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Impact evaluation of banana insurance program of the PCIC in the Davao region

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

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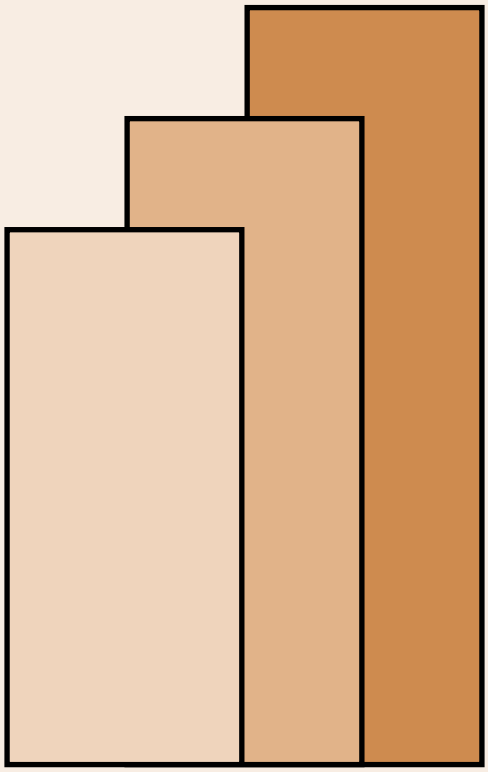
DISCUSSION PAPER SERIES NO. 2016-42



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IMPACT EVALUATION OF BANANA INSURANCE PROGRAM OF THE PHILIPPINE CROP INSURANCE CORPORATION (PCIC) IN THE DAVAO REGION

Roperto S. Deluna, Jr., Jennifer E. Hinlo and Michael L. Ayala

TERMINAL REPORT

SCHOOL OF APPLIED ECONOMICS

University of Southeastern Philippines
Davao City




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LIST OF ACRONYMS

ATT	Average treatment effect on the treated
BBTD	Banana Bunchy Top Disease
CCT	Conditional Cash Transfers
CLOA	Certificate of Land Ownership Award
CLT	Certificate of Land Title
CPBRD	Congressional Policy and Budget Research Department
DA	Department of Agriculture
DAR	Department of Agrarian Reform
FGD	Focus Group Discussion
FS	Farm Size
GSIS	Government Service Insurance System
IPCC	Intergovernmental Panel on Climate Change
LBP	Land Bank of the Philippines
LGU	Local Government Unit
MPCI	Multiple Peril Crop Insurance
NL	Notice of loss
PAO	Provincial Agricultural Office
PCARRD	Philippine Council for Agriculture, Forestry and National Resources Research and Development
PCIC	Philippine Crop Insurance Corporation
PIDS	Philippine Institute for Development Studies
TA	Team of Adjusters

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ABSTRACT

Agricultural crop insurance is a risk management tool to counter shocks and risks in banana production. It is a mechanism for farmers to be protected from unexpected risks and a tool for them to recover from the shocks experienced. The Philippine Crop Insurance Corporation (PCIC) is mandated to provide insurance protection to the country's agricultural producers, particularly the subsistence farmers, against natural disasters and other perils. This paper evaluated how agricultural insurance made an impact to banana growers in terms of managing risks and their well-being. The inputs, outputs and outcomes relative to risk, agricultural investment, productivity and access to credit are documented to provide options and strategies in improving the agricultural crop insurance in the country.

Agricultural crop insurance at its present coverage level is not sufficient to create impact on stabilizing income of banana farmers hit by shocks. This could be attributed to low insurance coverage which is only 55% of the production cost of banana. Without the subsidy of the government, and status quo on coverage and premium rate, crop insurance in the country will not be sustained in the case of banana. Agricultural insurance has not fully penetrated the whole banana industry yet because of the lack of information dissemination. Hence, educational programs to inform the farmers about the benefits of modern risk management schemes in banana should be prioritized because the major driver towards sustainable development of agriculture in the Philippines is to instill resiliency of farmers through agricultural crop insurance.

Keywords: Philippine Crop Insurance Corporation, Davao Region, agricultural crop insurance, banana, impact evaluation,

INTRODUCTION

Banana is a tropical plant growing in all regions of the Philippines. It is the leading fruit crop in terms of area, volume and value of production. It is considered as a table fruit since some varieties are eaten as fresh fruit while others are cooked and processed into chips, powder, paper, ketchup and other preparations. It is an important source of income for small farmers who constitute up to 80% of the banana growers because it is an annual crop that bears fruit throughout the year. There are about 5.9 million farm households depending on banana as their major source of income. It can also be used as an intercrop with fruit trees to provide additional income for the households. In Davao Region, it is a widely grown fruit, planted as a component of farming system or as a main crop in large plantations.

Agriculture is characterized by high risks and uncertainties, risks that are harder to control and these risks are getting higher with time. These risks and uncertainties include credit, fluctuating yield, income and unpredictable weather. Banana, like any other agriculture crop, is not immune or isolated from these risks and uncertainties. By nature, Filipino farmers are mostly risk-averse. This is quite alarming considering that more than 90% of the agricultural workers are classified as smallholders and any failed season of cropping is disastrous for the whole family. Given that climatic changes are becoming precarious, unpredictable and deadlier every year, mitigating measures such as crop insurance could soften the blow of this climatic aberration and provide a relief for the poor farmer and his family. A farm safety net is therefore important to help family farmers mitigate risks.

Given these realities, a number of schemes have evolved to mitigate these perceived and real risks, based on the economic theories of efficiency and utility. These measures include, among other things, guaranteed prices, subsidized credit, and crop insurance. Crop insurance is perceived to be a significant component to improve agricultural competitiveness of the farmers as it shields them from these unpredictable and uncontrollable risks increasing the welfare of the rural areas, leading to higher efficiency and utility. It is generally recognized as a basic instrument for maintaining stability in farm income, through promoting technology, encouraging investment, and increasing credit flow in the agricultural sector. It contributes to self-reliance and self-respect among farmers, since in cases of crop loss they can claim compensation as a matter of right (Chandrakanth, 1976). Thus, crop insurance does not obliterate the risks but simply spreads the risks and cushions the shock of crop loss by assuring farmers protection against natural hazards beyond their control. This means that it reduces part of the losses resulting from such risks and uncertainties. In general, the basic principles of crop insurance are as follows: (1) uncertainty faced by individual farmers is transferred to the insurer through their participation in large numbers, for which benefit, farmers over a wide area, i.e., horizontal spreading of risks over a wide and vertical spreading over many years; (2) the risk premium reflects the group risk assumed by the insurer; an indemnity is liable to be paid to the individual farmer when a loss is incurred due to causes beyond his control, as long as he maintains the insurance contract valid by paying the premium without default; and, (3) also, losses incurred in bad years are compensated from resources accumulated in good years (Dandekar, 1976).

While crop insurance underlies the competitiveness of the country's economy, they also constitute a major expenditure component for the farmers and for the government. There is now a growing concern on the money of the government that is allocated to the crop insurance system and the results for the society as a whole, in terms of efficiency and equity (Souza, 1997). In addition, the advancement in technology is creating increasing pressure from government and the community for accountability (Altbach, Gerdahl and Gunport, 1999; Cleary, 2001 by Lee, 2001). It appears that there are real concerns ad issues on the crop insurance program. In a study conducted by the Worldbank (2010) entitled Crop Insurance Mechanisms - Analysis of the Cavendish Banana Export Value Chain and GIS Study in Mindanao, it reported that Philippine Crop Insurance Corporation (PCIC) is regarded as inefficient and not a credible provider of insurance against crop failure while emphasizing that crop insurance may in fact help in reducing the cost of credit.

The Congressional Policy and Budget Research Department (CPBRD) of the House of Representatives in 2012 also reported that the government subsidies for premiums [and operational expenses] have been costly and the financial sustainability of the program is being at risk. It revealed that there has been little evidence to show that these interventions have generated any sizeable social net benefits. A similar study also showed that after over three decades of operations, the Philippine crop insurance program still has relatively little impact to show. Accordingly, its operation has been constrained by market and regulatory inefficiencies. The general characteristics of crop insurance programs are described as follows: 1) it is heavily subsidized by the government; 2) most of the publicly-provided programs are multiple peril crop insurance (MPCI) programs, and are compulsory in nature; and, 3) there is capacity constraint in agricultural reinsurance to underwrite systemic risk. In an earlier study, the PIDS (2015) observed that the operation of the agricultural insurance program is problematic because "the non-independence and high covariability of risks in agriculture and the casual empiricism that the elasticity of demand for agricultural insurance with respect to price is highly elastic going up (and relatively inelastic going down)". It outlined the constraints in the operation of crop insurance in the Philippines: high overhead cost, need for larger investment fund, and sustainability issues.

The best way to begin addressing those concerns is through an honest assessment of the impact of the crop insurance system at the farm level. The project is an impact assessment of the agricultural insurance programs implemented by the Philippine Crop Insurance Corporation (PCIC) in Davao Region- Region XI. The PCIC is mandated to provide insurance protection to the country's agricultural producers, particularly the subsistence farmers, against: loss of their crops and/or non-crop agricultural assets on account of natural calamities such as typhoons, floods, droughts, earthquakes and volcanic eruptions, plant pests and diseases, and/or other perils. PCIC also provides guarantee cover for production loans extended by lending institutions to agricultural producers for crops not yet covered by insurance. The insurance covers rice, corn, livestock, high value commercial crops, fisheries, non-commercial crop insurance and term insurance package. An impact assessment study is expected to determine the causality and establish the extent of improvement for the intended beneficiaries brought about by the programs.

OBJECTIVES OF THE PROJECT

The main objective of the study is to evaluate the impacts of the agricultural insurance program implemented by the Philippine Crop Insurance Corporation (PCIC) in Region XI. Specifically, the study aims to:

1. Document inputs, outputs and outcomes of the crop insurance relative to risk, agricultural investment, agricultural productivity and access to credit;
2. Assess the impact of the program particularly in managing risks and their well-being;
3. To identify the existing problems in implementing the scheme; and,
4. Document lessons learned and recommend possible options and/or strategies for the development/improvement of crop insurance in the Philippines.

SIGNIFICANCE OF THE PROJECT

In agricultural production, risk is an unavoidable element but is manageable. Agricultural production can vary widely from year to year due to unforeseen weather, disease/pest infestation, and/or market conditions causing wide swings in yields and commodity prices. The wide swings in yields and output prices generate high variability in a farmer's household income. The uncertainty in future incomes complicates both short-term production and long-term planning, that is whether to expand or reduce production, whether to invest in acquisition fixed and moveable assets, whether to stay in farming or to exit (Olumide, et al., 2014).

Life-saving interventions to protect the food insecure people and their livelihoods from rapid-onset emergencies caused by climatic events are essential. It is equally important, however, to create enabling conditions to ensure that communities affected by disasters are able to build back systems which are better adapted to changing climate conditions.

There is mounting evidence today that human-induced climate change is increasing the frequency and intensity of extreme weather events; including heat waves, droughts, storms, and floods. According to the Intergovernmental Panel on Climate Change (IPCC), the leading international body for the assessment of climate change, (1) it is now likely that human influences have led to a warming of daily minimum and maximum temperatures; (2) that greenhouse gas emissions have contributed to the intensification of extreme precipitation; (3) The IPCC considers it "virtually certain"; (4) that increases in the frequency of both warm and cold daily temperature extremes will occur globally throughout the century and "likely"; (5) that the frequency of heavy precipitation will increase in many regions and that the average maximum wind speed of typhoons and hurricanes will increase throughout the century (though possibly not in all ocean basins); (6) that there will be an increase in the frequency of droughts in many regions[1].

The impact crop insurance on farming practices is significant because it can reform the subsidized crop insurance system that is important to the future of rural areas in the Philippines.

[1] http://paxworld.com/ about/approach/sustainability-research/key-issues-briefs/climate-change-and-the-insurance-industry

INSURANCE FOR BANANA[2]

The insurance for banana falls under the high-value crops cover. The high -value crops that are eligible for cover include abaca, ampalaya, asparagus, banana, cabbage, carrot, cassava, coconut, coffee, commercial trees, cotton, garlic, ginger, mango, mongo, onion, papaya, peanut, pineapple, sugarcane, sweet potato, tobacco, tomato, water melon, white potato, etc. that are grown commercially, subject to their feasibility. Banana plants of all varieties cultivated by farmers are covered by the PCIC with credit support from the participating banks, under this insurance package.

The object of insurance are the standing crops planted/grown in the farmland described in the insurance application and which the insured farmer has an insurable interest on. The amount of cover or sum insured shall be the cost of production inputs as agreed upon by PCIC and the insured, including a portion of the value of the expected yield (at the option of the farmer) but not to exceed 120% of the cost of production inputs.

Plantation owners, cooperative farm farmers, corporate farm owners and other planters/growers with insurable interest on the farm, who grow high-value commercial crops individually or collectively in large scale, may qualify for coverage under this program. Provided; however, that the crop production activities shall be supervised by an agricultural production technician whether he be an in-house technician (i.e., employed by the proponent) or a government employed technician.

The insurance coverage shall be on annual basis subject to some stipulations such as waiting-period and pre-harvest termination of cover for some crops, as may be specified in the policy.

The insurance premium is market-rated and is solely borne by the insured. The premium rate is on a per project basis and depends 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, type of soil, terrain, farm management practices and production and loss records. The premium rate ranges from 2% to 7% of the total sum insured, subject to deductible and coinsurance provisions. Those under the premium subsidy by the government automatically has a 3% premium rate.

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; prorated cost of harvested crops; salvage value, if any; and, percentage of yield loss.

The insured may assign the policy to any lending institution or other financing conduits with insurable interest on the insured farm/plantation subject to PCIC's concurrence. The insurable risks include any, all or a combination of typhoon, flood, drought, earthquake, volcanic eruption, plant diseases, pest infestations and accidental fire; provided that the risk/s covered

[2] General Information on the High-Value Commercial Crop Insurance Booklet, Philippine Crop Insurance Corporation, Department of Agriculture

shall be limited to those specified in the policy contract. Other perils may be covered subject to the approval of the PCIC Board.

The subsidized insurance from PCIC shall only cover natural disasters. Farmers who are interested to cover pests and diseases shall pay the add-on premium payment because this is not included in the free insurance cover.

There are, however, risks that are excluded from the cover. These include: losses arising from fire not of accidental in nature, theft and robbery, pillage, sequestration, strike or other commotion, war, invasion, acts of foreign enemies, hostilities (with or without declaration of war), civil war, rebellion, revolution, insurrection, military or unsurped power, nuclear reaction or radioactive contamination (whether controlled or uncontrolled); any measure resorted to by the government in the larger interest of the public; avoidable risks emanating from or due to neglect of the assured/non-compliance with accepted farm management practices by the assured or person authorized by him to work and care for the insured crops; any cause or risk not specified in the covered risk; and, any cause or risk not specifically covered in the insurance policy.

Also excluded are losses occurring prior to the effectivity of the insurance; after harvest of the insured crops; after the expiration date of the insurance policy; and, any kind of consequential loss. The following are the required documents in applying for cover: application for High-Value Commercial Crop Insurance; parcellary or location map; list of growers (if applicable); and, other documents that may be required by PCIC.

In the event of loss arising from risks insured against, a written Notice of loss (NL) is sent to the PCIC Regional Office, within ten (10) calendar days from occurrence of loss and before the scheduled date of harvest. In the case of perils affecting crops and or fruits of crops which are highly 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 seventy-two (72) hours or three (3) days from the time of occurrence of such perils, or within the prescribed period specified in the policy contract. The NL shall at least contain the following information: name of the assured farmer, location of farm, time of occurrence of loss, nature and extent of loss. No claim shall be entertained without proof of filing of NL.

The Claim for Indemnity (PCIC Indemnity Form) is filed by the assured farmer/grower within thirty (30) calendar days from occurrence of loss with the PCIC Regional Office, pending verification and assessment of loss. For verification and loss assessment, a Team of Adjusters (TA) composed of at least two (2) members deputized by PCIC verify the claim and submit its findings thereon to the RO concerned for settlement. Depending on the value of the claim, the magnitude of the loss, or its economic significance within the surrounding community, the PCIC Regional Manager may invite a representative from any of the following offices to join the team of adjusters: Office of the Provincial or Municipal Agriculturist, Regional Office of the Department of Agriculture, Philippine Council for Agriculture, Forestry and National Resources Research and Development (PCARRD), and, other appropriate institutions.

A claim is settled as expeditiously, but not later than sixty (60) calendar days from submission by the insured of complete claims documents to the PCIC Regional Office. The insured shall be entitled to a no-claim benefit of at least ten percent (10%) of premiums paid during the

immediately preceding policy year, not subject on any claim, which may be used to finance premium credit applicable to renewal premium for the immediately following crop season/year.

Farmers can avail free insurance if they are listed under Registry System on Basic Sector in Agriculture -Agricultural Insurance Program (RSBSA - AIP) and for the farmers who are Agrarian Reform Beneficiaries can avail the Agrarian Production Credit Program – Agricultural Insurance Program (APCP – AIP). Both RSBSA-AIP and APCP-AIP are entitled to 100% premium subsidy for the cost of insurance coverage. Farmers who availed of free insurance, the maximum area of coverage is three (3) hectares and only natural disasters are covered. The reason for the limit is to give other farmers a chance to avail the insurance. If the farmer has availed of free insurance and wants to have additional riders such as pests and diseases, they will pay for the additional premiums.

Banana farmers can apply for insurance anytime of the year because there is no cut-off. The coverage can be per tree or per hectare. Banana farmers can avail insurance with multi crops, the specific crops are listed in their policy with its corresponding insurance coverage. The distribution in the amount of insurance coverage shall be calculated based on the following assumptions:

Table 1. Basis for computation of insurance coverage.

Age of trees planted	Percent	Number of hills/ha
1 to 3 months	15%	1,800
4 to 6 months	20%	1,200
7 to 10 months	65%	1,000

If the farmer has already experienced risk i.e. drought, typhoon, land slide, etc., he/she is not allowed to apply for insurance since the damaged had already began. The farmer should first normalize the farm and PCIC will ascertain if they are ready and eligible for insurance cover. The Department of Agriculture (DA) shall provide a certification regarding the package of technology they are practicing as part of their requirement for insurance availment.

PCIC is doing efforts to fully inform the public of their offered services. As a matter of fact, they were able to have a regular radio show and is planning to post tarpaulins in DA offices. They are currently working on their pilot program for weather-based index insurance and this is not yet ready for commercialization.

REVIEW OF RELATED LITERATURE

Roberts (2005) designed a booklet to provide an introductory overview of crop and forestry insurance in developing countries in order to define the boundaries for the different types of insurance products. He emphasized three (3) elements to the understanding of insurance. These are: that insurance does not and cannot obliterate risk; that insurance is a business, and that premiums must cover several areas of cost in addition to meeting the cost of paying indemnities under policies in force. He observed that a few insurance programs have

succeeded in laying the foundation for a sustainable risk management service, many have failed because most of the programs were set up with unrealistic expectations.

Manojkumar, et al. (2003), while studying the banana crop insurance scheme in Wayanad District in India, asserted that a crop insurance program cannot be designed without scarifying some of the preceding rigid requirements. The dearth of accurate and sufficient data regarding crop yield and losses in most developing countries compounds the problem in crop insurance design. They considered high premium rate as the main problem with crop insurance schemes. They proposed the following ways to reduce the rates down: lowering of the indemnifiable limit; finding alternative methods of calculation of premium rates to reduce the burden of premium to the farmers and to motivate them to produce more without the fear of possible loss or risk; and, premium rates and indemnities should be based on the agro-climatic zones with varied types of soil fertility, weather conditions, inputs, cultivation practices, and managerial systems.

The Congressional Policy and Budget Research Department of the Philippines (2012) which reviewed the crop insurance programs of PCIC observed that the potential benefits of crop insurance have not been exploited since the ideal conditions for an effective the insurance have not been met. They identified three (3) key impediments to a more stable and complete crop insurance market. These are: crop yield risks are highly correlated; insurers do not have sufficient information for risk assessment; and, administrative cost is prohibitive.

According to Chandrakanth and Rebello (1980), crop loss due to drought, excessive rains, pests, and diseases may be included in the hazards to be insured. They also remarked that if the entire crop is lost during the planting stage, the indemnity payable should cover the costs up to that stage. Another observation was that crop insurance should be made compulsory at least for all borrowers. In this case the insurance premium must be included in the crop finance.

Hogen (1982) stated that crop-credit insurance for farmers might be effective in stimulating adoption of new and risky technology in agriculture. Subrahmanian (1984) suggested that premium rates have to be revised annually based on the cost of cultivation and the long-term average yield. In India, coverage is taken as a percentage of the long-term average alone. But it would be better to arrive at the coverage level based on cost of cultivation and price per unit of output in addition to the long-term average yield.

Dandekar (1985) noted that the crop insurance scheme is based on the area approach and that a *taluk*/ *tehsil* is taken to be the area. Indemnities payable to farmers in the area are assessed on the basis of the average yield for the area; the variations in the yield within the area are neglected. This method is considered unsatisfactory.

Pathak (1986) argued that through crop insurance, farmers could purchase the right for compensation by paying only a small amount and that they are assured of protection against uncertainties.

According to Rustagi (1988), the pre-requisite to effective demand for crop insurance is the farmer's consciousness of risks arising from crop damage, namely exposure to risk. The degree of consciousness varied depending on the type of farm, size of farm, and environmental condition of the farm.

Merrit (1987) stated that regardless of whether crop production is government-sponsored,or originated with a private agricultural lender, the use of a crop insurance option

increases the probability of repayment of loans. It is to the advantage of the lender to require the collateral – the expected yield – to be insured thereby guaranteeing repayment of the loan. It was to the advantage of the farmer-borrower that he insures his crop when he takes an operating loan so that if a production loss should occur the insured will not be forced to choose between repaying the loan out of other resources and going out of business.

Toyoji (1987) has suggested three approaches to crop insurance. The initial approach is the study of demand of small-scale farmers for crop insurance in relation to their income and possibility of exposure to natural hazards. This information would provide an important insight into the formulation of a crop insurance scheme, which is sufficiently attractive even to the small-scale and low-income farmers. The second approach is to consider a suitable administrative organization that would oversee the implementation of the scheme at all levels. The third consideration pertains to the technical procedures for crop insurance such as insurance unit, amount of coverage, and premium rate.

Dragos and Mare (2008) used Ordered Logit and Binary Logit to assess the factors influencing the decision of farmers in buying an insurance policy and the type of insurance chosen of 308 small farmers in Romania. The factors included the following: age, education, field of study, size of the village, proximity to the city, type of culture, and type of crop. Results of the study revealed a higher propensity towards using the insurance system for younger farmers with tertiary education especially in Economics and Business, who live in large villages near the city and who cultivate vegetables.

Brånstrand and Wester *(2014)* evaluated the factors affecting the choice to purchase crop insurance or not for reseeding and hail risks provided by private companies among Swedish farmers using Logit Regression. The factors were divided into three different categories; social factors, business related factors and preferences and perceptions, based on the expected utility theory. The results showed that significant differences between different attributes with each category. The business related factors indicated that larger farms and farms with grain production as primary crop to a greater extent use insurance. Farmers with high level of diversification did not use crop insurance to the same extent as less diversified, i.e., farmers with high risk exposures are more likely to acquire insurance. The design of the insurance product was also found to be important for the insurance decision. Farmers that used insurance perceived that their yield level was higher than the average for their region. They also perceived a higher level of yield risk compared to uninsured farmers. The social factors, age, education and years of farming as well the farmers' risk preferences were not significant in terms of crop insurance decision.

Jorge (1987) opined that the appraisal of loss is one of the momentous aspects of insurance. Moreover, in the case of crop insurance, a rapid loss adjustment procedure is essential. Since the farmers will wish to harvest the undamaged part of the affected crop in due time, it is necessary to set up and train an adequate number of local adjustment personnel capable of responding immediately to appraise losses. Since crop insurance is characterized by a very high degree of risk, it is risky for a primary organization to bear an excessive insurance liability accepted from farmers. Therefore, the insurance carriers should be willing to spread their risk. One option is reinsurance. What distinguished crop insurance from pure mutual aid or mutual relief or public relief in the case of large-scale crop disasters is the link-up between the

actuarial techniques and the principles and operation of mutual aid. The actuarial technique is the application of appropriate statistical methods to determine certain behavioral patterns out of what seem to be *prima facie* irregular and unrelated happenings, for instance, the occurrence of drought or flood or insect infestations of crops or the extent of crop losses resulting therefrom (Ray, 1987).

The Philippine Institute for Development Studies (PIDS) organized a focus group discussion (FGD) with the members/representatives from selected associations and cooperatives in Davao del Norte last October 2014 to evaluate the Philippine Crop Insurance Corporation (PCIC) programs in the area. Since the establishment of the cooperatives/associations, they were enrolled in the crop insurance program of the PCIC because it is part of the requirement for the application of the Land Bank of the Philippines (LBP) agricultural loans. To avail agricultural loans at the LBP, they only need to be insured at the PCIC. Usually, to get PCIC insurance, these organizations have to secure lists of borrowers, DA certification, sketch/location plan and farm plan and budget. The loans are released in checks. About 180 days or 6 months (or per cropping) is the loan term given by the LBP to the associations/cooperatives. LBP charges 8.5% per annum of loan interest rate. Moreover, they usually pay the loan amount in lump-sum except for other few cooperatives that preferred monthly amortizations.

The respondents identified the following issues that hamper the operation of the insurance system in the area:

a. Lack of personnel from PCIC to penetrate and be deputized in the different sites, especially the remote areas;
b. The Regional Office of PCIC is very far that they could not easily transact business;
c. Lack of information drive to market the PCIC products to other farmers since in some parts of Davao del Norte only few associations and cooperatives has the idea and knowledge about the programs offered by PCIC; and
d. Lack of linkages to other government agencies to assist the programs of PCIC.

METHODOLOGY

CONCEPTUAL FRAMEWORK OF THE STUDY

Basically, an impact assessment identifies, provides evidence of and quantifies the impact of investments. The methodologies to be utilized for impact assessment should be able to measure both intended and unintended changes that result from the activity whose impact is being assessed. In undertaking the impact assessment for this government investment, this study follows the conceptual national framework, “Crop Insurance in the Philippines: Security for Farmers and Agricultural Stakeholders” as follows:

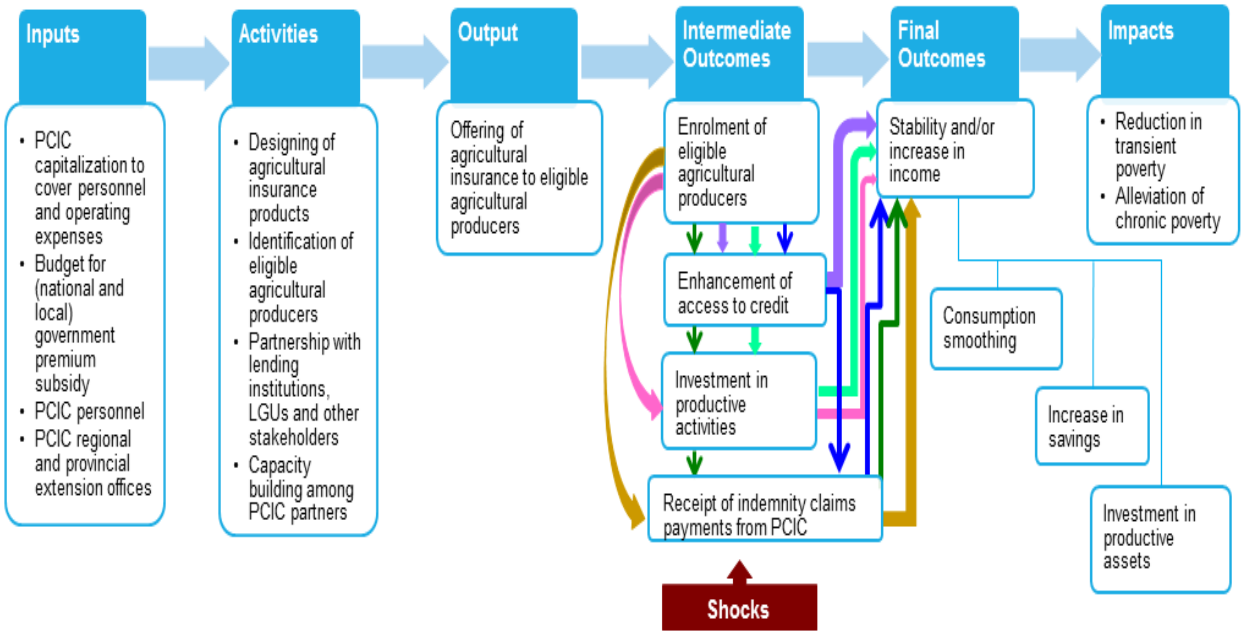

Figure 1. Framework for impact assessment of PCIC agricultural insurance programs.
Source: PIDS, Makati

In this study, the inputs (investments) cover the following items: Capitalization of PCIC to cover personnel and operating expenses, aggregate budget for government premium subsidy, PCIC personnel and PCIC regional and provincial extension offices. The outcomes are classified into intermediate incomes and the final outcomes. These outcomes are based on the objectives of agricultural insurance, as: to serve as a mechanism for managing the risks inherent in agriculture and stabilizing the finances of agricultural producers; and, to encourage lending institutions to extend credit to the agricultural sector. The intermediate outcomes include the following: availment of agricultural insurance; access to credit; and, investment in productive activities. The intermediate outcomes are important measures of progress towards achieving the final outcomes impact, but in themselves do not generate impacts. The final outcome is the net income derived from producing a specific crop, from crop production, from all agriculture-related activities. The crop insurance is designed to mitigate production/ yield shocks such as those associated with adverse natural events, e. g. typhoons and drought. As a formal risk management instrument, it is expected to stabilize income or **help manage risks to this income** (Roberts, 2005), smoothen consumption, increase savings, and investment in productive assets. The overall impacts of the project are the reduction in transient poverty and alleviation of chronic poverty.

