

Establishing the Agricultural and Fisheries Agricultural Engineering Resource Network in the Philippines

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Agricultural Mechanization in Asia and the Pacific

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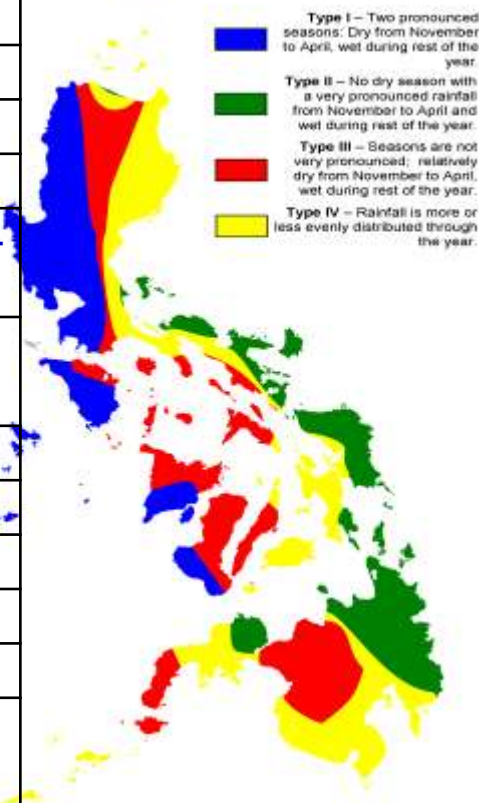
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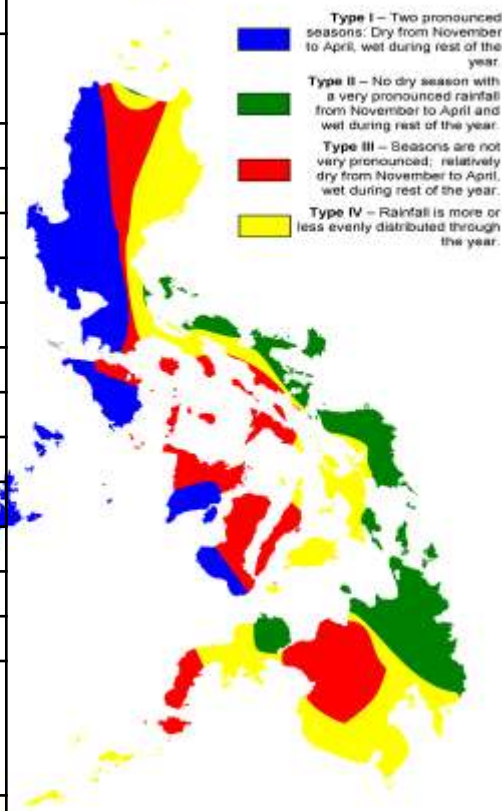
Country Background

Item	Description	Data
Geographical Location	Latitude : NL	4.7 ° N
	: SL	21.5 ° N
	Longitude: EL	117 ° E
	: WL	127 ° E
Meteorological conditions	Temperature	Min. 26.1 ° C Max. 28.4 ° C
	Annual Precipitation	2000 mm/year
Agricultural Conditions	Total Area	300,000,000 km ²
	Total Land Area	291,170,000 km ²
	Total Water Area	1,830,000 km ²
	Agricultural Land	9,671,000 km ²
	Arable Lands	4,936,000 km ²
	Permanent Cropland	4,225,000 km ²
	Agricultural Farms	4,820,000 farms (2002)



Country Background

Item	Description	Data
Agricultural Conditions	Staple foods	RICE: Production: 18.439 MT Farm gate Price: P17.33/kg
		CORN: Production: 7.377 MT Farm gate Price: P11.62/kg
	Other staples	Root Crops and Plantain
	Other major crops	Sugarcane, Coconut
	Top Export crops	Coconut Oil, Banana, Mango
Population and Employment	Total Population	100.00 million
	Agricultural Sector	86% of total population
	Total Employment	38.12 million
	Agricultural Labor	11.84 million
	Wage Rates	P 200-255 for corn & rice
Social Conditions	Official Language	English & Filipino
	National Language	Filipino
	Religion	Christians / Muslims
Economy (2013)	GNI at current prices	P 13,851 Billion
	GDP at current prices	P 11,584 Billion (10% in agriculture with 7.18% growth)
	GVA at current prices (agriculture and fishing)	P1,293 Billion



