

Human Resource Development in Farm Mechanization Sri Lanka



3rd Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific
3rd ASEAN Conference on Agricultural and Biosystems Engineering
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Status of Agricultural Machinery Workforce

- Promotion of Agricultural mechanization in the country is a collective effort of all categories
 - Farm machinery operators,
 - Craftsmen,
 - Sales and service providers,
 - Machinery manufacturers,
 - Extension personnel and
 - Design Engineers etc..
- Skill development, technology transfer and knowledge improvement depend on the basic education level of the different category.



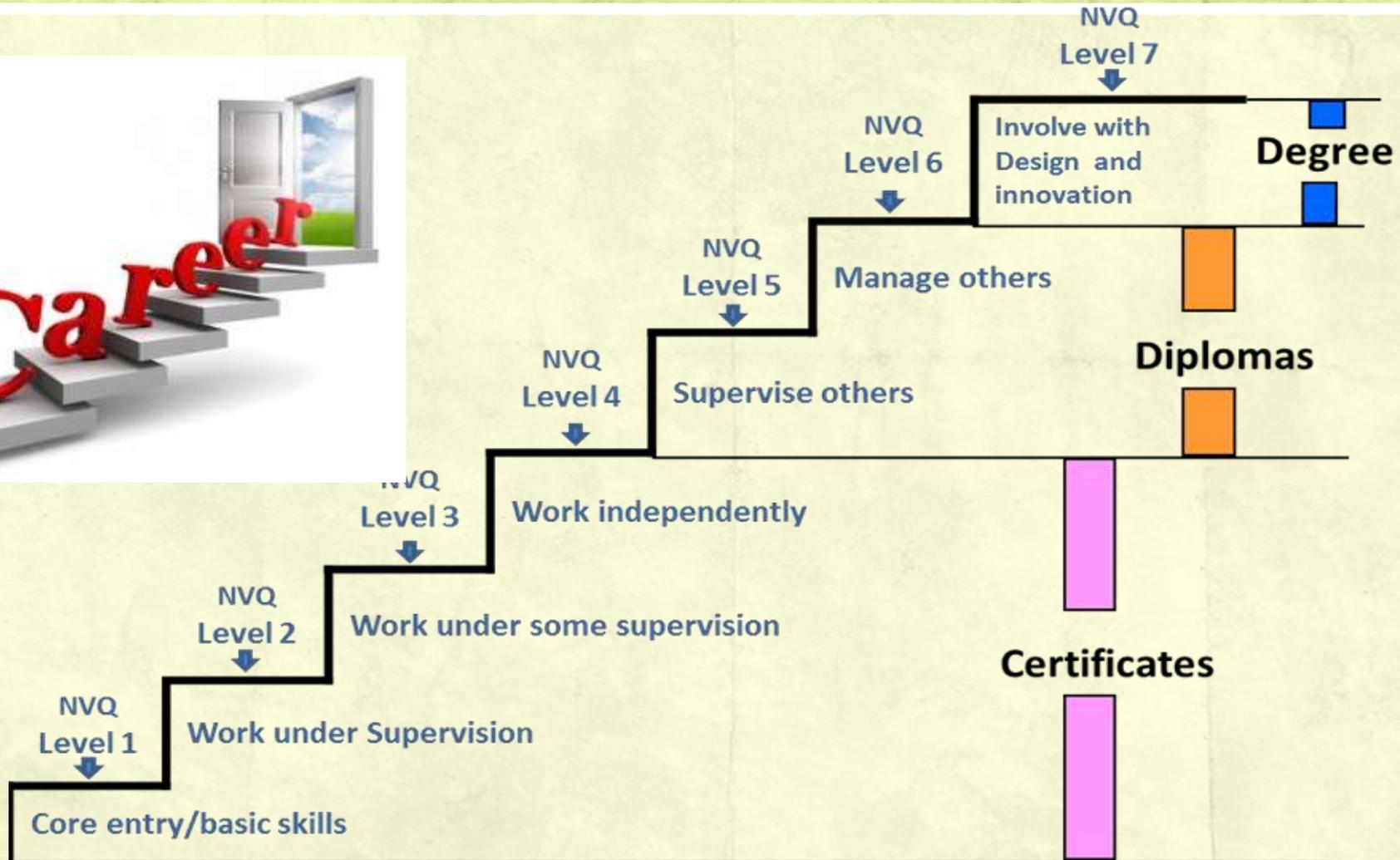
Credentialing/licensing/regulations

- **National Vocation Qualification (NVQ) is the recognized standards now applied in all sectors. Almost all theoretical and practical educational qualifications leading up to basic degree are assigned with NVQ level.**

