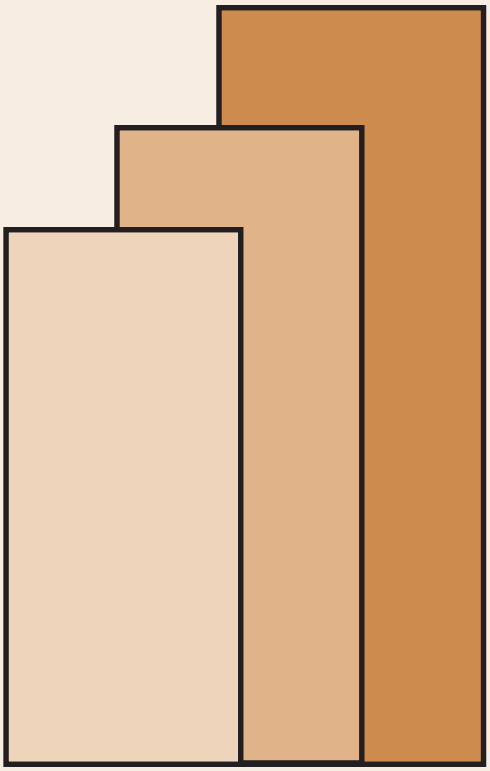
Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

Review of Design and Implementation of the Agricultural Insurance Programs of the Philippine Crop Insurance Corporation

Celia M. Reyes et al.

DISCUSSION PAPER SERIES NO. 2015-07



January 2015

For comments, suggestions or further inquiries please contact:
The Research Information Staff, Philippine Institute for Development Studies
5th Floor, NEDA sa Makati Building, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines
Tel Nos: (63-2) 8942584 and 8935705; Fax No: (63-2) 8939589; E-mail: publications@pids.gov.ph
Or visit our website at http://www.pids.gov.ph

Review of design and implementation of the agricultural insurance programs of the Philippine Crop Insurance Corporation (PCIC)

Abstract

The situation of the poor who participate in the country's agricultural sector has been exacerbated by the increasingly prevalent natural calamities, pests, and other such unpredictable event. However, there are certain risk management tools that aid in lessening the farmers' financial burden when losses related to such natural disasters are incurred. One of them is the crop or agricultural insurance. In the Philippines, the Philippine Crop Insurance Corporation (PCIC) is the government organization that implements rice, corn, high-value commercial crop, livestock, non-crop agricultural asset, fishery, and term insurance programs. The question thus arises regarding the effectiveness and sustainability of the said programs. It is thus the purpose of this study toreview the design and implementation of the PCIC's insurance programs. Key informant interviews and focus group discussions with various PCIC clients and partners in selected regions of the country, together with desktop review and secondary data analysis, were conducted.

Keywords: Philippine Crop Insurance Corporation, agricultural insurance, design, implementation, process evaluation

Review of design and implementation of the agricultural insurance programs of the Philippine Crop Insurance Corporation (PCIC)

Celia M. Reyes, Christian D. Mina, Reneli Ann B. Gloria, and Sarah Joy P. Mercado[1]

1. Introduction

The contribution of the agriculture sector in economic development cannot be undervalued. Through the years, it has remained as an important source of food, vital raw materials and employment to the Philippine economy (Habito and Briones, 2005). While this is true, growth in this sector has remained stagnant. Growth in gross value-added (GVA) in agriculture has been erratic and has remained below 5 percent for the past decade. This slow growth in agricultural output can explain why the sector has only absorbed around 11-12 million workers and its share to total employment has been slowly dwindling from roughly 40 percent to less than a third (PSA, 2014; ADB, 2014). This is a major concern because the agriculture sector absorbs a significant proportion of the working poor, particularly in rural areas (Reyes and Mina, 2013; Hasan and Jandoc, 2009). High poverty rates are exhibited across the different agricultural subsectors, particularly growing of coconut, coffee, cacao, and sugarcane. Interestingly, 42 percent of the transient poor are found to be engaged in agriculture (Reyes et al., 2011).

Venturing into the agricultural sector, particularly in crop production, entails certain risks. One bad harvest for farmers would translate to substantial losses since these farmers may not be able to recover their investments (Magno and Bautista, 1989). This is not surprising given that agriculture is very much dependent on weather. With the effects of climate change being manifested through increased frequency and intensity of typhoons and other extreme weather events, risks for farmers might be greater. One mechanism for managing risk is the agricultural insurance. This agricultural insurance can be an effective safety net that would enable agricultural producers, particularly the transient poor or those who are moving in and out of poverty, to recover more quickly from the shock. In contrast to some on-farm strategies that contribute to production losses, crop insurance allows mitigation from "high-severity, low-frequency correlated risks" (Bangsal and Mamhot, 2012).

In the Philippines, the Philippine Crop Insurance Corporation (PCIC) is the government organization that implements rice, corn, high-value commercial crop, livestock, non-crop agricultural asset, fishery, and term insurance programs. The question thus arises regarding the effectiveness and sustainability of the said programs. This report is first in a series of papers for the project that aims to evaluate the agricultural insurance programs of the Philippine Crop Insurance Corporation (PCIC). Also known as the process evaluation report, this paper reviews the design and implementation of the PCIC's insurance programs.

[1] Celia M. Reyes is Senior Research Fellow; Christian D. Mina and Reneli Ann B. Gloria are Supervising Research Specialists; and, Sarah Joy P. Mercado is Research Analyst II at the Philippine Institute for Development Studies. The authors gratefully acknowledge the following: Ronina D. Asis and Maria Blesila D. Mondez, for providing excellent research assistance; officials and technical staff of the PCIC (both from main and regional offices), for providing all the information and data used herein. The usual disclaimer applies.

2. Review of assessments conducted

There have only been a handful of studies that assessed the agricultural insurance programs of the PCIC. Among the most noted issues are related to the financial sustainability and implementation of the PCIC's insurance programs. Bangsal and Mamhot (2012) argued that the implementation of a crop insurance scheme is usually associated with asymmetric information between a farmer and an insurer, thus resulting in high transaction costs. The marketing, operational and other administrative costs of the PCIC were found to be higher than the amount of premiums collected. Similar set of bottlenecks was identified by other studies, i.e., Corpuz (2013), Reyes and Domingo (2009), and Estacio and Mordeno (2001). In addition, operations of the PCIC have been impeded by the lack of funding. Corpuz (2013) specifically mentioned that the agricultural insurance programs receive insufficient amount of subsidies and low capitalization from the government. Bangsal and Mamhot (2012) pointed out that government's equity shares were not being paid in full. Reyes and Domingo (2009) noted that remittances from the government have been delayed, which resulted in poor government capital contribution. A few studies argued that agricultural insurance programs have been largely ran by government subsidies and thus, might not be sustainable (Bangsal and Mamhot, 2012; Reyes and Domingo, 2009). Corpuz (2013) mentioned that have it not been for subsidies, farmers could have not afforded the high premium rates of rice and corn insurance policies.

Earlier studies alsoraised the issue of low penetration rate (e.g., Bangsal and Mamhot, 2012). Lack of awareness was found by Rola and Aragon (2013) as the primary reason for minimal participation in agricultural insurance programs of rice farmers in selected communities in Laguna. In fact, these selected rice farmers admitted that they only participated in the rice insurance program mainly because rice insurance was a requirement for obtaining a loan from the Land Bank of the Philippines (LBP). Reyes and Domingo (2009) found that crop insurance was virtually non-existent in select farming communities because formal lending institutions are not present in those areas. Apparently, the main clientele of the PCIC are the borrowing farmers but only a small proportion of farmers have access to loans provided by formal lending institutions. Another implementation issue is the determination of compensation for damaged crops. Corpuz (2013), in particular, argued that the claims validation and other related operations of the PCIC are not efficient.

A different perspective can be gleaned from Magno and Bautista (1989), which assessed the effectiveness and efficiency of the crop insurance program as well as the government's role in program implementation. Based on the assessment, crop insurance could be more effective as a partial collateral substitute and as a relief measure but not as a risk mitigation tool. The study also noted that crop insurance didnot result in increased technological adoption and thus, increased production.

3. Methodology

In order to answer the objectives of the study, primary and secondary data analyses were carried out. Desktop review of past assessment studies and other relevant documents containing

information on the insurance programs was done. Secondary data from the PCIC main and regional offices and other stakeholders were also analyzed.

In addition, key informant interviews (KIIs) and focus group discussions (FGDs) were also conducted to corroborate the findings from the desktop review and secondary data analysis. The team conducted various KIIs with national government agencies such as PCIC main office, Land Bank of the Philippines (LBP), Department of Agriculture (DA), Department of Agrarian Reform (DAR), and Department of Budget and Management (DBM). The team also visited selected regions like Regions II (Cagayan), VI (Negros Occidental), VII (Cebu and Negros Oriental), and XI (Davao del Norte) to conduct KIIs with PCIC and DAR regional offices, LBP provincial lending centers and Rural Bankers' Association of the Philippines (RBAP) representatives.FGDs with various PCIC clients, partners and even with agricultural producers without agricultural insurance were also conducted.

4. Overview of the agricultural insurance programs in the Philippines

4.1. The Philippine Crop Insurance Corporation (PCIC)

In order to understand the rationale for the creation of the PCIC and its ties with the history of the provision of agricultural credit, a short backgrounder on agrarian reform is quite necessary. The first landmark legislation providing for a mechanism to extend credit and similar assistance to agriculture, including marketing and technical services, was related to the institution of land reform in the Philippines. Republic Act (R.A.) 3844, which was signed into law by President Diosdado Macapagal on August 8, 1963, also provided for an institution to finance the acquisition and distribution of agricultural land, thereby creating the LBP.

In order to accelerate the implementation of R.A. 3844, President Ferdinand Marcos signed R.A. 6390 into law on September 10, 1971, created an Agrarian Reform Special Account amounting to PhP50 million. The utilization of this PhP50 million, as mandated by law, is as follows: PhP20 million for additional credit for agricultural lending; PhP20 million used as the government's capital contribution to the LBP; and, the remaining PhP10 million for land development and resettlement. This law also created the Agriculture Guarantee Fund (AGF) that would shoulder 70 percent of losses to rural banks due to loans extended under the supervised agricultural credit program[2]. The PhP20 million (from the funds accruing from the Agrarian Reform Special Account after June 1972) was earmarked for the use of the AGF.

Despite the funds allocated for the LBP (the only financial institution established for agrarian reform), it was found to be deficient in supporting the implementation of land reform. Thus,

[2] As a requirement for rural banks to avail of the Agriculture Guarantee Fund, they should extend loans under the following conditions: (1) the farmer must agree in writing that s/he will apply approved farm practices under a supervised credit program; (2) the farm plan and budget shall be the basis of the loan; (3) the farmer-borrower shall not be tilling more than six hectares; (4) priority must be given to cooperatives, farmers with leasehold contracts, or a member of a cooperative or an agrarian reform beneficiary (ARB); (5) acceptable collateral is any or a combination of real estate (if available), chattel mortgage on standing crops/livestock, stored crops in bonded warehouses, or two co-makers acceptable to the bank.

Presidential Decree (P.D.) No. 251, which was issued on July 21, 1973, increased the capital stock of the Bank to PhP3 billion, required government agencies to make the LBP the official depository, and expanded the mandate of the LBP to include granting of loans to farmers' cooperatives/associations for agricultural production purposes. As further support to agrarian reform credit, P.D. No. 717 was enacted on May 29, 1975, requiring government and private lending institutions to allocate 25 percent of their loanable funds to agricultural credit in general, of which at least 10 percent shall be allocated to agrarian reform credit.

The PCIC, created by virtue of P.D. No. 1467 on June 11, 1978, was financed via the AGF, which was transferred to the new Corporation as part of the government's contribution to the capital of PCIC. This AGF was previously administered by the LBP and used to guarantee the rice production loans under the supervised credit program of the LBP. As provided for in Section 7 of P.D. No. 1467, it was up to the Board of Directors of the new Corporation if they wanted to continue the guarantee operations commenced using the AGF[3]. Thus, the real provenance of the PCIC came from funds earmarked for agrarian reform credit, making the PCIC an institutional progeny of land reform. The LBP initiated the creation of an inter-agency committee that carried out a study on the feasibility of implementing crop insurance, and initially envisioned crop insurance as part of their supervised credit programs. The committee—the Inter-Agency Committee for the Development of the Philippine Crop Insurance System (IAC-PCIS)—comprised representatives from the DA, DAR, Armed Forces of the Philippines (AFP), private insurance industry, other private agencies, cooperative organizations, and the University of the Philippines (U.P.).

In order to make the PCIC more responsive, its charter was amended by P.D. No. 1733 on October 21, 1980 and further amended by R.A. 8175 on December 29, 1995. P.D. No. 1733, proclaimed on October 21, 1980, made crop insurance compulsory for all lending institutions granting production loans for *palay* under the supervised credit programs[4] of the government, and the same shall act as underwriters for the PCIC. Any person or institution implementing a government supervised credit program without requiring crop insurance will be fined PhP10,000.

The PCIC was also mandated by President Marcos, via Letter of Instruction No. 1242 to administer a Trust Fund[5] amounting to PhP450 million (to be given in tranches for a period of 3 years) as payment for claims of the Philippine National Bank and the rural banks that participated in the *Masagana* 99 credit program[6], to the extent of 85 percent good credit standing of these banks with the *Bangko Sentral ng Pilipinas* and enable them to be capable of offering

[3] This was implemented during the days of *Masagana* 99 and the directed credit programs, but stopped after the AFMA directive.

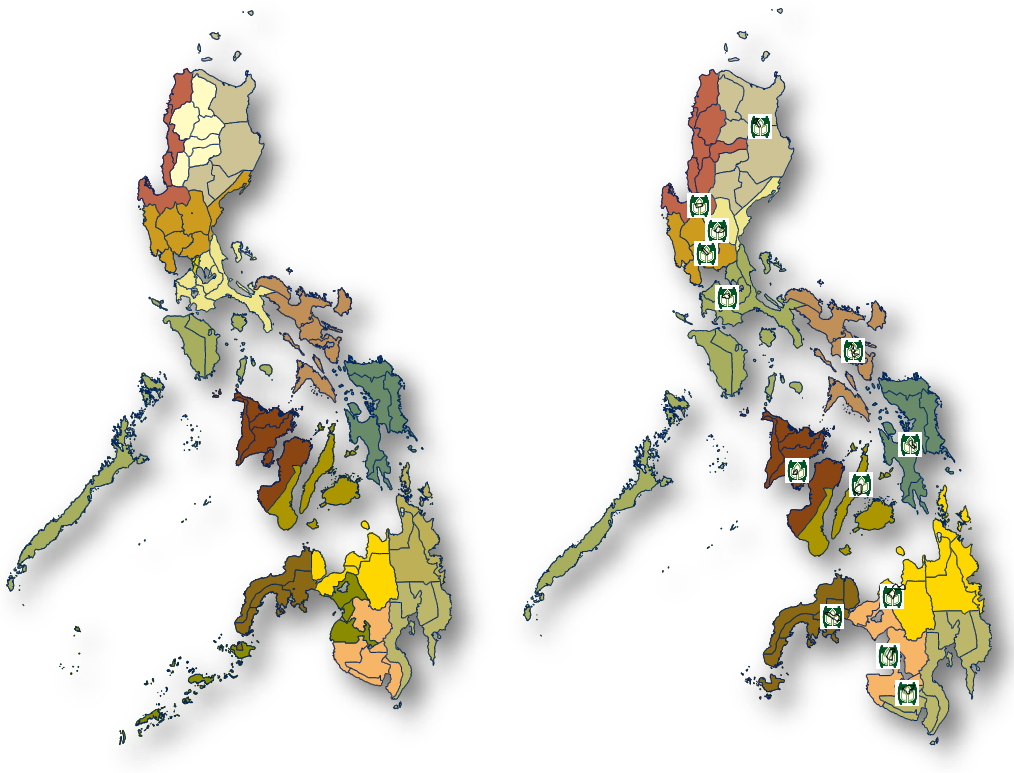
[4] Supervised credit program, as used in the Decree, is defined as a production credit program wherein the farmer agrees in writing to apply proven farm practices and abide by the farm plan and budget prepared by him and the accredited supervised credit technician.

[5] Also known as the Special Revolving Trust Fund (SRTF). Based on the 2013 Annual Audit Report for the PCIC by the Commission on Audit, about P301.979 million is unutilized as of 31 December 2013, and is currently placed in a High Yield Savings Account at the Land Bank of the Philippines.

[6] Farm credit on a non-collateral basis, fertilizer subsidy and extension services are the main components of the *Masagana* 99 program. It was conceived and launched on May 21, 1973 out of the need to massively increase rice production, after a series of farm crop failures in 1971-73, given the country's heavy dependence on rice imports and a world grain crisis during that time.

financial services to the rural communities under the supervised credit program. Thus, historically, crop or agricultural insurance of the PCIC was utilized by the government mainly as an agricultural support mechanism to expand agricultural credit, where agricultural credit as the main risk management tool used by farmers in case of shocks.

The PCIC has been mandated to provide insurance protection to agricultural producers in the Philippines against losses of crops and non-crop agricultural assets due to natural calamities, pests and diseases, and other perils (PCIC, 2014). It implements and manages various agricultural insurance programs of the government. Under the auspices of the DA, the PCICoperates as a government-owned and controlled corporation and its administrative operations are not funded by the national government. Its operation has also been decentralized up to the regional level. The PCIC have 13 regional offices (RO's) operating nationwide. However, not all regions (based on the official classification used by the Philippine Statistical Authority (PSA)) have existing PCIC-RO. Some of these RO's cover more than one region (Figure 1). For instance, the provinces in Cordillera Administrative Region (CAR) were divided into two; one set of which (western part: Abra, Benguet and Mountain Province) falls under Region I while the other set (eastern part: Apayao, Ifugao and Kalinga) is covered by Region II. Because PCIC is not operating in each region and the RO's may not be accessible to many agricultural producers, the PCIC put up a number of provincial extension offices (Table 1). The PCIC has 14 plantilla positions for each R.O., plus a number of job orders (depending on the volume of work and/or season).



(a) using official regional classification (b) using PCIC's regional classification

Figure 1. PCIC Regional Offices

Table 1. Provincial extension offices of the PCIC, as of December 2014

Regional Office	Provincial Extension Office	Date operationalized
I	Bontoc, Mt. Province	April 1, 2014
	Bangued, Abra	June 2, 2014
II	Office of the Provincial Agriculturist, Bulanao, Tabuk City, Kalinga	February 24, 2014
	NIA Office, Libertad, Abulug, Cagayan	April 3, 2014
	Office of the Provincial Agriculturist, Lagawe, Ifugao	May 19, 2014
	NIA Office, Batal, Santiago City, Isabela	July 1, 2014
	NIA Centro, San Manuel, Isabela	July 3, 2014
	Office of the Provincial Agriculturist, Bayombong, Nueva Ecija	August 15, 2014
	NIA Office, Bulala, Camalaniugan, Cagayan	August 26, 2014
III	-	-
III-A	2nd Floor, Aurora Bank Bldg., Baler, Aurora	January 13, 2015
IV	Odyongan, Romblon	April, 2014
V	Cagba, Tugbo, Masbate City	May 15, 2014
VI	-	-
VII	-	-
VIII	-	-
IX	Ecopark, Upper Turno, Dipolog City	April 7, 2014
X	Butuan City	June 3, 2014
XI	DFFC Bldg. Rabe Subd., Tagum City	
XII	Da-Lebak, Poblacion II, Lebak, Sultan Kudarat	April 21, 2014

Source: PCIC

4.2. Features of the agricultural insurance programs

4.2.1. Objectives

Crop insurance is defined as a financial instrument used to manage agricultural production risks caused by natural calamities, pest infestation, and plant diseases, among others. It is designed to protect the farmers against financial losses by transferring agricultural risks to a third party. It is a "risk-pooling instrument" that involves collection of premia and "assessment and payment of indemnity claims[7] for all or part of financial losses" (Bangsal and Mamhot, 2012, p. 3). Crop insurance is also used to encourage risk-averse farmers to engage in riskier and more profitable activities such as adoption of higher-yielding varieties (Bangsal and Mamhot, 2012, p. 4).