Objective of the paper

- **The paper aims to:**
 - **present an overview of the agricultural mechanization databases or information in the Philippines, the role of the UPLB in the AFMech Law, the agricultural and fisheries engineering resource network (AFMechERN)**
 - **discuss the issues and constraints in the establishment of the AFMechERN, and**
 - **provide recommendation to address the identified issues and constraints.**



Available Agricultural Mechanization Databases/Information in the Philippines

**Agencies with available
agricultural mechanization database**



2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

BAS (Bureau of Agricultural Statistics) is **the principal government agency for the efficient collection, processing, analysis and dissemination of official statistics on agriculture and fisheries** as inputs to policy and decision towards a sustainable agricultural development.

Available information at DA-BAS

- situationer of agricultural crops,
- livestock and poultry,
- fisheries and monthly regional agricultural situation report; agricultural price
- and trade, statistical databases, publications and technical papers

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

PSA- (Philippine Statistics Authority)

Philippine Statistical Act of 2013 *An Act Reorganizing the Philippine Statistical System, Repealing for the Purpose Executive Order Number One Hundred Twenty-One, Entitled "Reorganizing and Strengthening the Philippine Statistical System and for Other Purposes"* - **creates the Philippine Statistics Authority (PSA)** that shall comprise the PSA Board and offices on sectoral statistics, censuses and technical coordination, civil registration and central support and field statistical services.

The PSA shall be constituted from among the existing personnel of the major statistical agencies engaged in primary data collection and compilation of secondary data, i.e., the **National Statistics Office, the Technical Staff of the National Statistical Coordination Board, the Bureau of Agricultural Statistics, and the Bureau of Labor and Employment Statistics.**

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

PSA- (Philippine Statistics Authority)

The data produced by the **PSA shall be the official and controlling statistics of the government and. It shall serve as the central statistical authority of the Philippine government** on primary data collection and administer civil registration functions in the country as provided for in Act No. 3753, otherwise known as the Civil Registry Law.

The development of the **PSA website launched in 2014 (<http://www.psa.gov.ph>)** integrates the different websites of the four primary institutions dealing with different statistical data.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-BAFS (Bureau of Agriculture and Fisheries Standards) – in-charge in **development of standards specifications and test procedures of agricultural and fishery machinery and equipment** in coordination with concerned agencies

- ❑ important information that will be made available by BAFS shall be the standards specifications and test procedures of agricultural and fishery machinery and equipment.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-BAFE (Bureau of Agricultural and Fisheries Engineering) **is created as a regular bureau of the DA as part of Strengthening the DA Agricultural and Fishery Engineering Groups.** Among the important roles of BAFE and the information to be maintained

- ❑ certification registry of equipment and machinery as well as a registry of those denied certification (Art. 5. Sec. 18 & Rule 18.2 of the IRR of R.A. 10601),
- ❑ that the certification registry of BAFE shall include machines that have passed the minimum standards under PAES,
- ❑ and other standards set pursuant to Section 21 of the AFMech Law (Rule 18.2.1 of the IRR of R.A. 10601).