Structure of NVQ

Level	Qualification	Generalised Description
Level 1	National Certificate	Level 1 recognizes the acquisition of entry level competencies
Level 2	National Certificate	Levels 2, 3 and 4 recognize increasing levels of competencies. Level 4 qualification provides for full craftsmanship/ workmanship.
Level 3		
Level 4		
Level 5	National Diploma	Levels 5 and 6 recognize the increasing levels of competencies of technicians including supervision and process management.
Level 6		
Level 7	Bachelors Degree	Level 7 recognizes the vocational/technological competencies at Bachelors Degree level

Structure of NVQ.....



Institutions involved Human Resource Development

- Secondary school level

Recently Technology stream has been introduced in the secondary level school curriculum including Agricultural Engineering Technology.

- National Vocational Courses

Tertiary and Vocational Training Authority of Sri Lanka conducts practical oriented technical courses relevant to the prevailing job market. This institute recently introduced craftsman level (up to NVQ 4) in the field of Farm machinery technology.

Institutions involved Human Resource Development

- Technical Colleges

Apart from the general Engineering courses offered in most of the technical Colleges, there are some technical colleges offer specialized courses for farm machinery technicians.

- Advanced College of Technology Institutions

There are several Advanced Technical Education Centres offer National Diplomas in general Engineering Technology. Some offer National Diploma in Agriculture

- Universities

State universities offer General Agri. Degree with Agri. Engineering as a specialized subject.

Advanced College of Technology Institutions

Institute	Province	Courses offered
Hardi Technical College, Ampara	Eastern	General Agriculture
Technical College, Kullitapitiya	North Western	General Agriculture
Technical College, Dambulla	Central	General Agriculture
Aquvainas College, Colombo	Western	General Agriculture
Technical College, Anuradhapura	North Central	Farm Mechanization Technology



Technical Colleges



HARDI Advanced Technological Institute



University Colleges

- Recently established three University Colleges offer Farm Mechanization Diploma level and Certificate level courses along with the other technical courses.

Institute	Province
University College, Kuliyaipitiya	North Western
University College, Jaffna	Northern
University College, Mathara	Southern

University of Vocational Technology (UNIVOTEC)

- The general objective of the UNIVOTEC is to provide progressive upward movement to the students in the technical education and vocational training system, based on their aptitudes and abilities, to acquire university education.
- Provide pedagogical training up to degree level for trainers serving in the technical and vocational education sector and industry
- Provide courses of study for middle level technical personnel, with qualifications acceptable for admission to UNIVOTEC, up to degree level, and
- Provide courses of study for those with National Vocational Qualifications to upgrade their competencies and acquire a degree level qualifications
- Provide extension courses on continuous professional development.



University of Vocational Technology UNIVOTEC

University College



Sri Lanka Schools of Agriculture

- Department of Agriculture manages five Schools of Agriculture to produce Diploma holders (NVQ 6 level) to serve Agriculture sector in the country.

Institute	Province
Schools of Agriculture, Kundasale	Central
Schools of Agriculture, Pelwehera	Central
Schools of Agriculture, Angunakolapelessa	Southern
Schools of Agriculture, Karapincha	Sabaragamuwa
Schools of Agriculture, Vauniya	Northern

Annual Intake - 350

Sri Lanka Schools of Agriculture

- Department of Agriculture also manages another six Schools of Agriculture to produce Certificate level qualified (NVQ 5 level) to serve Agriculture sector in the country.

