10th Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific

Gender Mainstreaming in Sustainable Agricultural Mechanization

28-30 November 2023; Shanghai, China

Empowering Women Engineers through Agricultural Mechanization

Engr. Janice P. Vargas
Division Chief
Standards Regulation and Enforcement Division
Bureau of Agricultural and Fisheries Engineering
Department of Agriculture
& Board of Trustee, Philippine Technological Council-Women Engineers Network
The International Conference of Women Engineers and Scientists (ICWES) is the flagship event of International Network of Women and Scientists (INWES), a global organization partner of UNESCO. It serves as a platform where female engineers from all over the world meet onsite and virtually to present and discuss a range of topics.

During the ICWES19 in Auckland, New Zealand held on September 3-6, 2023, it was announced that the Philippines, through the Philippine Technological Council-Women Engineers Network (PTC-WEN) will host the ICWES20 in August 2026.

CONGRATULATIONS!

Assistant Director Juana T. Tapel

for being voted as Board of Director of International Network of Women Engineers and Scientists (INWES) for 2024-2026

Your BAFE family is proud of you!
9.417 million hectares of agricultural land (LMB 2020)

9.758 Million Employed in Agriculture (PSA 2020)

Mechanization as priority thrust for Philippine Agri-Fisheries modernization

Mostly non-TESDA certified AF Machinery Operators and Technicians

11,394 Agricultural and Biosystems Engineers (2021)
AGRICULTURAL AND BIOSYSTEMS ENGINEERING (ABE) AS A DISCIPLINE

It is the application of engineering science and designs to the processes and systems involved in the sustainable production, post production and processing of safe food, feed, fiber, timber and other agricultural and biological materials and the efficient utilization, conservation and management of natural and renewable resources in order to enhance human health in harmony with the environment (Republic Act No. 10915)
<table>
<thead>
<tr>
<th>Cluster</th>
<th>Specialization</th>
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<tbody>
<tr>
<td>AB Machinery and Power Engineering</td>
<td>Agricultural and Biosystems (AB) Power and Machinery</td>
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<td>Renewable/Bioenergy</td>
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<td>Agricultural and Biosystems Automation and Instrumentation (Cut-across, applied to other specializations)</td>
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<tr>
<td>AB Land and Water Resources Engineering</td>
<td>Irrigation and Drainage Engineering</td>
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<td>Soil and Water Conservation Engineering</td>
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<td>Agrometeorology</td>
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<td>Forest Engineering</td>
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<td>Agricultural and Biological Resource and Conservation Management</td>
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<td>Aquacultural Engineering</td>
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<td></td>
<td>Agricultural and Bio-information System (Cut-across, applied to all other specializations)</td>
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<tr>
<td>AB Structures and Environment Engineering</td>
<td>Agricultural and Biosystems Buildings and Structures</td>
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<td>Farm Electrification</td>
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<td>AB Process Engineering</td>
<td>Agricultural and Bioprocess Engineering</td>
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<td>Food Engineering</td>
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</table>
11,394 Agricultural and Biosystems Engineers (ABE)

Source: Philippine Society of Agricultural and Biosystems Engineers Inc. (PSABE, Inc.)
ABE Services in Agricultural Mechanization

01. Preparation and/or evaluation of FS including the tech specs of AF machinery pools and service centers

02. Management or supervision of the operation and maintenance of AF machinery pools and service centers

03. Training and supervision of agri-machinery technicians and operators in AF machinery pools and service centers

04. Management or supervision of the sales and distribution outlets, and assembling and manufacturing establishments of AF machinery and equipment, including the preparation of design and tech specs

05. Research and development to improve the operation and management of AF machinery pools and service centers, and in AF machinery assembling and manufacturing establishments
WOMEN ABEs

Source: Philippine Society of Agricultural and Biosystems Engineers (PSABE)
Bureau of Agricultural and Fisheries Engineering (BAFE)
WOMEN ABEs

Source: Philippine Society of Agricultural and Biosystems Engineers (PSABE)
Bureau of Agricultural and Fisheries Engineering (BAFE)
**TVET and Higher Education Qualifications**

