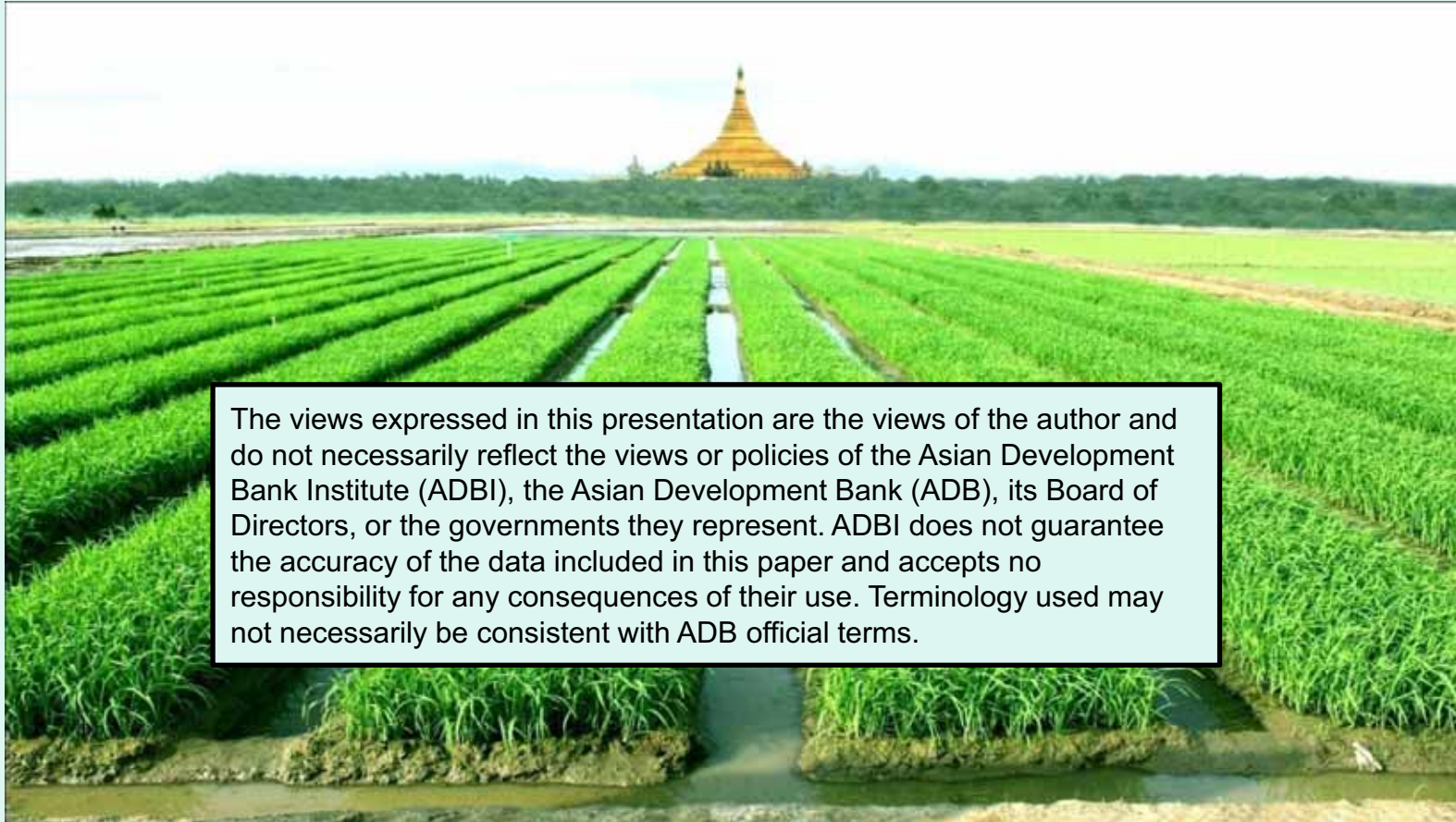




Seed Industry Development in Myanmar (First Draft)

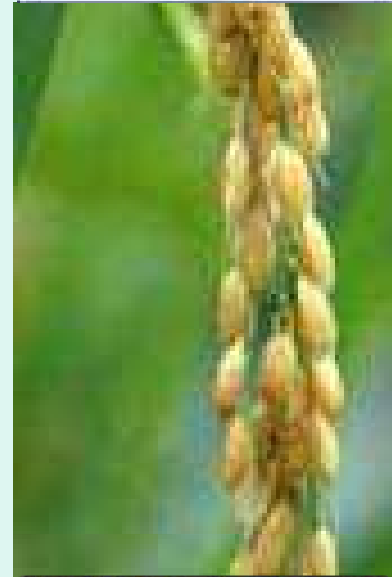


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U Htin Aung Shein
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Department of Agriculture

Content

- **Introduction**
- **Major Crops Production**
- **Three Main Tasks of MOAI**
- **Crop Seed Related Laws & The Seed Law**
- **Plant Variety Protection (PVP) & UPOV**
- **Seed Development Projects**
- **Procedure for New Varieties in Myanmar**



Content

- **Seed Class & Flow**
- **Seed industry Development**
- **Roles of Private Sector in Seed Production**
- **Private Sector Engaged in Seed Production**
- **Constraints & Way out on Seed Multiplication**
- **Conclusion**



Introduction

- ❖ **Agriculture sector took the lion' share of country economy**
- ❖ **Main objective of MOAI is to increase crop production**
- ❖ **It contributes 32% of GDP**
- ❖ **17.5% of total export earning is from agricultural products**
- ❖ **Employs 61.2% of labor force**
- ❖ **Net sown area of 12.02 million hectare**
- ❖ **Cropping Intensity is 171.8%**
- ❖ **Cereal crop covers the largest portion**
- ❖ **Pulses and Oil seed crops occupy the next largest**

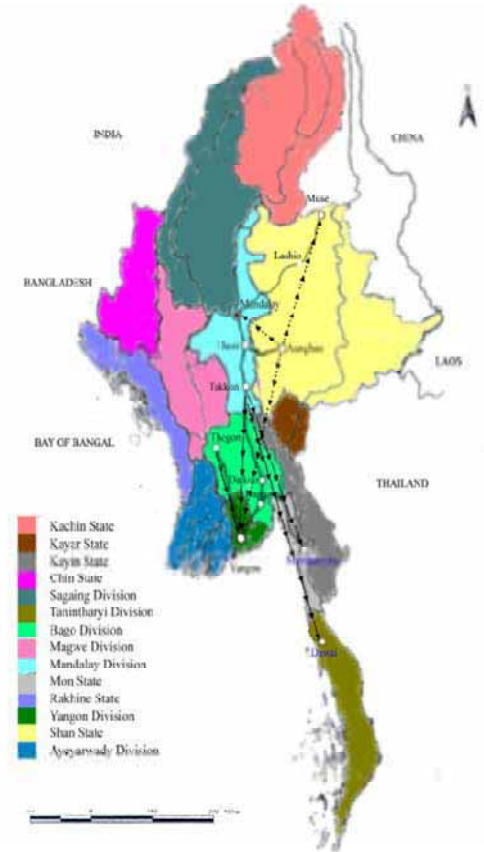
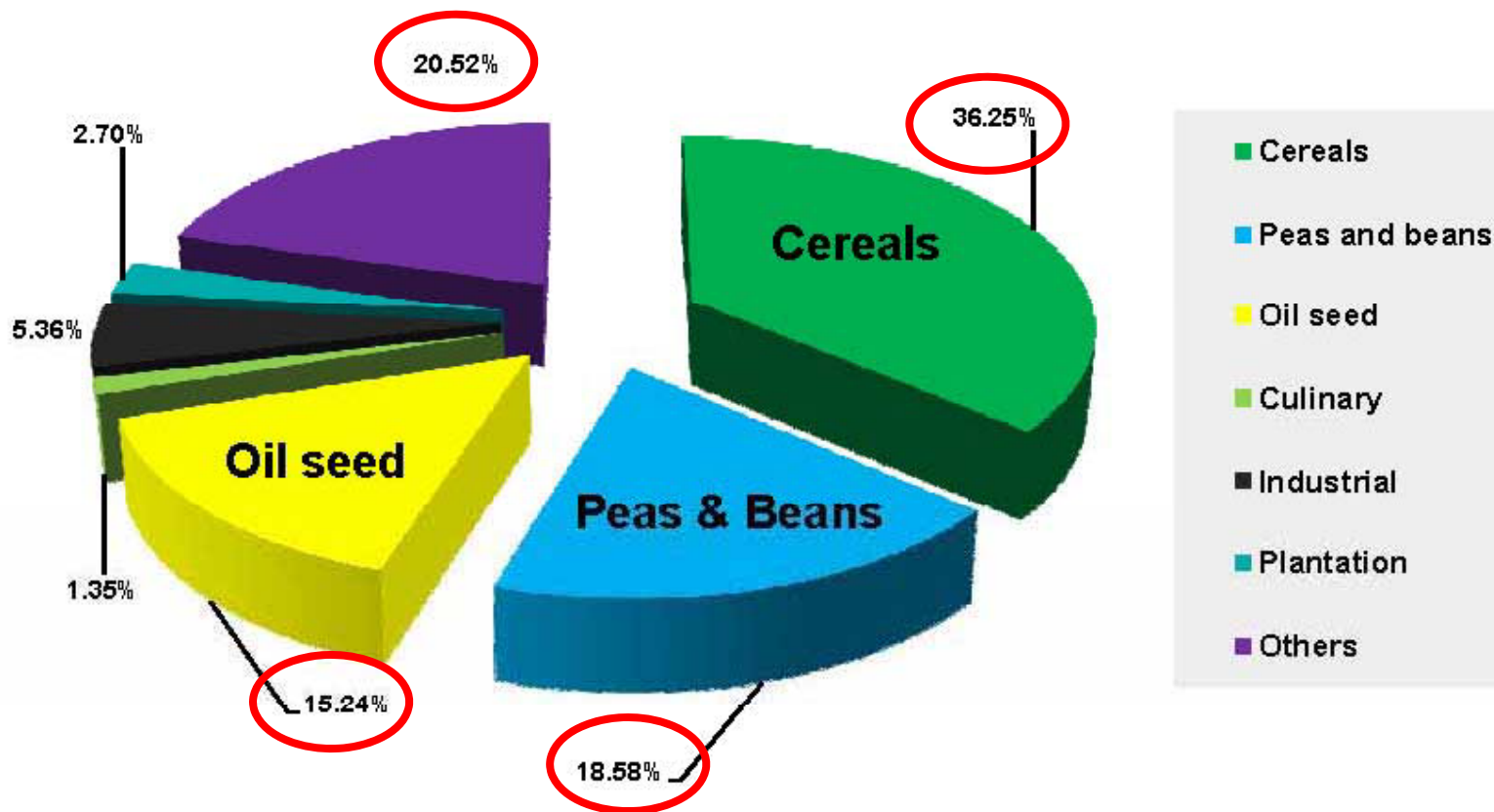