Crop insurance, or agricultural insurance in general, is considered as a tool used to manage agricultural production risks caused by natural calamities, pest infestation, and plant diseases,

[7]Indemnity claims are based on the difference between actual yield and pre-specified target yield, not on actual crop damage or input costs lost (Bangsal and Mamhot, 2012, p. 3).

among others. It is used toprotect agricultural producers from financial losses by transferring agricultural risks to a third party. This definition of agricultural insurance has been widely accepted and operationalized worldwide.

In the Philippines, however, agricultural insurance has been viewed as something more than just a risk management tool. While the aforementioned concept of agricultural insurance is adopted in RA 8175, both PD 1467 and PD 1733referred to the said tool as crop insurance and stated that it can serve as a *relief good* to crop producers whose farms are adversely affected by natural calamities or other perils.

Agricultural insurance has also been viewed as a credit risk reduction mechanism; a *surrogate collateral*—substitute for physical collateral—to lending institutions as a way to encourage the latter to provide financial assistance to agricultural producers (Corpuz, 2013; Reyes and Domingo, 2009). Agricultural insurance is said to provide banks with more security and thus, more incentive to lend to farmers. Thus, insurance programs of the government are usually linked to government-sponsored credit programs (Bangsal and Mamhot, 2012).

4.2.2. Product lines and risks covered

The PCIC has seven major insurance product lines, which are as follows: rice; corn; high-value commercial crops (HVCC); livestock; fishery; non-crop agricultural asset; and, term insurance packages.

The country started the nationwide implementation of its insurance programs on May 7, 1981, with only rice as the only covered agricultural asset. On July 1, 1982, corn was introduced in the program (Reyes and Domingo, 2009). All rice and corn varieties that are accredited for production by the National Seed Industry Council (NSIC) are considered insurable.

The PCIC also had an interim cover for tobacco on September 1991. On October 1993, the PCIC expanded its coverage toinclude all HVCC (Reyes and Domingo, 2009). HVCC covers the following crops: abaca, *ampalaya* (bitter gourd), avocado, baguio beans, banana, broccoli, cabbage, cacao, cacao nursery seedlings, calamansi tree, carrot, cashew tree, cassava, cauliflower, celery, chayote, Chinese pechay, coffee, coconut, commercial trees like falcate/mahogany and rubber, cotton, cucumber, durian, eggplant, garlic, ginger, guyabano, honeydew, jackfruit, lanzones, lettuce, melon, mango (fruit and tree), mangosteen, marang, melon, *mongo* (mung bean), onion, oil palm, okra, oil palm, onion, onion leek, orange tree, paper tree, papaya, patani, patola, peanut, pechay, pepper, pineapple, pole sitao, radish, rambutan, sayote, shallot, snapbeans, sorghum, soybeans, squash, star apple, strawberry, stringbeans, sugarbeet, sugarcane, sweet corn, sweet peas, sweet potato, sweet/hot/bell pepper, tiger grass, tobacco, tomato, upo, watermelon, white potato, winged beans, yam, and zucchini (PCIC, 2014; Cajucom, 2013).

For crop insurance, particularly rice, corn, and HVCC insurance, the object of insurance is the standing crop planted on the farmland as identified in the insurance application. These insurance products are designed to protect farmers against crop losses caused by natural calamities and other perils such as pests and diseases.

In 1988, the PCIC joined the pool of 14 participating insurers—known as the Philippine Livestock Management Services Corporation (PLMSC)—that provided insurance to livestock raisers. In 2005, however, the PCIC decided to disengage from the PLMSC in order to "gain flexibility and strengthen control on underwriting, claims adjustment and settlement" (Mahul and Stutley, 2010; Reyes and Domingo, 2009, pp. 2-3). Livestock insurance can cover the following livestock and poultry animals: carabao, cattle, horse, swine, goat, sheep, poultry, game fowls, and other animals. An animal becomes the object of insurance when it has been specified in the insurance application and when the insured farmer has insurable interest on it. The livestock insurance protects livestock raisers against losses of carabao, cattle, horse, swine, goat, sheep, poultry, and game fowls and animals due to accidental death or diseases.

Agricultural production does not merely involve the crops being grown or livestock/poultry being raised. Machinery, equipment, and other non-crop agricultural assets also play significant roles in the whole production process. In its efforts to become a "one-stop shop for agriculture insurance," the PCIC started with its non-crop agricultural asset (NCAA) insurance program in 1996. These NCAAs include the following: warehouses, rice mills, fishing boats, irrigation facilities, other farm equipment, and other agri-fishery-forestry assets and facilities (PCIC, 2014; Cajucom, 2013). The object of insurance for NCAA insurance is the agricultural machineries, equipment, or infrastructure to be insured. The insurance program provides protection to agricultural producers against losses of their non-crop agricultural assets such as warehouses, rice mills, irrigation facilities, and other farm equipment due to perils like fire, lightning, theft, and earthquake.

There had been clamor among PCIC clients to get life and accident insurance because they argued that natural calamities could also put the lives of agricultural producers at risk. Thus, term insurance packages were offered in 2005. These packages include life insurance, accident insurance and loan repayment protection plan for farmers, fisherfolks and other agricultural stakeholders (PCIC, 2014; Bangsal and Mamhot, 2012, p. 8). The PCIC also offer term insurance packages that cater to the needs of agricultural producers and stakeholders, with three different plans: (1) Agricultural Producers Protection Plan (AP^3); (2) Loan Repayment Protection Plan (LRP^2); and, (3) Accident and Dismemberment Security Scheme (ADS^2). AP^3 is an "insurance protection that covers death of the insured due to accident, natural causes, and murder or assault." LRP^2 is an "insurance protection that guarantees the payment of the face value or the amount of the approved agricultural loan upon the death or total permanent disability of the insured borrower." ADS^2, meanwhile, is an "insurance protection that covers death or dismemberment or disablement of the insured due to accident" (PCIC, 2014). For term insurance packages, the object of insurance is the person whose name appears in the application.

The fisheries insurance, meanwhile, is the newest addition to the set of insurance products offered by the PCIC. Its program has only been implemented since 2011. Fishery covers inland fish structures including fishponds, fish cages and fish pens. The fisheries insurance protects fish farmer/fisherfolk/grower against losses in unharvested crop or stock in fisheries farms due to natural calamities and fortuitous events.

4.2.3. Amount of cover, premium rates and sharing

The amount of insurance cover is varied with each policy since this is based on the costs of production inputs as indicated in the farm plan and budget that the farmers are required to submit upon application. The farmer also has the option to include an additional amount of up to 20% to cover the value the expected harvest, with the approval of the PCIC. For fisheries insurance, the insurance may also cover the value of own and hired labor as long as this is specified in the fisheries farm plan and budget.

The amount of cover for certain insurance products is subject to cover ceilings, depending on the crop insured and on the variety of the crop. The cover ceiling for inbred varieties of rice is PhP 39,000 per hectare for irrigated or rainfed crops and PhP 41,000 per hectare for seed production. For hybrid varieties of rice, the cover ceiling is PhP 42,000 per hectare for commercial production (F1) and PhP 52,000 for seed production (A x R). For corn, the cover ceiling is PhP 40,000 per hectare for hybrid varieties, and PhP 28,000 per hectare for open-pollinated varieties. The premium amounts to be paid rely on the amount of cover as well as on the corresponding insurance premium rates.

The insurance premium rates not only vary across products but also depend on various factors such as type of insurance cover, risk classification, type of farmer, and geographical location, among others. Essentially, the premium rates were calculated using historical data on damage rate (ratio of claims to amount of cover). The premium rates for corn are relatively higher than those for rice because corn is considered as a riskier crop. The premium rates vary also by cropping season and by location (by region and even by province), depending on risk classification. The premium rates during wet season are relatively higher than those during dry season because wet season planting is faced with higher production risks (e.g., typhoons, floods, pests and diseases). For instance, the rates in Region II are different from rates in Region VII. Within Region II, the rates in Cagayan are relatively higher than those in Isabela because loss rates in the former have been higher (based on historical data) compared to those in the latter. Table 2 displays the national composite rates and premium sharing for rice and corn, by type of farmer, by insurance cover and by risk classification. The premium rates per region (based on the PCIC's regional classification) are shown in Annex Table 1.

Clearly, the government heavily subsidizes the premium rates for rice and corn insurance. Bangsal and Mamhot (2012, p. 3) argued that government subsidies are generally designed to increase insurance availment and penetration rates. The government's share accounts for a substantial portion of the total insurance premium; >60% if low risk, >50% if medium risk, ~50% if high risk.

The premium sharing, on the other hand, suggests that the borrowing farmers have benefited more than the self-financed farmers since formal lending institutions also share in the payment of insurance premiums. If a farmer borrows from the LBP or any other formal lending institution, the farmer's share in insurance premium is automatically deducted from the farmer's loan. The lending institution then remits the farmer's share, together with its share, to the PCIC. A borrowing farmer only has to pay around one-third, or less if a farmer is classified as low risk, of

the original insurance premium to the PCIC, while self-financed farmers pay around half of the total premium.

Table 2. National composite rates and premium sharing for rice and corn insurance, by type of farmer, by insurance cover and by risk classification, in %

Crop/Type of cover/ Risk classification	Borrowing farmers				Self-financed farmers		
	Farmer	Lending institution	Govern-ment	Total	Farmer	Govern-ment	Total
Rice							
Multi-risk cover							
Low risk	1.46	2.00	5.90	9.36	3.46	5.90	9.36
Medium risk	2.91	2.00	5.90	10.81	4.91	5.90	10.81
High risk	4.37	2.00	5.90	12.27	6.37	5.90	12.27
Natural disaster cover							
Low risk	1.12	1.50	4.22	6.84	2.62	4.22	6.84
Medium risk	2.23	1.50	4.22	7.95	3.73	4.22	7.95
High risk	3.35	1.50	4.22	9.07	4.85	4.22	9.07
Corn							
Multi-risk cover							
Low risk	2.83	3.00	10.62	16.45	5.83	10.62	16.45
Medium risk	5.65	3.00	10.62	19.27	8.65	10.62	19.27
High risk	8.48	3.00	10.62	22.10	11.48	10.62	22.10
Natural disaster cover							
Low risk	1.90	2.00	7.50	11.40	3.90	7.50	11.40
Medium risk	3.80	2.00	7.50	13.30	5.80	7.50	13.30
High risk	5.70	2.00	7.50	15.20	7.70	7.50	15.20

Source: PCIC (2014)

On the other hand, the insurance premium of the HVCC insurance is solely borne by the insured clients. The premium rate is based on the existing market rate and "shall range from 2 to 7 percent of the total sum insured, subject to any deductible and co-insurance provisions." The rate "shall [also] be on a per project basis and shall depend on the result of the pre-coverage evaluation of the type and number of risks sought for coverage, as well as other factors such as location-specific agro-climatic conditions, [soil type], terrain, farm management practices[,] and production and loss records" (PCIC, 2014). Table 3 display the premium rate for each crop covered by the HVCC insurance.

Table 3. Premium rates for HVCC insurance

Crop	Premium rate (%)	Crop	Premium rate (%)
Abaca	4.99	Cotton	4.77
Ampalaya	5.5	Cucumber	6.32
Avocado	7	Durian	7
Baguio Beans	1.55	Eggplant	5.94
Banana	6.64	Garlic	4.85
Brocolli	7	Ginger	6.91
Cabbage	6.34	Guyabano	7
Cacao	6.94	Honeydew	3.35
Cacao Nursery Seedlings	3.34	Jackfruit	7
Calamansi Tree	6.95	Lanzones	7
Carrot	6.8	Lettuce	3.19
Cashew Tree	7	Mango-Fruit	6.51
Cassava	4.07	Mango-Tree	7
Cauliflower	7	Mangosteen	7
Celery	7	Marang	7
Chinese Pechay	7	Melon	6.07
Coconut	6.91	Mongo	4.59
Coffee	5.53	Okra	6.43
Com.Tree, Falcata/Mahogany	7	Oil Palm	4.95
Com.Tree, Rubber Tree	7	Onion	6

Source: PCIC

Table 3 (continued)

Crop	Premium rate (%)
Onion Leek	7
Orange Tree	7
Paper Tree	7
Papaya	3.16
Patani	7
Patola	5.5
Peanut	4.35
Pechay	5.53
Pepper	7
Pineapple	5.24
Pole Sitao	4.91
Radish	6.9
Rambutan	7
Sayote	7
Shallot	7
Snap Beans	4.69
Sorghum	4.63
Soybeans	5
Squash	5.98
Star Apple	7
Strawberry	7
Stringbeans	6.94
Sugarbeet	7
Sugarcane	3.49
Sweet Peas	7
Sweet Potato	6.62
Sweet/Hot/bell Pepper	6.78
Sweetcorn	6.99
Tiger Grass	7
Tobacco	2.01
Tomato	6.95
Upo	6.16
Watermelon	6.65
White Potato	5.71
Winged Beans	6.03
Yam	7
Zucchini	7

Source: PCIC

For livestock insurance, premium rates differ between non-commercial (small-scale or backyard) and commercial cover, and are shown in Tables 4 and 5, respectively.

Table 4. Sum insured and premium rates for non-commercial cover of the livestock insurance

Animal/Purpose	Age Upon Acceptance	Sum Insured and Premium Rate as Percentage (%) of Sum Insured				Deductible % of Sum Insured
		PhP 7,000 - 9,000	PhP 9,001 - 11,000	PhP 11,001 - 13,000	PhP 13,001 - 15,000	
Cattle & Carabao Draft, Dairy, Breeder, Fattener	7 mos. - 5 yrs.	5.00	5.50	6.00	6.50	
	6 yrs.	5.25	5.75	6.25	6.75	
	7 yrs.	5.50	6.00	6.50	7.00	
	8 yrs.	5.75	6.25	6.75	7.25	
	9 yrs.	6.00	6.50	7.00	7.50	
	10 yrs.	6.25	6.75	7.25	N.I.	
	11 yrs.	6.50	7.00	N.I.	N.I.	
	12 yrs.	6.75	N.I.	N.I.	N.I.	
		PhP 9,000 or less	PhP 9,001 - 11,000	PhP 11,001 - 13,000	PhP 13,001 - 15,000	
Horse Draft/Working	3 yrs. - 5 yrs.	5.00	5.50	6.00	6.50	
	6 yrs.	5.25	5.75	6.25	6.75	
	7 yrs.	5.50	6.00	6.50	7.00	
	8 yrs.	5.75	6.25	6.75	7.25	
	9 yrs.	6.00	6.50	7.00	7.50	
	10 yrs.	6.25	6.75	7.25	N.I.	
	11 yrs.	6.50	7.00	N.I.	N.I.	
	12 yrs.	6.75	N.I.	N.I.	N.I.	
Swine	See Insurable Age table	PhP 3,000 - 7,000	PhP 5,000 - 7,000	PhP 7,001 to 10,000		
Fattener		0.50%/mo.				10 to 20
Breeder			3.00-6.00	4.00-8.00		10 to 20
Goat & Sheep	See Insurable Age table	PhP 1,000	PhP 2,500	PhP 6,000		
Buck-Breeder		10	10	10		10 to 20
Doe-Breeder		10	10	N.I.		10 to 20
Fattener		10	N.I.	N.I.		10 to 20

Notes: 1. For cattle, carabao, and horse: a. above premium rates are applicable for the first/initial coverage; b. For continued annual renewal of the policy (including those renewed within 30 days from date of expiry, up to the age of 12 years), the assured shall be entitled to the premium rate similar to that of the first/initial coverage, based on the age the animal was first insured; and c. However, if the renewal of the policy was beyond 30 days after the expiry of the policy, the premium rate to be applied shall be based on the age of the animal upon acceptance of the latest application. The coverage will then be treated as if accepted for the first time. 2 For swine-breeder: premium rates shall depend on: personnel handling and managing the animals including the presence of veterinary supervision or livestock inspector/technician, housing, animal husbandry practices, disease prevention and control program, and general health condition of the animals.

Source: PCIC (2014)

Table 5. Sum insured and premium rates for commercial cover of the livestock insurance

Animal	Purpose	Sum Insured (PhP) per Head/Batch - poultry	Premium Rate as % of Sum Insured (SI)	Deductible % of SI
Cattle & Carabao	Draft, Dairy, Breeder, Fattener	10,000 to 15,000	5 to 7	10 to 30
		15,001 to 20,000	6 to 8	10 to 30
		20,001 to 25,000	7 to 9	10 to 30
		25,001 to 30,000	8 to 10	10 to 30
		30,001 to 50,000	Above 10% or as agreed	10 to 30
Horse	Draft			
Swine	Breeder	5,000 to 7,000	3 to 6	10 to 20
		7,001 to 10,000	4 to 8	10 to 20
	Fattener	3,000 to 7,000	0.50 per month	10 to 20
Goat & Sheep	Breeder	20,000	12	
	Fattener	1,000	10	
Poultry				
Chicken	Broilers	Prevailing market price or as agreed upon	1.75	
Chicken Ducks	Pullets/Layers	Prevailing market price or as agreed upon	3.25 to 3.50 w/o cover for typhoon & flood or 3.50 to 4.00 including cover for typhoon & flood	

Notes:1. The above premium rates are subject to change by the PCIC; 2. The sum insured and premium rate for commercial cover of horse will be supplied by PCIC.
Source: PCIC (2014)

The premium rate for the fishery insurance is determined by the PCIC, provided that the "rate depend[s] on the result of the pre-coverage evaluation of the type, and other factors such as agro-climatic conditions and terrain, project management factors[,] and production and loss records" (PCIC, 2014).

The premium rates for the non-crop agricultural asset insurance, however, depend on the type of risk and/or equipment. For fire and lightning risks as well as for commercial car, the premium rates (including applicable discounts and deductibles) "shall be in accordance with the prevailing industry practice." For property floater, on the other hand, the premium rate is based on the prevailing rate in the area, provided that it is not lower than 1 percent of the sum insured "if the coverage is an initial insurance coverage for the subject property or the rate as expiring if renewal, subject to a minimum premium of PhP400 per policy" (PCIC, 2014).

The insurance premium for the term insurance packages are shown in Tables 6 to 8.