Institute	Province
Schools of Agriculture, Labuduwa	Southern
Schools of Agriculture, Anuradhapura	North Central
Schools of Agriculture, Bibila	Uva
Schools of Agriculture, Palamunai	Eastern
Schools of Agriculture, Kilinochchi	Northern
Schools of Agriculture, Wariyapola	North Western



Sri Lanka Schools of Agriculture, Kundasale



Universities



- There are many state universities offer general Agriculture Bachelors Degree programmes including Agricultural Engineering as a subject in all semesters. Students can select Agricultural Engineering subject as specialized subject in the final semester.
- Open University of Sri Lanka also offer Diploma and Degree courses related to general agriculture as well as Agri Engineering.
- Post Graduate Institute of Agriculture, University of Peradeniya offers post graduate Degree courses on Agricultural Engineering leading up to PhD.

University of Peradeniya



Wayamba University of Sri Lanka

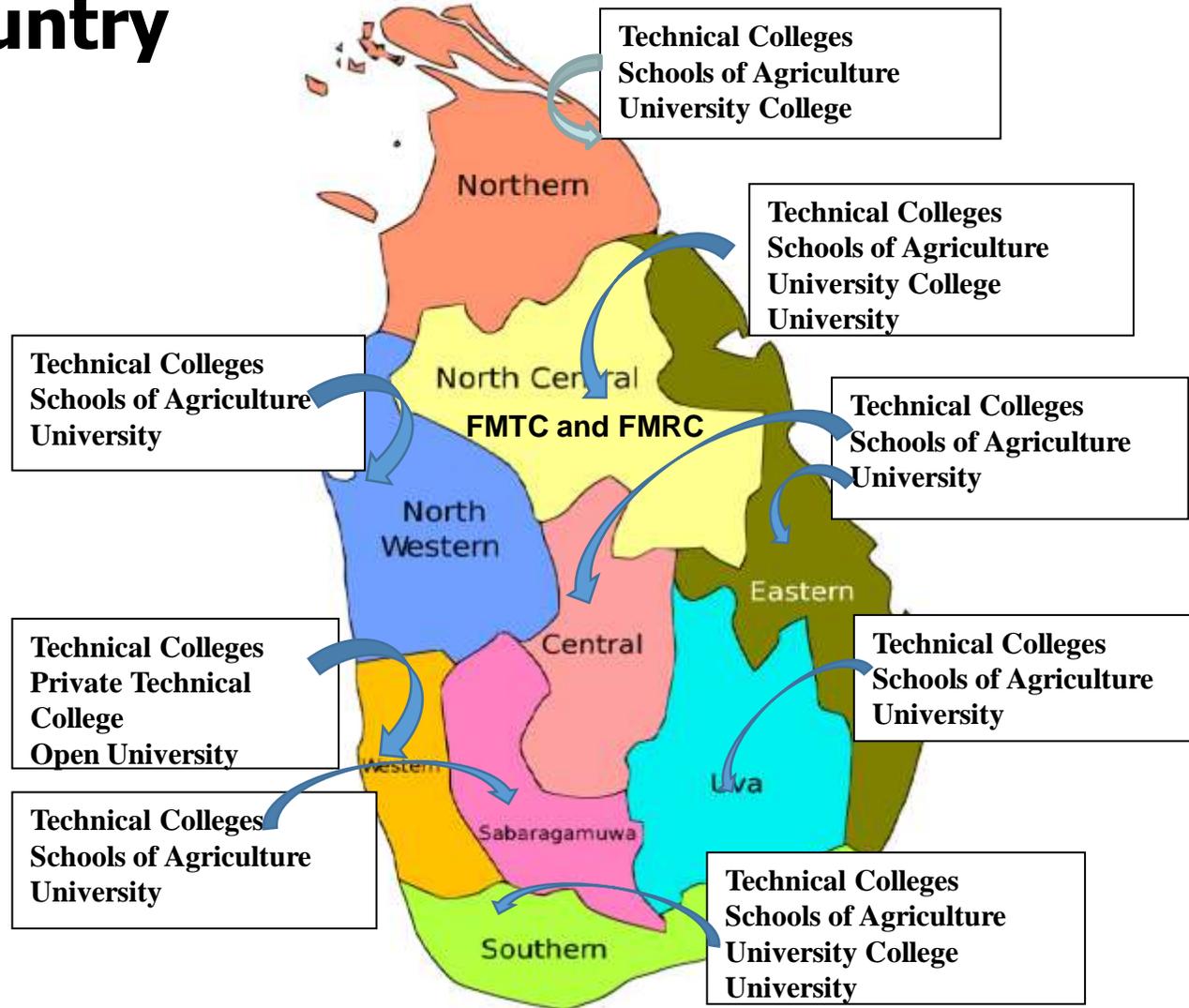
Farm Mechanization Training Centre (FMTC)