SOURCES OF DATA AND METHODS OF DATA COLLECTION

Both primary and secondary data were utilized in the study. Primary data were obtained from a social survey using interview schedule. Three (3) types of respondents were identified: those who were insured and have received indemnity; those who were insured but have not received indemnity; and, control. The survey questionnaire was pre-tested in Davao City to test the suitability and efficiency of the formulated survey questionnaire to exhaust the collection of the required information. Survey design and number of samples were determined and computed by the Philippine Institute of Development Studies. Table 1 shows the distribution of survey participants. Secondary data were collected from PCIC and PAO/MAO.

Table 1. Distribution of Survey Participants, Region XI

	T1	T2	T3	TOTAL
FS1	2	26	28	56
FS2	45	52	97	194
FS3	68	57	125	250
TOTAL	**115**	**135**	**250**	**500**

*T1- with insurance, with indemnity
*T2- with insurance, without indemnity
*T3-without insurance

**FS1- Farm size dedicated to the crop is less than .5 ha.
** FS2- Farm size dedicated to the crop is greater than 0.5 to 1 ha.
**FS3- Farm size dedicated to the crop is greater 1 ha.

IMPACT ESTIMATION

The study employed three (3) approaches to determine the impact of PCIC agricultural insurance to household income from banana production and total agricultural income, which includes all income from other agricultural related activities. First, a paired t-test was used to investigate whether there is significant difference between the mean incomes from banana production in 2014 and 2015 and between the mean total agricultural incomes also in 2014 and 2015. An independent t test was then employed to check whether, separately, the mean income from banana production and the mean total agricultural income differ significantly between the insured and uninsured farmer respondents, and between with indemnity claims and without indemnity claims for those insured farmers. These tests were conducted by farm size category and using all the observations in the data set.

Secondly, the average treatment effect on the treated (ATT) was computed to test the significant impact of insurance availment to farm net income between matched (paired) samples. The study used covariates as matching characteristics between those with insurance and without insurance. These include the municipality where the farmer resides, the barangay where the

farmer resides, total area planted with the specified crop (in hectares), access to irrigation, tenurial status, ARB status, farm location, number of farm parcel, age of farmers, and the highest educational attainment of the farmer. However, exact match of the treatment sample is hard to achieve, the study therefore settled with at least seven variables among the eleven covariates, which initially have to be matched.

Lastly, panel regression analysis for the periods 2014 and 2015 was employed to identify whether agricultural insurance has an impact on the farmers' income on banana production and total agricultural income. The net income from banana production as the final outcome variable was derived as follows:

$$\pi_{ijt} = R_{ijt} - (PC_{ijt} + pr_{ijt}) + ip_{ijt} \quad (1)$$

where: π_{hijt} = net income from banana of farm household *i* in community *j* at time *t*

R_{hijt} = total revenue from banana of farm household *i* in community *j* at time *t*

PC_{ijt} = total cost of producing banana incurred by farm household *i* in community *j* at time *t*

pr_{ijt} = amount of insurance premium for banana paid by farm household *i* in community *j* at time *t*

ip_{ijt} = amount of indemnity for banana received by farm household *i* in community *j* at time *t.*

The net total agricultural income is derived from the sum of net income from producing the crop of interest (banana) and from other agricultural activities done by the farmers.

Econometric model for crop insurance availment

The farmers' participation in crop insurance program is studied by employing the probit analysis. Probit models are certain types of regression models in which the dependent or response variable is dichotomous in nature. The probit technique allows the testing of the effects of a number of variables on the underlying probability of the response variable. Hence, probit analysis is employed to determine the factors that significantly affects the decision of the banana farmers to avail crop insurance. The general form of probit regression model is given as:

$$P(Y = 1 | X) = \Phi(Z)$$

where:

P = denotes probability of a choice

Y = 1, if the farmer avails the crop insurance, 0 otherwise

X = vector of independent variables

β = vector of estimated coefficients corresponding to *X*

φ = cumulative distribution function of the standard normal distribution

Z = z score

In this study, the empirical model to determine the z score of the probability that the farmer avails the crop insurance given a set of independent variables is given as:

$$Z_i = \beta_0 + \beta_1 year_i + \beta_2 shock_i + \beta_3 sex_i + \beta_4 age_i + \beta_5 age^2{}_i + \beta_6 hgc_i + \beta_7 cvstat_i + \beta_8 \exp_i + \beta_9 org_i + \beta_{10} hsize_i + \beta_{11} hsize^2{}_i + \beta_{12} dratio_i + \beta_{13} hhasset_i + \beta_{14} agriasset_i + \beta_{15} broad_i + \beta_{16} hilly_i + \beta_{17} nfarm_i + \beta_{18} ent_i + \beta_{19} remit_i + \beta_{20} govt_i + \beta_{21} othernfarm_i + \beta_{22} avail_i + \beta_{23} fs_i + \beta_{24} ocrop_i + \beta_{25} ncrop_i + \beta_{26} prio_i + e_i$$

where:

β_0	= intercept
β_i (I = 1 to 26)	= coefficients of independent variables
$year_i$	= 1 if 2015, 0 if 2014
$shock_i$	= 0 if crop loss (expected harvest less total harvest) is 10% or less; 1 if loss is more than 10% and below 90%; 2 if loss is 90% or above
sex_i	= 1 if male; 0 if female
age_i	= age of the farmer, in years
$age^2{}_i$	= square of age of the farmer
hgc_i	= 0 if no grade completed; 1 if primary; 2 if secondary; 3 if post-secondary/tertiary
$cvstat_i$	= 1 if the farmer is married; 0 otherwise
exp_i	= number of years of farmer's farming experience
org_i	= 1 if the farmer is a member of any farmers' organization/credit cooperative; 0 otherwise
$hsize_i$	= average number of household members
$hsize^2{}_i$	= square of household size
$dratio_i$	= proportion of household members aged below 15
$hhasset_i$	= index of household assets (i.e., housing unit and/or lot, appliances)
$agriasset_i$	= index of productive agricultural assets (i.e., farm equipment/machineries and livestock/poultry)
$broad_i$	= 1 if land being tilled is broad plain; 0 otherwise
$hilly_i$	= 1 if land being tilled is hilly/rolling; 0 otherwise
$nfarm_i$	= percentage of household income that is derived from non-farm wage employment
ent_i	= percentage of household income that is derived from non-farm entrepreneurial activities
$remit_i$	= percentage of household income that is derived from remittances
$govt_i$	= percentage of household income that is derived from government transfers (excluding those received from agriculture-related and credit programs
$othernfarm_i$	= percentage of household income that is derived from other non-farm income
$avail_i$	= 1 if the farmer was able to receive indemnity claim from the PCIC in

2014, 2015 or both periods; 0 otherwise

fs_i = 1 if 0.5 hectare or below; 2 if between 0.5 and 1 hectare; 3 if more than 1 hectare

$ocrop_i$ = percentage of household income that is derived from other crop(s)

$ncrop_i$ = percentage of household income that is derived from other non-crop agricultural commodity(ies)

$prio_i$ = 1 if the PCIC regional or provincial extension office is located within the province where the farmer's farm or house is located; 2 if located within the municipality or city; 3 if located within the community (barangay)

e_i = error term

The parameters were estimated by using maximum likelihood estimation (MLE) technique. Model estimations were conducted using Stata V.14.

Econometric Models for Impact of Crop Insurance

A random effect panel data estimation for the two periods (2014 and 2015) was employed to determine the impact of crop insurance to the income of banana farmers in terms of banana production and total agricultural related activities. Separate models were estimated for all of the farmer respondents, farmers with farm sizes less 0.5 hectare (FS1), farmers with farm sizes greater than or equal to 0.5 hectare but less than or equal to 1 hectare (FS2) and farmers with farm sizes great than 1 hectare (FS3). Interaction of factors were also investigated as possible significant indicators or the response variable. "Robust" option in Stata is included to control for heteroscedasticity.

Model 1 (Income from Banana Production)

$$lmcrop_{it} = \alpha_0 + \beta_1 year_i + \beta_2 shock_i + \beta_3 sex_i + \beta_4 age_i + \beta_5 age^2{}_i + \beta_6 hgc_i + \beta_7 cvstat_i + \beta_8 \exp_i + \beta_9 org_i + \beta_{10} hsize_i + \beta_{11} hsize^2{}_i + \beta_{12} dratio_i + \beta_{13} hhasset_i + \beta_{14} agriasset_i + \beta_{15} broad_i + \beta_{16} hilly_i + \beta_{17} nfarm_i + \beta_{18} ent_i + \beta_{19} remit_i + \beta_{20} govt_i + \beta_{21} othernfarm_i + \beta_{22} avail_i + \beta_{23} fs_i + \beta_{24} ocrop_i + \beta_{25} ncrop_i + \beta_{26} claim_{it} + \beta_{27} pr\_insured_{it} + \beta_{28} year * pr\_insured_{it} + \beta_{29} year * shock_{it} + \beta_{30} pr\_insured * claim_{it} + \beta_{31} pr\_insured * shock_{it} + \beta_{32} year * pr\_insured * claim_{it} + \beta_{33} year * pr\_insured * shock_{it} + \beta_{34} year * pr\_insured * shock * claim_{it} + u_{it}$$

Model 2 (Income from All Agricultural Activities)

$$lagri_{it} = \alpha_0 + \alpha_0 + \beta_1 year_i + \beta_2 shock_i + \beta_3 sex_i + \beta_4 age_i + \beta_5 age^2{}_i + \beta_6 hgc_i + \beta_7 cvstat_i + \beta_8 \exp_i + \beta_9 org_i + \beta_{10} hsize_i + \beta_{11} hsize^2{}_i + \beta_{12} dratio_i + \beta_{13} hhasset_i + \beta_{14} agriasset_i + \beta_{15} broad_i + \beta_{16} hilly_i + \beta_{17} nfarm_i + \beta_{18} ent_i + \beta_{19} remit_i + \beta_{20} govt_i + \beta_{21} othernfarm_i + \beta_{22} avail_i + \beta_{23} fs_i + \beta_{24} ocrop_i + \beta_{25} ncrop_i + \beta_{26} claim_{it} + \beta_{27} pr\_insured_{it} + \beta_{28} year * pr\_insured_{it} + \beta_{29} year * shock_{it} + \beta_{30} pr\_insured * claim_{it} + \beta_{31} pr\_insured * shock_{it} + \beta_{32} year * pr\_insured * claim_{it} + \beta_{33} year * pr\_insured * shock_{it} + \beta_{34} year * pr\_insured * shock * claim_{it} + u_{it}$$

Both models, t-test was also used to determine the significant independent variables that affect farmers' income. The F-test was utilized to determine the overall significance of the estimated panel regression model. The coefficient of multiple determination (R^2) was estimated to examine the goodness of fit of the data.

Model estimations were conducted using Stata V.14.

RESULTS AND DISCUSSION

PROFILE OF THE RESPONDENTS

This section presents the profile of the banana farmers in terms of some socio-economic indicators. The overall average age of the farmers is 54 years old and they have been engaging in farming activities for an average of 18 years as of the time the survey was conducted (Table 2). Insured farmers with claims who cultivate less than 0.5 hectare of land (FS1) appear to be the older among the farmers from the other groups. It should be noted that these years of farming are not only devoted to banana cultivation. Some of the farmers are also engaged in planting other crops, livestock and poultry raising, and other agricultural activities. Meanwhile, the average household size of the farmers is 4.6 members in 2014 and 4.5 members in 2015.

Table 2. Average age and number of years of farming experience by treatment group.

Treatment Group	Farm Size	Average	
		Age	No. of Years of Farming Experience
With Insurance (With Claims)	FS1	69	20
	FS2	56	16
	FS3	56	19
	All	**56**	**18**
With Insurance (Without Claims)	FS1	54	21
	FS2	54	19
	FS3	53	18
	All	**53**	**19**
Without Insurance	FS1	50	17
	FS2	52	18
	FS3	55	18
	All	**54**	**18**
Total (Pooled)	FS1	53	19
	FS2	54	18
	FS3	55	18
	All	**54**	**18**

As presented in Figures 2 and 3, at least 80% of the farmer respondents in each treatment group are male and at least 3 out of 4 farmers are married. In addition, 10% to 15% of the farmers are widowed while single farmers only accounted for just 5% or less of the total number of farmers.

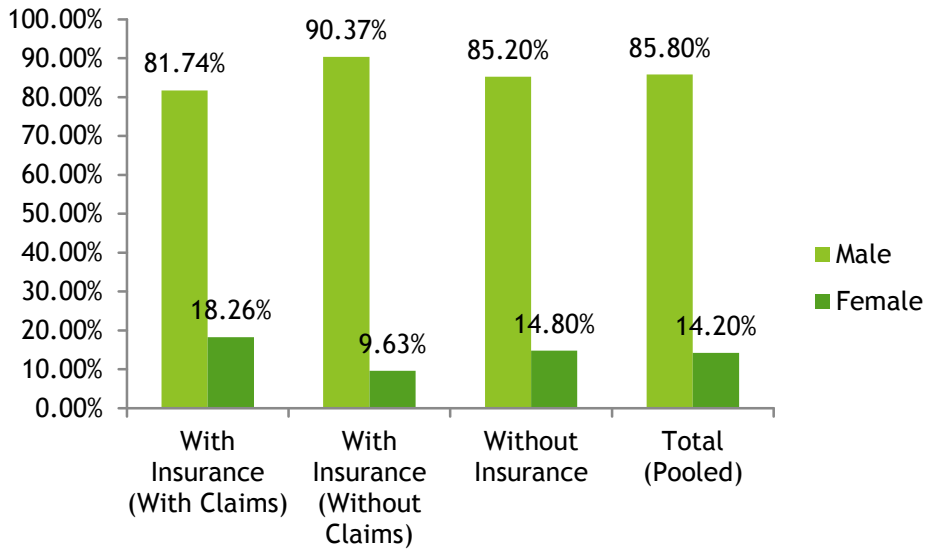

Figure 2. Distribution of sex of farmers by treatment group.

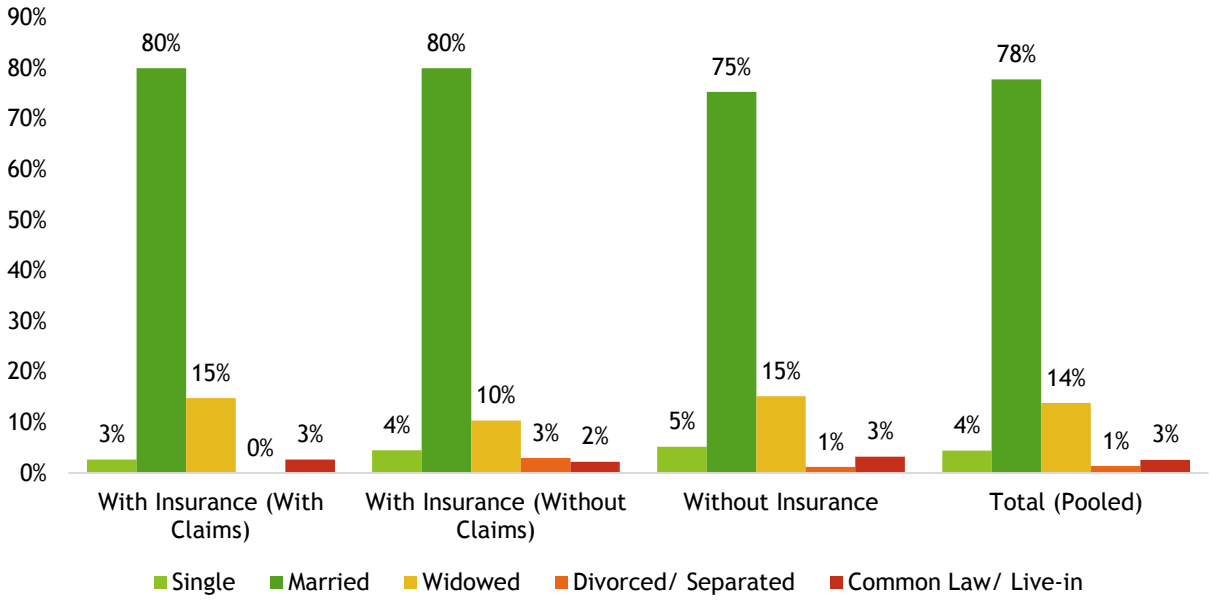

Figure 3. Distribution of marital status of farmers by treatment group.

In terms of the highest educational attainment of the farmer respondents, around 3 out of 10 farmers are high school graduates (Figure 4). It appears that there are more college graduates (24%) from the respondents with insurance and with claims compared to the other groups. The result also suggests that there are more farmers from this group who reached post-secondary/tertiary level of education (15%). Generally there are more farmers who only finished

primary education for the without claims (22%) and uninsured groups (21%). The percentage of farmers who did not finish any educational level is very minimal (1%).

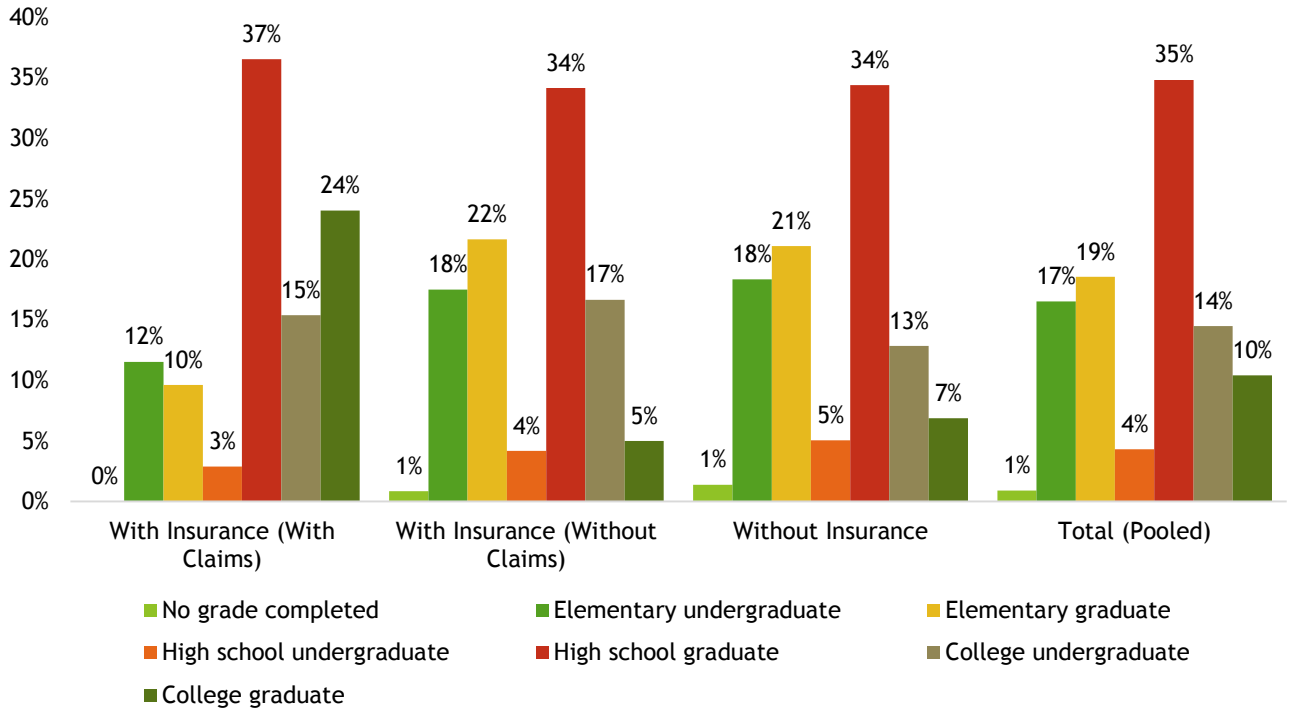

Figure 4. Distribution of highest education attainment of farmers by treatment group.

In terms of their primary occupation, 9 out of 10 respondents do farming, which includes fishing and livestock raising while less than 5% of the respondents do other types of occupation. Five percent of the insured farmers with claims are actually skilled laborers. Moreover, nearly half of the respondents are employers in own family related farm/business. Around 20% of them also said that they work without pay on own family farm/business. Noticeably, there are more insured farmers but without claims who are self-employed with no paid employee compared to other groups. Government employees only accounted for just less than 5% while 6% of the respondents are working for private firms or businesses. Further, Figure 7 shows that around 95% of the respondents are working as permanent/business/unpaid family worker.

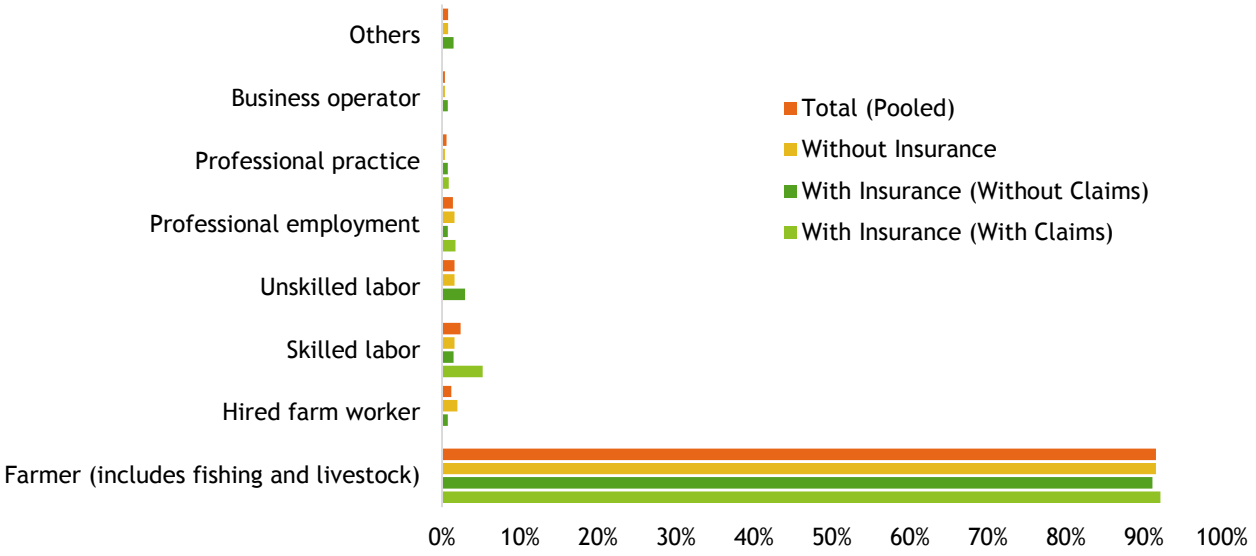

Figure 5. Distribution of farmers' primary occupation by treatment group.

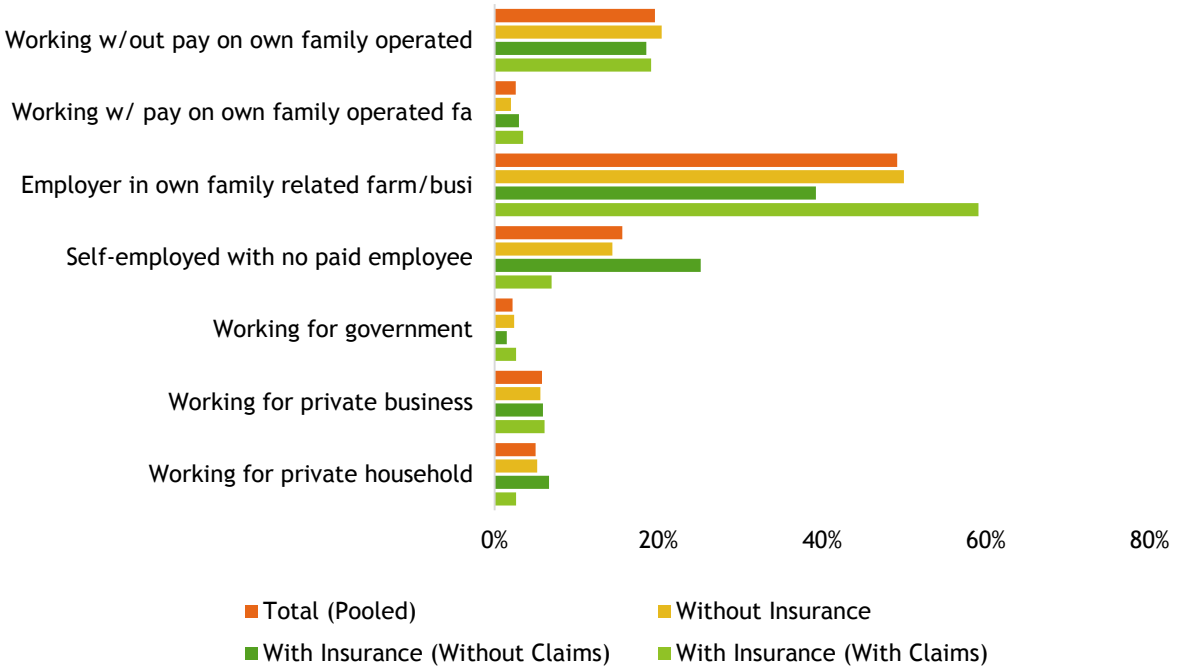

Figure 6. Distribution of farmers' class of worker by treatment group.

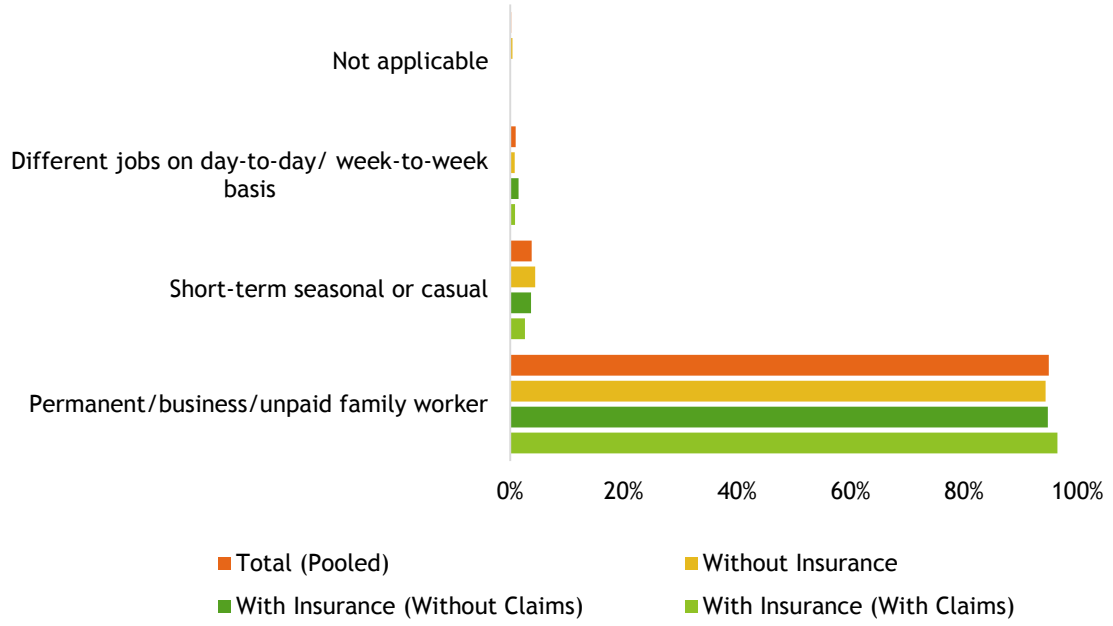

Figure 7. Distribution of farmers' nature of employment by treatment group.

Over 80% of the respondents said that they do not have secondary occupation. Out of those who claimed that they have secondary occupation, 60% said that their secondary job is also farming and commonly they are the insured farmers. Most of these respondents are actually employers in own family related farm or business.

