations for enabling environment for seed trade in Africa**
  - recommend review of outdated and ambiguous seed laws and regulations to reduce seed trade barriers
  - initiating harmonized seed trade regulations; SADC,EAC,COMESA, ECOWAS



# Regional and International Seed Trade Agreements

- The global development of plant breeding and agricultural specialization resulted in the emergence of formal seed system
- The formal system progressively diversified to market oriented system that engaged the private seed sector
- Seed then became a commercial commodity subject to commercial policies and regulations
- Advent of liberalization in seed trade resulted in more local and foreign seed companies engaging in the seed industry in variety development, seed production and trade
- African governments use varied national seed policies to govern seed trade at national levels



# International Seed Trade Agreements

**WTO:** World Trade Organization (WTO) Agreements comprises;

**TRIPS-** Trade Related Aspects of Intellectual Property Rights (TRIPs) on intellectual property laws

- Provides legal protection to plant varieties to encourage commercial plant breeders to invest improved variety development





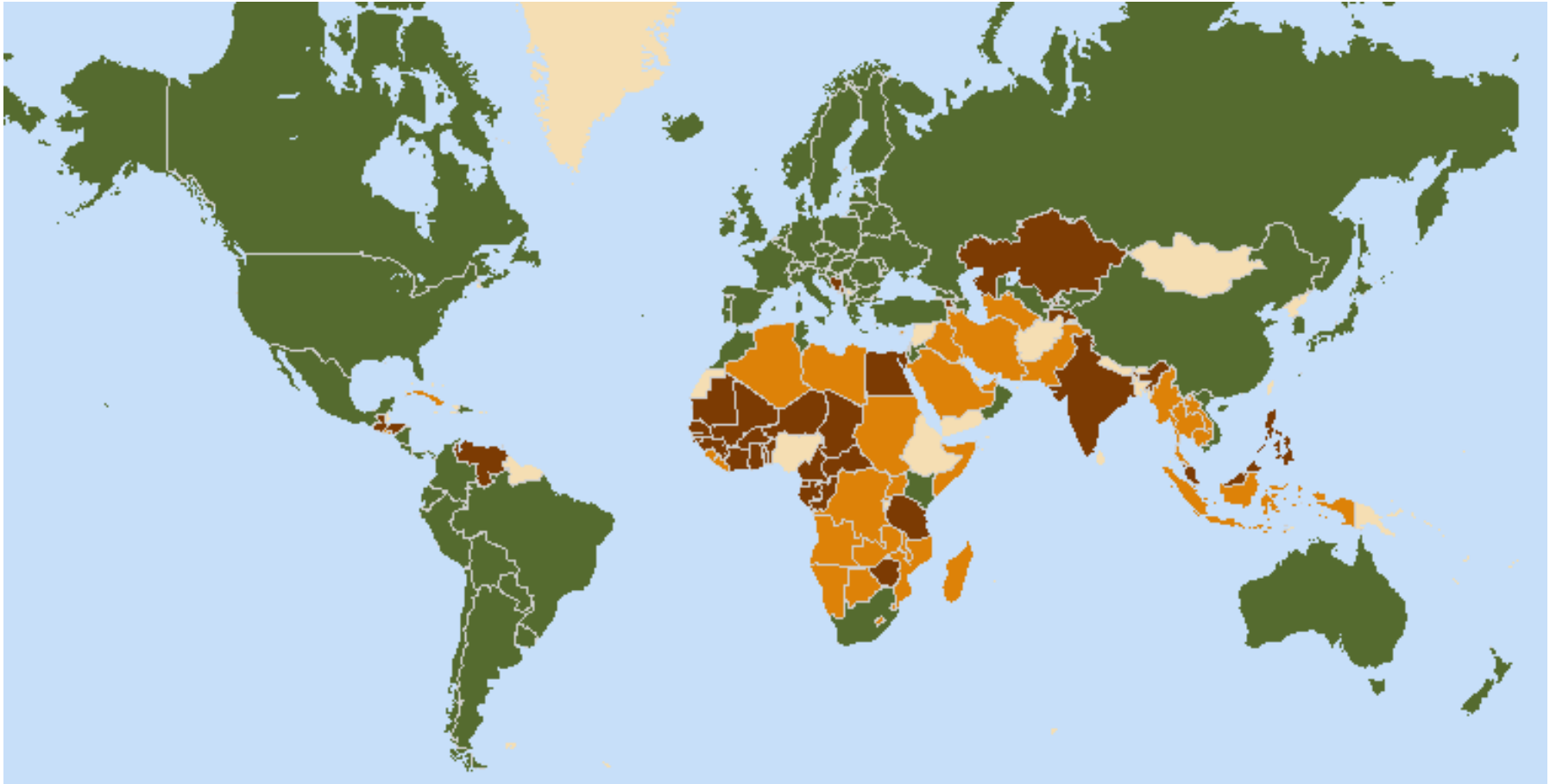
# International Agreements cont

**WIPO:** World Intellectual Property Organisation

**UPOV**

- The UPOV convention provides internationally recognised legal framework for protection of plant varieties in PBR
- Members of UPOV benefits from the possibility of applying for protection of their varieties in any UPOV member and get same nationals treatment as the member state where the application is filed.
- UPOV make no restriction to the place of first application