Figure 1. Flow of Cabbage in Myanmar

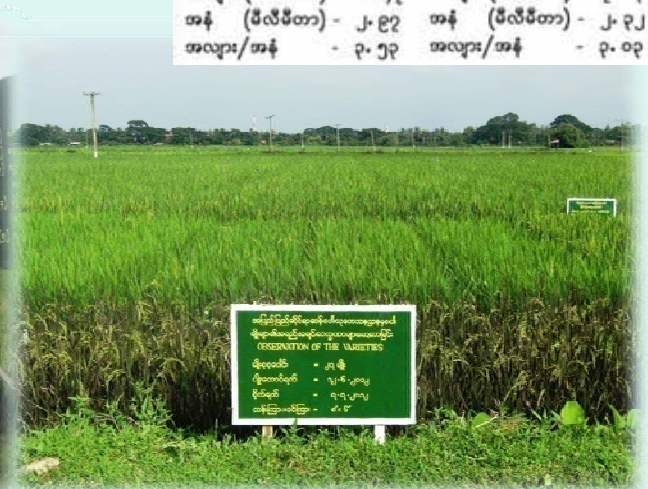
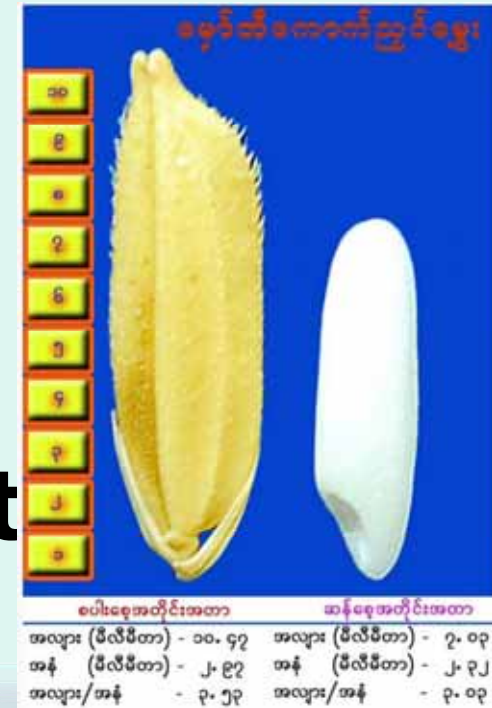
(Source: Myanma Agriculture in Brief, 2010)

Present Situation of Economic Crops Production in Myanmar (2010-2011)



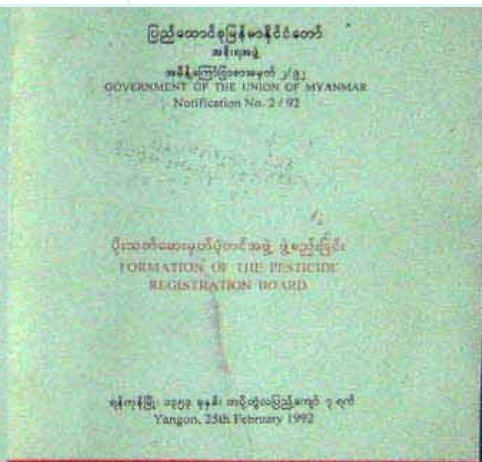
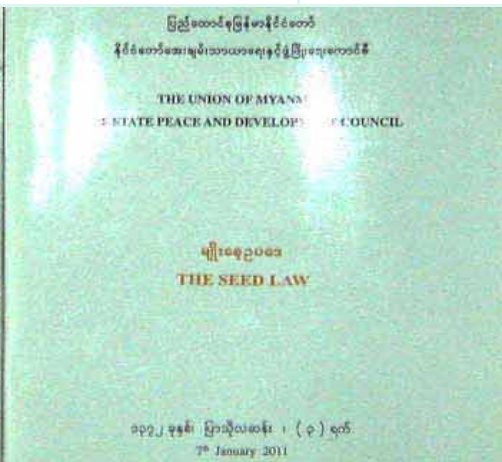
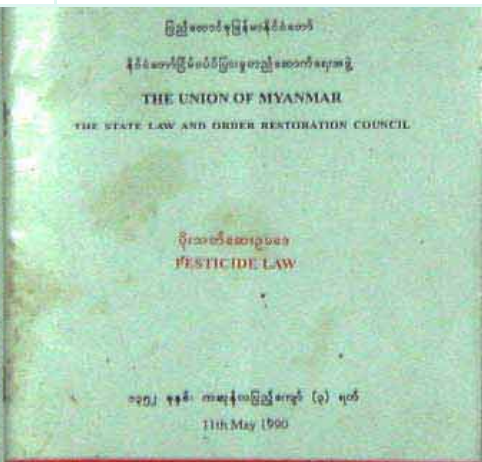
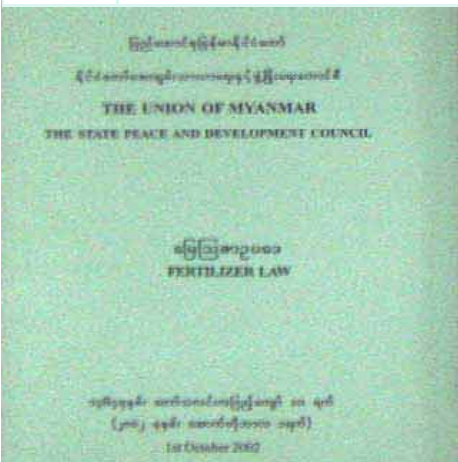
Three Main Tasks of Ministry of Agriculture and Irrigation (MOAI)

- ❖ Seed Production
- ❖ Training and Education
- ❖ Research and Development



Crop Seed Law & Related Laws In Myanmar

No .	Title of Law or Regulation	Scope of Law or Regulation	Responsible Agency	Status
1.	Pesticide Law	Covers the use of pesticides	MOAI	Enacted 1990
2.	Fertilizer Law	To manage the use of fertilizer	MOAI	Enacted 2002
3.	Plant Pest Quarantine Law	To Prevent quarantine pests from entering into Myanmar	MOAI	Enacted 1993
4.	The Seed Law	To maintain quality and the use of seeds	MOAI	Enacted 2011
5.	Law on Bio safety	To manage GMOs	MOAI	Being drafted



THE SEED LAW

ပြည်ထောင်စုမြန်မာနိုင်ငံတော်

နိုင်ငံတော်အေးချမ်းသာယာရေးနှင့်ဖွံ့ဖြိုးရေးကောင်စီ

THE UNION OF MYANMAR

THE STATE PEACE AND DEVELOPMENT COUNCIL

မျိုးစေ့ဥပဒေ
THE SEED LAW

၁၃၇၂ ခုနှစ် ၊ ပြာသိုလဆန်း ၊ (၃) ရက်

7th January 2011

- The State Peace and Development Council hereby enact the Seed Law in 7th January, 2011.
- This Law shall come into force commencing from the day of completion of two years of its promulgation.
- Therefore, the Seed Law shall come into force commence in 7th January 2013.
- The expressions contained in this law have the meaning given hereunder:

THE SEED LAW

- **Seed** means seed obtained from a flower or a fruit and propagable and cultivate plant or all parts thereof;
- **Grain** means grain and kernel produced to use by any means other than as a seed;
- **Pure Seed** means seed with varietal purity and that is in conformity with the seed standard;
- **Plant Variety** means the plant which has morphological, physiological and chemical resemblance with the growing plant and reveals distinctly the other specific characters and when propagated in various ways the same genetically characters are distinctly shown;



The Objectives of Seed Law

- To assist the development of agricultural sector of the State by cultivating and producing crops using pure seed;
- To enable to carry out the seed business commercially and to carry out such business systematically;
- To encourage for enabling participation in seed production and carrying out seed research of the Government departments, organizations and individuals;
- To enable the Government department organizations, international organizations, internal and external organizations and individuals to co-operate for the development of seed business.