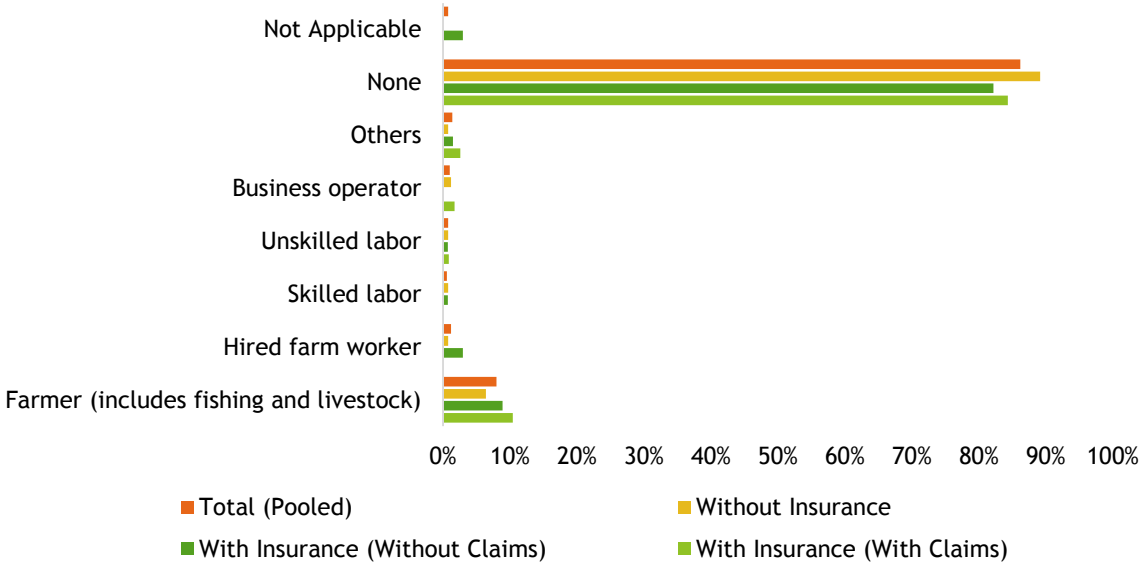

Figure 8. Distribution of farmers' secondary occupation by treatment group.

On the average, only 1 of the 10 members of the household is a salaried worker. The average dependency ratio of the households is 19% during the two periods. The ratios are somewhat similar to all treatment groups. The membership of farmers to farmer associations or cooperatives shows mixed results. Figure 10 shows that there are more (60%) insured farmers with claims who are members of associations or cooperatives as compared to the other treatment groups. For instance, 7 out of 10 uninsured farmers do not have any farmer organization membership. Only 1% to 2% of the households has at least one cooperative or mutual aid member for the two periods (Figure 11). Also, the penetration rate of private insurance membership is low which is only seen from 2% to 4% of the respondents.

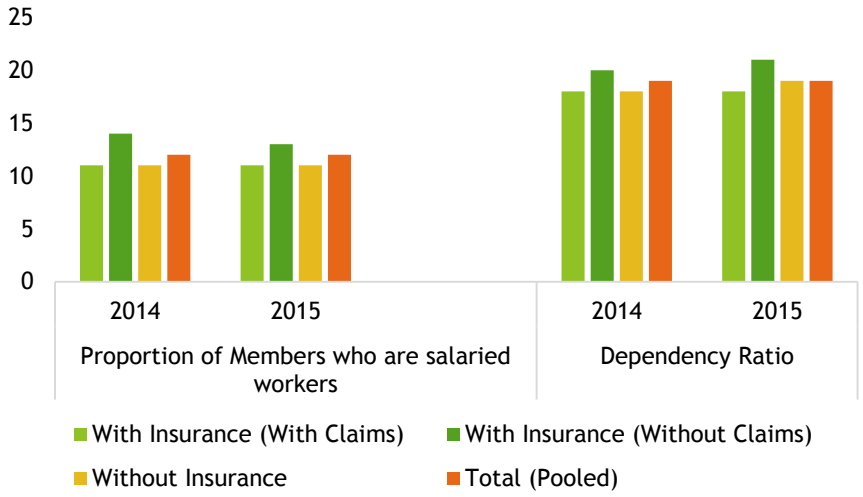

Figure 9. Proportion of household members who are salaried workers and dependency ratio, 2014-2015.

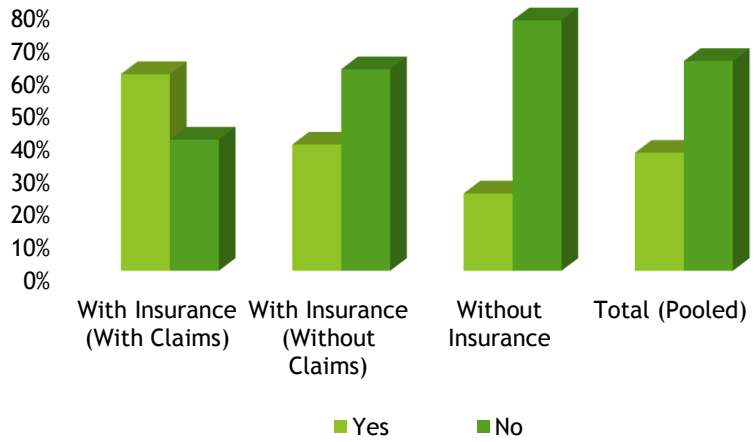

Figure 10. Distribution of membership of farmer in farmers' associations/cooperatives.

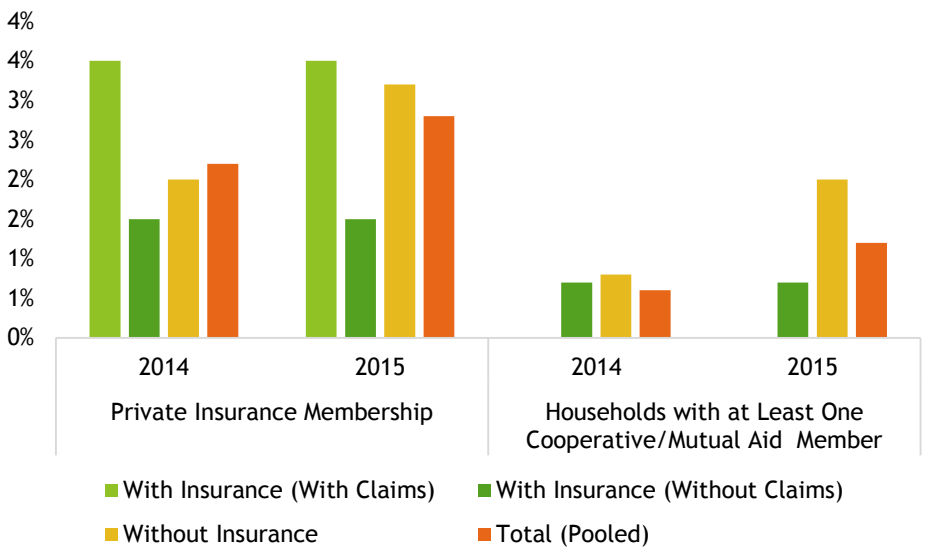

Figure 11. Penetration rate of private insurance membership and percentage of households with at least one cooperative/mutual aid member, 2014-2015.

In terms of the penetration of some government insurance programs, 60% to 70% of the respondents are already members of PhilHealth while 50% to 70% are members of GSIS and/or SSS (Figure 12). The percentages are almost the same for the two periods. Further, it can be seen that the penetration rates are higher for insured farmers for both of the insurance programs as compared to the uninsured farmers. Aside from the Conditional Cash Transfers (CCT) program, which has a penetration rate of 7% to 15%, other programs such as supplemental feeding, cash for work, health, scholarship, and livelihood/training/skills only accounted for less than 5% of the total number of respondents in 2014 and 2015. Also, the number of CCT beneficiaries are relatively lesser for insured farmers with claims compared to the other treatment groups. There are no insured farmers with claims who availed supplemental feeding, health, and livelihood/training/skills program during the two periods.

In terms of the agricultural support assistance received by the households, less than 5% said that they received assistance such as seeds, fertilizers, and pesticides subsidies, livestock dispersal program, and farm management program in 2014 and 2015. Generally, there are more beneficiaries of these subsidies for uninsured farmers than the insured ones and the number of beneficiaries generally increased from 2014 to 2015. The social protection index (Table 3) for farmer respondents is on the average negative, suggesting that the social protection programs received by the farmers are not that effective.

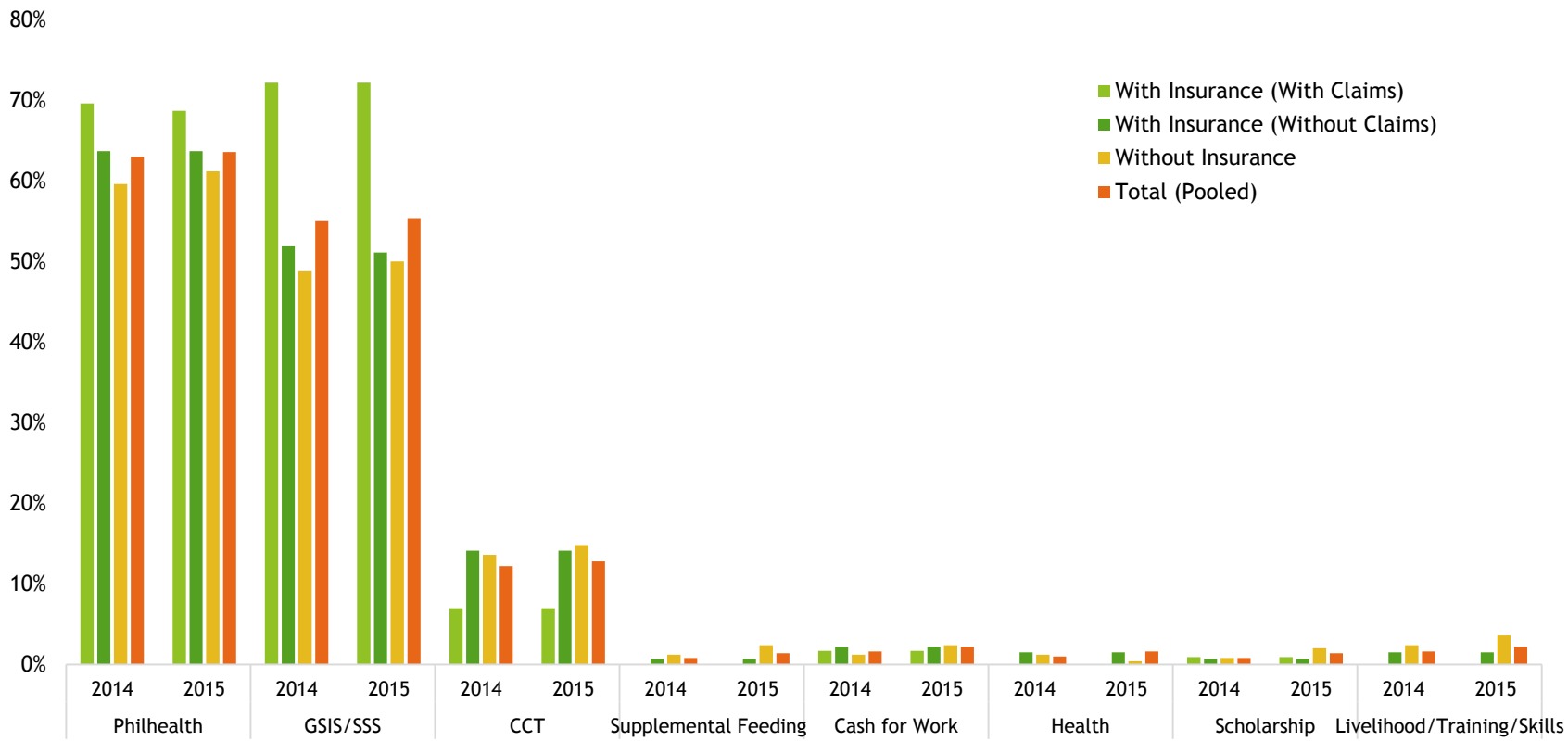

Figure 12. Percentage of households with members that are beneficiaries of government social programs, 2014-2015.

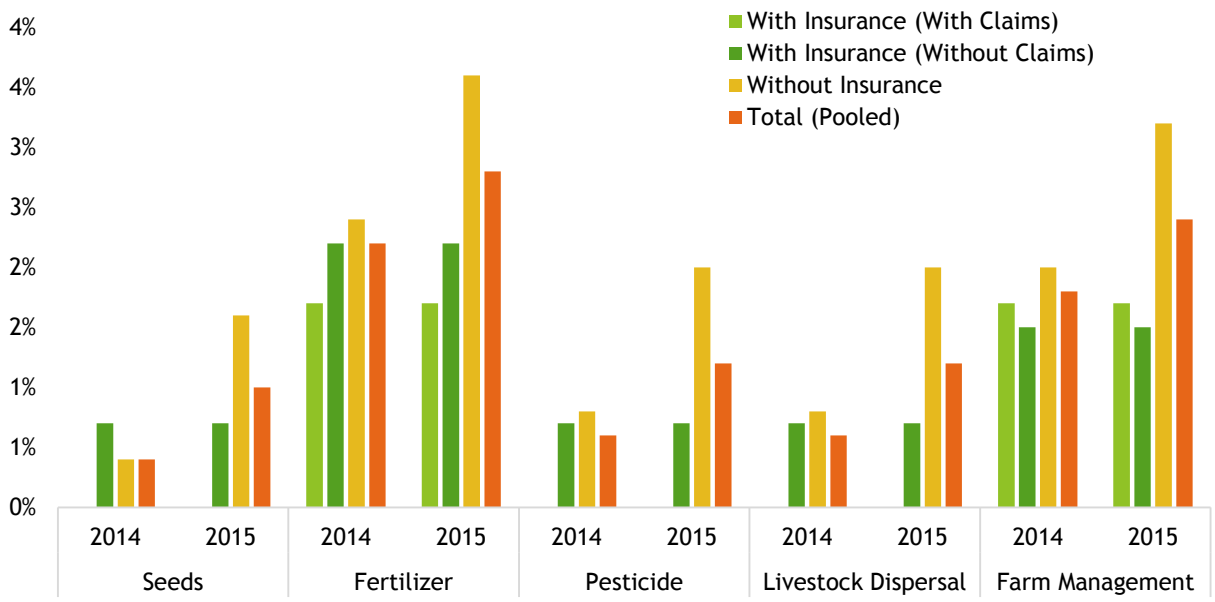

Figure 13. Percentage of households with members that received agricultural supports assistance, 2014-2015.

Table 3. Social Protection Index of farmer respondents by treatment group, 2014-2015.

Treatment Group	oth_agri_prog_index		non_agri_prog_index	
	2014	2015	2014	2015
With Insurance (With Claims)	-0.29	-0.34	-0.03	-0.26
With Insurance (Without Claims)	-0.04	-0.10	-0.02	-0.19
Without Insurance	-0.12	0.14	0.00	-0.01
Total (Pooled)	-0.14	-0.03	-0.01	-0.12

HOUSING, HOUSEHOLD AND PRODUCTIVE ASSETS

In terms of their economic status, around 60% to 75% of the farmer respondents are living in a non-makeshift housing as shown in Figure 14. Majority (96%) of them are living in a single house structure. Most of them are using permanent materials for the outer wall and roofing of their houses. It appears however that there are more insured farmers who have relatively better standard of living than the uninsured farmers. Almost all of the respondents (99%) are non-squatters. The average floor area of housing units is 177 square meters and the housing areas are relatively the same for all treatment groups.

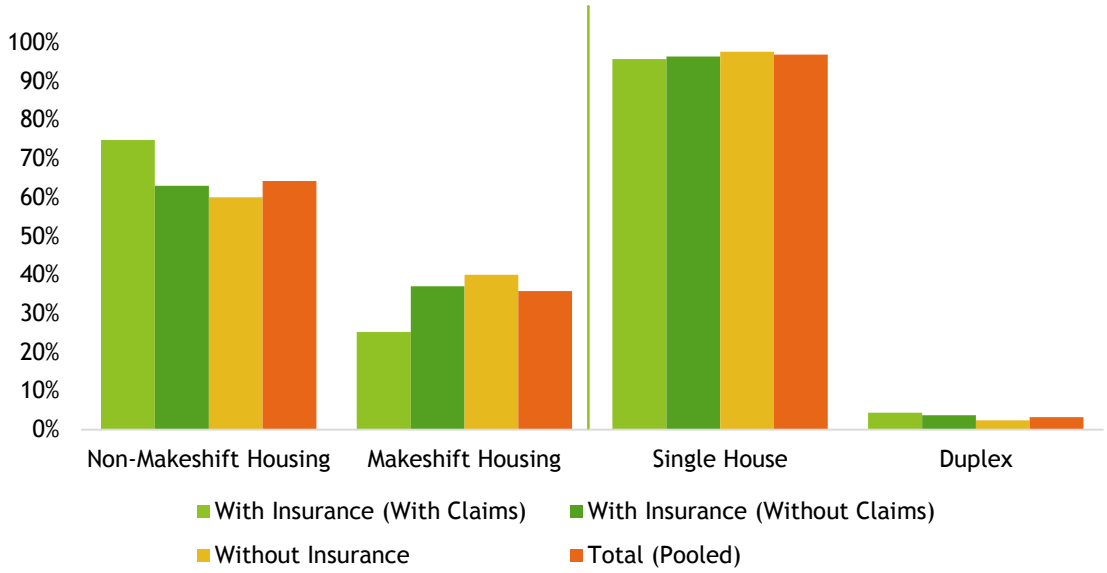

Figure 14. Percent distribution of type of housing and type of building of farmer respondents.

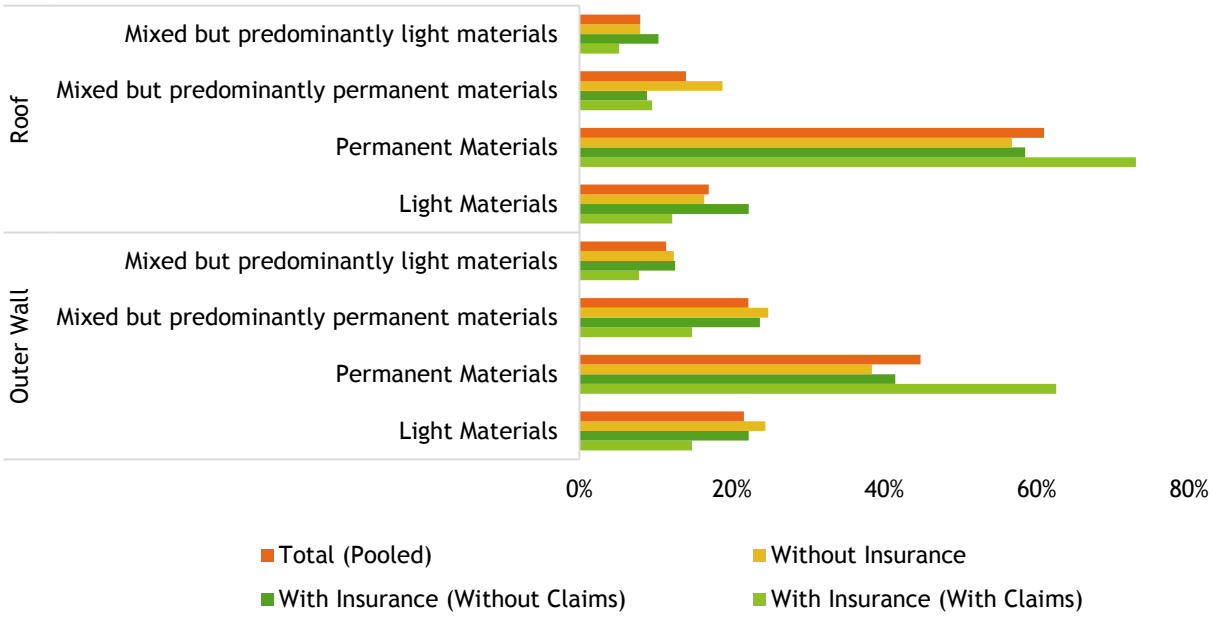

Figure 15. Construction material of outer wall (house) and roof (house) of farmer respondents, by treatment group.

Around 90% of the respondents claimed that they own the house or have owner like position of the house and lot. About 93% to 98% of the farmers said that electricity is available in their houses and 88% to 94% of them also claimed that there water sources for drinking are safe. The average of drinking water source to household is 225 meters. Drinking water source appears to be closer to the houses of insured farmers than the uninsured, which have an average distance of more than 300 meters.

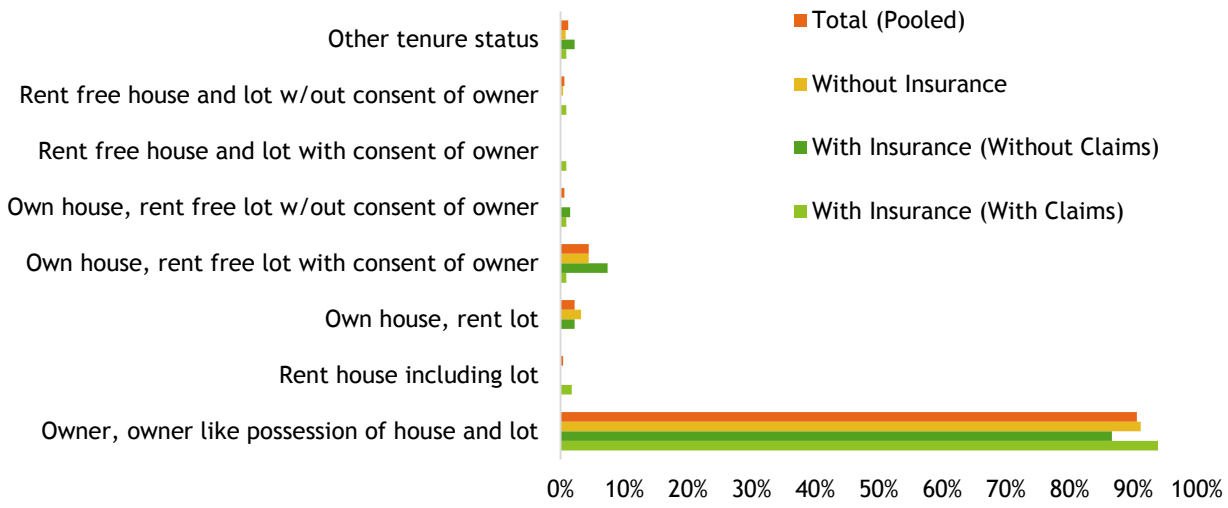

Figure 16. Distribution of tenurial status of house and lot of farmers by treatment group.

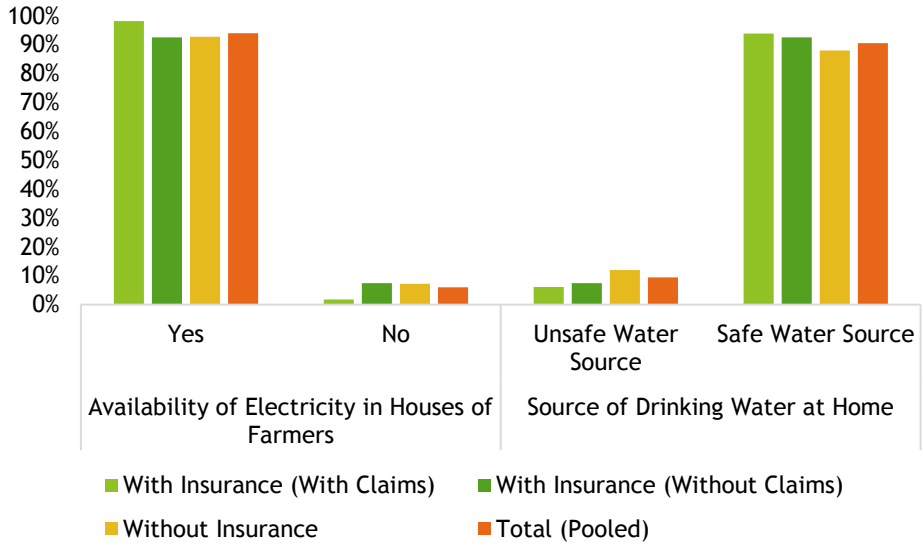

Figure 17. Availability of electricity and source of drinking water of farmer respondents.

In terms of the main source of water supply for drinking, majority of them (30%) are relying from the services of tanker/truck/peddler and another 30% from other sources such rain water. Around 10% to 15% are also using community water system piped into dwelling while less than 10% are using water from springs and dug wells.

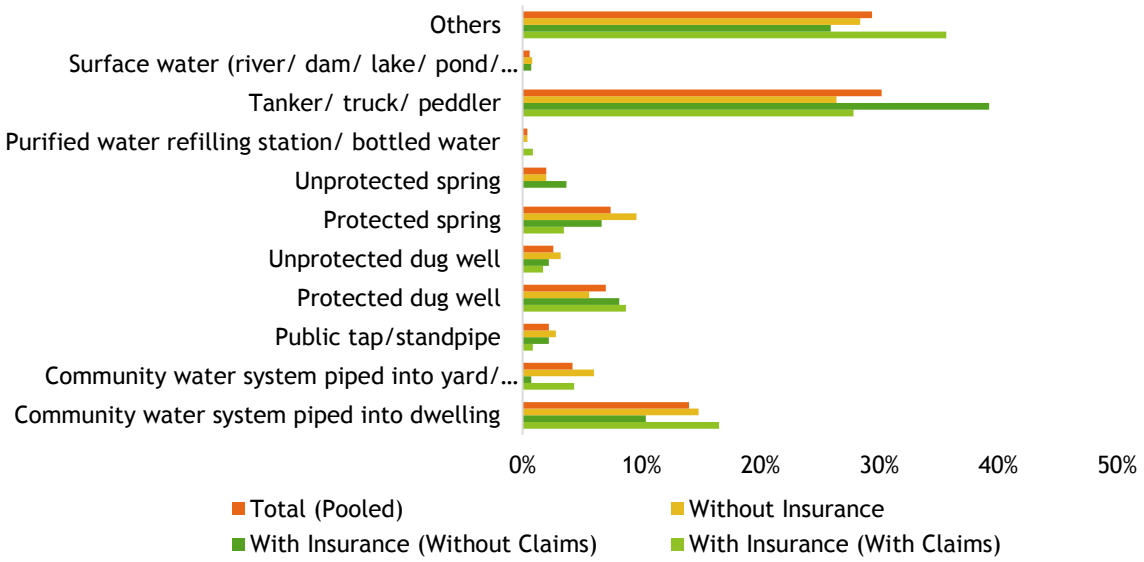

Figure 18. Main source of water for drinking of farmer respondents by treatment group.

In terms of the toilet facility, at least 80% of the farmer respondents said that they have sanitary toilet facility. Majority of them are using owned flush toilet. Pail system is also used by 11% to 16% of the total number of respondents.

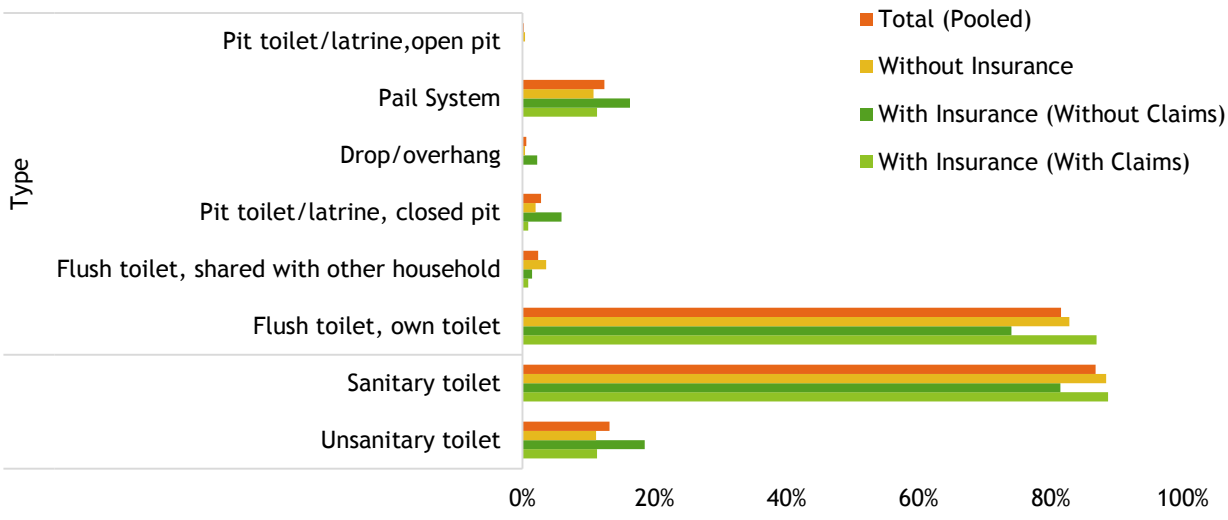

Figure 19. Type of toilet facility in household of farmers.