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-BAR (Bureau of Agricultural Research) - **lead and coordinate the national agriculture and fisheries R&D** in the country. Some of the important information included in the DA-BAR website:

- R&D thrusts and programs,
- research projects being funded, and
- guidelines and procedures in the approval of research projects

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-BFAR (Bureau of Fisheries and Aquatic Resources) is the government agency responsible for the **development, improvement, management, and conservation of the country's fisheries and aquatic resources**. Some of the important services offered are on **export permits and related clearances, licenses and other permits, and industry information** (e.g. list of importers and accredited aquaculture farms). Its website includes significant information on:

- its current programs,
- laws and regulations related to aquatic and fisheries,
- statistics** on fishery resources, and service offered.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-PCAF (Philippine Council for Agriculture and Fisheries, formerly) - “aims to **ensure participatory broad-based decision making in agriculture and fisheries by providing quality services to its nationwide network of private sector-led consultative councils toward the formulation of sound policy and program recommendations for sustained countryside agricultural and fishery development**” Among the many information available at PCAF are:

- the directory of its agriculture and fishery councils by region,
- programs and projects per region, and the sectoral committees which include the agriculture and fishery mechanization sector.
- important sectoral issues and concerns

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-PHiMech is a major player in RDE on ABE activities for various crops or commodities **with focus on the generation, extension and commercialization of appropriate and problem-oriented agriculture and fishery production, postharvest and mechanization technologies**. The following agricultural mechanization information can be found in PHiMech's website:

- ❑ *Mechanization and postharvest technologies* for various crops/commodities which include among others rice, corn, high-value crops, cashew, coffee, cassava, mango, and onion.
- ❑ *Other information* accredited manufactures, training courses offered, rice mechanization technologies, and agricultural infrastructure system.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DA-PhilRice is the country's **lead government agency in rice science and development towards on improving rice production and increasing land productivity.** Its website includes important agricultural mechanization related information such as:

- ❑ available R&D programs; training programs; products such as seeds available in their seed bank, rice mechanization technologies that are developed and are being promoted in the farm;
- ❑ products or available technologies such as new knowledge, diagnostic tools, bio-control (e.g. bio fertilizers), rice-based products (e.g. rice wine), among others.
- ❑ rice mechanization technologies for land preparation, crop establishment, harvesting, postharvest, and biomass use.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

DOST-PCAARRD (Philippine Council for Agriculture and Aquatic and Natural Resources Research and Development)- **formulates policies, plans and programs for science and technology-based research and development in the different sectors under its concern; coordinates, evaluates, and monitors the national research and development (R&D) efforts in the agriculture, aquatic and natural resources sectors; and also allocates government and external funds for R&D and generates resources to support its program. The following databases are being maintained by the council**

- Farmers Information and Technology Service information System (FITS IS)
- Short Message Service (SMS)
- Research and Development Management Information Systems (RDMIS)
- Human Resources Information System (HRIS)

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

The Agricultural Machinery Manufacturers and Distributors Association Foundation, Inc. (AMMDA) is one of the recognized **private agricultural assemblers, manufacturers and distributors in the country** which are involved “in the manufacture, assembly, distribution and servicing of farm machinery

Some of the available information in the association are :

- available local and imported agricultural machines, equipment and accessories available in the local market,
- sales of agricultural machines, and
- location and information and products of its members.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

UPLB-AMDP - involved in RD&E of agricultural machines. It has developed, designed, tested, and promoted affordable farm machinery for farmers, conducted technology & information dissemination through exhibits, pilot testing, demonstration of machines, publication of extension materials (bulletin, refereed and non-refereed journals, leaflets, etc.), and conducted training for different target beneficiaries.

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

UPLB-AMDP - The information being maintained by AMDP related to mechanization include:

- on-going RDE activities
- Machines developed and being extended by the program
- Abstracts of articles published in the Philippine Journal of Agricultural and Biosystems Engineering (PJABE) - refereed journal published by AMDP-IAE-CEAT, UPLB
- Abstracts of articles published in the Philippine Agricultural Mechanization Journal (PAMJ) - non-refereed journal published by AMDP-IAE-CEAT, UPLB
- Manpower complement of the program involved in agricultural mechanization
- Agricultural mechanization needs and analysis database for selected crops and regions of the country

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

UPLB-AMTEC - to **promote a self-reliant agricultural machinery industry for the benefit of the Filipino farmers.** It envisions the establishment of a **national center that will test and evaluate the performance of agricultural and fisheries machinery.** Its current mission is to establish standards of performance of machinery, conduct laboratory and field tests of machinery, evaluate the results using rationalized criteria, and disseminate the information to concerned agencies, farmers, and fisher-folks. Testing of machines is however, voluntary and only manufacturers participating in government bidding for agricultural machinery are required to submit their machines for testing. Further, AMTEC is not mandated to issue certificates of performance for machines tested (AMTEC 2010).