Quality Seed & Seed Quality Control

Quality Seed

- **Trueness to Variety**
- **Seed Vigor**
- **Good Germination**
- **Uniformity in Seed Size**
- **Free from Inert Matters**
- **Free from Weed Seed**
- **Free from Red Grain**
- **Intact Seeds**
- **Free from Insect and disease**

Seed Quality Control

- **Field Inspection**
- **Seed Sampling**
- **Seed Testing**
- **Seed Certification**



Plant Variety Protection

Plant Variety Protection (PVP)

- Provisions of plant breeder's rights would encourage private investment in plant breeding.
- Plant breeder's rights or Plant Variety Protection (PVP) is an exclusive right to exploit his variety granted to the breeder of a new plant variety.

Activities on Awareness of PVP system

- Became a party to the Convention of Biodiversity in 1994
- Became a member of WTO in 1995
- Not a member of UPOV
- Became aware of Intellectual Property Rights

2004 - Participated to the UPOV-INGER Workshop

2006 - Participated to conduct DUS test (INGER)

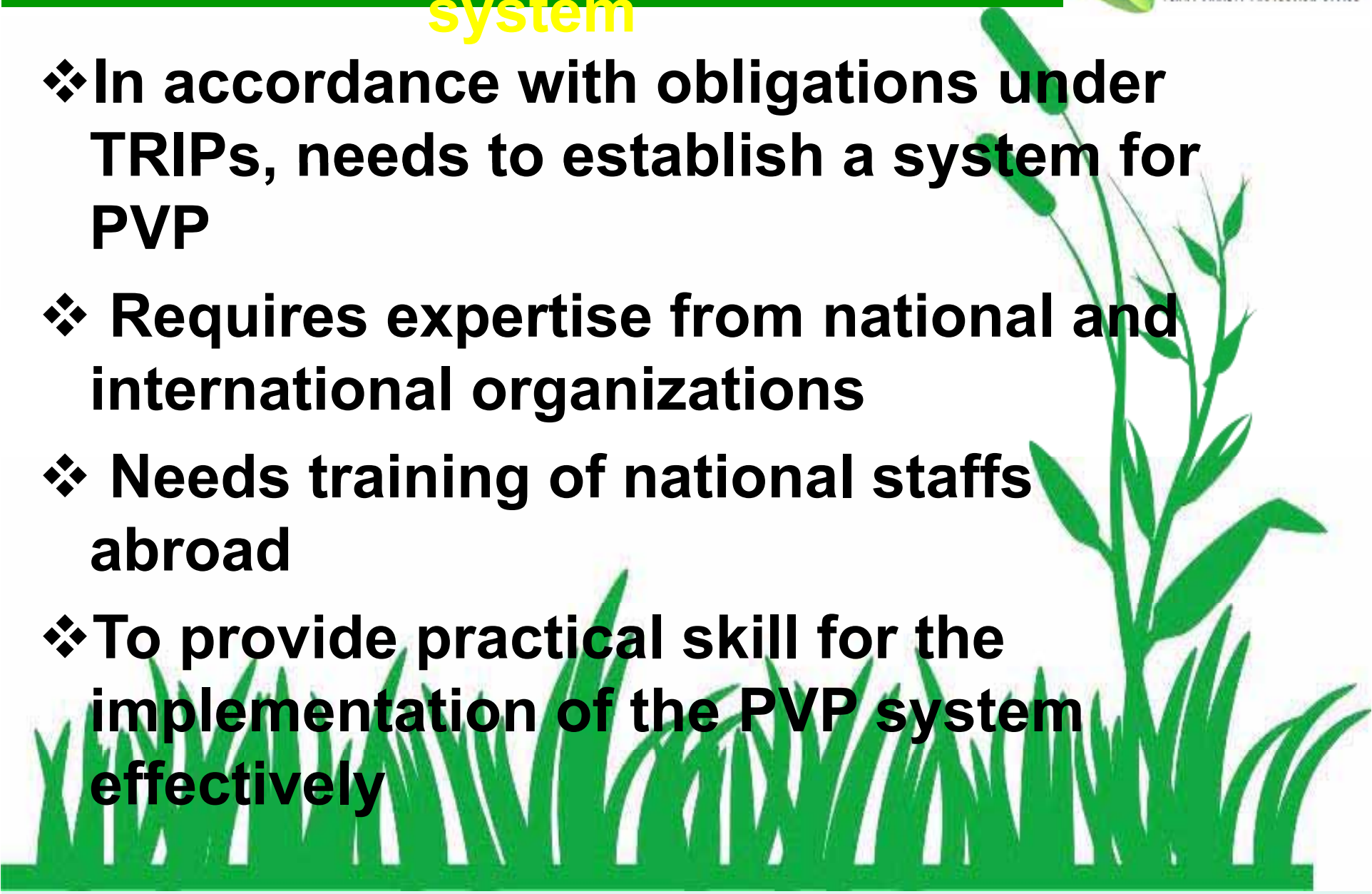
2003-2010 - PVP related Trainings, Workshops and Seminars

2009 -Working group organized with 10 participants



Realize the establishment of PVP system

- ❖ In accordance with obligations under TRIPs, needs to establish a system for PVP
- ❖ Requires expertise from national and international organizations
- ❖ Needs training of national staffs abroad
- ❖ To provide practical skill for the implementation of the PVP system effectively



WHAT IS UPOV?

- ❖ The International Union for the Protection of New Varieties of Plants, known as “UPOV,” is an intergovernmental organization with headquarters in Geneva.
- ❖ The acronym UPOV is derived from the French name of the organization,
- ❖ *Union internationale pour la protection des obtentions végétales.*
- ❖ **The mission of UPOV** is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.



Seed Development Projects

- Since from 1978 to 1984, Seed Development Projects were established for systemically quality seed production with the provision of World Bank Aids.
- The organization provide for quality seed production in proper crop were as follow:


No.	Project Name	Year	Provided Organization	Crops
1.	Seed Development Project Phase I	1978-1984	World Bank	Rice, Cotton
2.	Maize and Oil Seed Production project	1982-1986	USAID	Corn, Wheat
3.	Quality Seed Production Project	1984-1986	FAO/DANIDA	Corn, Wheat, Pulse, Oil Crops
4.	Seed Development Project Phase II	1986-1994	World Bank	Paddy, Pulse, Cotton, Groundnut

Seed Development Projects & Their Advantages

- On site seed production pilot project in farmers; level (2010-2011) by JICA collaborated with DAR& DOA,MOAI.
- Machineries and equipment were procured and other infrastructures as seed industry have been established.
- DOA is responsible for further development of the seed industry in Myanmar.
- Some projects collaborated with Vietnam, Philippines and China to produce hybrid rice seeds and hybrid sunflower seed production program by India with MOAI.

A digital seed counter machine with a control panel and a weighing scale on top.

Seed Counter
(27-4-2012)

A large industrial testing winnower machine with multiple gauges and a hopper.

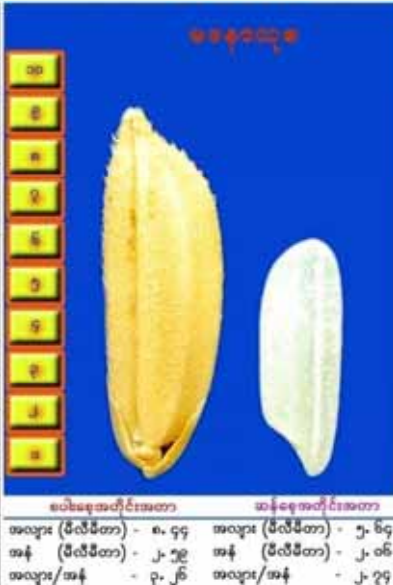
Testing Winnower
(30-3-2012)

A red rotary tillage implement attached to a tractor.