# UPOV status in 2013



Members of UPOV (71)

Initiating States (16) and Organizations (1)

States (23) and Organizations (2) in contact with the UPOV Office

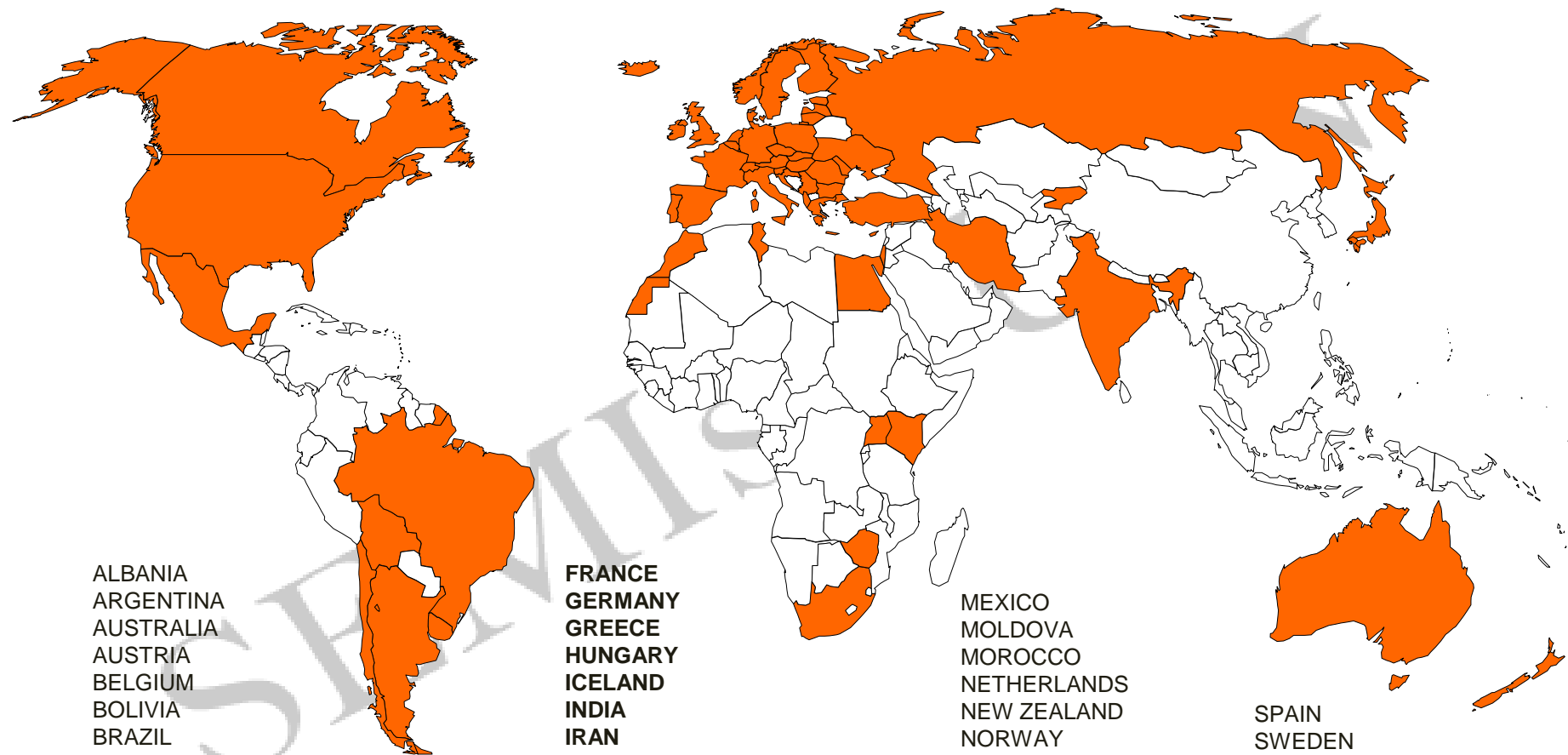
# International Agreements cont

## OECD

- Promote policies that will improve the economic and social well-being of people around the world
- Develops OECD seed Schemes which are Internationally accepted as seed certification systems to strengthen the seed sector

# Main Instruments of the Schemes

- OECD Seed Schemes Rules and Regulations 2015
  - fundamental framework; principles, procedures and methods of operation
- OECD List of Varieties
  - National List (varietal registration), DUS, VCU
- Guidelines for Control Plot Tests & Field Inspection of Seed
- Crops
  - critical in the seed certification system (VI, VP)
  - Pre & post control plots



ALBANIA  
 ARGENTINA  
 AUSTRALIA  
 AUSTRIA  
 BELGIUM  
 BOLIVIA  
 BRAZIL  
 BULGARIA  
 CANADA  
 CHILE  
 CROATIA  
 CYPRUS  
 CZECH REP.  
 DENMARK  
 ESTONIA  
 FINLAND