### Technical-Vocational Education and Training (TVET)

#### Existing Training Regulations (TR)
- Rice Machinery Operation NC II- Prior to AFMech Law
- Rubber Processing NC II- Prior to AFMech Law
- Agricultural Machinery Operation NC II (Non-Rice)
- Drying and Milling Processing Plant Servicing (NC III)
- Milking Operation NC II
- Farm Machinery Servicing (Tractor)- NC III
- Irrigation System Installation and Maintenance (NC II)
- Biogas Systems Installation and Maintenance (NC III)
- Hatchery Operation (NCII)

With TR, For TESDA Board Approval
- Solar Powered Irrigation System Operation and Maintenance NC II

Non-TR
- Diploma in Agricultural and Biosystems Engineering

### Higher Education

- BS Agricultural and Biosystems Engineering (CHED CMO No. 94, series of 2017)
- Master of Science in Agricultural Engineering/Agricultural and Biosystems Engineering
- Doctor of Philosophy in Agricultural Engineering/Agricultural and Biosystems Engineering
Section 13 (Republic Act 10601)
Manpower Complement. – All agricultural and fisheries machinery pools and service centers, including sales and distribution outlets and manufacturing establishments, either public or private, shall have the required manpower complement of licensed agricultural engineers and certified technicians and operators, in accordance with the guidelines and standards to be promulgated by the Board of Agricultural Engineering (BoAE) of the Professional Regulation Commission (PRC) and the DOLE to ensure efficient operation and maintenance and good management practices. The DA shall ensure compliance to this manpower complement requirement.
“Guidelines and Standards on the Manpower Complement of Registered and Licensed Agricultural Engineers in all Agricultural and Fisheries Machinery Pools and Service Centers including Sales and Distribution Outlets and Manufacturing Establishments either Public or Private”
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<table>
<thead>
<tr>
<th>Trainer NTTC</th>
<th>Assessor</th>
<th>Training Center</th>
<th>Assessment Center</th>
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<tr>
<td>RMO NCII</td>
<td>165</td>
<td>53</td>
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<td>20</td>
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<tr>
<td>AMO NCII</td>
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<td>Pres. Irrig. NCII</td>
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<td>Tractor NCIII</td>
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Gender Distribution of Enrollees in the TESDA Agriculture, Forestry and Fishery Sector

Enrolled Female 56%
Enrolled Male 44%

Source: TESDA 2022 TVET Annual Statistics Report
Gender Distribution of Graduates in the TESDA Agriculture, Forestry and Fishery Sector

Assessed Male 44%
Assessed Female 56%

Source: TESDA 2022 TVET Annual Statistics Report
Gender Distribution of Assessed Graduates in the TESDA Agriculture, Forestry and Fishery Sector

Assessed Male
44%

Assessed Female
56%

Source: TESDA 2022 TVET Annual Statistics Report
Gender Distribution of Certified Graduates in the TESDA Agriculture, Forestry and Fishery Sector

Certified Male 44%
Certified Female 56%

Source: TESDA 2022 TVET Annual Statistics Report
NATIONAL GUIDELINES ON TESTING AND EVALUATION OF AGRICULTURAL AND FISHERIES MACHINERY

DC NO. 02, SERIES OF 2023

CERTIFICATION OF TEST ENGINEERS
Gender Distribution of Certified Test Engineers (CTE) for Testing of Agricultural and Fishery Machinery

- **Senior CTE**
  - Female: 38%
  - Male: 62%

- **Junior CTE**
  - Female: 49%
  - Male: 51%

**Total No. of CTEs**: 595
**Total No. of Senior CTEs**: 473
**Total No. of Junior CTEs**: 122
PHILIPPINE SOCIETY OF AGRICULTURAL AND BIOSYSTEMS ENGINEERS (PSABE), INC.

2023-2024 OFFICERS & BOARD OF TRUSTEES

BOARD OF ADVISERS

APPOINTED OFFICERS

YOUNG ENGINEERS SECTION

PRE-PROFESSIONAL GROUP

In the Service of Filipino Agricultural and Biosystems Engineers
A sustainable agriculture for a sustainable future

Thank you