



PHILIPPINES



NDC PRIVATE SECTOR ENGAGEMENT PROJECT

Engaging private sector in NDC implementation – Assessment of private sector investment potential in the agriculture sector

September 2020

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UNDP's work on climate change spans more than 140 countries and USD \$3.7 billion in investments in climate change adaptation and mitigation measures since 2008. With the goal to foster ambitious progress towards resilient, zero-carbon development, UNDP has also supported the implementation of the Paris Agreement on Climate Change by working with countries on achieving their climate commitments or Nationally Determined Contributions (NDCs).

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The Guidance Note should be cited as: United Nations Development Programme (2020). Engaging private sector in NDC implementation - Assessment of private sector investment potential in the agriculture sector - Philippines, UNDP, New York

Design and layout: Jason T Quirk

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ACRONYMS

AFMA	Agriculture and Fisheries Modernization Act	NCCAP	National Climate Change Action Plan
ATI	Agricultural Training Institute	NDC	Nationally Determined Contributions
AWD	Alternate wetting and drying	NFSCC	National Framework Strategy on Climate Change
BAU	Business-as-usual	OECD	Organisation for Economic Co-operation and Development
BSP	Banko Sentral ng Pilipinas (Central Bank of the Philippines)	PCARRD	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development
BOT	Build-Operate-and-Transfer	PDP	Philippine Development Plan
CARL	Comprehensive Agrarian Reform Law	PHP	Philippine peso
CCC	Climate Change Commission	PPP	Public-private partnership
CDM	Clean Development Mechanism	PSA	Philippine Statistics Authority
CH₄	Methane	PVC	Polyvinyl chloride
DA	Department of Agriculture	R&D	Research and development
DA-BSWM	Department of Agriculture's Bureau of Soils and Water Management	SME	Small and medium enterprises
DBP	Development Bank of the Philippines	UNFCCC	United Nations Framework Convention on Climate Change
DOST	Department of Science and Technology	US\$	United States dollar
EAP	East Asia and Pacific	VAT	Value-added tax
GDP	Gross Domestic Product		
GHG	Greenhouse gas		
INDC	Intended Nationally Determined Contributions		
LBP	Land Bank of the Philippines		
LGU	Local government unit		
MNC	Multinational corporations		
MtCO₂e	Million metric ton of carbon dioxide equivalent		
N₂O	Nitrous oxide		
NAMA	Nationally Appropriate Mitigation Action		

1. INTRODUCTION

Transforming Nationally Determined Contributions (NDCs) into tangible actions that lead to long-term zero-carbon and climate-resilient development requires financing. Access to finance is fundamental to realize the objectives set by the NDCs. However, countries continue to face challenges in securing the resources needed to achieve their NDC targets.

To support the transition to low-emission, climate-resilient development, private sector resources must be mobilized to fill the gap caused by a lack of public investment. The adoption of the Paris Agreement sent a strong policy signal for private sector investment in climate finance. The development of the NDCs has also offered investment opportunities for the private sector. In 2015, private sector investments reached US\$299 billion, before dropping to \$242 billion in 2016 due to the combination of falling technology costs and lower capacity additions in some countries.¹ Project developers are by far the largest provider of climate finance, investing \$125 billion in 2016.

Broader-scale investments are needed to achieve the objectives set in the NDCs and the Paris Agreement. For example, it is estimated that \$23 trillion in public and private investments is needed. Given the magnitude of the need, most of that will have to come from the private sector.² Ensuring the transition to low-carbon agriculture, forestry, water and waste sectors, among others, will require additional capital. Global estimates of the cost of climate change adaptation may rise to between \$280 billion and \$500 billion per year by 2050; costs may be higher under higher emissions scenarios.³

To bridge this gap, it is important to identify the private sector stakeholders engaged in markets and industries and understand which financial instruments and services are available to technology providers and users and providers of capital.

Developing countries and emerging economies offer private sector players significant potential to participate in climate finance and climate actions. These players include multinational corporations (MNC) and financial institutions; small and medium enterprises (SME) may also be mobilized in these countries. However, these players face obstacles, such as financial barriers, technical limitations and regulatory barriers, to investing and engaging in climate actions.

This report estimates the private sector investment potential for delivering sectoral targets for the agriculture sector in the Philippines. Section 2 assesses greenhouse gas (GHG) emissions and climate targets in the agriculture sector and presents the importance of the agriculture sector for emission reductions in the Philippines and identifies targets. Section 3 focuses on the enabling environment, providing an overview of the main policies relevant to private sector investment and the agriculture sector. It also assesses macro-economic risks, the business environment and the regulatory environment relevant to foreign direct investment.

Section 4 assesses investments in the country's agriculture sector. It also provides an overview of the main challenges to such investment. Section 5 analyses private sector investment potential in the agriculture sector in the Philippines by subsector, using targets identified based on the Philippines' policy documents. Section 6 presents the reporting framework to align business opportunities with the Philippines' NDC targets in the agriculture sector and with the SDGs.

1 Climate Policy Initiative. October 2017. *Global Landscape of Climate Finance 2017*.

2 NDC Partnership. Unlocking private finance to help governments achieve their climate goals. <http://ndcpartnership.org/unlocking-private-finance-helps-governments-achieve-their-climate-goals>

3 Sustainable Development Goals. 2016. UNEP report: Cost of adapting to climate change could hit \$500B per year by 2050. <https://www.un.org/sustainabledevelopment/blog/2016/05/unep-report-cost-of-adapting-to-climate-change-could-hit-500b-per-year-by-2050/>

2. GREENHOUSE GAS EMISSIONS AND CLIMATE TARGETS

The Philippines is a relatively low GHG emitter, accounting for only 0.3 percent of global GHG emissions. However, the country is highly vulnerable to the impacts of climate change due to its location on the tropical rim of the Pacific Ocean and its archipelagic grouping of water-bound islands. These impacts include sea level rise, increased frequency of extreme weather events, rising temperatures and extreme rainfall. The Philippines was ranked as the second-most affected country by extreme weather events in 2018. It is also one of the countries most affected by recurring catastrophes over a 20-year period, ranking as the fourth-most affected country globally from 1999 to 2018.⁴

In response to this challenge, the Philippines has taken steps to ensure its people's resilience to the effects of climate change and contribute to mitigating global warming as it continues to develop economically.

This section presents the Philippines' GHG emission profile, its agriculture sector-specific GHG emissions, and the country's nationally determined contribution (NDC) and agriculture sector-related targets.

2.1 PHILIPPINES GHG EMISSION PROFILE

GHG emissions in the Philippines represent only 0.3 percent of total global GHG emissions. However, as the country's economy develops and its population continues to grow rapidly, its GHG emissions will also likely increase at a higher rate in coming decades. Data from 2010 show that the Philippines emitted 114.5 million metric tons of carbon dioxide equivalent (MtCO₂e), including the amount of carbon sequestered by land use change and forestry. The energy sector was the largest contributor to the country's GHG emissions, followed by the agriculture, transport, waste and industrial processes sectors. Table 1 shows the sectoral GHG emissions and removals in the Philippines.

Table 1: GHG emissions and removals in the Philippines' sectors (2010)

SECTOR	GHG EMISSIONS/REMOVALS (MtCO ₂ e)
ENERGY	54.4
AGRICULTURE	47.8
TRANSPORT	23.6
WASTE	14.6
INDUSTRIAL PROCESSES	11.1
FORESTRY	-37.0
TOTAL	114.5

Source: Cost-Benefit Analysis of Mitigation Options: 2018 Integrated Update Report

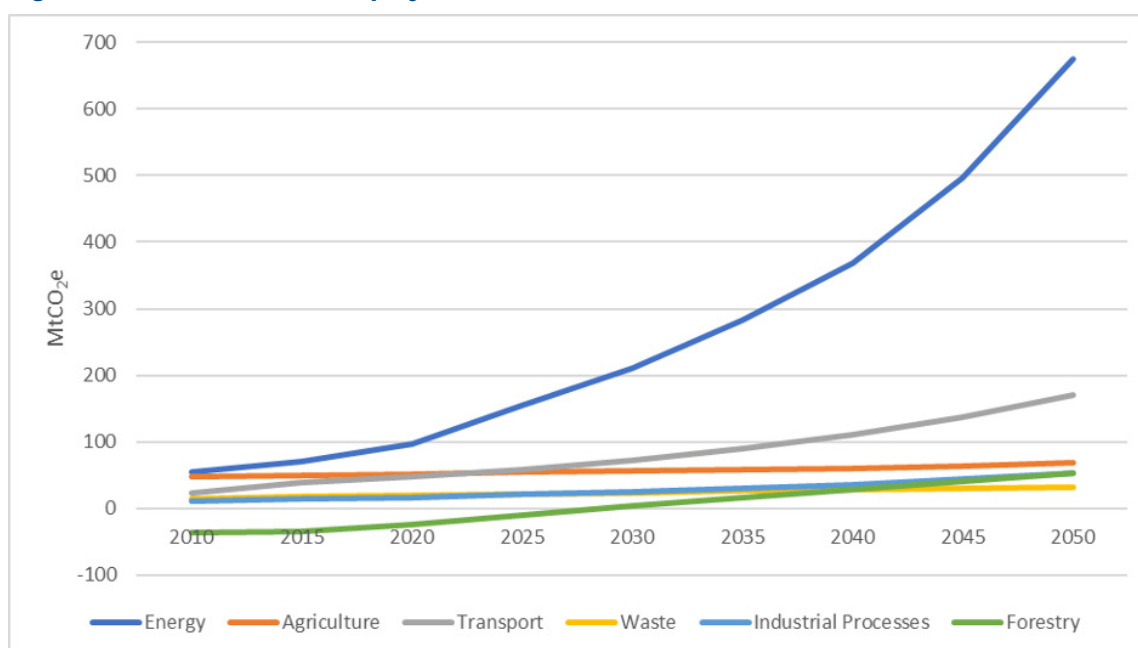
The Philippines' gross domestic product (GDP) has been growing annually, on average, by 6.5 percent over the last five years and is expected to strengthen further in the medium term to about 7 to 8 percent. At the same time, its population is expected to increase from around 100 million in 2014 to around 140 million in 2050. This increase in economic activity will increase GHG emissions. Projections reveal that under a business-as-usual (BAU) scenario, GHG emissions will grow by over 800 percent by 2050. Table 2 and Figure 1 show the projected BAU GHG emissions and removals in the coming decades for all sectors in the Philippines.

4 David Eckstein, Vera Künzel, Laura Schäfer, Maik Winges. *Global Climate Risk Index 2020*.

Table 2: Projected BAU GHG emissions (MtCO₂e) (2010-2050)

SECTOR	2010	2015	2020	2025	2030	2035	2040	2045	2050
Energy	54.4	69.8	96.8	154.4	210.0	282.3	369.2	495.7	675.0
Agriculture	47.8	49.6	51.3	53.8	56.3	58.3	60.3	64.2	68.1
Transport	23.6	38.7	47.3	58.6	72.6	89.6	110.3	136.3	169.9
Waste	14.6	17.0	19.4	21.7	23.9	26.1	28.3	30.4	32.7
Industrial processes	11.1	13.8	16.6	20.5	24.4	30.2	36.0	44.7	53.4
Forestry	-37.0	-34.8	-24.4	-10.3	3.8	16.0	28.3	40.5	52.8
TOTAL	114.5	154.0	207.1	298.6	391.0	502.6	632.3	811.9	1,051.9

Source: Cost-Benefit Analysis of Mitigation Options: 2018 Integrated Update Report

Figure 1: BAU GHG emission projections

Source: Cost-Benefit Analysis of Mitigation Options: 2018 Integrated Update Report

The projections show that GHG emissions are expected to grow across all sectors, with the energy and transport sectors likely to increase sharply. The projections also show that by 2030, the forestry sector will no longer serve as a carbon sink.

2.2 THE PHILIPPINES' AGRICULTURE SECTOR AND ITS GHG EMISSIONS

Agriculture is a major contributor to the Philippines' economy. Agriculture sector output in 2019 totalled crop production (50.6 percent), livestock farming (33.2 percent) and fisheries (16.2 percent). The agriculture sector contributed 8.1 percent to GDP in 2018. Ten 10 million people work in the sector, representing 24.3 percent of national employment. Agricultural output overall grew by 0.59 percent in 2018. Livestock posted production gains of 1.90 percent during that year, while crops and fisheries posted declines in output of 0.99 and 0.98 percent, respectively.⁵

Major crops, such as rice, sugarcane, coconut and corn, dominate crop production. Agricultural crop production systems include lowland irrigated farming, rainfed farming and upland farming. Irrigated lands produce primarily rice and sugarcane, while rainfed areas produce primarily coconut and corn.

Hogs and chicken are the leading livestock produced in terms of volume. Other livestock raised include cattle, carabao, goat and duck.

⁵ Philippine Statistics Authority. 2019. *Selected Statistics on Agriculture 2019*.

The agricultural value chain in the Philippines is characterized by small farms managed by single families engaged in subsistence production. The government has developed asset reform policies based on the premise that unequal distribution of the country's natural resources and productive assets is a leading cause of poverty. The Comprehensive Agrarian Reform Law (CARL) was enacted to improve equity and productivity in the agriculture sector by establishing owner-cultivatorship of economic-sized farms among landless farmers, farmworkers and tenant farmers. In 2012, the number of farm holdings in the Philippines was reported at 5.6 million, covering 7.3 million hectares. This reflects a 63 percent increase in the number of farms compared to 1980, while farm size decreased by 25 percent over the same period. Average farm size decreased from 2.8 hectares in 1980 to 1.3 in 2012.⁶ The increase in the number of farms and decrease in size could be attributed to the government's implementation of the CARL, land division among family members from one generation to another, and continued agricultural land conversion due to urban development. Additionally, more than half of the country's farms, estimated at 3.2 million, were reported to be less than 1 hectare in size. About 1.8 million (32 percent) were estimated at between 1.0 hectare and 2.9 hectares, while 621,000 (11 percent) were reported to be at least 3.0 hectares.⁷

Larger scale private sector stakeholders are involved further down the value chain, from farm-to-market activities such as processing and other commercial agriculture operations.

The agriculture sector is a key driver of the country's economy, with a large percentage of the population relying heavily on agriculture for food security. The adverse impact of climate change on the agriculture sector increases the vulnerability of the entire population, particularly of the sector's stakeholders. For example, in 2012, the agriculture sector declined with decreased production of major crops, such as rice and sugarcane, due to floods that severely affected rice farms in Davao, changes in harvest schedules in Western Visayas and Cagayan Valley, and frequent rains negatively affecting crop yield in Bukidnon, Davao del Sur and Lanao del Sur.

GHG emissions in the sector totalled 49.2 MtCO₂e in 2010. Methane (CH₄) emissions from anaerobic conditions in continuously flooded rice fields during rice cultivation represent the largest source of GHG emissions in the agriculture sector. These emissions totalled 19.2 MtCO₂e in 2010, or 39.1 percent of the sector's total emissions. The second-largest source of GHG emissions come from N₂O emissions from the use of synthetic fertilizers in agricultural soils, amounting to 10.4 MtCO₂e (21.2 percent).

The livestock subsector also represents a significant source of GHG emissions, generating methane emissions from enteric fermentation (mainly from cattle and carabaos) and both methane and N₂O emissions from the decomposition of livestock manure. Table 3 shows the details of GHG emissions from the agriculture sector.

Table 3: GHG emissions from the agriculture sector by subcategory

SUBCATEGORIES	GHG EMISSIONS (MtCO ₂ e)	PERCENT OF TOTAL
CH ₄ from rice cultivation	19.2	39.1
N ₂ O from agricultural soils	10.4	21.2
Livestock: CH ₄ from enteric fermentation	8.6	17.4
Livestock: CH ₄ from manure management	5.0	10.1
Livestock: N ₂ O from manure management	1.2	2.4
Non-CO ₂ from burning of agricultural residues	3.6	7.4
CO ₂ from liming soils	0.4	0.9
Silvopasture burning	0.4	0.8
Grassland burning	0.3	0.6
TOTAL	49.2	100.0

Source: Cost-Benefit Analysis of Mitigation Options Study: Agriculture Chapter

⁶ Philippine Statistics Authority. 2017. *Census of Agriculture and Fisheries: Agriculture 2012*.

⁷ Ibid.

By 2050, GHG emissions from the agriculture sector are projected to increase by 30 percent over 2010 figures, to about 68 MtCO₂e. Rice cultivation is projected to remain the largest source of GHG emissions, even with land area planted assumed to be constant in the baseline. Table 4 shows projected GHG baseline emissions from the agriculture sector.

Table 4: Projected BAU GHG emissions (MtCO₂e) in the agriculture sector (2010-2050)

SUBCATEGORIES	2010	2020	2030	2040	2050
CH ₄ from rice cultivation	19.24	19.24	19.24	19.24	19.24
N ₂ O from agricultural soils	10.44	11.97	13.50	15.03	16.56
Livestock: CH ₄ from enteric fermentation	8.58	9.21	9.84	10.47	11.10
Livestock: CH ₄ from manure management	4.99	5.72	7.34	8.37	11.58
Livestock: N ₂ O from manure management	1.19	1.43	1.56	1.76	2.15
Non-CO ₂ from burning of agricultural residues	3.63	4.25	4.86	5.48	6.10
CO ₂ from liming soils	0.44	0.44	0.44	0.44	0.44
Silvopasture burning	0.40	0.40	0.40	0.40	0.40
Grassland burning	0.31	0.31	0.31	0.31	0.31
TOTAL	49.2	53.0	57.5	61.5	67.9

Source: Cost-Benefit Analysis of Mitigation Options Study: Agriculture Chapter

2.3 THE PHILIPPINES' NDC AND AGRICULTURE SECTOR TARGETS

Leading up to the COP21 in Paris, the participating nations were invited to submit their Intended Nationally Determined Contributions (INDC). The Philippines Government submitted its INDC in October 2015, signed the Paris Agreement in April 2016 and deposited its instrument of ratification in March 2017. Upon accession to the Paris Agreement, the country also declared that the INDC would be updated and the first NDC would be submitted to the United Nations Framework Convention on Climate Change (UNFCCC) before 2020.

The Philippines' INDC notes that the country intends to reduce GHG emissions by about 70 percent relative to its BAU scenario by 2030. This is conditional on financial resources, technology development and transfer, and capacity building that will be made available to the Philippines. National circumstances, the country's climate vulnerabilities and its implementation capacity were among the critical determining factors in the identification and selection of mitigation options. The assumptions used to calculate the 2015-2030 BAU projections were based on historical GDP figures from 2010 to 2014, with annual average GDP growth of 6.5 percent, and average annual population growth of 1.85 percent.

Emission reductions will come from the energy, transport, waste, forestry and industry sectors. However, the INDC does not include information on how the mitigation target of 70 percent will be achieved in each.

The government's general approach to meeting its committed mitigation targets in the INDC is to achieve climate resilience and improve adaptive capacity as prerequisites for low-emission development. The government prioritizes adaptation and adopts it as the anchor strategy for carrying out the mitigation actions.

Adaptation measures identified for the agriculture sector include enhancing climate and disaster resilience. The INDC does not include contributions from agriculture sector mitigation efforts, so no specific mitigation actions are identified for the sector. It does note, however, that mitigation actions in the agriculture sector were included in the cost-benefit analysis study conducted by the United States Agency for International Development for the Climate Change Commission (CCC) of the Philippines.⁸ This indicates that inclusion of the agriculture sector is being considered during development of the NDC to be submitted by 2020.

⁸ Building Low Emission Alternatives to Develop Economic Resilience and Sustainability Project (B-LEADERS), 2018. *Philippines Mitigation Cost-Benefit Analysis: 2018 Integrated Update Report*.

The Philippines acknowledges that public financing will prioritize adaptation to reduce vulnerability and risks to the community, while providing a policy environment that will enable private sector participation to optimize mitigation opportunities and reduce business risks to achieve climate-smart development.

The INDC was developed based on a 2015 mitigation cost-benefit analysis. The study provides quantitative evidence for identifying and prioritizing socially beneficial climate change mitigation options for the country. It serves as the basis for development of the NDC to be submitted by 2020. It was updated in 2018, including methodological updates for all sectors except agriculture, which has not been updated yet. For the purpose of identifying mitigation options to meet the NDC for this report, the updated 2018 cost-benefit analysis report is referred to.

Mitigation options identified for the agriculture sector are as follows:

- Increased use of organic fertilizer, resulting in decreased use of synthetic fertilizer;
- Crop diversification to include leguminous crops, resulting in decreased synthetic fertilizer use;
- Alternate wetting and drying (AWD) in rice production, which allows rice fields to periodically dry out, reducing CH₄ emissions; and,
- Use of biodigesters in livestock production, which capture and destroy CH₄ and N₂O emissions from the decomposition of animal manure and produce renewable energy that replaces traditional fuels.