FRANCE  
 GERMANY  
 GREECE  
 HUNGARY  
 ICELAND  
 INDIA  
 IRAN  
 IRELAND  
 ISRAEL  
 ITALY  
 JAPAN  
 KENYA  
 KYRGYZSTAN  
 LATVIA  
 LITHUANIA  
 LUXEMBOURG

MEXICO  
 MOLDOVA  
 MOROCCO  
 NETHERLANDS  
 NEW ZEALAND  
 NORWAY  
 POLAND  
 PORTUGAL  
 ROMANIA  
 RUSSIAN  
 FEDERATION  
 SERBIA  
 SLOVAKIA  
 SLOVENIA  
 SOUTH AFRICA

SPAIN  
 SWEDEN  
 SWITZERLAND  
 TUNISIA  
 TURKEY  
 UGANDA  
 UKRAINE  
 UNITED KINGDOM  
 UNITED STATES  
 URUGUAY  
 ZIMBABWE

# International Agreements cont

## ISTA

- Develops laboratory seed testing rules
- Develops ISTA certificates
- Offer ISTA proficiency tests
- Provides quality management systems
- Provides laboratory Accreditation
- Offer follow up programs



# International Agreements cont

## IPPC

- Guidelines on phytosanitary measures

## AU-IAPSC

- Coordinates phytosanitary measures in all AU member states

# International Agreements cont

- **ITPGRFA** :International Convention on Plant Genetic Resources for Food and Agriculture
  - Established by FAO to facilitate CGIAR access to certain genetic resources under Multilateral system
- **Africa Model Law**
  - Model Legislation on the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources
  - The AU Heads of State endorsed the Model Law and recommended that it become the basis of all national laws on the matter across Africa



# International Agreement cont

- **CBD:** Convention on Biological Diversity (CBD)
  - established under ITGRFA to ensure fair access to and use of plant genetic resources and equitable sharing of benefits arising out of use of the biodiversity
- **NP:** Nagoya Protocol
  - under the CBD addresses the aspect of benefit sharing component in genetic resources exploitation



# Regional Agreements

- **COMESA** harmonized seed trade regulations
  - .Covers 19 members states
  - .Regulations launched in all member states
  - . Alignment of national laws
- **SADC** harmonised seed trade regulations
  - .Covers 15 members states
  - . Alignment of national laws
- **EAC** harmonised seed trade regulations
- **ECOWAS** harmonised seed trade regulations

# Regional Agreements cont

## **ARIPO**

- Develops regional PVP legal framework based on UPOV guidelines
- 15 Member states in East, South and West Africa

## **OAPI**

- Develops regional PVP legal framework based on UPOV guidelines mainly for the French speaking countries of West Africa

SEMINARS ALLIANCE

# THANK YOU

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# GLOBAL SEED SYSTEMS

(Models, India, Thailand, Philippines, Vietnam)

*SEMIS NPPOs Course*  
*14-19 September, 2015*  
*Nairobi University*  
*Kenya*

Grace Gitu  
Seed Experts  
AFSTA



# SEED

## What is Seed?

- Most important input for higher agricultural production
- Seed security represents hope for the future of mankind
- Can be a means of overcoming production constraints and thereby make a difference in food security
- A key component in conservation and ownership of biodiversity
- Supply of quality seed to farmers enhances higher agricultural production



# SEED

- **Seed is a key input of overpowering agricultural production constraints; low yields, pests resistances, quality produce etc**
- **Seed is a catalyst for making other agricultural inputs cost-effective**
- **Quality seeds increases food production**
- **Quality seeds are a product of a functional seed system**
- **Seed is a commodity for trade**

# SEED SYSTEM

- **A seed system is a vehicle through which farmers get good quality seed of improved crop varieties they want and need**
- **The actors in a seed system are crop researchers, seed producers, seed distributors, seed quality regulators, extension staffs, policy makers and farmers**
- **Collaboration between all actors of a system is crucial to increasing agricultural production quickly and economically.**



# SEED SYSTEM

## A Functioning Seed System;

- Provides seeds of appropriate varieties for use by different category of farmers
- Has a legal environment that allows for regular release of superior varieties with traits sought by farmers
- Multiplies and distributes quality seeds on time and at a price suitable to farmers
- Has appropriate regulatory systems that maintains the seed quality
- Is supported by effective providers of agro-inputs, credit and market systems
- Must be compatible with the national agricultural development



# GLOBAL SEED SYSTEMS

## Types of global seed systems

### Formal system

- Dominant in the developed countries
- Seed production and supply is regulated and involves a chain of activities leading to clear products which are certified seed of specified varieties
- Mainly covers economically viable crop species with good recurrent seed demands, such as vegetables, hybrids and some self-pollinated crops

### Informal system

- Controls 90-95% of seed supply in the developing countries
- Traditional arrangements used by farmers to supply the seeds they need mainly for food crops of low commercial interest to the private sector
- Heavily depends on local resources and inputs and highly vulnerable to natural disaster and social political disruptions



