Reforming Agricultural Insurance

IN THE PHILIPPINES

REVIEW AND ROADMAP

Policy Summary and Recommendations

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SEADRIF
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DISASTER RISK INSURANCE FACILITY

1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

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Preface

This note summarizes the key conclusions and recommendations of a 2022 World Bank exercise to assess the gaps in agricultural insurance in the Philippines and identify actions that could be taken to improve its quality and value for money. The note is intended for policy makers, and it sits alongside a comprehensive technical report, "Reforming Agricultural Insurance in the Philippines – Review and Roadmap: Technical Report and Recommendations." This latter document details the background, conclusions, and recommendations of the exercise and is intended for technical practitioners from the government, such as those in the Philippine Crop Insurance Corporation (PCIC).

Acknowledgments

This note was prepared by a team of the World Bank Group's Disaster Risk Finance and Insurance Program, in the Finance, Competitiveness, and Innovation Global Practice, comprising John Plevin (Senior Financial Sector Specialist), Tatiana Skalon (Financial Sector Specialist), Radu Tatucu (Senior Financial Sector Specialist), Benedikt Signer (Senior Disaster Risk Finance Consultant), Charles Stutley (Lead Agriculture Insurance Consultant), Deanna Villacin (Senior Disaster Risk Finance Consultant), Lisa Yu (Actuarial Consultant), Ramiro Iturrioz (Senior Agriculture Insurance Consultant), and Atty Maria Palanca (Senior Insurance Consultant).

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Abbreviations

ADB	Asian Development Bank
ADS	Accident and Dismemberment Security
AIC	Agricultural Insurance Corporation of India
AIP	Agricultural Insurance Program
APCP	Agrarian Production Credit Program
ARB	agrarian reform beneficiary
ARBO	Agrarian Reform Beneficiary Organization
ASEAN	Association of Southeast Asian Nations
AYII	Area Yield Index Insurance
BAS	Bureau of Statistics
BIR	Bureau of Internal Revenue
BSP	Bangko Sentral ng Pilipinas
BTr	Bureau of the Treasury
CAD	Claims and Adjusting Department (PCIC)
CADENA	Component for the Attention of Natural Disasters (Mexico)
CAP-BPD	Credit Assistance Program for Program Beneficiaries' Development
CCE	Crop Cutting Experiment
CLTI	Credit and Life Term Insurance
COA	Commission of Audit
CPMI	CARD Pioneer Microinsurance Inc.
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DARPO	DAR Provincial Office
DILG	Department of the Interior and Local Government
DoF	Department of Finance
DY	Dividend Year
ENSO	El Niño–Southern Oscillation
FAO	Food and Agriculture Organization of the United Nations
FCIP	Federal Crop Insurance Program (United States)

FI	Financial Institution
FO	Farmer Organization
FPB	Farm Plan and Budget
GIZ	German Agency for International Cooperation
GoP	Government of the Philippines
GPS	Government Premium Subsidies
GSIS	Government Service Insurance System
HA	Hectare
HRA	Homogeneous Risk Area
HVC	High-Value Crop
HVCC	High-Value Commercial Crop
IC	Insurance Commission
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
INSURED	Insurance for Rural Resilience and Economic Development
IPR	Indicative Premium Rate
IS	Input Supplier
JASINDO	PT Asuransi Jasa Indonesia
LBP	Land Bank of the Philippines
LGU	Local Government Unit
LTALR	Long-Term Average Loss Ratio
MARO	Municipal Agrarian Reform Officer
MPCI	Multi-peril Crop Insurance
NAIPP	National Agricultural Insurance Pilot Program (Vietnam)
NAT RE	National Reinsurance Corporation of the Philippines
NCI	Non-crop Agricultural Asset Insurance
NDRRMC	National Disaster Risk Reduction and Management Council
NDRRMF	Natural Disaster Risk Reduction and Management Fund
NIA	National Irrigation Administration
NL	Notice of Loss
NPCI	Named Peril Crop Insurance

O&A	Operational and Administrative
OCD	Office of Civil Defense
OECD	Organisation for Economic Co-operation and Development
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PCIC	Philippine Crop Insurance Corporation
P&D	Pests and Diseases
PD	Presidential Decree
PMFBY	Pradhan Mantri Fasal Bima Yojana (India)
PPP	Public-private Partnership
PSA	Philippine Statistics Authority
QRF	Quick Response Fund
RIICE	Remote Sensing-based Information and Insurance for Crops in Emerging Economies
RMA	Risk Management Agency
RMAC	Risk Management and Audit Committee
RO	Regional Office (PCIC)
RPR	Risk Premium Rate
RSBSA	Registry System for Basic Sectors in Agriculture
RWBCIS	Restructured Weather-Based Crop Insurance Scheme
SAC	Catastrophe Agricultural Insurance (Mexico)
SAGARPA	Ministry of Agriculture, Livestock, and Fisheries (Mexico)
SC	Steering Committee
SDC	Swiss Agency for Development and Cooperation
TNCIS	Thai National Crop Insurance Scheme
TWG	Technical Working Group

EXECUTIVE SUMMARY

The Government of the Philippines is seeking to reform agricultural insurance, specifically by increasing its cost-effectiveness, value for money, and penetration. This policy note was prepared as part of the World Bank's technical assistance to the Philippines and offers a roadmap for reforming the provision of agricultural insurance along sound market-based principles. Geared toward government policy makers, it summarizes the findings of the World Bank report entitled "Reforming Agricultural Insurance in the Philippines – Review and Roadmap: Technical Report and Recommendations." The note provides an overview of the key challenges in the agricultural insurance sector, specifically within the Philippine Crop Insurance Corporation (PCIC), and proposes a series of recommendations for the government to adopt in addressing these challenges.

Only one-third of farmers in the Philippines are protected by agricultural insurance, even though the government provides large premium subsidies to make it more affordable. Government premium subsidies (GPS) have been consistently increasing over the years but are not well focused. The PCIC is a key provider of agricultural insurance and the sole recipient of the government's premium subsidies, but it faces multiple operational and technical challenges related to its premium rating, capital management, and reporting, among others. The existing agricultural insurance products offered by the PCIC are not suitable for the majority of Philippine farmers, and they do not adequately reflect the losses suffered by farmers. The PCIC does not have competitors, and very few private insurers offer agricultural insurance, primarily because of significant barriers to entry.

This note details four main conclusions:

- The government should enact clear **policy reforms** to target the development and provision of agricultural insurance products with public sector support (including subsidies) where they are most needed.
- It is critical to bring the PCIC under the **oversight of the Insurance Commission (IC)** and enhance its operations by building key functions, analysis, and processes to support efficient decision-making and improve its risk management and financial resources.
- The agricultural sector requires **new products** for noncommercial-scale farmers and refinements of the basis for indemnity and loss assessment of existing products.
- Farmers would benefit from the existence of **alternative market structures** and initiatives to crowd in the private sector by allowing private insurers to access premium subsidies.

The proposed roadmap focuses on three sets of actions: (i) immediate actions to set the objectives and direction of the reforms, enhance oversight, and adopt a plan to be implemented by the PCIC; (ii) short-term actions to enhance PCIC's operations and inform medium-term reforms; and (iii) medium-term actions to introduce new products, reform the market structures, and ensure the alignment of premium subsidies with policy objectives.

IMMEDIATE ACTIONS

1. **Consult with public and private stakeholders** on the strategic direction of the reforms, based on the proposed roadmap as well as on previous reviews from the IC, the World Bank Group (including the International Finance Corporation), and others.
2. **Establish a Steering Committee** (in coordination with the PCIC Board) with a high level of responsibility, comprising public and private stakeholders, to set a market-wide agricultural insurance policy, propose legal and institutional reforms, and define the role of the government's support.
3. **Establish a Technical Working Group** (which could build on existing technical committees under the PCIC Board) comprising public and private stakeholders to conduct and implement studies and activities to reform and strengthen agricultural insurance.
4. **Prepare an agricultural insurance reform strategy and/or associated bill to provide direction and a mandate to carry out the reforms.** This should clearly lay out the main policy objectives, as well as the approach to be taken by key actors in pursuing those objectives.

The immediate actions can be implemented in end 2022/early 2023.

Photo credit: EAP Photo Collection/ World Bank

SHORT-TERM ACTIONS

To improve the operations and cost-efficiency of the PCIC:

1. **Bring the PCIC under regular IC oversight and reporting** through a government issuance.
2. **Revise the basis of coverage as well as the indemnity and loss adjustment methodology for existing products.** This effort should be informed by a deep crop-by-crop analysis and international best practice.
3. **Develop and refine a clear rating methodology, as well as a reinsurance strategy, investment strategy, and dividend strategy.** All of these should be informed by a thorough actuarial analysis of the PCIC's risk, risk management, and pricing.

To inform the foundation and direction of significant medium-term reforms:

1. **Conduct feasibility studies for new products,** including a macro social disaster parametric climate risk protection program for the most vulnerable subsistence farmers and an area yield index insurance (AYII) scheme for semicommercial farmers.
2. **Develop and review options for premium subsidy reform** informed by a broad stakeholder consultation as well as affordability and behavioral studies.
3. **Conduct an international knowledge exchange** including a study tour of different insurance schemes around the world (e.g., Turkey, India, Thailand, and Spain).

The implementation of these actions can begin in early 2023.

MEDIUM-TERM ACTIONS

1. **Reform the legal framework for the provision of agricultural insurance and develop a market structure to crowd in private sector insurers.** Market structure options include open-market competition and the creation of a pool to increase access to capital and expertise and grow the market.
2. **Design and implement products to better fit the needs of Philippine farmers.** Products may include parametric macro social disaster protection for the most vulnerable and area yield index insurance schemes for semicommercial farmers.
3. **Reform premium subsidies and public financial support to agricultural insurance, as follows:**
   - Open access to premium subsidies to private sector insurers.
   - Refine the eligibility for premium support based on farm size, priority crops, and region.
   - Rationalize insurance premium taxes to incentivize the provision of insurance by the private sector.
   - Remove 100 percent–subsidized premiums to incentivize proactive risk management.

These actions can be implemented throughout 2023–2026, as shown in Table 1.

TABLE 1. TIMETABLE OF REFORM ACTIVITIES

Step	Reform	2022	2023				2024				2025				2026
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Immediate actions															
1	Consult with public and private stakeholders														
2	Reform the agricultural insurance policy (establish an Agricultural Insurance Steering Committee and a Technical Working Group)														
3	Prepare an agricultural insurance reform strategy and/or associated bill to provide direction and a mandate to carry out the reforms														
Short-term reforms															
1	Bring the PCIC under regular IC oversight and reporting*														
2	Revise the basis of coverage as well as the indemnity and loss adjustment methodology for existing products														
3	Develop and refine a clear rating methodology as well as a reinsurance strategy, investment strategy, and dividend strategy														
Medium-term reforms															
1	Reform the legal framework for agricultural insurance (crowd in the private sector)														
2	Design/implement new agricultural insurance products and programs														
3	Reform the government's premium subsidy regime (sustainability/ affordability)														

Source: World Bank.

Note: IC = Insurance Commission; PCIC = Philippine Crop Insurance Corporation.
*This action was undertaken by the government as the report was being finalized.

Photo credit: EAP Photo Collection/ World Bank

INTRODUCTION

The Government of the Philippines (GoP) wants to improve the cost-effectiveness of the Philippine Crop Insurance Corporation (PCIC)—a public sector entity—and to promote private sector entry into the agricultural insurance market.[1] Over the past 15 years, the GoP has paid the PCIC about PHP 30 billion in premium subsidies from the national budget to make agricultural insurance more affordable to Philippine farmers; however, the program has not had the desired results at the farm level. The PCIC's premium subsidy budget has grown to PHP 4.5 billion in 2022, and the GoP questions whether this trend is sustainable. It is therefore seeking to reform the PCIC along sound market-based principles to ensure both that stakeholders get maximum value for money from this subsidy and that agricultural insurance becomes more sustainable.