Table 6. Principal sum and annual premium for the AP[3] insurance

Age Bracket	Plan							
	PhP 15T	**PhP 20T**	**PhP 25T**	**PhP 30T**	**PhP 35T**	**PhP 40T**	**PhP 45T**	**PhP 50T**
Annual Premium (PhP) for Individual Insurance Cover								
≤ 35	180	240	300	360	420	480	540	600
36 to 45	255	340	425	510	595	680	765	850
46 to 55	330	440	550	660	770	880	990	1,100
56 to 65	480	640	800	960	1,120	1,280	1,440	1,600
66 to 70	630	840	1,050	1,260	1,470	1,680	1,890	2,100
Annual Premium (PhP) per Member for Group Insurance Cover with 15 to 25 Members								
≤ 35	165	220	275	330	385	440	495	550
36 to 45	240	320	400	480	560	640	720	800
46 to 55	315	420	525	630	735	840	945	1,050
56 to 65	465	620	775	930	1,085	1,240	1,395	1,550
66 to 70	615	820	1,025	1,230	1,435	1,640	1,845	2,050
Annual Premium (PhP) per Member for Group Insurance Cover with 26 to 40 Members								
≤ 35	150	200	250	300	350	400	450	500
36 to 45	225	300	375	450	525	600	675	750
46 to 55	300	400	500	600	700	800	900	1,000
56 to 65	450	600	750	900	1,050	1,200	1,350	1,500
66 to 70	600	800	1,000	1,200	1,400	1,600	1,800	2,000
Annual Premium (PhP) per Member for Group Insurance Cover with 41 and More Members								
≤ 35	135	180	225	270	315	360	405	450
36 to 45	210	280	350	420	490	560	630	700
46 to 55	285	380	475	570	665	760	855	950
56 to 65	435	580	725	870	1,015	1,160	1,305	1,450
66 to 70	585	780	975	1,170	1,365	1,560	1,755	1,950

Notes:(a) Premia are inclusive of taxes; (b) Under the group insurance cover, a group can only avail of one group plan; however a group member may avail of an additional plan; (c) Two (2) or more policies may be availed of at any given time per insured individual or group, each to be honored separately in case of claim; (d) The aggregate sum insured in all policies shall not exceed P100,000.00; (e) Those with ages 66 to 70 years old shall be covered up to a maximum of P50,000.00 only; and, (f) The same premium shall be charged, if coverage is renewed yearly (within 30 days before expiry), provided that no escalation of sum insured is made.
Source: PCIC (2014)

Table 7. Premium rate and discount as percent of approved loan/sum insured for the LRP[2] insurance

Term of Loan (months)	Premium rate (inclusive of tax)	Discount for Group Coverage	
		No. of members	Discount (%)
≤ 3	0.375		
4	0.500		
5	0.625		
6	0.750	15 to 25	5
7	0.875	26 to 40	10
8	1.000	> 40	15
9	1.125		
10	1.250		
11	14.375		
12	1.500		

Note: Premia are inclusive of taxes.
Source: PCIC (2014)

Table 8. Premium rate and discount as percent of approved loan/sum insured for the ADS2 insurance

Type of Plan	Principal Sum (PhP) Sum Insured per Policy/Member		Annual Premium Rate (%)
	Minimum	Maximum Total Aggregate Amount per Insured Individual	
Individual	15,000	100,000	0.1 to 0.5
Group (aggregate sum insured should not be more that PhP 100,000)	15,000	100,000	0.1 to 0.5
Family •Primary •Secondary •Tertiary	 50,000 25,000 10,000/ child (max. of 3 children)	105,000 50,000 25,000 10,000/ child (max. of 3 children)	0.357

Notes:1. Premia are inclusive of taxes; 2. Two (2) or more policies may be availed of at any given time per insured individual or group provided that the aggregate Sum Insured in all policies shallnot exceed P100,000, each to be honored separately in case of claims; 3. For Group Plan – minimum 15 members per group; 4. For Family Plan – maximum 5 members per family.
Source: PCIC (2014)

4.2.4. Claim for indemnities

Crops and fishery insurance

The claim for indemnity procedure for the rice and corn insurance is similar to that for the HVCC and fishery insurance. The assured crop/fish farmer, or any immediate member of his/her family, has to file a claim for indemnity (through the accomplished PCIC indemnity form) to the concerned PCIC Regional Office within a particular period (45 calendar days for rice and corn; 30 calendar days for HVCC; 7 calendar days for fishery) from the occurrence of loss.

Verification and loss assessment immediately follows and is done by a team of adjusters (TA). For rice and corn, the TA is composed of one member from the PCIC and another one from any of the following: DA or Department of Interior and Local Government (DILG), DAR, National Irrigation Administration (NIA), or concerned lending institution. For HVCC, the TA is composed of at least two members deputized by the PCIC. For fishery, one TA member should come from the PCIC and the other one from the LGU personnel assigned on the Fisheries Program.

After verification, the TA submits its findings to the regional office. The amount of indemnity or claims paid for rice and corn is based on the stage of cultivation at time of loss, actual consumer price index (CPI; indicated in the farm plan and budget) applied at time of loss, and percentage of yield loss. Yield loss is categorized as either total loss (if 90% or above), partial loss (if more than 10% but below 90%), and no loss (if 10% or below). For HVCC, however, the amount of indemnity is based on the following: actual cost of production inputs already applied at the time of loss per farm plan and budget (subject to limits stipulated in the policy contract); pro-rated cost of harvested crops; salvage value (if any); and, percentage of yield loss. For fishery, the amount of indemnity is "determined based on the severity of damage with the use of applicable loss prediction models (if available)[, and any or] a combination of the following methods may be utilized depending on practicability: (a) actual production count, if applicable; and, (b) production (difference approach, where the extent of damage shall be measured and expressed as the ratio of the difference of the average normal and actual productions to the average normal production)" (PCIC, 2014).

All claims for indemnities are settled within 60 calendar days from submission of complete claims documents.

Moreover, "in the event of loss arising from risks insured against, a written Notice of Loss (NL) shall be sent to the PCIC Regional Office within 10 calendar days [(for crops; 2 calendar days for fishery)] from occurrence of loss and before the scheduled date of harvest. In cases where the cause of loss [of rice and corn] is due to pest infestation, disease or drought and where the effect of damage is gradual or the full extent is not immediately determinable, the NL shall be filed upon discovery of loss." Filing of loss report shall not be "later than 20 calendar days before the schedule date of harvest" (PCIC, 2014).

"In the case of perils affecting [HVCC or their fruits,] which are perishable in nature [(such as blowdown in bananas, strong wind or typhoon-related fruit-dropping in mangoes, typhoon and/or

flood affecting vegetable crops like brassicae, bell pepper and the like, cucumbers and tomato and other solanaceous vegetables)], the NL shall be filed within 3 days from the time of occurrence of such perils, or within the prescribed period specified in the policy contract" (PCIC, 2014).

"The NL shall at least contain the following information: name of the assured farmer; [certificate of insurance cover or] CIC number; lot number; time of occurrence of loss; stage of cultivation; [and,] nature, cause and extent of loss" (PCIC, 2014).

Livestock insurance

The claim procedure for the livestock insurance differs from those for the crop and fishery insurance. The PCIC does not usually conduct verification and loss assessment. The assured livestock raiser only needs to submit to the PCIC Regional Office a pro-forma NL[8] within 10 days from the death of the insured animal and all other required documents[9] including claim for indemnity or loss report within 30 days. Claims for indemnity are merely based on documents submitted by the assured producer and are settled within 45 days from receipt of complete set of claim documents.

The percentage of loss assessment is shown in Table 9.

[8]"can be in the form of telegram, fax, e-mail, or any other form of written statement containing the name of the assured, address, policy [number], livestock insured, cause of death, and date of the occurrence of death" (PCIC, 2014)

[9]i.e., "(a) claim for indemnity/loss report, duly accomplished [and signed] by the assured; (b) veterinary disease report, duly accomplished and signed by the authorized veterinarian or LGU livestock inspector/technician; (c) original copy of the certificate of ownership/transfer of large cattle or certified machine cope of memorandum receipt for government-dispersed animals; (d) livestock death certificate; (e) necropsy/laboratory reports, if performed; (f) photographs of the dead animal/s showing clearly the identifying marks ([e.g.,] eartags, earnotch, brand, or tattoo); [and,] (g) other documents as may be required by the PCIC such as affidavit of two disinterested parties. For poultry[:] (a) weekly loss report; (b) veterinary report accomplished by his duly authorized veterinarian; (c) farm management chart or daily mortality chart; (d) photographs of dead birds; and, (e) pertinent proof of proceeds" (PCIC, 2014).

Table 9. Percentage of loss assessment for the livestock insurance

Insurance Cover	Animal-Purpose	Percentage (%) Loss Assessment/Remarks
Non-Commercial	Cattle, Carabao, Swinebreeder, Goat & Sheep-breeder	100% of sum insured, less applicable deductible and salvage value
	Swine-fattener	100% of the value of animal at the time of loss, based on the table of assessment less applicable deductible and salvage value
	Goat & Sheep-fattener	90% of the value of the animal at the time of loss, less applicable deductible and salvage value
Commercial	Cattle, Carabao, Swine, Goat & Sheep	Maximum of 100% of sum insured less applicable deductible and salvage value
	Horse	80% of the actual cash value of the insured animal at the time of loss but not to exceed 80% of the sum insured
	Poultry	Indemnity shall be based on the remaining loss after deduction of the policy deductible
	All animals	Deductible shall be reckoned on a per farm per event basis on varying percentages depending on type of animal and cause/nature of loss

Source: PCIC (2014)

Non-crop agricultural asset insurance

Upon the event of loss of the insured infrastructure, the participant should immediately file a NL indicating the number and type of policy, location, date, and time of the occurrence of loss, and other information required by the PCIC. The NL as well as a proof of loss should be filed at the PCIC Regional Office. Claims for losses should be filed within a specified number of days from the occurrence, depending on the type of insurance availed: 60 days for fire and lightning, 90 days for property floater, and 3 days from NL filing for commercial car.

The claim will be assessed and adjusted by PCIC staff or an adjuster appointed by the PCIC. After the adjustment and after the claimant has submitted the necessary documents, the claim will be settled as soon and as quickly as possible.

Term insurance packages

The three term insurance programs have similar processes in terms of filing for indemnity claims. Within 45 days from the death (or dismemberment or permanent disability, in the case of the ADS[2] and AP[3] respectfully) of the insured, a family member, beneficiary, or representative (or the insured himself, for ADS[2] and AP[3]) should file a notice of claim (NC) to the PCIC Regional Office indicating the name and address of the insured, the COC number, the cause of death/injury, and the date of death/accident.

Claim documents have to be submitted within 90 days of the death/accident of the insured. The following documents are required for all three packages: death certificate and/or medical certificate of the insured, police report if the event occurred through violent means, birth

certificate of the insured in the case of the insured's death. For the AP[3] and the ADS[2], the hospital bill as well as the hospital-issued official receipt should be presented for medical reimbursement claims. For the LRP[2], the manager of the lending institution or the cooperative involved must fill out a Claimant Statement Form. In case the indicated beneficiary for the ADS[2] died earlier than the insured, a proof as the nearest kin has to be submitted as well in case no endorsement for beneficiary replacement was filed earlier. The PCIC may require the submission of other documents as needed.

The term insurance packages are subject to the following provisions as indicated by the PCIC:

Table 10. Provisions under the term insurance packages

Subject	Particulars
Disappearance	Disappearance per se of the insured is not compensable. However, if death of the insured alleged to have disappeared is proven or established later to have occurred during the term of cover, the claim may be given due course
Voidance & Cancellation Clause	The policy shall be voided and cancelled by the PCIC upon occurrence of any of the following during the effectivity of the policy, and after notice thereof to the insured/lending institution/cooperative: a) Conviction of a crime thus increasing the hazard insured against; b) Discovery of fraud or material misrepresentation; c) Discovery of willful, reckless acts or omissions that increase the hazard insured against. In case of cancellation, the insured is not entitled to any premium refund for the unexpired item
Civil Code 1250 Waiver Clause	It is hereby declared and agreed that the provision of Article 1250 of the Civil Code of the Philippines (Republic Act No. 386) which reads: "In case an extraordinary inflation or deflation of the currency stipulated should supervene, the value of the currency at the time of the establishment of the obligation shall be the basis of the payment..." shall not apply in determining the extent of liability under the provisions of this policy.

Source: PCIC (2014)

4.3. Types of programs

The PCIC is implementing regular and special programs. Under the regular program, the PCIC clients who are rice and corn farmers are paying less than 50 percent of the total premium amount while other agricultural producers are paying the full amount of insurance premium.

Under the special program, the insurance premium is fully subsidizedby the government. Three of the special programs of the PCIC, both under the DA Rice Program, are the *Sikat Saka*, the NIA-Third Cropping and the Weather-Adverse Rice Areas (WARA). These programs have been implemented starting 2012 and were catered to only to rice farmers who are members of NIA-certified irrigators' associations. The *Sikat Saka* provides full premium subsidy to borrowing farmers while the NIA-Third Cropping is designed for self-financed farmers. The WARA program provides premium subsidy to rice farmers in flood-prone rice areas. Meanwhile, the maximum insurance cover for both NIA-Third Cropping and WARA programs is PhP10,000 per hectare.

Another special program is the Agrarian Reform Beneficiaries (ARB) – Agricultural Insurance Program (AIP) under the DAR. Implemented only in 2013, this program provided full premium subsidy to agrarian reform beneficiaries (ARBs) or household members of ARBs through DAR's credit programs, namely: the Agrarian Production Credit Program (APCP), the Credit Assistance Program for Program Beneficiaries Development (CAP-PBD), Agrarian Reform Community Connectivity and Economic Support Services (ARCCESS), as well as their microfinance programs. The program covers the following product lines: rice, corn, HVCC, livestock, and ADS[2].

This year, the PCIC has started implementing the Department of Budget and Management (DBM)-funded special program named 'Agricultural Insurance for Farmers and Fisherfolk Registered in the Registry System for Basic Sectors in Agriculture (RSBSA)'. This program fully subsidizes the insurance premium of subsistence farmers and fisherfolk registered under the RSBSA for all insurance product lines, except the term insurance packages. A paper titled 'Targeting the Agricultural Poor: The Case of PCIC's Special Programs' provides details on each of the special programs of the PCIC.

Moreover, selected LGUs have established partnership with the PCIC in providing agricultural insurance to the local agriculture sector. One of these is the Cebu Provincial Government that currently provides full premium subsidy to all agricultural producers. The program, known as the Integrated Farming Systems Development Program, started in 2011 but the premium scheme adopted (until August 2014) was 90:10, where the Provincial Government pays 90 percent of the total premium while the Municipal Government pays the remaining 10 percent. Isabela has also been providing full premium subsidy since 2010 but only to rice and corn farmers. Davao del Norte, however, provides 25 percent premium subsidy to rice farmers and the program started only in 2013. The program of Negros Occidental, on the other hand, is different from those of the other LGUs. Since 2011, the Provincial Government, under the Negros First Universal Crop Insurance Program, has been paying part of the premium (amounting to PhP500 per hectare) in the form of loan, which has to be paid after harvest, while the assured agricultural producer pays the remaining premium amount upon enrolment. The program had only catered to rice farmers

from 2011 to 2013 but the coverage expanded this year to include other agricultural products such as corn, HVCC, tilapia, and marine hull. The paper titled 'Philippine Crop Insurance Corporation forging partnerships with selected LGUs in the Philippines' provides details of each LGU program.

4.4. Insurance partners

Agricultural credit has been considered as the most important delivery channel for agricultural insurance in the Philippines (Bangsal and Mamhot, 2012, p. 8). The LBP is considered as the main credit arm for agricultural producers, particularly the rice and corn farmers. The LBP require collateral among farmers who apply for loans. Crop insurance served as a collateral substitute by the bank. The insurance program has been heavily dependent on the loans released by formal lending institutions such as the LBP (Bangsal and Mamhot, 2012, p. 8).

Other than the LBP lending centers, the insurance partners of the PCIC also include the following: rural banks/cooperative rural banks; microfinance institutions/microinsurers; farmers' cooperatives/organizations; irrigators' associations; agrarian reform beneficiaries (ARB) organizations; and local government units (LGUs). The PCIC has a memorandum of agreement (MOA) with each of its partners and the primary task assigned to each of these partners is underwriting. As underwriters, these partners help in marketing the agricultural insurance to its partners, and they receive a "service fee" as incentives. Also, these underwriters may also serve as part of the team of adjusters when claims have to be paid.

4.5. Geographical coverage and type of clients

Since the start of the implementation of agricultural insurance programs in the country, rice and corn had been the accounting for the highest number of enrollees, until 2012 when the share of term insurance packages has started overtaking the rice and corn insurance (Figure 2).

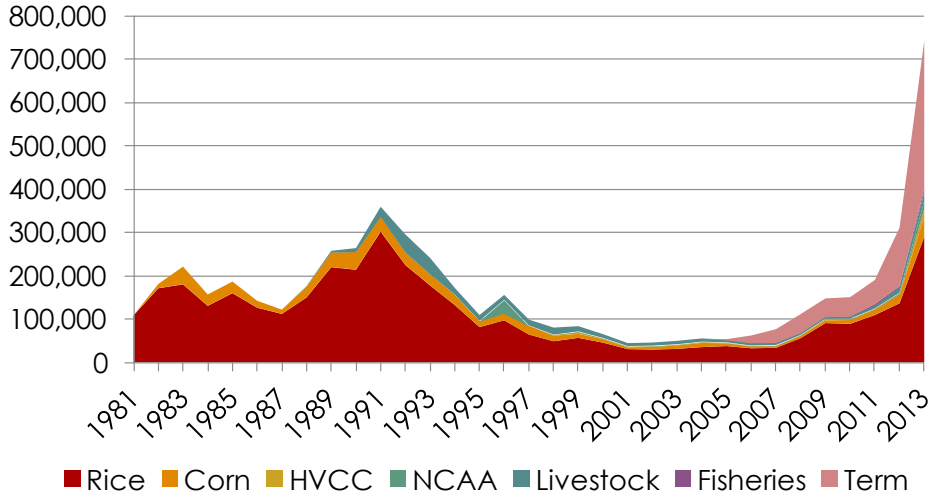
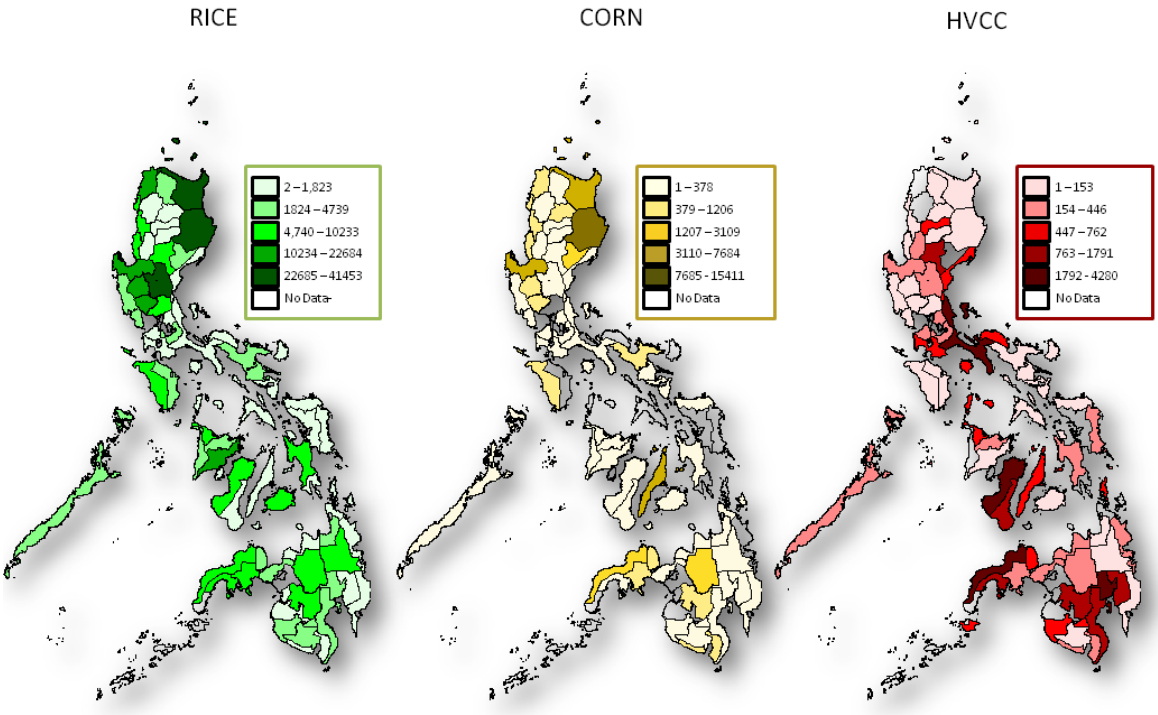


Figure 2. Number of insurance policies, by product line, 1981-2013
Source of basic data: PCIC

In 2013, the DAR's ARB-AIP accounted for the lion's share of the total number of insurance policies offered by the PCIC. The said program comprised 37.2 percent of the total rice insurance policies, followed by WARA with 31.8 percent, and then the regular program with only 29 percent. DAR's program also dominated the corn insurance policies, accounting for 58 percent, while the regular program only accounted for 42 percent. The cases of HVCC and livestock, on the other hand, are different. These products did not have premium subsidies before the implementation of the ARB-AIP in 2013. It is thus expected that the majority of HVCC and livestock insurance policies in 2013 were under the said program.