# MODELS OF GLOBAL SEED SYSTEMS

## Models within the formal system

- **State/parastatal model**
  - state researchers provides breeder seed to state/parastatal agency to multiply in state farms or contract growers
  - all seed production activities are done by state agencies
  - Public seed production started in many countries with the objective of facilitating modern farming through provision of improved crop varieties.
- **State/private model**
  - state and private sectors are the domain of this model
  - The balance between public and private roles varies between and within countries and regions, and between crops.
  - Public sector is more involved in seed production of self-pollinated and open-pollinated crops of underutilized species, while the private sector concentrates on commercial hybrids and horticultural crops
- **Community oriented seed systems**
  - covers a wide range of local seeds supply system e.g farmers, faith based and community organisation
  - generally not for commercial seed production
  - supported by NGOs,



# INDIA SEED SYSTEM

## India

- 7<sup>th</sup> largest country in the world
- Has 29 states
- Population is over 1.2 billion
- Agriculture contributes about 30% of GDP
- 60% of farmers purchase seed
- Is current food secure



# INDIA SEED SYSTEM

India has both formal and informal seed systems

Formal seed system

- consist of both public and private sector
- modernization of agriculture in India dates back to 1957 and was initiated by state to provide high yielding varieties for the high potential areas
- Over 2300 improved varieties are released for commercial cultivation
- Each state has a university and a research institute that provides breeder seed and determine its price
- Private sector and public agencies obtain breeder seed from the universities and research institute for multiplication and distribution to farmers
- A national seed program coordinates the seed production in each state



# INDIA SEED SYSTEM

## Informal seed system

- Dominant in non-commercial food crops
- Practiced by majority of the small holder farmers
- Is supported by the government through the 'seed villages' initiatives



# INDIA FORMAL SYSTEM

## Formal system

- By 1960, the informal system was dominant seed supply but by 2000 the formal sector dominated
- A seed committee develops crops specific standards and variety notifications
- States variety release committee
- Plant protection Authority that gives plant breeders rights
- Not members of UPOV



# INDIA FORMAL SYSTEM

Minimum data for variety registration

- 3 years yield data and agronomic traits
- Pests and diseases resistance information
- Comparative advantages of the new variety

SEMIS





# INDIA FORMAL SYSTEM

## Seed certification

- Each state has a seed certification agency responsible for, certification of seed production, processing and storage
- State department of agriculture carryout seed laboratory testing, labeling; truthfully and certified labelling

- 



# VIETNAM SEED SYSTEM

## Vietnam

- Agriculture accounts for 20% of GDP
- World leading exporter of rice, tea, coffee among others
- Was food insecure 20 yrs ago but currently food secure

## Seed system

- Operates both formal and informal system
- Formal system is both public and private with breeder seed mainly produced by the universities and research institutions. Distribution is by private companies and public agencies
- Informal system is operated by smallholder farmers on food crops through farm saved seed systems
- Informal system is supported by the government through training of farmers and extension staff



# THAILAND SEED SYSTEM

## Thailand

- 3<sup>rd</sup> largest seed exporter in Asia, after Japan and China
- Development of the seed industry dates back to 1959
- Operates both formal and informal systems
- In the formal sector, Public sector dominates development of breeders seed
- The research department of Agriculture develops and multiplies varieties. Farmers associations, private companies and public institutions produce and supply the seed.
- The public institutions have seed centers that contract farmers as seed growers and pay them at a premium above normal prices
- The informal sector is mainly by the smallholders and is supported by the government through the community seed development agencies



# PHILIPPINES SEED SYSTEM

## Philippines

- Formal seed industry dates back to 1970s
- The formal system is operated both by the public and private sector but the public is dominant
- 50% of seed price is subsidized and public seed has a fixed price and operates on 'plant no –pay later' system
- The farmers have organized themselves to form Seed growers associations which produces the bulk of seed



# THANK YOU

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# Africa Seed System

(Models, Eastern, Southern, Western)