The GoP requested the World Bank to identify ways to reform PCIC's operations, incentivize private sector entry, rationalize the premium subsidy regime, and improve the provision of agricultural insurance to Philippine farmers. To address this request, the World Bank identified a two-phase approach:

Phase 1	**A six-month technical assistance program starting in December 2021** to assist the government in formulating a roadmap that includes recommendations to strengthen PCIC's operations and identifies ways to reform the provision of national agricultural insurance along sound market-based principles.
Phase 2	**A three-year program (2023–2026)** to implement market-based reforms to the PCIC and the Philippine crop insurance market, and to strengthen the range of agricultural insurance products and programs available to Philippine farmers.

This report presents the World Bank's findings and recommendations from Phase 1 in the form of the proposed roadmap. It offers short- and medium-term solutions for reforming the PCIC and strengthening agricultural insurance in the Philippines under a suitable public-private partnership (PPP) framework.

1. For example, see a message by Secretary of Finance Dominguez in 2021 on the need to strengthen PCIC operations (Dominguez 2021).

Photo credit: Abigail Marquez from the Pexels.

BACKGROUND[2]

The Philippines is one of the most disaster-exposed countries in the world: it is subject to earthquakes and tsunamis, tropical storms and typhoons, droughts, flash floods, and landslides. A recent World Bank report highlights the social and economic costs of these disasters for the country, including an annual average death toll of 934 people and average economic losses of US$2.8 billion (World Bank 2019).

The country is also highly exposed to climate change, which is already having a negative impact on the agricultural sector. Climate change scenarios predict more extreme wet and dry seasons, with accentuated flood and drought exposure, increases in average temperatures, and more frequent typhoons. The impacts of climate change on agriculture will vary regionally and by crop type; rice yields in Luzon will likely be the most affected, with a projected yield decrease of 20 percent by 2050 (World Bank 2019).

Agricultural insurance can play an important role in climate change adaptation in the Philippines by helping farmers transfer their risk of crop failure—a risk that is increasing due to more frequent and extreme floods and droughts and increased temperatures—to insurance and reinsurance markets. Properly designed and effective agricultural insurance programs can stabilize farm income, reduce poverty, and ensure a climate safety net for food producers.

The high frequency and severity of typhoons, droughts, and floods in the Philippines represents a significant risk to Philippine farmers. The high level of risk of makes it hard for insurers and their reinsurers to write agricultural risks in the region profitably, which then means that farmers have fewer options for agriculture insurance products that would mitigate and reduce their losses from catastrophe risks. The catastrophe exposure is cited by insurers as one reason why local private insurance companies have been averse to participate in the agricultural insurance market.

There is a lengthy history of public sector–subsidized agricultural crop, livestock, and fisheries insurance in the Philippines, but to date there has been very little involvement by the private commercial insurance sector. For the past 40 years, the PCIC has been the sole (monopoly) agricultural insurance provider in the Philippines and the only entity authorized by the government to offer public sector–funded premium subsidies to farmers. These subsidies can be as high as 100 percent for subsistence farmers. Private sector insurers find it difficult to enter the agricultural insurance market, as they are not eligible for such premium subsidies. Several private companies have tried to pilot new innovative insurance programs, but these pilots have generally failed to achieve significant demand and uptake.

In the past decade, GoP has significantly expanded its premium subsidy support to the PCIC, and today more than a third of all Philippine farmers and fisherfolk have access to agricultural insurance. In 2009, 150,000 farmers had insurance with the PCIC, while in 2021 almost 2.5 million farmers had agricultural insurance, with a total sum insured of PHP 70.1 billion (US$1.42 billion) and insurance premiums totaling PHP 4.96 billion (US$101 million). With the inclusion of PCIC's nonagricultural insurance programs, the total number of policies rose to over 3.3 million in 2021.

The PCIC is currently one of the most heavily subsidized agricultural insurance programs in the world. Since the GoP elected in 2013 to provide 100 percent–subsidized premiums to subsistence farmers registered in the Registry System for Basic Sectors in Agriculture (RSBSA), the share of premium subsidies in PCIC's overall premium income has risen to 95.6 percent of total premium in 2021. That year, the PCIC received PHP 4.86 billion (US$98.7 million) in premium subsidies.

The PCIC offers indemnity-based insurance for crops, including rice, corn, and over high-value crops (HVCs), as well as for livestock and fisheries; non-crop agricultural insurance (NCI) for buildings, machinery, and equipment; and credit and life term insurance (CLTI). In 2021, rice crop insurance was the largest program, with 1.21 million policy sales (36 percent of total policies sold); this crop accounted for 26 percent of total liability, 58 percent of total premium, and two-thirds (66 percent) of total paid claims. The second largest program was the CLTI program (24 percent of policies, 34 percent of liability, 1.4 percent of premium, and 1 percent of claims). Livestock was the second largest agricultural insurance program in 2021.

2. Unless otherwise referenced, the source of data is from PCIC's annual reports.

ISSUES AND CHALLENGES FACED BY THE PCIC AND THE PROVISION OF AGRICULTURAL INSURANCE IN THE PHILIPPINES

TECHNICAL ISSUES

Agricultural insurance products offered by the PCIC today are not adequate for many farmers. Because the average farm size in the Philippines is very small, it is challenging for the PCIC and private insurers to design crop and livestock insurance products that suit the farmers' needs and to cost-effectively distribute and administer such products. The average farm size is only 1.26 ha; 89 percent of farmers own less than 3 ha of land, and only 1.8 percent own more than 7 ha of land. Today, PCIC's client base is predominantly made up of subsistence farmers in RSBSA Special Programs,[3] with plots of 0.5 to 1.0 ha. PCIC's indemnity-based agricultural insurance products are not suitable for insuring subsistence farmers. Its products and programs were substantially revised in 1992, and since then no radically new or innovative products or programs have been introduced. The company has on occasion piloted index-based crop insurance solutions, including area yield index insurance (AYII) and weather index insurance schemes, but these have failed to reach scale.

The PCIC offers low levels of sums insured (and therefore a limited protection) through its crop insurance programs, which in many cases do not cover the production costs of growing the crop. The PCIC crop polices aim to protect farmers against loss of their production costs and also to offer an allowance to cover yield loss. However, to ensure that it is able to extend insurance coverage to large numbers of farmers under its finite premium subsidy budget, the PCIC has traditionally set quite low levels of sums insured/compensation paid. For example, farmers participating in the RSBSA's rice and corn programs are given a flat sum insured of PHP 20,000/ha (US$400/ha), which represents only about 30 percent of the average production cost per hectare for rice and 37 percent for yellow corn. The potential drawbacks of capping the sum insured at such a low level are that (i) in the event of a loss, the compensation paid to the farmers may be too low to cover their outstanding debt to banks; and (ii) the low sum insured may not enable farmers to get back into production, which could lead to dissatisfaction with the insurance program.

PCIC's actuarial and rating methods and procedures do not meet internationally accepted standards. In 2021, the IC conducted a financial review of the PCIC and pointed to several issues with its approach to premium rating that are in line with the World Bank's conclusions. Issues include the following: (i) the use of oversimplistic rating methodologies; (ii) a lack of formal risk modeling to estimate catastrophe losses; (iii) the existence of cross-subsidies from flat premium rates for RSBSA clients, who make up more than 95 percent of PCIC's portfolio; and (iv) a failure to capture trends over time for loss experience. An actuarial review is needed to determine the rating adequacy of PCIC's portfolio, and annual reviews of its premium rates are needed to understand their adequacy by region and crop. Without these, PCIC's programs are at risk of being under-rated, exposing the PCIC and the GoP to significant losses.

The indemnity formulas PCIC applies to losses are complicated and, in some cases, appear unfairly to reduce the compensation (claims settlement) received by farmers. The PCIC applies a damage-based indemnity approach where loss is estimated in the field at the time of the loss event, and then converted into an end-of-season expected loss estimate using damage-indemnity matrices designed by the company. There is an urgent need to review and simplify this methodology to ensure that farmers are properly indemnified in situations of severe crop damage or losses.

OPERATIONAL ISSUES

PCIC's policy administration and communication systems and procedures are all paper based and have not been digitized to benefit from digital and mobile technology. Each year, the company processes more than 3.3 million paper-based policy applications from small-scale buyers of insurance.

3. PCIC Special Insurance Programs are targeted at vulnerable subsistence farmers and fisherfolk who qualify for free (fully subsidized) agricultural insurance. Special Programs include those implemented singly by the PCIC for farmers and fisherfolk included in the Registry System for Basic Sectors in Agriculture (RSBSA) or in partnership with the Department of Agriculture and the Department of Agrarian Reform.

PCIC Regular Programs are targeted at semicommercial and commercial farmers and fisherfolk who elect to purchase insurance on a voluntary basis, save where this is linked (mandatory basis) to seasonal production credit from Landbank of the Philippines or other financial institutions. Under PCIC's Regular Programs for rice and maize, famers are eligible for partial premium subsidies, but none of the other programs for HVC, livestock. or aquaculture clients attract premium subsidies.

All PCIC's crop and livestock insurance products and programs are indemnity-based policies, which are extremely costly to administer and to adjust on such small-farm holdings. To manage the rapidly increasing volume of policies, the PCIC has recruited large numbers of part-time staff to process insurance applications and to inspect losses and adjust claims at the individual farm level. As of 2021, the PCIC had a permanent staff base of 201 employees and 1,063 additional part-time or job order workers to conduct sales and marketing, as well as claims adjusting, processing, and settlement. Considering the total number of policies and staff, the resulting ratio is an average of 2,650 policies per person per year—a number that is far higher than that in similar programs in other countries, and practically impossible to administer appropriately without the full computer-based automation of all policy-related processes (from application to claim settlement).

The success or failure of large-scale indemnity-based agricultural insurance programs is highly dependent on the accuracy of the loss assessment procedures to determine the true loss, as well as the timeliness of adjusting the loss and settling the claim with the farmer. In the past, several major national programs—such as ANAGSA (National Agriculture and Livestock Insurance Company) in Mexico and COSESP (State Insurance Company of Sao Paulo, Companhia de Seguros do Estado e Sao Paulo) in Brazil—failed largely because governance was lacking and loss adjustment and claims settlement procedures were poor. Meanwhile, other programs—e.g., PMFBY (Pradhan Mantri Fasal Bima Yojana), the national flagship crop-credit insurance scheme of India—have for many years suffered from major delays and inaccuracies in conducting yield estimations at harvest, resulting in claims settlements that are often delayed by 6 to 12 months or more.

The PCIC has experienced some backlog problems that have delayed claims settlements. In its audit of the 2019 and 2020 programs, the Commission on Audit (2021) noted that "settlements of indemnity claims totaling PHP 13.116 million under various insurance programs/insurance lines to 108,954 registered farmers and fisherfolks in RO [Regional Office] Nos. I, II, IV and VIII were delayed by one to 797 days."

A very high proportion of insured policies has experienced claims in recent years, and the trend keeps moving upward. In 2014 the number of policies that incurred a claim represented about 15 percent of all agricultural insurance policies issued by the PCIC, but by 2021 that proportion had increased to one in three (29.3 percent), with a total of 730,869 adjusted and paid agricultural insurance claims (Figure 1). The reasons for this trend are unknown.[4] For rice and corn, the percentage of policies with claims was staggeringly high, at 43.7 percent and 41.3 percent respectively, considering that the economic rationale for insurance—the reason it is sold—is to protect against supposedly infrequent events.