Generally, there are mixed results in terms of wealth ownership of the banana farmers. For insured farmers with claims, they tend to have more agricultural assets and household consumer durables than livestock ownership as shown by the signs of indices. Insured farmers but without claims on the other hand have more livestock than agricultural assets and consumer durables. Also uninsured farmers tend to have more agricultural assets than consumer durables and livestock.

Table 4. Household Agricultural Assets Index, Household Consumer Durables Index, Household Livestock Ownership Index of farmer respondents, 2014-2015.

	Household Agricultural Assets Index		Household Consumer Durables Index		Household Livestock Ownership Index	
	2014	2015	2014	2015	2014	2015
With Insurance (With Claims)	0.02	0.05	0.82	0.77	-0.22	-0.24
With Insurance (Without Claims)	-0.11	-0.08	-0.46	-0.40	0.20	0.21
Without Insurance	0.05	0.02	-0.12	-0.14	-0.01	0.00

ACCESS TO ECONOMIC AND AGRICULTURAL SERVICES

In terms of the awareness of farmers on agricultural and economic services in the community, it appears that 60% to 90% of the farmers are aware of some economic services from financial institutions (such as credit associations, microfinance, cooperatives, and banks), agriculture and enterprise development/trainings, dealers of feeds, seeds, fertilizers, and pesticides, and agricultural market. There are more insured farmers with claims who are aware of the existence of cooperatives and banks in the community. There are many of them also who know where to find dealers of fertilizers and other agricultural products compared to the other treatment groups.

Although the results show that there are several farmers who are aware of the agricultural services, Figure 21 shows that there is less number of farmers who avail the said services. For instance, less than 20% of them avail services from credit associations and microfinance institutions. Only insured farmers with claims (44% to 48%) show considerable percentage in terms of their availment on cooperative and bank's services. Around 50% of the farmers avail the goods of fertilizer dealers in the community, however, the agricultural produce market is only used by less than 20% of the farmers.

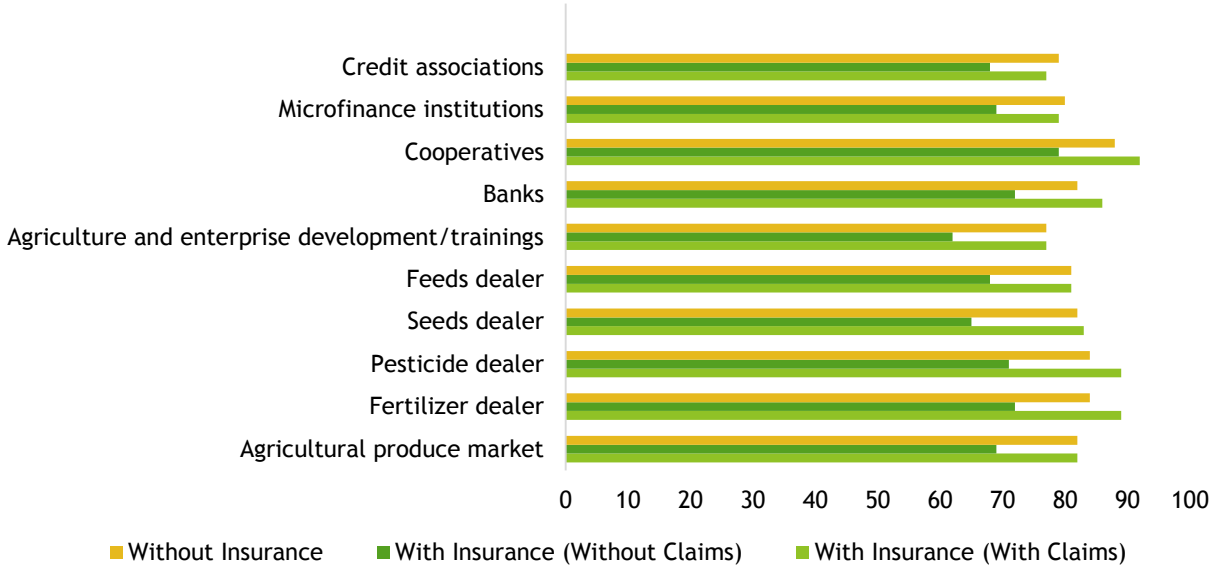

Figure 20. Awareness to economic support and agricultural services.

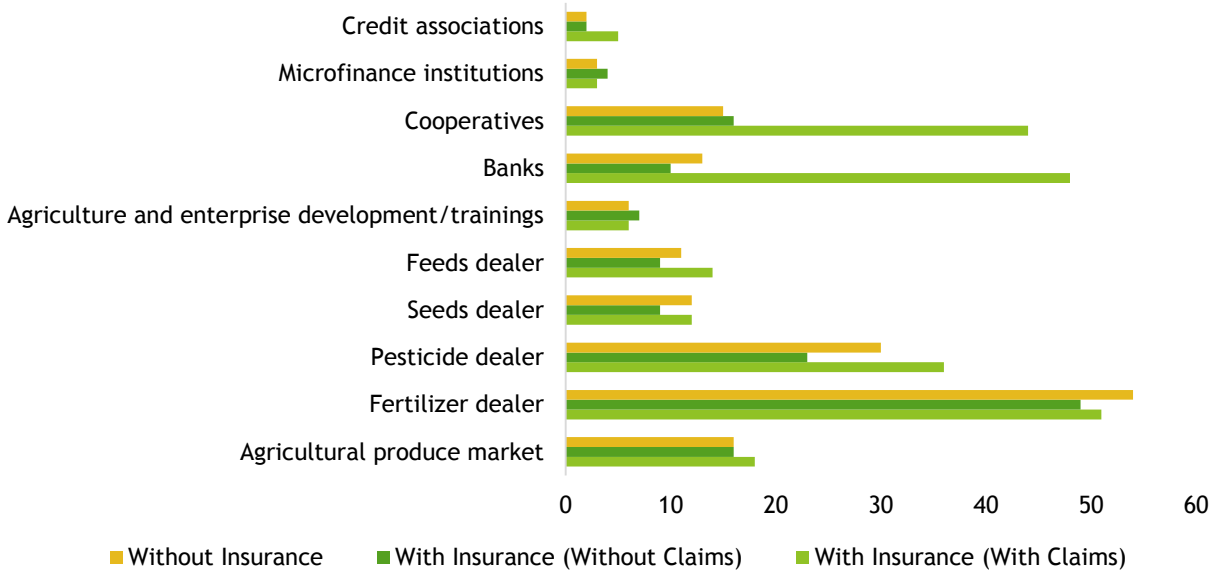

Figure 21. Availment to economic support and agricultural services.

FARM CHARACTERISTICS, PRODUCTION AND FARM INCOME

The total number of parcels cultivated by farmers is around 529 in 2014 and 2015. These parcels exceeded the number of respondents because some farmers owned more than one parcel. The average physical area planted per farmer is around 2.5 hectares for those with insurance and claims, 1.4 hectares for those without claims and 1.5 hectares for farmers without insurance (Figure 22). The total physical area planted to banana is around 861 hectares and the average physical area planted is 1.7 hectare per farmer. The highest average physical area planted is 3.7 hectares (farm size 3) owned by farmers who are insured and have received indemnity. The lowest average physical area planted which is 0.40 hectare is owned by farmers who are not insured.

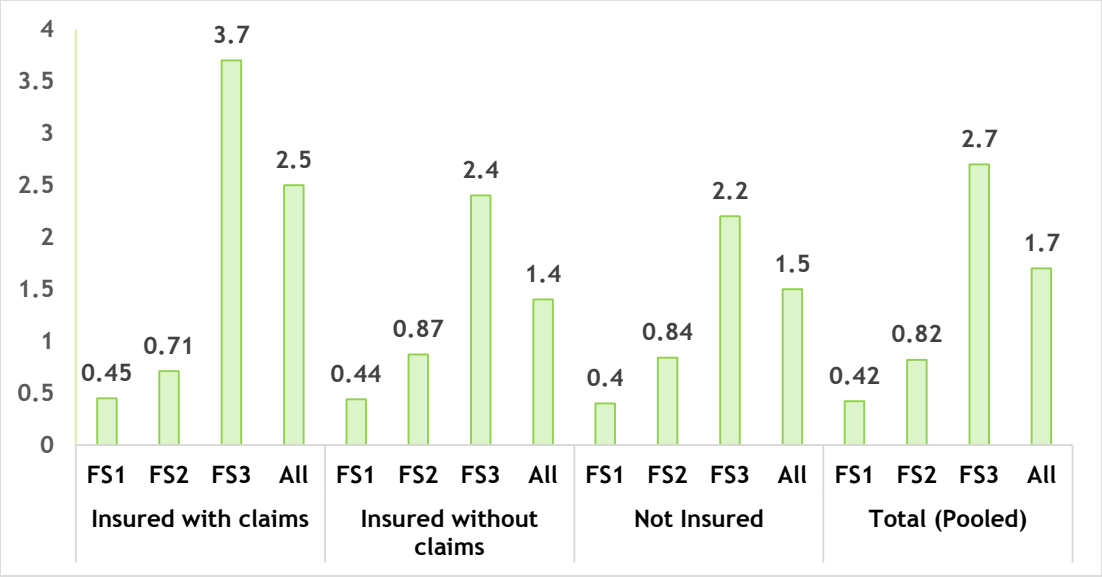

Figure 22. Average Physical Area Planted by Treatment and Farm Size in Region XI, 2015 to 2015.

There are around 445 parcels located within the same barangay, 59 are located in different barangays within the same municipality and only 5 are located in a different municipality within the same province (Annex. Table 62.). Meanwhile, banana farmers in Region XI have employed different cropping systems to maximize their productivity. A total of 432 parcels cultivated by farmers practiced mono-cropping while only 77 are into intercropping in 2014 and 2015. From the farmers who practiced monocropping; 49% do not have insurance, 28% have insurance with claims and 24% do not have claims, both in 2014 and 2015 (Figure 23).

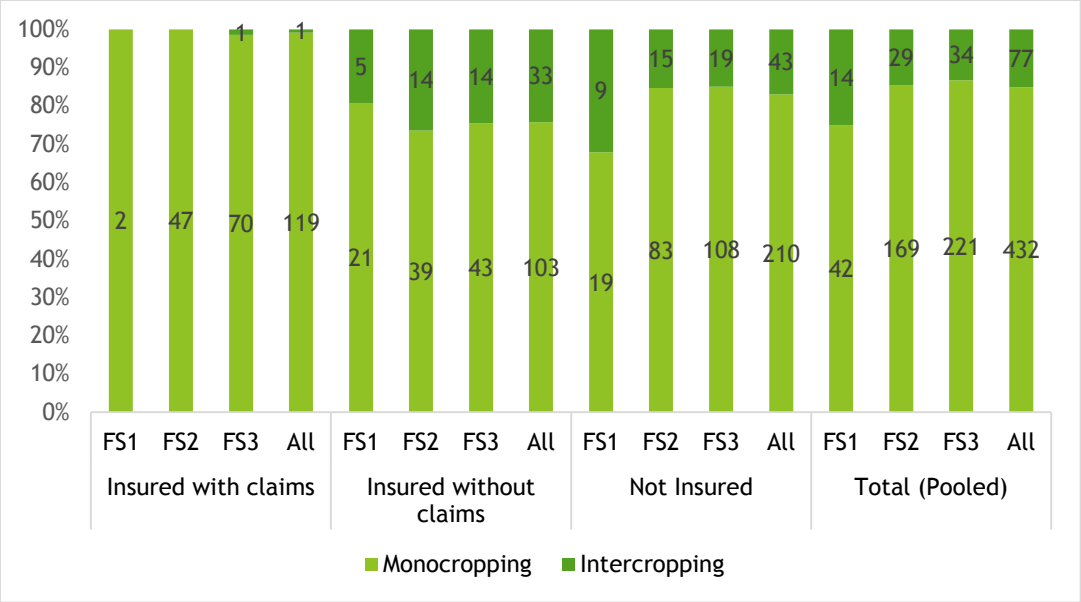

Figure 23. Cropping System used by Farmers by Treatment and Farm Size, 2014-2015.

In terms of farm topography, 71% of the parcels are located in broad plain areas, 17% are situated in river/flood plain and only 13% parcels are located in hilly/rolling areas in 2014 and 2015. For farmers who situated their parcels in broad plain areas, 46% do not have insurance, 27% are insured without claims and 27% have claims in 2014 and 2015. For those who are located in river/flood plain, 62% do not have insurance, 26% are insured with claims and 12% don't have claims in 2014 and 2015. Lastly in hilly/rolling places, 55% do not have insurance, 44% are insured without claims and only 2% have claims in 2014 and 2015 (Figure 24).

In terms of irrigation system, 95% of the farmers practiced rainfed irrigation system and only a few have practiced other systems like: national (2%), communal (2%), individual (0.19%) and other irrigation system (1%). From the farmers who practiced rainfed irrigation systems, 48% do not have insurance, 25% are insured without claims and 22% have claims. In the tenurial status of farmers' parcels, 80% are fully owned, 9% are owner like possession on other than CLT/CLOA, 6% are tenanted, 2% are rented/leased and also 2% are held under certificate of land ownership/CLOA. For parcels who are fully owned, 51% do not have insurance, 28% have insurance without claims and 21% have claims.

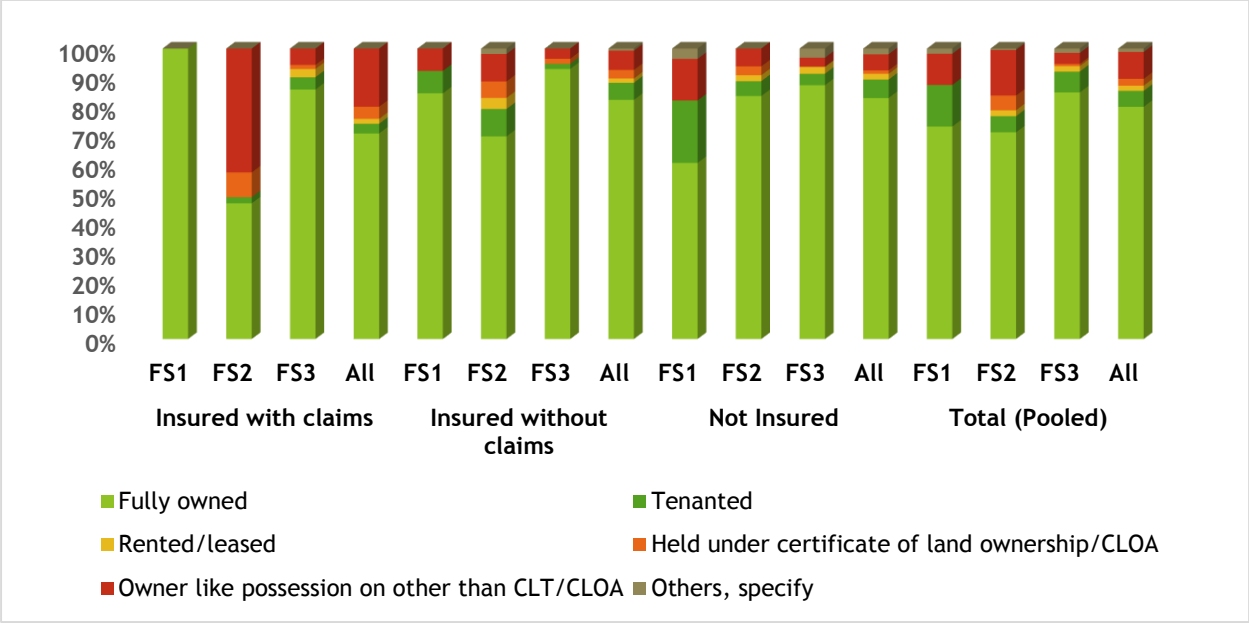

Figure 24. Percentage distribution of Farmer's Tenurial Status by Treatment and Farm Size, 2014 and 2015.

Figure 25 presents the distribution of banana varieties planted in 2014 and 2015. 75% of the crops planted are of Cavendish varieties for export, 15% are Saba varieties for domestic consumption and only 10% are planted to Latundan. From the farmers who planted Cavendish varieties, 47.55% are not insured, 31.01% are insured with claims and 21.45% do not have claims.

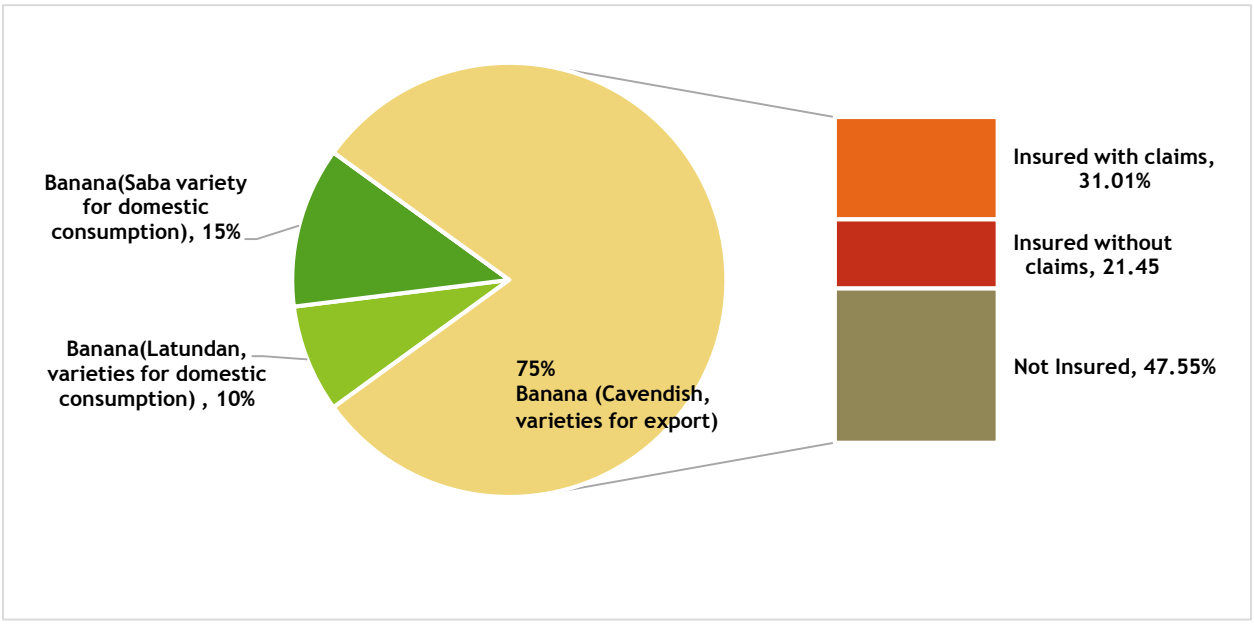

Figure 25. Distribution of banana varieties planted in 2014 and 2015.

Figure 26 presents the detailed distribution of parcels covered and not covered by insurance. 22% of parcels owned by farmers without claims (insured) are not covered with insurance while only 2.56% are not covered for farmers with insurance and claims. Some parcels of insured farmers are not yet covered with insurance and this can be attributed to their multi-cropping practice because only certain crops are insured and not all that are planted.

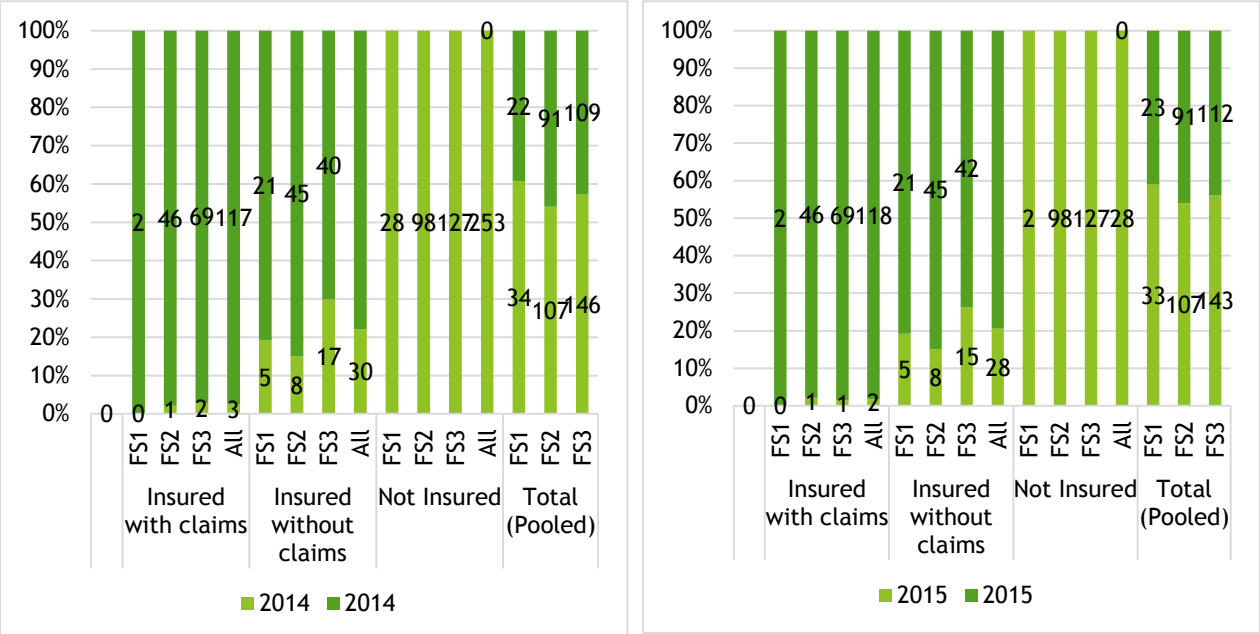

Figure 26. Distribution of Parcels Covered and Not Covered by Insurance in 2014 and 2015.

Figure 27 presents the total physical area covered by crop insurance per farmer insured in 2014 and 2015. In 2014, a total of 415.9 hectares of area are covered with insurance and it has slightly increased to 419.4 in 2015. Majority of the farmers with insurance and claims have covered their physical area planted to around 288 and 289.8 hectares in 2014 and 2015, respectively.

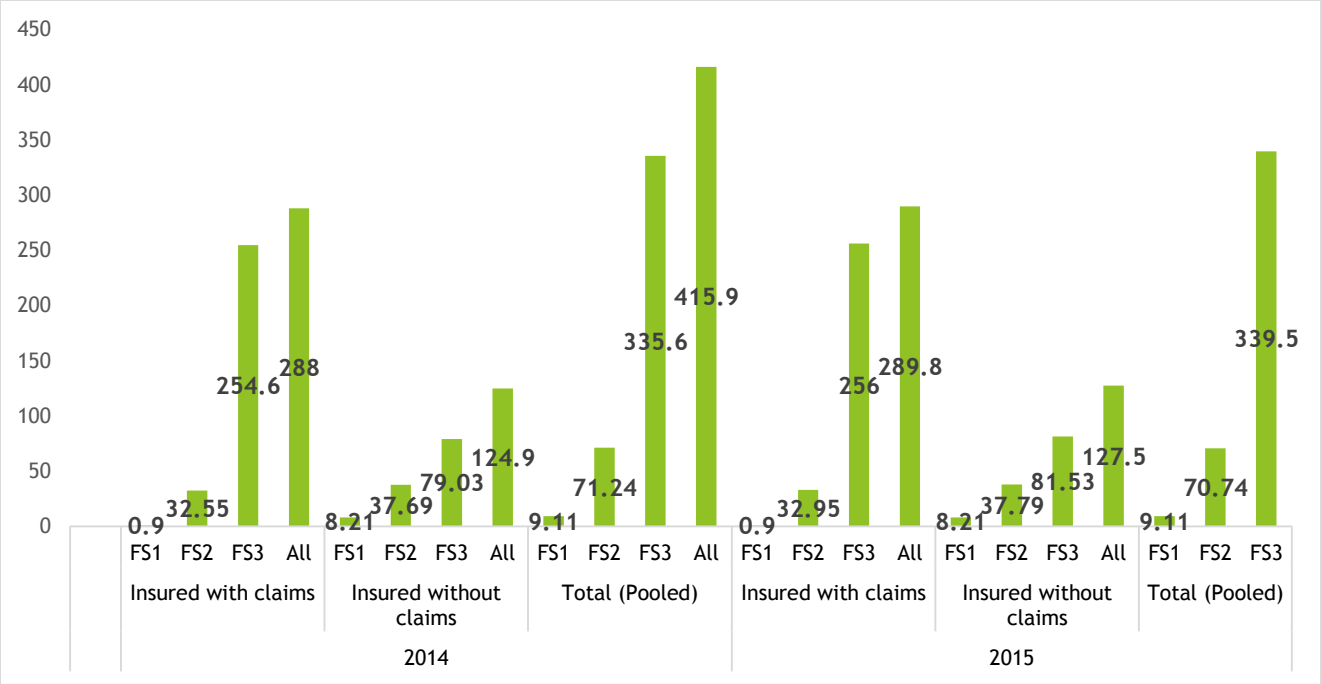

Figure 27. Total Physical Area Covered by Crop Insurance and respondent type, 2014 and 2015.

The total number of farmers with agricultural insurance in at least one farm parcel is around 219 in 2014 and 2015 (Figure 28). Farmers with insurance and claims have higher number of parcels covered with 112 compared to 105 of farmers without claims. Farmers with claims have the higher probability to renew their insurance cover compared to farmers who don't have claims. The average amount of insurance cover of parcels with farm size below 0.5 hectare is PhP 78, 701, PhP 171, 330 for farm size greater than 0.5 to 1 hectare and PhP 499, 719 for farms greater than 3 hectares (Figure 29) This is consistent that the higher the farm size, the higher is the insurance coverage.

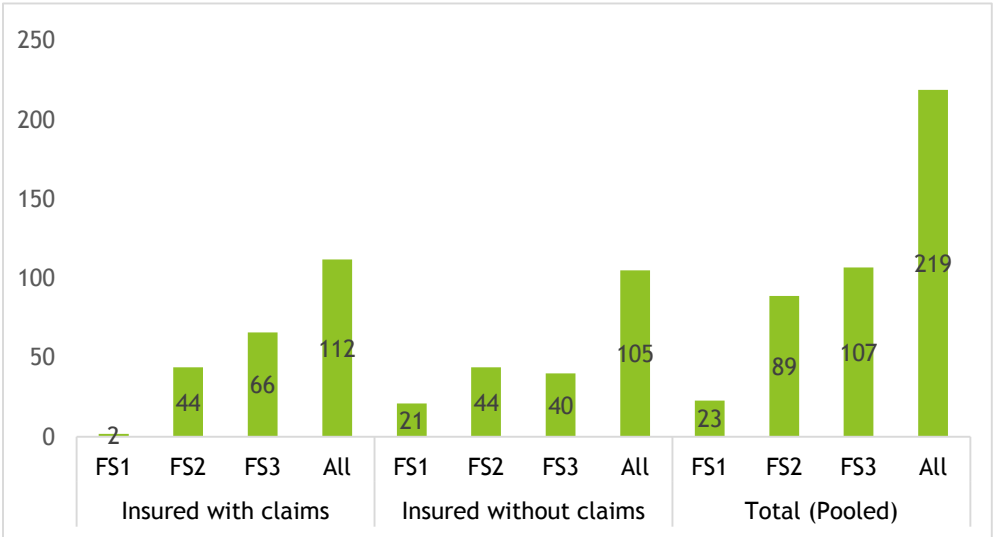

Figure 28. Total number of Farmers with Agricultural Insurance in at least one farm parcel by farm size and respondent type, 2014 and 2015.

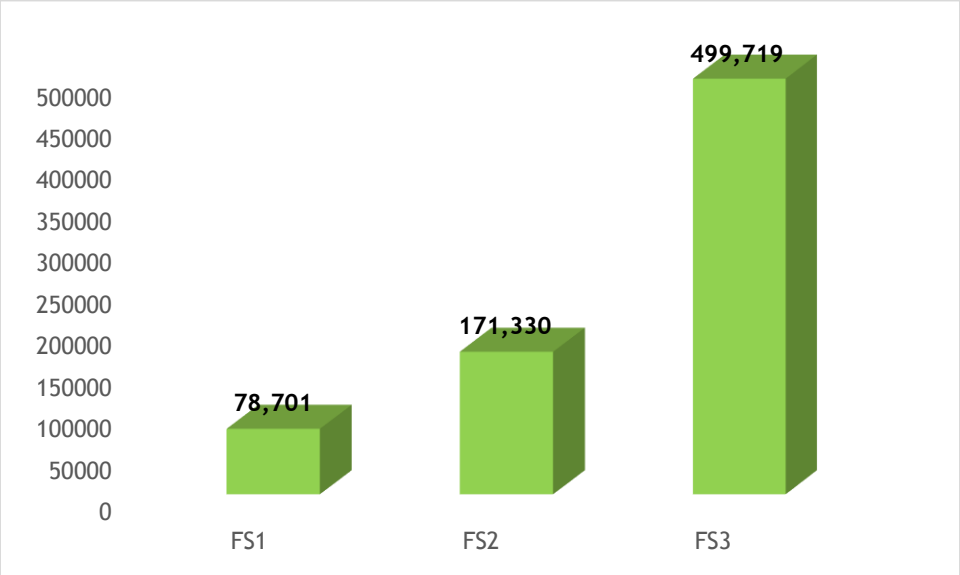

Figure 29. Average amount of insurance cover per farmer, by farm size, 2014 and 2015.