The agriculture sector targets were derived from the assumptions used to model projected costs and emission reduction benefits in the study. Table 5 shows the targets for the mitigation options identified.

Table 5: Mitigation options and targets for the agriculture sector

SUBSTRATEGIES	ACTIONS AND REQUIREMENTS
IMPROVED MANAGEMENT OF ORGANIC AND INORGANIC FERTILIZERS	Reduced use of synthetic fertilizers in rice production of 5%, 10%, and 20% in 2020, 2030 and 2050, respectively, compared to the 2010 level of fertilizer use.
	Increased amount of rice crop residue retained in the soil and a resulting reduction in rice crop residue burning. In 2010, 90% of rice crop residues were estimated to have been burned. Under this scenario, 85% will be burned in 2020, 75% in 2030 and 70% in 2050.
	Increased the amount of chicken manure composted, from 0% in 2010, 5% in 2020, 10% in 2030 and 20% in 2050.
AWD IN RICE PRODUCTION	Conversion of approximately 10,000 hectares per year to AWD to prevent conditions conducive to methane emissions from rice cultivation.
CROP DIVERSIFICATION	Reduced use of synthetic fertilizers in rice production of 5%, 10%, and 20% in 2020, 2030 and 2050, respectively, compared to the 2010 level of fertilizer use.
	Leguminous crop area increased by 5% in 2020, 10% in 2030 and 20% in 2050 compared to 2010.
USE OF BIODIGESTERS	Increased amount of swine waste handled in biodigesters, from 2% in 2010, to 7% in 2020, to 12% in 2030 and 2050.

The Department of Agriculture (DA) emphasized that the overall priority for the agriculture sector is to enhance its resilience and reduce/remove emissions whenever possible. The mitigation options in Table 5 are cross-cutting actions, offering both adaptation and mitigation benefits. As such, these options could be prioritized for the agriculture sector, as the DA notes. In addition, the INDC identifies enhancing the climate and disaster resilience of key sectors, which include the agriculture sector, as a priority adaptation measures. Specific adaptation measures were not defined in the INDC. However, the National Climate Change Action Plan (NCCAP) 2011-2028 focuses on enhancing the climate change resilience of the agriculture sector production and distribution systems and enhancing the resilience of agricultural communities in the midst of climate change. Specific activities to achieve this include: building site-specific knowledge on agriculture's vulnerabilities; establishing gender-responsive climate-smart policies, plans and budgets; building the adaptive capacity of farming communities; and strengthening the resilience of men and women in agricultural communities through the study, design and development of appropriate climate risk transfer and social protection mechanisms. Although the INDC does not define specific adaptation measures, the country's adaptation priorities could be taken into account as further opportunities for private sector investment.

The DA is also in the process of identifying potential adaptation and mitigation measures in the agriculture sector that could be part of the Philippines' NDC. In September 2020, it transmitted a list, to the CCC, of 12 adaptation measures for the sector; 11 of them have mitigation co-benefits. The mitigation options prioritized earlier (Table 5) are included, along with additional adaptation measures that offer mitigation co-benefits, such as the use of microbial inoculants that fix atmospheric nitrogen and improve plants' ability to absorb minerals efficiently, use of herbicide-tolerant crops, use of genetically engineered pest-tolerant crops, use of solar-powered pumps, use of lactobacillus as feed supplement, conversion of chicken manure to organic fertilizer, installation of biomass-based power plants, and bamboo planting. With support from its development partners, the DA is studying the potential impacts of these additional measures.

The agriculture sector is important to the Philippines' economy. It is a significant contributor to the country's GDP, provides employment in most rural areas and is key to achieving food security. However, it is one of the sectors most vulnerable to climate change and its impacts, including extreme weather events such as the strong typhoons that have hit the Philippines in recent years, severe dry spells caused by the El Niño phenomenon, and flooding due to increased amounts of precipitation. The Government of the Philippines has emphasized the importance of prioritizing the implementation of adaptation measures to address the challenges of climate change, particularly in the agriculture sector.

The government has also highlighted that public financing will prioritize adaptation and that private sector participation will be encouraged to optimize mitigation opportunities. Cross-cutting measures were identified that could be included as mitigation actions in the country's NDC, which is being developed. As such, these mitigation actions represent opportunities for private sector investment in the agriculture sector.

3. ENABLING ENVIRONMENT

The existence of an enabling environment, including related legislation, laws, programmes and plans, is crucial to achieve the sustainable development targets in any country. The Philippines has developed a wide range of policies related to climate change and the agriculture sector that emphasize the need to involve the private sector.

This section highlights existing key policies that define the private sector's role in the Philippines' agriculture sector, followed by an overview of the country's business environment, including the macro-economic environment and ease of doing business.

3.1 POLICY ENVIRONMENT RELATED TO CLIMATE CHANGE

The Government of the Philippines recognizes the importance of integrating climate change considerations into its policies, strategies and plans, as reflected in the creation in 1991 of the Inter-Agency Committee on Climate Change to formulate domestic policy responses and strategies to address climate change challenges. This paved the way for the Philippine Congress to enact special laws and implement national measures on environmental preservation, including taking into account the effects of climate change on the different sectors. Since the late 2000s, climate policymaking and climate diplomacy have intensified. Policies enacted include the Biofuels Act of 2006, aimed at pursuing energy self-sufficiency through the production and use of biofuels, and the Renewable Energy Act of 2008, which promotes the development, use and commercialization of renewable energy resources. The Presidential Task Force on Climate Change was created in 2007 to address and mitigate the impact of climate change in the Philippines, focusing particularly on adaptation, mitigation and technological solutions.

The following subsections present the Philippines' policies, strategies and plans incorporating climate change in its development planning framework to ensure that the country is resilient to the adverse effects of climate change and mitigate its impacts, while pursuing sustainable development. The Philippines' INDC, which represents the country's commitment to the international community to address the impacts of climate change, was discussed in detail in Section 2.3.

3.1.1 CLIMATE CHANGE ACT OF 2009

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Mainstreams climate change into government policy formulation, establishing the climate change framework strategy and programme	Identifies the agriculture sector as a key climate-sensitive sector for development investments	Encourages the participation of private sector and businesses to prevent and reduce the adverse impacts of climate change and, at the same time, maximize the benefits of climate change

The Republic Act No. 9729, also known as the Climate Change Act, was adopted in 2009. It mainstreams climate change in government policy formulations, establishing the climate change framework strategy and programme. It adopts the principle of protecting the climate system for the benefit of humankind on the basis of climate justice or common but differentiated responsibilities and the Precautionary Principle to guide decision-making in climate risk management. It also adopts the strategic goals of the Hyogo Framework for Action to build national and local resilience to climate-change related disasters. It aims to strengthen, integrate, consolidate and institutionalize government initiatives to coordinate the implementation of plans and programmes to address climate change in the context of sustainable development.

The Act created the CCC, chaired by the President, as the principal climate policymaking body of the government. It was amended in 2012 to establish the People's Survival Fund to provide long-term financing for climate change adaptation projects.

3.1.2 NATIONAL FRAMEWORK STRATEGY ON CLIMATE CHANGE, 2010-2022

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To build communities' adaptive capacity, increase the resilience of natural ecosystems to climate change and optimize mitigation opportunities towards sustainable development	Recognizes the value of forming partnerships with the private sector in climate change initiatives	Promotes and supports policy and incentive mechanisms to facilitate private sector participation in addressing adaptation and mitigation objectives

The National Framework Strategy on Climate Change (NFSCC) was developed and adopted in 2010 under the mandate of the Climate Change Act of 2009. The NFSCC aims to build a roadmap that will serve as the basis for a national climate change programme. It also seeks to establish an agenda through which the Philippines could pursue a dynamic process of determining actions through the National Climate Change Action Plan (NCCAP). The pillars of the Framework align with national adaptation and mitigation priorities, emphasizing adaptation as the anchor strategy. Whenever applicable, mitigation actions will also be pursued as a function of adaptation.

The Framework recognizes the value of forming multi-stakeholder participation and partnerships in climate change initiatives, including the private sector. As part of its guiding principles, it will promote and support policy and incentive mechanisms to facilitate private sector participation in addressing adaptation and mitigation objectives.

3.1.3 NATIONAL CLIMATE CHANGE ACTION PLAN, 2011-2028

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To build the adaptive capacities of women and men in their communities, increase the resilience of vulnerable sectors and natural ecosystems to climate change, and optimize mitigation opportunities towards gender-responsive and rights-based sustainable development	Aims to provide a policy environment to optimize private sector participation in mitigation opportunities	Implementation of green growth priorities focus on partnership with the private sector Consideration of public financing mechanisms to eliminate market barriers and share risks with the private sector

Following adoption of the NFSCC and its guiding principles, the NCCAP outlines the country's 2011-2028 adaptation and mitigation agenda. The NCCAP addresses the challenges of climate change comprehensively, providing key actions that enhance the adaptive capacity and resilience of communities and natural ecosystems to climate change, adopts the total economic valuation of natural resources while ensuring biodiversity conservation, and recognizes the competitive advantage of placing value on the direct use, indirect use, option to use and non-use of environment and natural resources as a short- to long-term sustainable development goal.

The NCCAP sets the directional plan for the government for implementing short-, medium- and long-term actions in seven thematic areas: food security; water sufficiency; ecological and environmental stability; human security; climate-smart industries and services; sustainable energy; and knowledge and capacity development.

The Plan emphasizes that public financing will prioritize adaptation to reduce vulnerability and risks to communities, particularly the marginalized poor. At the same time, it will provide a policy environment that will encourage private sector participation to optimize mitigation opportunities towards sustainable development.

3.2 POLICY ENVIRONMENT IN THE AGRICULTURE SECTOR

The Philippines has developed several policies that guide development of the country's agriculture sector. The following subsections discuss policies relevant to the agriculture sector and their implications for the private sector.

3.2.1 AGRICULTURE AND FISHERIES MODERNIZATION ACT OF 1997

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Directs the DA, together with other appropriate agencies, to take into account climate change, weather disturbances, and annual productivity cycles in forecasting and formulating appropriate agricultural and fisheries programmes	Facilitates investment to stimulate the sector's development	Private sector involvement is key to achieving agriculture's objectives

The Republic Act No. 8435, or the Agriculture and Fisheries Modernization Act of 1997 (AFMA), is the primary policy on development of the agriculture and fisheries sector. It is considered a landmark law and the basis for the major programmes and policies to develop the sector. The AFMA focuses on improving and modernizing production and marketing services, infrastructure services and facilities in rural areas, such as irrigation and farm equipment, human development programmes, research development and extension, and trade policies.

To achieve the AFMA's goals, the DA is developing the Agriculture and Fisheries Modernization Plan (AFMP) for the period 2018-2023. It constitutes one aspect of the long-term effort and focuses on food security; poverty alleviation and social equity; income enhancement and profitability; global competitiveness; and sustainability. It also incorporates climate change, disaster risk reduction and climate resilience considerations for the agriculture sector. The AFMP aligns with and provides details on the agriculture chapters of both the NCCAP and Philippine Development Plan 2017-2022.

3.2.2 PHILIPPINE DEVELOPMENT PLAN 2017-2022

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Lays a stronger foundation for inclusive growth, a high-trust society and a globally-competitive economy toward realizing the vision by 2040	Identifies opportunities in agriculture linked to the private sector (industries and service sectors) for more efficient value-adding processes and more effective commercialization	Promotes farm mechanization, technology adoption, organized farm management and climate-resilient, small-scale irrigation systems as entry points for private sector involvement

The Philippine Development Plan 2017-2022 follows from the Administration's 0+10 Point Socioeconomic Agenda. It is the first medium-term plan anchored on AmBisyon Natin 2040 (Vision 2040). The Plan aims to lay a stronger foundation for inclusive growth, a high-trust society and a globally-competitive economy toward realizing the vision by 2040.

The Plan's goal is to reduce poverty incidence from 21.6 percent in 2015 to 14.0 percent by 2022, which is equivalent to lifting about 6 million people out of poverty. Specifically, it will target poverty in agriculture and in lagging regions with high poverty incidence and inequality. It also seeks to enhance the resilience of individuals and communities by reducing their exposure to risks, mitigating the impact of risks, and accelerating recovery when risks materialize. Moreover, it will encourage innovation as the country sets its sights on becoming a knowledge economy to accelerate future growth.

Specific to the agriculture sector, the main target is to substantially increase gross value added in the sector (including forestry) from the baseline value of 0.1 percent to between 2.5 and 3.5 percent in 2017 and maintain that growth over the next five years.

Opportunities in agriculture under the Plan will be expanded by fostering linkages with the industry and service sectors for more efficient value-adding processes and more effective commercialization. This will require increasing agricultural productivity by, first, developing an integrated agricultural map to identify the comparative advantage of particular areas. The next step will involve strengthening collaboration between and among the science, technology and extension systems in agriculture. Greater farm mechanization and technology adoption will be promoted, organized farm management will be encouraged to achieve economies of scale and climate-resilient small-scale irrigation systems will be constructed or retrofitted, as necessary.

3.3 POLICY ENVIRONMENT FOR THE PRIVATE SECTOR

Policies supporting private sector development in the agriculture sector are limited in the Philippines. Overall, the country recognizes the essential role of the private sector in sustainable development and has enacted a law that allows for public-private partnerships (PPPs). The Sustainability Reporting Guidelines for Publicly Listed Companies of the Securities and Exchange Commission (SEC) and the Sustainable Finance Framework of the Banko Sentral ng Pilipinas (BSP), the country's central bank, could further encourage private sector investment toward NDC actions.

3.3.1 PHILIPPINE BUILD-OPERATE-AND-TRANSFER LAW

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides a framework for PPP infrastructure development	Allows local government units (LGUs) to enter into contractual arrangements with the private sector to implement infrastructure projects	Incentives provided to encourage private sector participation

The Republic Act No. 6957 as amended by Republic Act No. 7718, or the Philippines' Build-Operate-and-Transfer (BOT) Law, authorizes the private sector to finance, build, operate and maintain infrastructure projects and for other purposes. The State's declared policy recognizes the indispensable role of the private sector as the main engine for national growth and development. The State's role is to provide the most appropriate incentives to mobilize private resources to finance the construction, operation and maintenance of infrastructure and development projects normally financed and undertaken by the government.

The BOT law provided more a focused framework for PPP infrastructure development. Although the BOT law cannot be directly leveraged to implement mitigation actions identified in the agriculture sector, it provides opportunities for private sector investment in agriculture sector infrastructure development in general. Projects under consideration for PPP implementation include building a multipurpose reservoir dam, improving existing postharvest processing and trading centres, and creating a cold chain system.

3.3.2 SUSTAINABILITY REPORTING GUIDELINES FOR PUBLICLY LISTED COMPANIES

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Promotes sustainability reporting for PLCs	Assesses and manages non-financial performance across economic, environmental and social aspects of the organization	Provides a mechanism for private sector to communicate their contribution to sustainability goals, including climate-related issues.

The Sustainability Reporting Guidelines for Publicly-Listed Companies is a Memorandum Circular of the SEC issued in 2019. It aims to promote sustainability reporting that is relevant and adds value for publicly-listed companies (PLCs). It is also intended to help PLCs identify, evaluate and manage non-financial performance across economic, environment and social aspects of their organization. Last, it seeks to enable PLCs to measure and monitor their contributions toward achieving universal targets of sustainability, such as the United Nations Sustainable Development Goals, as well as national policies and programmes, such as AmBisyon Natin 2040.

The guidelines build on globally recognized sustainability reporting standards and frameworks. Specific to climate-related issues, they incorporate recommendations from the Task Force on Climate-related Financial Disclosure focused on climate-related risks, opportunities and financial impacts, and scenario analysis. Compliance with the SEC's sustainability reporting requirements should help PLCs optimize their business operations and improve competitiveness and long-term success. They provide a mechanism that allow PLCs to communicate their economic, environmental and social contributions to stakeholders, including potential investors. The guidelines provide classifications and materiality assessments to determine what constitutes a sustainable investment, providing a more favourable investment environment for PLCs.

3.3.3 SUSTAINABLE FINANCE FRAMEWORK

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Embed sustainability principles in the banking sector strategies and policies	Banks would have strategic objectives and a greater appetite for low-carbon and sustainable financing	Banks could provide more green products and services to private sector stakeholders

The BSP's Sustainable Finance Framework is the policy framework that sets out the BSP's expectations for integrating sustainability principles, including those that address environmental and social risks in corporate governance and risk management frameworks, strategic objectives and bank operations. The BSP issued the framework recently, recognizing that climate change and other environmental and social risks could pose concerns for financial stability, with implications for banks' operations and financial interests. The framework also recognizes the financial industry's critical role in pursuing sustainable and resilient growth by enabling environmentally and socially responsible businesses to make decisions in line with the country's development plans and goals.

The framework will apply to all banks in the Philippines. Branches of foreign banks may adopt the relevant policies and strategies of their head office, consistent with the applicable provisions of the framework.

The framework initiative was launched after the BSP joined the Network for Greening the Financial System (NGFS).⁹ NGFS is a group of central banks and supervisors, composed of 69 members and 13 observers as of July 2020, organized to enhance the role of the financial sector in managing climate and other environment-related risks and mobilize capital to support the transition to a sustainable economy. The framework should pave the way for the financial sector to provide green products and services for low-carbon and sustainable development across key sectors, including agriculture.

3.4 INSTITUTIONS AND INSTITUTIONAL FRAMEWORK IN THE AGRICULTURE SECTOR

There are several key institutions in the agriculture sector in the Philippines. Table 6 summarizes the government institutions that shape the sector's overall direction.

Table 6: Institutions and institutional framework in the agriculture sector

INSTITUTION	DESCRIPTION
Department of Agriculture	The principal government agency responsible to promote agricultural development. It provides the policy framework, helps direct public investments, and provides, in partnership with LGUs, the support services necessary to make agriculture and agri-based enterprises profitable and to help extend the benefits of development to the poor, particularly in rural areas.
Local government units (LGU)	Mandated by law to lead implementation of agricultural programmes, including providing support services that include manpower and financial assistance.
Agricultural Training Institute	Leads the formulation of the national agriculture and fisheries extension agenda and budget.
Bureau of Agricultural Research	Leads and coordinates the national agriculture and fisheries research and development (R&D).
Bureau of Agricultural and Fisheries Engineering	Mandated to monitor implementation of the National Agricultural and Fisheries Modernization Plan of the Department of Agriculture, including to plan, implement and evaluate development of agricultural mechanization and infrastructure in the agriculture sector.
Bureau of Animal Industry	Promotes development of livestock industries.
Bureau of Plant Industry	Mandated to serve and support the Philippine plant industry sector, ensuring availability of seeds, safety of plant food and development of crop farming technologies and to safeguard the plant industry.

INSTITUTION	DESCRIPTION
Bureau of Soils and Water Management	Formulates measures and guidelines for the effective use of soil and water resources as vital agricultural resources to attain food security and safety, environmental stability through soil and water resources-based adaptation, and mitigation measures that address multi-environmental concerns regarding land degradation, climate change and agricultural biodiversity conservation.
Agricultural Credit Policy Council	Develops and advocates agricultural credit policies and orchestrates programmes that would promote farmers' and fisherfolks' access to sustained financial services.
Land Bank of the Philippines	Government bank mandated to spur countryside development. One of its major roles is to provide credit assistance to small farmers and fisherfolks.
Philippine Crop Insurance Corporation	Mandated to provide insurance protection to farmers against losses arising from natural calamities, plant diseases and pest infestations of their palay and corn crops and other crops. Also provides protection against damage to/loss of non-crop agricultural assets including, but not limited to, machinery, equipment, transport facilities and other related infrastructures due to insured peril/s.

3.5 OVERALL BUSINESS ENVIRONMENT

3.5.1 MACROECONOMIC ENVIRONMENT

The Philippines is one of the region's faster growing economies. It sustained a 6.3 percent average annual growth rate between 2010 and 2019, up from an average of 4.5 between 2000 and 2009. The Philippines is transitioning from a lower middle-income country, with gross national per capita income of \$3,830 in 2018, to an upper middle-income country, with per capita income range of \$3,956 to \$12,235, in the near term. However, the country's economic growth slowed in 2019 to 5.9 percent year-on-year.¹⁰ The slowdown was driven primarily by a contraction in nominal public investment, due to delayed passage of the 2019 national government budget and the spending ban on new projects before the May election. Furthermore, the impact of the novel coronavirus (COVID-19) pandemic is expected to slow the economy's growth significantly this year, as result of community quarantine in response to the pandemic, leading to a slowdown in trade, investment, tourism and remittances. Nonetheless, economic growth is expected to rebound gradually in 2021-2022 as global conditions improve.