PCIC's regional staff face a huge burden in assessing losses and adjusting such large numbers of claims. PCIC's procedural guidelines specify that loss assessment for rice, corn, and HVCs must be conducted individually at the farmer and field level by a two-person team comprising a PCIC claims adjuster and a local official from the Department of Agriculture, Department of Agrarian Reform, or equivalent authority; these procedures require a high level of skill and experience. In 2020, each of the 129 existing claims adjusters would have had to adjust an average of 4,744 individual paid claims; in 2021, the number would have been 5,666 individual paid claims. This workload is clearly impossible for so few claims adjusters at the individual-farmer level or even at the collective-area level. A review and rationalizing of PCIC's claims adjusting systems and procedures are urgently needed to ensure the accuracy of loss adjustment, which will also require hiring and training many more crop loss adjusters on a part-time basis.

4. In this context, the Land Bank of the Philippines recommends "further study to determine why the claims rate is high. This could be attributed to deviation from proper farming technology/technique or lack of technical experts to guide the farmer/fisher to address concerns on pests and diseases" (Communication from Land Bank of the Philippines to World Bank, October 21, 2022).

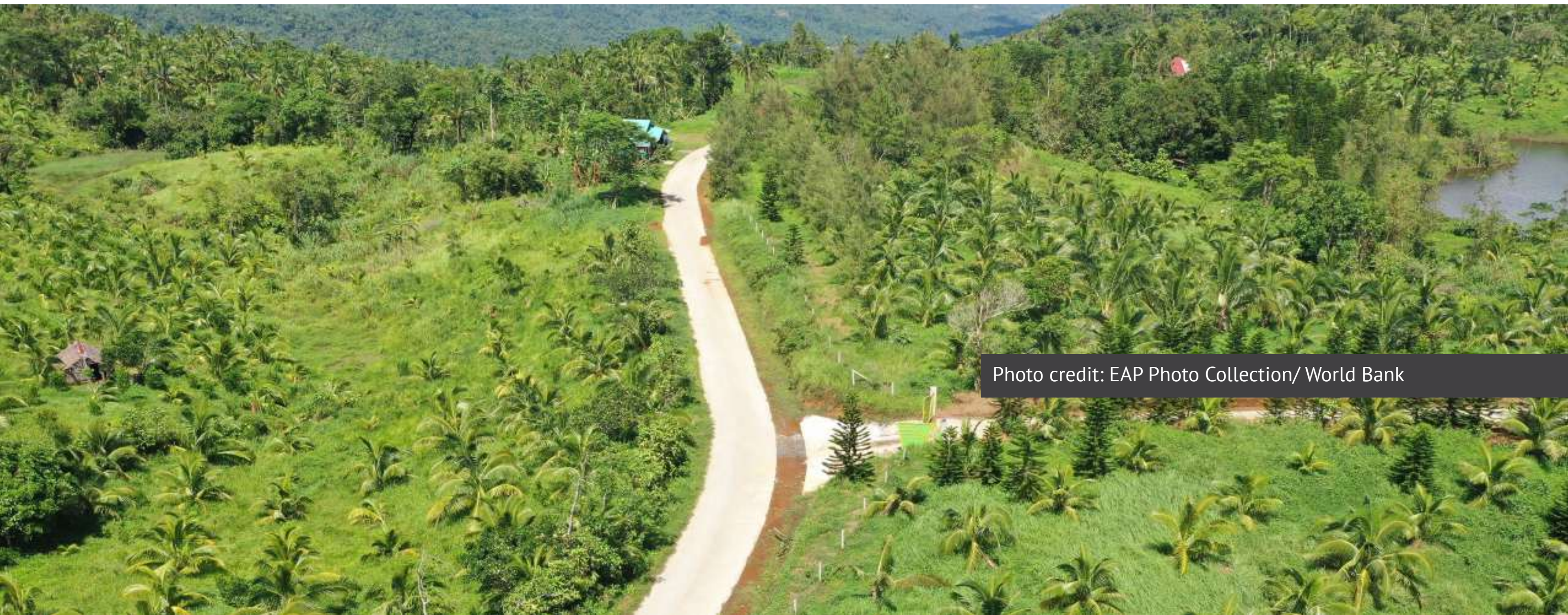
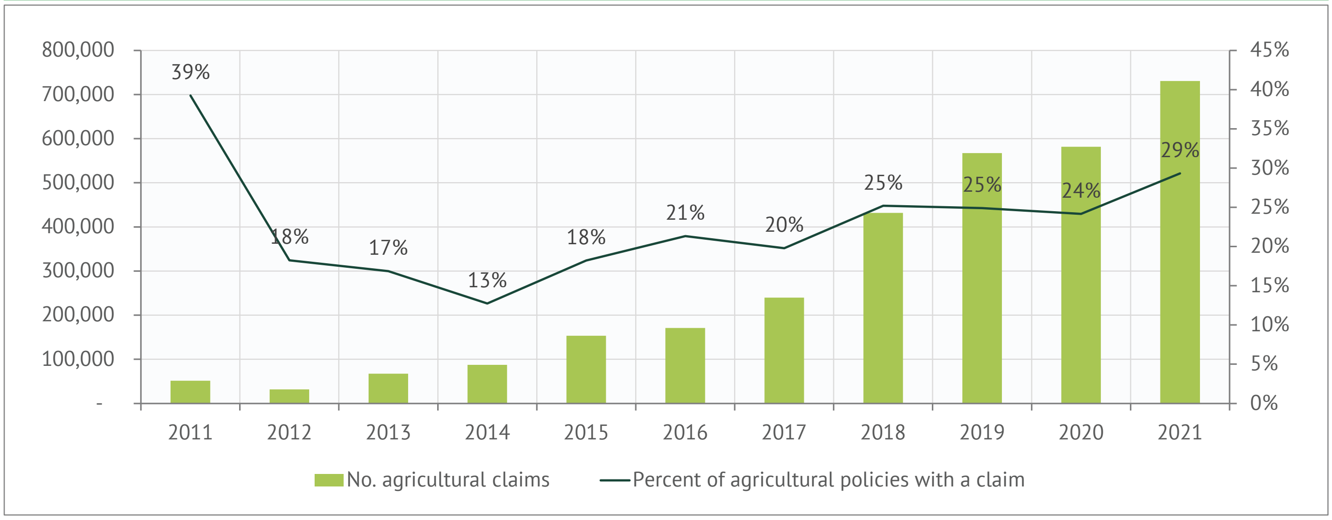


Photo credit: EAP Photo Collection/ World Bank

FIGURE 1. NUMBER AND PERCENTAGE OF AGRICULTURAL POLICIES ISSUED BY THE PCIC WITH AN ADJUSTED AND PAID CLAIM, 2011–2021



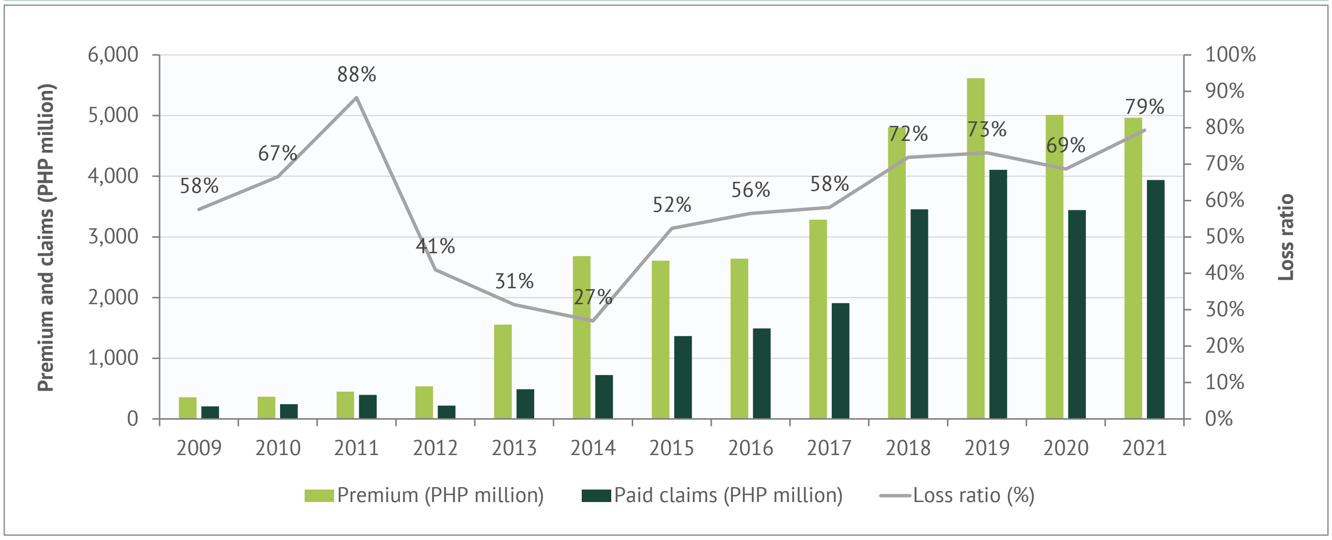
Source: PCIC 2011-2021 annual reports.

PERFORMANCE-RELATED ISSUES

Since the GoP introduced the fully subsidized Special Programs for RSBSA subsistence farmers, the PCIC has sold an increasing number of policies, but it still covers only a small portion of all the cultivated area. In 2021, it recorded 2.49 million policy sales to farmers, livestock producers, and fisherfolk, covering 45 percent of the 5.62 million farm households registered under the 2012 Census of Agriculture and Fisheries (PSA 2012), or 36 percent of the 6.85 million farmers and fisherfolk in the 2017 PCIC Automated Business Systems (PABS)-RSBSA listing. In many respects, protecting over one-third of all farmers in the Philippines is a significant achievement. However, the percentage of cultivated area that is protected by the PCIC is much lower. In 2021, the PCIC insured 29 percent of the total national cultivated area of rice and 19 percent of the corn area. In the case of livestock, the penetration rate was 12.3 percent of the national herd.

Losses on PCIC's portfolio have been increasing in recent years, and some products may be underpriced. Over the 13-year period from 2009 to 2021, PCIC's long-term average loss ratio for its agricultural insurance programs has been 63 percent, ranging from a low of 27 percent in 2014 to a high of 88 percent in 2011 (Figure 2). Since 2013, when the 100 percent–subsidized Special Programs were introduced, the annual loss ratio has shown an increasing trend every year, reaching 79 percent in 2021. This means that PCIC's combined ratio (i.e., allowing for costs of administration and capital) exceeded 100 percent in 2021, resulting in a loss-making year. The reasons for this trend are unknown, but the trend should be a source of concern for the PCIC. These aggregate figures also hide variations in performance across different products. For example, high losses have been incurred in the rice insurance program (loss ratio of 78 percent) and corn insurance program (68 percent). However, very low claims have been experienced in other agricultural insurance programs, such as livestock (loss ratio of 19 percent), HVCs (23 percent), and fisheries (31 percent). The rice and corn programs appear to be underpriced, suggesting that the rates should be actuarially modeled and revised.

FIGURE 2. PCIC'S AGRICULTURAL INSURANCE RESULTS, 2009–2021



Source: PCIC 2009-2021 annual reports.

FINANCIAL RISK MANAGEMENT ISSUES

The PCIC does not have a formal financial risk management framework in place covering its capital and investment strategy, risk retention, and reinsurance. The PCIC is not regulated by the IC, meaning that its capital requirements, investments, reinsurance, accounting and reserving systems, and procedures are not defined according to the legal and regulatory requirements set by the IC for other non-life insurance companies in the Philippines. Large shares of PCIC's investments are held in cash or short-term deposits, which pay a very low interest rate, meaning that the company relies solely on premium income to cover its operating and staffing costs.