Majority of the farmers do not know what type of insurance they are covered. Around 36% and 41% are not aware of it in 2014 and 2015, respectively (Figure 30). Farmers are not well-informed on the details of their insurance. Some farmers just recalled that they have signed an agreement but it did not state who sponsored them for that insurance. The PCIC Region XI should intensify their IEC (Information, Education and Communication) campaigns in the different province, municipalities and barangays. To highly implement this, they need to hire more staff that would be present in the field to do seminars and one-to-one orientation with the farmers

Among the farmers who are insured, 35% and 29% are sponsored by DA Sikat Saka in 2014 and 2015, respectively. Around 10% (2015) to 11% (2014) are funded by the LGU (Figure 30). The RBSA supported 10% to 12% of the farmers insurance, in 2014 and 2015, respectively. Only 7% to 8% of the farmers' insurance are financed by DAR. There were 27 to 64 farmers who received indemnity claims in 2015 and 2014, respectively (Figure 31). These farmers have received an average indemnity claims of PhP 51,882 in 2014 and PhP 23,126 in 2015 (Figure 32). Majority of farmers responded that the cause of loss connected to indemnity is due to typhoon/Flood and only a few attributed to drought/not enough water (Figure 33).

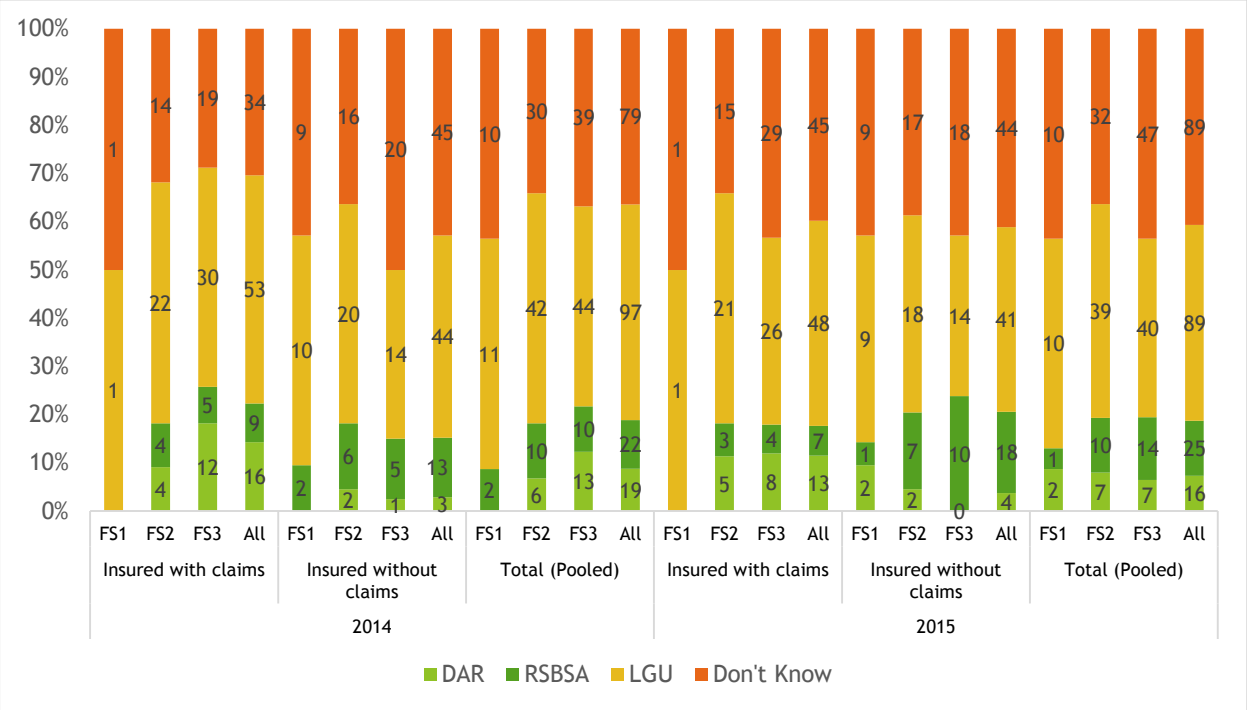

Figure 30. Type of insurance by farm size and respondent type, 2014 and 2015.

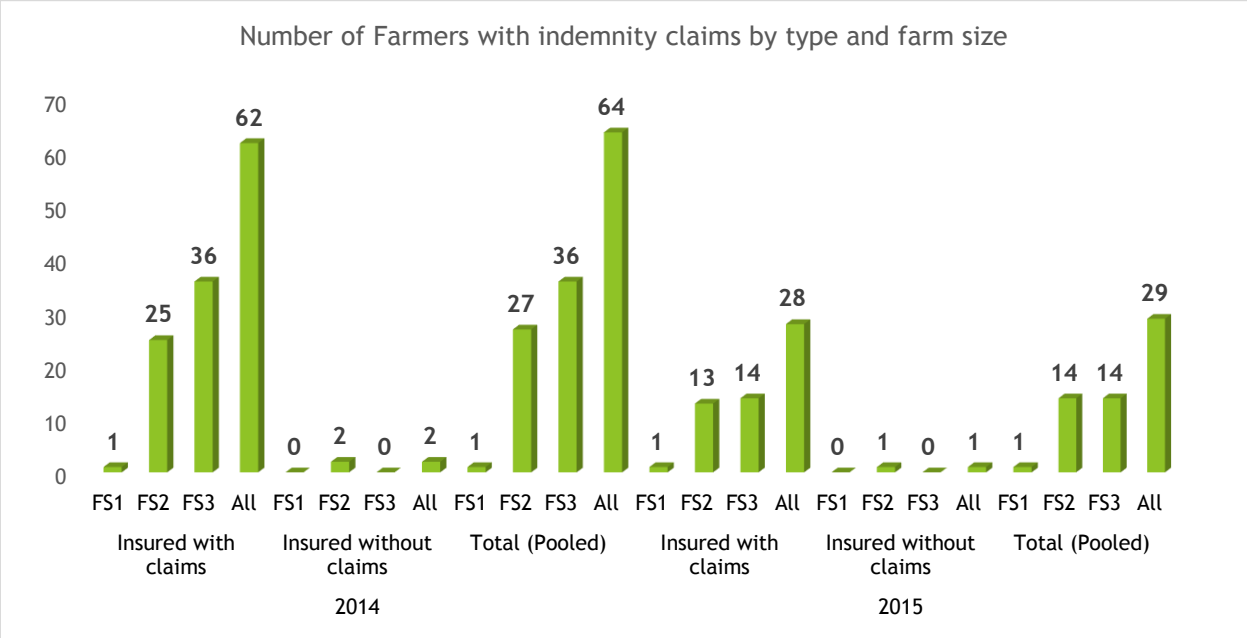

Figure 31. Number of farmers with indemnity claims by type and farm size, 2014 and 2015.

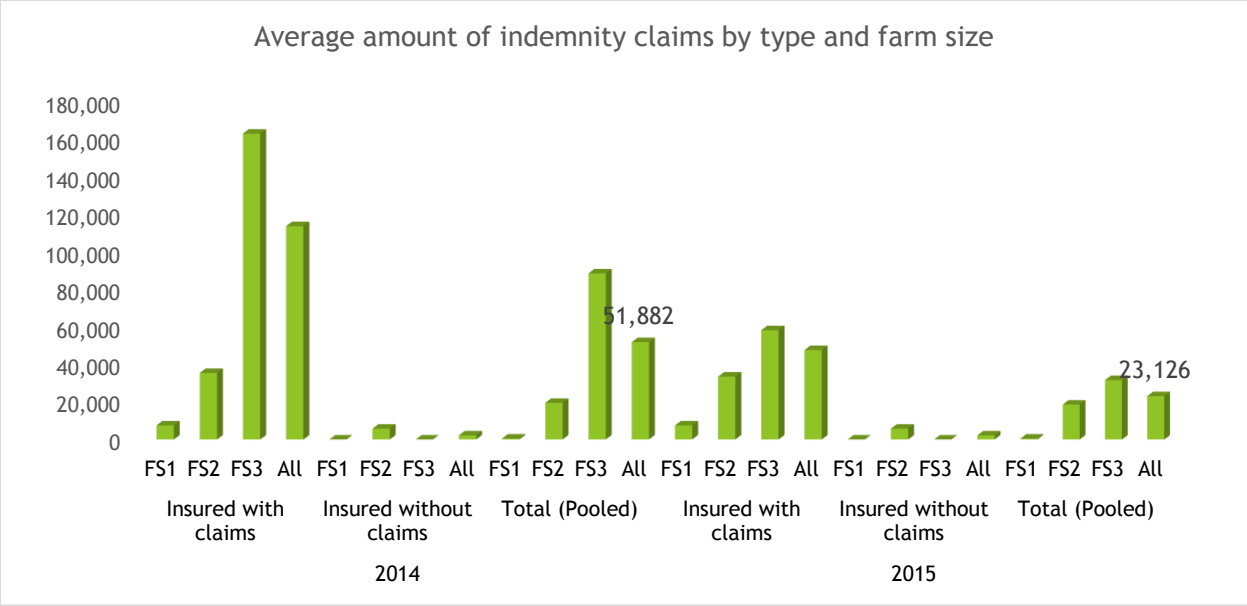

Figure 32. Total number of farmers with indemnity claims and average amount of indemnity claims, 2014 and 2015.

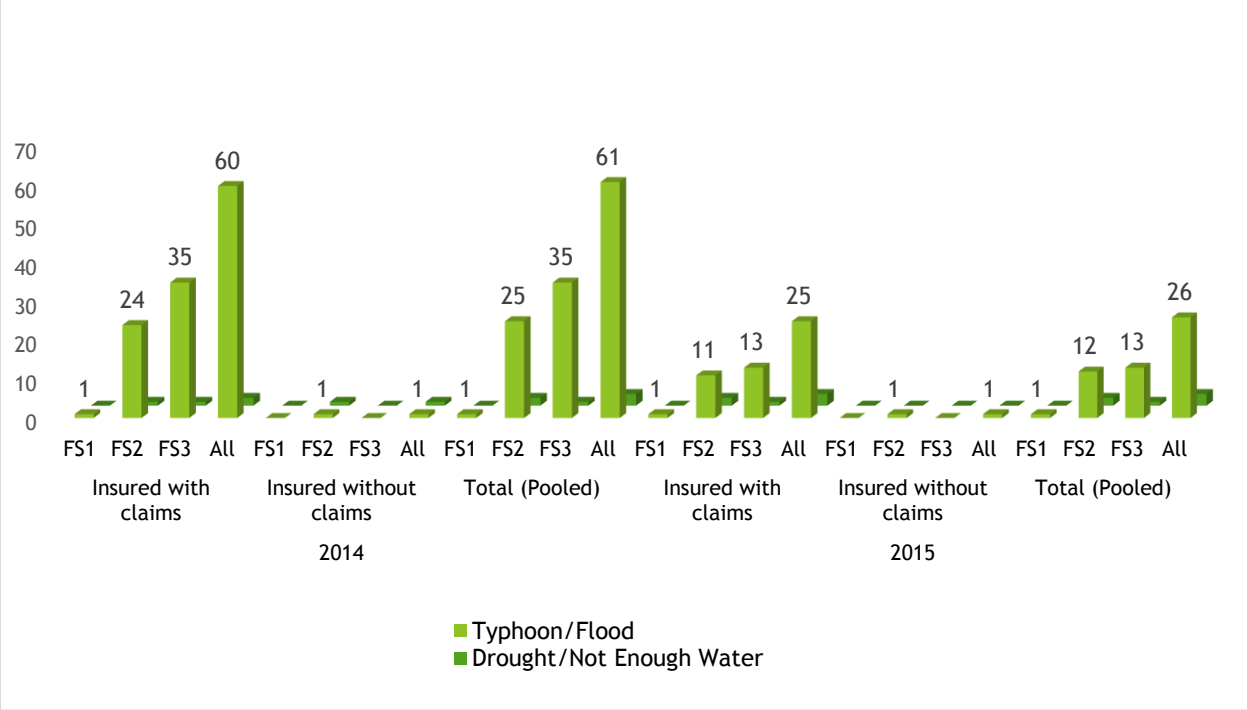

Figure 33. Cause of Loss Connected to Indemnity by Farmer and Respondent Type, 2014 and 2015.

In 2014, the average amount of indemnity received by insured farmers by type of insurance is around PhP 120,738 for DAR, PhP 20,637 for LGU and PhP 15,217 for RBSA beneficiaries. The amount of claims have decreased in 2015, DA Sikat Saka beneficiaries only

received around PhP 45, 865 and DAR claimants received an average of PhP 113,960. On the other hand, other farmers received an average of PhP 15,909 for LGU beneficiaries and only PhP 6,915 from RBSA (Figure 34). In Figure 2, 41% and 39% of farmers who did not receive indemnity but experienced crop damage have a farm sizes 2 and 3, respectively.

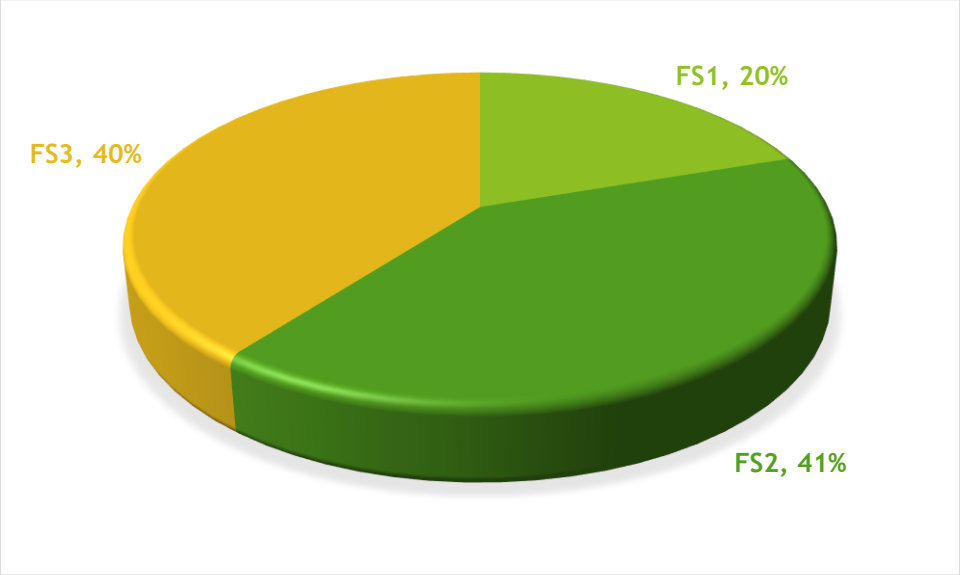

Figure 34. Percent distribution of farmers who experienced crop damaged but did not receive indemnity claims, by farm size.

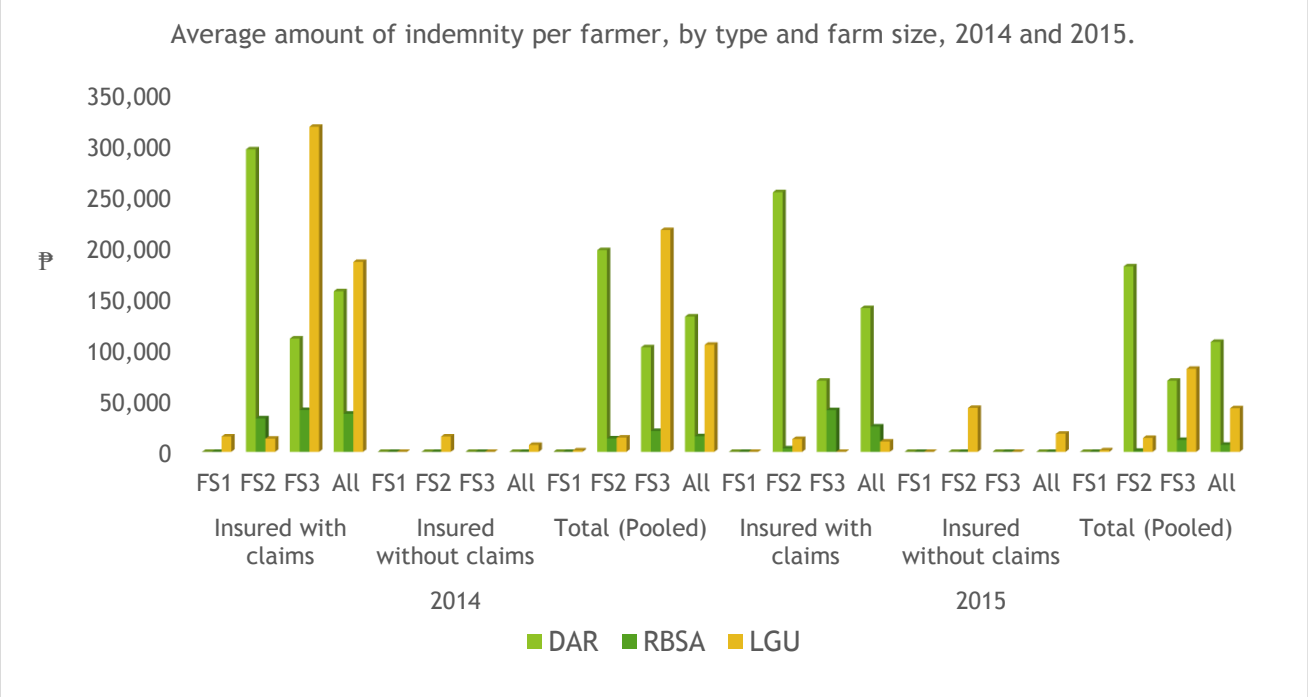

Figure 35. Average amount of indemnity per farmer, by type and farm size, 2014 and 2015.

The main reason why farmers did not received claims despite being insured is that they don't know they are insured. This is evident in Figure 36, in which 72 farmers answered other reasons (not stated in the questionnaire), because they are not aware that they could claim it. This is consistent to the results in Figure 30 in which majority of the farmers do not know what type of insurance they are covered and around 36% and 41% are not aware of it in 2014 and 2015, respectively.

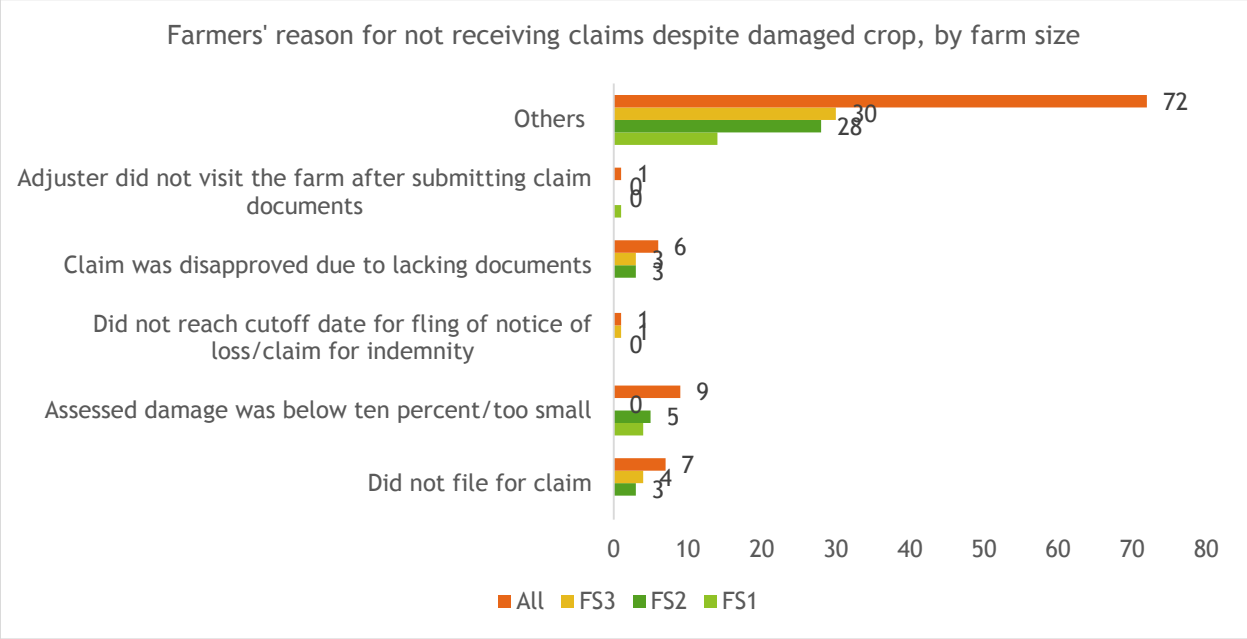

Figure 36. Farmer's reason for not receiving claims despite having damaged crop, by farm size.

The average total production cost per farmer respondent in 2014 is around PhP 212,931 (Figure 37). Specifically, the average itemized cost per item is around PhP 11,727 for seeds, Php 93,485 for fertilizers, PhP 8,804 for pesticides, PhP 82,056 for total cost of labor, only PhP 1045 for cost of machine/animal rental, PhP 11,384 for aggregate marketing cost and PhP 4,429 for other production cost. Among the following costs of production, it is evident that the cost of fertilizers, which comprised 44% the total costs incurred, has the largest share of the cost. In 2015, the average total cost of production is around PhP 212,100. Only aggregate marketing costs have decreased by only 11% (Figure 38). The average gross income per farmer is PhP 1,231,973 in 2014 and it has increase by 74% in 2015 to around PhP 2,148,939. Farmer's average net income is around PhP 1,001,111 in 2014 and PhP 1,873,409 in 2015 (87% increase from the previous year). The total harvest per area planted is approximately 1,999 boxes in 2014 and 2,465 in 2015. The average selling price per box, is around 365 to 372 in 2014 and 2015, respectively (Figure 39).

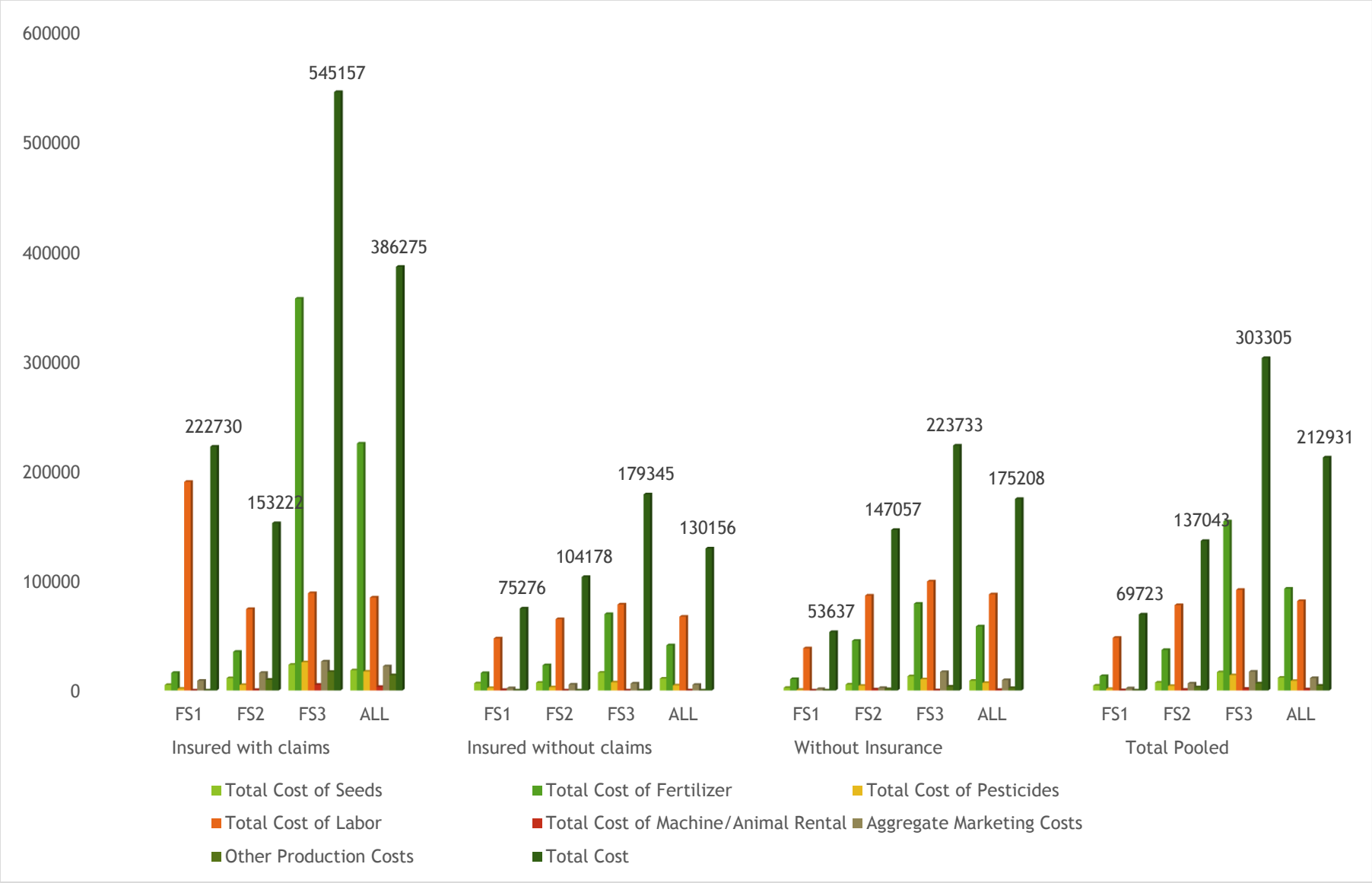

Figure 37. Average cost of production per farmer, by type and farm size, 2014.

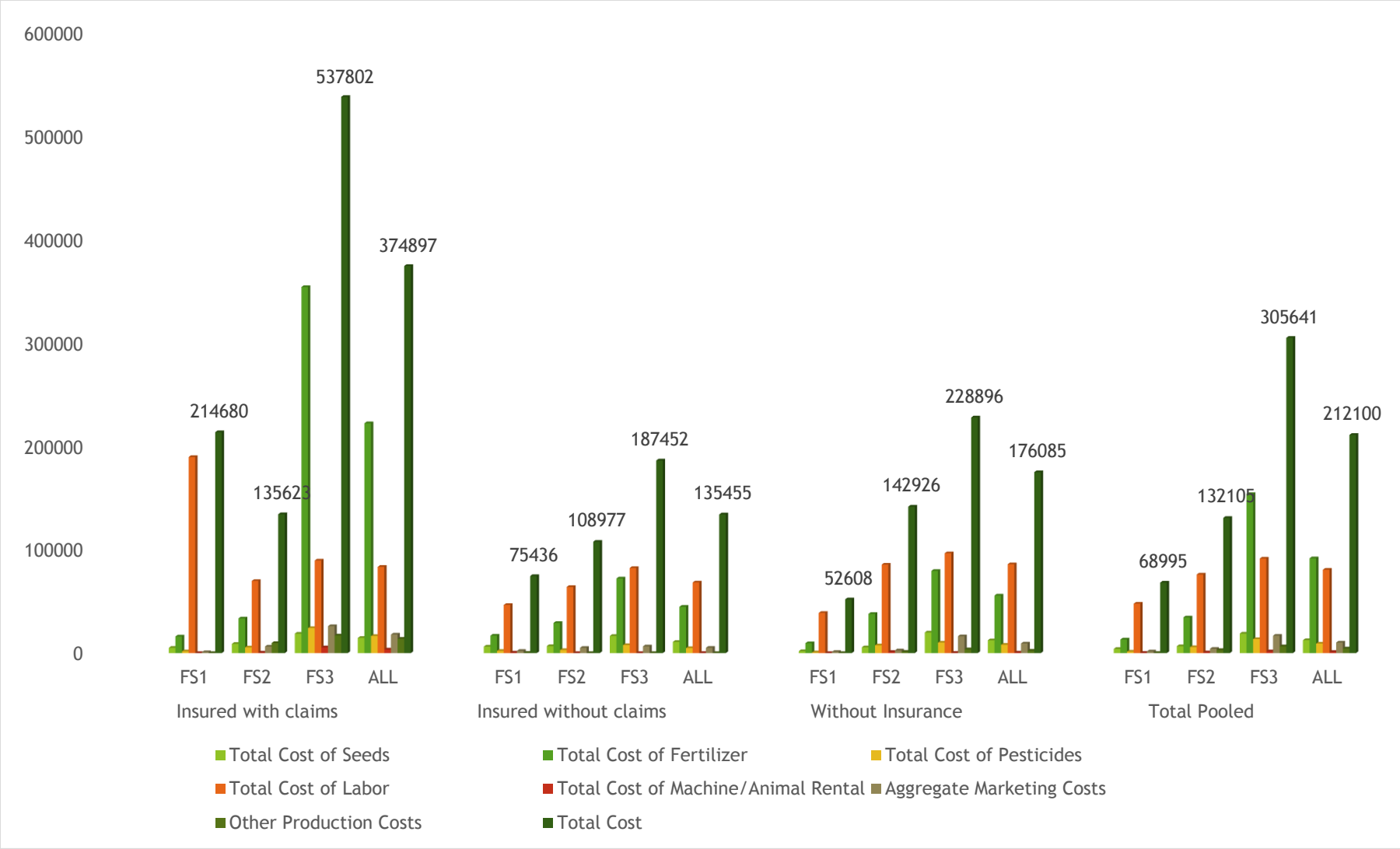

Figure 38. Average cost of production per farmer, by type and farm size, 2015.