2.0 AVAILABLE AM DATABASES/INFORMATION IN PH

UPLB-AMTEC

Among the important agricultural mechanization related information available at AMTEC are:

- Philippine Agricultural Engineering Standards Volumes I to VIII for various agricultural machines,
- catalogue of selected machinery,
- test results upon request of concerned party, and
- agricultural machinery manufacturers' catalogue.

Role of UPLB-AMDP and UPLB-AMTEC in the AFMech Law of 2013 (R.A. 10601)

Strategic Policy Goals of AFMech Law

Goal 1- Provide Access to Farmers and Fishermen to appropriate and affordable Agri-Fishery Machinery and Equipment.

- Establishment of Agri-Fisheries Machineries and Equipment Service Centers in SAFDZs and ARCs (Sec.8)
- Custom plowing, harrowing, etc.; b. Repair and trouble-shooting services; c. Training, after sales service & warranty
- Contiguous Farming and Infrastructure Support for economies of scale of machineries (Sec. 34 and 36)
- Promotion of Local Manufacturing and Assembling to lower down the cost of Agricultural and Fishery Machinery and Equipment (Sec. 15 and 16)



Role of UPLB-AMDP and UPLB-AMTEC in the AFMech Law of 2013 (R.A. 10601)

Strategic Policy Goals of AFMech Law

Goal 2- Provide Protection/ Support to Agri-Fishery Machinery Buyers, Owners, Manufacturers and Distributors

- provision of After –Sales Service and Warranty by suppliers to their clients/buyers (Sec. 17)
- mandatory testing and evaluation by AMTEC on all agri-fishery machinery sold in the market in accordance with the DA guidelines (Sec. 18)
- Standards Development and Enforcement (Sec. 21)
- Registration of Agri-Fishery Machinery Owners according to DA guidelines and procedures (Sec. 19)
- Registration, Classification and Accreditation of Agri-Fishery Manufacturers, Distributors , Dealers and Importers (Sec. 20 and 22)
- Imposition of Penalties and Sanctions for Prohibited Acts i.e. selling of machinery which are substandard or without warranty or after sales service. Sec. 30 and 31



Role of UPLB-AMDP and UPLB-AMTEC in the AFMech Law of 2013 (R.A. 10601)