The PCIC does not purchase reinsurance for its agricultural insurance portfolio, exposing the company and the GoP to catastrophic losses. In addition to leaving the PCIC without financial protection, this arrangement also denies it the broader technical expertise and financial benefits provided by reinsurers, including greater diversification and risk-taking capacity than the PCIC or other domestic insurers. The reasons given by the PCIC for not reinsuring its agricultural insurance portfolio center on (i) an inability to access international reinsurance protection at affordable rates; and (ii) the company's own internal actuarial analyses, which suggest that it is more financially beneficial to retain 100 percent of its agricultural risks rather than paying for reinsurance premiums, as these would not have yielded large payouts in recent years.

To manage the risk of large losses, the PCIC instead aims to increase its capital base. The company is seeking to grow its capital base from PHP 2 billion to PHP 10 billion, as authorized by Republic Act 8175, which was never enacted. It also wants to modify the current practice, whereby 50 percent of any annual operating surplus is paid back to the government as a dividend, and instead retain all surpluses to build its claims reserves.

Although the PCIC has experienced only one negative underwriting result (defined as a loss ratio exceeding 100%) in the past 30 years—in 1998 it had a loss ratio of 108 percent—it now has a large agricultural liability, and without reinsurance it is exposed to catastrophic losses caused by typhoons, floods, droughts, and epidemic pests and disease. The PCIC is among the very few agricultural insurance companies that underwrites a national portfolio of crops, livestock, and fisheries against such catastrophe risks without reinsurance. Compared to 1998, the size of PCIC's exposure is now 10 times larger, and a catastrophic event would result in much bigger losses, likely leaving the government with a significant contingent liability.

ALIGNMENT OF PCIC'S PORTFOLIO WITH ITS STATED OBJECTIVES

When the PCIC was established more than 40 years ago, the GoP's objectives centered on (i) protecting small farmers against financial losses caused by natural perils, and (ii) leveraging access to credit for small rice farmers by protecting their loans. In 1980, crop insurance was specifically made compulsory for any palay (rice) farmer contracting seasonal loans from a bank or other financial institution.

Against PCIC's traditional mandate to insure small-scale farmers who borrow to grow their crops, only 5 percent of PCIC's 3.36 million agricultural and nonagricultural insurance policies were linked to credit in 2021. This represents a major reduction in the proportion (percentage) of insured farmers using credit since 2013–2014, when they accounted for more than one-third (nearly 38 percent) of all PCIC-insured farmers, and for as high as 71 percent of insured farmers in Region IIIA.

In 2021, the PCIC insured a very small number (around 36,000) of Regular Program farmers, livestock producers, and fisherfolk; of these, 79 percent were borrowers. However, when decomposing this number, the proportion of borrowers was less than 10 percent for rice and corn farmers, compared to between 94 percent and 99 percent for livestock producers, HVC producers, and fisheries. In addition, under the PCIC's Regular Program, 98 percent of NCI policies were issued to borrowers. It is unclear why only 10 percent of participating rice and corn farmers had access to credit in 2021.

In the case of the Special Programs, only 4 percent of the 2.5 million policies were issued to borrowers in 2021. This suggests that the PCIC is predominantly insuring very small subsistence farmers who do not have access to credit to purchase improved seed and fertilizer technology: they produce for their own family consumption rather than for sale.

The shift away from semicommercial borrowing farmers to self-financing ones is the result of providing 100 percent–subsidized insurance premiums to subsistence farmers registered under the RSBSA who do not have access to credit. In 2020, only 126,416 agricultural insurance policies (5.3 percent of the total) were issued to PCIC's Regular Program farmers, livestock producers, and fisherfolk; conversely, Special Program farmers receiving free (100 percent–subsidized) insurance accounted for 94.7 percent of all PCIC-insured farmers (Table 2).

Given this change in the target farmer segment toward small subsistence farmers, different products should be developed to meet these farmers' current needs and constraints (see the section entitled "Strengthening PCIC's Existing Crop Insurance Products and Programs" below).

Photo credit: Philippine Rural Development Project-Department of Agriculture

TABLE 2. PCIC-INSURED FARMERS, BY REGULAR AND SPECIAL PROGRAMS, 2020

Insurance product line	PCIC Regular Program	Special Programs							Total no. of farmers all programs	Farmers as percentage of total programs
		RSBSA	Non-RSBSA	DA rice & corn	DA-PLEA	DA-SURE	DA-DAR-LBP-APCP	Subtotal Special Programs		
Rice	61,273	973,132	213,429	16,725	3,437	24	10,867	1,217,614	1,278,887	41.4%
Corn	20,782	303,937	96,707	378	2,679	51	1,443	405,195	425,977	13.8%
High-value crops	6,276	196,880	77,272		1,982	280	2,109	278,523	284,799	9.2%
Livestock	36,025	243,273	89,651		1,051	30	316	334,321	370,346	12.0%
Fisheries	2,060	32,433	12,731		24	84		45,272	47,332	1.5%
Subtotal agricultural insurance	126,416	1,749,655	489,790	17,103	9,173	469	14,735	2,280,925	2,407,341	77.9%
Percentage of agricultural policies	5.3%	72.7%	20.3%	0.7%	0.4%	0.0%	0.6%	94.7%	100.0%	
NCI	259	3,489	368					3,857	4,116	0.1%
CLTI	677,357				785	652		1,437	678,794	22.0%
Total agricultural + nonagricultural programs	804,032	1,753,144	490,158	17,103	9,958	1,121	14,735	2,286,219	3,090,251	100.0%
Percentage of agricultural + nonagricultural policies	26.0%	56.7%	15.9%	0.6%	0.3%	0.0%	0.5%	74.0%	100.0%	

Source: PCIC 2020 Annual Report (Department of Agriculture 2020).

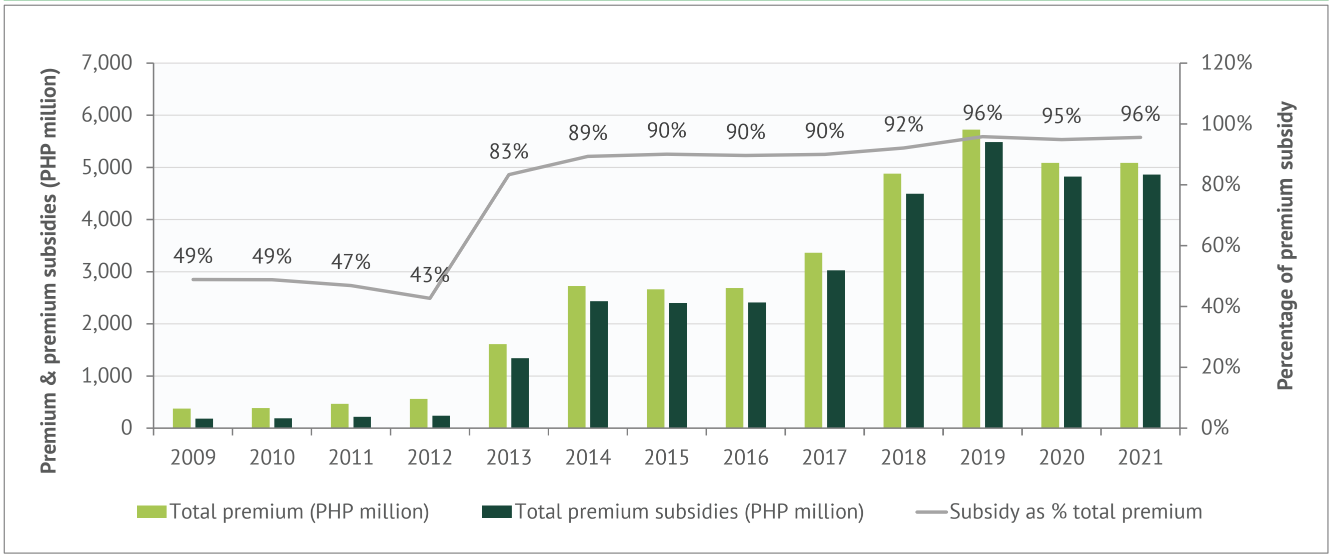
Note: APCP = Agrarian Production Credit Program; CLTI = credit and life term insurance; DA = Department of Agriculture; DAR = Department of Agrarian Reform; LBP = Land Bank of the Philippines; NCI = non-crop agricultural insurance; PLEA = Production Loan Easy Access; RSBSA = Registry System for Basic Sectors in Agriculture; SURE = Survival and Recovery.

SUSTAINABILITY OF GOVERNMENT PREMIUM SUBSIDIES

Between 2009 and 2021, the GoP allocated around PHP 30 billion (US$604 million) to agricultural insurance premium subsidies, averaging 93 percent of total premium income and making this one of the most heavily subsidized agricultural insurance programs in the world. Over the three-year period from 2019 to 2021, the level of premium subsidies has been even higher, at between 95 percent and 96 percent of total premium (Figure 3). The annual cost of premium subsidies is now in the order of PHP 5 billion per year, for a 37 percent uptake of RSBSA-listed subsistence farmers. If the government insured all RSBSA farmers under this program, the costs of the annual premium subsidies would rise to at least PHP 13.0 billion.

With its focus on free (fully subsidized) insurance for RSBSA subsistence farmers, the PCIC's agricultural insurance program increasingly resembles a social protection program as opposed to a public sector–subsidized insurance program for small-scale semicommercial farmers seeking to protect their loans.

FIGURE 3. PCIC'S PREMIUM SUBSIDY EVOLUTION, 2009–2021



Source: World Bank analysis of PCIC annual reports for 2009–2021.

The international experience shows that, once a government has introduced agricultural insurance premium subsidies, it is extremely difficult to either reduce the premium subsidy levels or to phase out premium subsidy provision over time (Mahul and Stutley 2010). Farmers form the backbone of the rural economies in many emerging markets, and they have a strong political voice, especially when governments propose the reduction of subsidies on input costs or output and premium prices.

There are major drawbacks to offering farmers 100 percent–subsidized premiums on commercial agricultural insurance schemes. Not only is it very difficult for a government to reduce or withdraw such high levels of subsidies once farmers become used to them, but the provision of free insurance is likely to induce moral hazard behavior by farmers, who no longer bear any risk and have little incentive to manage and control risk by themselves (e.g., through pest and disease control). The premium subsidy levels are shown in Table 3.

As a starting point for reforming and strengthening the PCIC and the provision of agricultural insurance in the Philippines, government should review which segment(s) of the farming population it wishes to target with subsidized agricultural insurance. It should also review the levels of premium subsidy that can prudently be offered to these different types of farmers.

Furthermore, government should clarify its future strategy for Special Program RSBSA farmers who receive free insurance cover from PCIC. As noted above, the current premium subsidy budget of about PHP 5 billion is only adequate to insure about one-third (37%) of RSBSA clients; and if government plans to extend free protection to all 6.85 million RSBSA farmers, the annual costs of premium subsidies would rise to PHP 13 billion or more. Under this review it was not possible to conduct a detailed review of the procedures for targeting and selection of the one-third of RSBSA farmers who are the beneficiaries of the free crop and livestock and fisheries insurance programs; however, PCIC advises that priority is given first to the poorest farmers or those with less than 1.5 ha, then those with 1.5–2.0 ha, then farmers with 2.0–3.0 ha until the premium subsidy budget is exhausted (the maximum subsidized area of any one RSBSA farmer is 3.0 ha).

In order to maximize value for money from the premium subsidy budget, a smart premium subsidy regime should be developed and implemented transparently based on a deeper study of the RSBSA and the needs of smallholder farmers.