*Need for harmonization of seed laws*

*SEMIS NPPO Course*

*Nairobi University*

*14-19 September 2015*

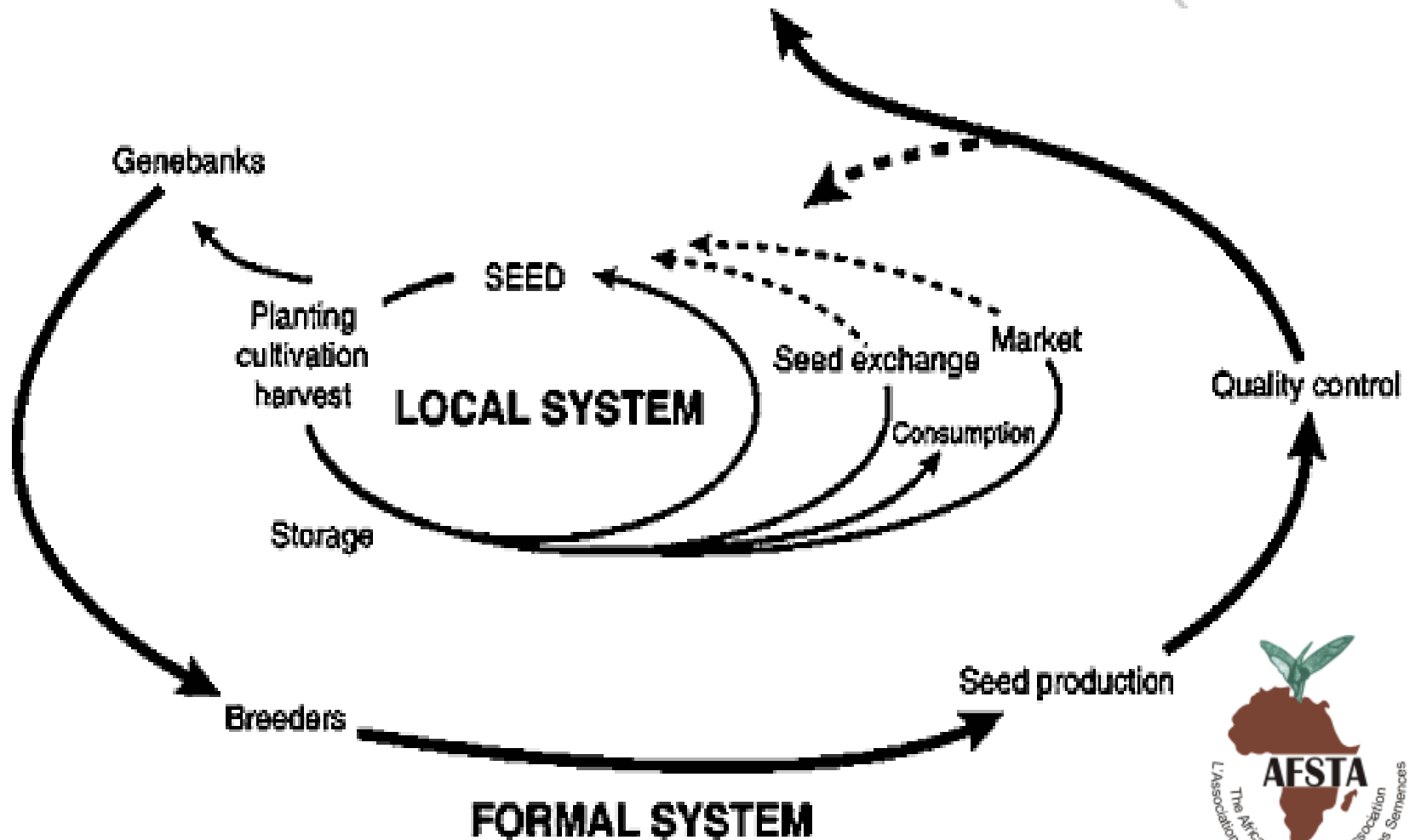
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# AFRICA SEED SYSTEMS



# Evolution of Seed Sector in Africa

- Development of improved varieties, mainly hybrids
- Evolution of seed technology: *capacity development in human and infrastructure resources*
- Development of domestic and international seed markets: *involvement of the private seed sector*
- **Development in Regulatory Framework**





# Regulatory Framework

- Seed regulations are put in place to facilitate collaboration between the public and private seed sectors in producing quality seeds
- Most countries in Africa have some type of seed regulations
- However gaps exists in many national seed regulatory frameworks in these countries