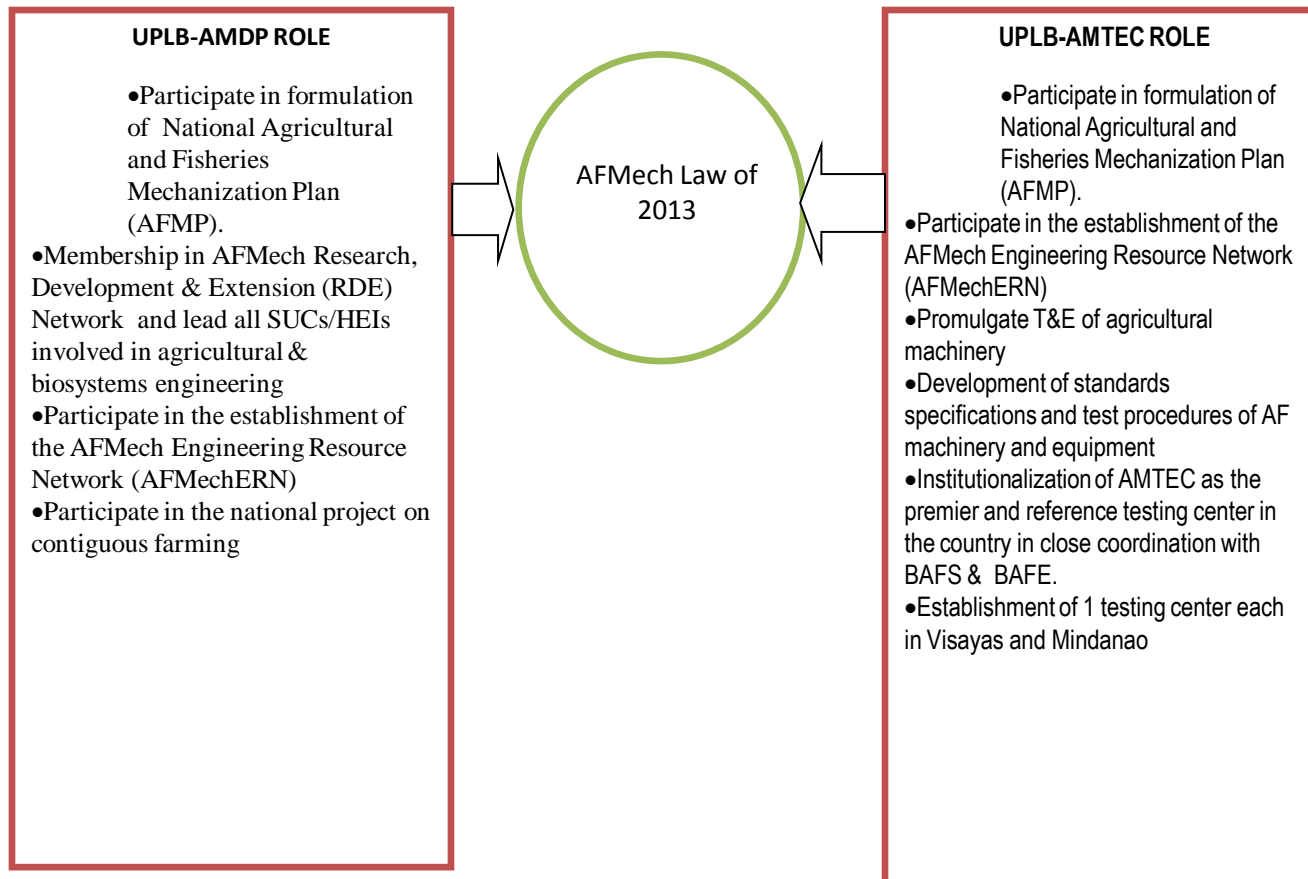
Strategic Policy Goals of AFMech Law

Goal 3- Strengthen Support Services and Institutions for the development of Philippine Agri-Fisheries Mechanization

- Formulation and Implementation of National and Local AFMech Program (Sec. 5,6 and 33)
- Formulation and Implementation of Unified Agri-Fisheries Mechanization RDE Agenda (Sec. 7) and Organization of the AFMechRDE Network
- Strengthen the Agri-Fisheries Mechanization and Engineering Resource Network (Sec. 10)
- Institutional Strengthening (NAFC, PHilMech, BAFS, UPLB-AMDP, UPLB-AMTEC, DA Ag. Engage Groups
- Manpower Complement requirement of ag'l engrs. & agri-fishery machinery technicians and operators in Agri-Fishery Machinery Service Centers in accordance with BOAE and DOLE guidelines (Sec. 13)
- Upgrading of agri-fisheries mechanization and engineering laboratory facilities and faculty training program of concerned State Universities and Colleges (SUCs) through research grant and funding support (Sec. 11 and 38) (Source: Rico, 2013)
- Funding Provisions/Allocation for the AFMech Law Implementation (Sec. 38)



Role of UPLB-AMDP and UPLB-AMTEC in the AFMech Law of 2013 (R.A. 10601)