Macroeconomic policies have supported strong GDP growth and macroeconomic stability, while helping to contain external and macro-financial vulnerabilities. Macroeconomic policy settings are appropriate to maintain a balanced economy in the near term under the baseline outlook and risk scenarios. The government has the space to take a more expansionary policy stance, should downside risks materialize.¹¹ This was illustrated when the country opted not to tap the new International Monetary Fund borrowing facility, created to help its members respond to the pandemic. In explaining its decision, the BSP cited the country's strong macroeconomic fundamentals and external position.¹²

The Philippines' monetary policy stance is close to neutral and consistent with the BSP achieving its inflation objectives under the baseline outlook. This is attributed to the 2018 policy tightening, which helped reverse rising inflationary pressures. With an improved inflation outlook, the cumulative 75 basis-point cut in the policy rate in 2019 was appropriate.¹³ However, BSP reduced its policy interest rate by 175 basis points since February, as a result of the pandemic-induced economic crisis. Further rate cuts are expected in the third and fourth quarters of 2020.¹⁴

The Philippines faced significant challenges in the agriculture sector prior to the COVID-19 crisis, which has weakened its economic and fiscal outlook. Recovery could be achieved by steadily mainstreaming climate action into fiscal policies, as proposed by the Coalition of Finance Ministers for Climate Action. The Philippines was one of first countries to endorse the Coalition's principles, with other countries following after the formal announcement of the principles. The Coalition recently proposed a set of principles for stimulus packages that would provide the right balance between sustainability and investment strategy.

¹⁰ World Bank Group. *The World Bank in the Philippines*. <https://www.worldbank.org/en/country/philippines/overview>

¹¹ International Monetary Fund. 2020. *Philippines: Staff Report for the 2019 Article IV Consultation*.

¹² Manila Standard. Article, May 19, 2020. *PH ignores loan proposed by IMF*.

¹³ International Monetary Fund. 2020. *Philippines: Staff Report for the 2019 Article IV Consultation*.

¹⁴ Economist Intelligence Unit. 2020. *Country Report: Philippines*.

Coalition of Finance Ministers for Climate Action and recovery principles

In April 2019, governments from over 20 countries launched the Coalition of Finance Ministers for Climate Action, which recognizes the challenges posed by climate change, the unique capacity of the world's finance ministers to address them, and the ways in which collective engagement could strengthen these efforts. The Helsinki Principles recognize the importance of finance to achieve climate action goals.

In July 2020, the Coalition published guidance related to climate action for the post-pandemic future.¹⁵ It emphasizes the importance of finance for recovery and long-term transformation, while recognizing that macro-fiscal contexts are more complex today than before the crisis. The document acknowledges the need for emerging economies to anticipate the substantial investments needed to drive the transformation to a low-carbon climate-resilient economy.

In this context, leveraging international climate finance to unlock fiscal space and leverage private finance will be crucial to achieve the goals set by the Paris Agreement and all NDCs. Efforts to shift the financial system must also continue, including on reporting (Task Force on Climate-Related Financial Disclosures), green taxonomies, risk management and returns.

Aligning national priorities, economic and fiscal policies on these principles could help the Philippines attract private sector investment and achieve its climate goals in the agriculture sector. The country's detailed performance is presented in the following subsections.

3.5.2 COUNTRY RISK

Based on the risk assessment performed by the Economist Intelligence Unit (EIU), the Philippines' overall country risk rating was BBB as of July 2020.¹⁶ It remains stable relative to its pre-COVID-19 crisis level.¹⁷ Table 7 summarizes the Philippines' risk profile.

Table 7: Philippines' risk profile

	SOVEREIGN RISK	CURRENCY RISK	BANKING SECTOR RISK	POLITICAL RISK	ECONOMIC STRUCTURE RISK
OCTOBER 2019	BB	BBB	BB	BB	B
JULY 2020	BB	BBB	BB	BB	B

3.5.2.1 SOVEREIGN RISK

The underlying drivers of sovereign risk rating improved slightly from the previous year's, although the rating remains at BB, unchanged from prior to the pandemic.¹⁸ This is attributed to the return of real interest rates to positive territory, an increase in the country's foreign exchange reserves and a slowdown in inflation. The country's public debt-to-GDP ratio is low compared to other BB-rated countries. Domestic investors hold most of the debt, reflecting that the government is more reliant on domestic, rather than external, investors for funding.

The pandemic triggered a recession that will send the budget deficit to a historic high, due to increased government spending, while tax revenues slump. However, despite recent borrowing, the country's public debt will remain relatively low and mitigate against risk of default.

3.5.2.2 CURRENCY RISK

The underlying currency risk improved over the previous year, with the rating remaining at BBB, unchanged from prior to the pandemic. This could be attributed to the continued deceleration of consumer price inflation,

¹⁵ Coalition of Finance Ministers for Climate Action, 2020. *Better Recovery, Better World: Resetting climate action in the aftermath of the COVID-19 pandemic*.

¹⁶ Economist Intelligence Unit. 2020. *Country Risk Service, Philippines*.

¹⁷ Economist Intelligence Unit. 2019. *Country Risk Service, Philippines*.

¹⁸ Ratings are derived from scores as follows: 0-12 = AAA; 13-18 = AA; 19-24 = A; 25-30 = BBB; 31-36 = BB; 37-42 = B; 43-48 = CCC; 49-54 = CC; 55-60 = C; 61-66 = B; 67-72 = BB; 73-78 = BBB; 79-84 = AAA; 85-90 = D.

resulting in real interest rates turning positive and to the 2019-2020 increase in foreign exchange reserves, which will help to support the Philippine peso (PHP) in this period.

The sizable foreign exchange reserves and a current account surplus will support the PHP during the pandemic, enabling the exchange rate to be stabilized in case of volatility.

3.5.2.3 BANKING SECTOR RISK

The drivers for banking sector risk improved slightly from the previous year, with the risk rating remaining at BB, unchanged from prior to the pandemic. The change in the scoring of the underlying drivers was driven by a return to positive real interest rates. The health of the banking sector remains broadly robust, with nonperforming loans making up 2.2 percent of total lending at end-August 2019. In 2020, the BSP will approve further cuts to benchmark interest rates, which will fall to historic lows. This could jeopardize banks' profit margins in this period, but will help build business confidence amid the pandemic.

3.5.2.4 POLITICAL RISK

The political risk rating continues to be based largely on the relatively strong position that President Duterte will retain in the legislature in 2019-20. This rating is expected to remain broadly stable over the coming years, as presidential elections are not scheduled until 2022. The Philippines will continue to fare poorly in terms of institutional effectiveness and government corruption. Mr. Duterte's focus on domestic security issues suggests that reform in other areas might be slow. Furthermore, a significant shift in the Philippines' foreign policy, which is now firmly China-focused, will present risks to partnerships with traditional allies, particularly Western countries. The Philippines-China territorial dispute in the South China Sea will become secondary during Mr. Duterte's tenure, as the countries bolster their economic ties.

3.5.2.5 ECONOMIC STRUCTURE RISK

Despite healthy economic growth, income inequality remains rife and per capita GDP is among the lowest in the region. The Philippines' heavy reliance on electronics exports is a source of vulnerability, particularly given the cyclical nature of the industry. Although the country has one of the least export-oriented economies in Southeast Asia, declining export receipts have weighed on its external balance position. The economy relies heavily on remittances from overseas workers, which are vital in supporting private consumption. Remittances have proved to be a relatively stable form of income, although a significant downturn in Western labour markets could pose a threat to such inflows.

3.6 EASE OF DOING BUSINESS

The business environment is one of the most important factors when considering local and foreign investments. Investors tend to consider not only existing market opportunities, but also the country's ease of doing business. Regulations including business regulation and property rights protection have an impact on economic growth and must therefore be taken into account.

The Doing Business Project, developed by the World Bank Group, measures business regulations and their enforcement in 190 countries and 11 cities across the world. It covers 12 areas of business regulation that affect small and medium-sized domestic firms in each country, including starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency, and employing workers.

According to the World Bank's latest Doing Business 2020 Report, the Philippines ranked 95th out of 190 countries in 2019,¹⁹ improving from 124th in 2018. The Philippines' ranking in ease of doing business averaged 118.58 from 2008 to 2019, ranking highest in 2019 and lowest, at 144th, in 2009. Table 8 shows the Philippines' ranking and scores over the last five years.

¹⁹ World Bank Group. 2019. *Doing Business 2020, Economy Profile Philippines*.

Table 8: Philippines' Doing Business score and ranking

YEAR	SCORE	RANK
2019	95	62.8
2018	124	60.9
2017	113	59.3
2016	99	59.3
2015	99	58.2

This section provides an overview of important criteria for doing business in the Philippines, based on the Doing Business 2020 Report.

3.6.1 STARTING A BUSINESS

This indicator measures the number of procedures, time, cost and paid-in minimum capital requirement for a small- to medium-sized limited liability company to start up and formally operate in the largest business city of each economy. This is relevant to Philippine private sector actors intending to start businesses that will implement adaptation and mitigation actions in the agriculture sector.

The Philippines ranks 171st, with a score of 71.3 out of 100, which is below the East Asia and Pacific (EAP) regional average score of 83.9. This is mainly due to the 13 procedures required to start and operate a company in the Philippines, compared with the regional average of 6.5. Consequently, this also affects the time and costs associated with completing each procedure.

3.6.2 DEALING WITH CONSTRUCTION PERMITS

This indicator tracks the procedures, time and cost to build a warehouse, including obtaining necessary licenses and permits, submitting all required notifications, requesting and receiving all necessary inspections, and obtaining utility connections. It also measures the building quality control index, evaluating the quality of building regulations, the strength of quality control and safety mechanisms, liability and insurance regimes, and professional certification requirements.

The Philippines ranks 85th overall, with a score of 70.0, which is consistent with the EAP regional average. Its 22 procedures to legally build a warehouse is higher than the regional average of 14.8. Despite the number of procedures, the time required to complete each one is relatively shorter and the costs relatively lower than the regional average. The Philippines' building quality control regulations perform very well in terms of the regional average and even better than the Organisation for Economic Co-operation and Development (OECD) high-income average.

3.6.3 GETTING ELECTRICITY

This indicator measures the procedures, time and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse. Reliability of supply, transparency of tariffs and the price of electricity are also measured by the reliability of supply and transparency of tariffs index.

The Philippines rank 32nd overall on this indicator, scoring 87.4, which is above the EAP regional average of 75.1. The number of procedures required to obtain electricity connection is slightly lower than both EAP regional and OECD high income averages. The time required to complete the procedures to obtain electricity is significantly less than both EAP and OECD averages and the costs of these procedures are significantly lower than EAP regional and OECD averages. The Philippines' reliability of supply and transparency of tariff index of 6 is higher than the 4.0 regional average.

3.6.4 REGISTERING PROPERTY

This indicator examines the steps, time and cost involved in registering property, assuming the standard case of an entrepreneur who wants to purchase land and a building that is already registered and free of title dispute. It evaluates the quality of the land administration system based on five factors: infrastructure reliability; information transparency; geographic coverage; land dispute resolution; and, equal access to property rights.

The Philippines ranks 120th on this indicator, scoring 57.6, which is slightly above the 57.5 EAP regional average. Although the time required to register a property and the costs associated with completing the procedures generate a score better than regional averages, the nine procedures required to register properties are above the 5.5 regional average. The Philippines' 12.5 index for quality of land administration is below the 16.2 regional average.

3.6.5 GETTING CREDIT

This indicator explores the strength of credit reporting systems and the effectiveness of collateral and bankruptcy laws in facilitating lending. This is relevant to mobilizing private sector investments in the agriculture sector, especially for local stakeholders.

The Philippines ranks 132nd on this indicator, with a score of 40.0, which is below the 58.0 EAP regional average. The country scored poorly on the strength of legal rights index, scoring 1 on a range of 0-12. It also scored poorly in terms of credit registry coverage, with zero percent of adults covered.

3.6.6 PROTECTING MINORITY INVESTORS

This indicator measures the strength of minority shareholder protections against directors' misuse of corporate assets for their personal gain, as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse. This is important to encourage both local investment and foreign investment in the country.

The Philippines ranks 72nd with a score of 60.0, which is higher than the 49.7 EAP regional average. The country scored low on the extent of director liability index and extent of shareholder rights index. However, the country performed better than the EAP regional averages in terms of extent of disclosure index, ease of shareholder suits index, extent of ownership and control index, and extent of corporate transparency index.

3.6.7 PAYING TAXES

This indicator measures the taxes and mandatory contributions that a medium-sized company must pay or withhold in a given year, as well as the administrative burden of paying taxes and contributions and complying with post-filing procedures (value added tax (VAT) refund and tax audit).

The Philippines ranks 95th overall on this indicator, scoring 72.6, which is below the 73.6 EAP regional average. The country's indicators for tax payments, time required to comply with taxes, and post-filing index all scored above regional averages. However, the country scored lower on total tax and contribution rate.

3.6.8 TRADING ACROSS BORDERS

This indicator measures the time and cost associated with the logistics of exporting and importing goods. It measures the time and cost (excluding tariffs) of three sets of procedures – documentary compliance, border compliance and domestic transport – within the overall process of exporting or importing a shipment of goods.

The Philippines ranks 113th overall with a score of 68.4, which is below the 71.6 EAP regional average. The country's time to import and cost to import for border compliance indicators scored poorly among all of the

indicators in trading across borders. The time required is 120 hours, compared to a regional average of 68.4 hours, and the cost to import is \$690, compared to a regional average of \$422.80. This can be a barrier to investors, especially for activities that require importing agriculture-related technologies and equipment.

3.6.9 ENFORCING CONTRACTS

This indicator measures the time and cost to resolve a commercial dispute through a local first instance court and the quality of judicial processes index, evaluating whether each economy has adopted a set of good practices that promote quality and efficiency in the court system.

The Philippines ranks 152nd overall for this indicator with a score of 46.0, which is lower than the 53.0 EAP regional average. The 962 days required to enforce contracts through the Philippine courts is significantly longer than the EAP average of 581.1 days and the OECD average of 589.6 days. The quality of judicial processes also scored lower than the regional average.

3.6.10 RESOLVING INSOLVENCY

This indicator measures the time, cost and outcome of insolvency proceedings involving domestic legal entities. The variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings.

The Philippines ranks 65th overall with a score of 55.1, which is higher than the 40.9 EAP regional average. Under this indicator, the country performs better than the region and OECD high-income countries in terms of strength of insolvency framework, but performs relatively poorly in terms of recovery rate for creditors, time required to recover debt and cost required to recover debt.

The Philippines ranked 95th out of 190 economies in ease of doing business. This was a significant improvement from the previous year's performance, when it ranked 124th. The improvement could be attributed to the abolition of minimum capital requirements for domestic companies, which made it easier to start a business. The process for obtaining occupancy certificates was streamlined, which reduced the time to secure construction permits. However, inefficiencies remain in terms of doing business in the Philippines, including the procedures for starting a business, property registration and the procedures for building a physical establishment in the country. Nonetheless, the government has taken steps to address these inefficiencies. The Ease of Doing Business and Efficient Government Service Delivery Act of 2018 aims to provide simple and straightforward regulations for entrepreneurs, micro, small and medium-sized businesses and ordinary citizens. The government's efforts to continue to improve the business climate will further encourage private sector investment.

3.7 ENABLING ENVIRONMENT FOR CROSS-BORDER AND FOREIGN INVESTMENTS

The enabling environment for cross-border and foreign investments constitutes another important factor in investment decisions for foreign investors. Foreign investors may perceive risks to be higher in some countries if regulations pertaining to foreign investment are not seen as favourable. For example, some investors may perceive restrictions on the payment of dividends to foreign investors, repatriation of funds and tax issues as constraints.

This section provides an overview of important laws and regulations pertaining to investment and foreign investment in the Philippines, as well as an analysis of gaps and challenges for foreign investment.

3.7.1 REGULATIONS RELATED TO DIRECT FOREIGN INVESTMENT

The Omnibus Investments Code and the Foreign Investment Act create the framework for promoting foreign investment in the Philippines. The Revised Corporation Code of the Philippines contains provisions for the incorporation and organization of private corporations, including foreign corporations.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none">• Provide the overall framework for foreign investments in the Philippines• Provide the regulatory framework for foreign enterprises investing and operating in the Philippines	<ul style="list-style-type: none">• Minimum capital requirement set at \$200,000 for enterprise with more than 40% foreign ownership, PHP 5,000 for enterprise with less than 40% foreign ownership• Basic rights and guarantees for foreign investment provided• Incentives for foreign investments provided

OMNIBUS INVESTMENTS CODE OF 1987 (EXECUTIVE ORDER NO. 226)

The Omnibus Investments Code contains provisions on fostering foreign investment and providing significant employment opportunities relative to the amount of capital invested, which, in turn, increase the volume and value of exports. As per the provisions of this Code, the government provides a favourable platform for entry and growth of foreign investment. It also offers incentives to enterprises setting up businesses in Philippines and assists them during their initial operations.

The Code contains provisions regarding the appointment and functions of the Board of Investments (BoI) as the highest government authority responsible for regulating and promoting investments in the Philippines. BoI is an agency of the Department of Trade and Industry and performs the following functions in accordance with the Code:

- Prepares the annual Investment Priorities Plan, which contains a list of activities that qualify for government incentives. The President has the power to approve the plan in whole or in part;
- Promulgates rules and regulations to implement the intent and provisions of the Omnibus Investments Code;
- Checks and verifies that registered enterprises comply with relevant provisions of the Omnibus Investments Code;
- Formulates and implements rationalization programmes for industries whose operations result in dislocation or inefficient use of resources and impede economic growth. The Board has the power to restrict the import of equipment or raw materials or finished goods involved in the rationalization programmes;
- Regulates investments and business operations in Philippines by foreigners and business organizations owned by foreigners (in part or in whole);
- Enters into agreements with the government and agencies to facilitate the investment promotion- and enterprise registration-related procedures;
- Recommends the entry of foreign nationals into the Philippines for employment to the Commissioner of Immigration and Deportation, under the provisions of this Code; and,
- Recommends registered enterprises that may list their shares on an accredited stock exchange or directly offer a portion of their stock capital to the public/employees, when feasible and desirable.

The Investment Priorities Plan under the Code serves as a blueprint for local and foreign investors by helping them match their entrepreneurial efforts and financial capacities with the country's prioritized activities, which are eligible for incentives.

- If the applicant enterprise is a partnership or association, a minimum of **60 percent of its capital must be owned and controlled by citizens of the Philippines**. If the applicant enterprise is a corporation or a cooperative, a minimum of **60 percent of the capital stock outstanding and voting rights must be held by Philippine nationals**.

- The ownership requirements do not apply if the Bol is convinced that the business of the enterprise requires skills that Philippine nationals do not have or if the enterprise exports 100 percent of its total production.
- The ownership requirements also do not apply to enterprises whose business activity is not reserved exclusively for Philippine nationals by the Constitution or other laws of the Philippines.
- An enterprise is eligible for registration if its operations support national development, contributing to the national economy in general.

The basic rights and guarantees apply to registered foreign enterprises under the Code are as follows:

- **Repatriation of investments:** In the case of foreign investments, repatriation of the entire proceeds from the liquidation of investments is permitted (in the currency in which the investment was made and at the exchange rate prevailing at the time of repatriation);
- **Remittance of earnings:** In the case of foreign investments, remittance of earnings from the investment is permitted (in the currency in which investment was made and at the exchange rate prevailing at the time of remittance);
- **Foreign loans and contracts:** Remittance of sums necessary to meet payments of interest and principal on foreign loans and foreign obligations is permitted (at the exchange rate prevailing at the time of remittance);
- **Freedom from expropriation:** The Government of the Philippines does not have the right to expropriate the property of an enterprise, except for public use or in the interest of the national welfare and defence upon payment of appropriate compensation. Foreign investors and enterprises have the right to remit such compensation sums (in the currency in which investment was made and at the exchange rate prevailing at the time of remittance); and,
- **Requisition of investment:** Requisition of investments or properties of an enterprise is not permitted, except in the event of war or national emergency upon payment of appropriate compensation at the time of requisition or immediately after cessation of the state of war or national emergency. Foreign investors and enterprises have the right to remit such compensation sums (in the currency in which investment was made and at the exchange rate prevailing at the time of remittance).

Provisions under the Code includes incentives for registered foreign enterprises.