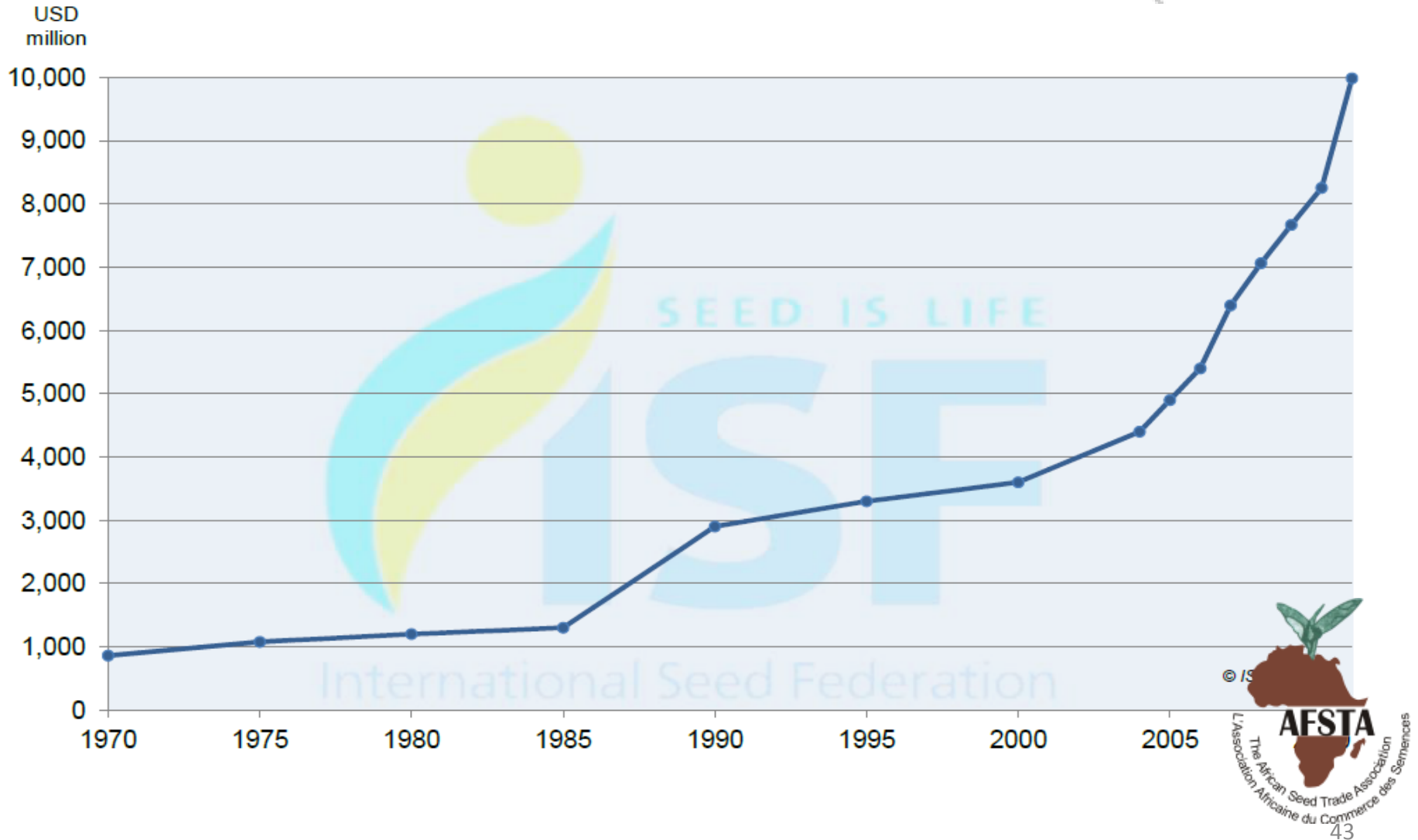
# Regulatory Framework

## Existing gaps

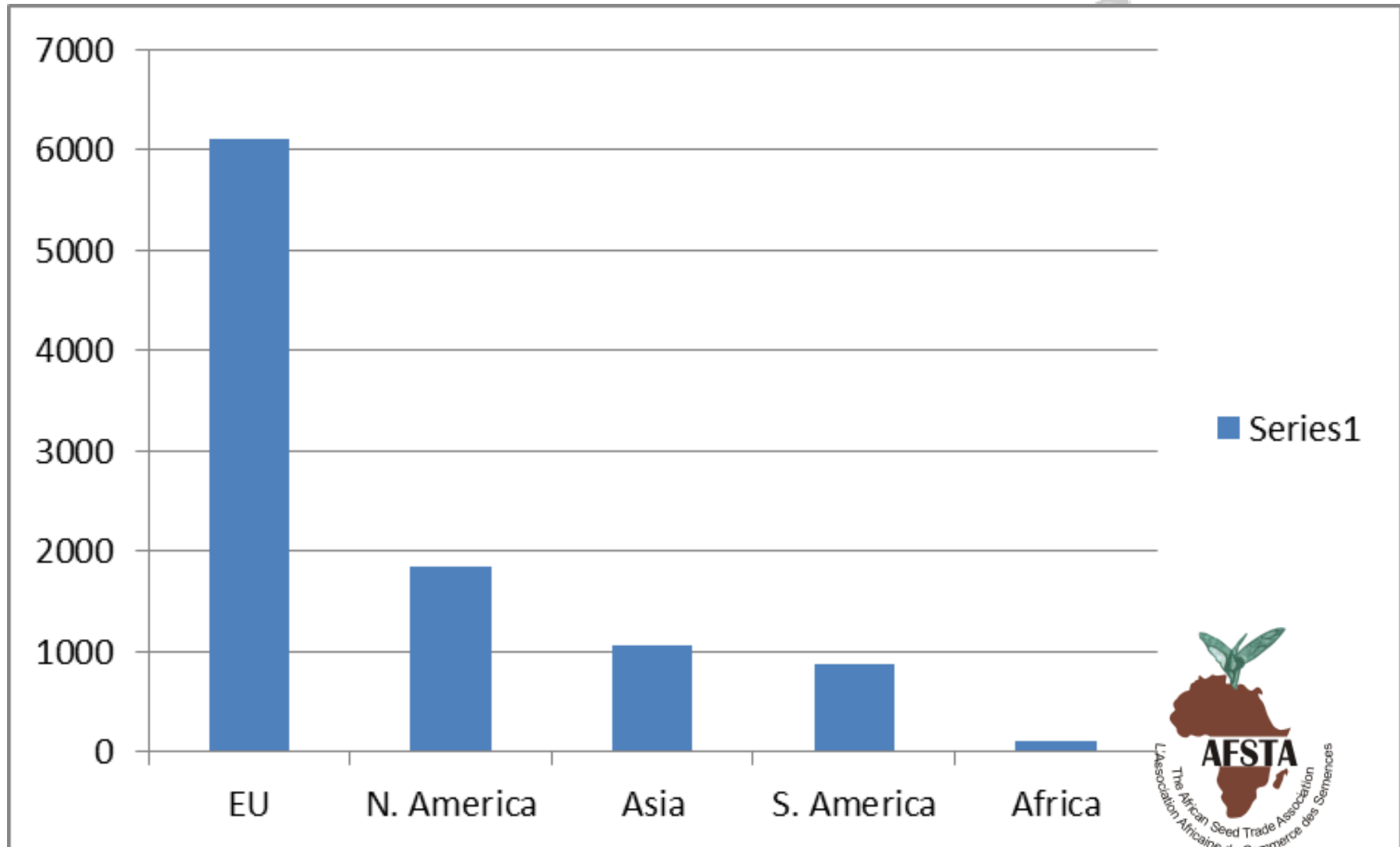
- **Outdated and ambiguous national seed policies and regulations that limit the Africa seed sector cope with the changes in the global seed industry**
- **absence or weak Plant Breeders Rights in many countries**
- **Low membership to international organizations: UPOV, OECD, ISTA etc.**
- **Weak or absence of National Seed Trade Association**
- **Low capacity of human and infrastructural resources to effectively produce and test quality seeds**
- **Absence of facilitation for cross border movement of quality seeds**
- **The Africa seed market value is rated at about  $\frac{1}{10}$  of the global market value**