Rice insurance policies, in general, were distributed nationwide in 2013, although there were still provinces that were not covered by the rice insurance program. Many of the rice insurance policies were found in the north, particularly Cagayan, Isabela and Nueva Ecija—the major rice-producing areas of the country (Figure 3). Similarly, corn insurance policies were concentrated in Luzon, but there were also some policies found in Mindanao (e.g., Zamboanga del Norte and Sur, Bukidnon and North Cotabato) and a few ones in Visayas (e.g., Cebu and Iloilo). HVCC insurance policies, on the other hand, were mostly found in Visayas and Mindanao, particularly in Negros Occidental, Zamboanga del Norte and Davao del Norte. Bulk of livestock insurance policies were located in Visayas, particularly Cebu and Bohol.

Non-crop agricultural asset insurance policies were only found in some parts of Luzon and Visayas, although the majority of them (essentially, fishing boats) were foundin Cebu, particularly Bantayan Island. Term insurance packages were also geographically dispersed like those of the rice insurance. Interestingly, this is the only insurance program that managed to cover all provinces in the Autonomous Region in Muslim Mindanao (ARMM).



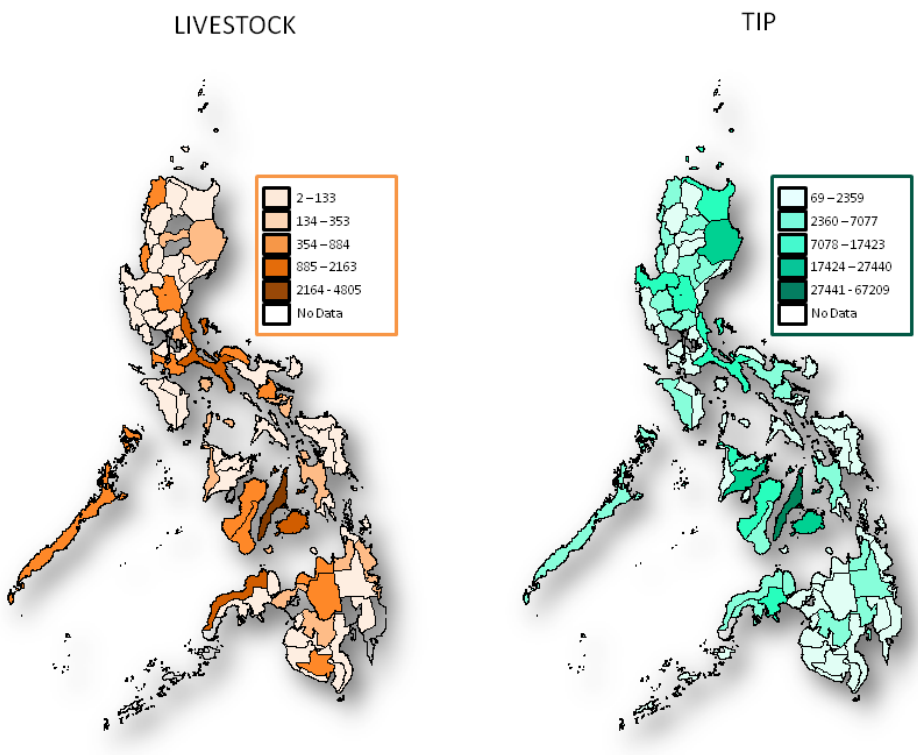


Figure 3. Provincial distribution of insurance policies in the Philippines, by product, 2013
Source of basic data: PCIC

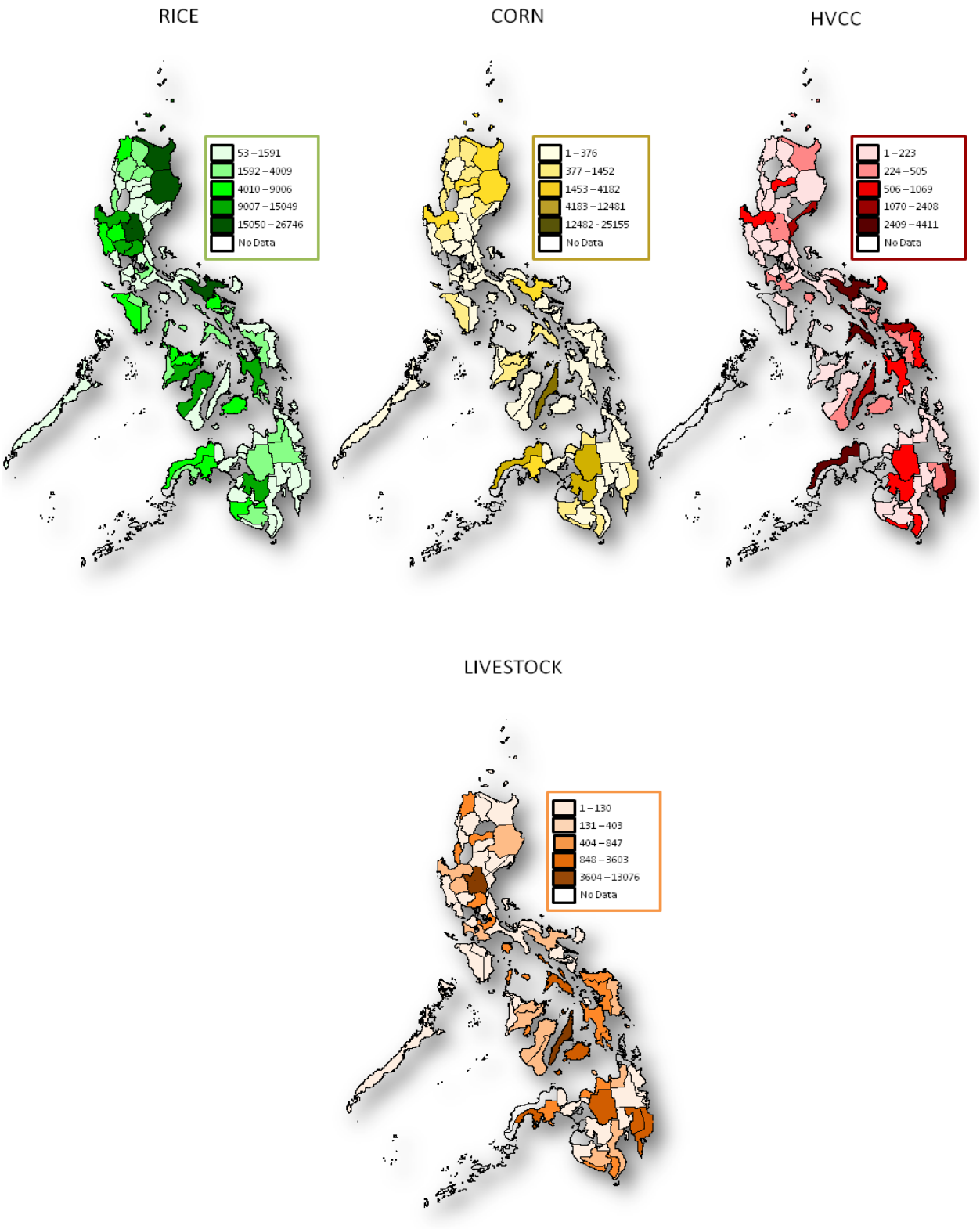


Figure 4. Provincial distribution of insurance policies in the Philippines, by product, 2014
Source of basic data: PCIC

The set of maps shown above provides a distribution of insurance policies by product line. Since an agricultural producer is allowed to avail of more than one insurance product (say, rice and livestock insurance plus an accident insurance), this is not a good representation of the magnitude of agricultural producers who are covered by the agricultural insurance programs.

The map shown below, on the other hand, provides the readers an idea on the actual number of agricultural producers who are PCIC clients (regardless of how many insurance policies one client purchased), by province and by product line. While the majority of insurance policies (regardless of product line) in 2013 were under the DAR's special program, the said program only accounted for 26.5 percent of the total PCIC clients. The regular program had the most number of clients, accounting for 44 percent. This observation implies that many of the DAR program beneficiaries were granted multiple policies. The provinces in Luzon have the highest number of program beneficiaries in 2013, specifically Nueva Ecija, Pampanga, Tarlac, Cagayan, Pangasinan, Isabela, and Bulacan, respectively. These eight provinces alone accounted for around 58 of the total clients. Leyte, Negros Occidental and Iloilo had the highest number of clients in Visayas, while Zamboanga del Sur, Bukidnon and Agusan del Sur dominated Mindanao in terms of magnitude of clients.

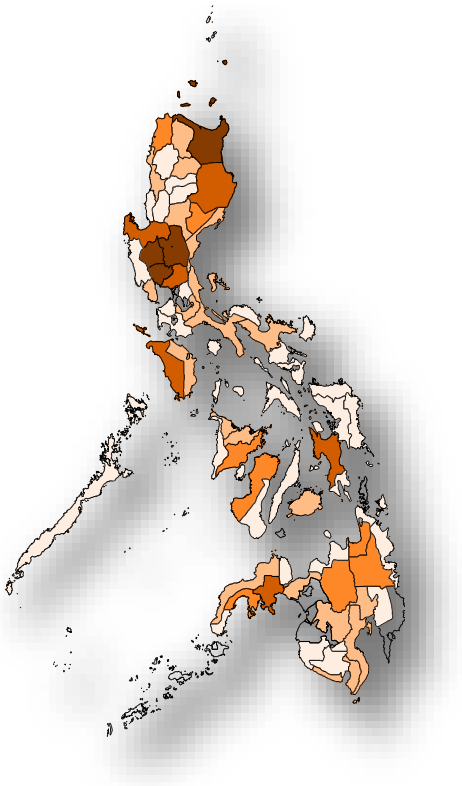


Figure 5. Provincial distribution of PCIC clients in the Philippines, 2013
Source of basic data: PCIC

For the first semester of 2014, the regular program accounted for the most number of unique PCIC clients at 51.8 percent. Regardless of product line, the provinces in Luzon with the most number of clients are Nueva Ecija, Tarlac, and Pangasinan (Figure 5). The provinces with the most number of agricultural producers in Visayas are Iloilo, Leyte and Negros Occidental while

Zamboanga del Sur, North Cotabato and Agusan del Sur in Mindanao. It is important to note, however, that the number of unique clients is significantly lower than the number of insurance policies.

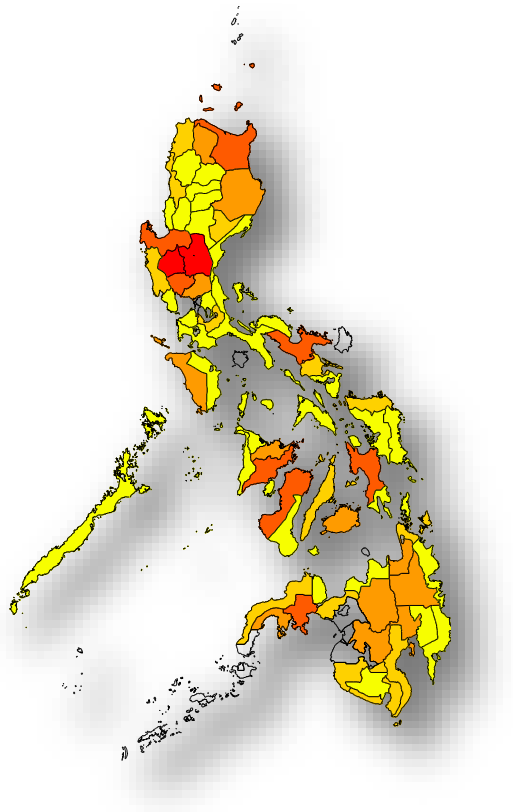


Figure 6. Provincial distribution of PCIC clients in the Philippines, 2014
Source of basic data: PCIC

Moreover, there are two types of clients that participate in the agricultural insurance programs, namely: (1) borrowing clients; and, (2) self-financed clients. The borrowing clients are agricultural producers who obtain production loans, and thus purchased insurance policies through borrowing, from any formal lending institutions. These clients are typically members of farmers' cooperatives and/or other formal organizations and are assumed to have good credit background. Borrowing clients are also participants of the supervised credit program of the government and thus, agricultural insurance is compulsory among them.

On the other hand, the self-financed clients are assumed to have sufficient amount of funds for their agricultural production, and purchased insurance policies using their own funds. These clients voluntarily purchase insurance, provided they agreed to be placed under the supervision of agricultural production technicians. The PCIC, however, found that the majority of these clients were not genuinely self-financed but were actually dependent on informal credit. Informal lenders, like formal lending institutions, require their clients to get and submit as collateral an agricultural insurance policy. The PCIC also found that many of these informal borrowers have bad credit background and were blacklisted by formal lending institutions.

The proportion of borrowing rice and corn farmers had been generally higher than that of self-financed farmers, except in the late 1980s. This can be attributed to the thrust of the government of encouraging farmers/agricultural producers to group themselves through provision of incentives.

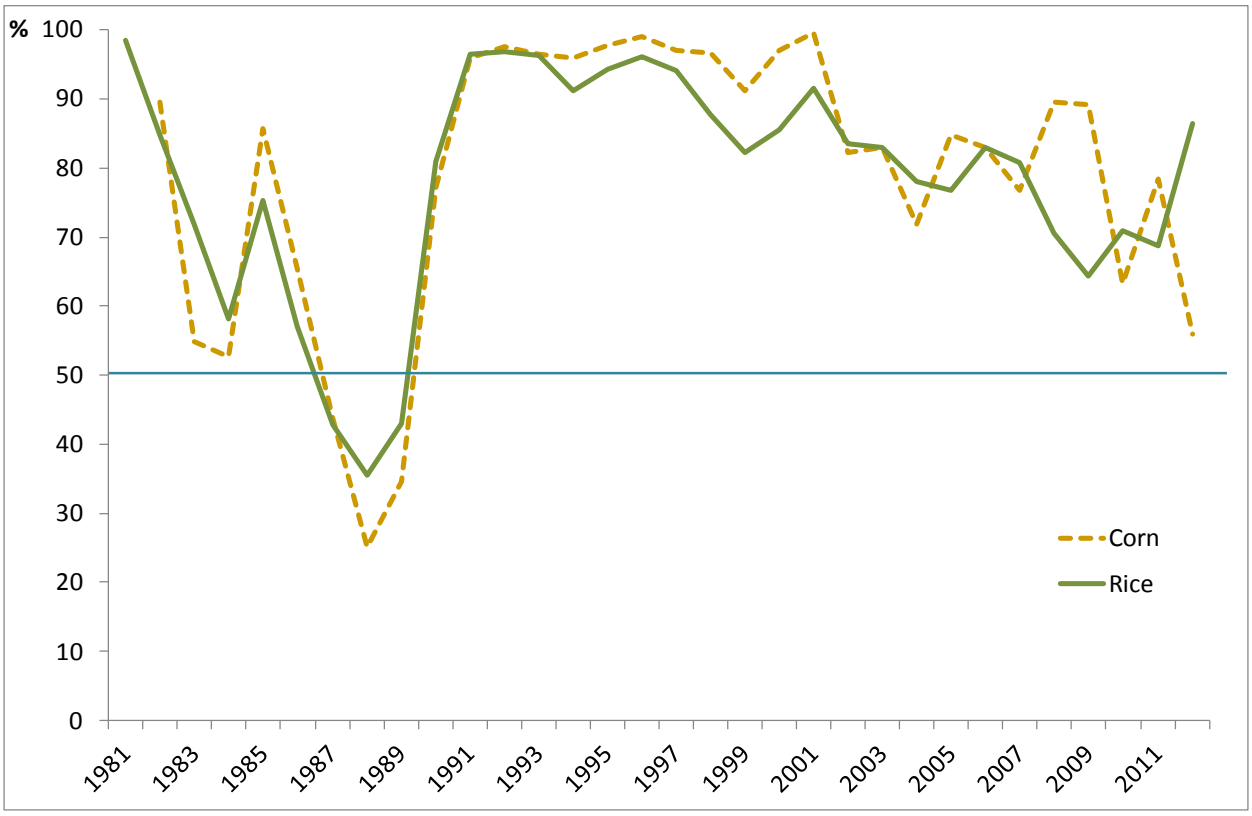


Figure 7. Proportion of borrowing rice and corn farmers who are insured, 1981-2012
Source of basic data: PCIC

4.6. Financial performance

In terms of profits, the year 2013 was an exceptional year for the PCIC. It registered the highest net income of PhP555.73 million in its 33 years' history. This was mostly due to the PhP1 billion government subsidy for the DAR's Agrarian Reform Beneficiaries Agricultural Insurance Program, of which PhP241 million was used to pay for claims of farmers insured under the said program[10]. Figure 8 shows the graph of the PCIC's net income over time.

[10] As of the year-end of 2013, there are still active policies in effect until 2014 that might have filed claims.

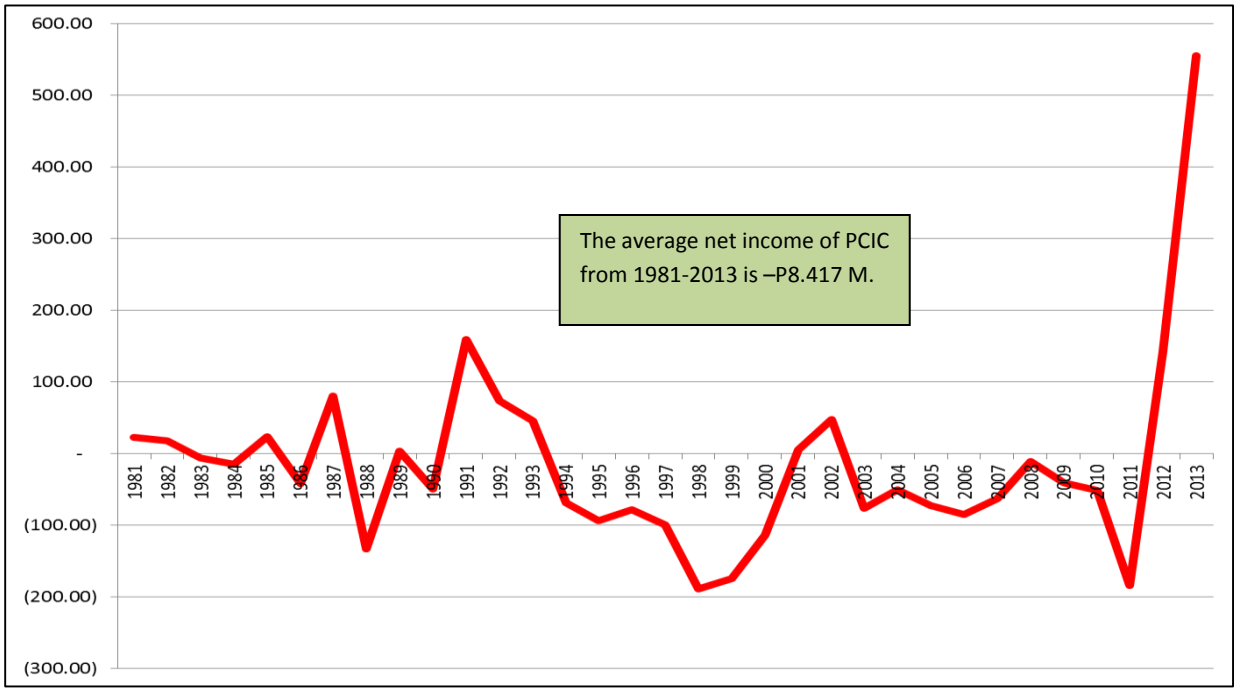


Figure 8. Net Income of PCIC, 1981-2013
Source of basic data: PCIC

Loss ratios are used in agricultural insurance as one way to determine the viability of a product line. For the PCIC, it is computed as total insurance premiums collected less total claims paid for the period. Based on revisions to the charter of the PCIC (RA 8175), operating expenses of the Corporation must come from the interest earnings of its fund placements, thus, these expenses are not deducted from total insurance premiums collected to compute for the loss ratio. Interestingly, of the various product lines, the term life insurance package has the lowest average loss ratio at 15 percent. Perhaps this is the reason why in the succeeding figures, it shows the highest increase in insurance production. Figure 9 shows the average loss ratio of the PCIC while Figures 10 to 13 show the loss ratio, total claims, and total insurance premiums collected by product lineover the years. Note that the average loss ratio of PCIC is 79 percent or almost four-fifths of total premiums collected, and the computation does not include other underwriting expenses (premium discounts, commission expenses, honoraria for claims adjusters, among others) and operating expenses. Thus, it seems that the PCIC is operating on a rather unsustainable premise, particularly if the national government has large arrearages in the payment of government premium subsidies.