Rotary Tiller
(12-1-2012)

Advantages from Seed Development Project

- Formation of National Seed Committee in 12th November, 1977.
- Foundation of (6) Seed Quality Control Laboratories
- Upgrading of (17) Seed Production Farms
- Foundation of (17) Seed Processing Plants
- Prescription of Quality Seed Standard in each class
- Increase implementation in plant breeding and applied research works
- Raising seed technician
- Distribution of quality seeds



မျိုးစေ့သန့်စင်ပုံအဆင့်ဆင့် (Seed Processing)

အခြောက်ခံခြင်း	သန့်စင်ခြင်း	မျိုးစေ့စုစုစုစု တွင်စစ်ဆေးခြင်း	ဆေးလူးနယ်ခြင်း	အိတ်သွပ်ခြင်း	သိုလှောင်ခြင်း
<p>မျက်သိမ်းခြင်း (၂၅)မှာရို အတွင်း အစိုဓာတ် (၁၀%) အထိအမြောက် ခံရမှု တစ်မှာရို လျှင် အစိုဓာတ် (၁%) သာ လျော့ချရမည်</p>	<p>အရင်းဆ ထုတ် ပုံ၊ သစ် ခဲ စယ်စွေးရန်</p>	<p>မျိုးစေ့အရွယ်အသွေး သန့်စင်မှု % - ၉၇ အဝင်အပတ် % - ၉၅ အစိုဓာတ်ပါဝင်မှု % - ၁၃ အနံနီပါဝင်မှု (စာ) - ၀</p>	<p>ပိုသတ်ဆေး တစ်မျိုးမျိုး နှင့် ပိုတတ်စီသစ် ဝါး ဂန်တိုဖြင့် ဆေးလူးနယ် ရန်</p>	<p>မျိုးစေ့အရွယ်အသွေး လေးဘယ်လ် မျက်စိစွဲရန်</p>	<p>မျိုးစေ့များကို အေး၍ မြောက်သွားသော နေရာတွင် ထားပါ။</p>

Procedure for New Varieties in Myanmar

Hybridization and selection

Introduction

Indigenous selection

Mutation Breeding

Molecular Breeding

Observation on stable lines

Yield trial (atleast 3 times)

Adaptability test (atleast 2 times)

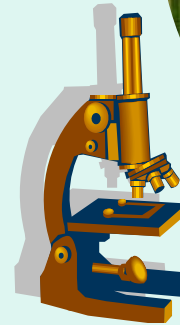
Farmers' field testing

Promising varieties by
Technical sub comittee

National Seed Committee (NSC)

Nomination new varieties and producing

Seed multiplication



Varieties Developed in Rice

Introduction	Nant Thar Hmwe(Basmati-370), Lone Thwe Hmwe (Khap Dauk Muli-105), Tun Thi Ri (Tethom), Hmawbi-2(IR 21836-90-3), Sin Thwe Latt (IR 53936-60-3-2-3-1), Shwe Pyi Tan (PSBRc 68), Sin Ekari-3 (RD -23-B), Aye Yar Min (Machan do), Yadarna Toe (Thai-1-E-9), Manawthukha
Indigenous selection	Ngakywe (D25-4), Paw San Hmwe (D44-8), Pintosein (A29-20), Ekarinkwa (A35-17), Yebawlatt, Inmayebaw
Hybridization and selection	Seintalay (C4-113 x Yebaw sein), Sin Ekari (IR24 x Kauk Hmwe), Thee dat 1 (IR24 x Yebawsein), IRYN1514-50-1-T8 (IR21836-90-3 x Blue Bonet), Shwe Pyi Htay (Lone Thwe Hmwe x TunThi Ri)
Molecular Breeding	Manawthukha Hmwe (Manawthukha x Basmati)
Mutation Breeding	Yezin Lone Thwe, Micronutrient dense (Fe dense rice)



Seed Flow

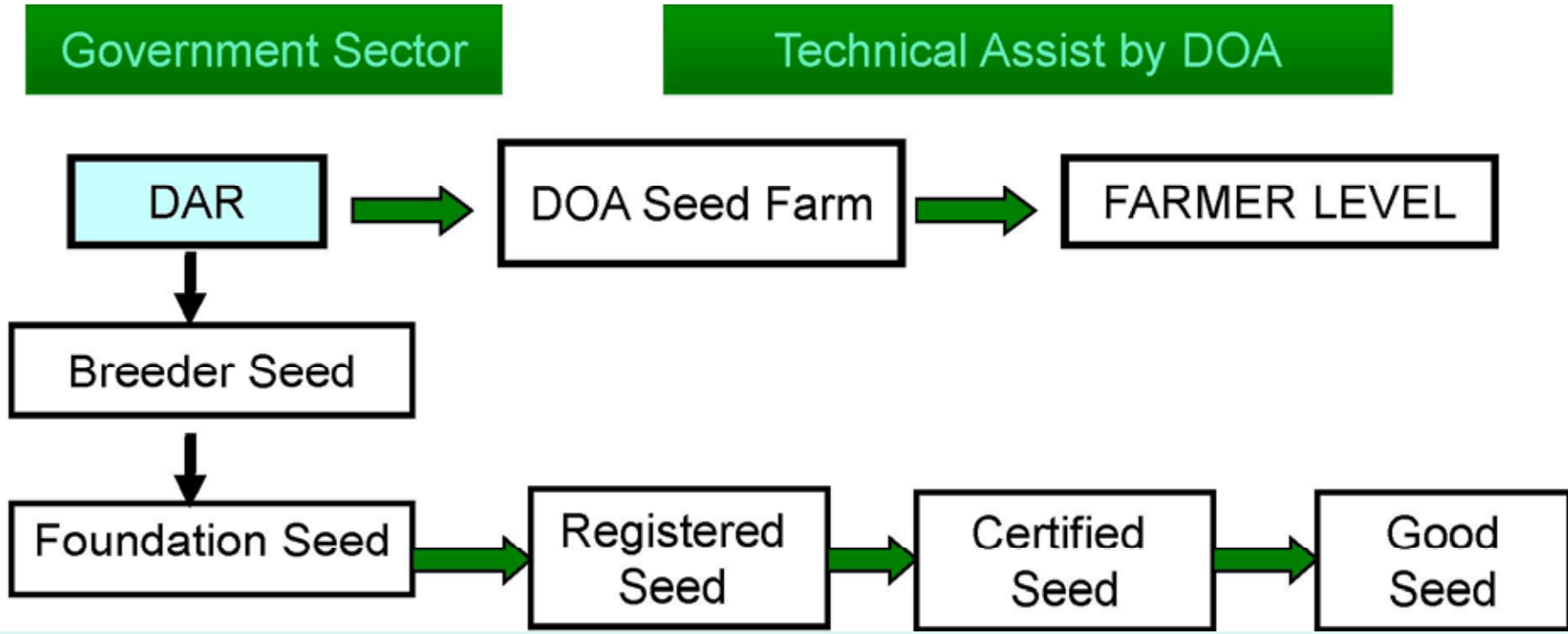


Seed class	Responsible Organizations
Breeder Seed	Department of Agricultural Research (DAR)
Foundation Seed	DAR + Depart of Agriculture (DOA) [Seed Division]
Registered Seed	Depart of Agriculture (DOA) [Seed Division]
Certified Seed	Department of Agriculture (DOA) [Extension Division] + Contact farmers

- ❖ There are totally 56 research and seed farms under MOAI.
- ❖ 32 seed farms are located and produced annually in different ecological zones under the supervision of Seed Division, Department of Agriculture (DOA) .
- ❖ 24 research farms are in Department of Agricultural Research (DAR).

