



LAND BANK OF THE PHILIPPINES

Carbon Finance Support Facility

**Methane Gas Recovery and Combustion with Renewable
Energy Generation from Animal Wastes Anaerobic
Digestion System**

LEILA C. MARTIN
First Vice President
Lending Program Management Group

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Georgetown University Hotel & Conference Center
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OUTLINE

- Country Profile
- LANDBANK Profile
- Livestock Sector in the Philippines
- Carbon Finance Support Facility
- Program of Activity (PoA) for Animal Waste-to-Energy projects
- Barriers Encountered / Actions Taken
- Conclusion

COUNTRY PROFILE : THE PHILIPPINES



- Republic of the Philippines
- Location : Southeast Asia
- Capital : Manila
- Land Area : 115,830 sq. miles
- Population : 102 million
(As of Dec. 2015)
- GDP: US\$ 284.8 B
(As of Dec. 2015)

Photo credits:

<http://kids.nationalgeographic.com/explore/countries/philippines/#philippines-island.jpg>

COMPANY PROFILE : LANDBANK



OWNERSHIP	100% National Government Principal depository of the Philippine government
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Industry Ranking (as of 31 December 2015)	4th largest bank in the Philippines Asset Size: US\$ 26.63 B
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Reach and Network (As of 29 February 2016)	361 branches/bank units 47 Provincial and Head-office based Lending Units
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International Standard Certifications	ISO 14001:2004 Environmental Management System (EMS)
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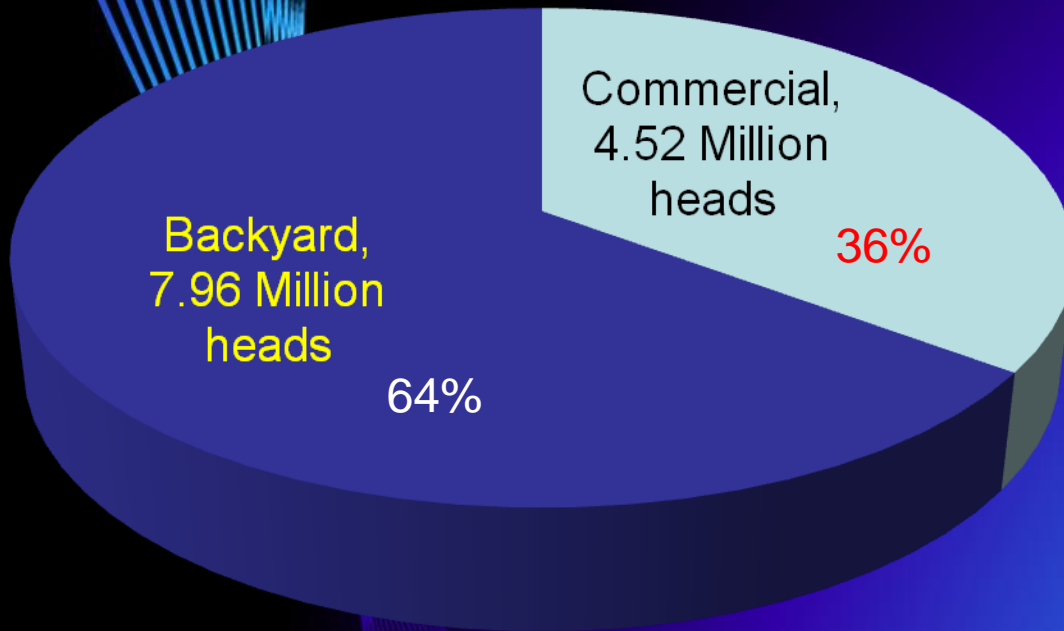
	ISO 9001:2000 Quality Management System (QMS)
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Awards and Recognitions	2014 Bank of the Year Award KARLSRUHE Sustainable Finance Award 2015
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PHILIPPINES LIVESTOCK OVERVIEW

Philippine Swine Inventory by Farm Type as of January 2016

(Source:www.bas.gov.ph)



📌 Pig farms have taken the most cost effective route for the management of swine wastes, by constructing lagoons and settling ponds

LANDBANK's Carbon Finance Support Facility



PIG FARM OWNERS - Methane recovery and combustion projects from pig manure management systems (PoA 5979)
UNFCCC-registered in May 2012



LANDFILL/DUMPSITE OPERATORS/LGUs- Landfill gas recovery and combustion projects (PoA 6707)
UNFCCC-registered in July 2012