- **Income tax holiday:** Exempts newly registered firms from income taxes levied by the national government for at least four years from the start of commercial operations, with additional years extended to pioneering enterprises and other enterprises meeting special conditions;
- **Additional deduction for labour expense:** For the first five years from registration, a registered enterprise may deduct, from taxable income, 50 percent of the wages corresponding to the increase in the number of direct labour employees hired for skilled and unskilled jobs. This incentive is offered only if the project meets the prescribed ratio of capital equipment to the number of workers set by the Bol for that enterprise;
- **Employment of foreign nationals:** A registered enterprise is permitted to employ foreign nationals in supervisory, technical or advisory roles for a period not exceeding five years from its registration. However, the period may be extended for limited periods at the discretion of the Bol;
- **Incentives to registered enterprises located in less-developed areas:** A registered company located in a less-developed area, regardless of the company's nationality, is entitled to the following incentives, in addition to those mentioned previously.
 - **Pioneer incentives:** Any venture of the registered enterprise is entitled to incentives offered for a pioneer enterprise under its law or registration.
 - **Incentives for infrastructure and public utilities:** An enterprise may deduct an amount from taxable income equivalent to 100 percent of necessary and major infrastructure work it undertook with prior approval from the Bol in consultation with other government agencies concerned. Any amount not

deducted for a particular year may be carried over for deduction to subsequent years, not exceeding 10 years from the start of commercial operations.

- **Incentives for multi-national corporations establishing regional HQ in the Philippines:**

- Income tax incentives
- VAT exemption
- Other tax exemptions

- **Incentives for export processing zone enterprises:**

- Employment of foreign nationals
- Exemption from local taxes and licenses.

FOREIGN INVESTMENT ACT OF 1991 (REPUBLIC ACT NO. 7042)

The Foreign Investment Act promotes investment by foreign individuals, partnerships, corporations, and governments. It also contains provisions on the registration of enterprises intending to do business in the Philippines. The Act does not impose any restrictions on foreign ownership of export enterprises in country. Foreigners may invest up to 100 percent in export businesses, provided they do not appear on the Philippines' Negative Investment List.

However, this Act does not apply to banks and other financial institutions, which are governed and regulated by the General Banking Act and other laws and supervised by the Bangko Sentral ng Pilipinas (Central Bank of Philippines).

The Act's provisions include the capital requirements for setting up an enterprise in the Philippines. Enterprises can minimize paid-up capital by increasing local ownership, exporting the majority of their products or employing more locals.

BUSINESS TYPE AND % FOREIGN OWNERSHIP	MINIMUM PAID-UP CAPITAL REQUIREMENT
Domestic enterprise with more than 40% foreign ownership	\$200,000
Domestic enterprise with less than 40% foreign ownership	PHP 5,000
Enterprise that exports at least 60% of its products	PHP 5,000
Enterprise employing at least 50 Philippine nationals or using advanced technology as determined by the Department of Science and Technology	\$100,000
Life insurance company	PHP 1 billion
To set up a regional headquarters of any representative office that does not engage in any commercial activities or earn any revenue, the parent company must transfer \$30,000 to its corporate bank account in Philippines. The parent company must remit the same amount every year to cover its operating expenses.	

Under the Act, industries in the agriculture sector value chain that are eligible for 100 percent foreign ownership in the Philippines are limited to:

- training centres outside the formal education system;
- adjustment, lending, and financing companies; and,
- investment houses

The Philippines Negative Investment List, an executive order, is a provision of the Act that regulates the ownership of foreign entities in businesses located in the Philippines. The following table shows the amount of foreign ownership allowed in various relevant agriculture value chain businesses in the Philippines.

FIELD OF BUSINESS	MAXIMUM FOREIGN OWNERSHIP
Ownership of private lands	40%
Contracts for the supply of materials and goods to companies, agencies or municipal corporations	40%
Advertising	30%
Retail trade enterprises with paid-up capital of less than \$2.5 million	0%

REVISED CORPORATION CODE OF THE PHILIPPINES, 2019

The Revised Corporation Code of the Philippines contains provisions on the incorporation and organization of private corporations, foreign corporations, close corporations, educational corporations, religious corporations and one-person corporations. Specific to foreign corporations, it contains provisions on the rights, licensing requirements for operations and withdrawal of foreign corporations.

As per the provisions, a foreign corporation intending to do business in the Philippines must obtain a license from the Security and Exchange Commission (SEC), the government agency responsible for the regulation of the securities industry and supervision of all corporations, partnerships and associations. Incorporation and licensing requirements include providing the SEC with a copy of the corporation's articles of incorporation and bylaws. The license application must include the following information:

- Date and term of incorporation;
- Complete address of the principal office of corporation in the country of incorporation;
- Name and address of its resident agent, who is authorized to accept service of process in all legal proceedings and process for all notices on behalf of the corporation.
- Location in the Philippines where the corporation intends to operate and the specific purpose that the corporation intends to pursue in its business transactions;
- Names and addresses of the current directors and officers of the corporation;
- Statement of the paid-in capital amount;
- Statement of its authorized capital stock and aggregate number of shares that the corporation has authority to issue; and,
- Statement of its outstanding capital stock and aggregate number of shares that the corporation has issued.

Within 60 days after the issuance of a business license, the licensee (except foreign banking and insurance corporations) must deposit, with the SEC, a combination of the securities referred to below with actual market value of at least PHP 500,000 or any such amount set by the SEC:

- Bonds or other evidence of indebtedness of the Government of the Philippines;
- Shares of stock or debt securities that are registered under the Securities Regulation Code;
- Shares of stock in domestic corporations listed in the stock exchange in Philippines;
- Shares of stock in domestic insurance companies and banks; and,
- Any financial instrument determined suitable by the SEC.

Within six months after the end of each fiscal year, the SEC will require the licensee to deposit securities or financial instruments equivalent, in actual market value, to 2 percent of the amount by which the licensee's gross income for that fiscal exceeds PHP 10 million. The SEC will also require additional securities to be deposited if the actual market value has decreased by at least 10 percent of their actual market value at the time they were deposited initially.

Under the Code, one or more licensed foreign corporations may merge or consolidate with any domestic corporation(s) if permitted under the laws of its/their incorporation. A foreign corporation licensed to transact business in the Philippines may withdraw from the Philippines after filing a petition for withdrawal of license. The certificate of withdrawal of license will not be provided unless all the requirements below are met:

- All claims accrued in Philippines are paid or settled;
- All taxes, penalties (if any), and imposts lawfully due to the Philippines government are paid; and,
- The petition for withdrawal of license is published once a week for three consecutive weeks in a newspaper in the Philippines.

If a licensed foreign corporation ceases to do business in the Philippines, its deposits will be returned upon the licensee's application and submission of proof to the SEC that the licensee has no liability to Philippine residents and the Government of the Philippines.

3.7.2 CAPITAL MARKET LAWS AND REGULATIONS

Capital markets are important for foreign investment as they facilitate the buying and selling of securities. The Philippine Stock Exchange is the only stock exchange in the country. It operates under the provisions of the Securities Regulation Code and is governed by the authority of the SEC.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> • Provide the overall framework for capital markets in the Philippines 	<ul style="list-style-type: none"> • Foreign investment in capital market is allowed • Requirements for foreign registrants must be signed by its resident agent in the Philippines

SECURITIES REGULATION CODE (RA 8799)

The Securities Regulation Code promotes the development of capital markets and protects investors from fraudulent market activities in the Philippines. The Code establishes the SEC as the regulatory authority for the country's capital market.

The Philippines Stock Exchange (PSE) is the only stock exchange in the Philippines. In 1998, the SEC granted the PSE "self-regulating organization" status. The PSE may thus implement its own rules and establish penalties on PSE-listed companies in the event of non-compliance. The Capital Markets Integrity Corporation is the market regulation division of the PSE and is responsible for monitoring stock exchange transactions.

According to the Securities Regulation Code, the sale or transfer of securities is permitted only after the securities have been registered with the SEC. The following documents are required to register securities:

- Three completed copies of SEC Form 12-1;
- Consolidated and audited financial statements (if applicable);
- Signed and notarized statement of management responsibilities in the audited financial statements;
- Payment Assessment Form (PAF); and,
- Other documents that may be required by the SEC.

For foreign registrants, the above-mentioned statements must be signed by its resident agent in the Philippines, along with its principal executive officer, principal operating officer, principal financial officer, controller, principal accounting officer and corporate secretary.

The PSE listing regulations specify the requirements for listing on the PSE. They include meeting the criteria for minimum capital requirements, minimum number of stockholders, minimum earnings before income tax and depreciation and amortization requirements. However, information on requirements specific to foreign companies that seek to be listed on the PSE were not provided.

3.7.3 BANKING SUPERVISION LAWS AND REGULATIONS AND OTHER REGULATIONS RELATED TO THE FINANCIAL SECTOR

The banking and financial sector is regulated by a number of laws and regulations including the Act Allowing the Full Entry of Foreign Banks in the Philippines, Manual of Regulations for Banks and Manual of Regulations for Non-Bank Financial Institutions.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none">• Provide the overall framework for banking services and non-banking financial services in the Philippines• Provide the overall framework for non-bank lending in the Philippines	<ul style="list-style-type: none">• Minimum capital requirements provided for the categories of banks• Minimum capital requirements are the same for foreign and local banks• Permits 60% ownership by a foreign bank of a domestic bank

ACT ALLOWING THE FULL ENTRY OF FOREIGN BANKS IN THE PHILIPPINES (R.A. 10641)

The Act Allowing the Full Entry of Foreign Banks in the Philippines contains the provisions for entry and guidelines for approval of a foreign bank to operate in the Philippines. Foreign banks may operate in the Philippines through one of the following modes of entry:

- By acquiring, purchasing, or owning up to 100 percent of the voting stock of an existing domestic bank;
- By investing in the voting stock (up to 100 percent) of a new banking subsidiary incorporated in the Philippines; or,
- By establishing branches in the Philippines with full banking authority.

A foreign bank intending to enter the Philippines by any of the above-mentioned modes must meet all the following requirements:

- Submission of the letter of application and other documents to the Office of the Governor and of copies of the same to the Office of the Supervisory Policy Development (OSPD). Following submission, a foreign bank applicant will be scheduled for a presentation;
- Presentation by the foreign bank applicant of its ownership structure, financial condition, performance in the home country, corporate plan and business model. One week prior to the presentation, a copy of the presentation and names of the bank representatives should be provided to the OSPD;
- Payment of PHP 500,000 as an application fee to the BSP cash department;
- Payment of a license fee of PHP 24.5 million to the BSP, post approval of the application; and,
- Inward remittance of the minimum capital within 30 days of approval, by the BSP Monetary Board, of the foreign bank's entry into the Philippines.

According to the Act, the minimum capital requirements for foreign banks are similar to those for domestic banks in the same category.

In 2013, R.A. 10641 amended the Act Liberalizing the Entry and Scope of Operations of Foreign Banks in the Philippines and for Other Purposes (R.A. 7721) that restricted ownership by a foreign bank of a domestic bank to 60 percent (prior to amendment, the Act permitted a foreign bank to own 100 percent of a domestic bank in the Philippines).

MANUAL OF REGULATIONS FOR BANKS

The BSP's Manual of Regulations for Banks (MORB) provides the minimum capital requirements for various categories of banks, both foreign and local. According to the MORB, those categories include universal banks, commercial banks, thrift banks, rural banks, cooperative banks and Islamic banks. The minimum capital requirements by bank category are as follows, with ranges depending on the size and scale of the bank's operations.

CATEGORY	REQUIRED MINIMUM CAPITAL RANGE (IN PHP)
Universal banks	3 billion-20 billion
Commercial banks	2 billion-15 billion
Thrift banks (head office in NCR)	500 million-2 billion
Thrift banks (head office outside NCR)	200 million-800 million
Rural banks and cooperative banks (head office in NCR)	50 million-200 million
Rural banks and cooperative banks (head office outside NCR, up to 3rd class municipalities)	20 million-80 million
Rural banks and cooperative banks (head office outside NCR, from 4th to 6th class municipalities)	10 million-40 million

MANUAL OF REGULATIONS FOR NON-BANK FINANCIAL INSTITUTIONS

The Manual of Regulations for Non-Bank Financial Institutions (MORNBFI) is the authoritative codification of regulations governing non-bank financial institutions supervised by the BSP. This includes quasi-banks, non-stock savings and loan associations, pawnshops, trust corporations, non-bank credit card issuers, and other non-bank financial institutions. The MORNBFI serves as the principal source of banking regulations issued by the Monetary Board of the BSP.

Provisions of MORNBFI regulations applicable to domestic banks also apply to foreign banks in the Philippines.

3.7.4 INSOLVENCY AND BANKRUPTCY-RELATED REGULATIONS AND PROCEEDINGS

The Financial Rehabilitation and Insolvency Act governs the liquidation and rehabilitation procedures of insolvent companies in the Philippines.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> Provide the overall framework for insolvency procedures in the Philippines 	<ul style="list-style-type: none"> Foreign creditors are treated the same as local creditors

FINANCIAL REHABILITATION AND INSOLVENCY ACT OF 2010

The Financial Rehabilitation and Insolvency Act (FRIA) of 2010 governs rehabilitation and liquidation proceedings involving insolvent debtors and entities in the Philippines. The proceedings are conducted in accordance with rules promulgated by the Supreme Court.

The FRIA contains provisions for voluntary and involuntary court-supervised rehabilitation, pre-negotiated rehabilitation and out-of-court rehabilitation processes. The FRIA does not apply to banks. The New Central Bank Act contains the provisions for bank insolvency.

In the event of liquidation of a company's assets, the court issues a liquidation order and appoints a liquidator to carry out the procedure, whether voluntary or involuntary, as per the FRIA provisions. In the case of a banking institution, the Monetary Board will appoint the Philippine Deposit Insurance Corporation as receiver. For a quasi-bank, any person with recognized competence in banking or finance may be appointed as receiver. The receiver will take charge of the assets and liabilities of the institution and administer them for the benefit of its creditors.

3.7.5 FOREIGN EXCHANGE

Foreign exchange regulations are governed by the BSP. Its Manual of Regulations on Foreign Exchange Transactions consolidates all regulations pertaining to foreign exchange and related transactions.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none">• Provide the overall framework for foreign exchange in the Philippines	<ul style="list-style-type: none">• Cross-border transfers are allowed, with limitations and conditions

MANUAL OF REGULATIONS ON FOREIGN EXCHANGE TRANSACTIONS

This Manual contains provisions for the purchase of foreign currencies, cross-border transfer of currencies and other foreign exchange transactions.

Specific to foreign investment, the Manual includes provisions for inward foreign investments in the Philippines. Inward foreign investments are not required to be registered with the BSP, unless repatriation of capital or remittance of earnings in PHP is funded with the foreign exchange resources. Inward foreign investments may be in the form of cash, machinery and equipment, raw materials, supplies, spare parts, intangible assets, and other items that are actually transferred to the Philippines.

The Manual's provisions for inward investments divides investment instruments into two broad classifications: foreign direct investment and foreign portfolio investment. Foreign direct investment is a category of cross-border investment associated with a resident in one economy having influence on the management of an enterprise that is resident in another economy. It includes assigned capital and operational working fund, contributed capital, ownership or purchase of condominium unit, and capitalized expenses incurred by foreign firms pursuant to government-approved service contracts for oil, gas and geothermal energy exploration. Foreign portfolio investment is a category of cross-border transaction and position involving debt or equity securities, other than those included in foreign direct investment. It includes debt securities issued by the national government and by other public sector entities.

For cross-border transfers (both electronic and legal tender) involving PHP, a person may transfer up to PHP 50,000. Amounts above PHP 50,000 require written authorization from the BSP.

For cross-border transfers involving foreign currencies (including foreign legal tender and other monetary instruments such as money orders, drafts, checks and bonds), a person may transfer up to \$10,000. Amounts greater than \$10,000 require written declaration using the foreign currency declaration form. The form is also available at the Bureau of Customs Desk in the arrival/departure areas of international ports/airports in the Philippines.

3.7.6 ENFORCEMENT

The Philippines does not have enforcement laws specific to foreign and local investment. However, the Foreign Investment Act and the Omnibus Investments Code provide details about the penalties for violations by registered enterprises that have investments in the Philippines.

Dispute resolution mechanisms and regulations in the Philippines follow in-court and out-of-court (alternative dispute resolution) mechanisms. For in-court dispute resolution, the Philippines judicial system includes first level courts (municipal, metropolitan and regional trial courts), the Court of Appeals and the Supreme Court. The main stages of civil proceedings include:

- The filing of the complaint, issuance of summons and exchange of other operative pleadings, which usually takes three to six months;
- Referral to two-stage mediation, pre-trial and discovery, which may take six months to one year; and,
- Actual trial, which depends on the complexity of the case and could take between six months and three years.

The Alternative Dispute Resolution Act of 2004 is the main law on alternative modes of dispute resolution. Under the Act, international commercial arbitration is governed primarily by the UNCITRAL Model Law on International Commercial Arbitration, adopted by the United Nations Commission on International Trade Law. Domestic arbitration is governed by the Republic Act No. 876 - The Arbitration Law (as amended by Alternative Dispute Resolution Act of 2004), Model Law and the Alternative Dispute Resolution Act of 2004.

Arbitration, mediation, mini-trial, early neutral evaluation and mediation-arbitration are the forms of alternative dispute resolution in the Philippines.

3.7.7 SUMMARY OF FINDINGS FOR FOREIGN INVESTMENT REGULATORY ENVIRONMENT

Overall, the regulatory environment for foreign investments in the Philippines is supportive. There is no discrimination against foreign-owned shares in registered businesses. Basic rights and guarantees for foreign investment are provided under the regulatory framework. Incentives are established to encourage foreign investment in the country. However, the Philippines has experienced a consistent decline in foreign direct investment inflows, owing to investment and foreign ownership restrictions across various sectors. Specific to the agriculture sector, foreign ownership of private lands is limited to a maximum of 40 percent, which may hinder foreign investments requiring land holdings. Capital requirements remain reasonable, set at \$200,000 for enterprises with more than 40 percent foreign ownership.

Foreign enterprises may invest in capital markets, with the additional requirement that the required registration documents be signed by a resident agent in the Philippines. For banking and financing sector investments, foreign entities are subject to similar minimum capital requirements for incorporation as domestic entities. However, a foreign bank is limited to 60 percent ownership in a domestic bank.

Insolvency procedures in the Philippines are provided under the Financial Rehabilitation and Insolvency Act. Foreign creditors are treated equally to local creditors. Foreign exchange regulations allow for cross-border transfers, with certain limitations and conditions.

Although there is no specific enforcement law in the Philippines, the Foreign Investment Act and the Omnibus Investments Code provide details about the penalties for violations by registered enterprises that have investments in Philippines. Disputes could be resolved through in-court or out-of-court mechanisms, with international commercial arbitration primarily governed by the UNCITRAL Model Law on International Commercial Arbitration adopted by the United Nations Commission on International Trade Law.

The overall enabling environment for private investment in the agriculture sector in the Philippines is relatively strong. The government has emphasized the need to involve the private sector in the agriculture sector's sustainable development while addressing climate change. The Philippines is one of the faster-growing economies in Southeast Asia and although its economic growth is expected to be severely affected by the COVID-19 pandemic, it is likely to recover gradually as global conditions improve.

Despite the decline in the country's economic outlook due to the pandemic, the government has developed policies and strategies supporting the development of private investment towards low-carbon development, including in the agriculture sector. Policies such as the AFMA and the BOT Law provide incentives to encourage private sector participation. The regulatory framework also supports investment in the agriculture sector, providing conditions and incentives that encourage foreign direct investment and cross-border investment.

4. PRIORITIZED SECTOR CONTEXT

The country's existing policy, strategies and plans encourage private sector investment in the Philippines' agriculture sector. However, the sector is constrained by barriers and challenges that prevent private sector investment from scaling up. These barriers and gaps need to be addressed to support private sector participation in the sector.

This section presents the structure of each subsector within the agriculture sector in the Philippines through an analysis of its ecosystem and value chain, the status of private sector engagement and investment, investment barriers and critical gaps, recommendations and entry points for private sector investment, and best practice examples.

The ecosystem analysis provides an overview of the relationship between inputs and products for specific subsectors and explains the business environment for private stakeholders in each subsector. The value chain analysis builds on the ecosystem analysis, providing an illustrative representation of the identified chain actors, their functions and an analysis of their relationships.

Together, these analyses provide a better understanding of how and where stakeholders and organizations are positioned within the ecosystem and value chain and identify opportunities and engagement points for decision-makers in the public and private sectors.

Box 1: Private sector investment in agriculture

Private sector investment in the agriculture sector refers to investments that build capital that generates returns over time. This report distinguishes between investments that generate returns over several years and expenditures made over a year that generate a return during the same crop cycle. For example, investing in fertilizer may not be considered an investment in general terms and is therefore not considered an investment here.

