Links between Extension and Agricultural Practices (Research and Extension Roles of DAR and DOA for Agro-technique/Seed Supply)

- **San Thein**
- **Consultant for AFC**
- **Email:usanthein@gmail.com**

- **30 March, 2015**

Objectives of the Presentation

- To identify the strong and weak links between DAR and DOA and associated Contact Farmers for the supply of improved seeds/agro-technique to farming population;
- To suggest the change management and extended role of public sector in extension services delivery to farmers

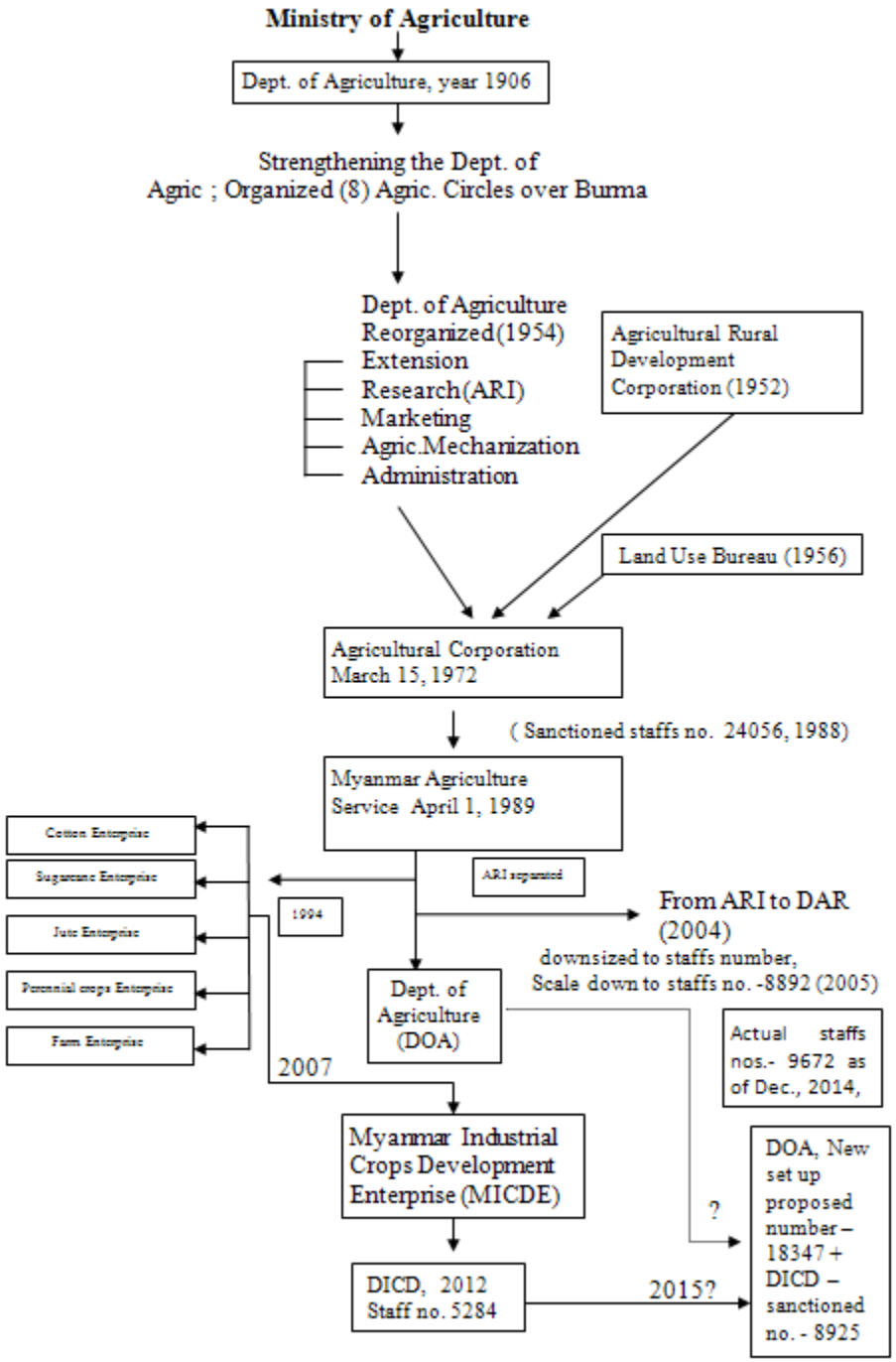
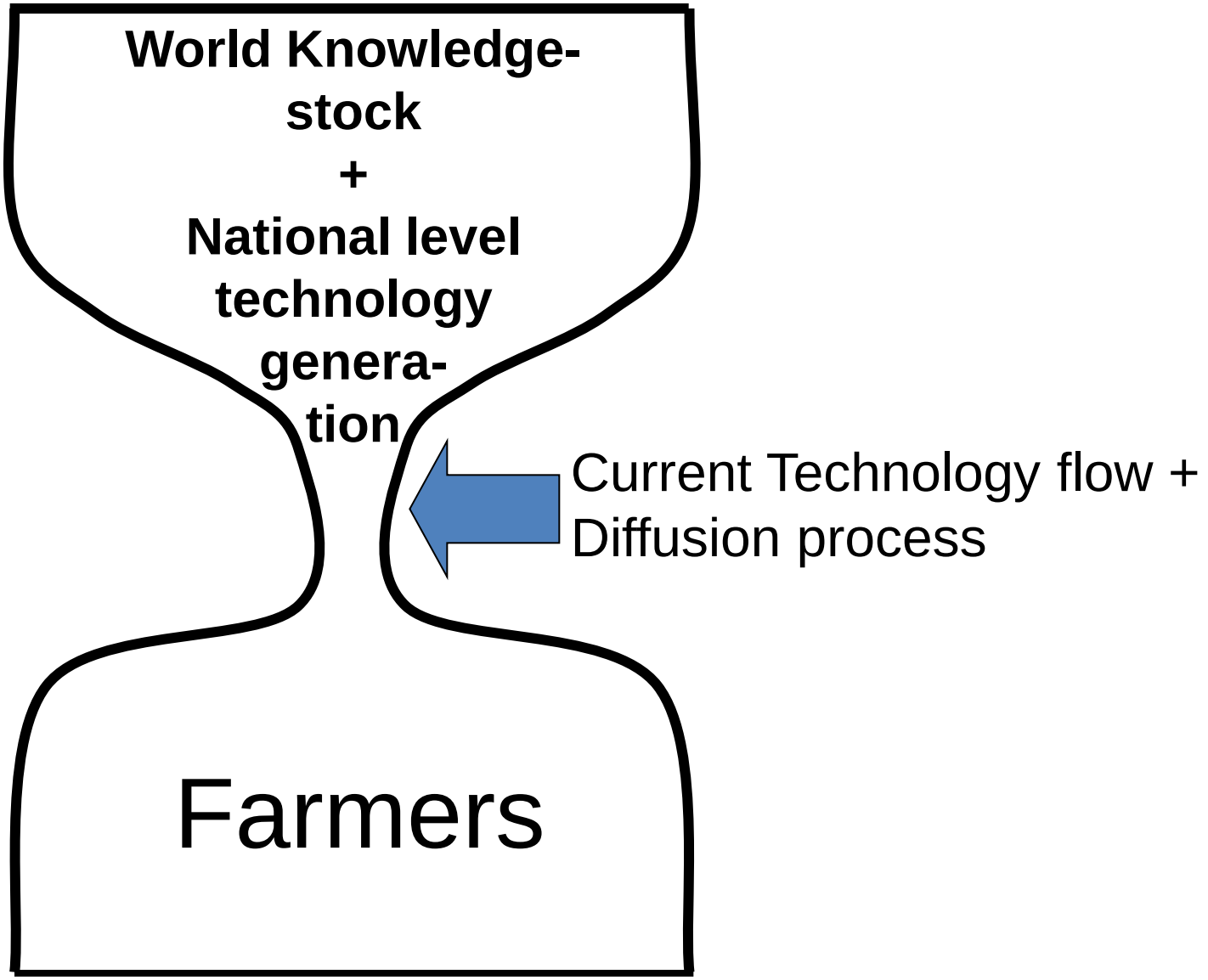


Figure (1) Historical Aspect of Transformation of Agricultural Department Organization