Current Seed Production and Distribution Systems

SYSTEM I

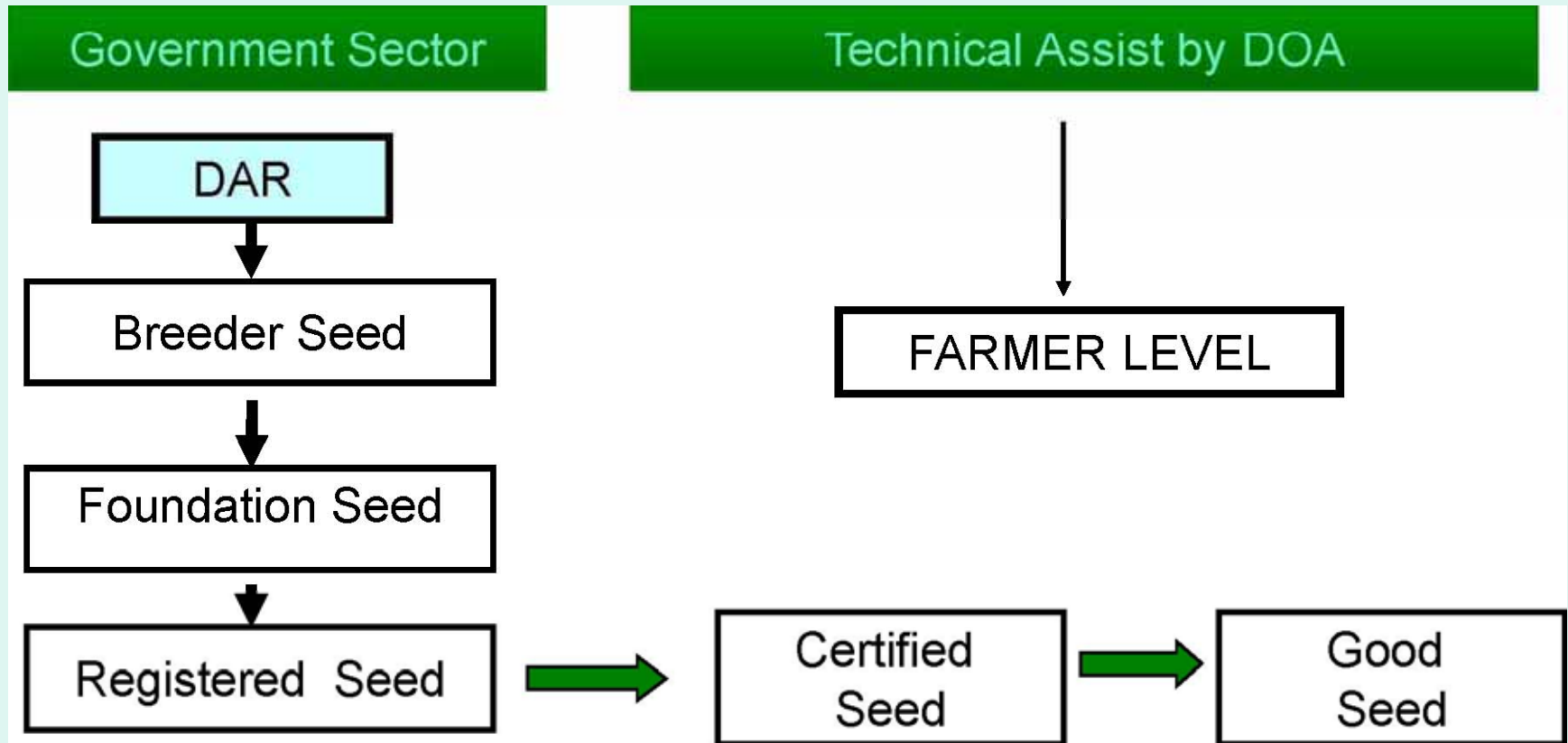


- Varietal Improvement
- Technical Assist

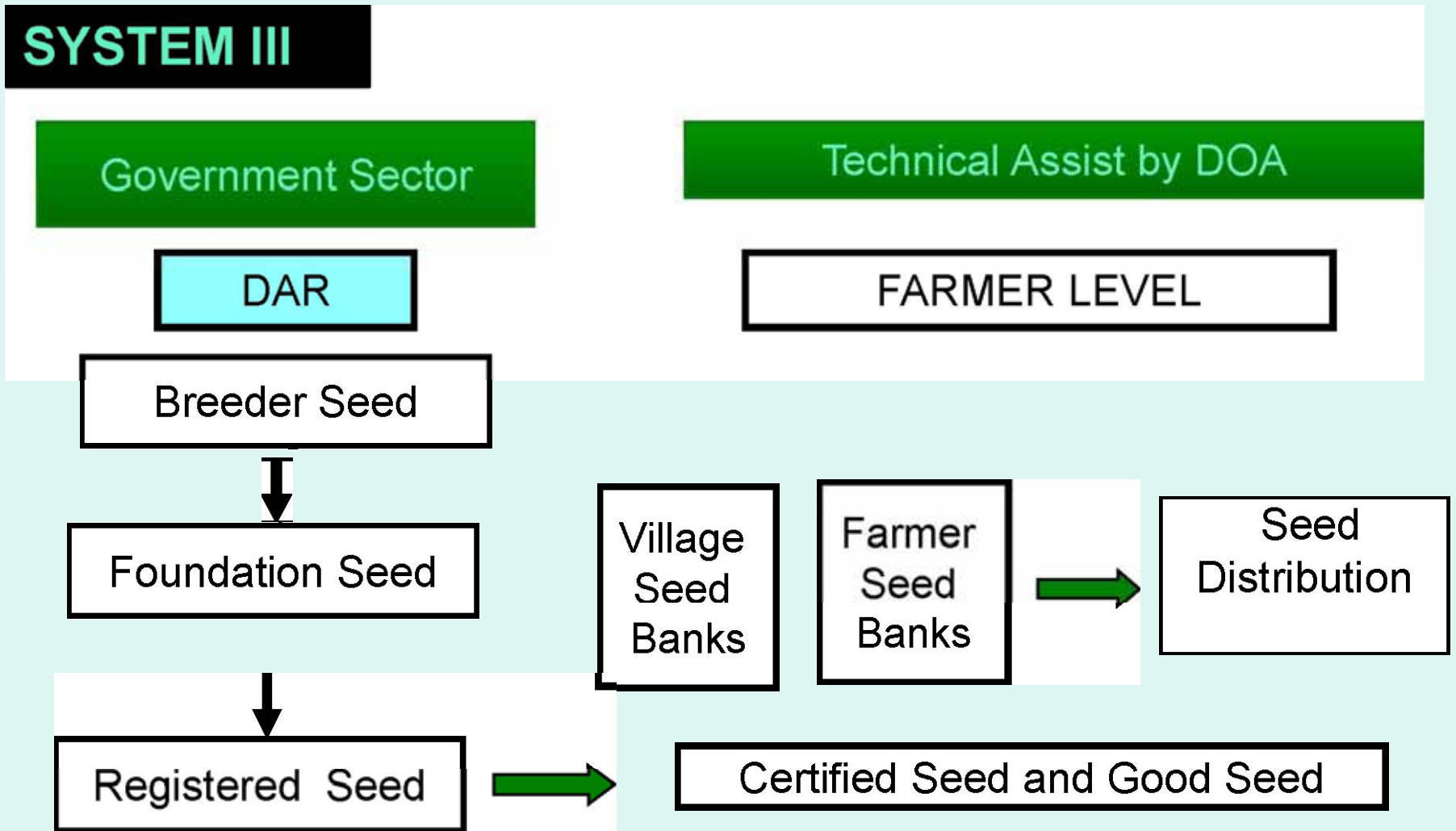
- Capacity Building
- Materials and Equipments

Current Seed Production and Distribution Systems

SYSTEM II

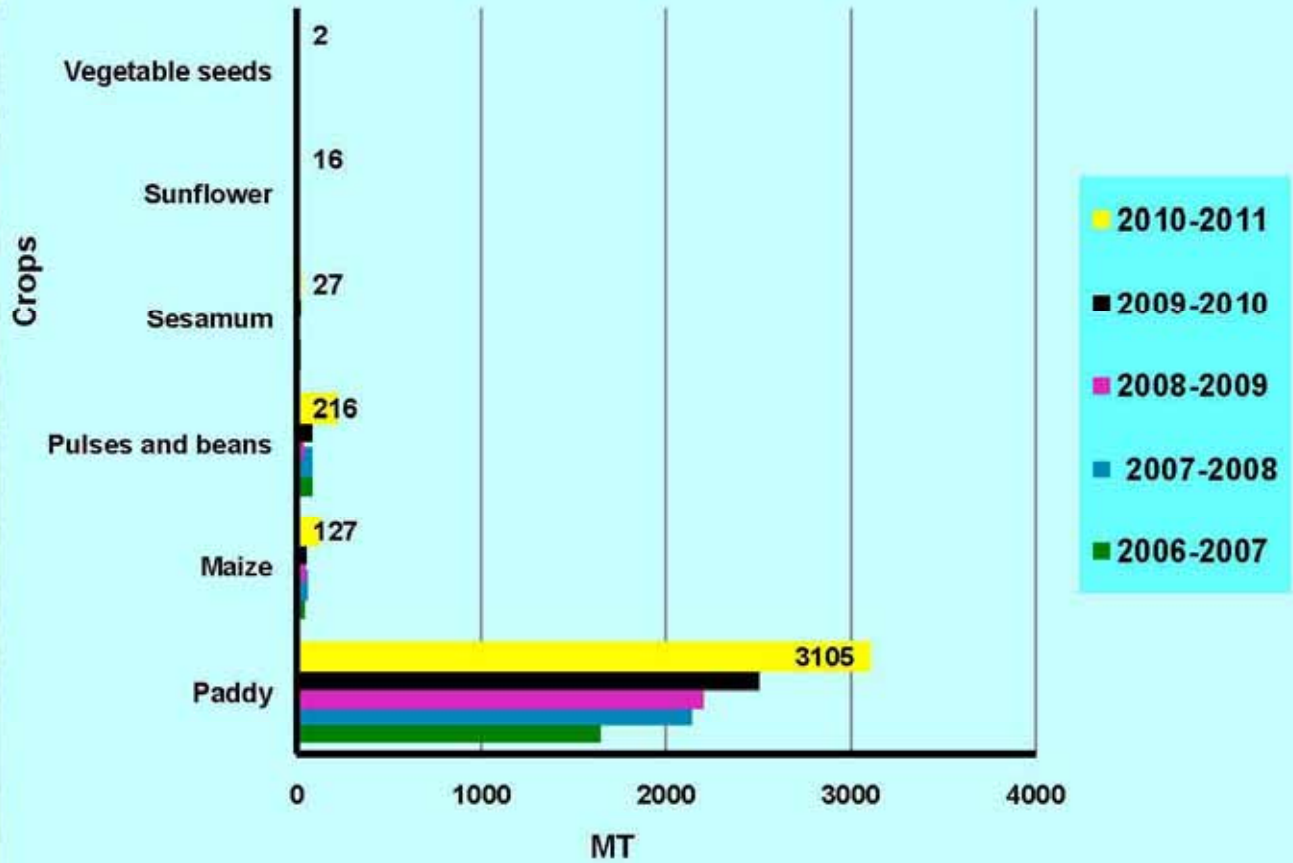


Current Seed Production and Distribution Systems



System III is currently widely used by DOA and Farmers.