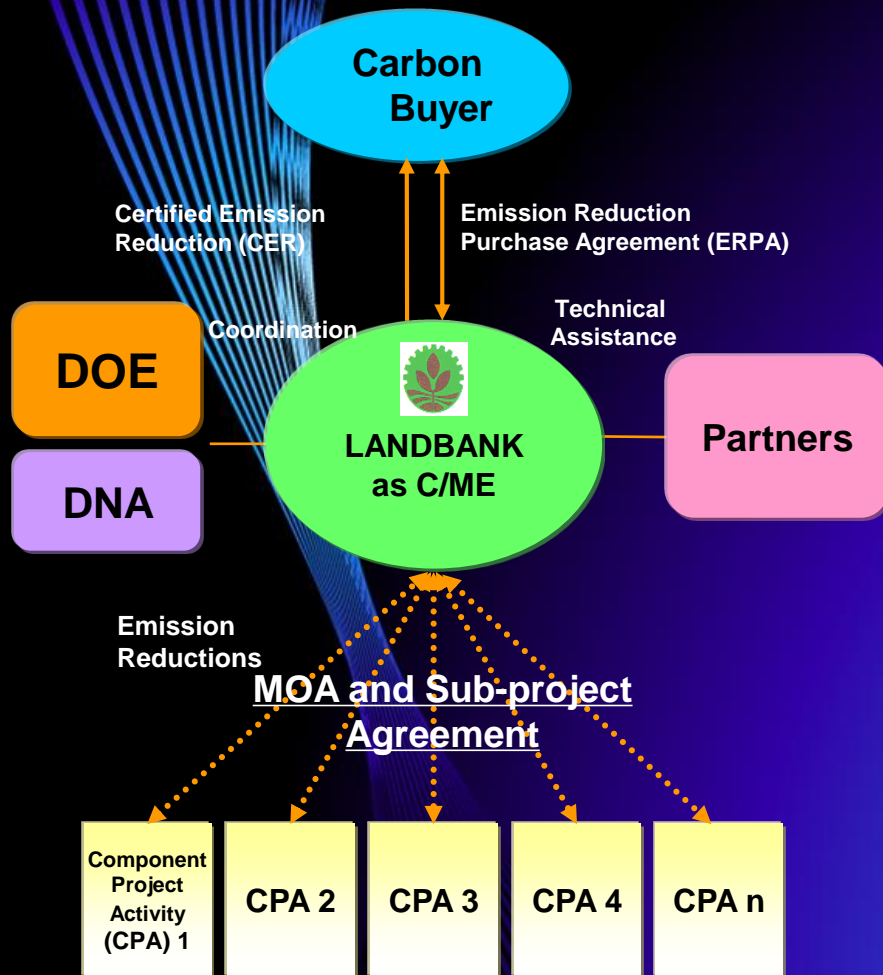


MINI-HYDRO power plant developers/owners (PoA 8674)
UNFCCC-registered in December 2012

OBJECTIVE

To promote climate change-mitigating activities to clients by providing financing and CDM services

LANDBANK as a Coordinating and Managing Entity (C/ME) for the PoA



- Conduct due diligence activities
 - Facilitate DNA endorsement
 - Provide assistance in CDM documentation, verification and monitoring
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- ➔ CER as additional source of loan repayment / security
 - ➔ Management fee

PoA for Animal Waste-to-Energy Project (UNFCCC Registered POA 5979)



PoA Title:

Methane Recovery and Combustion with Renewable Energy Generation from Anaerobic Animal Manure Management Systems under Land Bank of the Philippines' (LBP) Carbon Finance Support Facility

Registration Date:

10 May 2012

Carbon Buyer:

World Bank (as Trustee of Carbon Partnership Facility)

UNFCCC-REGISTERED CPAs



LAGOON-TYPE



MARCELA FARMS, INC.

Lourdes, Cortes, Bohol

- Registered on May 10, 2012
- 4,100 sow level
- Estimated CERs per year : 23,105
- Investment cost : \$337,000
- Engine Capacity : 560 KW

BIOTECH FARMS, INC.

Banga, South Cotabato

- Registered on September 8, 2013
- 7,100 sow level
- Estimated CERs per year : 59,388
- Investment cost : \$2,000,000
- Engine Capacity : 800 KW



CONCRETE-TYPE

POTENTIAL OF THE PROGRAM

PIPELINE PROJECTS:

95 Piggery farms (124,653 sow level)

POTENTIAL CERs:

278,287 tCO₂e/year

Signed Emission Reduction Purchase Agreement with the World Bank

GMI's assistance to the PoA



- Technical due diligence
- Conduct of specialized lectures/
hands-on training
- Provision of equipment like flares and
flowmeters



BARRIERS ENCOUNTERED

BARRIERS	ACTIONS TAKEN
<p>1. <u>TECHNOLOGICAL BARRIER</u></p> <ul style="list-style-type: none">• No government-accredited technology provider for biodigester / animal waste-to-energy project	<p>Promoted the program thru regional and national forums and linked project proponents with technology providers with successful projects</p>
<p>2. <u>ACCESS TO FINANCE</u></p> <ul style="list-style-type: none">• Based on ERG study in 2010, Philippine banks would shy away from financing biodigester as they were unfamiliar with the technology investment and associated risks	<p>In 2010, LANDBANK paved the way for carbon financing in the country wherein carbon credits were considered as an additional security to the loan.</p>

BARRIERS ENCOUNTERED

BARRIERS

ACTIONS TAKEN

3. COMMON PRACTICE

- | | |
|---|--|
| <ul style="list-style-type: none">Local technicians and end-users are unfamiliar with the application and maintenance of the technology | Raised awareness on the potential of the projects in order to encourage local technicians and end-users to participate in the program thru road-shows and trainings |
| <ul style="list-style-type: none">policy regulation does not require capturing the methane | Collaborated with local/national agencies to demonstrate the co-benefits of the biodigester, power generation, carbon credits, and good environmental practice in the piggery sector |

BARRIERS ENCOUNTERED

BARRIERS

ACTIONS TAKEN

4. CDM PROCESS / COST

- Stringent CDM documentation requirement
- Cost implication of CDM transaction and processes in terms of CDM validation, registration, monitoring and verification

- LANDBANK built internal capacity to assist the clients in CDM Design Document preparation
- Adopted a programmatic approach to aggregate small-scale projects in the PoA thus reducing CDM costs and other risks

CONCLUSION

- LANDBANK's experience in implementing the entire CDM process made the Bank ready and capable to accept more projects in the PoA
- Collaboration with World Bank, GMI, and national/local agencies helped in overcoming barriers and enhanced the implementation of the POAs.
- Combining the incentives of CDM and Renewable Energy Act will help reduce emissions from the agriculture sector as well as municipal waste and energy sectors to support the INDC of the Philippines.

Thank
you



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