Historical Backdrop

- **DOA was born in 1906, an early runner in South East Asia.**
- **After 1924, DOA was expanded and sister agencies of its Extension emerged as Agricultural College and Research.**
- **After 1954, Agricultural College was transferred to Education sector and research (ARI), extension, marketing and mechanization became established with DOA.**
- **DOA was strengthened after 1972 by merging with ARDC and Land Use Bureau and the consolidated agency named as Agricultural Corporation. In 1989, it was renamed as MAS.**
- **Industrial crops sections were removed from MAS and upgraded to various crops enterprises in 1994. These are scaled down to one industrial crops dept after 2007.**
- **After 2005, MAS was transformed from enterprise to DOA directorate. ARI, separated from DOA was upgraded to DAR.**

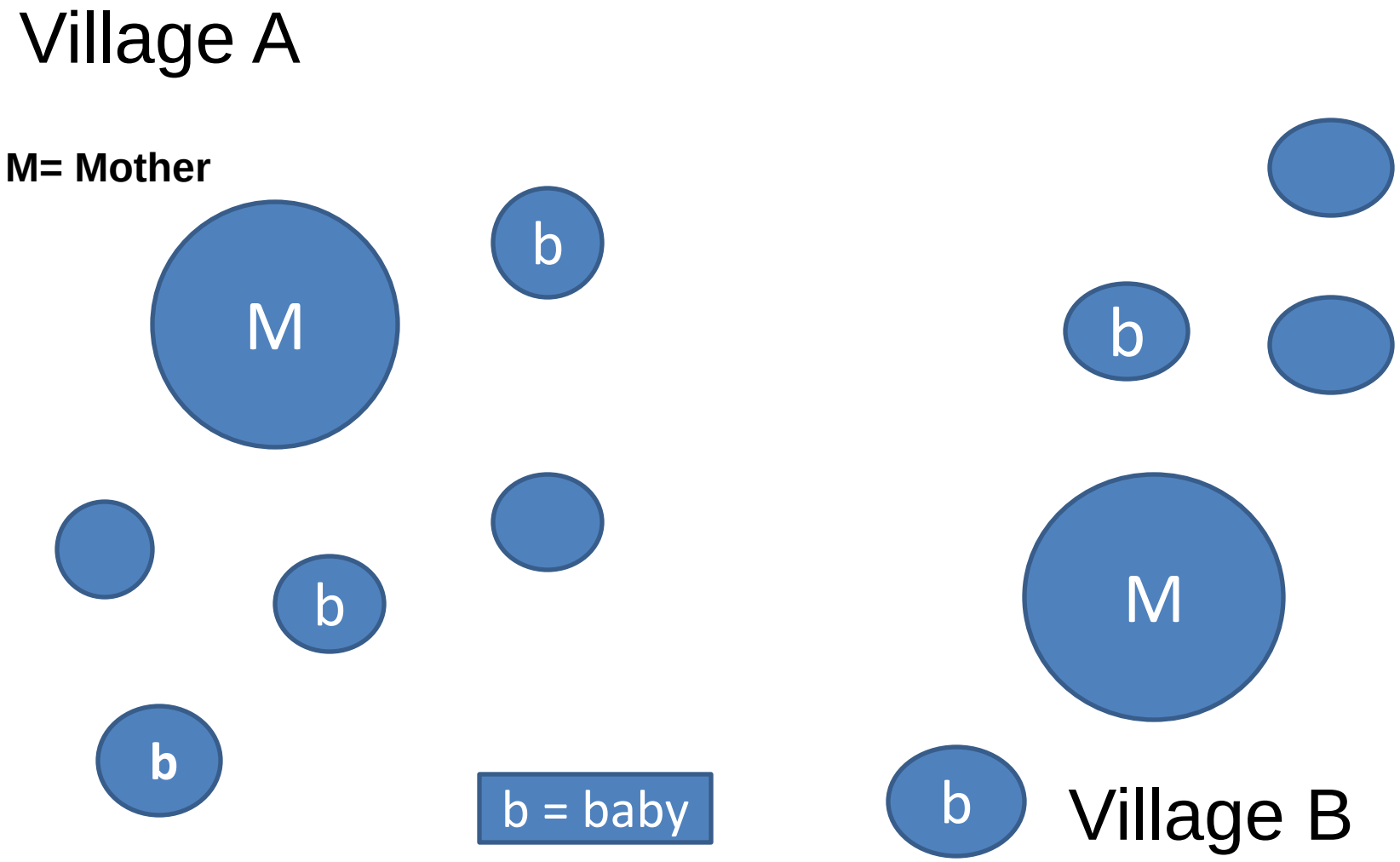
Over years, the flow of technology to end-users is still restricted during the diffusion process



Delivery of adaptable crop varieties to farmers by DAR.