- Farm Mechanization Training Centre (FMTC) of the Department of Agriculture is the only national level training institute for providing farm machinery trainings.
- FMTC offers training on tractors, water pumps, plant protection equipment, paddy reapers, paddy threshers, paddy combine harvesters, manually operated and micro irrigation technology.
- FMTC provide training to farmers, officers in the agricultural sector, university students, students of the schools of agriculture, technical colleges and general schools and private personnel.

Farm Mechanization Research Centre (FMRC)

- Farm Mechanization Research Centre (FMRC) of the Department of Agriculture train farm machinery manufacturers on manufacturing technology on new designs
- At the introduction stage of a new technology in agriculture FMRC provide training on operation and maintenance on the new technology to trainers, operators and farmers.

Distribution of Institutions In the country



Private Sector

- Private sector involvement in human resource development activities is not significant. However they provide practical training opportunities in collaborative training programmes on specific areas.

Strategies, policies, and national programmes/initiatives

- Recently, the need of human resource development in the field of agricultural mechanization has been identified as a priority area and has given the equal opportunity same as with the other sector. Therefore gates are open to acquire knowledge and skills. However more systematic approach is needed by analyzing the problems in the present scenario.

Need Assessment

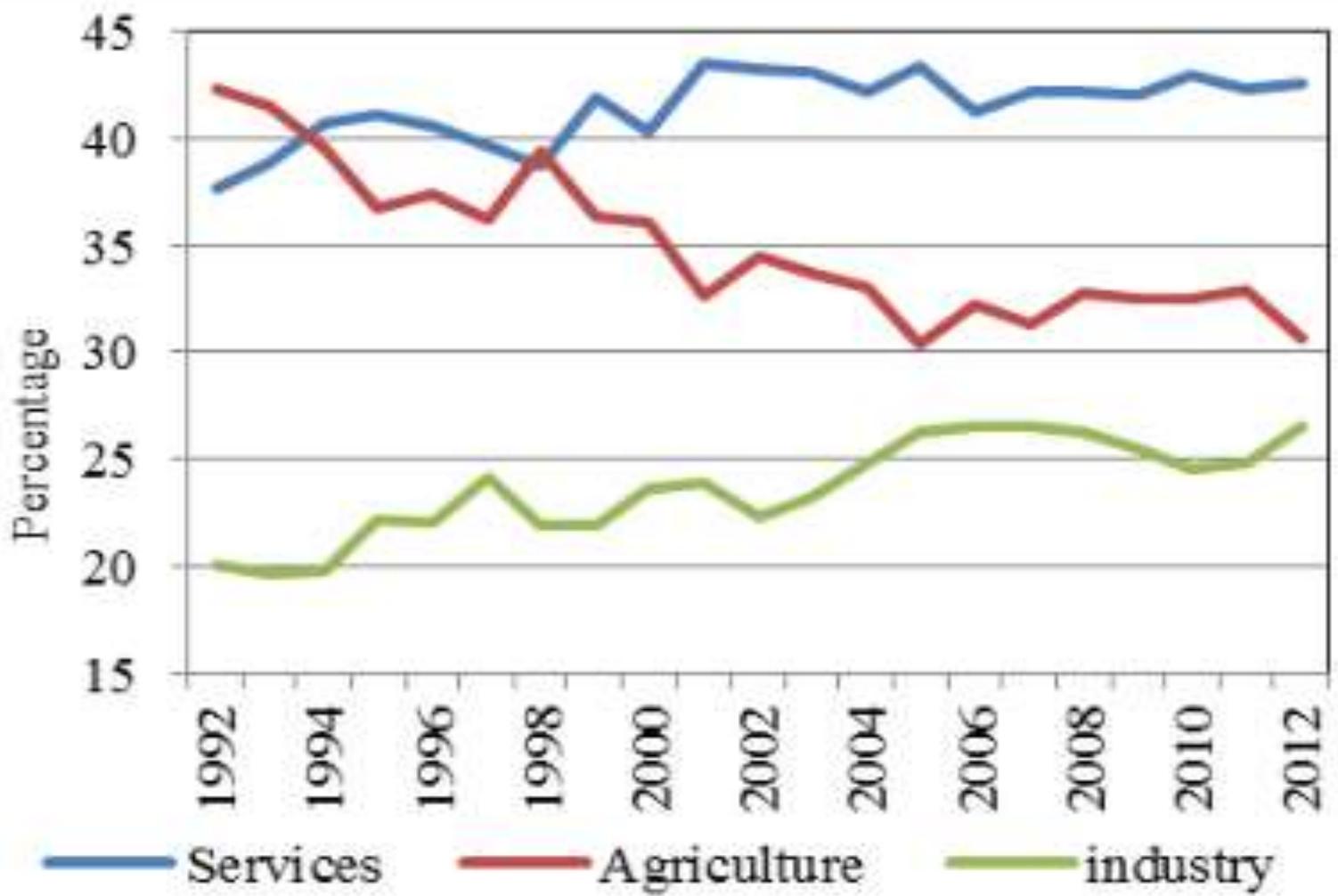
- Development in Farm Machinery sector and introduction of new technology is a continuing process.
- Human resource development in the sector has to be updated in parallel with the technology improvement
- A systematic need assessment has not been conducted same as with the other sectors
- The need assessment in parallel with the technology development is an urgent need.