Distribution of quality seed by MOAI

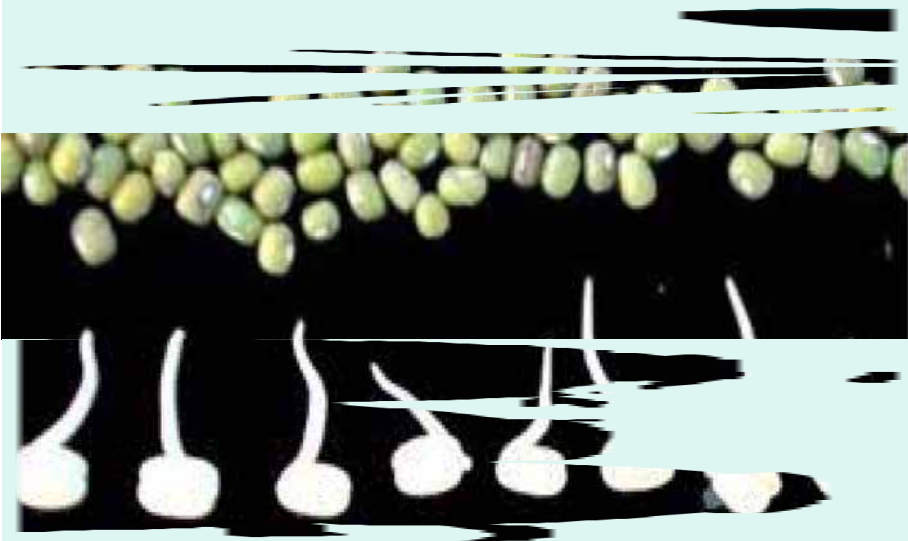


APSA Seed Congress

21

Seed Industry Development

- ❖ At present, seed production industry is leading role in governmental sector.
- ❖ But, it is not enough distribution for seed necessities.
- ❖ This will be succeeded cooperation with private companies.
- ❖ Now, government sector is encouraging to private companies for increasing crop production.



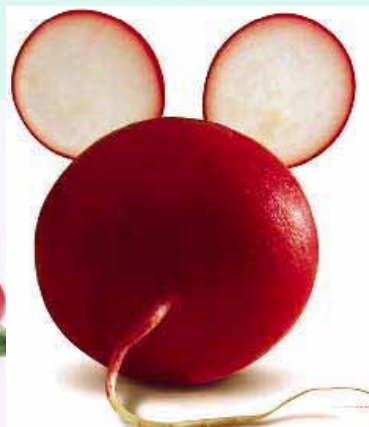
Seed Industry Development

- ❖ In this situation, we have pleased in noticed that private seed production companies are also participating in seed production industry.
- ❖ In these activities, state sector is also need to help with the control of policy, laws, regulations and production technology.
- ❖ Seed certification is important task in seed production,



Seed Industry Development

- **Seed Certification**
- **Enacting of seed law and regulation**
- **Quality seed production plan**
- **Formation and implementation of rules and regulations**
- **Formation in standard of Seed Quality control**
- **New Variety Registration**



Seed Certification

- ❖ To ensure that the seeds and planting materials available to the public are so grown and distributed that they are of the highest quality, especially in genetic purity.
- ❖ The primary objective of seed certification safeguard varietal purity.
- ❖ The objectives of seed certification are:
 - To produce better new varieties with systemically
 - To describe clearly for new crop varieties and more production
 - Quality control for new crop varieties and continuously seed production



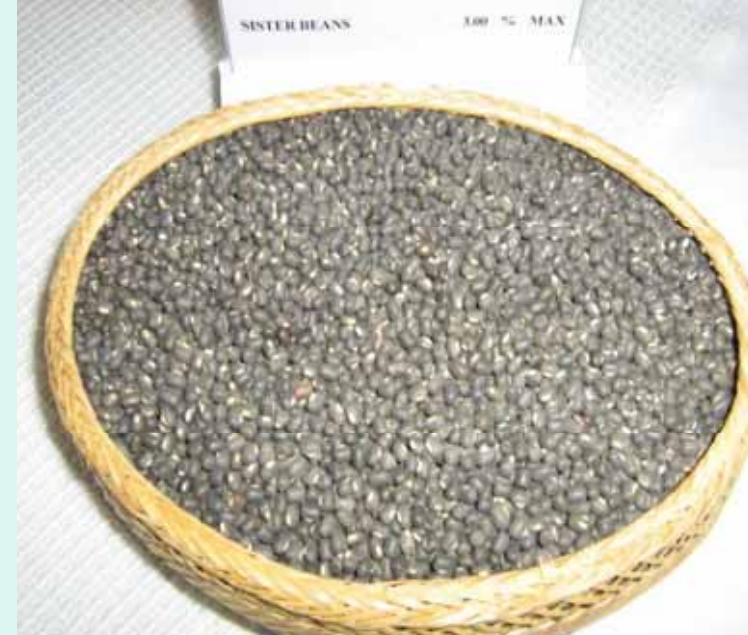
Enacting of Seed Law & Regulation

- Farmers can use true quality seed and prevent from using bad seeds.
- The main slogan of enacting in seed act is” **Truth in Labeling**”.
- It is very important point that quality in seed in bag must be truth in labeling.
- The seed law is not only for seed trading but also for seed production systemically in each seed class.



Quality Seed Production Plan

- **Quality seed production works have been started in agricultural developed European countries, USA and Canada since hundred years ago and seed quality control also.**
- **International Seed Testing Association (ISTA) was founded in Europe with the 30 member countries and now activates regularly increasing up to 140 member countries.**
- **Therefore, most of the countries in the world are producing:**



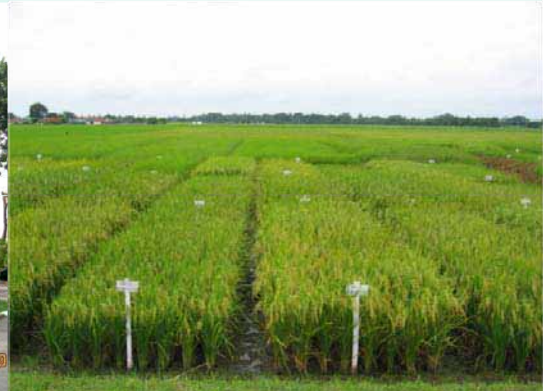
Quality Seed Production Plan



- **quality seeds systemically and their selling in market seed is also certified seeds.**
- **Farmers are also using this certified seed and their products are also increasing yield and quality.**
- **Our neighboring of south Asia and south East Asia countries have being implemented for seed program since few years ago.**

Quality Seed Production Plan

- In Myanmar, quality seed production industry was cooperated with contact farmers.
- But, we can start systemic seed program in 1978-79.
- Agricultural Research Co-ordination Committee, Central Agricultural Research Co-ordination Committee, Technical Sub-Committee and National Seed Committee were also formed to supervise the tasks and enact the necessary policy in this implementation seed program.



Formation & Implementation of Rules & Regulation

- ✓ **Field Inspection Manual for genetic purity in field**
- ✓ **Seed Testing Principles and Procedures for seed standard have been recognized**
- ✓ **Submitted to National Seed Committee through proper technical sub-committee.**



Formation in Standard of Seed Quality Control

- There are mainly two functions in seed quality control.
- They are field inspection and laboratory testing.
- This is very important necessity to control the quality of seeds.
- Systemically applied and observed planting, harvesting, threshing, winnowing, transport, storage through distribution.

The collage consists of several informational posters and a photograph of farmers in a field. The posters are written in Burmese and illustrate various stages of seed production and quality control:

- Top Left Posters:**
 - စပါးတစ်စက် တင်း(၁၀၀)နှင့်အထက်ထွက်ရန် လိုက်နာ လုပ်ထောင်ရမည့် သိပ္ပံနည်းကျ မှီခိုနည်းစနစ် (၁၄) ချက်** (14 scientific methods to ensure 100% or higher yield per acre).
 - 1. စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး (Soil preparation for rice cultivation).
 - 2. မြေစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး (Soil preparation for rice cultivation).
 - 3. မြေစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး (Soil preparation for rice cultivation).
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
- Middle Posters:**
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
- Right Posters:**
 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).
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 - စပါးစိုက်ပျိုးရေးအတွက် မြေစိုက်ပျိုးရေး** (Soil preparation for rice cultivation).

Bottom Right Photograph: A photograph showing two farmers working in a lush green rice field, likely engaged in planting or weeding activities.

Formation in Standard of Seed Quality Control



- **Seed Division staffs of DOA perform field inspection, seed sampling, and seed testing and seed certification.**
- **Field inspection carried out 2-3 times during the season and off-types roughing if necessary.**
- **To smoothly implement the quality seed program, training on quality seed production and testing methods are conducted by DOA staffs.**

New Variety Registration

- For releasing a new variety, need to approve Technical Seed Committee (TSC) and National Seed Committee (NSC). (**Distinctness, Uniformity, Stability**)
- New crop cultivars developed by DAR, DOA and other INGOs are submitted to the TSC.
- After the TSC certification is obtained it has to be submitted to again to the NSC.
- After approving of NSC it could be released officially as a new cultivar.
- Chairperson of NSC is Deputy Minister of MOAI



New Variety Registration

Produced New Variety

- ✓ Distinctness
- ✓ Uniformity
- ✓ Stability

(Technical Sub-committee)

(National Seed Committee)

(New Variety)



Alternate Options for the Way Forward

- ❖ Since quality seeds production not sufficient by government's organization,
- ❖ Therefore, encouraging the private, local and foreign companies to involve in agriculture development.
- ❖ Now, many crop specialized companies already formed. State sector and public sector are two main roles in seed industry development.