- In earlier 1970s and 1980s, Agricultural Research Institute devoted to strengthening its capacity to be a centralized research institution. It placed more emphasis on “on-station” research activities.
- Later it expanded with satellite research centers in various agro-ecological zones and extended to on-farm trials.
- Today, DAR collaborated with farmers by extending more “Mother-Baby Trials” .

Mother –baby Trial adopted by DAR for crop varietal selection



Weakest link in Research-Extension

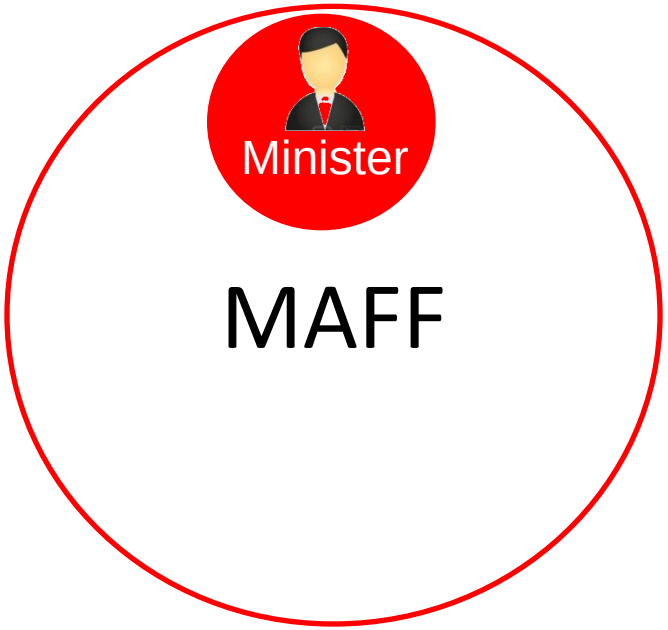
- **In the technology generation and adoption process, preliminary and advanced trials are conducted as on-station trials finally followed by on-farm trials in collaboration with farmers.**
- **The last step at on-farm trials is still the weakest chain in the research-extension linkage. Thus the technology diffusion covers limited scope.**
- **Diffusion is not only limited but also restricted to only the favorable ecological areas around the centralized stations.**

Coordination between ARI and MAS for better mechanism of Extension Services

- Joint-working groups of Extension and Research were formed and implemented based on crop commodities and disciplinary matters around 1980s. Technology transfer mechanism was largely improved.
- After 1990s, strong and single driving force came from the dominant Ministry to all sections heads of R & D and Extension to work under command and authoritarian leadership to achieve physical targets and increase GDP for national target.
- Agriculture sector has been the most intervened area by various hierarchal order from the top to the village tract over the country limiting horizontal coordination.

Comparison of Structure and Authority

JAPAN



Ministry of Agriculture, Fishery and Forestry (MAFF)

MYANMAR

Ministry of Agriculture and Irrigation (MOAI)

Same Mechanism in the Past and Present

- In the seed flow process, DAR takes the responsible for production of breeder seed and foundation seed while Seed Division of DOA involves in production of foundation seeds, registered seeds and certified seeds. DOA normally collaborates with contact farmers for certified seeds production on a contractual basis.
- The linkage was not often smooth. Even when research, seed and extension divisions were under the same parent organization of MAS, there were poor coordination due to some departmental administrative barriers. Today, much less coordinated.
- DAR has limited capacity for RS production even in rice as pointed by facilitators of community seed growers.

Reliability of Seed Class

- Reliability of the seed class produced from the Central Farm of DOA is often governed by the budget restriction to be a positive balance.
- Pigeon pea, for example, is by nature open-pollinated crop and it requires roughing (eliminating off-type) twice at the time of flowering.
- But standard roughing could reduce overall grain yield and subsequently affect the profit margin of the Farm. One Central Farm of DOA did not remove but marked the branches having off-colour of the flower. They let the whole standing plants to grow and at harvest, off- type branches were harvested separately and sold the grain to earn revenue. Possibility of contamination may occur in seed production.