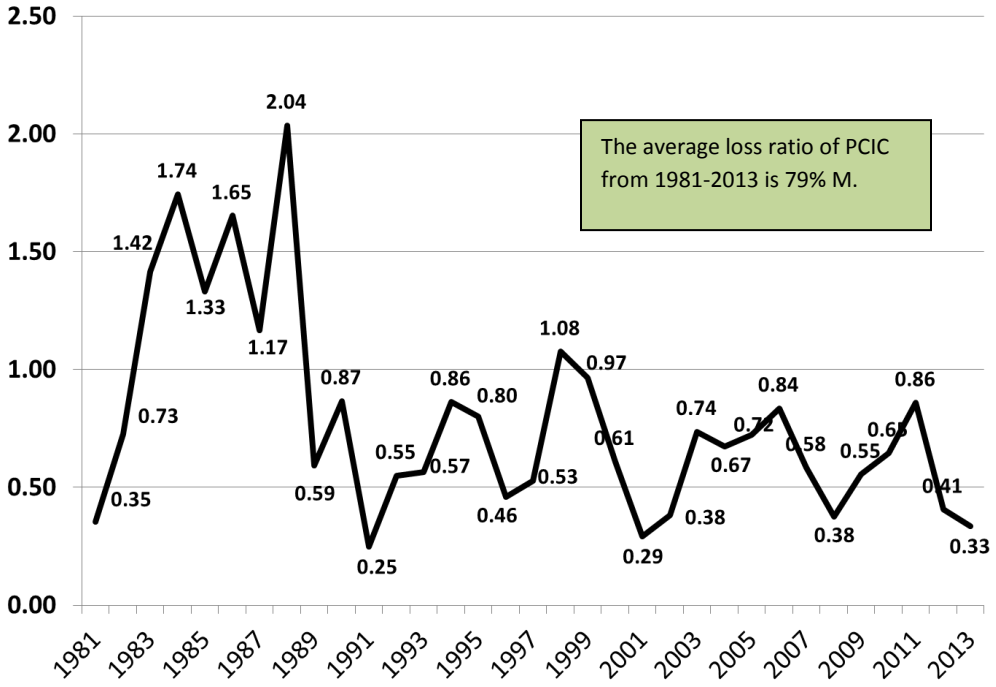


Figure 9. PCIC Loss Ratios, 1981-2013
Source of basic data: PCIC

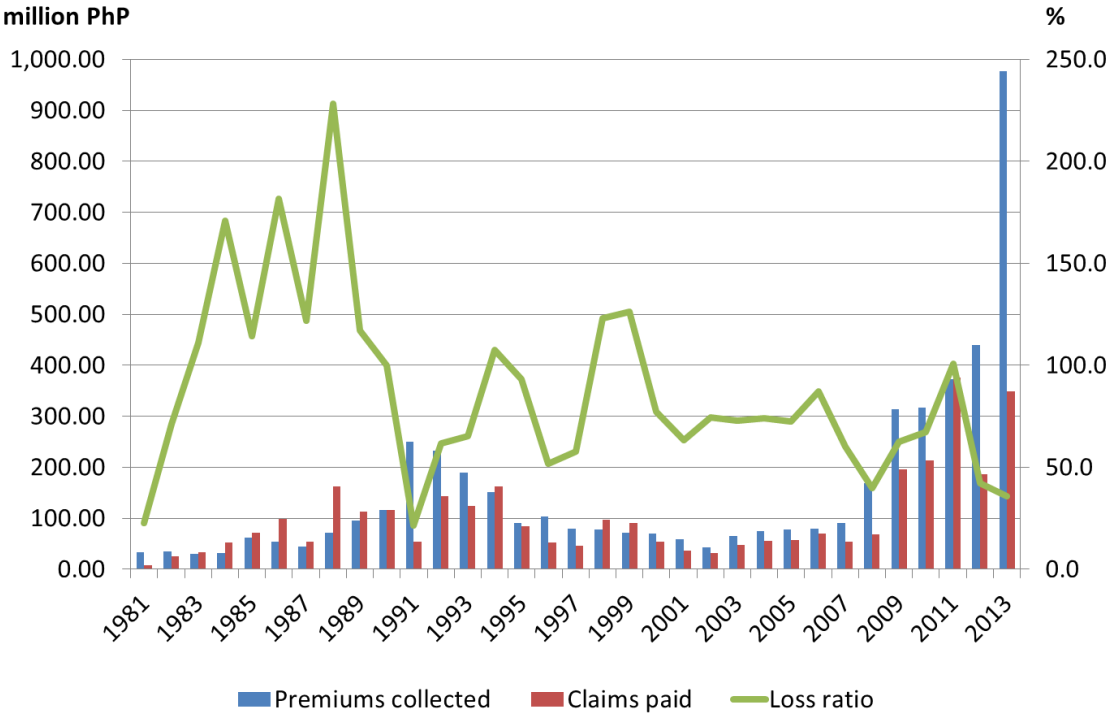


Figure 10. Premiums Collected, Claims Paid and Loss Ratio, Rice, 1981-2103
Source of basic data: PCIC

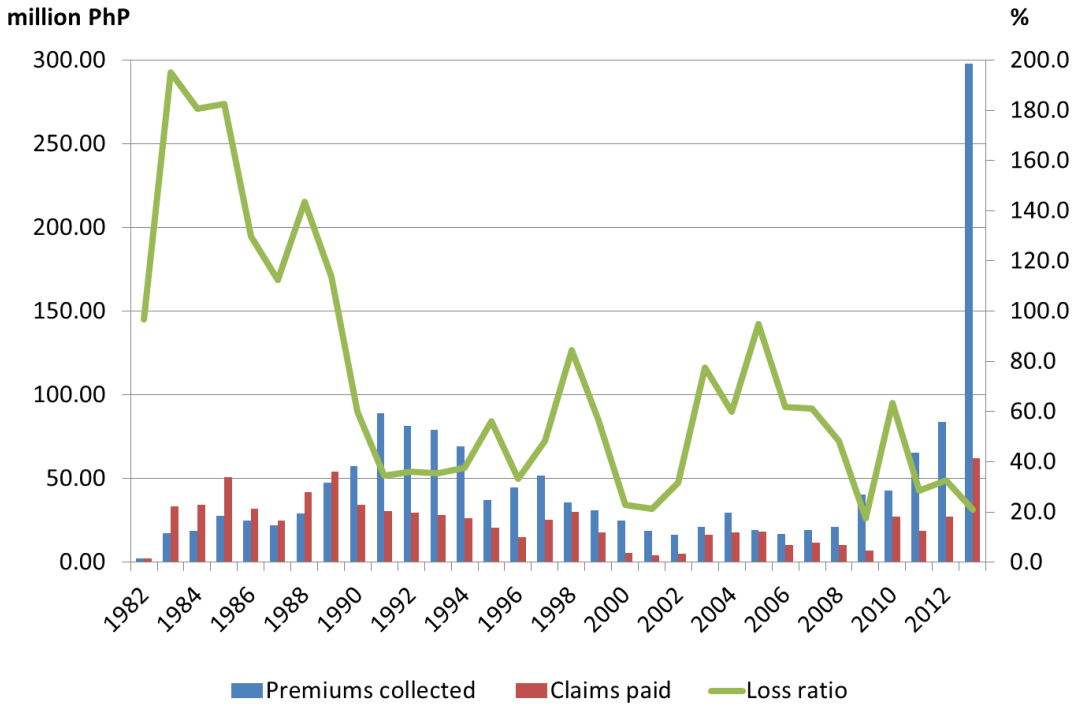


Figure 11. Premiums Collected, Claims Paid and Loss Ratio, Corn, 1982-2013
Source of basic data:PCIC

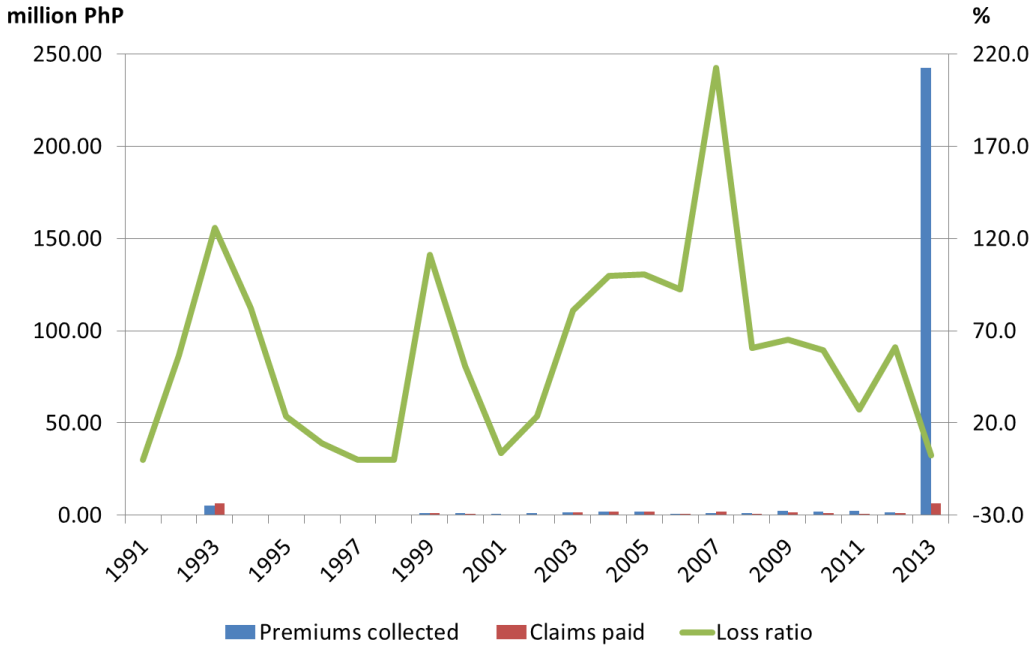


Figure 12. Premiums Collected, Claims Paid, and Loss Ratio, HVCC
Source of basic data: PCIC

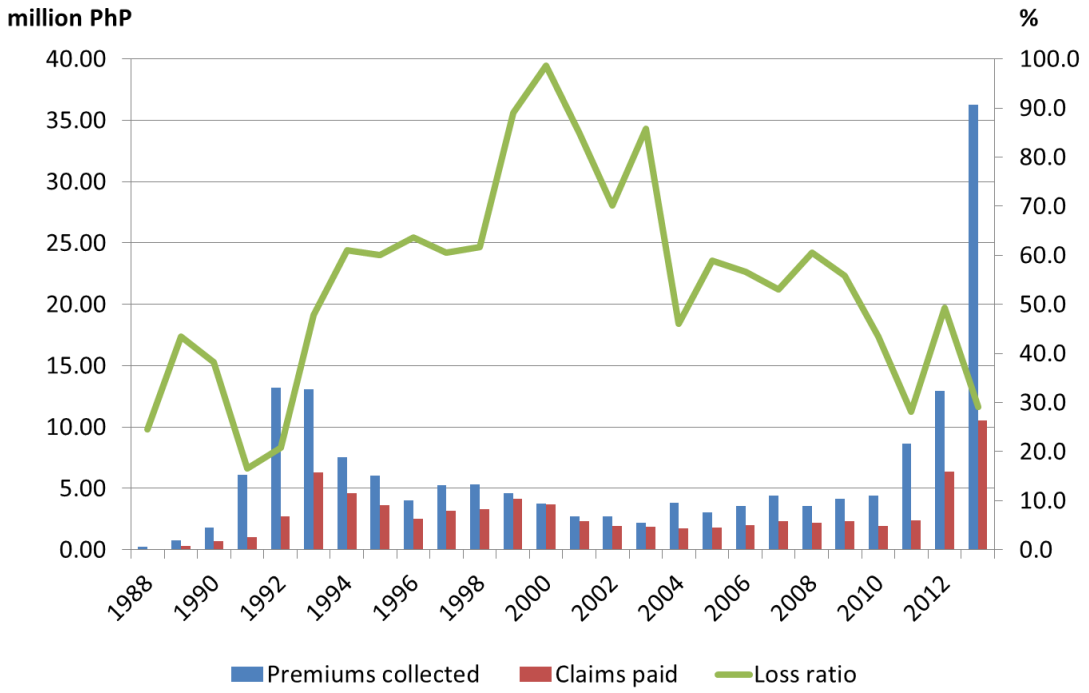


Figure13. Premiums Collected, Claims Paid and Loss Ratio, Livestock
Source of basic data: PCIC

For the year 2014, the government allotted another P1 billion on top of the P183.771 million government premium subsidy for those listed under the Registry System for Basic Sectors in Agriculture. This increased subsidy is a welcome event for PCIC, since the National Government has been amiss in releasing the Corporation's allotted government premium subsidy as stipulated in the General Appropriations Act. As of December 2013, DBM has to release a total of PhP542.94 million in premium subsidy arrearages to PCIC, of which PhP347.58 million consist of premium arrearages from 1996-2012. Table 11 shows summary of collectibles from the national government of the PCIC.

Table 11. Summary of collectibles from the National Government (PhP), as of December 2013

1. Premium Receivables	
a) Premium Arrearages Under RA 8175	
Beginning balance	42,941,000.00
Less-	
Releases (1996-2013)	374,182,505.00
	168,758,495.00 [1/]
b) Unreleased Government Premium Subsidy	146,906,181.66 [2/]
Unreleased Subsidy (1996-2013)	
Plus+	55,040,356.00
Balance of CY2012 GAA, RA 10155	
Balance of CY2010 GAA, RA 9970	73,596,745.78
Balance of CY2009 GAA, RA 9524	71,714,717.89
	347,258,001.33
2. Equity Receivables	
Authorized Common Stock to be Subscribed by the National Government per RA 8175	1,500,000,000.00 [3/]
Less:Releases/Transfers/Entries	1,250,954,342.54
	249,045,657.46
3. State Reserve Fund (Per RA 8175)*	500,000,000.00 [4/]
4. Total Receivables from the National Government	1,265,062,153.79

Notes: [1/] Total premium arrearages per RA 8175 is P542.941 million. Actual releases from 1996-2013 is P374.183 M

[2/] This is the accumulated balance of unreleased GPS for the years 1996-2014

[3/] The total authorized common stock to be subscribed by the National Government per RA 8175 is P1.5 billion.

[4/] Sec. 8-A of RA 8175 states that a "State Reserve Fund for catastrophic losses in the amount of P500 M shall be created exclusively to answer for the proportion of all losses in excess of risk premium under the operation of the Crop Insurance Program"

Source of data: PCIC

Table 12 shows a snapshot of underwriting expenses incurred by PCIC in the conduct of its operations. Insurance benefits or claims payouts make up the majority of expenses, followed by premium discounts and commission expenses.

One can immediately see that other income sourced from investment activities can barely cover 20 percent of PCIC's operating expenses. Based on PCIC's revised charter (RA 8175) this was meant to finance the operational expenses of the Corporation. In view of this, the PCIC is currently pushing for a Senate Bill to increase its capitalization to PhP10 billion from PhP2 billion pesos[11], as part of their efforts to achieve sustainability.

[11] There are various initiatives in the senate and congress to change the charter of PCIC, and one of these proposed changes is an increase in capitalization. Senate Bill 266 of Hon. Antonio Trillanes III proposes this, together with the House Bill 2825 of Hon. Walden Bello and Hon. Kaka Bagao. As of December 2013, the Corporation's paid up capital stood at P1.351 billion, thus, the P2 billion is not even fully subscribed.

Table 12. Snapshot of Gross Income, Underwriting Expenses and Operating Expenses, 2010-2013

	2013	2012	2011	2010
Net Insurance Premiums	**1,294,352,889.00**	**556,278,564.00**	**458,171,343.00**	**396,967,607.00**
Underwriting Expenses				
Insurance benefits	538,157,990.00	227,103,791.00	401,018,313.00	249,586,976.00
Premium discounts			62,652,507.00	33,528,145.00
Commission expenses	23,048,264.00	18,717,758.00	15,728,864.00	11,779,024.00
Reinsurance premiums ceded/ facultative	11,016,238.00	4,540,475.00	6,752,406.00	20,081,510.00
Death benefits	1,190,000.00	745,000.00	770,000.00	620,000.00
Honoraria/Incentive to claims adjuster	22,851.00	7,785.00	120,132.00	61,750.00
Honoraria/ Incentive to agricultural technician	243,655.00	94,303.00	11,568.00	34,332.00
	573,678,998.00	**251,209,112.00**	**487,053,790.00**	**315,691,737.00**
Operating Expenses	**202,417,670.00**	**191,400,560.00**	**187,931,223.00**	**168,696,263.00**
Other Income	**37,470,943.00**	**29,270,900.00**	**32,925,539.00**	**36,221,358.00**
Net Income	**555,727,164.00**	**142,939,792.00**	**(183,888,133.00)**	**(51,199,035.00)**

Sources of data: PCIC, COA

4.7. Recent innovations

4.7.1. Area-Based Yield (ARBY) Index Insurance

In 2010, the GTZ (German Technical Cooperation) Microinsurance Innovations Program for Social Security (MIPSS) looked into the demand of natural catastrophe insurance products. Household interviews and focus group discussions were conducted in Iloilo, Leyte, Luzon, and Agusan del Sur especially in areas that were frequented by natural calamities. In terms of crop insurance, participants said that they were not particular about quality, and that they would avail the product as long as it proved to be beneficial and affordable since only the PCIC products are available. However, verifying the findings of previous studies, information proved to be a relevant factor. Several participants expressed that they do not purchase insurance since they are not properly informed about product details. The need of a better way of assessing risks also arises. Those who availed the insurance also complained that the products and the processing of requirements appeared too technical and tedious. The study thus recommends that reforms should be made in terms of product design, financial literacy, and improved distribution. Such measures as weather data indexes, yield-area, damage indicators, and technological advances should be utilized in providing better products and coverage.

The transition towards index-based programs in the country has begun as there are recorded efforts in the pilot testing of certain indexes. Loro (2012) reported that the German Development Corporation (GIZ) GmbH in Germany introduced the Area-Based Yield (ARBY) Index

Insurance in 2011. The ARBY was initially tested across three National Irrigation Systems to address the needs of farmers who reported losses from natural catastrophes in the Visayas. In 2012, GIZ started the Remote Sensing-Based Information and Insurance for Crops in Emerging Economies (RIICE) project. The project adopts a remote sensing technique used in Europe in identifying the area yield for rice. According to the same report, the Senior Vice President of the PCIC announced that the pilot testing of the technology-aided ARBY brought about favorable results.

4.7.2. Weather Index Based Crop Insurance (WIBCI)

The Philippine Climate change Adaptation Project (PhilCCAP) is a World Bank-funded project initiated by the Department of Agriculture. The PhilCCAP aims to educate certain communities in dealing with the effects of climate change and variability. In 2014, the pilot testing of the Weather Index Based Crop Insurance (WIBCI) was launched in as Sub Component 2.3 of the PhilCCAP (Quilang, 2014).

The main difference between the regular crop insurance scheme and the WIBCI scheme is that the latter makes use of weather reports and rainfall data from PAGASA instead of assessing damage in terms of yield. However, the WIBCI scheme covers only natural risks like drought (or low rainfall) and excessive rainfall.

The WIBCI scheme utilizes automatic weather stations and manual rain gauges in measuring rainfall at various crop growth stages. Within a pre-defined radius of each weather station, weather patterns should be relatively similar. Also, farmers around each weather station should be well-trained and educated about the program.