TABLE 3. PCIC'S PREMIUM SUBSIDY LEVELS AS PERCENTAGE OF PREMIUM, BY PROGRAM, 2021

Insurance product line	PCIC Regular Program	Special Programs							Total all programs
		RSBSA	Non-RSBSA	DA rice & corn	DA-PLEA	DA-SURE	DA-DAR-LBP-APCP	Subtotal Special Programs	
Rice	55%	100%	100%	100%	100%	100%	100%		
Corn	55%	100%	100%	100%	100%	100%	100%		
High-value crops	0%	100%	100%		100%	100%	100%		
Livestock	0%	100%	100%		100%	100%	100%		
Fisheries	0%	100%	100%		100%	100%	100%		
NCI	0%	100%	100%		100%	100%	100%		
CLTI	0%				100%	100%	100%		
No. insured in 2020	804,032	1,753,144	490,158	17,103	9,958	1,121	14,735	2,286,219	3,090,251
Premium paid by farmers (PHP million)	262.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	262.39
Premium subsidies (PHP million)	146.32	3,556.35	833.96	172.91	27.19	0.97	86.35	4,677.73	4,824.05
Total premium (PHP million)	408.71	3,556.35	833.96	172.91	27.19	0.97	86.35	4,677.73	5,086.44

Source: World Bank analysis of PCIC 2021 data.

Note: APCP = Agrarian Production Credit Program; CLTI = credit and life term insurance; DA = Department of Agriculture; DAR = Department of Agrarian Reform; LBP = Land Bank of the Philippines; NCI = non-crop agricultural insurance; PLEA = Production Loan Easy Access; RSBSA = Registry System for Basic Sectors in Agriculture; SURE = Survival and Recovery.

Photo credit: EAP Photo Collection/ World Bank

PROPOSED SOLUTIONS: KEY RECOMMENDATIONS

Before moving to implement substantive reforms, the GoP could carry out the following immediate actions to set the objectives and direction of such reforms, enhance oversight, and formulate a roadmap for reform implementation:

1. **Consult with public and private stakeholders** on the strategic direction of the reforms based on the proposed roadmap as well as on previous reviews from the IC, the World Bank Group (including the International Finance Corporation), and others.
2. **Establish a Steering Committee** (SC), in coordination with the PCIC Board, with a high level of responsibility, comprising public and private stakeholders, to set a market-wide agricultural insurance policy, propose legal and institutional reforms, and define the role of the government's support.
3. **Establish a Technical Working Group (TWG)** (which could build on existing technical committees under the PCIC Board) comprising public and private stakeholders to conduct and implement studies and activities to reform and strengthen agricultural insurance.

The remaining recommendations outlined in this note are divided between short- and medium-term actions:

- **The GoP can begin implementing short-term recommendations in late 2022 / early 2023 with actions aimed at strengthening PCIC's organization and management, existing products, and operations.** These recommendations include bringing the PCIC under the IC's legal and regulatory umbrella; changing the basis of valuation and indemnity of the existing crop insurance products and programs to offer better cover and value to farmers; strengthening PCIC's actuarial and rating methods; strengthening its loss assessment and claims settlement systems and procedures; and strengthening its financial risk management framework (underwriting and reinsurance, investment strategy, and capital and reserves).
- **The GoP can implement medium-term recommendations from 2023 to 2026 by targeting reforms to the agricultural insurance market structure, developing new products, and increasing the sustainability of premium subsidies.** The recommendations for reform include changes to the legislation governing the provision of agricultural insurance in order to crowd in the private sector; removing the PCIC's monopoly over premium subsidies; introducing a suitable PPP institutional model that fits the country's circumstances; rationalizing the premium subsidy regime; and developing new index-based agricultural insurance products and programs that are more suited to the risk transfer needs of Philippine farmers than the existing range of products offered by the PCIC.

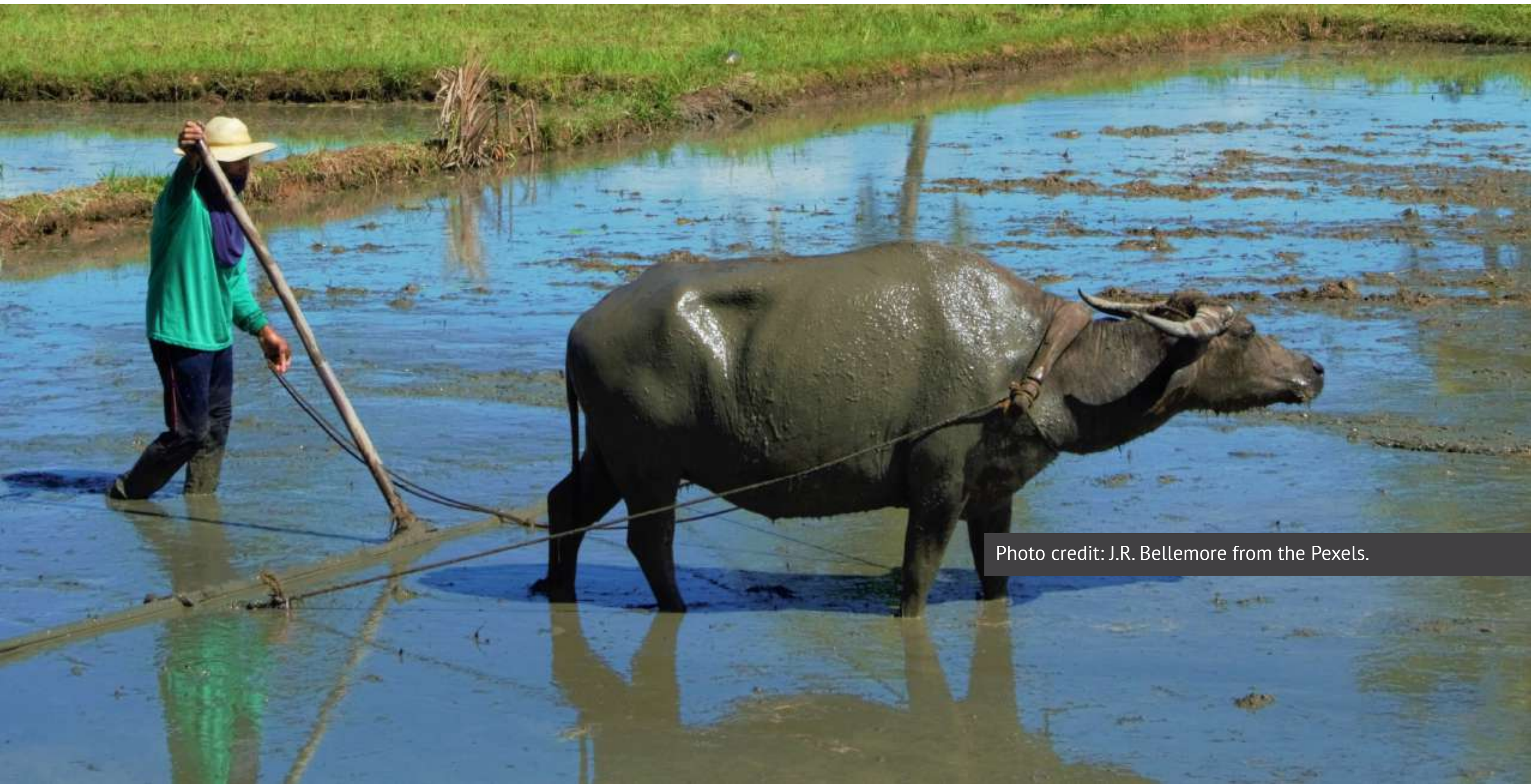


Photo credit: J.R. Bellemore from the Pexels.

SHORT-TERM ACTIONS: TARGETING REFORMS TO STRENGTHEN PCIC'S ORGANIZATION AND MANAGEMENT, EXISTING PRODUCTS, AND OPERATIONS

Strengthening PCIC's Organization, Management, and Supervision

In 2021, the GoP took a series of measures to strengthen PCIC's organization, management, supervision, and performance:

1. In September 2021, **the PCIC was transferred from the Department of Agriculture (DA) to the Department of Finance (DoF) and PCIC's Board of Directors** was reorganized (Executive Order No. 148 of September 14, 2021). The new board is chaired by the secretary of finance, and the vice chair is the secretary of agriculture.
2. In 2021, the IC-DoF conducted **an in-depth review of the financial status of the PCIC** and presented a series of far-reaching recommendations to strengthen the corporation. The current note was guided by and aimed to build on the IC's findings and recommendations, particularly those regarding the need to strengthen PCIC's actuarial, financial, and risk management strategies (reserves, investments, capital base, dividend policy, and need for reinsurance protection).
3. In December 2021, **the secretary of finance instructed the Government Service Insurance System (GSIS) and the Land Bank of the Philippines (LBP) to assist the PCIC in strengthening its financial situation.**[5] The GSIS and the LBP should work with the PCIC to determine ways to efficiently manage its risks and enhance its investment portfolio so that the taxpayer funds used to subsidize the state-run firm's operations are being spent well.

In addition to the measures already taken, the GoP could consider the following recommendations:

1. There would be many advantages in **bringing the PCIC under the regulatory and supervisory framework of the IC,**[6] which covers all other life and non-life insurance companies in the Philippines. The World Bank and IC are in agreement on this point.
2. **The PCIC should therefore adopt all IC regulations** regarding accounting and annual reporting, insolvency regulations, solvency and reserve requirements, investment regulations and retentions, and consumer protection requirements. This will strengthen the solvency position of the PCIC.
3. **Enact legislation to transfer the supervisory control of the PCIC from the DoF to the IC** and also to transfer the responsibility for auditing the corporation's annual accounts from the Commission on Audit to the IC.

5 LBP is regulated by Bangko Sentral ng Pilipinas (the Central Bank of the Philippines), and its Board of Directors includes both the secretary of finance and the secretary of agriculture.

6 In July 2022, the government acted on this recommendation by adopting Circular Letter No 2022-35 putting the PCIC under financial oversight of the IC.

Strengthening PCIC's Existing Crop Insurance Products and Programs

In the short term, starting in 2022, the PCIC should conduct an in-depth review of and seek to strengthen its existing crop, livestock, and aquaculture indemnity-based products; but it could also begin research to develop and implement new index-based crop insurance products that are more suited for small-scale subsistence and semicommercial farmers in the Philippines.[7]

The GoP could therefore consider the following recommendations:

1. **The PCIC could contract an international crop insurance specialist** and a livestock insurance specialist to conduct a thorough review and assessment of the existing indemnity-based products and programs with a view of rationalizing, simplifying, and improving the coverage (protection) provided to farmers. Ideally, such specialists would have worked on large-scale crop and livestock insurance programs in Asia, Europe, or the Americas and have a detailed knowledge of smallholder insurance systems.
2. **The range of insured perils should be carefully reviewed for each crop, livestock, and fisheries program.** Where the review judges that the damage or losses caused by the peril cannot be properly quantified and measured using PCIC's damage-based methods, then the peril should no longer be insured, or the basis of assessment should be modified accordingly.
3. **In view of the extraordinarily high losses experienced by PCIC's rice and corn crop insurance programs due to pests and disease, it would be appropriate to review the cover currently provided and to seek ways to rationalize it.** It may be necessary to restrict coverage against pest and disease damage to those perils that are "strictly unavoidable and uncontrollable using the technology and practices recommended by the DA or another competent organization," or to introduce separate deductibles. In this context, it is important to note that the secretary of finance has already requested a review to determine whether providing pest and disease cover is a common practice in other similar crop insurance programs of the Southeast Asia region.
4. **The sums insured under each agricultural insurance program should be reviewed in light of the findings of this report, and increases should be offered at least to the PCIC's Regular Program farmers,** especially those who are borrowers and need to be protected for the full amount of their crop-related credit in the event of loss.[8]
5. **With the help of international specialists, the PCIC should carefully review the damage-indemnity matrices that it applies to losses,** with a view to simplifying such matrices, especially for the HVC programs, to offer farmers better value for money.
6. **With support from international specialists, the PCIC should review the application systems and procedures of its agricultural insurance programs,** with a view to simplifying the application procedures and, where possible, moving from a paper-based system to electronic application forms. This change is especially important for group applications, which are prepared and submitted by financial institutions, farmer organizations, local DA or Department of Agrarian Reform project authorities, etc.
7. **In the medium term, it is recommended that rice and corn farmers under the PCIC's Special Programs be insured using more suitable index-based crop insurance products.** However, index insurance may not be appropriate for many HVCs, and therefore a special effort should be made either to strengthen the existing indemnity products or to introduce hybrid indemnity products for this kind of crop.