Functions of State Sector in Seed Industry Development

- ❖ The State sector needs to implement in technology transfer, raising seed technologists, upgrading of current seed staffs and formation of rules and regulations.
- ❖ Field inspection in seed quality control works should be formed by each state and regional.
- ❖ Duty and function of field inspectors must be given in this work. Field inspector certificate should be required for qualified person who must be passed in field inspector examination.



Functions of State Sector in Seed Industry Development

- ❖ The responsible of National Seed Committee should inspect the production system of Breeder Seed, Foundation Seed and Registered seed in state organization at the stage of sowing time, flowering time and ripening time.
- ❖ The necessary infrastructure of seed processing plant, dried ground, fields in seed farm are required to renovate and set up in seed industry development.

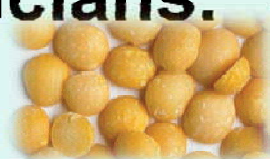
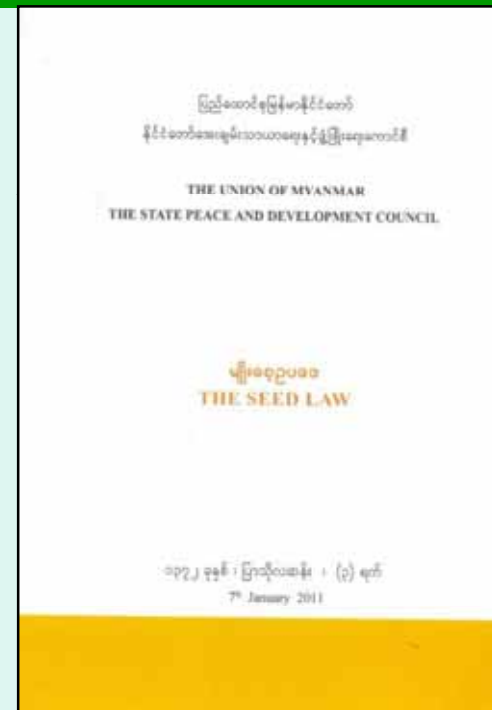
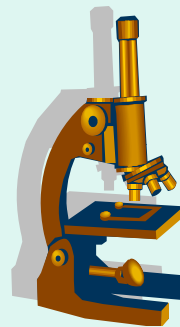


မျိုးစေ့သန့်စင်ပုံအဆင့်ဆင့် (Seed Processing)

အခြေခံအဆင့်	သန့်စင်ခြင်း	မျိုးစေ့စုတ်ခွဲခြားခြင်း	မေးလျှော့နှုတ်ခြင်း	အိတ်လျှပ်ခြင်း	သိုလျှော့ခြင်း
<p>စိုက်ပျိုးရေး (ပွားများရေး) အတွက် အသုံးပြုရန် မိမိတို့ လက်ထဲတွင် (၁၀%) သာ ထားရမည်။</p>	<p>အစုတ်ခွဲခြားမှု နှင့် စိစစ်မှု</p>	<p>မျိုးစေ့စုတ်ခွဲခြားမှု</p> <p>သန့်စင်မှု % - ၉၇ အစုတ်ခွဲခြားမှု % - ၉၅ အနိမ့်စိစစ်မှု % - ၀၃ အနိမ့်စိစစ်မှု (ဆေး) - ၀</p>	<p>မျိုးစေ့စုတ်ခွဲခြားမှု</p> <p>မျိုးစေ့စုတ်ခွဲခြားမှု</p>	<p>မျိုးစေ့စုတ်ခွဲခြားမှု</p> <p>မျိုးစေ့စုတ်ခွဲခြားမှု</p>	<p>မျိုးစေ့စုတ်ခွဲခြားမှု</p> <p>မျိုးစေ့စုတ်ခွဲခြားမှု</p>

Functions of State Sector in Seed Industry Development

- ❖ If the seed production from private sector are not recognize in seed standard, each production sector must be solved their responsibilities.
- ❖ The private seed production companies should excuse by the inspection of seed technicians.



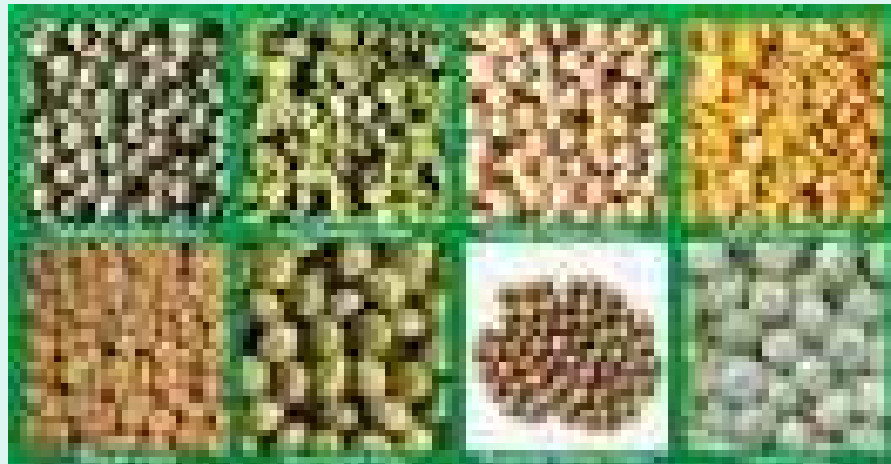
Functions of State Sector in Seed Industry Development

- ✓ Seed Science and Technology Department should be founded in Agricultural University separately to raise the new trainees in seed expert.
- ✓ It is necessary to pass giving the seed certificate to seed producer of private and contact farmer after seed experts inspect the field and completely in seed standard.
- ✓ Rules and regulations are required for Guarantee Prices in each seed stage and Quality Guarantee from seed producers for the price of seed and grain separately.
- ✓ Need to allow the registration of seed production by private sectors.



Functions of Private Sector in Seed Industry Development

- Seed production region must be registered in proper department for easy to take seed quality inspection.
- Confer the responsibility to seed technician in seed production.
- Farmers and private companies should co-ordinate and co-operate for both profit as “Win-Win” action.



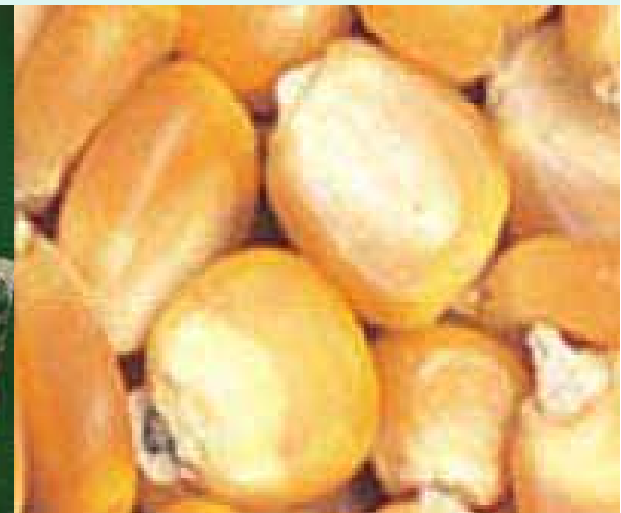
Role of Private Entrepreneurs in Seed Production

- Seeds and grains of rice and pulses produced by processing plants which are owned by the government and private entrepreneurs
- UMFCCI is one association to lead and export Agricultural products
- Under UMFCCI, a number of associations such as rice, pulses, fruits and vegetables production & many other
- associations related to agriculture are formed & organized
- Most of the members of these associations are organized with private entrepreneurs



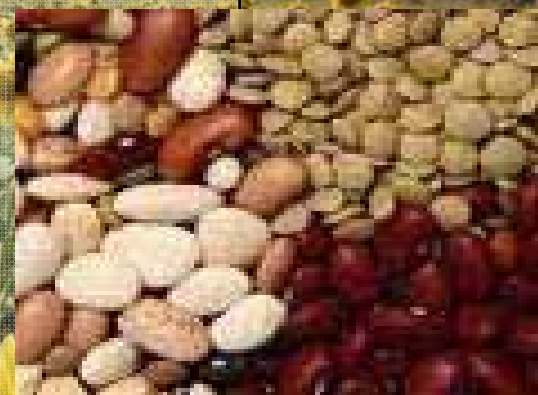
Private Sector Institutions Engaged in Seed Production System

- C P Company ----- Hybrid Corn
- Known You Seed Company ---- Melons, Cucumber
- Malar Myaing ----- Vegetables Seeds
- Small Private Individuals ----- Vegetables Seeds
- Myat Min ----- Rice
- Bayer Crop Science ----- Hybrid Rice