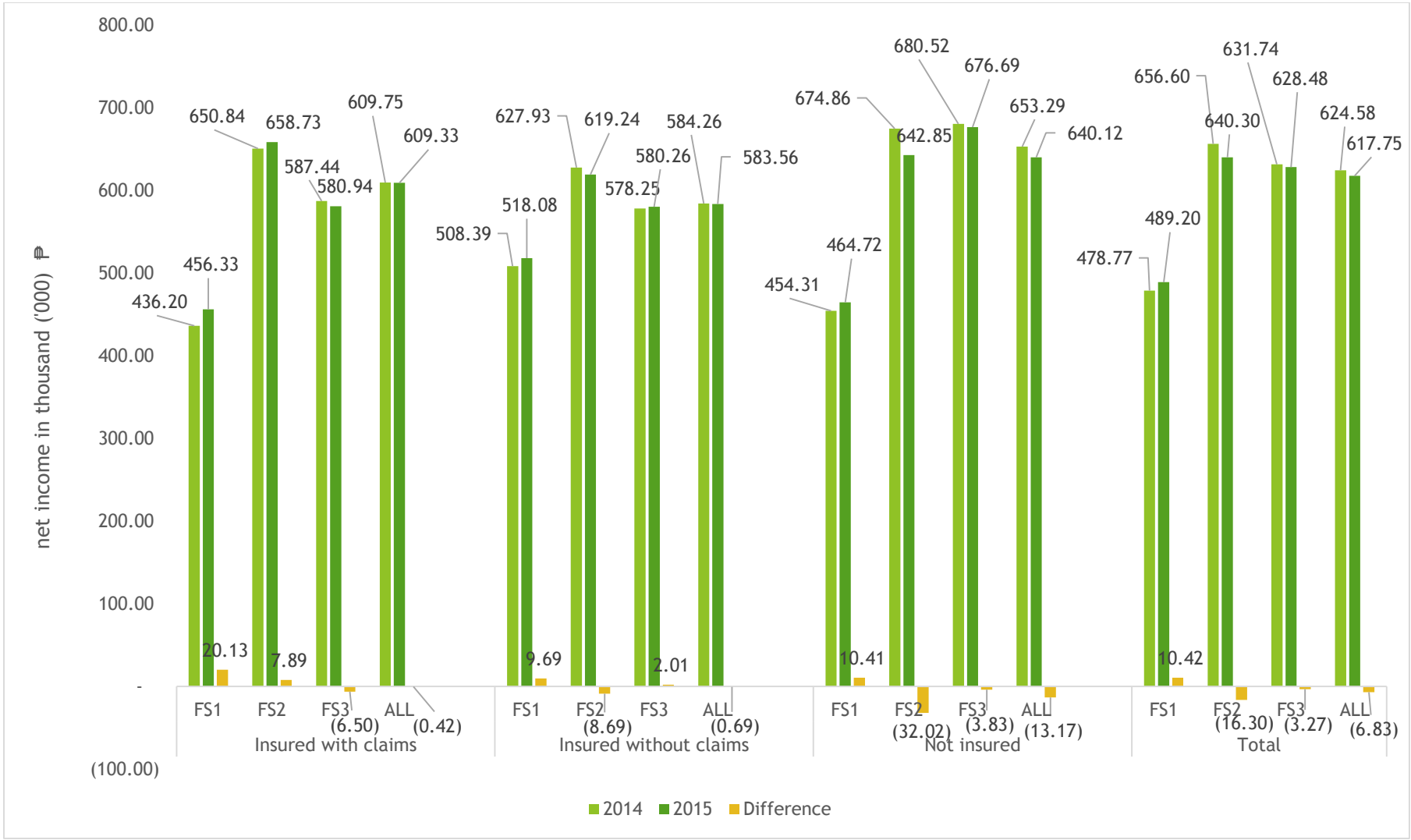

Figure 39. Average net income and difference from 2014 and 2015 per farmer, by type and farm size.

CREDIT AVAILMENT PRACTICES

Banana corporations and growers (farmer/farmer organization) signed tripartite agreements with the Land Bank of the Philippines for the provision of loans. Loans were used to rehabilitate banana plantations after Typhoon Pablo damaged those last 2012. Banana growers were able to avail of PhP 430,000 per hectare. Their loan carries a 6 percent interest fixed for 10 years, and provides a two-year moratorium on payment of principal and interest. There agreements were subjected to the loan repayment protection plan of PCIC.

Table 5 shows the distribution of banana farmers' availed agricultural loans in 2014 and 2015. In general, it shows that 30% farmers with insurance has availed loans in 2014 compared to only 8% of those who do not have insurance. It was observed that availment of loans declined to 2% for both with insurance and without insurance in 2015.

Table 5.Distribution of Banana Farmers in Region XI (Davao) that Availed of Agricultural Loans, Treatment Group, 2014 and 2015.

Items	2014		2015	
With Insurance (With Claims)	Yes	No	Yes	No
FS1	0	2	0	2
FS2	25	20	0	45
FS3	37	31	1	67
All	62	53	1	114
With Insurance (Without Claims)				
FS1	1	25	1	25
FS2	5	47	1	51
FS3	6	51	3	54
All	12	123	5	130
Without Insurance				
FS1	0	28	0	28
FS2	5	92	2	95
FS3	16	109	4	121
All	21	229	6	244
Total (Pooled)				
FS1	1	55	1	55
FS2	35	159	3	191
FS3	59	191	8	242
All	95	405	12	488

Table 6 shows the distribution of farmers by type of creditors. It shows that banks are predominantly the source of credit among banana farmers. Availment of credit to banks is higher with those with insurance compared to those without insurance. Formal credit requires insurance as "surrogate collateral" in loan availment. Among those without insurance, it was noted that these are individual farmers with land tittle as collateral. Cooperatives are the second sources of credit among banana farmers. Generally, banana farmers are into formal sources of credit. Informal sources are usually availed for non-agricultural purposes (Table 7).

Table 6. Percent Distribution of Banana Farmers in Region XI (Davao), by Type of Creditor and Treatment Group, 2014 and 2015.

Items	2014			2015			
	Cooperatives	Banks	Private moneylenders (institutions)	Cooperatives	Banks	Private moneylenders (institutions)	Relatives /friends
With Insurance (With Claims)							
FS1	0	0	0	0	0	0	0
FS2	11	14	0	0	1	0	0
FS3	2	36	0	1	4	0	0
All	13	50	0	1	5	0	0
With Insurance (Without Claims)							
FS1	0	2	0	0	2	0	0
FS2	0	5	1	0	1	0	2
FS3	3	4	2	2	1	2	0
All	3	11	3	2	4	2	2
Without Insurance							
FS1	0	0	0	0	1	0	0
FS2	1	4	2	0	2	1	0
FS3	6	9	5	4	1	0	0
All	7	13	7	4	4	1	0
Total (Pooled)							
FS1	0	2	0	0	3	0	0
FS2	12	23	3	0	4	1	2
FS3	11	49	7	7	6	2	0
All	23	74	10	7	13	3	2

Table 7. Percent Distribution of Loans By Type of Creditor (Formal/ Informal), Type of Crop, Region and Treatment Group, 2014 and 2015

Items	2014		2015	
With Insurance (With Claims)	Formal	Informal	Formal	Informal
FS1	0	0	0	0
FS2	25	0	1	0
FS3	38	0	5	0
All	63	0	6	0
With Insurance (Without Claims)				
FS1	2	0	2	0
FS2	5	1	1	2
FS3	7	2	3	2
All	14	3	6	4
Without Insurance				
FS1	0	0	1	0
FS2	5	2	2	1
FS3	15	5	5	0
All	20	7	8	1
Total (Pooled)				
FS1	2	0	3	0
FS2	35	3	4	3
FS3	60	7	13	2
All	97	10	20	5

In terms of the amount of loans availed, in general it shows that, the larger the farm the higher amount of loan availed. On the average interest rate in the region is estimated to be around 8%. Availed amount of loans in the formal sector is six times higher compared to those availed in the informal sector.

In 2013, banana corporations and growers (farmer/farmer organization) signed tripartite agreements with the Land Bank of the Philippines for the provision of loans. Loans were used to rehabilitate banana plantations after Typhoon Pablo damaged those last 2012. Banana growers were able to avail of PhP 430,000 per hectare. Their loan carries a 6 percent interest fixed for 10 years, and provides a two-year moratorium on payment of principal and interest. There agreements were subjected to the loan repayment protection plan of PCIC.

Table 8. Average Loan Amount, Loan Proceeds and Interest Amount By Type of Creditor (Formal/ Informal), Type of Crop, Region and Treatment Group, 2014.

Items	Formal			Informal		
	Amount of loan	Loan Proceeds	Interest	Amount of loan	Loan Proceeds	Interest
With Insurance (With Claims)						
FS1	-	-	-	-	-	-
FS2	239986	101978	12	-	-	-
FS3	1265203	872293	6.2	-	-	-
All	858371	566613	8.5	-	-	-
With Insurance (Without Claims)						
FS1	5000	4850	3	-	-	-
FS2	150800	54960	6.2	168000	117000	4
FS3	261000	93143	5.6	10000	9000	10
All	185071	66893	5.4	62667	45000	8
Without Insurance						
FS1	-	-	-	-	-	-
FS2	230000	139000	9.4	30000	950	1
FS3	279333	253813	8.3	166000	153500	11
All	267000	225110	8.6	127143	109914	8.1
Total (Pooled)						
FS1	5000	4850	3	-	-	-
FS2	225819	100550	11	76000	39633	2
FS3	901579	626772	6.7	121429	112214	11
All	639262	424075	8.1	107800	90440	8.1

Table 9. Average Loan Amount, Loan Proceeds and Interest Amount By Type of Creditor (Formal/ Informal), Type of Crop, Region and Treatment Group, 2015.

Items	Formal			Informal		
	Amount of Loan	Loan Proceeds	Interest	Amount of Loan	Loan Proceeds	Interest
With Insurance (With Claims)						
FS1	-	-	-	-	-	-
FS2	320000	0	4	-	-	-
FS3	1463400	1204467	6.2	-	-	-
All	1272833	1003722	5.8	-	-	-
With Insurance (Without Claims)						
FS1	5000	4850	3	-	-	-
FS2	50000	48500	3	10000	1000	6.5
FS3	20000	12667	2	10000	9000	10
All	20000	16033	2.5	10000	5000	8.3
Without Insurance						
FS1	250000	250000	20	-	-	-
FS2	25000	0	3	15000	15000	14
FS3	250000	242800	8.4	-	-	-
All	193750	183000	8.5	15000	15000	14

Total (Pooled)						
FS1	86667	86567	8.7	-	-	-
FS2	105000	12125	3.3	11667	5667	9
FS3	663615	559564	6.1	10000	9000	10
All	465350	379127	5.9	11000	7000	9.4

INCOME AND OTHER RECEIPTS

In 2014, 96% of farmers' income are sourced from their banana production and it has decreased to 84% in 2015 (Figure 40 & 41). The proportional decrease of the income derived from banana is due to other relevant sources essential to their daily living expenses. Majority of the farmers seek other sources of income so they would not be totally affected if banana production will fail (less than expected revenues). Moreover, these other sources still has a minimal contribution to the income of banana farmers and these are: farm wage (3.2% & 4%), other crops (1.3% & 0%), non-agricultural commodities (1.3% & 2.5%), non-farm entrepreneurial activities (1.1% & 1.2%) , non-farm wage (0.30% & 5.3%) , remittance (0.37% & 0.61%), government transfers (0.038% & 0.082%) and other farm income (0% & 2.4%), in 2014 and 2015, respectively.

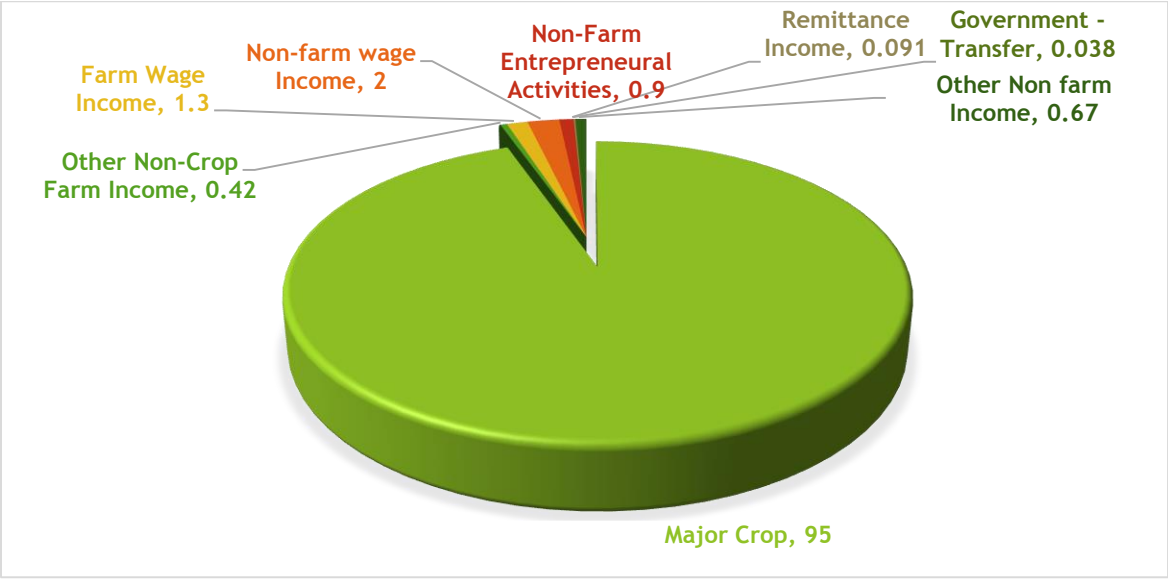

Figure 40. Proportion of Income (%) derived from different sources of Banana Farmers in Region XI, 2014.

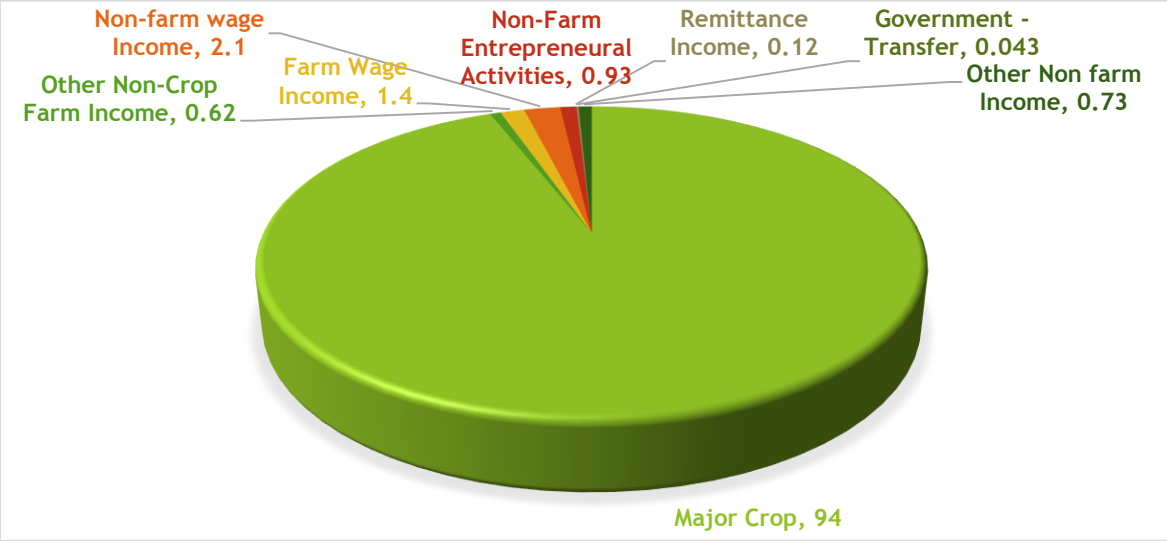

Figure 41. Proportion of Income (%) derived from different sources of Banana Farmers in Region XI, 2015.

SHOCKS AND COPING

SIGNIFICANT SHOCKS EXPERIENCED DURING THE PAST TWO YEARS BY BANANA FARMERS IN REGION

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 (Reyes *et al.*, 2015). Shocks experienced by farmers include natural and man-made disasters. For the past two years, banana farmers in Region XI responded that the most severe natural disaster they have experienced are typhoon (1st), flood (2nd) and drought (3rd). 45% of the farmers experienced typhoon as their most severe natural disaster. From those who have experienced typhoon, 48% do not have insurance, 29% have insurance with claims and 23% are insured without claims (Figure 42). Farmers with no insurance are more vulnerable to risks be it natural or man-made.

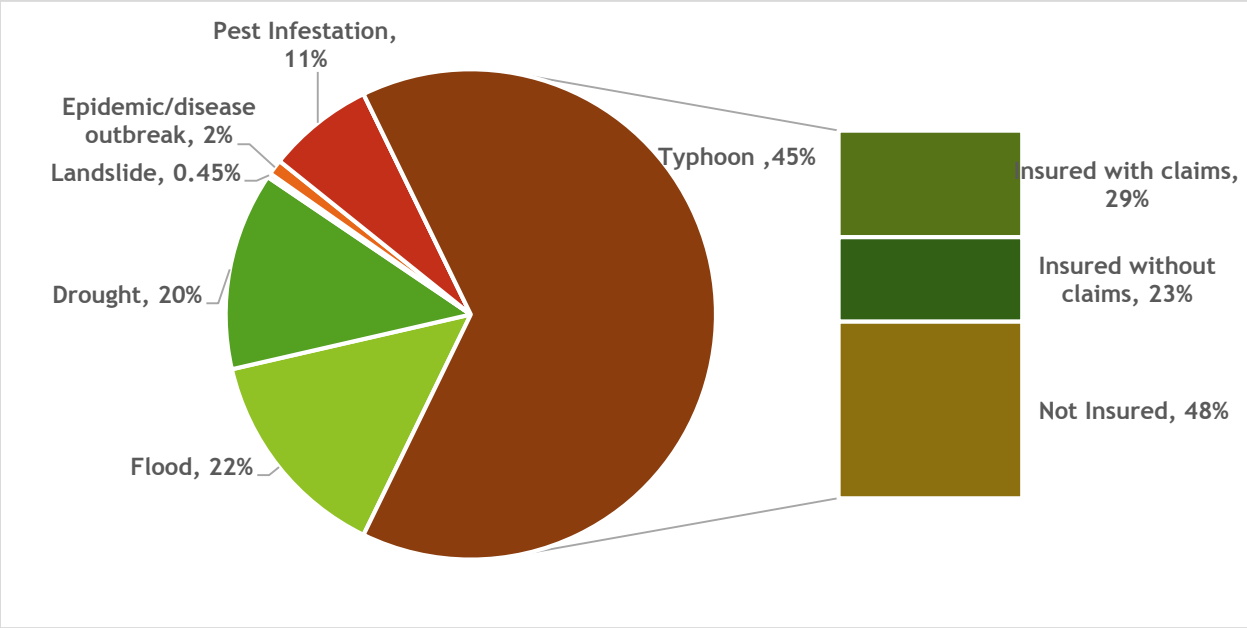

Figure 42. Distribution of the Most Severe Significant Shocks Experienced During the Past Two Years by Banana Farmers in Region XI, By Treatment Group.

In 2012, Davao Region has experienced Typhoon Pablo in which the province of Davao Oriental and Compostela Valley were greatly affected. The damage to agriculture brought by typhoon "Pablo" has reached PhP 8.5 billion, with the already troubled banana industry sustaining the bulk of losses. The government has implemented measures to help Cavendish banana growers to meet their overseas delivery contracts at the time. Tissue cultures were gathered from surviving banana nurseries and private culture growers for distribution to farmers whose crops were damaged by the typhoon. The Philippine Crop Insurance Corp. (PCIC) has set aside P22 million for the insurance claims of banana farmers while the Department of Agriculture (DA) has sought supplementary budget to cover the cost of rehabilitation assistance (PhilStar,

Dec. 10, 2012). Banana farmers described drought (1st), flood (2nd) and pest infestation (3rd) as their second most severe shock experience in natural disaster. For farmers who experienced drought for the past two years, 43% do not have insurance, 28% have insurance and 29% have insurance but without claims (Figure 43). Meanwhile, majority of the respondents have not experienced man-made disasters for the last two years. Farmers have experienced greater shocks to natural disasters than the man-made ones. Farmers with farm size greater than 1 had experienced greater shock compared to farm areas with 1 hectare below.

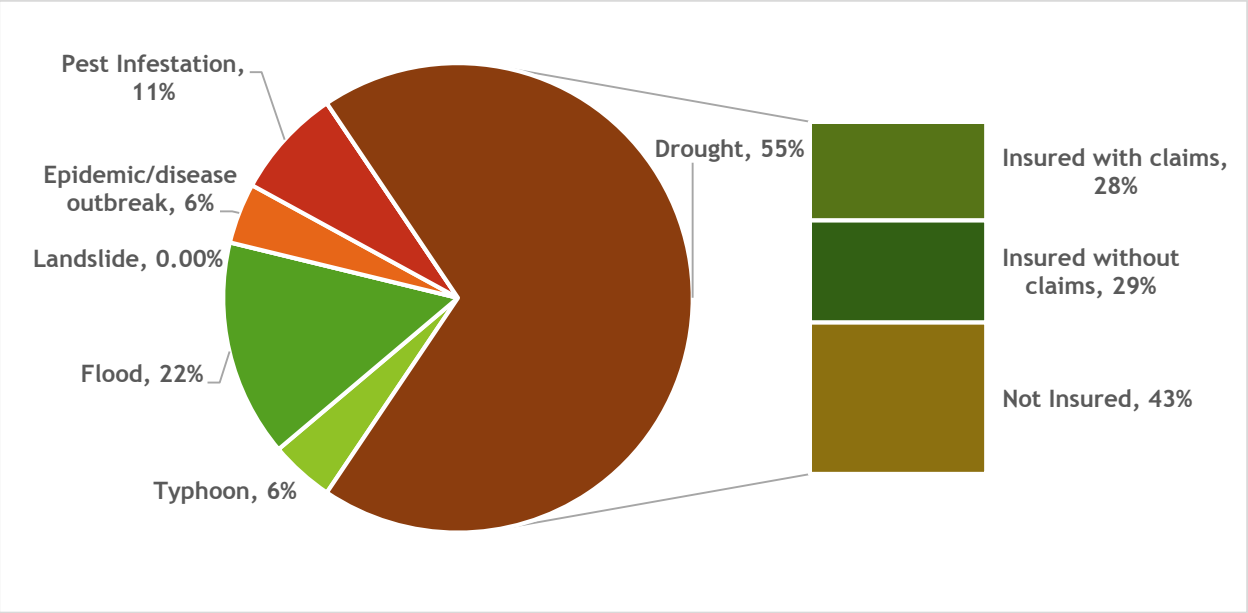

Figure 43. Distribution of the Second Most Severe Significant Shocks Experienced During the Past Two Years by Banana Farmers in Region XI, By Treatment Group.

It is evident that more number of farmers without insurance have experienced greater shocks compared to those who are insured. Being insured assures the farmer (with insurance) that they can cope up with the shock, since they are more confident to have insurance claims once they are affected by these occurrences. While farmers without insurance, are not prepared when disasters happen making them more vulnerable compared to the insured ones.

AVERAGE DECLINE IN HOUSEHOLD INCOME DUE TO SHOCKS EXPERIENCED

The distribution and spending of household income is greatly affected by unexpected shocks experienced by banana farmers in the last two years. Given that the most severe shock experienced by the farmers are typhoon, flood and drought, these are also the main reasons that triggered the average decline of household incomes (including job loss). In the most severe natural disasters, the average decline in household income due to typhoon is PhP 268,558, flood is PhP 128,180 and drought is around PhP 78,884. Farmers who are insured and had claims experienced greater average decline in income of around PhP 496,642, PhP 148,961 average

decline for insured farmers without claims and PhP 188,724 average decline for farmers without insurance (Figure 44).

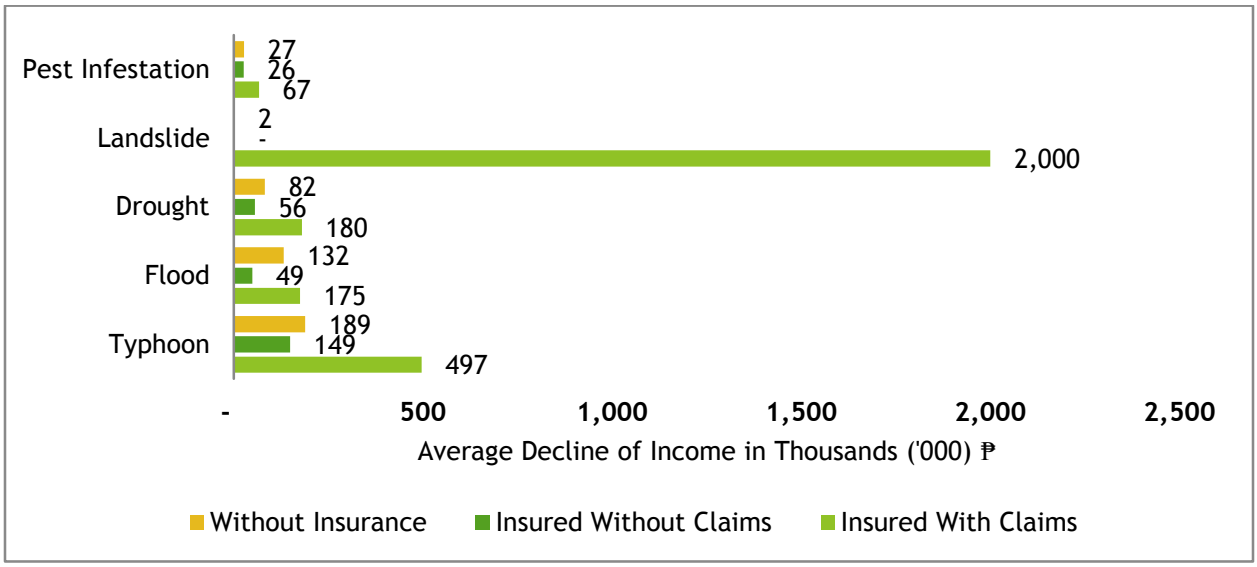

Figure 44. Average decline in household income in the most severe natural disaster, Region XI.

Even though man-made disasters are not tagged as prevalent for the banana farmers in Region XI, certain circumstances are also affected by this. Specifically, financial crisis contributes to PhP 23,433 average decline of income while PhP 15,250 decline are due to the drop in export/demand prices. Respondents who answered that they have not experienced man-made disasters have an average decline of PhP 17,024 in their income (Table 169.b). This decline can be attributed to other circumstances.

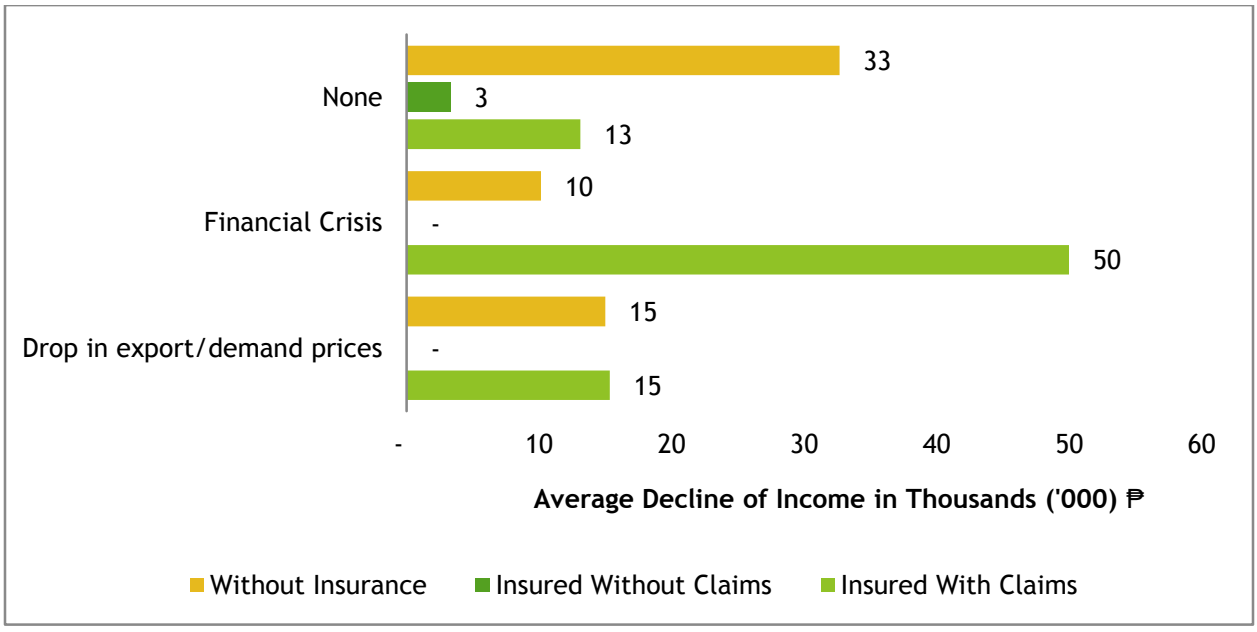

Figure 45. Average decline in household income in the most severe man-made disaster, Region XI.