7 Subsequent to the completion of the World Bank technical study on reforming agricultural insurance in the Philippines, PCIC has advised that it is due to receive funding under the Asian Development Bank (ADB)-funded Inclusive Finance Development Program Philippines (subprogram 2), "to help the corporation to carry out reforms on product development with focus on developing the Index/Parametric Insurance approach and the use of digital technology in claims adjustment. PCIC is waiting for the start of such funding and study" (Communication from PCIC to World Bank, October 21, 2022). ADB's support to PCIC will be closely aligned both with the IC 2021 Sandbox Regulations to crowd in private sector crop insurers and the CARD Pioneer–PCIC PPP initiative jointly to develop and underwrite crop insurance covers for several high-value crops (including coconut, coffee, cacao, banana, sugarcane, and pineapple), which was signed in February 2022 (ADB 2022).

8 The LBP had this comment on this World Bank Group recommendation: "The cover per ceiling per commodity should be regularly reviewed and enhanced by PCIC to consider increase in cost of material inputs and labor. The ceiling may be lower than the actual Farm Plan and Budget of the farmer, which is one of the bases in the establishment of production cost. The insurance ceiling should at least conform with the production cost or loan amount to be availed. Ceiling range may be recommended per region or area since technical considerations like site suitability, cost of material inputs, and labor, among others, differ per geographic area" (Communication from Land Bank of the Philippines to World Bank, October 21, 2022).

Strengthening PCIC's Actuarial and Rating Methods

Below are key recommendations for strengthening PCIC's actuarial and rating methods:

1. **In 2021, the IC recommended that the PCIC should hire an actuarial specialist to help its Actuarial Department strengthen its rating systems and procedures. The PCIC should follow through on this key recommendation.** The PCIC has advised that it has hired such a specialist.[9] Moreover, since December 2021, IFAD (International Fund for Agricultural Development)-INSURED is helping the PCIC design and rate HVC covers for selected crops, including coffee, cocoa, and coconuts, and the consultant PCIC hired is an actuarial and rating specialist.
2. **The PCIC must introduce formal procedures to quantify its catastrophe risk exposures and to build a catastrophe load into its pricing of all agricultural insurance programs.** The PCIC does not conduct any risk modeling or risk assessment to establish low-frequency but high-severity losses on any of its crop, livestock, or fisheries programs. This oversight is alarming given that the country is exposed to catastrophic typhoon, excess rain, flood, and drought events. The actuarial consultants should provide capacity building and training to the PCIC staff in standard procedures for fitting distributions to its historical loss data and then using Monte Carlo simulations to estimate probable maximum loss exposures.
3. **The PCIC should reintroduce a system of regional risk rating for all its agricultural insurance programs to reflect the exposure to risk in the different regions and provinces of the country.** Actuarially fair risk-based pricing has a signaling effect (to farmers and banks alike) regarding the price of risk. Crops which are best adapted to a region will have the lowest insurance premiums and vice versa. These price of risk signals can influence farmers to grow more sustainable crops throughout the country, adapting their practices to climate change. In addition to the regional risk rating, the PCIC should discriminate rates by crop variety (e.g., for white and yellow corn, which have different yields and investment levels), by crop modality (e.g., irrigated rice and non-irrigated rice), and by crop season.

Strengthening PCIC's Loss Adjustment and Claims Settlement Systems and Procedures

Below are key recommendations for strengthening PCIC's loss adjustment and claims settlements systems and procedures:

1. **The PCIC should hire a senior international crop loss adjuster.** This specialist should have experience in a leading international program—e.g., Risk Management Agency–Federal Crop Insurance Corporation (RMA-FCIP) in the United States or Agroseguro in Spain) and belong to the International Association of Agricultural Production Insurers, or should possibly be a specialist from agricultural reinsurers such as MunichRe or SwissRe. This specialist should be hired to advise on the redesign of the basis of indemnity and loss adjustment for the corn, rice, and HVC programs.
2. **The PCIC should immediately perform a review of its Claims Adjusting Department staffing levels.** In regions with very few designated claims adjusters, it should strengthen its job order staff accordingly, with appropriate training in the different loss assessment procedures for corn, rice, and HVCs. Based on international standards, a single loss adjuster can properly adjust a maximum of three to five claims per day assuming he or she has the needed mobility and that the affected farms are located in the same area. The maximum number of claims that a single adjuster can assess in a year is between 500 and 750—but in 2021, the claims adjusters in the PCIC each had an implied annual workload of about 4,000 to 5,000 claims that needed to be adjusted. This situation is not sustainable.

9. Few details were available until recently, when PCIC shared the following very important information: "With the hiring of an IC-accredited consultant, PCIC already has recommendations and initial output of the consultant indicating recommendations for product repricing, reserved premiums and liabilities in line with IC-standards" (Communication from PCIC to World Bank, October 21, 2022).

3. **If it is not possible to adjust crop claims on an individual-farmer basis, the PCIC will need to consider an area-based approach for larger typhoon and flood claim events that affect several thousand rice and corn farmers at a time.** In this case, PCIC should engage a remote sensing specialist to assess the potential of using remote sensing to estimate the area that has been damaged and to delineate homogeneous risk areas (HRAs) with similar planting dates and stages of crop growth, as well as similar percentages of damage levels. The aim would be to estimate the average percentage of yield loss in each HRA. At the same time, the PCIC would need to simplify the existing loss assessment procedure for individual farms, where the adjuster is required to confirm that the actual planted area is the same as the declared area, and it would need to abandon the adjustment factor for stand quality.
4. **The PCIC must automate the in-field loss adjustment process by investing in smart phone or computer tablet technology and move away from paper forms.** Simple loss assessment apps have been designed in countries such as India to help claims adjusters record all the necessary in-field information and then transmit the field report in real time to the processing team.
5. **The automated claims adjustment and settlement procedures, along with the indemnity matrices, must be reviewed by the PCIC with a view to making the indemnity payouts fairer to farmers, especially to those under the HVC program.**
6. **The PCIC must transition rapidly to a digital claims payment system** and move away from paper checks that the farmer must then cash at a bank or other financial institution. At the time of writing, the PCIC reported that it is rolling out a debit card–based payment system in conjunction with the LBP in 2022. The system will be extended over time to all RSBSA farmers. This will not only reduce the costs associated with issuing individual checks but greatly speed up the claims settlement process.[10]

Strengthening PCIC's Financial Risk Management Framework

The PCIC should put in place a sound risk management framework structured to clarify and mitigate risk, based on four pillars: investment management; underwriting and reinsurance management; capital reserve management; and dividend and profit management.

Below are key overall recommendations; recommendations for each specific pillar follow.

1. The PCIC should define its risk appetite and objectives and develop a formal financial risk management framework.
2. The services of risk management experts/actuaries should be used to carry out a deep analysis of PCIC's risk to inform risk management and decision-making around each of the four pillars mentioned above. In-house expertise should be developed to ensure this analysis can be maintained and repeated as part of PCIC's regular business practices in the future.
3. Informed by the results of such analysis, the PCIC should review current risk management policies and make and implement decisions around each pillar (e.g., revise its investment strategy and premium rating approach and reinsurance strategy, and consider a dividend policy).

Investment Management

The PCIC should develop an investment strategy in accordance with its risk appetite that maximizes returns while considering the riskiness of its existing portfolio. A large share of PCIC's current asset investment portfolio is held in low-return assets such as cash and term deposits. The PCIC could improve its underwriting results by leveraging its underwriting capacity to achieve higher investment returns.

10. In this context, LBP recommends that "PCIC can establish an automated system on the filing of claims and insurance coverage applications. This facilitates the process, [makes it] easier to monitor compliance to checklist of requirements, and expediates management reporting" (Communication from Land Bank of the Philippines to World Bank, October 21, 2022).

Below are key recommendations:

1. Work with the GSIS and the LBP (in line with the directive given by the secretary of finance) to develop potential asset allocation strategies that may be more suitably aligned with PCIC's investment goals.
2. Build a clear statement of investment principles and investment strategy for the short term, which (i) clearly sets out the objectives and constraints of the PCIC regarding investment, (ii) holds less in cash and deposits (in keeping with market best practices), (iii) defines how returns from investment will be used, (iv) defines a clear governance process, and (v) is reviewed annually.
3. Engage actuarial and investment advisors to build analysis around the types of assets that may be suitable, taking into account the company's liabilities and risk appetite, and considering the trade-off between risk and return from investment

Underwriting and Reinsurance Management

The PCIC is not currently reinsured. By accessing the reinsurance market, it could benefit from a lower cost of risk—a function of the reinsurers' capacity to diversify the risk and their degree of specialization. Reinsurers have the ability to diversify risk across different lines of business and geographies, which allows them to have lower capital needs than a single insurer. Reinsurers' degree of specialization and portfolio size offer economies of scale that result in lower costs compared with those incurred in house by a local reinsurer. These factors could make transferring the claims risk more cost-efficient for PCIC than retaining it on its balance sheet. Reinsurers can also provide significant knowledge and expertise on product development and operations. Because they are exposed to different territories and products, they can share relevant knowledge and experiences as PCIC's business evolves.

In adverse years, the PCIC would benefit from catastrophe reinsurance cover to transfer the cost of larger losses. The PCIC could incur very significant losses from catastrophes, as was the case in 1998; that year exemplifies the conditions that could exhaust the PCIC's resources and require significant bailout funds from the government. Adjusting for changes in risk and policies through time, the loss ratio from the experience in 1998 would now stand at 156 percent. When including an additional 20 percent for claims costs, the combined ratio would be as high as 187 percent, resulting in a total cost of PHP 4 billion if the same scenario occurred with the current portfolio. This exceeds the minimum reserve capital amount of PHP 2 billion and the PHP 500 million of the reserve fund. Where the PCIC does not have excess reserves to fund these losses, or reinsurance to cover this kind of event, it might be unable to pay the excess claims or would need additional funds from the GoP.

Assessment of a suitable reinsurance strategy, including the product underwriting strategy, should be carried out as part of the broader risk management framework. For example, changes to the reinsurance strategy should be considered when the PCIC changes the types of insurance it offers, or the amount of coverage provided.

Below are key recommendations:

1. **Engage an actuary to review the PCIC's premium adequacy for all lines of business.** From this review, rating schedules should be constructed for each relevant segment (i.e., instead of a flat rating structure).
2. **Build (and implement) a rating policy that includes an annual review of rate adequacy,** such that rates can be adjusted based on experience. This will require (i) sign-off by the board and (ii) hiring of an internal actuary to carry out this process.
3. **Review the adequacy of loadings** for expenses and profit/surplus.
4. **Engage an actuary to review possible reinsurance structures against catastrophic exposures.** This review should occur annually, and when there are any changes to coverage that may modify the exposure to catastrophic claims.
5. **Consider the appointment of one or more international reinsurance broker(s),** specializing in agricultural reinsurance, to seek the most cost-effective reinsurance terms and conditions for PCIC from global leading reinsurers.