Perspective is also important. Farmers and large companies are the main investors in the Philippine agriculture sector. Land purchases are important investments that may yield significant returns. However, purchasing land does not increase capital stock but only changes its ownership. Therefore, this report does not consider land purchases.

Additionally, investments related to, but not directly in, agriculture are also important. They may include energy sources for a farm, nutrition sources and ecosystem services, such as weather forecasting services. However, these investments are more challenging to capture. Similarly, this subsection does not cover investment in good agricultural practices, such as crop diversification, the decreased use of inputs and the use of conservation agricultural practices.

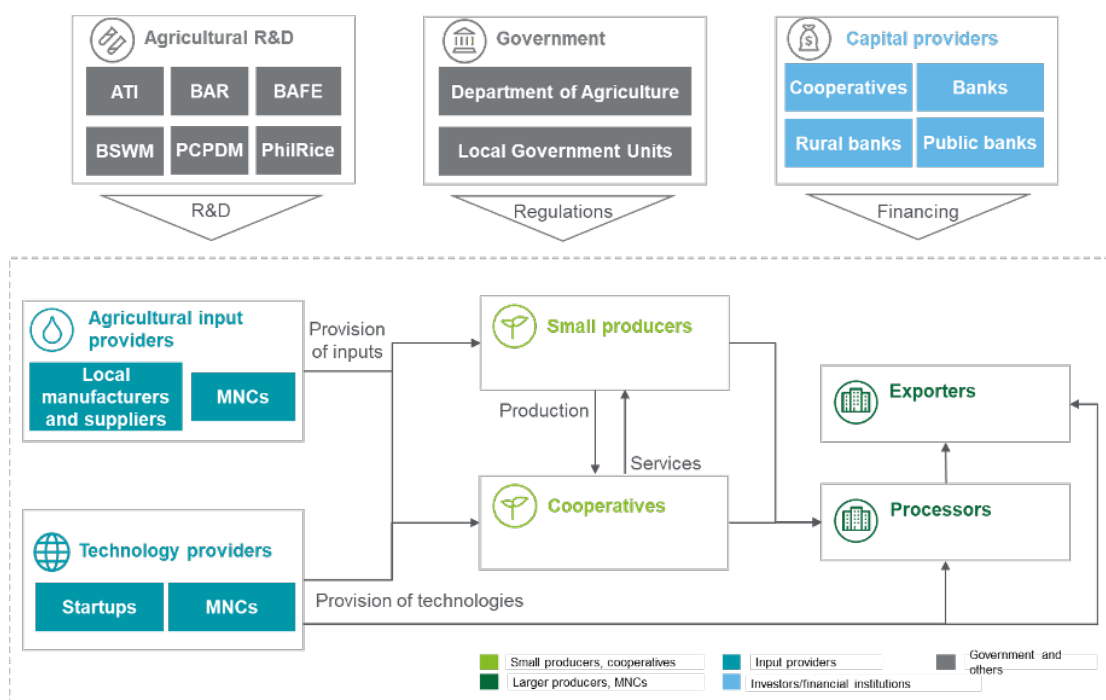
4.1 CROP PRODUCTION

Mitigation actions related to crop production identified in the Philippines agriculture sector include improved management of organic and inorganic fertilizers, AWD in rice production, and crop diversification. These actions mainly involve input providers and crop producers.

4.1.1 ECOSYSTEM ANALYSIS

Figure 2 shows the crop production ecosystem in the Philippines.

Figure 2: Crop production ecosystem in the Philippines



This ecosystem is composed of input providers, producers, middlemen, processors and exporters. Input providers include a wide range of stakeholders, ranging from providers of agriculture seeds, fertilizers, pesticides and other agricultural inputs to machinery and equipment suppliers.

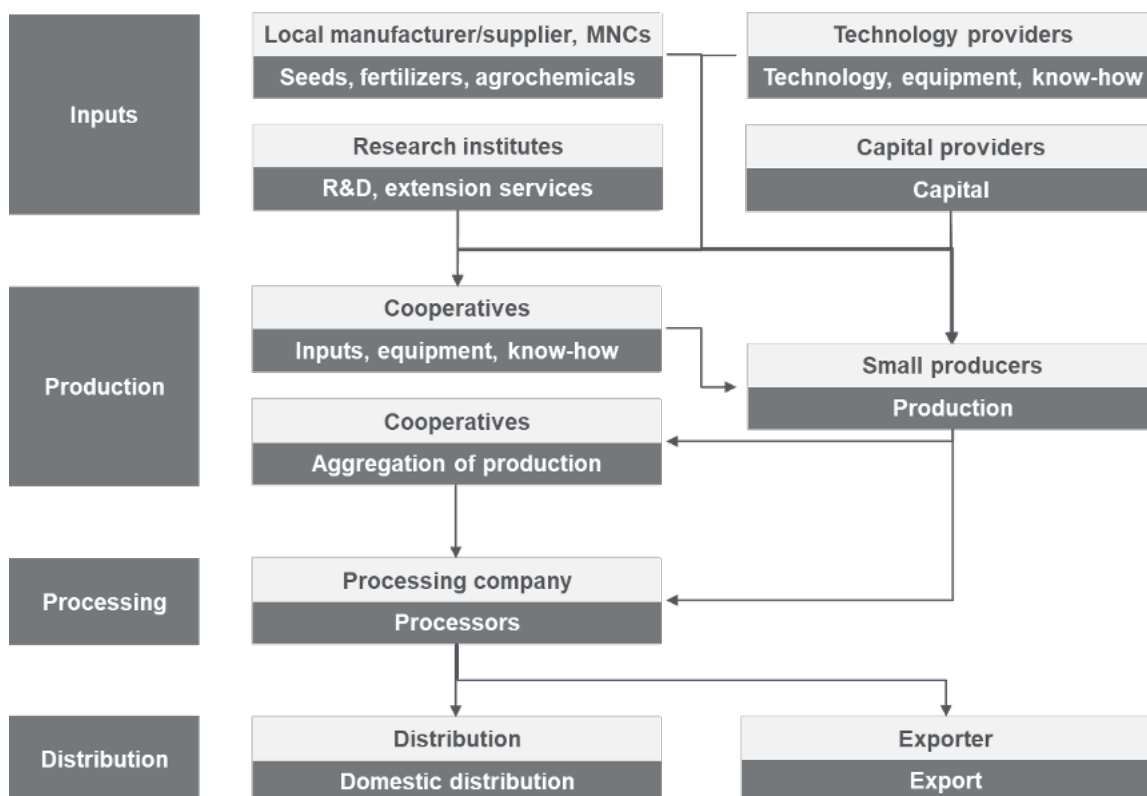
Smallholder farmers dominate among crop producers as a result of the CARL, which limits ownership of agricultural land to no more than five (5) hectares. The 2012 census revealed that the average farm size in the country is about 1.3 hectares. Medium and large companies are integrated within the ecosystem around the smallholder producers; they provide agricultural inputs and services and purchase crop products for processing to be sold for domestic consumption and/or export.

The public sector is key in spearheading agricultural innovation through the DA's bureaus, agencies and corporations. They include the Agricultural Training Institute (ATI), Bureau of Agricultural Research (BAR), Bureau of Agricultural and Fisheries Engineering (BAFE), Bureau of Soils and Water Management (BSWM), Philippine Center for Postharvest Development and Mechanization (PCPDM), and Philippine Rice Research Institute (PhilRice).

4.1.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO CROP PRODUCTION IN THE PHILIPPINES

The value chain analysis of crop production in the Philippines is shown in Figure 3.

Figure 3: Value chain for crop production in the Philippines



Crop production in the Philippines is structured around producers, who are the main drivers for the adoption of low-carbon technologies in the agriculture sector. Crop production in the country is defined by the area of land available to farmers and is dominated by smallholder farmers. Investment in agricultural land to expand production is very limited in the Philippines due to implementation of the CARL, which places a limit on land ownership. Thus, investments in the sector focus on improving productivity.

The crop production value chain includes larger stakeholders, such as large-scale agricultural companies. They include both locally-owned and predominantly foreign-owned companies that provide agricultural inputs and services, integrated cooperatives under private profit-making management, bulk buyers and dealers, and food processing firms.

Research institutes and DA agencies, such as the ATI and Philippine Rice Research Institute (PhilRice) lead agricultural innovation. Technology providers in crop production include providers of support services and farm equipment. Capital providers in the value chain range from large commercial banks to community-based organizations.

INPUT PROVIDERS

Manufacturers and suppliers of agricultural inputs such as seeds, fertilizers and agrochemicals, as well as machinery and equipment, include local companies and MNCs.

Seeds

A few large companies dominate the Philippines seed market. They provide a variety of seeds, including traditional interbred seeds and more advanced hybrid varieties. Some of the major players include local manufacturers and suppliers such as Allied Botanical and SL-Agritech, and multinational companies, such

as Bayer Group, East-West Seed, Kaneko Seeds, Pioneer Hi-Bred and Syngenta Group. The informal sector also has a presence in the Philippines seed market and holds a significant market share.

Fertilizer

The Philippines fertilizer market supports crop producers providing the necessary nutrients and soil conditioning products. Private sector stakeholders in this industry include importers, manufacturers, distributors, wholesalers, dealers and retailers, with major players integrating several of these functions into their businesses.

The major crops that use fertilizer are rice, which consumes about 38 percent of the country's total fertilizer, followed by corn (21 percent), fruits and vegetables (19 percent), sugar (7 percent), and other crops (the remaining 15 percent).²⁰

Major players in the domestic production of fertilizer include the Philippine Phosphate Fertilizer Corporation (PHILPHOS), formerly a government-owned corporation that was privatized in 2000, which produces fertilizer for both the domestic and export markets. It is the country's largest fertilizer manufacturer. Other major fertilizer manufacturers include Soiltech Agricultural Products and Atlas Fertilizer Corporation.

Agrochemicals

The Philippines agrochemical market supports crop producers that provide products and services for crop protection, such as herbicides, insecticides, molluscicides, fungicides and plant growth regulators. These products are primarily imported, with private sector stakeholders involved in import, distribution, repackaging, trading and exportation. In 2018, only three registered pesticide manufacturers were registered with the Fertilizer and Pesticide Authority - Agchem Manufacturing Corp., C.B. Andrew Philippines and Chemrez Technologies.

CROP PRODUCERS

Smallholder farmers dominate corn production in the Philippines based on the limits of ownership of agricultural land under the CARL. This limits the participation of larger stakeholders, such as corporations.

Cooperatives play an important role in the crop production value chain. The significant number of individual smallholder farmers, with their limited land area for planting, is associated with limited production volumes and difficulties accessing technologies and finance for general improvement and efficient crop production, let alone climate mitigation technologies. Cooperatives create pools of individual farmers to collectively achieve economies of scale, thus reducing the costs of farm inputs and product marketing. Cooperatives may also provide their members additional support, such as credit from savings funds, access to equipment for pre- and post-harvest, and health care.

Private sector investments in crop production are reflected in the sector's outputs. Table 9 shows the latest available information on the production of the major crops in the Philippines.

Table 9: Crop production in the Philippines

ITEM	UNIT	2018 QUANTITIES
Sugar cane	Tonnes	24,730,820
Rice	Tonnes	19,066,094
Coconut	Tonnes	14,726,165
Corn	Tonnes	7,771,919

Source: FAOSTAT

²⁰ Philippine Institute for Development Studies. 2017. *Philippine Journal of Development: The Fertilizer Industry and Philippine Agriculture: Policies, Problems, and Priorities*.

PROCESSING INDUSTRIES

The Philippines food processing industry is composed of micro- to medium-sized businesses, by numbers, but dominated by large corporations, both domestic and international, by market share. Major players in this industry that use agricultural products as raw materials include Nestlé Philippines, Universal Robina, Pilmico Foods, Oleo-Fats, Nutri-Asia, Cargill Oil Mills and Philippine Foremost Milling.

Businesses directly linked with processing agricultural farm outputs are involved in post-harvest operations such as drying, milling, storage and packaging.

Sugar is one of the Philippines' major crops and leads crop production in terms of output. Sugar cane is cultivated throughout the country, across 17 provinces and occupying total land area of about 422,500 hectares.²¹ As of 2019, 28 sugar mills (raw mills) are registered under the Sugar Regulatory Authority and operate in the Philippines. Fourteen sugar refineries operate adjacent to a raw mill and four bioethanol distilleries produce fuel ethanol.²² Major players in the sugar industry include Universal Robina, Central Azucarera and Sweet Crystals Integrated Sugar Mill.

As the population's staple food, rice is also a major crop. It is cultivated on approximately 4.81 million hectares of land, a relatively small area compared with the country's Southeast Asia counterparts,²³ and there are approximately 10,000 rice mills. However, following liberalization of the rice industry and the resulting influx of lower-priced imported rice, the Philippine Confederation of Grains Association (PhilConGrains) estimates that in 2019, only 60 percent of the 10,000 rice mills were operating.²⁴ Rice millers are organized into regional associations, with PhilConGrains serving as the nationwide organization.

4.1.3 GAPS, CHALLENGES AND RECOMMENDATIONS FOR THE CROP PRODUCTION VALUE CHAIN

The country's existing policy, strategies and plans encourage private sector investment in the Philippines' agriculture sector and the crop production value chain. However, several challenges limit the sector's development.

LOW AGRICULTURAL PRODUCTIVITY

Low agricultural productivity in the Philippines is a long-standing challenge, resulting from a set of related barriers that include limited access to credit and agricultural insurance, low farm mechanization, inadequate post-harvest facilities, inadequate irrigation, scant support for R&D, weak extension service, incomplete agrarian reform programme implementation, and ageing farmers and fisherfolks.

HIGH PRODUCTION COSTS

This is generally associated with high production costs. For example, the cost of rice production in the country was PHP 12.72/kilo, compared to regional costs of PHP 6.22 in Vietnam and PHP 8.86 in Thailand. These high costs are attributed primarily to the cost of manual labour and material inputs and other socioeconomic variables. This is detrimental to private sector investment in the sector.

HIGH VULNERABILITY TO CLIMATE CHANGE

The Philippines' agriculture sector is already experiencing the adverse impacts of climate change. Increased incidence of flooding, drought, soil degradation, water shortages and an uptick in pests and diseases constantly threaten agricultural output and productivity. In 2018, the Philippines was ranked as the second most-affected country in the global climate risk index in terms of extreme weather events. At the same time, agriculture is the country's second-largest GHG-emitting sector, contributing further to climate change. Lack of intervention to address this challenge could deter the private sector from investing.

²¹ Sugar Regulatory Administration. *The Philippine Sugarcane Industry: Challenges and Opportunities*.

²² Sugar Regulatory Administration. *Directory of Sugar Mills 2018 – 2019*.

²³ Department of Agriculture. 2018. *The Philippine Rice Industry Roadmap 2030*.

²⁴ The Philippine Star. 2019. Article: *More rice mills stop operations*.

LACK OF INVESTMENT IN TECHNOLOGY AND INNOVATION

The agriculture sector is characterized by underinvestment in general and in technology- and innovation-related investment in general. The AFMA should have generated a significant increase in investments to improve the sector's performance, but investments to improve productivity remain low. Public spending in agriculture is fairly low and considered inadequate. This poses a constraint for favourable returns on investment in the sector.

LIMITED ACCESS TO FINANCING

The DA provides financing mechanisms to farmers and smallholders through LGUs and government banks. However, the credit provided to farmers is often unaffordable in terms of lendable amount thresholds, and in most cases, is inaccessible because of the difficulty of complying with the requirements.

LAND OWNERSHIP UNCERTAINTIES

Uncertainty regarding land ownership rights following from implementation of the CARL affects crop production productivity and profitability. The lack of long-term land tenure hampers farmers' confidence and, thus, willingness to invest in the long-term sustainability of their land, including technological solutions to adapt to and mitigate climate change.

RECOMMENDATION AND POINT OF ENTRY 1

Incentivizing private sector investments in crop production mitigation actions

The government's focus on crop production and the agriculture sector is to achieve self-sufficiency and food security. The priority in terms of climate change actions is adaptation actions that consider mitigation actions if the latter are cross-cutting and/or offer co-benefits with associated adaptation actions. As such, the current enabling environment is not tailored to private sector investment in advanced low-carbon technologies, measures and practices in crop production.

Incentives are needed to encourage the private sector to invest in sustainable low-emission technologies in order to scale up. This could be achieved through financing instruments to support mitigation actions, such as climate finance or carbon finance from international organizations and/or donors. Such instruments include the Green Climate Fund (GCF), NAMA Facility and future mechanisms expected to be operational under Article 6 of the Paris Agreement, including CORSIA, under which demand for carbon offsets could be sourced from existing crediting mechanisms.

Best practice example: Thai Rice Nationally Appropriate Mitigation Action (NAMA) in Thailand²⁵

Agriculture is the second-largest GHG-emitting sector in Thailand; rice accounts for almost 60 percent of its emissions from agricultural activities. The NAMA provides a framework for advanced farming practices that involve switching from the conventional farming practice of flooding rice fields to applying AWD to laser land-levelled fields, site-specific nutrient management, straw and stubble management, and integrated pest management. This is expected to reduce GHG emissions during rice cultivation, increase net profits and yields, and enhance food safety.

The programme will include developing incentive schemes to provide financial support. It is implemented with farmers, farmers' associations and external service providers to adapt the advanced farming practices.

Main implementer	Government institutions involved in crop production will be the main implementer.
Private sector involvement	Private sector stakeholders in crop production will receive financial support to implement advanced farming practices.
Financial benefits	Through the know-how transfer and incentive scheme, farmers can expect efficient crop production, leading to higher yields and profits.
Mitigation outcomes	Reduced flooded fields and decreased GHG emissions.

²⁵ <https://www.nama-facility.org/projects/thailand-thai-rice-nama/>

Making precision agriculture accessible to smallholder farmers

Precision agriculture, which involves the proper and efficient use of fertilizers, relies on high-level technology, machinery and equipment. Crop production in the Philippines is dominated by smallholder farmers, who generally have no access to such technologies. However, solutions targeting smallholders could be provided to improve the management of fertilizer application. For example, very small landowners could apply micro-doses of fertilizer manually. More advanced farmers, or larger groups of smallholders such as cooperatives and irrigator associations, may have access to more advanced technologies and may consider remote services offered by third-party providers.

Best practice example: Enabling access to precision agriculture through mobile phones and sensors

Mobile phones are an important tool for introducing smallholders to precision agriculture. Mobile phones provide easier access to early warning systems, climate information, as well as extension services, which are essential to understand and apply precision agriculture principles.

UjuziKilimo, a Kenyan startup, provides a holistic solution to smallholders by providing a data platform accessible on mobile phones. The company assists farmers with crop yield optimization through soil analysis and farming recommendations. UjuziKilimo uses sensor technology to measure soil characteristics, forwards the information in real time to an analysis centre with a comprehensive database, and then relays information on crop breed, fertilizer required, pest control, markets and other farm management tools to the farmer, in real time, through his/her mobile phone.

Main implementer	Technology providers and potential startup companies that provide precision agriculture technologies and solutions will be the main implementers.
Private sector involvement	The private sector, through technology and solutions providers and start-ups, is expected to be the main driver for this entry point. Financial service providers, including commercial banks and non-banking organizations, may also be involved by providing financing.
Financial benefits	Smallholder farmers will have access to precision agriculture technologies that could increase efficient use of inputs and increase productivity.
Mitigation outcomes	Optimized use of fertilizers and decreased GHG emissions.