Claims settlement for the traditional insurance schemes involves several and long processes. Farmers have to file the notice of loss and wait for the adjuster's validation as well as the claims processing. In contrast, claims settlement for the WIBCI scheme is more convenient for farmers since rainfall measurements are made in common weather stations. As such, this scheme is attributed with low administrative costs, fast claims settlements, and improved transparency. Also, the scheme is initially offered at low premiums:

However, the implementation of the WIBCI scheme is not without certain issues and challenges. The insured farmer cannot file for indemnity claims if losses experienced are brought about by causes other than excessive and insufficient rainfall, or if the extreme weather event was not recorded at the weather station. Also, farmers as well as other stakeholders have to be educated and trained about this insurance scheme since it is very different from the traditional multi-peril crop insurance scheme. Under the Enhanced Climate Smart Farmers Field School, the WIBCI training module will be facilitated by the PhilCCAP team through the Agricultural Training Institute (ATI), the Bureau of Soils and Water Management (BSWM), the PCIC, and the Philippine Rice Research Institute (PhilRice).

The WIBCI is implemented by the PCIC with several other collaborating agencies. The WIBCI scheme is pilot tested in select barangays in Peñablanca and Tuguegarao City in Cagayan Valley, Dumangas in Iloilo, and Butuan City, Agusan del Norte.

Table 13. WIBCI pilot areas, number of farmers, and area covered in Cagayan

LOCATION	RICE		CORN		TOTAL	
	Number of farmers	Area (ha)	Number of farmers	Area (ha)	Number of farmers	Area (ha)
Peñablanca						
Aggugaddan			22	21	22	21
Cabasan	30	30			30	30
Dodan			31	27.5	31	27.5
Malibabag			13	10	13	10
	30	**30**	**66**	**58.5**	**96**	**88.5**
Tuguegarao City						
Capatan			20	20	20	20
Larion Alto	33	21	16	13.5	49	34.5
Namabbalan Norte	15	12			15	12
	48	**33**	**36**	**33.5**	**84**	**66.5**
TOTAL	**78**	**63**	**102**	**92**	**180**	**155**

Source: PCIC

This insurance scheme covers the cost of production inputs as indicated in the farmers' farm plan and budget. The maximum amounts of cover for each crop are as follows: PhP20,000.00 for inbred rice, PhP20,000.00 for hybrid corn and PhP15,000.00 for OPV corn. The WIBCI pilot testing covers only rice and corn crop.

Table 14. Premium rates and sharing for Weather Index Based Crop Insurance pilot testing in Cagayan Valley

Premium Rates	Trial Rate	
	Rice	Crop
A. Borrowing Farmers		
Farmer	1.07	7.15
Lending Institution	2.14	2.33
Government	4.29	14.02
Total	**7.50**	**23.50**
B. Self-financed Farmers		
Farmer	3.21	9.43
Government	4.29	14.07
Total	**7.50**	**23.50**

Source: PCIC

The participants for the pilot testing in Cagayan Valley have farms that are located within a 20 kilometer radius from the weather station. Farmer participants had to be the actual tillers of the land, must have completed the WIBCI training module, and must not have availed of the traditional crop insurance programs.

The designated PCIC personnel in charge of monitoring for pay outs has to first take note of the sowing dates across barangays from the PCIC underwriter, as well as PCIC's initial local weather data. The PCIC personnel must then gather PAGASA rainfall data and update the information to the PCIC local weather database for the covered areas on a daily basis.

Rainfall amounts have to reach certain levels on the Trigger/Strike Index to be eligible for pay outs. Rainfall is considered excess when total rainfall in millimeters is above the threshold for 2 or more consecutive days or for a given growth period. On the other hand, rainfall is considered low when total rainfall in millimeters is below the threshold for 15 or more consecutive dry days or for a given growth period.

5. Assessment of the design of the program

Agricultural insurance has been viewed in other countries as a risk management tool or as a safety net for farmers in the midst of natural shocks and other perils. It is seldom that agricultural insurance is viewed differently. Interestingly, in the Philippines and a few other developing countries like Brazil, Mexico and Indonesia, agricultural insurance is treated both as a risk management tool (first objective) and as a credit risk reduction mechanism (second objective). These two views are explicitly stated in the PCIC charter as the objectives of the agricultural insurance scheme in the Philippines. The attainment of dual objectives may sound promising but challenging at the same time. The efforts made toward the attainment of the objectives might not always be balanced. Thus, there is a possibility that one of the objectives might not be fully achieved.

5.1. Access to credit

It is interesting to note that agricultural insurance programs might have been enhancing access to credit. The PCIC mentioned that two of its major partners—the *Tulay sa Pag-unlad*, Inc. (TSPI) and the *Alalay sa Kaunlaran*, Inc. (ASKI)—have substantially increased its member-borrowers since the start of their partnership. Another piece of evidence is the fact that agricultural producers can now borrow from the LBP and take advantage of the relatively lower interest rate if they opt to be a member of an irrigators' association and/or get an agricultural insurance.

5.2. Amount of cover

The PCIC charter stipulates that the amount of cover allowed for borrowing farmers should not exceed their loan amount. This is strictly observed by lending institutions to make sure that farmers would be able to pay for their loans in case the latter's crops would be fully damaged. Essentially, it is one way of protecting the lenders from loan default and thus, ensuring that they would continue to lend to the agriculture sector. This definitely satisfies the PCIC's objective of protecting the lenders from loan default, but may fail to address the objective of mitigating the risks that could be faced by agricultural producers.

The majority of agricultural producers participated in the FGDs perceived that agricultural insurance is quite helpful in mitigating the effects of various production risks. They argued,

however, that the amount of loan isusually not enough to cover for the cost of production. Data shows that around 97.5 percent of rice insurance policies of borrowing clients under the regular program have insurance cover less than the average production cost per hectare, which is roughly PhP40,000 based on the estimate of the BAS (Tables 15 to 17). Similarly, a large proportion of corn insurance policies have amount of cover less than the average cost of producing corn per hectare (~PhP25,500) (Table 18). These observations, which are true both in 2013 and 2014, imply that in case crop areas would be fully damaged, the amount of cover would not be enough to help farmers recover from the said losses.

Table 15. No. of rice insurance policies*, by amount of cover and by program type, 2013

Amount of cover (PhP)	Regular	DAR	*Sikat Saka*	NIA-Third Cropping	WARA	All
Less than 1000	14	-	-	-	-	14
1,000 - 4,999	358	3	-	-	4,900	5,261
5,000 - 9,999	2,023	21	-	-	-	2,044
10,000 - 19,999	21,970	778	42	4	13	22,807
20,000 - 29,999	41,462	2,699	178	24	-	44,363
30,000 - 39,999	24,673	6,517	826	601	-	32,617
40,000 - 49,999	2,408	1,275	1,037	2	-	4,722
50,000 - 59,999	66	294	21	-	-	381
60,000 - 69,999	7	-	-	-	-	7
70,000 - 79,999	8	1	1	-	-	10
80,000 - 89,999	2	-	-	-	-	2
90,000 - 99,999	1	-	-	-	-	1
100,000 & over	7	-	-	-	-	7
All	92,999	11,588	2,105	631	4,913	112,236

* limited only to borrowing clients

Source: Authors' calculations (with amount of cover adjusted to per hectare basis)

Table 16. No. of rice insurance policies*, by amount of cover and by program type, 2014

Amount of cover (PhP)	Regular	*Sikat Saka*	NIA-Third Cropping	WARA	APCP	PPP	Yolanda	All
1,000 - 4,999	262	-	-	-	-	-	1	263
5,000 - 9,999	1,035	6	3	-	8	4	13	1,069
10,000 - 19,999	18,120	40	19	231	210	130	172	18,922
20,000 - 29,999	32,682	243	45	-	911	1,073	196	35,150
30,000 - 39,999	21,135	1,056	6	-	1,231	86	76	23,590
40,000 - 49,999	1,692	3,185	-	-	252	13	2	5,144
50,000 - 59,999	64	2,972	-	-	16	-	-	3,052
60,000 - 69,999	14	-	-	-	1	-	-	15
70,000 - 79,999	5	1	-	-	-	-	-	6
80,000 - 89,999	1	-	-	-	-	-	-	1
100,000 & over	5	1	-	-	-	-	-	6
All	75,015	7,504	73	231	2,629	1,306	460	87,218

* limited only to borrowing clients

Source: Authors' calculations (with amount of cover adjusted to per hectare basis)

Table 17. Average production cost per hectare of rice and corn (PhP), Philippines, 2012

Item	Rice	Corn
Total costs[a/]	42,475.00	25,546.00
Seeds	2,101.00	2,111.00
Fertilizer	5,049.00	4,534.00
Pesticides	1,462.00	691.00
Labor[b/]	11,328.00	9,618.00
Irrigation fee	662.00	9.00
Fuel and oil	960.00	270.00
Rentals	1,070.00	592.00
Repairs	1,359.00	856.00
Harvester's share	4,018.00	1,057.00
Thresher's share	3,568.00	-
Sheller's share	-	231.00
Landowner's share	3,313.00	697.00
Others[c/]	7,585.00	4,880.00

[a/] cash, non-cash and imputed costs; [b/] operator, family and exchange labor costs; [c/] depreciation, interest payment on crop loan and interest on operating capital, land tax, food expenses, and transport of inputs, among others;

Source of basic data: Bureau of Agricultural Statistics

Table 18. No. of corn insurance policies*, by amount of cover and by program type, 2013

Amount of cover (PhP)	Regular	DAR	All
Less than 1,000	1	-	1
1,000 - 4,999	79	-	79
5,000 - 9,999	396	-	396
10,000 - 19,999	9,280	33	9,313
20,000 - 29,999	4,115	185	4,300
30,000 - 39,999	7,221	70	7,291
40,000 - 49,999	643	173	816
50,000 - 59,999	8	2	10
60,000 - 69,999	4	-	4
100,000 & over	2	-	2
All	21,749	463	22,212

* limited only to borrowing clients

Source: Authors' calculations (with amount of cover adjusted to per hectare basis)

The low amount of cover is clearly evident among special programs, particularly the DA-WARA and NIA-Third Cropping programs. The maximum amount of cover given to beneficiaries of DA-WARA and NIA-Third Cropping is only PhP10,000 per hectare. The amount of cover was deliberately set at the said amount so that, given the limited budget, the program would be able to cover more beneficiaries. It appears then that the program is putting more importance on expansion of coverage (in terms of no. of beneficiaries) than provision of sufficient amount of assistance that would ensure protection against potential shocks[12].

It can also be observed in the table on distribution of policies by amount of cover presented in the earlier section that the some special programs are not strictly implementing its rule on the maximum cover. The figures shown in the said table were adjusted to per hectare basis but there are still policies on the amount of cover under the DA-WARA and NIA-Third Cropping programs still contain values

5.3. Premium rate

Because of low amount of cover, some of the PCIC clients who participated in the FGDs perceived premium rates to be relatively high. In particular, the premium rate for corn, even after deducting the government and lending institution shares, is still high at 8.48 percent. Insurance premium accounts for a significant percentage of the total production cost (Table 19). This was also raised by a number of corn farmers in Cagayan during the FGDs.

[12] It is interesting to note that because of the low coverage in WARA and Third Cropping, some farmers' organizations supplement this with other special insurance programs, e.g. WARA plus LGU-sponsored crop insurance programs, for example, in order to fully cover their crops.

Table 19. Average production costs per hectare (PhP) and premium rate (%) of selected crops, Philippines, 2012

Average production costs per hectare (PhP) and premium rate (%) of selected crops, Philippines, 2012

Item	Rice	Corn	Mango	Pineapple	Cassava	Onion	Eggplant
Production cost							
Total costs (PhP)[a/]	42,475	25,546	68,654.00	77,351.00	20,695.00	116,138.00	120,268.00
Seeds	2,101	2,111	-	18,542.00	1,318.00	24,075.00	2,173.00
Fertilizer	5,049	4,534	16,734.00	17,543.00	2,413.00	15,514.00	26,093.00
Pesticides	1,462	691	7,349.00	1,583.00	0.00	2,990.00	10,932.00
Labor[b/]	11,328	9,618	11,097.00	11,812.00	13,031.00	32,465.00	19,128.00
Irrigation fee	662	9	-	161.00	-	120.00	125.00
Fuel and oil	960	270	1,836.00	98.00	0.00	5,119.00	3,813.00
Rentals	1,070	592	4,072.00	4,324.00	1,230.00	3,871.00	5,849.00
Repairs	1,359	856	1,344.00	2,133.00	222.00	751.00	2,282.00
Harvester's share	4,018	1,057	607.00	6.00	59.00	196.00	1,279.00
Landowner's share	3,568	-	3,059.00	5.00	119.00	5,841.00	4,653.00
Thresher's share	-	231	-	-	-	-	-
Sheller's share	3,313	697	-	-	-	-	-
Others[c/]	7,585	4,880	22,556.00	21,144.00	2,303.00	25,196.00	43,941.00
Insurance premium							
Premium rate (%)[d/]	12.27	22.10	6.51	5.24	4.07	6.00	5.94
Estimated premium amount (PhP)[e/]	5,211.68	5,645.67	4,469.38	4,053.19	842.29	6,968.28	7,143.92

[a/] cash, non-cash and imputed costs; [b/] operator, family and exchange labor costs; [c/] depreciation, interest payment on crop loan and interest on operating capital, land tax, food expenses, and transport of inputs, among others; [d/] assumption: multi-risk cover, high-risk classification; [e/] assumption: amount of cover (amount of loan) = production cost

Sources: Bureau of Agricultural Statistics (production cost); Authors' calculations (insurance premium; using premium rates from the PCIC)

Similarly, premium rates for HVCC and livestock insurance are high, considering that there is no subsidy provided for these products under the regular program of the PCIC. The PCIC admitted that they are applying the so-called 'bonus-malus' system on HVCC and livestock insurance. If they incurred a loss, they usually load overhead expenses and forecasted damage rate (up to a maximum of 20%) on HVCC and livestock insurance premium rates. Increase in capitalization, as suggested in the literature, might provide a solution to this issue of high premium rate.

This 'bonus-malus' system of the PCIC, or the high premium rates of HVCC, can be a serious issue because not all of the HVCC farmers, particularly the small-scale and/or subsistence ones, are well-off. In fact, Reyes et al. (2012) estimated that roughly half of all households whose heads are engaged in the following agricultural subsectors are considered as income poor: coconut (56.2%), coffee and cacao (53.6%), sugarcane (53.2%), and vegetables (48.1%). There might be a room for some modifications in the premium structure. For instance, premium rates may be different between commercial and non-commercial cover, similar to those for the livestock insurance, and/or rates vary across socioeconomic groups.

Another issue with premium rates is that the rates used since 1981 had been applied through the years until they were modified in 2005. Premium rates are calculated based on historical damage rates. Because climate scientists have been stressing that the effects of climate change are becoming more evident recently, it may be rational to update the premium rates on a regular basis (say, every 5 or 10 years). Based on the latest data on occurrence of typhoons, floods and

drought that visited the country and on the extent of damage on rice production due to these natural calamities, Luzon has been the most affected. Israel and Briones (2013), for instance, noted that Luzon, particularly Cagayan province, had been frequently visited by typhoons from 2001 to 2010 while Mindanao provinces had been visited by only few typhoons during the said period. From 2007 to 2011, however, Region III topped the highest cost of damage while the Caraga region incurred the least cost. At present, Regions V, VII, III, and VIII had the highest premium rates for rice insurance, respectively. Further refinements in the premium rates could take into account the aforementioned issues.

Analysis of the premium structure is also provided in the study titled 'Evaluation of Financial Sustainability of the Agricultural Insurance Programs of the Philippine Crop Insurance Corporation'.

5.4. Type of insurance packages

Another issue related to the design is the type of insurance packages offered by the PCIC. Agricultural insurance programs in other countries mainly offer crop insurance while a few also have livestock insurance. Only the Philippines offer non-crop agricultural asset insurance and term insurance packages. Since the start of the PCIC, rice and corn had been accounting for the lion's share of the total amount of insurance cover, until 2012 when the share of term insurance packages exceeded the combined shares of all other products (Figure 14).

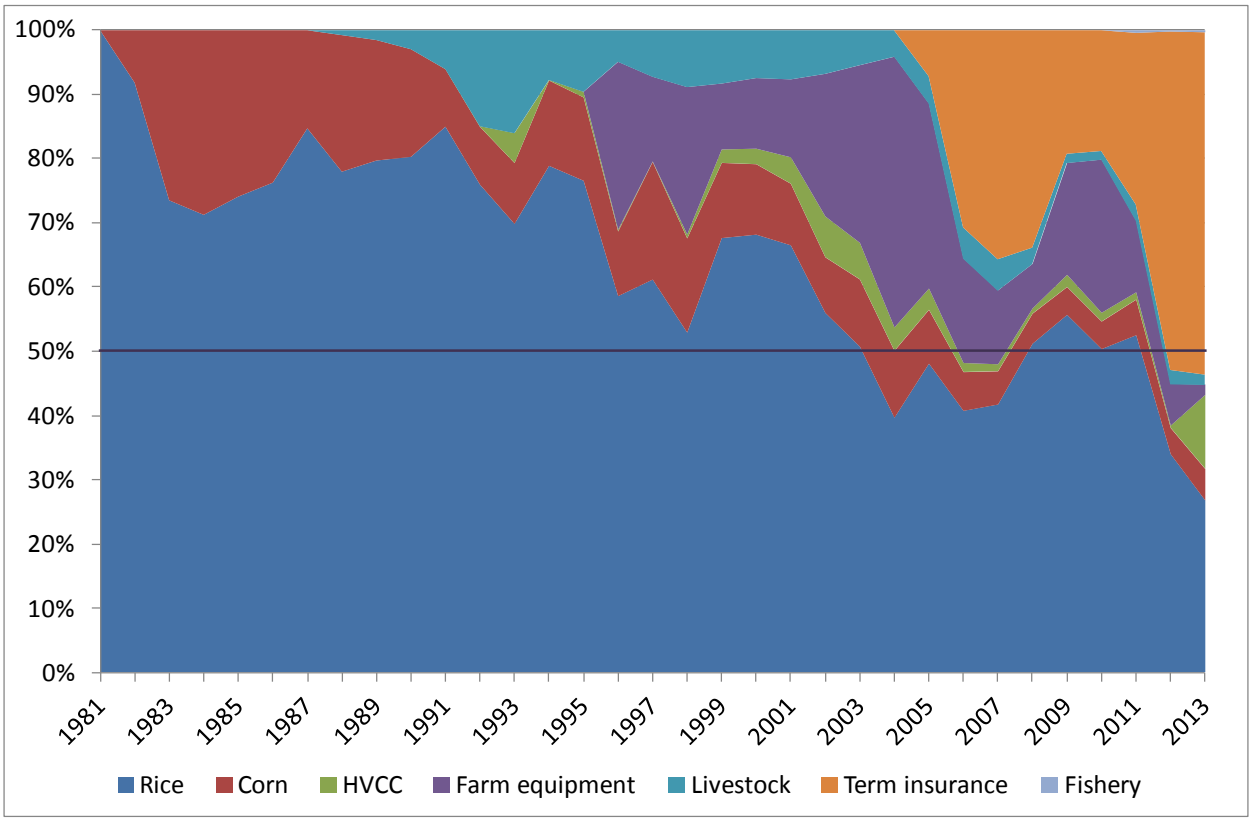


Figure 14. Share of insurance product to total amount of insurance cover (in %), 1981-2013
Source of basic data: PCIC

The charter of the PCIC does not explicitly stipulate that venturing into non-crop insurance such as the term insurance packages is beyond the mandate of the PCIC. Term insurance packages, in particular, can be used as a way to market the PCIC and its main product lines, especially in underserved or rural areas. This idea is intelligible as long as the term insurance package is bundled with crop/livestock/NCAA insurance. However, the team was able to learn during the regional visits that there have been PCIC clients who only avail themselves of term insurance but did not get crop/livestock/NCAA insurance. There can also be an issue with eligibility requirements, wherein family members up to the 4th degree of consanguinity or affinity can still be covered by ADS[2] and AP[3]. It is not explicitly stated in the guidelines that those members have to be employed in the agriculture sector as well. It is thus possible that some members can still be covered even if they are not agricultural workers.