Challenges and constraints

- Compared to the progress in development of other sectors this sector has only received marginal attention. Because of limited chances of finding employment in agriculture, student enrollment is limited
- Fragmented and scattered technical and vocational training delivery that does not meet the needs of the fast growing agricultural mechanization sector.
- Low capacity, inadequate and outdated training materials & equipment and also lack of skilled and qualified trainers in training institutions.
- Teachers and trainers lack practical, pedagogical and didactic skills, and lack technology knowledge and competences to develop curricula.
- Weak linkages between private and public efforts National Apprenticeship Training Authority (NAITA) Industrial and agricultural universities and research.
- Efforts in rehabilitating training Centres and programmes in agricultural mechanization tend to rebuild on old systems instead of promoting modernized systems.



Employed population by major industry group - 1992 - 2012



Solutions and suggestions (country and regional perspectives)

- Bringing private sector or NGO training providers and the public sector providers together in public-private partnerships that lead to more efficient use of existing public sector facilities
- Develop new and innovative models to incorporate capacity building programmes of farm machinery into existing NVQ systems or to generate new institutions for specialized only for Agricultural Engineering.
- Develop legislative frameworks ensuring and supporting National Vocational Qualification (NVQ) in operation and maintenance of farm machinery.

Solutions and suggestions (country and regional perspectives).....

- Develop appropriate monitoring evaluation systems to trace the impact of human resource development programmes with regards to employability of graduates
- Install incentives that encourage private sector participation in skills development activities
- Modernize existing facilities to cope with emerging innovations in training delivery.

Solutions and suggestions (country and regional perspectives)....

- Support linkages between public and private initiatives among research Institutes, universities and the training authorities.
- Support the role of farmer organizations in assessing training needs and compiling overviews of available training institutions as well as to lobby for improved or changed curricula and for demand-driven training courses in the country or region
- Adopt models that have proved to be effective in generating vocational and professional capacity in other regions

Solutions and suggestions (country and regional perspectives).....

- Integration of non-formal and formal training
- Education and capacity-building programmes for youth must be defined in a more participatory way and focus on best operational practices and knowledge sharing with other countries in the region
- Youth platforms (rural youth and young farmer's platforms and councils) must be created to determine training and capacity building needs

Thank You!