Capital Management

The capital reserves set by the PCIC should be reviewed annually alongside the other pillars of the risk management framework to assess if the level of capital remains appropriate. As the PCIC evolves and grows as an insurer, it is reasonable to assume that the capital held will change accordingly. The amount that has been set for capital is interdependent with other risk management tools, such as the amount of reinsurance to be purchased. International best practice sets capital using a risk-based approach, i.e., the level of capital held changes depending on the risks of the insurance operations. The PCIC does not adopt a risk-based approach to capital setting, and for this reason, it is even more important that the other pillars of risk management (investment, underwriting and reinsurance, dividend policy) are set in an adequate and robust manner and reviewed annually.

PCIC's current reserves may not be sufficient, especially considering the lack of reinsurance, although a detailed actuarial analysis has not been conducted.

Below are key recommendations:

1. Commission/carry out a comprehensive actuarial analysis of PCIC's business to inform the appropriate level of minimum capital reserves for the company.
2. Alongside the review of the other pillars of risk management, put in place a formal, regular process to refresh the analysis and inform the PCIC Board.
3. Perform an in-depth actuarial review of the level of capital and reserves that the PCIC should hold to meet the risks of its business.

Dividend (Profit) Management

The PCIC could retain its annual surpluses to grow its reserves, invest in new products, and better administer existing products. The PCIC has paid 50 percent of its annual net profit back to the government since 2014, equivalent to PHP 1.4 billion. The value of these dividends to the GoP should be weighed against the benefit of the alternative uses for these funds by the PCIC, such as building up additional reserves, purchasing reinsurance for catastrophic events, or improving the quality of its products and services. Utilizing profits for these purposes would strengthen the PCIC's ability to pay claims in adverse years. In the long term, once the PCIC has an optimal capital and risk management position, operating surpluses/profits could be used to increase the value of the product offering and reduce the public premium subsidy budget.

A key recommendation in this area is to build a dividend policy that (i) details how the profits of the company will be used to further the sustainability of the business; and (ii) is agreed upon by the board as part of the overall risk management framework.

MEDIUM-TERM ACTIONS: TARGETING REFORMS OF THE MARKET STRUCTURE, NEW PRODUCTS, AND THE SUSTAINABILITY OF PREMIUM SUBSIDIES

Reforming the Legal Framework: Toward a National Policy for Agricultural Insurance

In recent years, the GoP has introduced several bills aimed at reforming and strengthening the provision of agricultural insurance in the Philippines and stimulating private sector entry into this field:

- In 2018, the Philippine House Committee on Economic Affairs revised the PCIC mandate aiming to expand its crop insurance coverage and encourage the use of index-based insurance and reinsurance. The revised mandate allows the PCIC to provide index-based direct insurance and reinsurance policies and encourage private insurers and commercial banks to offer index-based insurance or reinsurance.
- The draft House of Representatives House Bill No. 10276 (undated), "Revised Charter of the Philippine Crop Insurance Corporation," contains a series of far-reaching proposals to strengthen the PCIC's monopoly in provision of agricultural insurance in the Philippines and to reinforce its mandate as a social protection scheme rather than a commercial market-based agricultural insurance program.[11]

11. The full title of the bill is "An act strengthening the Philippines Crop Insurance Corporation, repealing for the purpose Presidential Decree No 1467, as amended, entitled 'Creating the PCIC prescribing its powers and activities, providing for its capitalization and for the required Government Premium Subsidy, and for other purposes.'"

- In September 2019, the IC issued a series of regulatory guidelines (IC Advisory 2021-09) for private insurers to pilot agricultural insurance in collaboration with the PCIC. This IC initiative represents a major step in the right direction to promote private sector agricultural insurance in the Philippines after 40 years of public sector monopoly. In February 2022, CARD Pioneer Microinsurance Inc. (CPMI) became the first private sector insurer in the Philippines to formally announce that it was partnering with the PCIC to provide insurance protection to smallholder HVC farmers.

It is important to build on the IC Advisory 2021-09 and encourage more private insurers to pilot agricultural insurance with the PCIC. This effort could largely repeal Presidential Decree No. 1467-1978 and subsequent amendments and replace them with a new act that explicitly promotes private sector entry into the field of agricultural insurance.

To date, only a handful of private sector insurers in the Philippines have shown an interest in designing and implementing agricultural insurance, as they cannot offer subsidized insurance in competition with the PCIC. Today, in nearly all other countries around the world, governments have enacted legislation to permit both public and private sector insurers to access premium subsidies and to offer them to farmers. In the Philippines, any new agricultural insurance bill should include provisions to permit both PCIC and approved private sector insurers to have equal access to government-funded premium subsidies.

International experience tends to show that the most successful agricultural insurance programs are based on some kind of PPP that is backed up by carefully researched and drafted national agricultural insurance acts (policies). Many countries that have major national agricultural insurance PPPs, including the United States, Canada, Spain, and Turkey, have drawn up and enacted special agricultural insurance legislation to govern the operations of the PPP stakeholders and to approve government financial support in the form of premium subsidies. In the context of the Philippines, new legislation would be needed to authorize private insurance companies to access premium subsidies under the same regime as the PCIC.

Under any amendments of agricultural insurance legislation in the Philippines, the government should give special attention to (i) defining the priority segments of the farming population whom they intend to target with subsidized insurance in future; and (ii) ensuring that agricultural insurance is carefully aligned with the existing natural disaster compensation and social protection programs. As noted in this report, over the past 40 years PCIC's programs have become almost totally centered on free (100 percent–subsidized) insurance provision for RSBSA subsistence farmers, to the neglect of semicommercial and commercial farmers. International experience suggests that small subsistence farmers are often better serviced through alternative disaster risk management approaches, including savings and credit or ex post disaster response funding, such as that provided by the Natural Disaster Risk Reduction and Management Fund and Quick Response Funds. (For further discussion, see the section below entitled "Strengthening Linkages between Agricultural Insurance and Natural Disaster Risk Management in the Philippines.")


Photo credit: Aver Justin Parado/World Bank

The GoP could implement the following recommendations starting in 2022:

1. **The TWG, working closely with the IC and Philippine Insurers and Reinsurers Association (PIRA), should conduct a review of PCIC's existing charter and decide on the necessary reforms to encourage private sector entry.** Options for reforming the PCIC and the market could include the following:
   - Open-market competition between the PCIC and private sector insurers (this model is similar to that of India, where the former monopoly state Agricultural Insurance Company [AIC] today competes with both public and private sector insurers, to underwrite the national subsidized agricultural insurance scheme, PMFBY. (See next section for further detail on PMFBY.)
   - Collaboration between the PCIC and private sector insurers along the lines of the IC Advisory 2021-09, which encourages coinsurance agreements between the two parties; or extension of this to some form of national agricultural insurance pool program (such as those in Spain, Turkey, or Thailand).
2. **The TWG could study enacting agricultural insurance legislation similar to that underpinning some of the larger more successful PPP models,** for example, those in the United States, India, Spain, and Turkey.
3. **The TWG could consider contracting the services of a specialist in corporate law with experience in drafting national agricultural insurance legislation** to assist in drafting a new agricultural insurance act for the Philippines.
4. **In drafting new legislation to promote PPP agricultural insurance in the Philippines, the TWG should clearly define the roles played by the government and the private sector.**
5. **The new act should also clearly define the public sector's financial support role and budget process, including the premium subsidy regime** and financial support to other areas.

Public-Private Partnerships for Agricultural Insurance and the Institutional Reform of the PCIC

Open-Market Competition vs. Formation of a Pool Company

Under a national PPP scheme for agricultural insurance in the Philippines, there are two main organizational and operational models that the GoP may wish to consider:

- **Open-market competition by existing public and private sector insurance companies**
- **Formation of a new specialized agricultural insurance pool company** owned and capitalized by interested private insurance companies and the PCIC.

Under Option 1, open-market competition, any interested and approved private sector insurer would be permitted to compete with the PCIC and to offer government-provided subsidies on crop, livestock, and fisheries insurance products and programs. This option would be very quick and easy to introduce and would not involve major costs for the PPP stakeholders, apart from those incurred by each company in setting up a specialized agricultural insurance department.[12] The PPP stakeholders should assess various open-market PPPs operating in other countries, ranging from very open structures such as in Brazil, to much more regulated models such as in the United States, to the PMFBY program in India, where the former state insurer monopoly, AIC, today has to compete with up to 18 other state and private sector commercial insurers. Under the PMFBY, approved agricultural insurance companies tender for three-year contracts with the state governments, according to a series of standard guidelines and procedures. Although AIC remains the largest agricultural insurer, private sector companies are actively involved in underwriting this national subsidized crop insurance program. PMFBY currently insures more than 50 million small and marginal farmers, most of whom are loanee farmers, over the two main cropping seasons; it is the third largest PPP agricultural insurance program in the world in terms of premium volume (the 2019–2020 premium was US$4.1 billion, of which 86 percent was financed by central and state governments). (See the full technical report for further details of the PMFBY institutional and operational model).

12. One option for stakeholders to consider under an open-market competition is whether or not there is a need to establish a centralized Technical Support Unit (TSU) as in India, or a Risk Management Agency (RMA) as in the US to supervise the market, to provide capacity building and training to the new agricultural insurers, to assist in product design and rating, and to establish common systems and procedures for loss adjustment.

International experience shows that PPP agricultural insurance pools (Option 2) can operate both effectively and cost-efficiently. Examples include the Agroseguro pool program in Spain, the TARSIM pool in Turkey, and the Thai National Crop Insurance Scheme (TNCIS) in Thailand. There are many potential advantages to forming a specialized agricultural insurance pool company, including (i) the potential to crowd in insurance companies that would otherwise not be willing to incur the start-up costs of creating their own independent crop or livestock insurance department; (ii) the ability to retain a much higher share of risk in the pool; (iii) the economies of scale derived from creating a single centralized agricultural managing underwriter unit to underwrite the program on behalf of the pool members; and (iv) the cost savings generated when purchasing reinsurance protection due to the effects of risk pooling. Option 2, however, is more challenging for stakeholders in the Philippines, as it is likely to require legislation to create such an entity, while the pool company would require capitalization, staffing, equipment, and resources. It is recommended that the Steering Committee or Technical Working Group consider conducting study tours in Spain and Turkey to appraise their pool programs as part of any feasibility study of a pool option for the Philippines. (See the full technical report for further details of the Spanish and Turkish pool models).

Option to Reform PCIC as a National Agricultural Reinsurer

Since 2018, the GoP has been studying the option to convert the PCIC into a reinsurer rather than a primary provider of agricultural insurance. The rationale behind this proposal is that it would even out the competition in the crop insurance market and enable private insurance companies to access premium subsidies. This might not be the best option for strengthening and scaling up the provision of agricultural insurance in the Philippines, for several reasons: (i) there is already a public sector reinsurer, Nat Re; (ii) under a carefully designed and rated PPP program, international reinsurers are highly likely to wish to participate in the program; and (iii) the PCIC is currently best placed to use its many years of experience in underwriting agricultural risk, and its large network of marketing agents, field inspectors, and loss assessors, to assist any future PPP partners in further scaling up the program.

Photo credit: FilmSoft from Pexels.

Strengthening Linkages between Agricultural Insurance and Natural Disaster Risk Management in the Philippines

Under any future PPP initiative for agricultural insurance in the Philippines, it is recommended that the insurance stakeholders coordinate their programs with the National Disaster Risk Reduction and Management Council (NDRRMC).[13] This is required to avoid duplication of damage payouts following major natural and climatic disasters that affect the rural farming population, but also to ensure that each segment of the rural farming population is protected against such disasters, either by a suitable agricultural insurance policy or by NDRRMC's response programs.