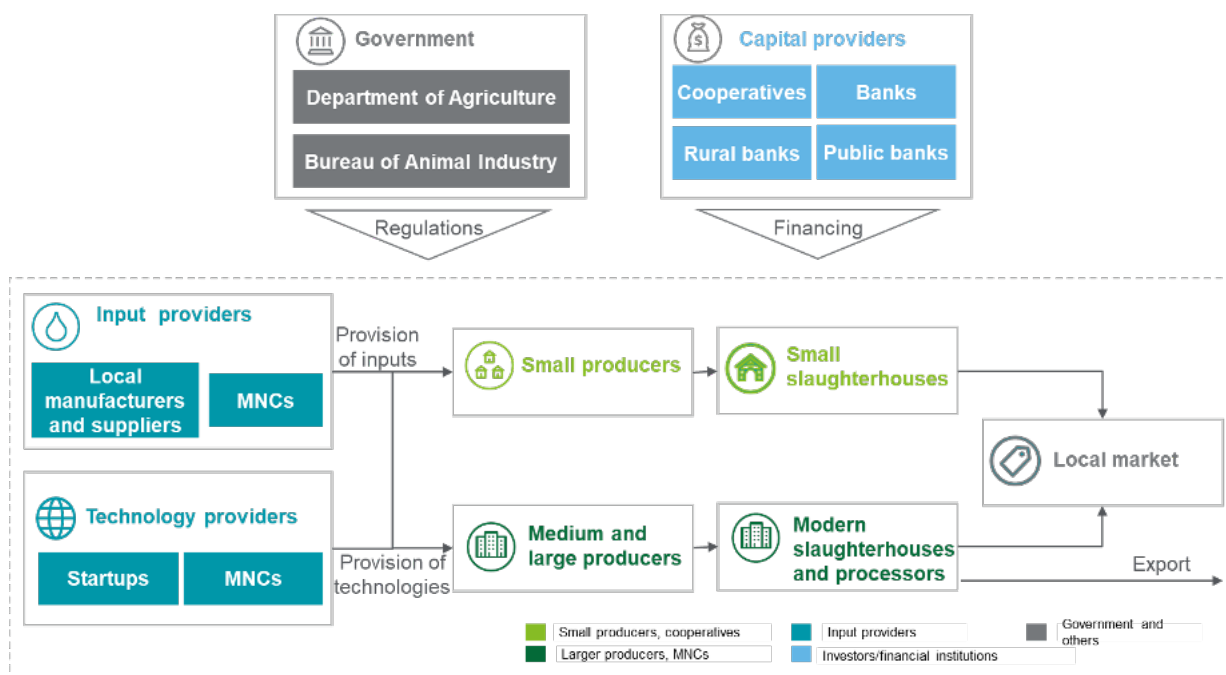
4.2 LIVESTOCK

Mitigation actions identified for the livestock subsector involve using biodigesters to treat and manage swine waste. Livestock farmers will be involved in implementing this action as key stakeholders. Nonetheless, it is important to understand the other stakeholders in the livestock ecosystem and value chain. They are discussed in this subsection.

4.2.1 ECOSYSTEM ANALYSIS

The livestock production ecosystem in the Philippines is described in Figure 4.

Figure 4: Livestock production ecosystem



The livestock production ecosystem is composed of input providers, technology providers, producers, slaughterhouses and processing industries. Hogs and chickens and, to a smaller extent, carabao, cattle, goat and duck, dominate livestock production. Producers include smallholders and commercial producers, with smallholder producers holding the larger market share. For example, in July 2020, backyard hog inventory totalled 7,802,902 head, compared with commercial hog inventory of 3,936,282 head.²⁶ Commercial producers have been concentrated in the two regions north and south of Metro Manila, close to the national capital, where demand is the highest. Smallholder producers tend to be farther from the capital and spread throughout the country.

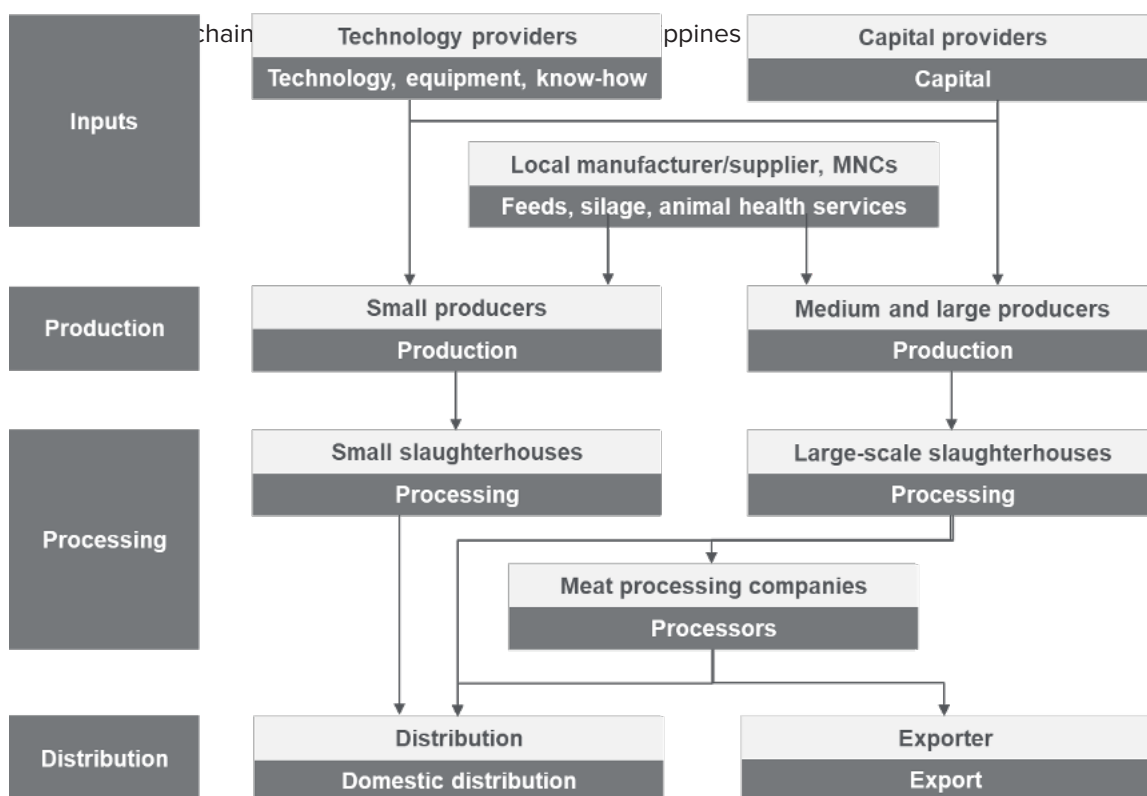
Input providers include feed and silage suppliers, animal health services providers, and other livestock input suppliers. Slaughterhouses and meat processors make up the post-growing stakeholders. Modern slaughterhouses usually cater to medium and large livestock producers, with the output sent to wet markets or for further processing through meat processors and packers. Small-scale traditional slaughterhouses normally cater to smaller producers and backyard producers. Output usually goes to the nearest wet market. Far-from-market livestock producers (often backyard growers) slaughter in their own backyard with accreditation from the municipal government.

The Philippine livestock industry also includes stakeholders involved in several or all segments of the livestock value chain, from providing input supplies to meat processing, trading, retail and logistics services.

26 Philippine Statistics Authority. *OpenSTAT: Livestock: Inventory by Animal Type, by Farm Type, by Region, by Province and by Quarter, 1994-2020P*.

4.2.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO LIVESTOCK PRODUCTION IN THE PHILIPPINES

Figure 5 shows the value chain analysis of livestock production in the Philippines.



The value chain for livestock production is structured around the producers raising livestock, which is the source of most of the subsector's GHG emissions. Livestock producers will be the main drivers for implementing mitigation actions in the subsector. Medium and large producers dominate in areas around major cities. In terms of livestock inventories, smallholder producers have a larger market share, but are located farther from major cities.

INPUT PROVIDERS

Livestock production input providers include manufacturers and suppliers of feed and silage and providers of animal health services, such as vaccination and provision of animal medicine. Feed manufacturers in the Philippines are classified into commercial feed millers involved solely in producing feed, integrated farm feed millers who produce feed and are directly involved in livestock production, and home-mixer feed millers who produce feed for their own farm, typically backyard farmers. The leading livestock feed producers include San Miguel Foods, Cargill Philippines, Swift Foods, General Milling and Vitarich Corporation.

The Philippine Association of Feed Millers, Inc. represents the feed manufacturing industry. Its members include the country's major feed manufacturing companies.

LIVESTOCK PRODUCERS

Livestock producers in the Philippines are generally categorized as smallholder backyard farmers or commercial producers. They generally receive less support from the government than other agricultural industries, such as crop production. Nonetheless, the country's livestock industry is thriving and consistently contributes to economic growth. According to the Philippine Statistics Authority (PSA), the livestock subsector (hog and poultry) recorded production increases in the first quarter of 2020 even as the agriculture sector reported a 1.2 percent decline.²⁷

²⁷ Philippine Statistics Authority. 2020. *Performance of Philippine Agriculture: 1st Quarter 2020*.

PRIVATE SECTOR INVESTMENTS IN LIVESTOCK ARE DETAILED IN TABLE 10.

Table 10: Investments in livestock farming

ITEM	UNIT	NEW INVESTMENT (2018)
Hog	Head	12,604,441
Goat	Head	3,724,808
Cattle	Head	2,553,937
Carabao	Head	2,882,655
Chicken	Head	175,772,000
Duck	Head	11,220,000

Source: FAOSTAT

Hog/swine farming dominates livestock production in the Philippines. As the subsector responds to increasing demand, it is likely to continue to grow. As it grows, so will GHG emissions from animal waste disposal. This is reflected in the agriculture sector's GHG emissions: methane emissions from manure management are the second-highest source of emissions in the livestock subsector. Private sector investment opportunities include in biodigesters, used to manage waste from livestock production. The Philippines has implemented several projects involving methane collection from swine waste management and the use of biogas under the UNFCCC's Clean Development Mechanism (CDM). The CDM supported private sector investors by covering the incremental costs they incurred in implementing the biogas technologies by selling emission reduction units.

Although not identified as a mitigation action under the country's NDC development, investments in improving feeding strategies to reduce enteric fermentation from cattle and carabao farming can offer significant climate change mitigation benefits.

SLAUGHTERHOUSES

As of August 2020, there were 126 registered slaughterhouses accredited by the National Meat Inspection Service (NMIS). NMIS is an agency of the DA with authority for all matters pertaining to meat and meat product inspection and hygiene.

Most slaughterhouses are graded 'AA,' which means that their facilities and operational procedures meet NMIS standards for slaughtering, cutting and packaging fresh meat for local use. Only eight of the 126 registered slaughterhouses received a grade of 'AAA,' which would meet international standards. AAA-graded slaughterhouses include Rombe Philippines, Coral Agri-Ventures Farm, San Miguel Foods - Monterey Cavite Meat Plant, Universal Robina Corporation, Sunpride Foods, JK Mercado & Sons Agri. Ent., Nestfarms and Matutum Meat Packing Corporation.

MEAT PROCESSORS

The processed meat industry in the Philippines includes all meat product manufacturing and preservation methods, but does not include pre-packaged fresh, chilled or frozen meat, as defined by the NMIS. The Philippine Association of Meat Processors, Inc., a national umbrella association for meat processors in the country, represents the industry.

Some of the Philippines' major meat processors include Purefoods-Hormel Company, CDO Foodsphere, Century Pacific Food, RFM Corporation, Pacific Meat Co. and Pampanga's Best.

4.2.3 GAPS, CHALLENGES AND RECOMMENDATIONS FOR THE LIVESTOCK PRODUCTION VALUE CHAIN

The country's existing policy, strategies and plans encourage private sector investment in the Philippines' livestock subsector. However, several challenges limit the sector's development.

LACK OF GOVERNMENT SUPPORT

The livestock production subsector generally receives less government support than the crop production subsector. However, the subsector's stakeholders are more empowered than other agricultural stakeholders based on the presence of commercial industries in livestock production. They are thus likelier to be receptive to adopting innovative practices and implementing low-carbon technologies.

LACK OF TECHNICAL CAPACITY

There is a general lack of technical capacity in low-carbon technologies for livestock production. Most stakeholders focus on their farms' productivity. Although several farms have installed animal waste treatment systems with biodigesters, those systems usually operate under the build-own-transfer model, where technology providers manage the system's installation and operation. While the transfer of technological know-how is usually part of the agreement, in practice, farm owners and employees are not adequately trained during the process.

HIGH COST OF TECHNOLOGY

Implementing animal waste treatment systems with biodigesters that collect methane to fuel electricity generation would entail high investment costs for construction, equipment purchase, installation, operation and maintenance. This high cost is a deterrent for smallholder farmers. Larger stakeholders may perceive it as high risk as the investment will not translate into increased productivity.

LOW-COST ALTERNATIVES

Other low-cost alternatives are available for larger livestock producers who must comply with government regulations on wastewater discharge and treatment of wastewater. Most large farms have open lagoon systems to treat animal waste from their farms, which are usually adequate to meet discharge regulations and offer an inexpensive option. However, this sends methane emissions directly into the atmosphere.

LIMITED ACCESS TO FINANCING

Investment in low-carbon technologies, specifically animal waste treatment with biodigesters, is capital intensive. Smallholder farmers lack access to finance to implement such technology. Larger commercial producers will still find it difficult to access financing, as banks perceive the investment as high risk. At the same time, banks will not accept the biodigester system itself as collateral as they usually prefer real estate.

RECOMMENDATION AND POINT OF ENTRY 3

Establish enabling environment for quality biodigester technologies and solutions

Policies and regulations – Previous experience implementing biodigester projects in the Philippines has been primarily private sector-led, with minimal government intervention in terms of regulation. The Bureau of Animal Industry launched the National Animal Waste Resource Management Program in 2015 to promote biogas production in treating livestock waste. However, regulations have not yet been developed to ensure that biogas systems are high quality and meet certain standards.

Establishing an enabling environment for the implementation of biodigester systems is essential for disseminating the technology and scaling up private sector investment. Policies and regulations to be established could include implementation standards, certification for equipment and systems, and incentives.

Awareness campaigns – The Philippines lacks general lack of awareness of biodigester technologies. Awareness is usually created by technology providers who approach individual farms to propose installing their systems. Awareness-raising is needed to highlight the benefits of biodigester systems in terms of cost savings, environmental benefits and social benefits so that farmers can make informed investment decisions.

Best practice example: Code of Practice for on-farm biogas production and use at piggeries

The Code of Practice²⁸ (CoP) for on-farm biogas production and use at piggeries aims to provide a consistent framework and guidance for the safe design, construction, operation, and maintenance of biogas systems to facilitate greater uptake of biogas in the Australian pork industry. The CoP refers to international best practice and Australian regulations and standards relevant to biogas.

Main implementer	Government, through the development of the required enabling environment, will be the main implementer.
Private sector involvement	The private sector is expected to invest more in biodigester technologies and solutions if enabling environment is established.
Financial benefits	Increased savings (electricity and/or fuel) from biogas production.
Mitigation outcomes	Decreased use of electricity and/or non-renewable fuel and decreased GHG emissions.

RECOMMENDATION AND POINT OF ENTRY 4

Developing innovative business models focused on sustainability and replicability

Biogas technology and solution providers have been operating in the Philippines, offering farm owners several business models for operating biodigester systems. These include the BOT model, through which the system is provided to the farmer at no cost. In exchange, the farmer gives the provider the right to build, install and operate the biogas system on the farm premises. The farmer provides the amount of animal waste required to feed the system and then purchases the electricity that the system generates at a discount compared to the cost of electricity from the grid. The biogas system thus meets part of the farm's electricity demand. At the same time, a circular model could be considered for the slurry and residual by-products of the biodigester system, as biogas slurry is a good source of organic fertilizer for crop production.

Establishing an enabling environment to ensure the quality of the biogas systems provided to end-user farmers and developing innovative business models favourable to both technology providers and farmers would encourage the private sector to invest in biodigester systems.

Main implementer	Technology and solution providers of biodigester systems would be the main implementer, leading the development of innovative business models.
Private sector involvement	The private sector, through technology providers, is expected to be the driver for this entry point. Financial service providers, including commercial banks and non-banking institutions, may also be involved by providing financing to technology providers.
Financial benefits	Increased revenues for technology providers through increased demand from end users and cost savings for end users.
Mitigation outcomes	Decreased use of electricity and/or non-renewable fuel and decreased GHG emissions.

²⁸ Australian Pork Limited. 2015. *Code of Practice for On-farm Biogas Production and Use at Piggeries*.

Carbon finance to mitigate the high cost of technologies and solutions

Carbon finance, particularly results-based financing through the generation of emission reduction credits, could be leveraged to reduce the incremental cost of implementing biodigester technologies and solutions. The Philippines has experience in leveraging carbon finance under the CDM, with most of the country's registered projects related to biogas production through the treatment of animal waste. Although the current status of the carbon market is uncertain, it is expected to improve when negotiations over the new mechanisms under Article 6 of the Paris Agreement conclude and become operational.

Main implementer	Government and private sector would be the main implementer, taking the lead in leveraging carbon finance for the implementation of biodigester technologies.
Private sector involvement	Financial incentives provided by carbon finance would support the private sector by offsetting incremental costs associated with implementation of the biodigester technologies.
Financial benefits	Additional revenue stream reducing overall implementation cost
Mitigation outcomes	Decreased use of electricity and/or non-renewable fuel and decreased GHG emissions.

4.3 FINANCIAL INSTITUTIONS PROVIDING GREEN FINANCING RELEVANT TO THE AGRICULTURE SECTOR

Access to finance is critical to the Philippines agriculture sector. Short-term financing allows smallholder stakeholders to purchase the inputs required to sustain production, while medium- and long-term financing provides larger stakeholders the capacity to increase their investment in equipment, infrastructure and technology. Investing in additional assets to implement improved crop production practices and livestock waste management by using biogas is essential to reduce GHG emissions from the agricultural sector.

Several financial institutions provide financing to the Philippines agriculture sector; some provide specifically green financing. Table 11 maps the institutions that provide green financing and the financial products and services they offer.

Table 11: Financial institutions providing green financing to the agriculture sector

FINANCIAL INSTITUTIONS		SUBSECTOR SERVED	PRODUCTS AND SERVICES	DETAILS
Type	Example			
GOVERNMENT BANKS	Land Bank of the Philippines	Crop and livestock production	Agricultural Credit Support Project	Interest rate: 15% short-term (up to 1 year) 16% long-term (1-7 years)
			Agricultural and Fishers Financing Program	Interest rate: 15% Lendable amount: PHP 20,000-PHP 300,000
			Agricultural Competitiveness Enhancement Fund	Interest rate: 2% Lendable amount: up to 90% of project cost, up to PHP 1 million for individual farmer/fisherfolk, PHP 5 million per cooperative, association, and MSE
	Development Bank of the Philippines	Crop and livestock production	Green Financing Program	Lendable amount: up to 80% of project cost for private corporations, enterprises, cooperatives and associations; up to 90% for LGUs, GOCCs and Gas Interest rate: prevailing market rate Tenor: up to 15 years, with maximum 5 years grace period

FINANCIAL INSTITUTIONS		SUBSECTOR SERVED	PRODUCTS AND SERVICES	DETAILS
Type	Example			
COMMERCIAL BANKS	Bank of the Philippine Islands, BDO Unibank, RCBC	All sectors	Consumer finance (debt)	Existing commercial lending rates as indicated in BSP's statistics on effective lending rates of universal and commercial banks. ²⁹
FARMERS' ORGANIZATIONS, COOPERATIVES AND MICROFINANCE INSTITUTIONS	Rural-based organizations	Crop and livestock production	Usually short-term credit (up to 1 year); longer term also available (1 to 7 years)	Pass-on interest rates at 15%-16%
IMPACT INVESTORS, VCS AND PES	Mostly fund managers	Financial services, energy and agriculture	Equity and debt	Investment through cooperatives with focus on post-harvest value addition

4.3.1 GOVERNMENT BANKS

LAND BANK OF THE PHILIPPINES

The Land Bank of the Philippines (LBP) is a government-owned universal bank with a social mandate to spur development in the countryside, especially in unbanked and underserved areas. It focuses on providing financial and support services to small farmers and fishers, micro, small and medium enterprises, countryside financial institutions, LGUs and government agencies. Specific products and programmes that LBP provides the agriculture sector are detailed in Table 12.