Roles of UPLB-AMDP and UPLB-AMTEC in RA 10601



Agricultural And Fisheries Mechanization Database in the Philippines

Agricultural and Fisheries Engineering Resource Network (AFMechERN) –RA 10601

*“The existing agricultural machinery information and database of the **Philippine Center for Postharvest Development and Mechanization (PHilMech)** shall be strengthened into an agri-fishery mechanization and engineering resource network. It will also be used or **tapped as a facility for the online registration of agri-fisheries machinery and equipment, and monitoring of agri-fisheries mechanization and infrastructure projects.** This network shall be linked to other existing information and database **networks of the DA**, the Agricultural Machinery Information Network of the Department of Science and Technology (**DOST**), the Agricultural Mechanization Development Program (**AMDP**) of the **UPLB** and of other government agencies.”*



Agricultural And Fisheries Mechanization Database in the Philippines

(AFMechERN) –RA 10601
Information and Databases

- ❑ **Inventory** of agricultural and fisheries machinery and postharvest facilities of the country;
- ❑ Agricultural and fisheries mechanization technologies, **data and information** generated by DA, DOST, other government RDE Institutions, LGUs, UPLB-AMDP, UPLB-AMTEC and other SUCs through their **research and development programs, projects and activities**;
- ❑ **Government investments** on agri-fisheries mechanization from various sources of funds such as grants, loans and local or international donors among others;



Agricultural And Fisheries Mechanization Database in the Philippines

(AFMechERN) –RA 10601
Information and Databases

- ❑ *Agro-industrial **processing technologies**;*
- ❑ *Human Resource Information System to include **Registry of Agricultural Engineers and Resource Persons and Experts** on Agri-fishery Mechanization;*
- ❑ *Agri-fishery Machinery and Equipment **Manufacturers, Assemblers and Distributors**; and*
- ❑ ***Academic institutions** offering Agricultural Engineering or Agricultural and Biosystems Engineering and Agri-fishery Mechanization programs.*



Agricultural And Fisheries Mechanization Database in the Philippines

(AFMechERN) –RA 10601

Organization, Operation and Management

- ✓ DA-Bureau of Agricultural and Fisheries Engineering (BAFE)
- ✓ Philippine Rice Research Institute (PhilRice)
- ✓ Bureau of Agricultural and Fisheries Standards (BAFS)
- ✓ Bureau of Fisheries and Aquatic Resources (BFAR)
- ✓ Philippine Council for Agriculture and Fisheries (PCAF)
- ✓ **UPLB-Agricultural Mechanization Development Program (AMDP)**
- ✓ DOST-Philippine Council for Agriculture, Aquatic and Natural Resources, Research and Development (PCAARRD)
- ✓ Philippine Society of Agricultural Engineers (PSAE)
- ✓ Recognized national organization of agricultural assemblers, manufacturer and distributors (e.g.AMMDA)



Agricultural And Fisheries Mechanization Database in the Philippines

(AFMechERN) –RA 10601

Organization, Operation and Management

Formulate a capability enhancement plan for the upgrading of the IT manpower complement and the existing equipment

Enhance the web-based information system of the network;

Make the data accessible to all government and non-government partner agencies and organizations like the DA, DOST, DTI, UPLB-AMDP, SUCs

Government agencies, recognized national organization of agricultural assemblers, manufacturers and distributors and other private organizations

Ensure the data security of the website by establishing standards and protocols for the implementation of the online registration, data access and data sharing.



ISSUES, CONSTRAINTS AND RECOMMENDATIONS

Issues Challenges/Problems	Recommendation
Organization & Linking	Clear Guidelines Clear organizational structure Open- access Increase government support
Operationalization <ul style="list-style-type: none"> - human resource complement - infrastructure (facilities & equipment - website & data base, design & structure 	Additional provision of human resource Additional funding Harmonized and unified guidelines on website and data base



ISSUES, CONSTRAINTS AND RECOMMENDATIONS

Issues Challenges/Problems	Recommendation
Upgrading & Consolidation	Additional Human Resources Strong linkages among key players Commitment and allow open – access



Thank you very much!

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