Linkage with network of marketing the seeds

- Seed production suffers a weak link with market demand. There often is no mechanism for gathering information of demand from farmers. Allocation of planting acreage for seed production usually based on the previous year sale.
- In case of hybrid maize, Charoen Pokphand Group (CP) maize not only possess superior yield performance but has been traded over extensive network of market linkages as compared to DAR's hybrid maize.

Complaints expressed by Seed Farm Manager.

- Demand for improved seeds from farmers or market are often irregular with respect to the localities.
- Private sector has no incentive in producing seeds of dry zone crops due to irregularities of rainfall and sporadic occurrence of risk prone areas.
- If early sesame is damaged by drought, farmers put up a lot of demand for hybrid sunflower for growing in the late monsoon season. The central farm could not meet their high demand.
- There is no follow- up by Extension department for the impact of the seeds sown by farmers.

Constraints expressed by Township Extension Officer of DOA

- **One constraint is withdrawal of "Seeds/Implements" (Myo/ Htun) Budget Heading from the township regular budget allotment. This Myo /Htun Budget had been misappropriated over several years. Therefore DOA removed this Myo Htun Budget Heading in 2001. Without this budget heading and allotment, DOA could not play the major role in seed production and multiplication process.**
- **Some officers are afraid of using Myo/Htun budget for seed multiplication even if the budget heading is allowed. Under weather hazard in dry zone, seed delivery function may end up with crop failure and township officer will be in trouble if he could not pay back the required budget amount that he spent for implementing seed production with farmers.**
- **Travelling budget constraints for extension staffs to go to interior villages and farmers. Show-piece Demo trials need to set up along roadside for frequent route of VIP Visit.**

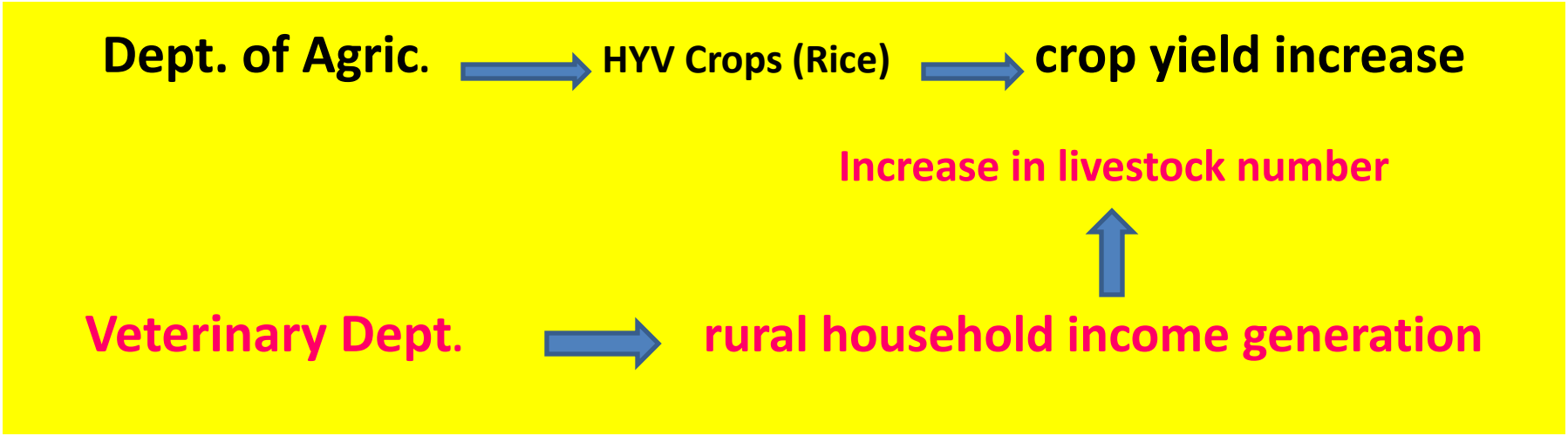
View of Farmers over Seed Supply

- Farmers nearby the town or seed farm are well aware of availability of improved seeds from the Seed Farm. Sometimes they may serve as seed growers for the Farm in seed multiplication.
- Most farmers in remote and interior areas are not aware of the existence or function of the Seed Farm in their township.
- One contact farmer of FAO seed production project said that his neighbouring farmers did not believe seed system without guarantee system.