Table 12: Products provided by the Land Bank of the Philippines for the agriculture sector

PRODUCT	DESCRIPTION	PURPOSE	DETAILS
SULONG SAKA PROGRAM	Credit assistance to farmers cultivating high-value crops and for qualified stakeholders to support their production, processing, marketing and other agribusiness projects	<ul style="list-style-type: none"> Fixed asset acquisition Building construction Production loan Rediscounting Working capital/ commodity loan Permanent working capital 	<ul style="list-style-type: none"> Production loan - standard project cost sharing of 80:20 (90:10 for small farmers) Fixed assets - no more than 80% of the acquisition/ construction cost Commodity loan - up to 85% of the market price of commodity at the time the loan is made
AGRICULTURAL CREDIT SUPPORT PROJECT	Credit support to agrarian reform beneficiaries' organizations, farmers' organizations, peoples' organizations and other conduits such as co-ops, rural banks and NGOs	To provide credit to sub-borrowers for crop production (short and long gestating crops), agri-enterprise, and livelihood projects (agri-related)	<p>Short-term loan Interest rate: 8.5% Tenor: up to 1 year</p> <p>Term-loan Interest rate: 9.5% Tenor: 1-7 years, 3-year grace period</p> <p>Pass-on rate to sub-borrowers: 15% per annum for short-term Loans 16% per annum for term loans</p>
AGRICULTURAL AND FISHERS FINANCING PROGRAM	Provides small farmers and fishers access to formal credit to finance their economic activities	<p>For small farmers cultivating no more than five hectares of land and/or engaged as small poultry/livestock raisers, defined as those raising not more than the following:</p> <ul style="list-style-type: none"> poultry (1,000 poultry layers or 5,000 broilers) swine (10 sow level or 20 fatteners) cattle (10 fatteners or 5 breeders) dairy (10 milking cows) goat (50 head) 	<p>Lendable amount: PHP 20,000 to PHP 300,000</p> <p>Interest rate: 15%</p> <p>Tenor:</p> <ul style="list-style-type: none"> Based on the crop/operating/ project cycle Based on estimated remaining useful life of fixed assets/ equipment acquired, but not to exceed 5 years

29 Banko Sentral ng Pilipinas. *Effective lending rates of universal and commercial banks for the week ending 11 March 2020.*

PRODUCT	DESCRIPTION	PURPOSE	DETAILS
AGRICULTURAL COMPETITIVENESS ENHANCEMENT FUND	Provides necessary credit to farmers and fisherfolk and their cooperatives and associations and MSEs to increase their productivity; Establishes an agricultural lending programme that enhances competitiveness of target project beneficiaries or sectors, especially small farmers and fisherfolk	<ul style="list-style-type: none"> • Purchase of farm input and equipment or farm improvement • Acquisition/establishment of agri-based production and post-production and processing machineries, equipment and facilities 	Lendable amount: up to 90% of total project cost, but not to exceed: <ul style="list-style-type: none"> • PHP 1 million per individual farmer/fisherfolk; and • PHP 5 million per project loan per farmers and fisherfolk cooperative and association, and MSE Interest rate: 2% Collateral required
ARISE-ARBS PROGRAM	Credit support for post-disaster emergency needs to restore livelihoods and farming activities of disaster affected agrarian reform beneficiaries (ARBs) and small farm holders (SFHs)	Livelihood/agri-enterprise loans – to augment conduit funds for relending to ARBs/SFHs to finance their livelihood and agri-enterprises projects Providential loans –to augment conduit's funds for relending to member ARBs/SFHs to finance home or office repairs	Lendable amount: <ul style="list-style-type: none"> • Livelihood/agri-enterprise loans - up to PHP1 million per conduit • Providential loans - up to PHP 10,000 per ARB/SFH or up to PHP 100,000 per conduit Interest rate: Livelihood/agri-enterprise loans - 3% Providential loans - 0% Pass-on rate: Livelihood/agri-enterprise loans - 6% Providential loans - 0%
CARBON FINANCE SUPPORT FACILITY	Promotes climate change-mitigating activities to pig farm owners by providing financing and CDM services	Implementation of biodigester systems by farm owners to be included as a project in LBP's CDM POA "Methane recovery and combustion projects from pig manure management systems" registered with the UNFCCC	LBP provides assistance with CDM documentation, monitoring and verification LBP has emission reduction purchase agreement with the World Bank CERs leveraged as additional source of loan repayment and security

The Land Bank of the Philippines is an important source of finance for the country's crop production and livestock subsectors. The bank provides products and services directly to individual smallholder farmers and SMEs and to conduits such as farmer organizations, cooperatives and rural banks.

LBP created the Carbon Finance Support Facility, which supports pig farmers in adopting biodigesters to treat animal waste and use the biogas produced through a CDM programme of activities (CDM POA) registered with the UNFCCC. Under its programme, Methane Gas Recovery and Combustion with Renewable Energy Generation from Anaerobic Animal Manure Management Systems, LBP can include additional biogas projects as part of the CDM POA. The Bank provides support by conducting due diligence, facilitating endorsements from the Designation National Authority, and assisting with CDM documentation, monitoring and verification. The potential certified emission reduction units (CERs) generated from individual projects are leveraged as an additional source of loan repayment and security.

LBP's other products and services do not provide green financing specifically for the agriculture sector. However, the current products could accommodate climate action projects in crop production and livestock.

DEVELOPMENT BANK OF THE PHILIPPINES

The Development Bank of the Philippines (DBP) is a government-owned development financial institution. It is classified as a development bank and may perform all other functions of a thrift bank. Its primary objective is to provide banking services that meet the medium- and long-term needs of agricultural and industrial enterprises with an emphasis on small- and medium-scale industries.

DBP has demonstrated its commitment to environmental protection and sustainable development by integrating environmental considerations into all aspects of its operations. DBP provides financing and technical assistance to ecologically-sound projects and encourages clients and participating financial

institutions under its wholesale lending programme to include green considerations in their businesses and operations.

DBP's Green Financing Program falls under its development financing for the environment and climate change, aligned with the country's green growth strategy. The programme provides financing assistance to strategic sectors, industries and LGUs to adopt environment-friendly processes and technologies and incorporate climate change adaptation and mitigation and disaster risk reduction measures. Eligible projects under the programme relevant to crop and livestock production include the installation/upgrading of wastewater treatment systems, waste-to-energy, and other GHG emission reduction/avoidance projects.

4.3.2 COMMERCIAL BANKS

Commercial banks in the Philippines provide credit to the agriculture sector. Under the Agri-Agra Reform Credit Act of 2009, which established an agriculture and agrarian reform credit and financing system through banking institutions, all banking institutions must allocate at least 25 percent of their total lendable funds for agriculture credit, including at least 15 percent for agriculture and fisheries and at least 10 percent for agrarian reform beneficiaries. However, as of July 2020, only rural and cooperative banks were able to comply.³⁰ Reportedly, banks prefer to pay the penalty for non-compliance rather than lend to farmers perceived as a high credit risk. However, it has also been reported that the BSP is considering including green loans as part of banks' mandated Agri-Agra credit compliance.³¹ Based on the final details, this could promote increased lending to the agriculture sector or divert the credit intended for the agriculture sector to other sectors.

In terms of green investments, the commercial banking sector does not provide products and services that explicitly support low-carbon and resilient practices in the agriculture sector. However, commercial banks, such as the Bank of the Philippine Islands, BDO Unibank, and RCBC, began supporting green financing by establishing frameworks within their respective organizations. Although commercial banks' green financing is usually geared towards green bonds, it also aims to serve green loans. This could be an opportunity for agriculture sector stakeholders.

The products and services offered by commercial banks can generally support investments in low-carbon and resilient development in the agriculture sector. However, green products specific to the agriculture sector are not available. This is due primarily to the perceived high risk of both the technologies involved in implementing low-carbon and resilient agriculture-related projects and the agriculture sector stakeholders overall, particularly smallholder farmers, who may not meet the requirements of commercial banking.

RECOMMENDATION AND POINT OF ENTRY 6

Encouraging green investments in the agriculture sector

Investments in mitigating the impacts of climate change in agriculture are similar to traditional investments, as they are related to financing equipment, machinery and inputs. However, green investments are considered to be more sustainable in the long term. They increase the resilience of producers and industry to climate change and reduce their contribution to it, which reduces investment risk. Some investors have integrated these environmental criteria into their investment framework. They are encouraged to do so because these investments present fewer risks than traditional ones. Several environmental, social and governance (ESG) rating agencies rate portfolios and companies based on their ESG performance, which increasingly drives ESG investing.

The development of guidelines and guidance formalizing green investments will encourage green investment in the agriculture sector. Supporting the financial sector by formalizing the definition of green investments could also drive sustainable agriculture investments.

The Philippines already has its Sustainability Reporting Guidelines for Publicly-Listed Companies and Sustainable Finance Framework. The former defines a reporting framework for companies in sustainable

30 Banko Sentral ng Pilipinas. 2020. *Banking Statistics - Agricultural-Agrarian Reform Credit - Philippine Banking System*.

31 BusinessWorld Publishing. Article, August 28, 2020. *BSP wants to count green loans against Agri-Agra compliance*.

finance and the latter sets out green financing mandates for banks. These enabling initiatives could be built upon to provide green investment specific to the agriculture sector.

Best practice example: EU Taxonomy³²

The European Commission has published its taxonomy for sustainable finance, a classification instrument to help financial players and companies determine which activities qualify as sustainable. This is part of the EU's push to support the development of a low-carbon economy. The taxonomy will underpin new regulations that will regulate disclosures for ESG investment and prevent greenwashing attempts.

Main implementer	Government will be the main implementer, through the BSP, to develop the enabling environment for green investment in agriculture.
Private sector involvement	The private sector is expected to invest more in green technologies and solutions with the establishment of the enabling environment
Financial benefits	Higher productivity in crop and livestock production
Mitigation outcomes	Increased green agricultural practices and decreased GHG emissions

4.3.3 FARMERS' ORGANIZATIONS, COOPERATIVES AND MICROFINANCE INSTITUTIONS

Farmers' organizations, cooperatives and microfinance institutions are important stakeholders in the Philippines for financial inclusion in the agriculture sector. The products and services that government banks provide target smallholder farmers and they generally have access to commercial banking. However, in practice, smallholder farmers usually do not take advantage of the commercial banks' products and services as those farmers do not meet financing requirements. At the same time, commercial banks perceive lending to smallholder farmers to be high risk.

As such, farmers' organizations, cooperatives and microfinance institutions play a crucial role in providing financing to smallholder farmers. They serve as conduits in accessing financing available specifically from commercial banks for the agriculture sector, with the LBP, in particular, assuming some of the risk of providing financing to smallholder farmers. The financing that farmers' organizations, cooperatives and microfinance institutions offer is usually short term and usually imposes additional interest on top of the commercial banks' interest rates. This could be useful to farmers investing in basic agricultural inputs. However, low-carbon and resilient agricultural investment that can help the country achieve its NDC, such as precision agriculture for proper fertilizer use and installation of biodigester systems, will require longer-term financing.

RECOMMENDATION AND POINT OF ENTRY 7

Providing equipment and machinery to smallholders at lower costs

Mitigation actions in agriculture, such as using precision agriculture and installing biodigester systems, often require equipment and machinery. Precision agriculture also relies on GPS and automated solutions. Such equipment and machinery remain expensive for smallholders. Access to equipment and machinery is usually facilitated by improving access to agricultural credit, but this can also be achieved by reducing the initial cost.

Leasing may offer a satisfactory financial solution for smallholders. For example, leasing does not require collateral, as the leased asset becomes the collateral. At the end of the lease, the lessor may retain legal ownership of the assets, which reduces the credit risk for the financial service provider.

Lending assets on a short-term basis is another potential solution to overcome obstacles to access to credit. Some startups and companies already lend agricultural equipment and machinery on a short-term basis.

Best practice example: Rent to Own³³

In Zambia, farmers and rural business owners lack access to affordable, available and appropriate equipment for key business ventures, such as farming and food production. Without productive assets, these entrepreneurs cannot realize their business potential.

³² European Commission, 2020. *Taxonomy: Final report of the Technical Expert Group on Sustainable Finance*.

³³ <https://rtoafrica.com/about-us/>

Founded in 2010, Rent to Own is a social business that seeks to provide high-impact assets to micro-entrepreneurs in rural Zambia. These assets, such as refrigerators, hammer mills and irrigation pumps, help catalyse business growth and improve prosperity for smallholders who lack access to equipment due to high initial costs. The company's business model focuses on providing equipment along with a set of services, including tailored financing, delivery, and training on equipment maintenance and repair, so that each client has a comprehensive skills and knowledge needed to use the assets.

Best practice example: Connecting tractor owners and users - Hello Tractor³⁴

Hello Tractor supports smallholder farmers in sub-Saharan Africa by connecting them to tractor owners through an application that supports mechanization by reducing transaction costs. With Hello Tractor platform, farmers can request affordable tractor services enabling them to plant 40 times faster and 2.5 times less expensively than conventional manual methods.

Main implementer	Farmers' organizations, cooperatives and microfinance institutions would be the main implementers, leading the development of innovative products and services to reduce equipment and machinery costs for smallholder farmers.
Private sector involvement	The private sector through farmers' organizations, cooperatives and microfinance institutions are expected to be the main drivers for this entry point. Commercial banks may also be involved by providing financing to conduits.
Financial benefits	Increased revenues for rural-based organizations; access to financing and technology for end users for better productivity
Mitigation outcomes	Better access to low-carbon technologies and decreased GHG emissions

4.3.4 IMPACT INVESTORS, VENTURE CAPITAL FIRMS AND PRIVATE EQUITY FUNDS

The Philippines is Southeast Asia's second-largest impact investment market. At least 23 active private impact investors, operating in a wide range of sectors, deployed impact capital of \$107.2 million between 2007 to 2017. The financial services and energy sectors have the highest volume of private impact investment activity, with the agriculture sector experiencing growth. Investment in agriculture makes up 13 percent of total private impact investment via a mix of equity and debt instruments, with average deal size of \$500,000.³⁵

The technology landscape in the Philippines has been improving, paving the way for incubators and accelerators. Most incubators are technology focused, supporting tech-based impact business models. Some are dedicated exclusively to impact or social enterprises. For example, Villgro Philippines, an early-stage impact incubator aiming to inspire, mentor, fund and nurture entrepreneurs addressing the most urgent social issues through innovative market-based models, includes the agriculture sector among its high-impact focus areas. It seeks to provide market access to agriculture and fisheries commodities, products and services to increase farm productivity, and to technology solutions to make farming profitable for smallholder farmers.

RECOMMENDATION AND POINT OF ENTRY 8

Fostering innovation specific to low-carbon and resilient development in agriculture

Impact investment in the Philippines has been increasing over the years and the startup ecosystem is favourable. The country's incubators and accelerators can support entrepreneurs willing to invest in climate change-related activities and technologies in the agriculture sector, such as climate-smart agriculture. However, services that focus on agricultural technologies remain very limited. Increasing their presence could further scale up private investment in the agriculture sector. Impact investors, incubators and accelerators could leverage grants and other sources of concessional financing to provide focused services.

³⁴ <https://hellotractor.com/about-us/>

³⁵ Global Impact Investing Network. 2018. *The Landscape for Impact Investing in Southeast Asia – Philippines: An Introduction to the Impact Investing Landscape*.

Best practice example: Impact investors and GCF

GCF has provided financing to Acumen, an impact investment fund, to develop an investment fund, KawiSafi, to drive off-grid solar power in East Africa. The fund seeks to spur a low-carbon paradigm shift and leapfrog fossil fuel grids to clean energy, using equity capital from GCF to leverage investment and grant capital to set up a technical assistance facility.

Best practice example: Acceleration services and funding focused on climate change and agriculture

The Kenya Climate Innovation Center (KCIC) provides holistic, country-driven support to accelerate the development, deployment and transfer of locally relevant climate and clean energy technologies. KCIC provides incubation, capacity-building services and financing to Kenyan entrepreneurs and new ventures developing innovative solutions in energy, water and agribusiness to address climate change. KCIC was the first incubation centre under the infoDev Climate Technology Program.

KCIC also provides financing options throughout the investment cycle. At seed level, it provides grants to entrepreneurs. After this stage, it provides loans. When companies become investable, KCIC can also invest through its VC firm, Kenya Climate Ventures.

In 2018, a similar initiative was launched in Brazil through the Nucleus for Technological Innovation for Family Agriculture (NITA). NITA supports small businesses developing and commercializing climate-smart solutions for family farmers in Santa Catarina.³⁶

Main implementer	Incubators and accelerators would be the main implementers, leading the development of agriculture-focused incubation services.
Private sector involvement	The private sector, through incubators and accelerators, is expected to be the driver of this entry point.
Financial benefits	Acceleration service providers will benefit from concessional financing and technical support. This will be extended to entrepreneurs benefitting from the programmes, which will have access to these services at a reduced cost.
Mitigation outcomes	Decreased overall GHG emissions in the agriculture sector.

The Philippines agriculture sector is driven primarily by private sector stakeholders involved in crop production and livestock production value chains. Smallholder farmers dominate the crop production value chain, with small to large enterprises involved in the other stages, from providing agricultural inputs to processing. In livestock production, smallholders and larger stakeholders are involved throughout the value chain.

Private sector investment in low-carbon technologies and practices in the agriculture sector should be scaled up to address GHG emissions in the sector and contribute to reducing the country's overall GHG emissions, while simultaneously improving agricultural productivity.

In the crop production value chain, the private sector should focus on implementing AWD irrigation practices in rice cultivation to avoid methane emissions associated with the traditional flooding of rice fields. The private sector should also focus on variable rate fertilizer application technologies, which would help to better manage nitrogen and potentially avoid N₂O emissions. However, investments in these technologies and practices involve purchasing equipment and machinery, which would require longer-term debt financing and/or innovative solutions, such as leasing. Technical assistance, particularly for smallholder farmers, is also crucial to implement these measures successfully.

In the livestock production value chain, the private sector should focus on investment in biodigesters to treat livestock waste and use of the biogas produced to generate heat and/or electricity. Implementing this technology will require medium- to long-term investment, so improving the conditions for obtaining long-term credit is crucial for the sector.

³⁶ <http://www.infodev.org/articles/new-climate-center-brazil-brings-together-entrepreneurs-and-farmers>

Innovation can support initiatives in low-carbon agriculture, particularly in crop and livestock production. It is therefore important that the Philippines give greater emphasis to innovation by establishing an appropriate enabling environment in terms of acceleration services and seed funding to innovative ventures in agriculture technologies. Finally, to further support the private sector and leaders in low-carbon development, the country should support the development of green financing schemes by further driving sustainable investment initiatives and encouraging commercial banks to further integrate ESG in their investment decisions.

5. PRIVATE SECTOR INVESTMENT POTENTIAL

The Philippines' INDC targets a 70 percent reduction in GHG emissions by 2030 relative to the BAU scenario, conditional on receiving external financial support. The INDC does not include the agriculture sector in its strategy to achieve this mitigation target. However, the country is considering including it as it develops its NDC, to be submitted by 2020.

This section estimates private sector investment potential in the agriculture sector, based on adaptation and mitigation actions identified for its NDC.

5.1 DATA SOURCES

To analyse the sector's private sector investment potential, targets were derived from mitigation options identified in the cost-benefit analysis study, which was used as the basis for developing the NDC. The Philippines' targets in the agriculture sector relevant to private sector investments are detailed in Table 13.

Table 13: Potential NDC targets for the Philippines' agriculture sector

ITEM	NDC TARGETS	
	2020	2050
Improved management of organic and inorganic fertilizers	10% reduction in inorganic fertilizer use	20% reduction in inorganic fertilizer use
AWD in rice production	10,000 hectares per year	
Crop diversification	10% increase of leguminous crop area	20% increase of leguminous crop area
Use of biodigesters	12% of swine waste treated	

5.1.1 IMPROVED MANAGEMENT OF ORGANIC AND INORGANIC FERTILIZERS

This mitigation action involves reducing the amount of synthetic fertilizer used and increasing organic fertilizer use for rice cultivation. From the farmers' and smallholders' perspective, given the investment costs, the direct costs of implementing this mitigation action would be negative. Thus, farmers would actually spend less to use organic fertilizers on a per unit basis, compared with inorganic fertilizer. Private sector investment potential for this mitigation action considers investments in building organic fertilizer production facilities that would help meet the demand for organic fertilizer in the Philippines.

The data on total harvested area for rice cultivation was obtained from the PSA database, OpenSTAT,³⁷ which includes 2019 information on total harvested area for rice. Data from past years, as well as results in the literature,³⁸ suggest that rice cultivation area will not increase significantly. As such, projections for 2030 and 2050 are assumed constant.

Data from the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), a council of the Department of Science and Technology (DOST), was used to determine the amount of organic fertilizer used to replace inorganic in rice cultivation.³⁹ Its publication, *The Philippines Recommends for Organic Fertilizer Production and Utilization*, provides information on the amount of organic fertilizer used in the DA's TIPID ABONO programme on a per hectare basis. Under this programme, organic fertilizer users applied 50 percent organic and 50 percent inorganic fertilizer.

³⁷ Philippine Statistics Authority: OpenSTAT database. Agriculture, Forestry, Fisheries. <http://openstat.psa.gov.ph/Database/Agriculture-Forestry-Fisheries>

³⁸ The cost-benefit analysis of mitigation options study used the same assumption, referring to literature from (Roy and Misra, 2002, Wailes and Chavez, 2012). This report assumes the same.

³⁹ Department of Science and Technology (DOST) – Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD). 2006. *The Philippines Recommends for Organic Fertilizer Production and Utilization*.

Through its National Organic Agriculture Program, the DA's Bureau of Soils and Water Management (DA-BSWM) provides composting facilities for biodegradable waste units and small-scale composting facilities to qualified LGUs.⁴⁰ Costs for composting facility units and production capacities were extrapolated from the programme information.

Data sources used for the calculation of investment potential are described in Table 14.

