

GLOBAL SEED SYSTEM MODELS

NATIONAL PLANT PROTECTION ORGANIZATIONS AND
SEED QUALITY REGULATORS COURSE

AT SEMIS NAIROBI UNIVERSITY

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Seed Enterprises Management Institute

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AFSTA

- ▶ Africa Seed Trade Association
- ▶ A regional seed association established in 2000 to promote use of improved quality seeds in Africa through:
 - Establishment of national seed trade associations,
 - Increased exchange of seed industry information,
 - Promoting the private sector seed system
 - stimulating regional harmonization of seed trade regulations
- ▶ Has over 100 members; 46 NSTAs, private seed companies and other seed institutions



AFSTA MISSION

To dialogue with seed stakeholders on promotion of trade in improved quality seeds and technologies for the benefit of members and farmers in Africa



GLOBAL SEED SYSTEMS

What is Seed?

- ▶ Most important input in agricultural production
- ▶ Seed is a commodity for trade and may carry harmful organisms, thus it is a subject of business and trade policies.
- ▶ 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 and thus represents hope for the future of mankind
- ▶ Supply of quality seed to farmers enhances higher agricultural production



GLOBAL SEED SYSTEMS

What is a seed system?

- ▶ A chain of interlinked seed activities involving
 - breeding research for new superior varieties,
 - seed multiplication process,
 - seed marketing and distribution,
 - use of the seed by farmers
- ▶ A well functioning seed system has the potential to increase agricultural production quickly and economically



GLOBAL 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

TYPES OF 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
- ▶ Consist of 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 SEED SYSTEMS

State/parastatal model

- ▶ This is a public seed production that aims to facilitate modern farming through provision of improved crop varieties to farmers.
- ▶ Characterized by state researchers who provide the breeders seed to state agencies for multiplication and supply to farmers
- ▶ all seed production activities are done by state agencies

State/private model

- ▶ The private sector is involved in the seed activities and the balance between the role of public and private sector varies among crops, countries and regions
- ▶ Generally the 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 crops

Community oriented seed model

- ▶ Covers a wide range of local seeds supply system e.g farmers, faith based and community organization
- ▶ Generally used for food crops and seed production is rarely regulated
- ▶ Mainly supported by NGOs,



INDIA SEED SYSTEM

India

- ▶ 7th 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
- ▶ Produces surplus food for export



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 aimed at providing 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 to seed producers in the private sector and public agencies

- ▶ 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 famers
- ▶ Is supported by the government through the 'seed villages' initiatives



VIETNAM SEED SYSTEM

Vietnam

- ▶ Agriculture accounts for 20% of GDP
- ▶ World leading exporter of rice, tea, coffee among others crops
- ▶ experienced food insecurity 20 yrs ago but currently has surplus for export
- ▶ 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

- ▶ 3rd 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 organised themselves to form Seed growers associations which produces the bulk of seed



THANK YOU

SEMI's UoN

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