5.5. Risks covered

There are also concerns about the risks covered by the agricultural insurance. During the FGDs, some farmers expressed that some major risks are not covered. Sometimes, winds and rains are strong enough to damage crops, especially during the earlier stages of growth. However, if these are not induced by typhoon (or PAGASA did not declare a storm signal during that period), damages would not qualify for indemnity claims. Some crop farmers reported that some pests and diseases such as black bug, rice bug, and birds (maya), among others, are also not covered when these are most of the time affecting their crops. Some livestock raisers were wondering why stunted growth and/or disability of animals were not included in the list of risks covered in livestock insurance. Some hog raisers wanted to lift also the 21-day rule because piglets are only covered 21 days after the purchase date. These aforementioned concerns are also among the reasons cited by some of those who did not get agricultural insurance. Some potential clients do not want to get agricultural insurance because the risks covered have only minimal impacts on their crops or agricultural assets.

6. Assessment of the implementation of the program

The issues regarding the implementation of the agricultural insurance programs of the PCIC are the assessment of damages, selection of beneficiaries in special programs and awareness of insurance packages, among others.

6.1. Awareness of the insurance packages

One of the implementation issues that emerged from the FGDs is the lack of awareness on some of the insurance lines of the PCIC and the specific terms and conditions of the insurance lines. Many of the rice and corn farmers in Cagayan were not aware of the non-crop insurance. Non-crop insurance products are not even offered in some areas, e.g., Peñablanca, Cagayan. A number of the livestock raisers in some areas in Negros Occidental only knew about livestock insurance during the second half of the year when livestock association and Negros Coop Bank organized a briefing about livestock insurance that was conducted by the PCIC. Agricultural producers in Bantayan Island, Cebu recounted that PCIC programs were only introduced to them

by LGUs only recently; 2011 in Bantayan, March 2014 in Madridejos and June 2014 in Santa Fe. Massive information campaign happened only in 2013 after Bantayan Island was severely affected by Typhoon Yolanda. Meanwhile, fisherfolk in Bantayan Island, Cebu who registered their fishing boats in 2006 were automatically insured but did not renew their insurance since then. In Davao del Norte, many of the agricultural producers were not aware of the agricultural insurance. In fact, even the LGU officials and staff admitted that they were not aware of the programs of the PCIC.

One of the plausible explanations behind this is that the PCIC has not been very accessible to a large number of agricultural producers. Aside from the fact that it only has 12 regional offices and around 15 provincial extension offices all throughout the country, it also has a small number of personnel. Thus, the PCIC does not have sufficient resources to reach all of its target clientele. On the other hand, the issue of absorptive capacity arises because once the programs are made known to a larger number of agricultural producers, the PCIC may not be capable of facilitating all of them.

6.2. Assessment of damage

One of the main concerns of the farmer-participants in FGDs conducted by the team is the assessment of damages. The majority of them perceived that agricultural insurance is quite helpful for them in mitigating the effects of various production risks, except that the indemnity claims that they receive only account for a small percentage of the amount of cover. If the amount of cover is not sufficient, the amount of payout is even smaller (e.g., <50% of the insurance cover), not enough to be able to re-plant after the shock. In 2013, about half (22,997 out of the total 44,513) of rice farmers experienced total (100%) damage. Table 20 shows that almost all of these rice farmers received indemnity amount less than the amount of cover. Around 60 percent of them received between PhP1,000 and P30,000. A small percentage of these farmers with negative values for the amount of cover less indemnity amount can be explained by the fact that the PCIC made an overpayment of claims in selected areas in 2013 (COA, 2013)[13].

Looking at a particular set of samples with the same set of conditions — same barangay, same cropping period, same date of claims approval (December 2013), same type of crop (rice), area covered = area damaged, and same cause of loss (typhoon) —, the finding that the amount of cover substantially exceeds the indemnity amount has been validated (Figure 15). In addition, the scatter plot also shows that the estimated indemnity amount varies across farmer, even under the same set of conditions. This particular finding can raise doubt on the accuracy of the assessment. Plausible reasons supporting such assessment results should have been provided to clients to prevent them from casting doubts on the system.

[13] A net overpayment of indemnity claims amounting to PhP340,696, covering 40.7 percent of vouchers examined in two regional offices, was checked by the COA audit. This was because the old indemnity schedule was embedded in the PCIC Automated Business System (a new indemnity schedule was put in place in 2012). This was only discovered in October 22, 2013 by the Chief of Claims Administration Division. As of date, enhancements are continually incorporated in the PABS.

Table 20. Total amount of cover less total indemnity amount (PhP) of rice farmers* who experienced total damage, 2013**

Amount of cover less indemnity amount (PhP)	Freq.	Percent
Less than 0	29	0.13
0 - 499	119	0.52
500 - 999	718	3.12
1,000 - 4,999	8,093	35.19
5,000 - 9,999	2,338	10.17
10,000 - 19,999	3,116	13.55
20,000 - 29,999	2,838	12.34
30,000 - 39,999	1,631	7.09
40,000 - 49,999	1,034	4.50
50,000 - 59,999	765	3.33
60,000 - 69,999	703	3.06
70,000 - 79,999	421	1.83
80,000 - 89,999	211	0.92
90,000 - 99,999	177	0.77
100,000 & over	804	3.50
Total	22,997	100.00

Notes: * unique rice farmers (i.e., those with more than one rice insurance policy were only counted once); ** 100% damage; total area covered = total area damaged
Source: Authors' calculation

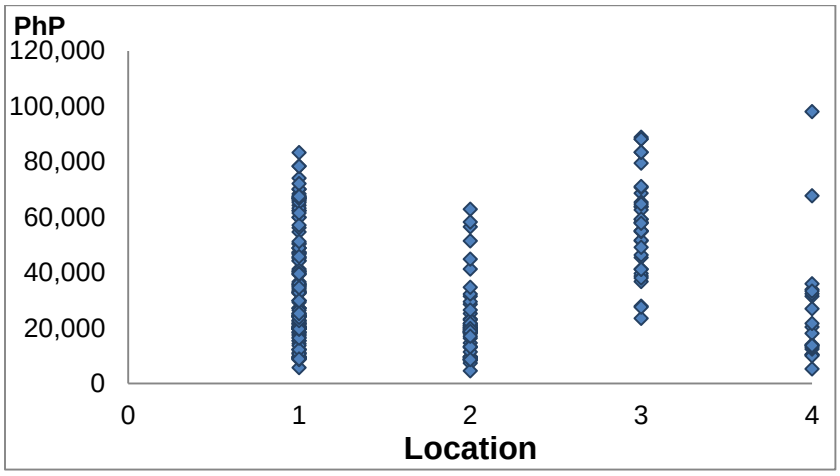


Figure 15. Total amount of cover less total indemnity amount (PhP) of a specific group of rice farmers* under the same set of conditions, 2013**
Notes:1 = Brgy. Baluluc, Apalit, Pampanga; 2 = Brgy. Dadda, Amulung, Cagayan; 3 = Brgy. Mallorca, San Leonardo, Nueva Ecija; 4 = Brgy. Maragondong, Dagami, Leyte;* unique rice farmers (i.e., those with more than one rice insurance policy were only counted once) in the same barangay; ** same cropping period, same date of claims approval (December 2013), 100% damage (total area covered = total area damaged)
Source: Authors' calculations

Apparently, many farmers who participated in the FGDs have doubts in the way the payout is estimated. Some farmers thought that assessment of damage, especially in large farms, might have been done haphazardly by just looking at one portion of the farm and then coming up with an estimate for the whole farm. They also expressed concerns about the fact that the PCIC hires

'reserve' adjusters when damage area is larger. This group of adjusters have been perceived to be less experienced than the regular adjusters and may provide varying and inaccurate estimates.

Another concern is the time it takes to receive the claims payment. Settlement of claims is done on a piece-meal basis because claims applications are received on a piece-meal basis. On the average, it takes around 2 months to process a claim; from filing of notice of loss to receipt of claims payment. Based on the results of the FGDs, if claims are simultaneously filed because a lot of areas are damaged, processing of claims would take around 4 months or more. Apparently, this could be attributed to limited manpower resources of the PCIC.

6.3. Selection and enrolment of beneficiaries

In general, the penetration rates for rice and corn insurance of the PCIC have remained below 10 percent from 1981 to 2013 (Figure 16). After 1991, the penetration rates for rice insurance have gone down and remained even below 2 percent between 2000 and 2007. It was only in 2013 when the said rates increased to 8.5 percent. Apparently, this was the time when implementation of the special programs started.

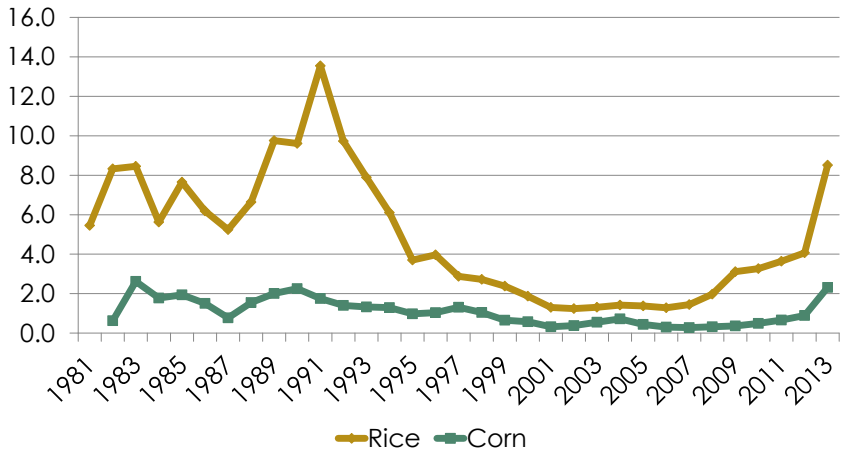


Figure 16. Penetration rates* for rice and corn insurance (%), 1981-2013
Note: areas insured (ha.) ÷ area harvested (ha.) (PCIC's computation)
Sources of basic data: PCIC (areas insured); BAS (area harvested)

During the first half of 2014, the farmer-beneficiaries—of the RSBSA program—accounted only for a small percentage of the total farmers listed in the RSBSA. It is interesting to note that 100 percent of rice farmers in Isabela who are listed in the RSBSA availed of rice insurance while the rest of the 38 provinces covered by the first two batches of the RSBSA have penetration rates of below 40 percent (60% of them are, in fact, even below 10%) (Figure 17). Similarly, the penetration rates for corn are mostly 10 percent, except for a few provinces such as Eastern Samar with 100 percent and Mountain Province with 64 percent. In the case of HVCC, Aurora has the highest penetration rate of 23 percent; the rest have penetration rates of below 10 percent.

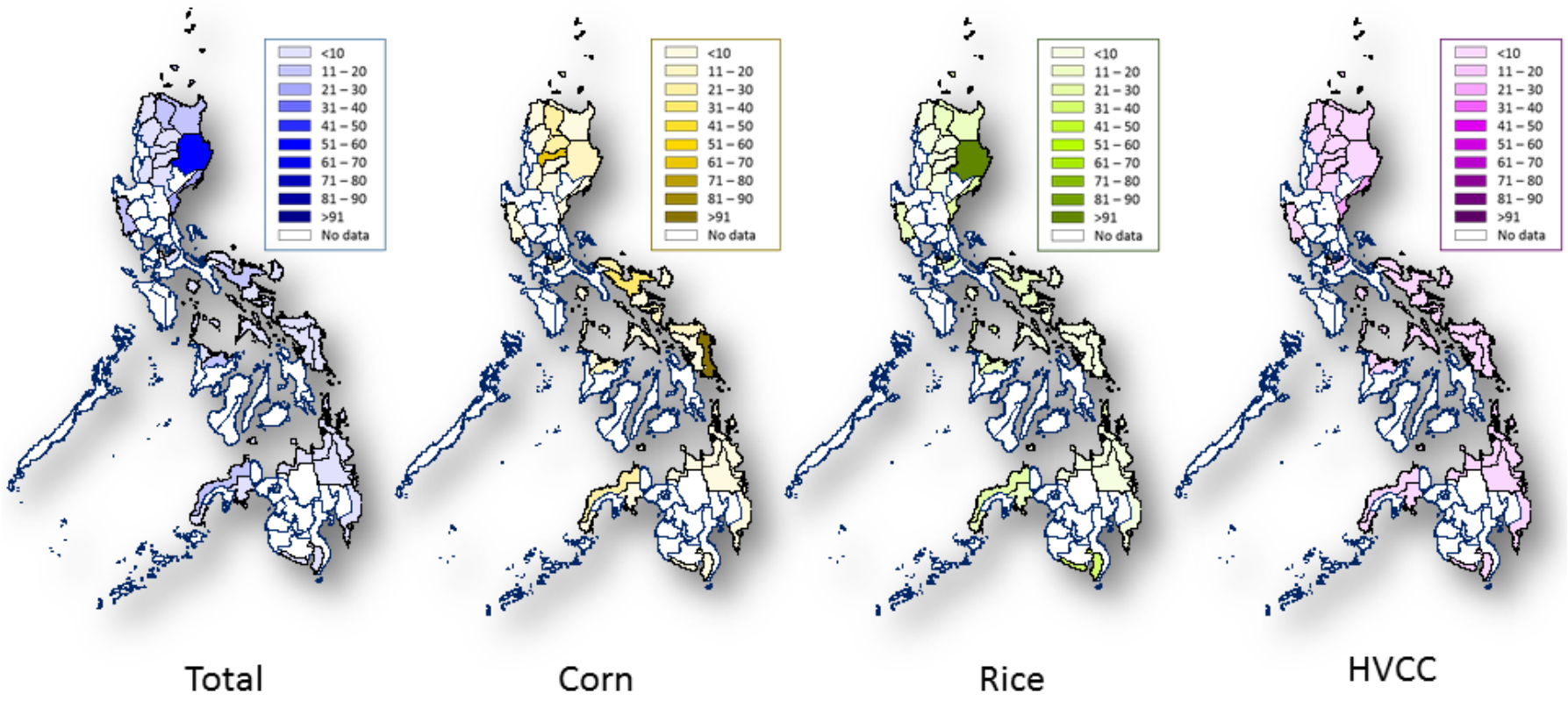


Figure 17. Penetration rates* for rice, corn and HVCC insurance (%), January-June 2014
Note: no. of farmers with PCIC insurance ÷ no. of farmers in the RSBSA list (Authors' computation)
Sources of basic data: PCIC (no. of farmers with PCIC insurance); DBM (no. of farmers in the RSBSA list)

Essentially, only a small segment of the farming population has been covered by the agricultural insurance programs of the government. In order to ensure that the agricultural insurance programs would achieve its intended impact, proper targeting system should be put in place.

For special programs of the PCIC with DAR and DA, the main concern is also beneficiary selection. There is no assurance that the target beneficiaries are indeed the ones that were given the premium subsidy because of documentation issues. Like in the case of the DAR program, there were applications not signed by the farmers and with no certifications from the municipal agrarian reform officer (MARO). For the DA-WARA program, there were farmers enrolled but not in the pre-masterlist of the DA-Regional Field Unit (RFU) of flood-prone areas.

Feedback from the FGDs corroborates this. Some enrolled participants do not even know that they are enrolled in the insurance program. Others enrolled but did not receive any confirmation of enrolment from PCIC or the sponsor agency that gave free premium subsidies. If the farmers did not know that they were enrolled, they would not be able to file for indemnity claims at all in case of damage to their crops or livestock, making the insurance program a waste of resources. In one instance, the certificates of insurance cover (CICs) were not distributed to the clients but still with the LGU.

Documentation is also quite a challenge. In one FGD, one cooperative member mentioned that it took them 6 to 7 months to enroll all of their members because the documentation requirements were not clear, and the information was given to them on a piecemeal basis. Compliance with the standard farm plan and budget and the sketch map can sometimes be a challenge to the enrolling farmer, especially if they are not affiliated to any organization.

Meanwhile, low capitalization has also been an issue because it can limit the number of agricultural producers that can be given subsidies.

6.4. Operational issues

Implementation of special programs is also *ad hoc* in nature. They tend to be implemented in a rather hurried manner, and funding is discontinuous. For those in the field offices who would do the actual work, the rather short mobilization and implementation phase, (8 months, for example in the DAR program), make adjustment a challenge. From a level of transactions' worth PhP183.77 million for five years, field implementers are forced to cope with transactions worth more than five times as much in a span of just eight months. Training people and aligning systems and procedures to deal with the challenge would require time and resources, and thus, "birth pains" are expected to happen.

Coordination among the different concerned agencies can also be a challenge. This is particularly highlighted in the DAR program. In one province, one CAGRO is not even aware that for 2013, his city has the most number of PCIC enrolled under the DAR program. It was even the research team who gave him the list of enrolled farmers in his area. The farmers themselves, most surprisingly, do not even know that they are insured. This has implications on the success of the program because, even if their insured crops are damaged, they would not file for claims in the first place if they did not know whether they were insured or not. The LGU must also be aware,

because they are the ones with the infrastructure and mandate to implement welfare increasing programs in their areas.

The issue of "who benefits" from the full subsidy is also in question. There was one banana farmers' ARB cooperative that enrolled all their 500-odd members. They have 524 hectares planted to Cavendish banana, but they have a contract growing lease with a large corporation that produces and ships premium-quality tropical fresh produce based in the Mindanao region. The latter pays for the inputs to production of bananas, and also buys them at low prices for export to Chinese, Japanese and Korean markets. Since it is the big corporation that both pays for the inputs and buys the outputs, the cooperative is just essentially hired workers, and not owners in the real sense of the word. They cannot sell their produce to more lucrative market contracts, and they cannot just revoke the contract with the corporation because they do not have enough capital to sustain the operations of banana production in such a large scale. One can argue, then, that the DAR subsidy is actually enjoyed by the corporation, and not the farmers. However, farmers would not have been able to participate in an export market and have a sustainable livelihood (compared to their former state) without these government agricultural support programs via agricultural insurance, of which the corporation benefits.

Connected to the abrupt implementation period and burgeoning personnel requirements are the tendency for field implementers to do "shortcuts" in order to reach the insurance production targets. This is especially true in case of the DAR program, where the subsidy is given on a production basis. (Note: DBM releases the payment upon submission of farmer list of insured). The 2013 COA report highlights this. There was an instance of one cooperative under the DAR program that was able to insure 250 piglets under one name only, violating the maximum of 10 small ruminants/livestock per ARB farmer. There were also reports of LOBs being signed by one person only, and some lacking certification documents attesting that s/he is an ARB. Because of the sharp increase in personnel needed to man the special programs, crucial services of PCIC (e.g., claims assessment) tend to be done by Job Order personnel that are not as well-equipped as the regular staff in doing the job.

7. Concluding remarks

The agricultural insurance programs in the Philippines have dual objectives: (1) protecting farmers against production risks; and (2) protecting the lenders from loan default, thereby easing access to credit in agriculture. The second objective differentiates the latter from the agricultural insurance programs of those in other countries. The preliminary assessment carried out in this study notes that the major features of the insurance products of the PCIC are primarily designed to address the second objective. Although this is not necessarily bad, the PCIC should also ensure that agricultural insurance could be an effective risk management tool for agricultural producers. For instance, the amount of cover can be increased to cover for the production cost in order to help agricultural producers recover easily from a shock. Premium rates, especially the market-based ones (i.e., for HVCC and livestock), the risks covered, and the terms and conditions of term insurance should be carefully reviewed to make sure that these are still relevant in addressing the needs of agricultural producers. Moreover, the appropriateness of the

product lines being offered need to be assessed, especially since life and accident insurance that are already being offered by the private sector.