View of Dy. Staff Officers of DOA

- **One Dy. Extension officer of DOA township in Delta had chance to work in NGO for post- Nargis community development for 3 yrs. And he compared the management style;**
- **In our mother institution, our boss instructed us to do this job:**
- **In an NGO, I was told by the PM what will you do?. I submitted my work plan and PM supported my plan. My plan was based on farmers' need.**
- **One Dy. Staff Officer viewed that " Adequate staff strength is necessary but not essential. Proper facility and per Diem are needed for extension workers to reach farmers in interior areas.**

Change management needed



By comparison,

Vet. Dept after reorganization with Rural Development Dept has changed its focus on "Clients first". DOA is still focus on physical target "Crop yield increase".

Recent policy announcement on VISION in "Agriculture in Brief, 2014" by MOAI has changed the statement that:

Achieving "Per Capita Income" and "Standards of Living" of rural populace relying on agriculture higher than the neighbouring countries and keep abreast with developed nations.

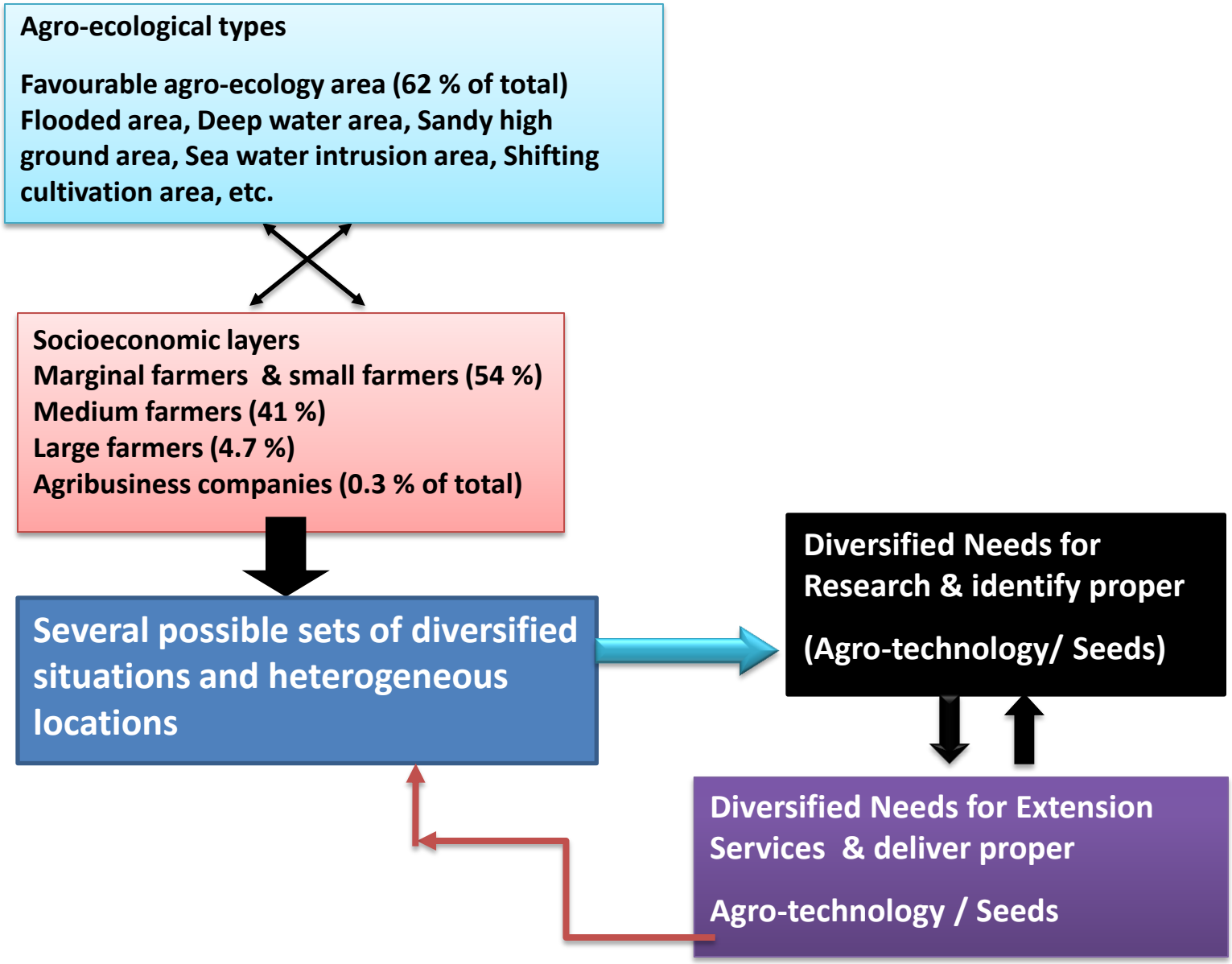
Changing trial/research methods with varying degrees of farmer participation adopted by various stakeholders