Table 14: Data sources for improved management of organic and inorganic fertilizers

ITEM	DATA	DATA SOURCE
Rice harvested area in 2019	4,651,490 hectares	PSA: OpenSTAT database on Palay area harvested
Amount of organic fertilizer use	250 kg per hectare	DOST-PCARRD
Costs for organic fertilizer production facility	\$11,576 per facility	DA-BSWM
Production capacity per facility	500 kg/2 weeks	DA-BSWM

5.1.2 AWD IN RICE PRODUCTION

This mitigation action involves changing farmers' practice of continuously flooding their rice fields to alternate wetting and drying of the fields through water resource management. This reduces methane emissions that occur in anaerobic conditions during rice cultivation. Direct investments associated with implementing AWD in rice fields involve a simple tool that guides farmers in determining the water level below the surface of the soil, which tells when to irrigate and how much water to use. The tool is a tube made of perforated polyvinyl chloride (PVC), or any other material that could be used as a tube. It measures about 25 cm long with a diameter of 10 cm and serves as an observation well. The cost of installing an observation well is around \$2.00 for a PVC well and practically nothing if made from repurposed materials.

However, implementing AWD – and convincing farmers to change their water management practices for rice cultivation - is not as straightforward as simply investing in observation wells. The practice of flooding rice fields until harvest is deeply entrenched. Despite studies by national and international organizations on the benefits of AWD and several pilot studies to prove its effectiveness, farmers still follow their traditional practice. Thus, holistic approaches should be taken into account when considering implementing this mitigation action.

In 2015, UNDP developed a NAMA, Adaptation and Mitigation Initiatives in Philippine Rice Cultivation, which provides an implementation plan for adopting AWD practice.⁴¹ The NAMA identifies the necessary interventions as a holistic approach to implementing AWD. The implementation costs include capacity building and training for farmers, with support from national agencies and LGUs, and providing incentives. The NAMA provided the basis for determining the costs of implementing this mitigation action.

Data sources used to calculate investment potential are described in Table 15.

Table 15: Data sources for AWD in rice production

ITEM	DATA	DATA SOURCE
Total area targeted by the NAMA	750,000 hectares	Adaptation and Mitigation Initiatives in Agriculture in Philippine Rice Cultivation
Total cost of the NAMA	\$16,009,383	DOST-PCARRD
Cost per 10,000 hectares	\$213,458	Estimated; scaled-down

⁴⁰ Department of Agriculture – Bureau of Soils and Water Management.

⁴¹ United Nations Development Programme. 2015. *Adaptation and Mitigation Initiatives in Philippine Rice Cultivation*.

5.1.3 CROP DIVERSIFICATION

This mitigation action involves planting nitrogen-fixing legumes, such as mongo beans, cowpeas and soybeans, in rotation with other cash crops. This increases the amount of nitrogen in the soil and reduces the need for inorganic fertilizers. Private sector investment associated with this mitigation action assume that mongo is intercropped in rice cultivation fields. The PSA provides information on the average costs for mongo production per hectare in 2012.⁴² As with data regarding the improved management of organic and inorganic fertilizers, data on total harvested area for rice cultivation was obtained from the PSA database, OpenSTAT.

Data sources used to calculate investment potential are described in Table 16.

Table 16: Data sources for crop diversification

ITEM	DATA	DATA SOURCE
Rice harvested area in 2019	4,651,490 hectares	PSA: OpenSTAT database on Palay area harvested
Cost of mongo production	\$291 per hectare	PSA

5.1.4 USE OF BIODIGESTERS

This mitigation action involves capturing methane generated from the management of livestock manure. The methane captured can be used as a domestic energy source to provide fuel for electricity generation or other uses. This mitigation option also provides co-benefits in the form of improved local air quality and domestic energy production. Private sector investments associated with this mitigation action involve investments in biodigester facilities to treat livestock waste and capture the methane generated from the decomposition of manure. The PSA provides statistics on the total number of swine in the Philippines for 2019. The Bureau of Animal Industry provides cost estimates of biogas digesters, both for high-density polyethylene (HDPE) and stacked dome designs.⁴³ A 2015 study also reported on treatment capacities for biogas digesters in the Philippines.⁴⁴

Data sources used to calculate investment potential are described in Table 17.

Table 17: Data sources for biodigester use

ITEM	DATA	DATA SOURCE
Head of swine (2019)	12,800,000	PSA Swine Situation Report
Cost of biodigester	\$1,078- \$1,176 per 4m ³ facility	Bureau of Animal Industry
Treatment capacity	20 heads per 4m ³ facility	Batangas State University

5.2 INVESTMENT POTENTIAL

The private sector investment potential for each mitigation option in the sector is assessed based on the Philippines' agriculture sector mitigation targets, baselines and investment costs. The basis for developing the NDC identifies medium-term (2030) and long-term (2050) targets. This assessment of investment potential considers both medium- and long-term targets.

⁴² Bureau of Agricultural Statistics. 2013. *Updated Production Costs and Returns of Selected Commodities, Part II: Other Commodities 2010-2012*.

⁴³ Bureau of Animal Industry. 2015. *Presentation on Waste Management and Biogas Technology Promotion in the Philippines*.

⁴⁴ Batangas State University. 2015. *Implementing Biogas Technology Project in Malvar, Batangas, Philippines*.

5.2.1 IMPROVED MANAGEMENT OF ORGANIC AND INORGANIC FERTILIZERS

The Philippines seeks to reduce the use of inorganic fertilizers for rice cultivation by 10 percent by 2030 and by 20 percent by 2050. Based on data sources and assumptions used under section 5.1.1, this represents estimated private sector investment opportunities of **\$103,263,081** (2030 targets), and **\$206,526,162** (2050 targets). The calculation of investment potential for this mitigation action is presented in Table 18.

Table 18: Calculation of investment potential for improved management of organic and inorganic fertilizers

PARAMETER	2030	2050
Total annual capacity/facility	13,036 kg/year	
NDC targets	10% organic fertilizer use	20% organic fertilizer use
Amount of organic fertilizer required to achieve target	116,287,250 kg/year	232,574,500 kg/year
Number of facilities to meet demand	8,921 facilities	17,841 facilities
Total investment potential	\$103,263,081	\$206,526,162

5.2.2 AWD IN RICE PRODUCTION

The Philippines aims to implement AWD as a water management practice in the country's rice production subsector by changing farmers' rice cultivation practices on approximately 10,000 hectares per year. At that pace, about 100,000 hectares will have been converted to AWD by 2030 and 300,000 hectares by 2050. The investment potential is thus **\$2,134,584 by 2030** and **\$6,403,753 by 2050**.

As discussed in section 5.1.2, potential investments for this mitigation action are associated with a holistic approach to raising awareness and building stakeholders' capacity so that AWD can be scaled up in rice cultivation. As such, direct investment per se is not expected to generate returns and does not make a business case for private sector investment. However, private sector participation could be encouraged through innovative financing sources, particularly carbon financing, as the generation of emission reductions from AWD in rice cultivation can support the costs of its implementation. Although the carbon market has slowed, it is expected to pick up and improve as mechanisms under Article 6 of the Paris Agreement are operationalized. At the same time, based on this expectation, some organizations are willing to purchase emission reductions at a premium in the meantime.

5.2.3 CROP DIVERSIFICATION

The Philippines aims to increase the amount of harvested rice fields intercropped with leguminous crops by 10 percent of rice fields by 2030 and 20 percent by 2050. Based on data sources and assumptions used under section 5.1.3, this represents an estimated private sector investment opportunity of **\$135,239,792 annually** to achieve the 2030 targets and **\$270,479,583** for the 2050 targets. The calculation of investment potential for this mitigation action is presented in Table 19.

Table 19: Calculation of investment potential for crop diversification

PARAMETER	2030	2050
NDC targets	10% using crop diversification	20% using crop diversification
Land area using crop diversification	465,149 hectares	930,298 hectares
Cost of crop diversification	\$291 per hectare	
Total investment potential	\$135,239,792	\$270,479,583

5.2.4 USE OF BIODIGESTERS

The Philippines aims to increase the amount of swine waste managed and treated in biodigesters to 12 percent in 2030 and 2050. Based on data sources and assumptions used under section 5.1.4, this mitigation action represents a total of about \$82,823,529 to \$90,352,941 in private sector investment opportunities, depending on the type of technology. The calculation of investment potential for this mitigation action is presented in Table 20.

Table 20: Calculation of investment potential for use of biodigesters

PARAMETER	VALUE
Heads of swine in 2019	12,800,000
Cost of biodigester	\$1,078-\$1,176 per 4m3 facility
Treatment capacity	20 head per 4m3 facility
NDC target	12% in 2030 and 2050
Number of facilities to meet target	17,800 facilities
Total investment potential	\$82,823,529-\$90,352,941

6. REPORTING FRAMEWORK TO ALIGN BUSINESS OPPORTUNITIES WITH NDC IMPACT TARGETS IN THE PHILIPPINES' AGRICULTURE SECTOR

Encouraging the private sector to invest in NDC actions is important if the Philippines is to achieve its climate goals. It also constitutes a significant business opportunity for the private sector. However, the private sector can also capitalize on these opportunities by better aligning with the objectives detailed in the NDC and in the SDGs.

This section details the rationale for private sector alignment with NDC targets and the SDGs, and provides a reporting framework for the private sector.

6.1 RATIONALE FOR PRIVATE SECTOR ALIGNMENT WITH NDC IMPACT TARGETS

Governments and international organizations engage the private sector to leverage stakeholder investments in the NDC. The NDC can offer the private sector additional business opportunities, but it is often unaware of those opportunities. It is therefore important to highlight and translate them into clear reporting frameworks, which the private sector can then leverage to enhance its understanding of the added value that climate investments bring.

A clear understanding of this alignment, or the extent to which it can align with NDC actions, offers the private sector potential advantages. First, it enables the sector to identify actionable actions, which can be translated into business opportunities.

From a longer-term perspective, adopting reporting frameworks is also the first step towards reporting and disclosing impacts on climate objectives and SDGs. For the private sector, this can improve valuations and credit scores. Impact investors and climate finance sources may also be more comfortable providing financing to private stakeholders with established reporting frameworks and understanding the impact their business has on the country's climate challenge.

6.2 REPORTING FRAMEWORKS

The NDC and SDGs have been chosen as the main reporting frameworks for this report. Business opportunities in the agriculture sector identified in this report are linked to NDC objectives and SDG targets in the following tables. To provide the businesses more in-depth information, clear metrics representing measurable key performance indicators are also included.

The reporting frameworks are intended to be leveraged and tailored by individual businesses, depending on the specific characteristics of each. For example, technology providers providing financial services, such as leasing, may use impact metrics related to access to finance.

6.2.1 CROP PRODUCTION: IMPROVED MANAGEMENT OF ORGANIC AND INORGANIC FERTILIZERS

Producers and technology providers in the value chain have a direct impact on N₂O emissions based on the proper application of fertilizer. Producers have the opportunity to better manage nutrients for their crops, which offers significant economic benefits by reducing production costs. In crop production, business opportunities can have direct impacts on and benefits for climate and the SDGs, such as improving livelihoods through better income. These are therefore considered direct benefits, rather than as co-benefits.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	Mitigation option target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
CLIMATE-SMART NUTRIENT MANAGEMENT (PRECISION AGRICULTURE AND VARIABLE RATE APPLICATION OF FERTILIZER)	Reduce the use of synthetic fertilizers in rice production by 5%, 10% and 20% by 2020, 2030 and 2050, respectively, compared to the 2010 level	Increased use of organic fertilizer, resulting in decreased use of synthetic fertilizer	2 – Zero hunger	2.3 By 2030, increase the agricultural productivity and incomes of small-scale food producers	# and value (US\$) of climate-smart equipment and services deployed Productivity of crop producers (tons of crops produced by ha) Increased income of crop producers (US\$) Decreased cost of fertilizer usage (US\$)
				2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, help maintain ecosystems and strengthen capacity for adaptation to climate change	Volume of nitrogen fertilizer used (tons/output) for soybean production (commercial and smallholders) Direct (estimated) carbon reduction achieved through efficient nutrient management (tCO ₂ e)
			13 – Climate action	Accelerated decarbonization and resilience of the agriculture sector	
			1 – No poverty	1.4 Ensure that all men and women, in particular the poor and the vulnerable, have equal access to basic services, appropriate new technology and financial services, including microfinance	# and value of loans (US\$) developed for precision agriculture # and value of leasing agreement (US\$) provided by local financing organizations (cooperatives, banks)
			8 – Decent work and economic growth	8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	
				8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	# of technology providers in the Philippines providing climate-smart equipment and technologies to producers, as well as value (US\$) provided
			9 – Industry, innovation and infrastructure	9.b Support domestic technology development, research and innovation in developing countries	

KEY

Direct impact

Long-term industry impact

Co-benefits

6.2.2 LIVESTOCK PRODUCTION

Producers and technology providers in the value chain have a direct impact on methane emissions. Producers have an opportunity to improve their livestock waste treatment systems and have access to an additional source of energy by producing biogas, which also offers significant economic benefits.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	Mitigation option target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
USE OF BIODIGESTERS	Increase the amount of swine waste handled in biodigesters from 2% in 2010 to 7% in 2020, and to 12% in 2030 and 2050	Use of biodigesters in livestock production, which capture and destroy CH ₄ and N ₂ O emissions from the decomposition of animal manure and produce renewable energy that replaces the use of traditional fuels	13 – Climate action	Accelerated decarbonization and resilience of the agriculture sector	Direct (estimated) carbon reduction achieved through wastewater treatment and methane capture (tCO ₂ e) Direct (estimated) carbon reduction achieved through the use of renewable biogas for energy (tCO ₂ e)
			1 – No poverty	1.4 Ensure that all men and women, in particular the poor and the vulnerable, have equal access to basic services, appropriate new technology and financial services, including microfinance	# and value of loans (US\$) developed for low carbon practices in the livestock value chain
			8 – Decent work and economic growth	8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	
				8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	# of technology providers in the Philippines providing equipment and technologies to producers related to use of biodigester systems, as well as value (US\$) provided
			9 – Industry, innovation and infrastructure	9.b Support domestic technology development, research and innovation in developing countries	
			3 – Good health	3.9 Reduce health hazards from air, water and soil pollution and contamination	# of related illnesses and deaths
			6 – Clean water and sanitation	6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Volume of livestock wastewater safely treated (m ³)

KEY

Direct impact

Long-term industry impact

Co-benefits

To better leverage the reporting framework, it is recommended that private sector stakeholders use additional tools. For example, to calculate GHG emission reductions and better mainstream the NDCs and SDGs into their operations, private companies may consider leveraging the following tools.

Calculating GHG emissions: Greenhouse Gas Protocol⁴⁵

Calculating GHG emissions can be challenging for businesses. It requires following specific and complex methodologies, which may not be easy to approach without the appropriate guidance.

The Greenhouse Gas Protocol provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions. It provides online tools to measure and manage GHG emissions, as well as related trainings. The platform builds on a long-term partnership with international stakeholders, including the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

Tools include the Project Protocol, which is used to quantify the GHG benefits of climate change mitigation projects. It provides specific principles, concepts, and methods for quantifying and reporting GHG reductions—i.e., decreases in GHG emissions or increases in removals and/or storage—from climate change mitigation projects (GHG projects).

The Protocol also provides extensive guidance on developing business-level emission inventories, measuring emissions from purchased/acquired electricity and estimating avoided emissions.

Aligning with and mainstreaming the SDGs/Sustainability: Impacti Solutions⁴⁶

Aligning with the SDGs and integrating sustainability goals into operations can be an important step for enterprises. The SDGs and sustainability provide new business opportunities that the private sector can explore. However, businesses may find it complex to understand where they fit in the scope of the SDGs.

Impacti Solutions provides tools that can help the private sector understand the SDGs and impact areas where they can have the greatest impact. The Rapid SDG Opportunity Finder Tool provides personalized recommendations on priority SDGs and impact areas suited to specific businesses. After businesses choose their priority SDGs, the tool introduces them to thematic areas within each SDG. Businesses receive a personalized SDG business profile with chosen priorities at the end of the assessment. This helps businesses identify strategies to better integrate SDGs in their operations.

Impacti Solutions also provides an online platform to view and update an SDG business profile and connect with like-minded businesses and an Impact Data Management Tool, which makes it possible to streamline data management, track and manage impact, and create reports.

⁴⁵ <https://ghgprotocol.org/companies-and-organizations>

⁴⁶ <https://impacti.solutions/>

7. CONCLUSION

GHG emissions in the Philippines account for only 0.3 percent of total global GHG emissions. Although a relatively low emitter of GHG, the country is highly vulnerable to the impacts of climate change. To address this challenge, the Government of the Philippines has taken measures to ensure that its people are resilient to the effects of climate change and to help mitigate global warming as its economic development advances. This is evident in the country's policies, strategies and plans incorporating low-carbon sustainable economic growth into the Philippines' development planning framework.

In its INDC, the Philippines stated the country's intention to reduce GHG emissions by about 70 percent by 2030 relative to its BAU scenario, conditional on financial resources. Emission reductions will come from the energy, transport, waste, forestry and industry sectors. Mitigation contributions from the agriculture sector were not included in the INDC, so no specific mitigation actions were identified under the sector. Adaptation measures identified for the agriculture sector include enhancing climate and disaster resilience. The INDC also acknowledged the key role that the private sector will play in implementing climate change-related activities. The government intends to provide a policy environment that will allow the private sector to participate to optimize mitigation opportunities and reduce business risks on the path to climate-smart development.

The Government of the Philippines has developed a wide range of policies related to climate change and the agriculture sector that emphasize the need to involve the private sector. They include the Climate Change Act of 2009, which mainstreamed climate change into government policy formulations and established the framework strategy and programme on climate change. In the agriculture sector, the 1997 AFMA takes into account climate change considerations in formulating appropriate agricultural and fisheries programmes. The Philippine Development Plan lays out a stronger foundation for inclusive growth, a high-trust society and a globally-competitive economy. It provides opportunities for private sector participation through greater farm mechanization, technology adoption, organized farm management, and climate-resilient small-scale irrigation systems as entry points.

The Philippines highlights the importance of the agriculture sector to overall contributions to the economy and to achieving food security and self-sufficiency. The country prioritizes implementation of adaptation measures within the sector that will reduce vulnerability and risks to the community and acknowledges that public spending will focus on adaptation actions. Nonetheless, the government also recognizes the key role of the private sector in developing resilience to climate change. As such, great potential for private sector investment in the agriculture sector exists, especially for cross-cutting measures that address both climate change adaptation and mitigation. Specifically, mitigation actions considered for the agriculture sector include the increased use of organic fertilizers, adoption of AWD in rice cultivation, crop diversification to include leguminous crops, and the use of biodigesters in managing waste from livestock production.

The government has also developed the country's enabling environment for private sector investment in the agriculture sector. The AFMA and the BOT Law provide incentives to encourage private sector participation in the sector's low-carbon development. The existing regulatory framework provides conditions and offers incentives that encourage foreign direct investment and cross-border investment that could support investment in the Philippines' agriculture sector.

Improving fertilizer management for crop production, specifically through the use of organic fertilizer, as well as introducing climate-smart agriculture practices such as precision agriculture for the proper and efficient use of fertilizers, offer strong potential for private sector participation. The private sector investment potential in managing the use of organic and inorganic fertilizers is estimated at between \$103 million and \$207 million to achieve mitigation targets by 2030 and 2050, respectively.

Private sector investment potential in disseminating the practice of AWD in rice cultivation is estimated at between \$2.13 million and \$6.40 million to achieve mitigation targets by 2030 and 2050, respectively.

However, direct investment in this mitigation action is not expected to generate returns. Hence, innovative financing mechanisms such as carbon financing could be leveraged to enable private sector participation.

In terms of crop diversification through intercropping of leguminous plants, the private sector investment potential is estimated at between \$135 million and \$270 million to achieve mitigation targets by 2030 and 2050, respectively.

Private sector investment potential in the use of biodigesters to treat livestock waste is estimated at between \$82.8 million and \$90.4 million to achieve mitigation targets by 2030 and 2050, respectively. It is important to establish the enabling environment that would regulate the quality of biodigester technologies and solutions provided to farmers to ensure sustainability and allow their dissemination to be scaled up. In addition, technology and solution providers should lead the development of innovative business models that would benefit both farmer end users and the providers' businesses.

Together, this represents a significant potential for private sector investment in the Philippines' agriculture sector that would contribute to achieving the country's climate change adaptation and mitigation targets, leading towards a low-carbon and sustainable national economic growth.

Although the agriculture sector is private sector-led in terms of investment, it still faces barriers to accessing finance. Government banks, such as LBP and DBP, provide credit specific to the agriculture sector. Agriculture stakeholders also have access to credit from commercial banks. However, green products and services specific to the agriculture sector are not available. Making them available will encourage investment in the sector's low-carbon and sustainable development.

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