When natural disasters struck, property and assets of banana farmers are greatly affected which also causes decline in household income. Epidemic/Disease outbreak appeared to have the largest damage that resulted to an average household decline of PhP 250,000 to farms with more than 1 hectare and those who are not insured. These outbreaks include panama disease (fusarium wilt), moko disease and banana bunchy top disease. Among the three, panama disease is the number one culprit in banana farms. Panama disease is a lethal fungal disease caused by the soil-borne fungus *Fusarium oxysporum f. sp. cubense* (Foc). The fungus enters the plant through the roots and colonizes the xylem vessels thereby blocking the flow of water and nutrients. Disease progression results in the collapse of leaves at the petiole, the splitting of the pseudostem base and eventually plant death. Once established in a field, the fungus persists in soil for an indefinite period of time and cannot be managed using chemical pesticides. The solution best adapted to the continued production of bananas in infested soils is replacing susceptible cultivars by resistant ones. Fusarium wilt is the first disease of bananas to have spread globally (http://www.promusa.org/Fusarium+wilt).

Aside from diseases, typhoon, flood and drought also damages property and assets, thereby contributing to the average decline in household income. The average decline in household income due to typhoon is around PhP 99,944, due to flood is PhP 34, 024 and PhP27,158 due to drought. Farmers who are insured and with claims have greater decline in household income with an average of PhP 165,946 due to typhoon, PhP 45,000 due to flood and PhP 25,600 due to drought. Farmers who are insured have greater capacity to pay, has higher income and evidently, has more property and assets. These results confirmed that the greater the property/assets, the greater also is the damage.

The decline in household income is also due to increases in household expenses. The increase in expenses brought about by shocks (natural or man-made) are experienced because farmers need to spend more to recover from their losses. The average decline in household income due to increase in expenses brought by typhoon is around PhP 78,100, by flood is PhP69,000, by drought 12,000 and by epidemic/disease outbreak PhP 100,000. In the man-made disasters, the major shock they are more affected in is the death of a family member which contributed to an average decline of PhP 100,000 household income. This is followed by financial crisis with PhP 6,000 and drop in export/demand prices at PhP 5,000 average decline in household income.

The average monetary impact of the most severe natural disaster experienced by the farmers (for the past two years) is around 1 million pesos for land slide, PhP 306,667 for typhoon and PhP 124,686 for epidemic/disease. For man-made disasters, death of a family member triggers a higher average monetary impact of PhP 100,000. This is followed by financial crisis with PhP 18,063 and drop in export/demand prices with PhP 12,833.

RECOVERY AND COPING STRATEGY

Banana farmers were also asked how they recovered from the losses and how their expenses increase due to shock and how long it took them to recover. Farmers who experienced shock tends to have longer time to recover. Most of the farmers' recovery status is only partial (covering 59% of the total farmers) in which 47% of them do not have insurance. Only 28% have insurance with claims and 26% are insured without claims. Majority of the farmers recovered from shocks for more than one year. Specifically, 52% do not have insurance, 22% are insured with claims and 25% are insured without claims (Figure 46).

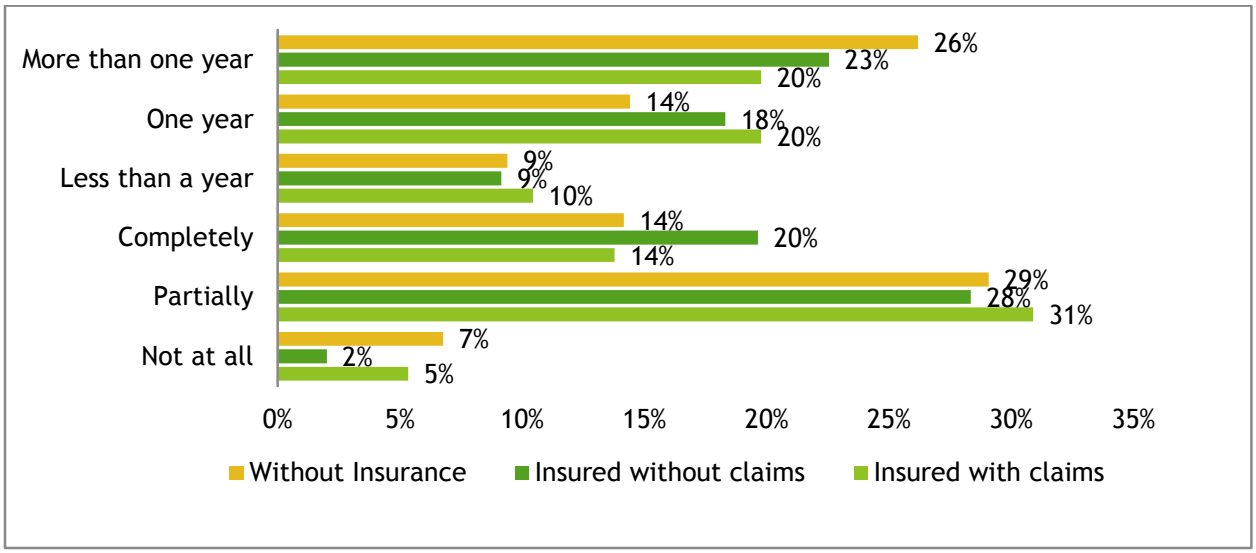

Figure 46. Recovery status and recovery period from shock by treatment group, Region XI.

In reaction to monetary impacts and increases in household expenses, banana farmers tend to dwell on coping strategies to lessen the severe impact of the natural and man-made disasters. Strategies are grouped as food and non-food related. For food related in the most severe shocks experienced, the top three coping strategies are: shifting to cheaper food items (experienced by 24% of the banana farmers), eating more ready-to-eat-cook food (experienced by 17% of the banana farmers) and buying cooked food (experienced by 16% of the banana farmers). The following coping strategies are also the top mechanisms of farmers without insurance and farmers with insurance without claims (Figure 47).

Meanwhile, the top coping strategies of farmers with insurance and claims are: shifting to cheaper food items (experienced by 20% of farmers who responded to the coping strategy), lessening the frequency of dining out (experienced by 23% of farmers who responded to the coping strategy), and eating their less preferred food (experienced by 17% of farmers who responded to the coping strategy) (Figure 47). The top coping strategies for the second most severe natural disaster are the same. Furthermore, farmers are not that affected in man-made disasters. Majority of banana farmers responded to coping strategies related to natural disasters.

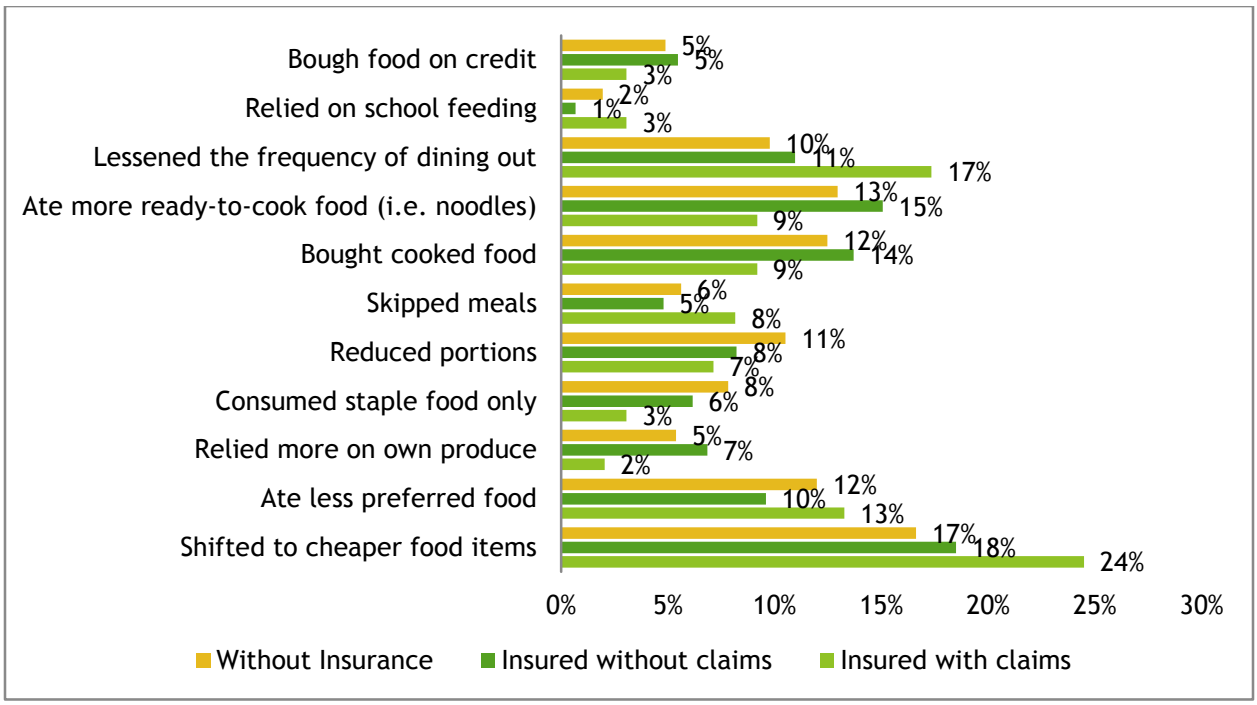

Figure 47. Food-related coping strategies for most severe shocks experienced, Region XI.

The top three non-food related coping strategies (for the most severe shocks experienced in natural disasters) are (Figure 48): shifted to cheaper means of transportation and limited use of electricity (done by 8% of banana farmers), shifted to fuel sources and limited use of cooking fuels (done by 6% of banana farmers) and limited use of water (done by 5% of banana farmers). 69% of the farmers who shifted to cheaper means of transportation does not have insurance. Meanwhile, 22% of the farmers who experienced shifting cheaper fuel sources are insured without claims. Lastly, 24% of the farmers with insurance and claims experienced limited use of water.

The education of banana farmers' children are also affected by shocks. The top three coping strategies for education in the most severe shocks experienced in natural disasters are (Figure 49): reduced allowance for children in school (done by 11% of banana farmers), shifted to cheaper school supplies (done by 8% of banana farmers) and children in school skipped classes (done by 5% of banana farmers). Among the farmers who experienced reducing the allowance of their children in school; 52% of those are not insured, 28% are insured with claims and 20% don't have claims. For those who have shifted to cheaper school supplies; 62% of them do not have insurance, 21% have insurance with claims and the remaining 17% do not have claims. For farmers who had their children skipped classes, 59% of them do not have insurance and 41% are insured with claims.

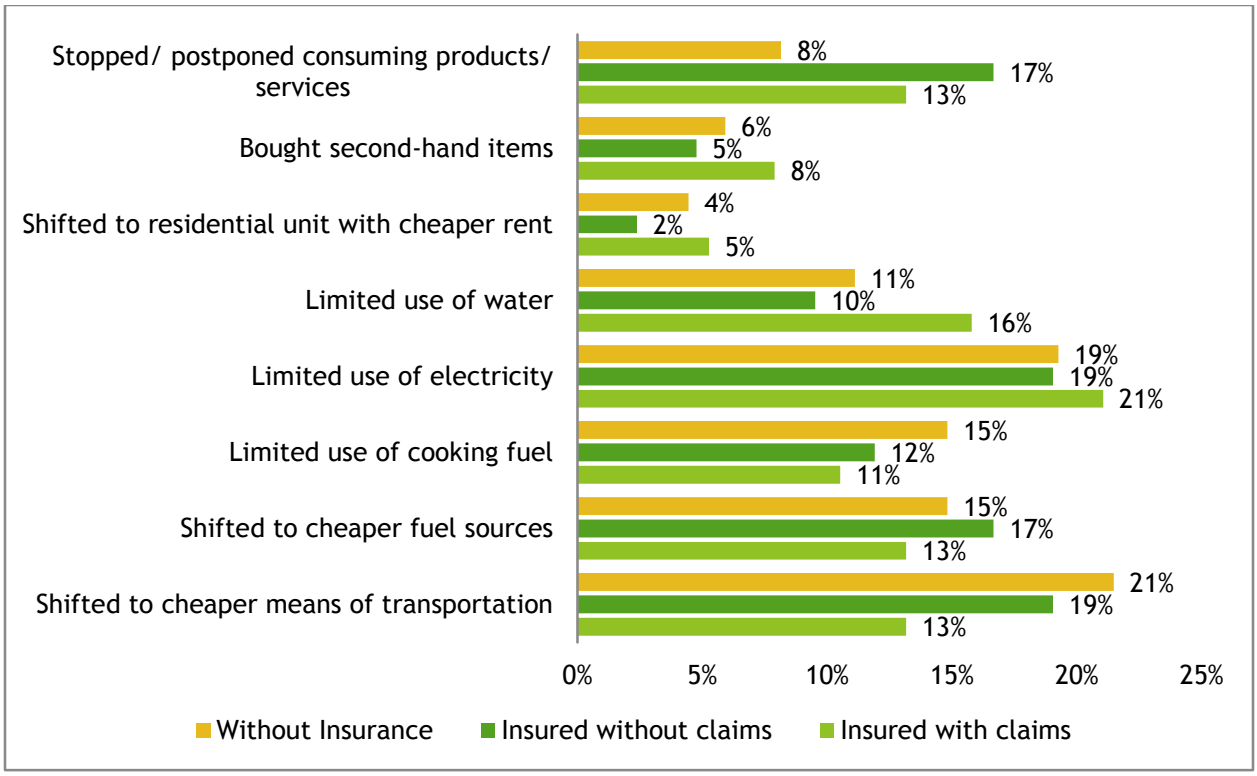

Figure 48. Non-food coping strategies for most severe shocks experienced, Region XI.

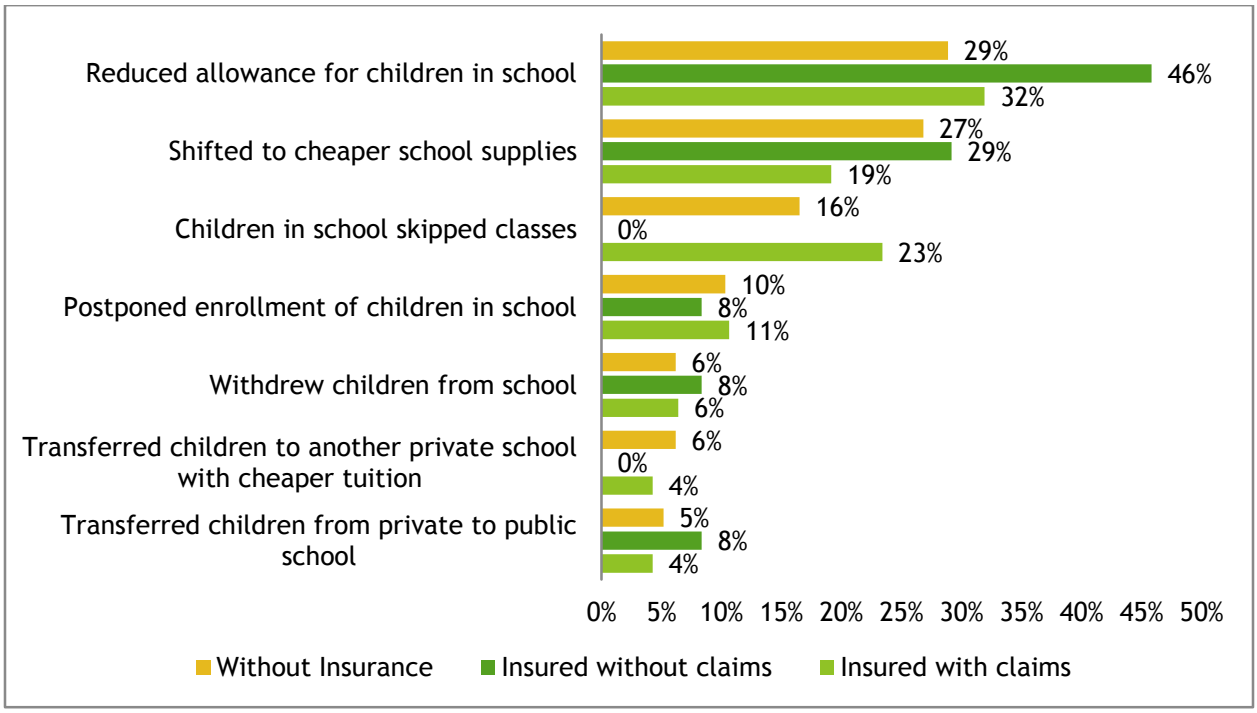

Figure 49. Education coping strategies for most severe shocks experienced, Region XI.

Health is also very much affected by shocks experienced and this has contributed to certain coping strategies for mitigation. The top three coping strategies for health concerns in the most severe shocks experienced are (Figure 50): shifted to generic and cheaper drugs (practiced by 10% of the banana farmers), shifted to cheaper alternative medicines (practiced by 9% of the banana farmers), and shifted to self-medication and government health centers and hospitals (practiced by 8% of the banana farmers). For those who have shifted to generic and cheaper drugs; 65% are not insured, 21% are insured without claims and 13% have claims. For farmers who opt to shift to cheaper alternative medicines, 63% are not insured, 24% are insured but do not have claims and 13% have claims. While farmers who shifted to self-medication; 64% do not have insurance, 26% are insured without claims and 10% have claims. Lastly, farmers who shifted to government health centers and hospitals, 62% do not have insurance, 26% are insured without claims and 13% have claims.

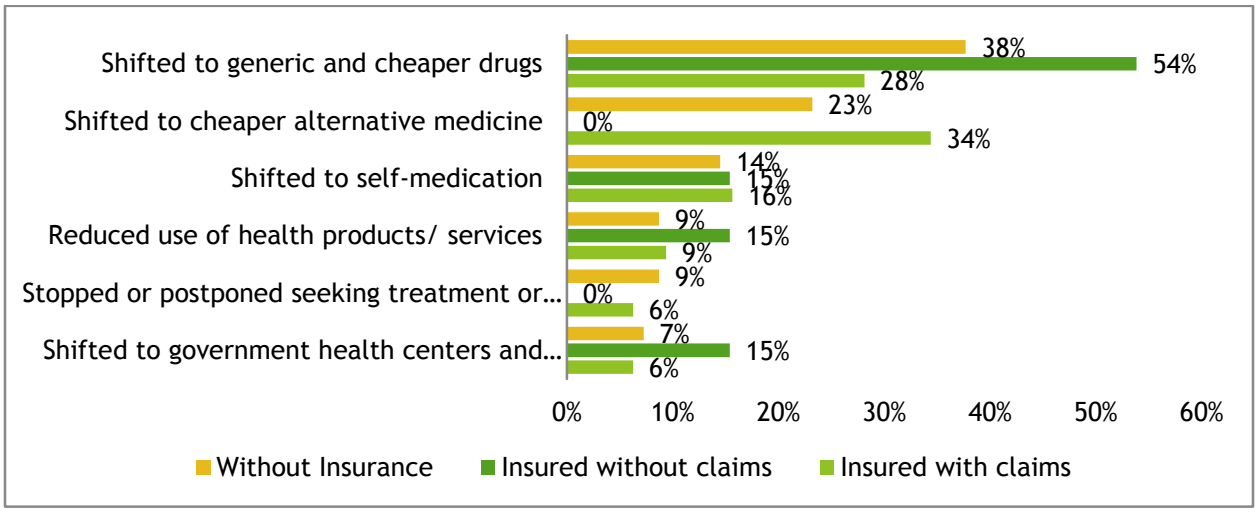

Figure 50. Health coping strategies for most severe shocks experienced, Region XI.

Farmers affected by disasters tend to receive assistance from different sources to cope with the shocks they have experienced. In the coping strategies in receiving assistance (Figure 51), 16% of banana farmers received assistance from the government, 7% received assistance from the private sector and 3% received other material support from friends/neighbors. For those farmers who receive assistance from the government, 55% of them do not have insurance, 29% are insured with claims and 15% do not have claims. Farmers who were lucky to have received assistance from the private sector, 66% are not insured, 26% are insured with claims and 9% do not have claims. Lastly, for farmers who opt to receive assistance from friends/neighbors, 59% of them do not have insurance, 24% are insured but with no claims and 18% have claims. Consistently, majority of those who practiced such coping strategies are farmers without insurance. Indeed, they are more vulnerable to shocks compared to those insured ones.

In times of need, farmers dwell on their savings, assets and find credit in order to cope with the shock they have experienced in the most severe natural disaster. 13% of the banana farmers responded that they opt to borrow money and spend their savings. Only 3% of the farmers consider pawning assets and 2% are selling their prized assets. From the farmers who

spent their savings, 49% are not insured, 29% are insured with claims and only 22% do not have claims. For those who have chosen to borrow money, 36% borrowed from government banks, 16% borrowed from private banks and 14% borrowed from their personal friend. For those farmers who borrowed, 52% are not insured, 34% are insured with claims and 14% do not have claims (Figure 52).

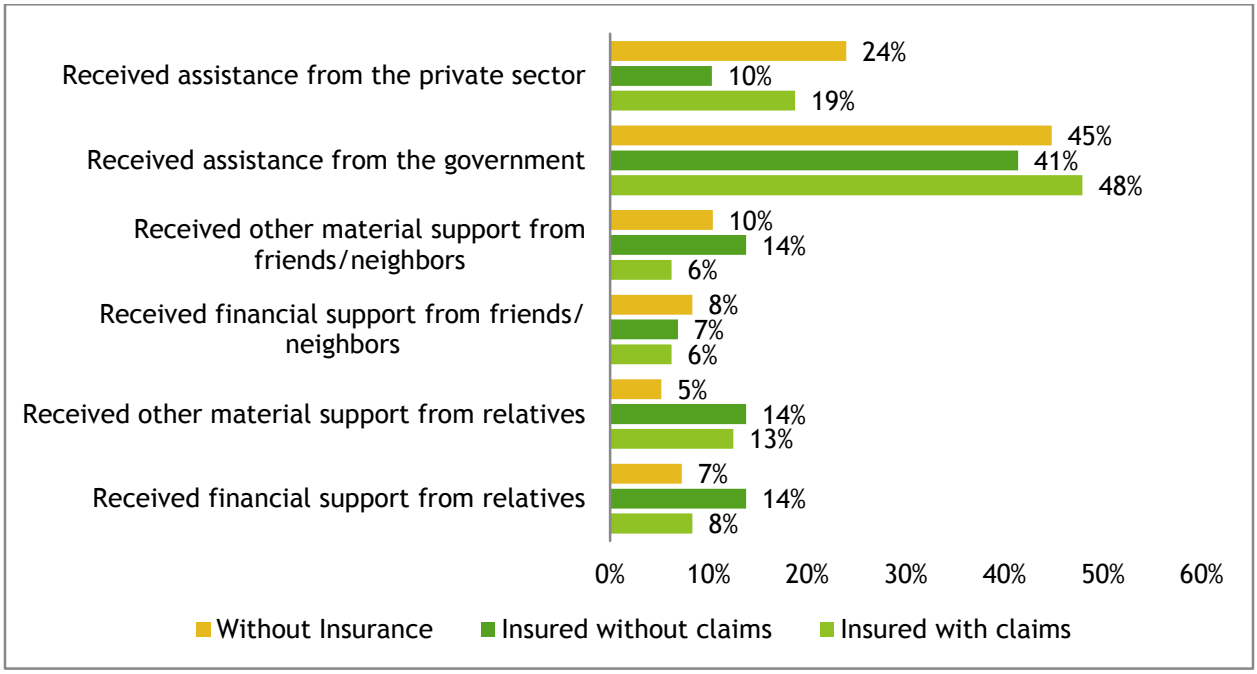

Figure 51. Receipt of assistance coping strategies for most severe shocks experienced, Region XI.

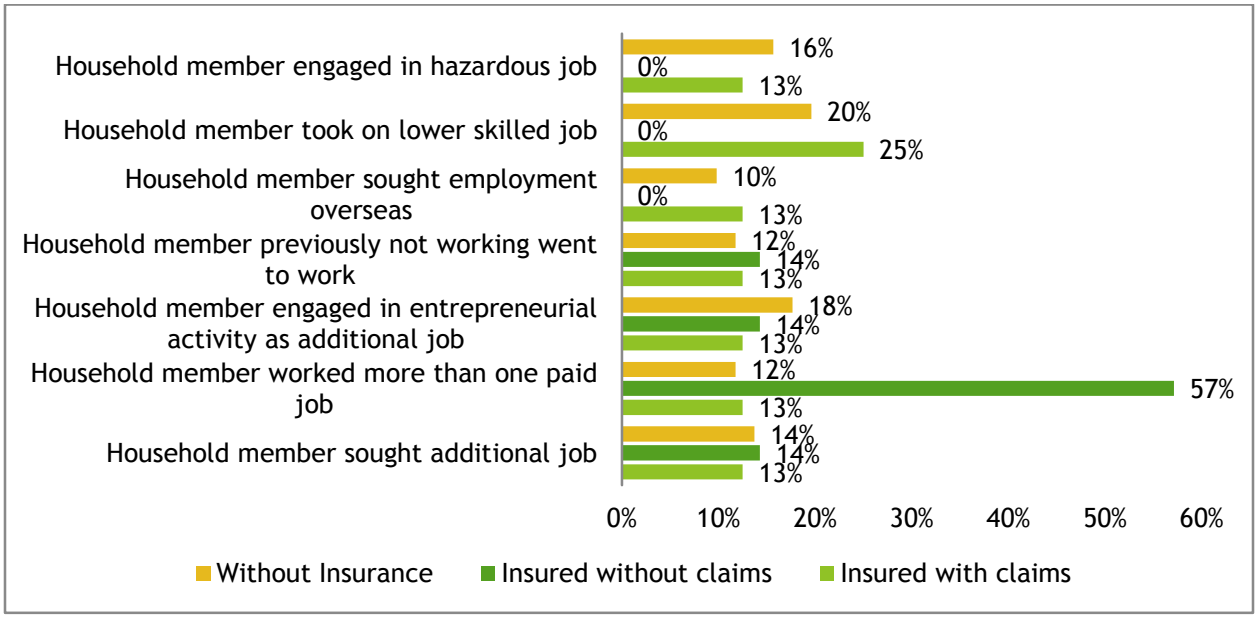

Figure 52. Additional sources of income coping strategies for most severe shocks experienced, Region XI.

It is also important to know what is the relevant change experienced by the farmers two years ago, based from the identified recovery and coping strategies (Figure 53). Majority of farmers claimed that their life today and two years ago are just the same. From these respondents, 50% of them do not have insurance, 29% are insured without claims and 21% have claims.

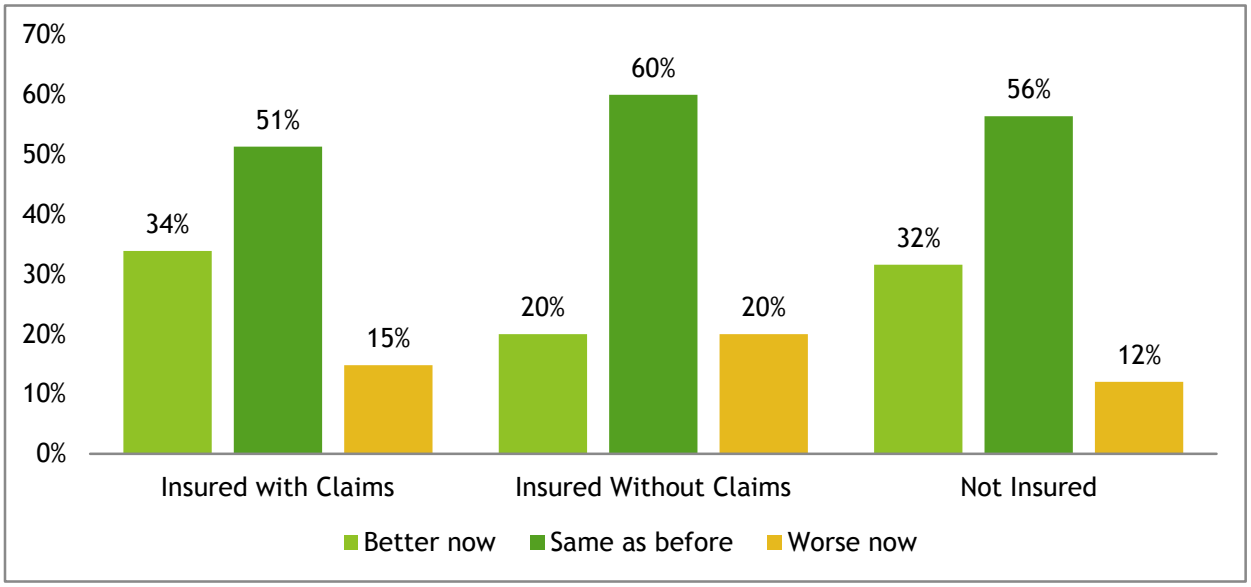

Figure 53. Current condition of farmers two years ago and now, Region XI.