Increasing order of farmers' participation	Assessment	Actors involved
Researcher-managed on-farm trials. Unreplicated design. (Farmers may be involved in evaluation)	Yield data & farmers' perception	Research and Extension
. Farmer-managed, replicated design, on-farm trials, with scientists' supervision Several entries per farmer	Front-line demonstration and adaptive trials	Research & Extension
Farmer- managed using a recommended package of practices. Unreplicated design with many farmers	Mini Kit programme	Farmers & Extension
. Farmer- managed , unreplicated design, on-farm trial; One cultivar per farmer	Yield data & farmers' perception	Farmers , Research, Extension, NGO
Farmer-managed trials. No formal design either within a farm or across farmers	Anecdotal, Informal	NGO, Farmers, Extension, Research

When and Where Farmers' Participatory Seed Production System is Needed for Public Sector?

- **Heterogeneous environment**
- **Still lacking adapted varieties**
- **Conventional plant breeding often fails to meet the needs of farmers and to develop cultivars showing specific or local adaptation**
- **Disinterest of formal private seed sector when targeted seed production is not profit- generating.**
- **Marginal areas or stress –prone areas**
- **Need to incorporate diverse traits in plant genetic resources to meet specific client preferences**
- **Centralized breeding is less efficient in producing cultivars adapted to marginal agricultural environments.**

Needs for Extension Services are Diversified.



Extension supports are needed at varying level of farmer growth stages in diversified localities

Stress-prone ecosystem	Less-favorable ecosystem	Favorable ecosystem

Degree of Commercialization

Subsistence farming	Food-cum-cash crop	Cash crop
Seek survival strategy, risk avoidance, focus on stress tolerance and stable productivity (important role of NGOs with pro-poor approach)	Technology adoption driven by cost-benefit ratio (farmers' participation is essential. Role of contract farming is important.)	High input – high output with competitiveness; (Role of market, contract farming owner-operator or of estate farming is important)

Moving from physical target to inclusive growth

- Extension workers need to help farmers develop the skills and spirit of an entrepreneur in farming ;
- Extension Services need for moving them from survival to subsistence phase, from subsistence to livelihood improvement phase and finally to commercial farmer-entrepreneurs stage.
- Farmers advancing through such stages of development will need information, advice and support.
- Advice and support to farmers should cover areas beyond the conventional approach of yield maximization without regard to farmers' income maximization.

Future Role of Public Institutions

- With expansion of commercial agriculture and agribusiness roles, production of hybrid seeds and quality seeds for high value crops will be taken up by private sector seed producers.
- The role of public institutions is to promote the seed system with certification and regulate ABCs to be pursuing socially and environmentally responsible ways of business.
- Major task is to place more emphasis on the farmers under less favourable agro-ecological areas and promote them from subsistence level to livelihood development phase. In this aspect, more coordination is needed with CBOs and NGOs or public-private partnership approach..

Create Enabling Environment

- **Extension Division of DOA had been subjected to top-down approach oriented to achieve physical target for over 40 years**
- **Institutional level reform is needed for the following key issues;**
- **Design comprehensive and decentralized programme fulfilling the Dual purposes of promoting inclusive growth of small farmers and ensuring ABCs enterprises in responsible way of agri. Development. Avoid "One size fit for all approach.**
- **Creation of motivation and sense of obligation for active participation of extension workers at various positions and functional levels leading to more responsiveness to diversified needs of farmers.**
- **Institutional strengthening and capacity building for training for trainers in extension support services.**

- THANK YOU