An increasing number of governments are purchasing macro-level ex ante catastrophe climatic and natural peril index insurance as a complement to, or even as a substitute for, their ex post natural disaster relief programs. The most common use of index insurance to date has been as a contingent or disaster risk financing instrument that provides governments with an immediate source of liquidity after a disaster and allows them to purchase emergency relief supplies and food aid.

For subsistence farmers producing a food crop (mostly rice and corn) on less than 1 ha of land—a group that makes up around 57 percent of the farming population as a whole—it is recommended that the GoP consider using macro-level index insurance programs to complement or substitute NDRRMC's conventional ex post disaster relief programs. The government in Mexico has over the past decade switched away from ex post disaster relief funding for subsistence crop and livestock farmers and fisherfolk and instead provides macro-level social protection through parametric (index) insurance cover under the CADENA program.[14] This program is now being implemented for subsistence farmers in all the states of the country; the federal government finances approximately 50 percent of the commercial premium costs, and state-level governments cover another 10 percent of the premium. If such a macro-level program was approved in the Philippines, at least 1 million subsistence food crop farmers with less than 1 ha could be transferred from PCIC's micro-level fully subsidized Special Programs and instead covered through macro-level disaster risk financing to protect against catastrophe events.

Segmenting the Farming Population and Developing New Insurance Products and Programs to Meet Farmers' Needs

There is a need to design and implement new agricultural crop, livestock, and fisheries products and programs that meet the specific needs of each segment of the 5.56 million farmers in the Philippines. Three main categories of farmers require tailored agricultural insurance products and services:

- **Commercial farmers (> 7 ha; 1.8 percent of total farm holdings):** This segment of larger commercial farmers could be offered individual indemnity-based multiple peril crop insurance based on the existing PCIC covers for rice and corn.
- **Semicommercial farmers (1–7 ha; 41.3 percent of total farm holdings):** The current indemnity-based crop insurance products offered by the PCIC are very expensive to administer and operate for this group of farmers. There is a need to develop new index-based crop insurance products; area-yield index insurance (AYII) is probably the most suitable product, as crop production is exposed to perils like typhoons, droughts, floods, and pests and disease that are difficult to reflect in weather indices. AYII adoption would be subject to crop area yield data availability.
- **Subsistence and small-scale food crop farmers (< 1 ha; 56.9 percent of total farm holdings):** For this very large segment of about 3.2 million subsistence farmers, who mainly produce rice and corn and other food crops for family consumption, the most appropriate solution may be the implementation of market-orientated social welfare programs. These would be among the ex post natural disaster compensation mechanisms that can be insured through index solutions at the macro level (e.g., at the province level) to protect the government's budget, as is done with CADENA in Mexico. The PCIC could be the exclusive insurer for catastrophe risks for the social welfare program, or alternatively be placed under the proposed insurance pool company, if such a pool is formed.[15]

13. The NDRRMC is the highest-level organized and authorized body for disaster risk reduction and management in the Philippines. It is composed of various government, nongovernment, civil sector, and private sector organizations. The NDRRMC is responsible for overall policy making, coordination, integration, supervision, and monitoring and evaluation related to disaster risk reduction and management.

14. CADENA is the Spanish abbreviation for "Component for the Attention of Natural Disasters."

15. PCIC disagrees with this recommendation. "PCIC's view on the macro social disaster protection program as contained in the proposed bill for new PCIC Charter explicitly explained that such proposed program is already undertaken by the LGUs [Local Government Units] as their obligation to pre- and post-disaster response. Making this . . . part of PCIC's package of insurance may just be a duplication of the existing LGU as well as national pre-disaster and post-disaster response through the DSWD [Department of Social Welfare and Development]. PCIC should focus on crop/livestock loss response through indemnity" (Communication from PCIC to World Bank, October 21, 2022).

Product Design Recommendations: Design of Macro-Level Parametric (Index Insurance) for RSBSA Subsistence Farmers

At the request of the GoP, in December 2019 a World Bank technical mission explored options for the design and implementation of a macro-level parametric (index) crop insurance program, which would be targeted at RSBSA subsistence food crop farmers with less than 1 ha (or, alternatively, with up to 3 ha). The central objective of this macro-level cover would be to replace PCIC's traditional indemnity-based rice and corn policies—which are marketed as micro-level individual covers—with a simplified and less expensive to administer index-based solution. Parametric insurance can be used to leverage capital from international reinsurers and can provide support to affected farmers much more rapidly than conventional ex post disaster relief programs (World Bank 2020).

The index product considered most feasible for early introduction is a macro-level satellite-based parametric insurance product for named perils such as typhoons (using typhoon tracking data and wind speeds to model expected damage), **precipitation-induced flooding** associated with typhoons or otherwise, and **deficit rainfall (as a proxy for drought)**. In the short term, it should be feasible to develop catastrophe climatic risk insurance for these named perils using remote sensing data for the Philippines.

The 2018 Mandanas ruling of the Philippine Supreme Court, which devolved some powers to Local Government Units (LGUs), provides possible opportunities for agricultural insurance. Going forward it appears that DoF, DA, and insurers will be able to work closely with regional and provincial governments and LGUs, both in the setting of policy for agricultural insurance and in the design and delivery/implementation of the new macro-level social protection parametric crop insurance programs for vulnerable subsistence food crop farmers at provincial and local levels. Under such joint initiatives, the LGUs could play very important roles in acting as the main delivery channel for these macro-level social protection insurance programs and performing key tasks such as targeting and registering beneficiaries, conducting insurance awareness and education campaigns, setting up digital payment systems, and sharing the costs of premium cofinancing.

Going forward PCIC must also move away from individual-farmer application, enrollment, and policy issuance to group-based delivery and underwriting systems and procedures in order to reduce its operating overhead costs. It is extremely expensive for PCIC to insure subsistence farmers with less than 1 ha of food crops on an individual basis. Here PCIC can link into existing farmer-based associations and cooperatives and also consider group-based approaches to linking insurance with group credit and group input supply.

Product Design Recommendations: Design of Micro-Level Area Yield Index Insurance for Semicommercial Rice and Corn Farmers Linked to Seasonal Credit

In the Philippines, AYII could potentially be launched as a micro-level product for individual semicommercial farmers who borrow to grow their crops and/or as a macro-level social protection cover. The PCIC has previous experience with AYII; in 2013–2014, with support from GIZ (German Agency for International Cooperation), it implemented a pilot program for rice in Leyte Island.

AYII can be implemented successfully only if farmers adopt similar farming practices. A wide variation in planting dates and crop technology, and thus in the expected yields, tends to invalidate the area yield approach. For example, in the Philippines the planting windows (start and finish dates) for rice in the two main planting/transplanting seasons can be as wide as 60 to 90 days (Gutierrez et al. 2019), and such variation would need to be considered before any AYII can be recommended.

In the Philippines there is no tradition of using crop cutting experiments (CCEs) to estimate area yields. To operate an AYII cover, it is necessary to have (i) accurate historical yield data at the local area level (unit area of insurance) as a basis to construct a yield index, and (ii) an objective and accurate method of establishing the actual average yield in the insured growing season to determine if a payout is due or not. In most countries where AYII is being commercially implemented, such as India, area yield estimation at harvest is conducted using sample-farmer yield measurements known as CCEs. Given that no such process exists at scale in the Philippines, a couple of other options could be considered: (i) work with the two main official providers of agricultural crop production statistics, the Bureau of Agricultural Statistics (BAS) and the Philippine Statistics Authority (PSA), to develop a CCE-based yield estimation methodology; or (ii) examine the potential of remote sensing applications for area yield estimation (both India and Vietnam are piloting remote sensing–based AYII programs).

Key recommendations include the following:

1. **The newly formed TWG should commission a technical study on rice planting dates and technology levels at the level of the barangay (the smallest administrative division in the Philippines)** to determine the degree of homogeneity in rice cultivation practices by farmers within the barangay. This in turn will help determine whether AYII is a suitable product or not.
2. **The TWG should engage with providers of Remote sensing-based Information and Insurance for Crops in emerging Economies (RIICE) technology to explore application of this technology to estimate rice yields as part of an AYII pilot program in the Philippines.**
3. **The TWG should reach out to BAS and PSA to discuss options for introducing independent CCEs** on a limited scale under any future pilot AYII program in order to check the satellite estimated yields for accuracy.
4. **The PCIC should consider options for contracting an international AYII and CCE specialist** to assist the corporation in rolling out a new pilot AYII program between 2022 and 2023.

Realigning Government Premium Subsidies to Ensure Sustainability

The GoP should consider reforming the provision of subsidies to increase financial sustainability and reduce perverse incentives. This could be done through differential subsidies and improved targeting, and by developing products that fit the needs of different farmer segments.

Photo credit: EAP Photo Collection/ World Bank

Key recommendations include the following:

1. **Make certain changes in the Special Programs for RSBSA farmers:**
   - Avoid offering 100 percent–subsidized premiums on micro-level insurance (which is a disincentive for farmers to manage their production risks and which creates moral hazard).
   - The Steering Committee/TWG should study alternative meso- and/or macro-level index insurance solutions for the poorest 3.2 million subsistence farmers with less than 1 ha (57 percent of the total farmer population) and who predominantly grow rice and corn for family consumption. This could operate as a social protection cover funded by central and regional governments.
   - For RSBSA semicommercial farmers with 1–3 ha (1.78 million farms; 32 percent of total), seek to reform and reduce premium subsidy levels to a maximum of 65 percent and further reduce the level to 50 percent over the next three to five years.
   - Stop insuring farmers who have 3–7 ha under the free Special Programs and switch them instead to the PCIC's Regular Program.
2. **Adopt smart premium subsidy principles for other farmers:**
   - Introduce differential premium subsidy levels for different farm sizes: e.g., 50 percent subsidy for small/medium semicommercial farmers (3-7 ha); 25 percent subsidy for larger commercial farmers (> 7 ha).
   - Cap the maximum amount of premium subsidy that one individual farmer can qualify for to avoid situations where large farmers with several hundred hectares end up capturing a disproportionate amount of the premium subsidy benefit.
   - Use differential premium subsidies to promote possible government policies aimed at specific crops, regions, or types of farmers.
3. **Consider alternatives to premium subsidies such as insurance tax concessions:**
   - Consider reducing the very high insurance taxes, which on average add 25–27 percent to the costs of insurance premiums in the Philippines.
   - Ensure an equal treatment of private insurers and the PCIC, which is exempted from levying insurance taxes on the fully subsidized Special Programs. If all agricultural insurance premiums were tax exempted, premium costs could go down significantly, encouraging semicommercial/commercial farmers to purchase agricultural insurance from private sector insurers. In many countries, governments exempt farmers from paying insurance premium taxes on agricultural insurance.

As part of the next steps, the World Bank Group proposes assisting the government to quantify the implications and potential cost savings of adopting a system of smart premium subsidies. Such an analysis was outside the scope of the Phase 1 diagnostic study.

Additional Ways the GoP Can Support the Scale-up of Agricultural Insurance in the Philippines

The GoP is committed to scaling up agricultural insurance in the Philippines through premium subsidies to make coverage more affordable for smallholders. There are many additional ways for the government to support agricultural insurance, including these:

- **Strengthen existing data and information collection systems** and give access to such data to the insurance sector.
- **Promote capacity building, education, and training** of underwriters, farmers, and other stakeholders in agricultural insurance.
- **Support agricultural insurance product design and development** considering that the task of designing and rating new crop and livestock insurance programs is often technically exacting, time-consuming, and costly.
- **Subsidize administration and operating costs** as practiced in some other countries (e.g., the United States and Republic of Korea).
- **Participate in risk financing and reinsurance.** Some governments (e.g., Canada, the United States, Spain, Portugal, Brazil, China, and India) participate as reinsurers of last resort for agricultural insurance programs. For example, Nat Re could participate in the reinsurance program of a potential agricultural insurance pool company in the Philippines.

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