Aside from the design issues, there are also a number of implementation aspects that need to be reviewed and fine-tuned. Assessment of damages should be done carefully by a group of adjusters who are competent and considerate enoughso farmers will feel the benefits of insurance. It is also important that such process properly explained to clients. Further streamlining of procedure to process claims will address the farmer's needs for capital to finance inputs for the next planting season. To increase awareness about the PCIC and its programs, information campaign should be intensified and should be done in collaboration with LGUs and its other partners. Beneficiary selection and the enrolment process are important specifically for the fully subsidized programs, given that the current budget allocation is not enough to satisfy the total amount for the premiums. Proper targeting should be ensured to avoid channeling funds to unintended beneficiaries. In line with this, more detailed guidelines on who should be provided the subsidy would be very useful to regional offices.

Different mechanisms and premium sharing schemes can be explored in order for every farmer to benefit from agricultural insurance. The absorptive capacity of the PCIC must also be taken into account so that program implementation would be smooth. Training and hiring people, and adjusting systems and procedures take time, effort and resources. As noted in the literature, increase in capitalization of the PCIC might offer a solution to some of the aforementioned problems. Moreover, while subsidies are definitely helpful to agricultural producers, abrupt implementation of special programs could undermine the intention of the regular program, which is to instill in agricultural producers the idea of investing on agricultural insurance as way to help them manage production risks and move away from the idea of a "dole-out" system. The lack of predictability stems from the absence of a long-term policy and strategy on crop insurance.

References

Asian Development Bank (ADB). 2014. Country Tables: Philippines [online]. *Key Indicators for Asia and the Pacific 2014*. Mandaluyong City, Manila: ADB. http://www.adb.org/publications/key-indicators-asia-and-pacific-2014.

Bangsal, N.V. and P.C.T. Mamhot. 2012. Review of the Philippine crop insurance: key challenges and prospects. CPBRD Policy Brief No. 2012-06 (November). Quezon City: Congressional Policy and Budget Research Department, House of Representatives.

Israel, D.C. and R.M. Briones. 2013. Impacts of natural disasters on agriculture, food security, and natural resources and environment in the Philippines. ERIA Discussion Paper Series 2013-15.

Cajucom, N.R. 2013. Sharing the risk: importance of insurance adaptation. Presentation during the *Climate Change Consciousness Week 2013*, Climate Change Commission, SMX Conference Hall, Pasay City, 26 November 2013.

Commission on Audit (2013). Annual Audit Report on the Philippine Crop Insurance Corporation.

Corpuz, J.M. 2013. Case study: loan guarantees and insurance in the Philippines. Paper presented at the 4th World Congress on Agricultural and Rural Finance

Estacio, B.F. and N.B. Mordeno. 2001. Agricultural insurance: the Philippine experience. Paper presented at the Corporate Planning Conference, PCIC.

GTZ-MIPSS. 2010. Study on Demand of Insurance for Natural Catastrophes. Retrieved March 12, 2014 from http://www.microinsurance.ph/data/uploads/reports/Summary_Study%20on%20Demand%20of%20Insurance%20for%20Natural%20Catastrophes%20Final.pdf

Habito, C.F. and R.M. Briones. 2005. Philippine agriculture over the years: performance, policies and pitfalls. Paper presented at the conference titled "Policies to Strengthen Productivity in the Philippines," Makati City, June 27, 2005.

Hasan, R. and K.R. Jandoc. 2009. Quality of jobs in the Philippines: comparing self employment with wage employment. ADB Economics Working Paper Series No. 148. Mandaluyong City: Asian Development Bank.

Loro, J. 2012. The Promise of Technology in Aid of Crop Insurance. Microinsurance Innovations Program for Social Security, Microinsurance Newsletter. No. 6, April 2012. Retrieved March 12, 2014 from http://www.microinsurance.ph/data/uploads/newsletters/mnl6_for-printing-1.pdf.

Magno, M.T. and E.D. Bautista. 1989. Is there a role for crop insurance in Philippine agricultural development? ACPC Staff Paper 89-06. Quezon City: Agricultural Credit Policy Council, Department of Agriculture.

Mahul, O. and C.J. Stutley. 2010. Annex E - International experiences with agricultural insurance: findings from a World Bank survey of 65 countries. *Government support to agricultural insurance: challenges and options for developing countries*. Washington, D.C.: The World Bank.

Philippine Crop Insurance Corporation (PCIC). 2014. Programs. http://pcic.gov.ph/index.php/programs/ (accessed May 2014).

Philippine Statistics Authority (PSA).2014. CountrySTAT Philippines [online]. http://countrystat.bas.gov.ph/?cont=9 (accessed December 7, 2014) .

Quilang, E.J.P. 2014. Philippine Rice R&D Highlights 2013: Special Projects. IV. Pilot testing the Feasibility of Weather Index-Based Crop Insurance. Retrieved December 9, 2014 from http://www.philrice.gov.ph/philrice_docs/highlights/2013_Special%20Projects.pdf.

Reyes, C.M. and S.N. Domingo. 2009. Crop insurance: security for farmers and agricultural stakeholders in the face of seasonal climate variability. PIDS Discussion Paper Series No. 2009-12. Makati City: Philippine Institute for Development Studies.

Reyes, C.M. and C.D. Mina. 2013. Where are the poor employed? Profiling the working poor. *PIDS Policy Notes*, 2013-04, pp. 1-8. [Online].http://dirp4.pids.gov.ph/ris/pn/pidspn1304.pdf (accessed on December 7, 2014).

Reyes, C.M., Tabuga, A.D., Mina, C.D., and Asis, R.D. 2013. Regional integration, inclusive growth and poverty: enhancing employment opportunities for the poor. *PIDS Discussion Paper Series*, 2013-10, pp. 1-26, [Online]. Available at: http://dirp4.pids.gov.ph/ris/dps/pidsdps1310.pdf (Accessed: 12 December 2013).

Reyes, C.M., A.D. Tabuga, R.D. Asis, and M.B.G. Datu. 2012. Poverty and Agriculture in the Philippines: Trends in Income Poverty and Distribution. *PIDS Discussion Paper Series* No. 2012-09.Retrieved March 3, 2014 from http://dirp4.pids.gov.ph/ris/dps/pidsdps1209.pdf.

Reyes, C.M., Tabuga, A.D., Mina, C.D., Asis, R.D., and Datu, M.B.G. 2011. Dynamics of poverty in the Philippines: distinguishing the chronic from the transient poor.*PIDS Discussion Paper Series*, 2011-31, pp. 1-32, [Online]. Available at: http://dirp4.pids.gov.ph/ris/dps/pidsdps1131.pdf (Accessed: 15 June 2013).

Rola, A.C.C. and C.T. Aragon. 2013. Crop Insurance Participation Decisions and Their Impact on Net Farm Income Loss of Rice Farmers in the Lakeshore Municipalities of Laguna, Philippines. Retrieved March 5, 2014 from http://phileconsoc.files.wordpress.com/2013/11/rola.docx.

Yedra, R.C. 2007. Aquaculture insurance in the Philippines: constraints and opportunities. *Guidelines to meet insurance and other risk management needs in developing aquaculture in Asia.*

Republic Act No. 8175, an act further amending Presidential Decree No. 1467, as amended, otherwise known as the charter of the Philippine Crop Insurance Corporation (PCIC), in order to make the crop Insurance system more stable and more beneficial to the farmers covered thereby and for the national economy. Retrieved on May 23, 2014 from http://www.congress.gov.ph/download/ra_10/RA08175.pdf.

Annex Table 1. Premium rates and sharing for HVCC insurance

REGION I	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.64	3.27	4.91	0.63	1.26	1.88	1.08	2.15	3.23	0.96	1.92	2.88
Lending Institution	1.65	1.65	1.65	0.63	0.63	0.63	2.15	2.15	2.15	1.92	1.92	1.92
Government	6.39	6.39	6.39	2.45	2.45	2.45	2.78	2.78	2.78	2.48	2.48	2.48
TOTAL	**9.68**	**11.31**	**12.95**	**3.71**	**4.34**	**4.96**	**6.01**	**7.08**	**8.16**	**5.36**	**6.32**	**7.28**
Self-financed farmers												
Farmer	3.29	4.92	6.56	1.26	1.89	2.51	3.23	4.30	5.38	2.88	3.84	4.80
Lending Institution	6.39	6.39	6.39	2.45	2.45	2.45	2.78	2.78	2.78	2.48	2.48	2.48
TOTAL	**9.68**	**11.31**	**12.95**	**3.71**	**4.34**	**4.96**	**6.01**	**7.08**	**8.16**	**5.36**	**6.32**	**7.28**

REGION II	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.07	2.14	3.21	0.39	0.77	1.16	2.43	4.87	7.30	3.58	7.15	10.73
Lending Institution	2.14	2.14	2.14	0.77	0.77	0.77	1.58	1.58	1.58	2.33	2.33	2.33
Government	4.29	4.29	4.29	1.54	1.54	1.54	9.54	9.54	9.54	14.02	14.02	14.02
TOTAL	**7.50**	**8.57**	**9.64**	**2.70**	**3.08**	**3.47**	**13.55**	**15.99**	**18.42**	**19.93**	**23.50**	**27.08**
Self-financed farmers												
Farmer	3.21	4.28	5.35	1.16	1.54	1.93	4.01	6.45	8.88	5.91	9.48	13.06
Lending Institution	4.29	4.29	4.29	1.54	1.54	1.54	9.54	9.54	9.54	14.02	14.02	14.02
TOTAL	**7.50**	**8.57**	**9.64**	**2.70**	**3.08**	**3.47**	**13.55**	**15.99**	**18.42**	**19.93**	**23.50**	**27.08**

REGION III	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.82	3.64	5.47	0.39	0.79	1.18	0.65	1.31	1.96	1.40	2.80	4.19
Lending Institution	2.00	2.00	2.00	0.43	0.43	0.43	1.31	1.31	1.31	2.80	2.80	2.80
Government	7.27	7.27	7.27	1.57	1.57	1.57	1.00	1.00	1.00	2.14	2.14	2.14
TOTAL	**11.09**	**12.91**	**14.74**	**2.39**	**2.79**	**3.18**	**2.96**	**3.62**	**4.27**	**6.34**	**7.74**	**9.13**
Self-financed farmers												
Farmer	3.82	5.64	7.47	0.82	1.22	1.61	1.96	2.62	3.27	4.20	5.60	6.99
Lending Institution	7.27	7.27	7.27	1.57	1.57	1.57	1.00	1.00	1.00	2.14	2.14	2.14
TOTAL	**11.09**	**12.91**	**14.74**	**2.39**	**2.79**	**3.18**	**2.96**	**3.62**	**4.27**	**6.34**	**7.74**	**9.13**

REGION IV	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.06	2.12	3.18	0.35	0.70	1.05	2.31	4.62	6.93	1.34	2.69	4.03
Lending Institution	1.95	1.95	1.95	0.65	0.65	0.65	2.75	2.75	2.75	1.60	1.60	1.60
Government	4.90	4.90	4.90	1.62	1.62	1.62	9.25	9.25	9.25	5.38	5.38	5.38
TOTAL	**7.91**	**8.97**	**10.03**	**2.62**	**2.97**	**3.32**	**14.31**	**16.62**	**18.93**	**8.32**	**9.67**	**11.01**
Self-financed farmers												
Farmer	3.01	4.07	5.13	1.00	1.35	1.70	5.06	7.37	9.68	2.94	4.29	5.63
Lending Institution	4.90	4.90	4.90	1.62	1.62	1.62	9.25	9.25	9.25	5.38	5.38	5.38
TOTAL	**7.91**	**8.97**	**10.03**	**2.62**	**2.97**	**3.32**	**14.31**	**16.62**	**18.93**	**8.32**	**9.67**	**11.01**

REGION V	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	2.05	4.09	6.14	1.23	2.45	3.68	2.76	5.53	8.29	1.70	3.39	5.09
Lending Institution	1.79	1.79	1.79	1.08	1.08	1.08	2.55	2.55	2.55	1.57	1.57	1.57
Government	7.77	7.77	7.77	4.66	4.66	4.66	10.45	10.45	10.45	6.48	6.48	6.48
TOTAL	**11.61**	**13.65**	**15.70**	**6.97**	**8.19**	**9.42**	**15.76**	**18.53**	**21.29**	**9.75**	**11.44**	**13.14**
Self-financed farmers												
Farmer	3.84	5.88	7.93	2.31	3.53	4.76	5.31	8.08	10.84	3.27		
Lending Institution	7.77	7.77	7.77	4.66	4.66	4.66	10.45	10.45	10.45	6.42	6.42	6.42
TOTAL	**11.61**	**13.65**	**15.70**	**6.97**	**8.19**	**9.42**	**15.76**	**18.53**	**21.29**	**9.69**	**6.42**	**6.42**

Annex Table 1 (continued).

REGION VI	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.04	2.09	3.13	1.13	2.27	3.40	1.52	3.04	4.56	0.62	1.25	1.87
Lending Institution	1.47	1.47	1.47	1.60	1.60	1.60	3.04	3.04	3.04	1.25	1.25	1.25
Government	4.45	4.45	4.45	4.83	4.83	4.83	5.65	5.65	5.65	2.32	2.32	2.32
TOTAL	**6.96**	**8.01**	**9.05**	**7.56**	**8.70**	**9.83**	**10.21**	**11.73**	**13.25**	**4.19**	**4.82**	**5.44**
Self-financed farmers												
Farmer	2.51	3.56	4.60	2.73	3.87	5.00	4.56	6.08	7.60	1.87	2.50	3.12
Lending Institution	4.45	4.45	4.45	4.83	4.83	4.83	5.65	5.65	5.65	2.32	2.32	2.32
TOTAL	**6.96**	**8.01**	**9.05**	**7.56**	**8.70**	**9.83**	**10.21**	**11.73**	**13.25**	**4.19**	**4.82**	**5.44**

REGION VII	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.96	3.92	5.88	1.85	3.70	5.55	2.97	5.93	8.90	2.37	4.73	7.10
Lending Institution	1.54	1.54	1.54	1.45	1.45	1.45	2.25	2.25	2.25	1.80	1.80	1.80
Government	7.32	7.32	7.32	6.90	6.90	6.90	10.84	10.84	10.84	8.65	8.65	8.65
TOTAL	**10.82**	**12.78**	**14.74**	**10.20**	**12.05**	**13.90**	**16.06**	**19.02**	**21.99**	**12.82**	**15.18**	**17.55**
Self-financed farmers												
Farmer	3.50	5.46	7.42	3.30	5.15	7.00	5.22	8.18	11.15	4.17	6.53	8.90
Lending Institution	7.32	7.32	7.32	6.90	6.90	6.90	10.84	10.84	10.84	8.65	8.65	8.65
TOTAL	**10.82**	**12.78**	**14.74**	**10.20**	**12.05**	**13.90**	**16.06**	**19.02**	**21.99**	**12.82**	**15.18**	**17.55**

REGION VIII	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	1.77	3.54	5.31	1.35	2.70	4.04	4.17	8.34	12.51	1.44	2.88	4.31
Lending Institution	1.73	1.73	1.73	1.32	1.32	1.32	4.30	4.30	4.30	1.48	1.48	1.48
Government	6.89	6.89	6.89	5.25	5.25	5.25	16.12	16.12	16.12	5.56	5.56	5.56
TOTAL	**10.39**	**12.16**	**13.93**	**7.92**	**9.27**	**10.61**	**24.59**	**28.76**	**32.93**	**8.48**	**9.92**	**11.35**
Self-financed farmers												
Farmer	3.50	5.27	7.04	2.67	4.02	5.36	8.47	12.64	16.81	2.92	4.36	5.79
Lending Institution	6.89	6.89	6.89	5.25	5.25	5.25	16.12	16.12	16.12	5.56	5.56	5.56
TOTAL	**10.39**	**12.16**	**13.93**	**7.92**	**9.27**	**10.61**	**24.59**	**28.76**	**32.93**	**8.48**	**9.92**	**11.35**

REGION IX	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	0.72			0.80			1.83			0.78	1.57	2.35
Lending Institution	1.43	1.43	1.43	1.60	1.60	1.60	3.10	3.10	3.10	1.33	1.33	1.33
Government	2.86	2.86	2.86	3.18	3.18	3.18	8.04	8.04	8.04	3.45	3.45	3.45
TOTAL	**5.01**	**4.29**	**4.29**	**5.58**	**4.78**	**4.78**	**12.97**	**11.14**	**11.14**	**5.56**	**6.35**	**7.13**
Self-financed farmers												
Farmer	2.15			2.40			4.93			2.11	2.90	3.68
Lending Institution	2.86	2.86	2.86	3.18	3.18	3.18	8.04	8.04	8.04	3.45	3.45	3.45
TOTAL	**5.01**	**2.86**	**2.86**	**5.58**	**3.18**	**3.18**	**12.97**	**8.04**	**8.04**	**5.56**	**6.35**	**7.13**

REGION X	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	0.83	1.67	2.50	0.68	1.35	2.03	2.57	5.14	7.72	0.97	1.94	2.92
Lending Institution	1.67	1.67	1.67	1.35	1.35	1.35	3.20	3.20	3.20	1.21	1.21	1.21
Government	3.91	3.91	3.91	3.17	3.17	3.17	10.40	10.40	10.40	3.93	3.93	3.93
TOTAL	**6.41**	**7.25**	**8.08**	**5.20**	**5.87**	**6.55**	**16.17**	**18.74**	**21.32**	**6.11**	**7.08**	**8.06**
Self-financed farmers												
Farmer	2.50	3.34	4.17	2.03	2.70	3.38	5.77	8.34	10.92	2.18	3.15	4.13
Lending Institution	3.91	3.91	3.91	3.17	3.17	3.17	10.40	10.40	10.40	3.93	3.93	3.93
TOTAL	**6.41**	**7.25**	**8.08**	**5.20**	**5.87**	**6.55**	**16.17**	**18.74**	**21.32**	**6.11**	**7.08**	**8.06**

Annex Table 1 (continued).

REGION XI	RICE						CORN					
	WET			DRY			PHASE B			PHASE A		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	0.59	1.18	1.77	0.92	1.84	2.76	1.56	3.12	4.68	1.28	2.57	3.85
Lending Institution	1.18	1.18	1.18	1.84	1.84	1.84	2.20	2.20	2.20	1.81	1.81	1.81
Government	1.17	1.17	1.17	1.81	1.81	1.81	6.50	6.50	6.50	5.35	5.35	5.35
TOTAL	**2.94**	**3.53**	**4.12**	**4.57**	**5.49**	**6.41**	**10.26**	**11.82**	**13.38**	**8.44**	**9.73**	**11.01**
Self-financed farmers												
Farmer	1.77	2.36	2.95	2.76	3.68	4.60	3.76	5.32	6.88	3.09	4.38	5.66
Lending Institution	1.17	1.17	1.17	1.81	1.81	1.81	6.50	6.50	6.50	5.35	5.35	5.35
TOTAL	**2.94**	**3.53**	**4.12**	**4.57**	**5.49**	**6.41**	**10.26**	**11.82**	**13.38**	**8.44**	**9.73**	**11.01**
REGION XII	**RICE**						**CORN**					
	WET			**DRY**			**PHASE B**			**PHASE A**		
	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Borrowing farmers												
Farmer	0.42	0.85	1.27	1.26	2.52	3.77	1.15	2.31	3.46	1.24	2.49	3.73
Lending Institution	0.85	0.85	0.85	2.52	2.52	2.52	1.92	1.92	1.92	2.06	2.06	2.06
Government	1.96	1.96	1.96	5.82	5.82	5.82	5.05	5.05	5.05	5.44	5.44	5.44
TOTAL	**3.23**	**3.66**	**4.08**	**9.60**	**10.86**	**12.11**	**8.12**	**9.28**	**10.43**	**8.74**	**9.99**	**11.23**
Self-financed farmers												
Farmer	1.27	1.70	2.12	3.78	5.04	6.29	3.07	4.23	5.38	3.30	4.55	5.79
Lending Institution	1.96	1.96	1.96	5.82	5.82	5.82	5.05	5.05	5.05	5.44	5.44	5.44
TOTAL	**3.23**	**3.66**	**4.08**	**9.60**	**10.86**	**12.11**	**8.12**	**9.28**	**10.43**	**8.74**	**9.99**	**11.23**