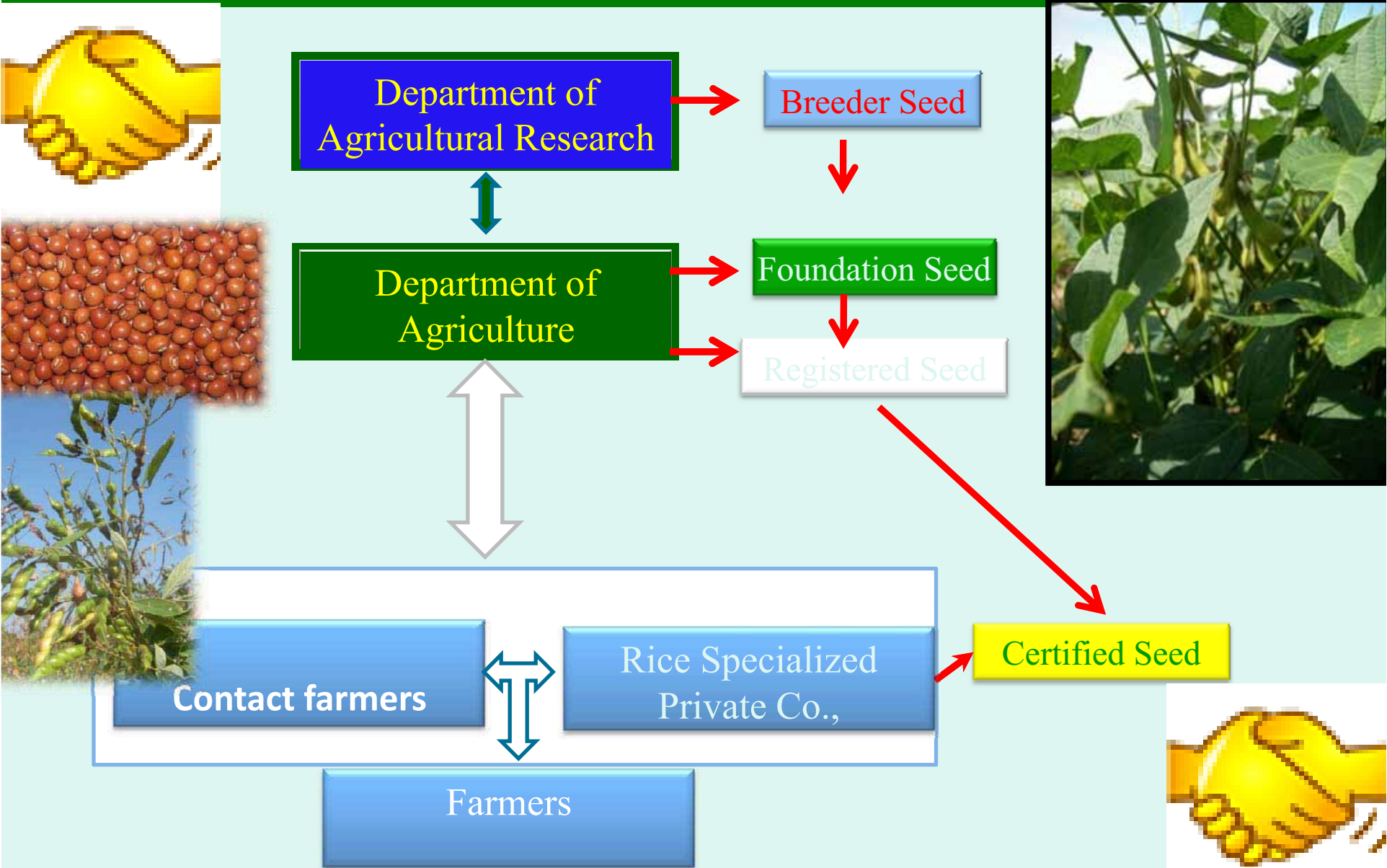


Producer Associations in Myanmar

- **UMFCCI**
- **Vegetable and Fruit Producers and Traders Association**
- **Myanmar Organic Group**
- **Myanmar Rice Producer and Exporter Association**
- **Myanmar Pulses Producer Association**
- **Myanmar Oilseeds Crop Producer Association**

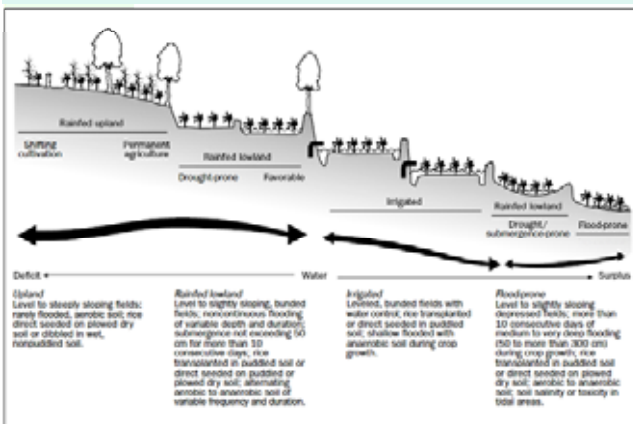


Future Seed Industry Development [Private- Public-Partnership]



Constraints on Varietal Development

- **Varietal development**
- Varietal development is the foundation of any seed supply program.
- Constraints to varietal development in Myanmar can be summarized as follows.
- Shortage of varieties that are adaptable to different agro-ecological conditions:






Constraints on Varietal Development








- **Varietal evaluation procedures commonly used in Myanmar limit the release of superior varieties**
- **Limited resources for variety development research**
- **Fewer personnel trained in plant breeding**
- **Weakness to properly maintain varieties after they are released**



Constraints in Certified Seed Production

Subjects	Constraints	Ways out
Farmers' awareness on seed utilization	Accessibility, precedent, Market, seed producer	Training, media, market guarantee demonstration, producer incentives
Storage facility 	Small warehouse for own use (round bamboo basket for storing paddy)	Village seed bank farmers groups
Input Limitation 	Fertilizers, pesticides, labour, threshers, harvesters, Rouging cost	Subsidy, loan or micro-finance, education, knowledge sharing
Infrastructure 	water management, productive road, land reforming, dryers, processing	Land policy, associations or village farmers groups
Seed certification	Field and lab inspection	Train and raise inspectors

Constraints in BS/FS/RS production in governmental farms

Subjects	Constraints	Ways out
Infrastructure 	water management, productive road, land leveling, dryers, processing	Budgets, permission 
Seed testing 	Skillful staffs, equipment, weakness of field inspection 	Trainings (local/foreign), upgrading lab equipments, inspection methods
Processing plants	Electricity, skillful labours, only some, spare parts	Training, supporting, establish small scale plant
Collaboration system 	Separate departments, precedent, over supervision,	Meetings, discussions, seminar, knowledge sharing etc.
Jobs efficiency 	Production a large amount of varieties 	Variety selection for different agro-ecological zoning

Conclusion

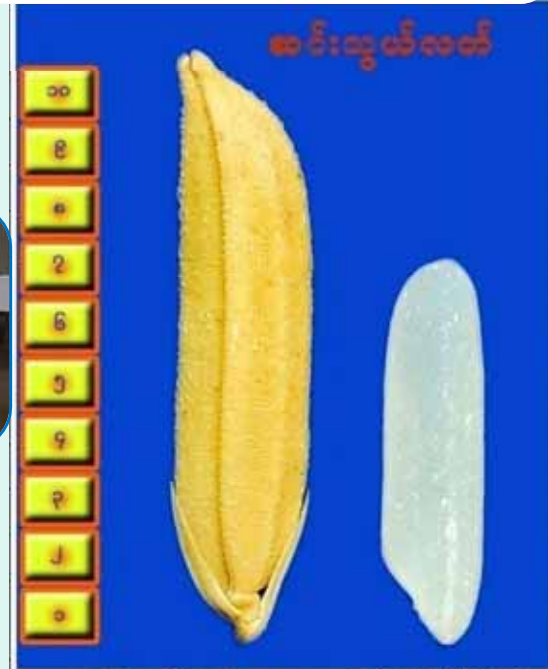
- ❖ Myanmar agriculture is increasing good shape at present.
- ❖ Area expansion for rice fields may need high investment and thus emphasis will be placed more on increasing yield per unit area through using Hybrid and High-Yielding varieties.
- ❖ Public or government institutions are providing breeder seeds and foundation seeds to private companies and contact farmers.



- C P Company -----Hybrid Corn
- Known You Seed Company ---- Melons, Cucumber
- Malar Myaing -----Vegetables Seeds
- Small Private Individuals -- Vegetables Seeds
- Myat Min ----- Rice
- Bayer Crop Science ----Hybrid Rice

Conclusion

- ❖ It, however, needs further and constant reforms, adjustments, manipulations, sustainability and truth in labeling.
- ❖ Now there are plenty of seed demand but quality seeds production not sufficient by government's organization
- ❖ Collaboration works between public and private sectors, farmers and local companies to supply good quality seeds at sufficient amount to farmers if the future prospect.



Rice Cultivation in Myanmar



Fruits of collaboration. Hybrid rice varieties, the result of international scientific efforts, show great yield potential under field conditions.

A photograph of a rice field with rows of rice plants. The rice stalks are a mix of green and golden-brown, indicating they are ready for harvest. The background shows a clear sky and some distant trees.

Thank you!

Discussions are warmly welcome!!