# Evolution of global Seed market 1970-2011



# Seed Market Value Per Continent (ISF) by 2011





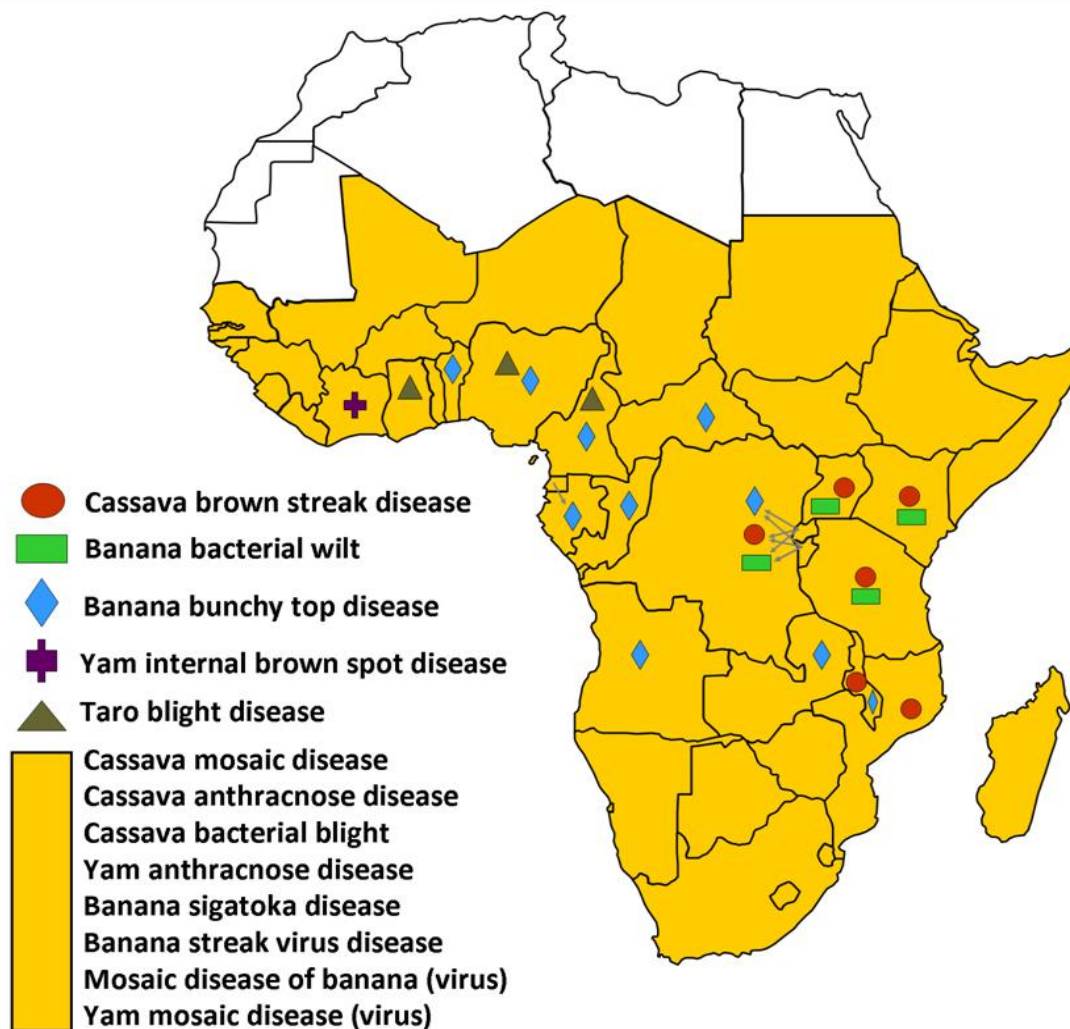
# Emerging Diseases -Maize Lethal Necrosis Disease

(MLND) Symptoms





# Distribution of some Pathogens in Africa



# Constraints of Vegetable Production

- Production issues (biotic and abiotic stresses)



- Quality, stress-tolerances
- Improved production technologies
- Capacity-building among producers

# WHAT NEED TO BE DONE

African governments cannot confront challenges of the seed sector individually. There is need to support each other in

- Reviewing seed policies and legislation to facilitate the development of the modern seed sector.
- Strengthening Public Private Partnership in the seed sector to facilitate flow of improved quality seeds among countries.
- Supporting the emergence of private seed sector and strengthening local and regional seed associations.
- Fast track implementation regional seed regulations to facilitate cross border quality seed movement





# Regional Harmonised Seed Regulations

- AFSTA has partnered with donors, RECs of EAC, COMESA, SADC, ECOWAS and other institutions to develop regional harmonized seed trade regulations to facilitate regional seed trade.
- The key areas addressed in the harmonized regulations are; variety release system based on UPOV guidelines, seed certification based on OECD and ISTA, phytosanitary measures based on IPPC and plant variety protection
- The regional harmonised regulations are at various stages of implementation among the MS

## EAC (ASARECA)- SADC- COMESA SEED HARMONISATION

### COMESA

- Burundi
- Comoros
- DR Congo
- Djibouti
- Egypt
- Eritrea
- Ethiopia
- Kenya
- Libya
- Madagascar
- Malawi
- Mauritius
- Rwanda
- Seychelles
- Sudan
- Swaziland
- Uganda
- Zambia
- Zimbabwe

### SADC

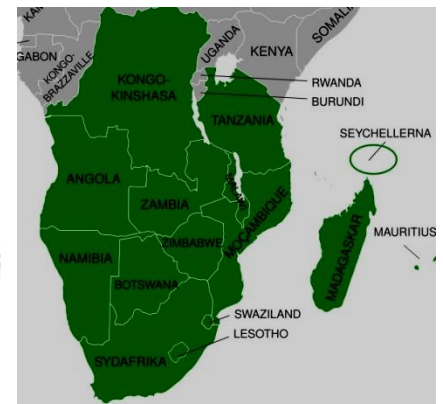
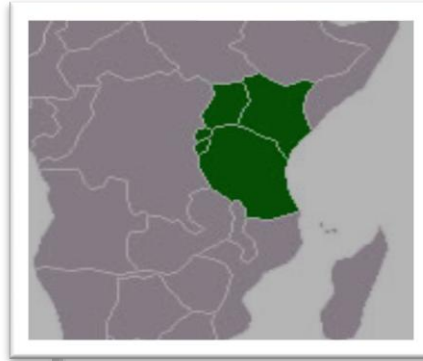
- Angola
- Botswana
- DR Congo
- Lesotho
- Madagascar
- Malawi
- Mauritius
- Mozambique
- Namibia
- Swaziland
- Tanzania
- Zambia
- Zimbabwe
- South Africa
- Seychelles


### ASARECA

- Burundi DRC
- Ethiopia
- Eritrea
- Kenya
- Madagascar
- Rwanda
- Sudan
- Tanzania
- Uganda

### EAC

- Kenya
- Uganda
- Tanzania
- Burundi
- Rwanda
- Comoros
- Djibouti
- Egypt
- Libya



| 11 CROPS COMMON IN BOTH THE COMESA AND SADC | CROP –COMESA LIST ONLY | CROPS –SADC LIST ONLY   |
|---|------------------------|---|
| MAIZE (OPV and Hybrid)                      | PEARL MILLET           | <b>CABBAGE</b>  |
| GROUNDNUT                                   |                        | <b>ONION</b>  |
| SOYABEAN                                    |                        | <b>PEPPER</b>   |
| COTTON (OPV and Hybrid)                     |                        | <b>TOMATO</b>   |
| SUNFLOWER (OPV and hybrid)                  |                        | <b>TOBACCO</b>  |
| RICE (OPV and Hybrid)                       |                        | PEA   |
| BEAN  |                        |   |
| SORGHUM (OPV and Hybrid)                    |                        |   |
| WHEAT                                       |                        |   |
| CASSAVA                                     |                        |   |
| POTATO                                      |                        |  |

| 8 CROPS COMMON IN BOTH THE COMESA AND ECOWAS | CROP –COMESA LIST ONLY     | CROPS – ECOWAS LIST ONLY |
|--|----------------------------|--------------------------|
| MAIZE (OPV AND HYBRID)                       | SUNFLOWER (OPV AND HYBRID) | <b>COWPEA</b>            |
| GROUNDNUT                                    | SOYABEANS                  | <b>YAM</b>               |
| SORGHUM (OPV AND HYBRID)                     | WHEAT                      | <b>ONION</b>             |
| COTTON                                       |                            | <b>TOMATOS</b>           |
| CASSAVA<br>PEARL MILLET                      |                            |                          |
| RICE (OPV AND HYBRID)                        |                            |                          |
| IRISH POTATO                                 |                            |                          |
| BEANS  |                            |                          |



THANK YOU

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