RISK MITIGATION STRATEGIES IN CROP PRODUCTION

The rise of extreme climatic effects such as droughts, strong winds, floods and flashfloods, increasing or decreasing temperatures and other abnormal climatic conditions, has affected agricultural production activities. Some of these are experienced by banana farmers and they have innovated and used new methodologies to mitigate crop production during wet and dry seasons.

During dry season, 11% of the farmers used varieties with high resilience (high temperature tolerance, resistant to salinity, drought and floods), 3.40% adopted an earlier/later planting date and 3% used site specific nutrient management. For farmers who used varieties with high resilience; 36% do not have insurance, 38% have insurance and claims and 25% do not have claims. For those who adopted an earlier/later planting date; 47% are not insured, 35% are insured with claims and 18% do not have claims. For those who used site specific nutrient management; 47% are insured with claims, 33% do not have insurance and 20% are insured without claims (Figure 54).

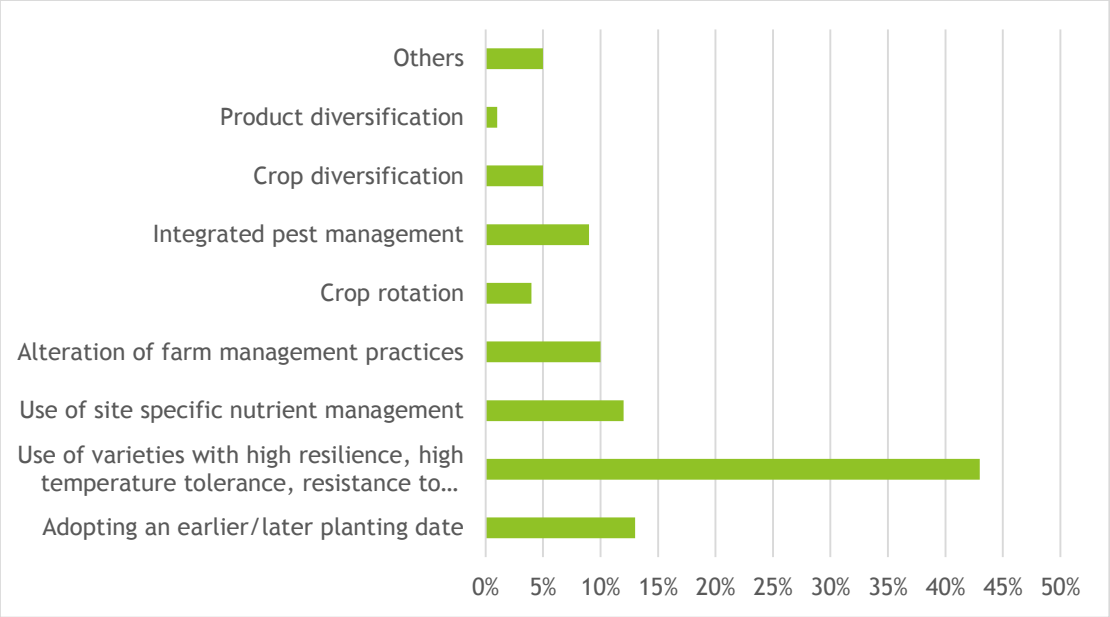

Figure 54. Risk mitigation strategies during wet season, Region XI.

In the wet season, 8% of the farmers employed alteration of farm management practices, 5% used varieties with high resilience, and 3% adopted earlier/later planting date and used site specific nutrient management. For those who preferred to alter farm management practices, 37% of them do not have insurance and 64% are insured (both with claims and without claims). For banana farmers who use varieties with high resilience, 44% are insured with claims, 37% do not have insurance and 19% are insured without claims (Figure 55).

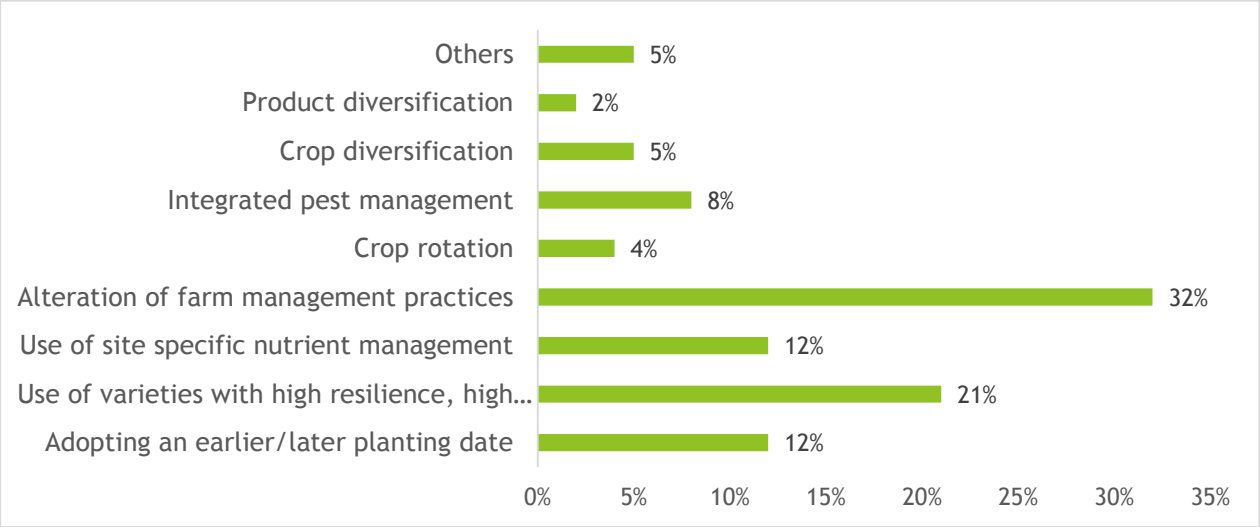

Figure 55. Risk mitigation strategies during wet season, Region XI.

AWARENESS ON AGRICULTURAL INSURANCE

The survey solicited information on problems encountered by banana farmers in the region. Results are summarized in Table 9. It shows that in general, 55% of banana farmers perceived that adverse weather conditions especially drought and flood is the most severe problem encountered by farmers. Low farm gate prices of agricultural products is perceived to be the second most severe problem, while high cost of farm inputs is considered to be the third most severe problem. Pest, weeds, emergences of new pests and diseases was also recorded to be a major problem. It is worth noting that low farm gate price is perceived by farmers usually those who are tie-up with banana plantation with fix contract price of produce banana. The region is also facing with the problem of Panama disease, a type of *Fusarium wilt*.

Table 9. Ranking of Problems Facing Farmers Today , by Treatment Group, Region XI Davao.

Problems Facing Farmers	With Insurance With Claims			With Insurance Without Claims			Without Insurance			Total Pooled		
	All			All			All			All		
	Rank 1	*Rank 2*	*Rank 3*	*Rank 1*	*Rank 2*	*Rank 3*	*Rank 1*	*Rank 2*	*Rank 3*	*Rank 1*	*Rank 2*	*Rank 3*
Adverse weather conditions (drought, flood)	64	19	21	81	35	26	128	62	49	273	116	96
Low farm gate price of agricultural products	23	44	19	24	34	27	57	70	49	104	148	95
High cost of farm inputs (fertilizers, pesticides, etc.)	11	24	26	9	21	26	22	44	60	42	89	112
High cost of labor	0	2	3	0	0	3	1	5	11	1	7	17
Farmers being heavily indebted to traders/ lack of capital	2	3	5	2	5	5	1	4	8	5	12	18
Poor soil fertility	0	1	5	0	3	8	0	7	21	0	11	34
Lack of post-harvest facilities (dryer, miller, storage, etc.)	1	0	0	0	0	1	2	2	2	3	2	3
Pests, weeds, emergences of new pests and diseases	14	15	23	18	31	29	37	43	36	69	89	88
Lack of new farming technologies	0	6	1	0	3	2	0	5	4	0	14	7
Water shortage	0	1	2	0	2	3	0	3	4	0	6	9
Others	0	0	10	1	1	5	2	5	6	3	6	21

Among those who has insurance, asked on their first availment of agricultural insurance. Results are summarized in Figure 56. Among the 250 insured farmers, 71 refused to answer since they are not aware that they are insured. Among those who responded, 42% first availed insurance about three years ago in between typhoon Pablo and Agaton in 2013 and 2014 respectively. There are 9% who first availed insurance more than five years ago, these are individual banana farmers with more than 1 hectare farm.

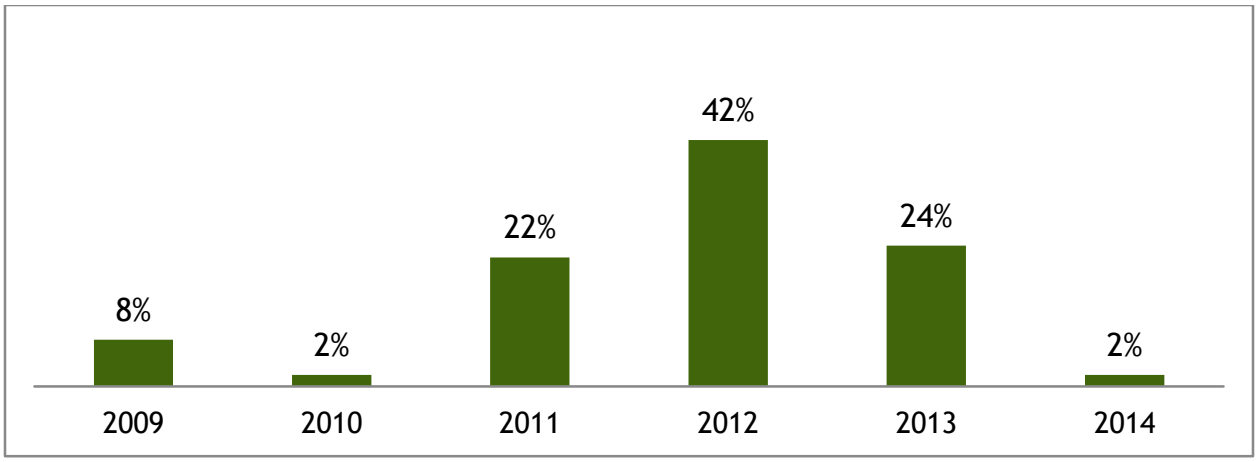

Figure 56. Percentage of farmers who first availed of agricultural insurance, 2009-2014.

Among those who were insured, 71.2% claimed that they avail insurance on a regular basis, while 28.8% are not aware of the existence of their crop insurance as a reason of not availing it regularly. All 250 without insurance, has no experience in availing crop insurance.

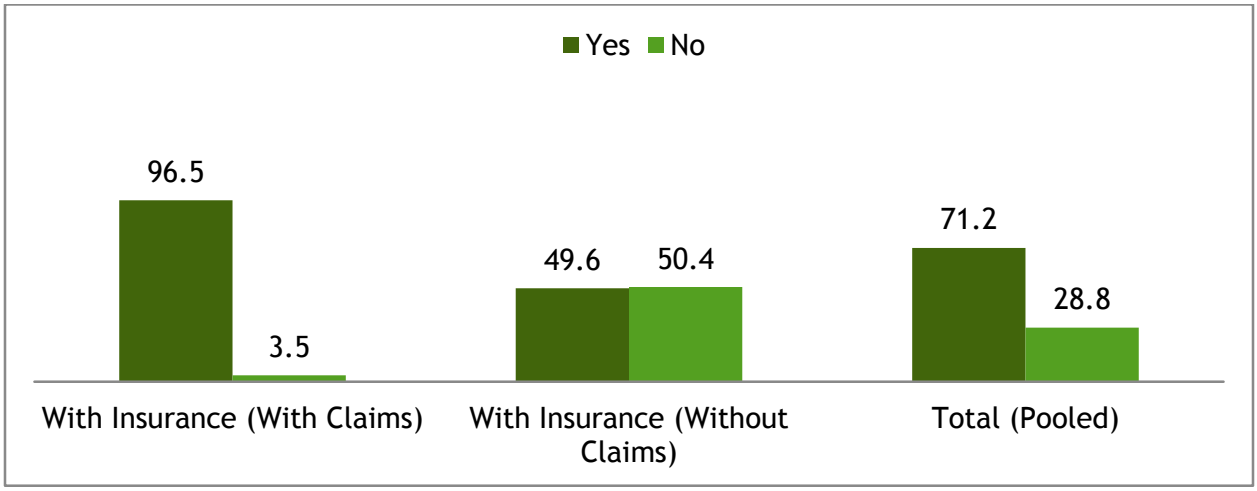

Figure 57. Percentage of farmers who said they regularly availed of agricultural insurance.

Reasons for non-regular availment of crop insurance are presented in Figure 58. It shows that in general, 35% perceived that lack of awareness and know-how on insurance and its application process is the reason for non-regular availment of insurance. This is followed by lack of money to pay the premium (29%) and insurance is not helpful to their farming activities (15%).

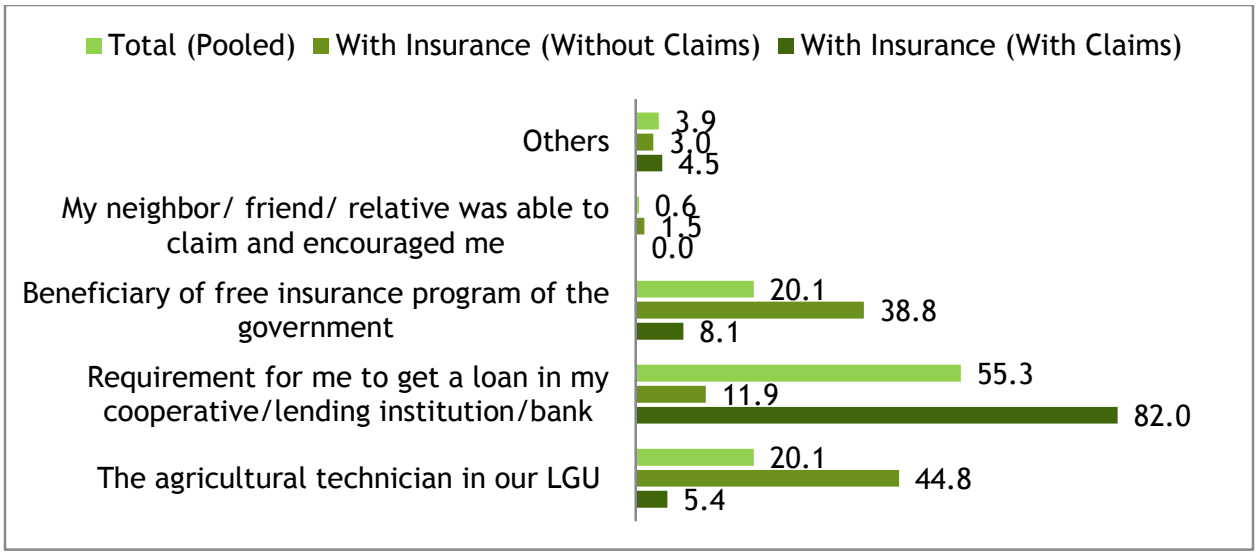

Figure 58. Percentage of farmers' reason for regular availment of agricultural insurance.

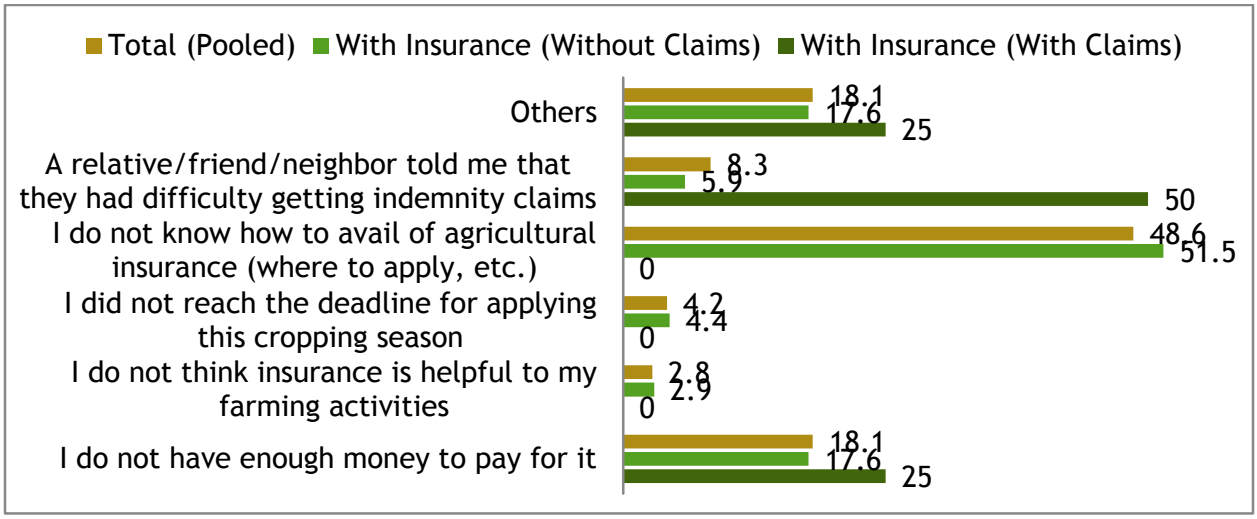

Figure 59. Percentage of farmers' reason for nonregular availment of agricultural insurance.

Reasons for non-availment of agricultural insurance is similar to reasons for non-regular availment. No awareness to crop insurance (36%), lack of capacity to pay for the premium (19%) and not aware of the ways/process on availing insurance (14%) are the top three reasons among total responses (Figure 59).

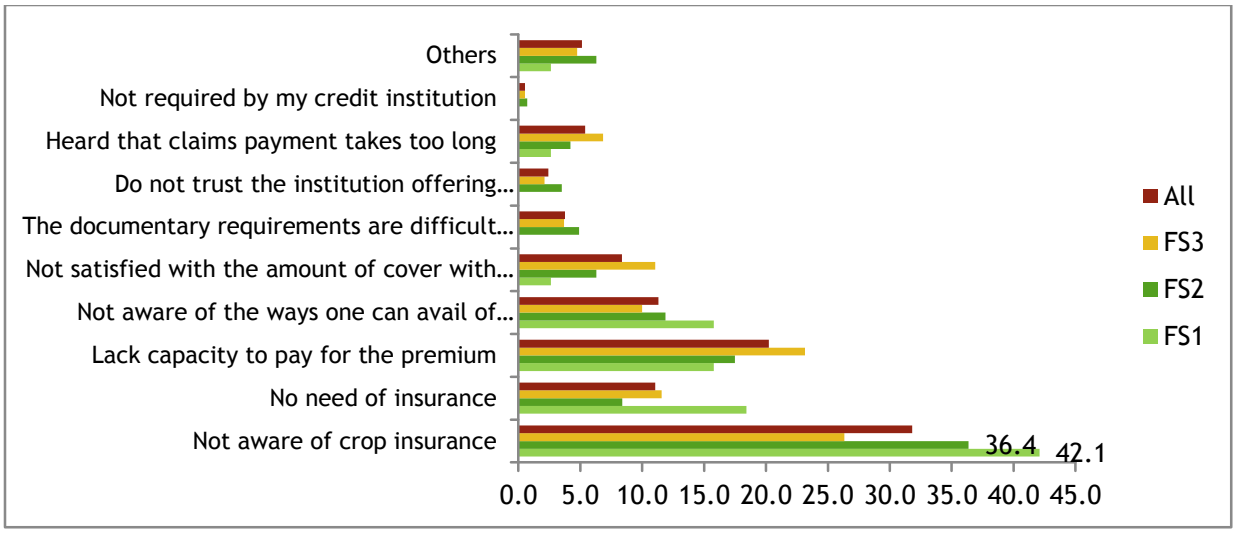

Figure 60. Percentage of farmers' reason for nonregular availment of agricultural insurance.

Crop insurance as requirement to avail loan in the banks is perceive to be the top reason for availing crop insurance by 55% of the total insured and aware banana farmers. This is followed by the encouragement to avail by LGU's agricultural technician (20%) and because they are beneficiary of free insurance of the government (20%) (Figure 60).

Figure 61 presents the sources of premium payments for agricultural insurance. It shows that 41% of banana farmers insured with PCIC source premium payment as part of the loan from creditor, 40% source premium payment from free insurance of the government programs and only 19% source it from their own pocket.

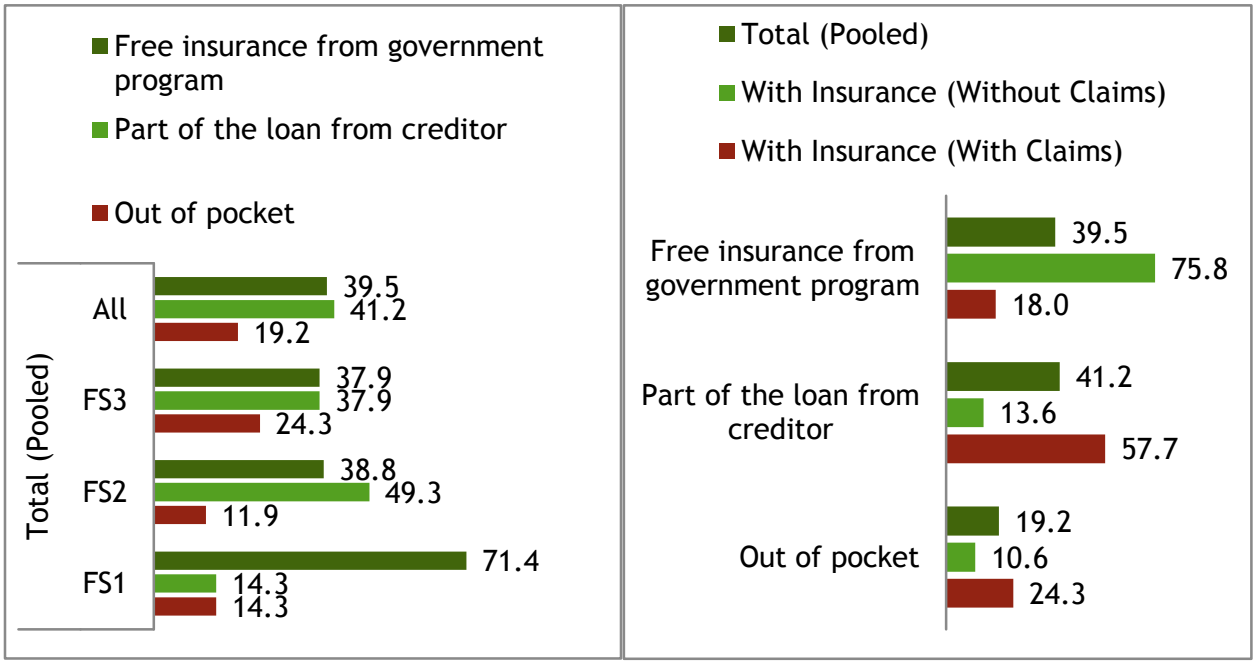

Figure 61. Percentage of farmers' sources os premium payment for agricultural insurance.

Product and services ratings of those who are insured by PCIC is presented in Figure 62. Overall satisfaction with PCIC's products and services is unsatisfactory. This is due to unsatisfactory ratings at all levels of crop insurance processes of all products and services (Figure 62).

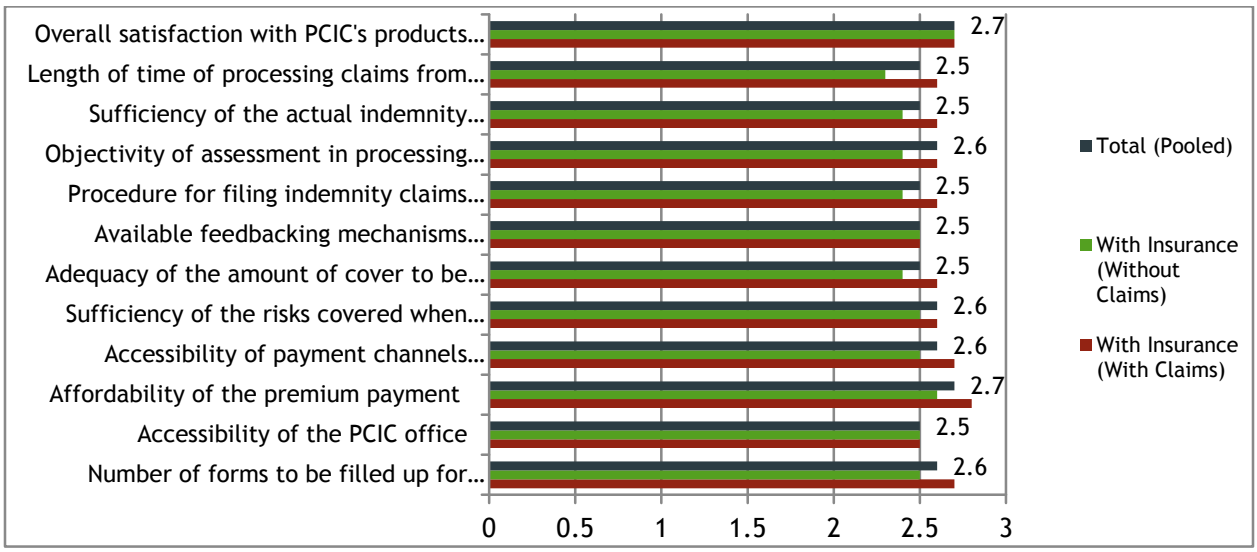

Figure 62. Percentage of farmers' rating of PCIC's Product and Services.

UTILIZATION OF INDEMNITY CLAIM PAYMENT

Among sample respondents, 115 have claimed indemnity in 2014. On the actual survey, however, only 101 (88%) farmer respondents who are insured and claimed indemnity are aware of the claims. Among the 101 who were aware of the claims, 40 (40%) responded that the amount of indemnity received is in time for the next planting season, while 61 (60%) responded that claim processing is long. In terms of the sufficiency of the indemnity claim to re-stablish the farm, 52 (51%) respondent claim that the indemnity receive is sufficient, while 49 (49%) respondent insufficient (Figure 63).

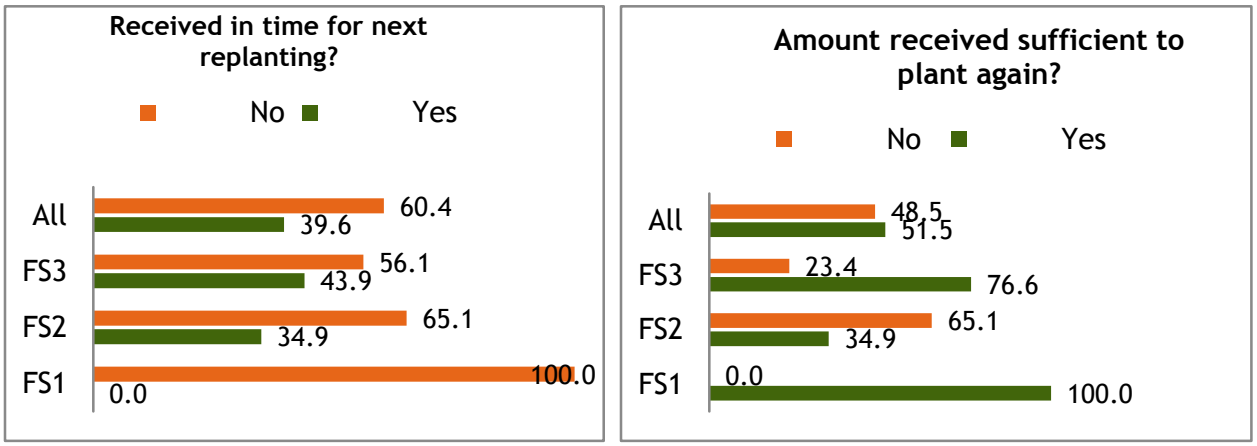

Figure 63. Percentage of Farmers' Responses on the Timeliness and Sufficiency of Indemnity Claims.

Figure 64 shows the utilization of indemnity claim payment. Among those who claimed, 37% responded that the claim was used to pay for farm inputs, 32% used indemnity to pay existing loans and 13% claimed that they used it to buy food for the family.

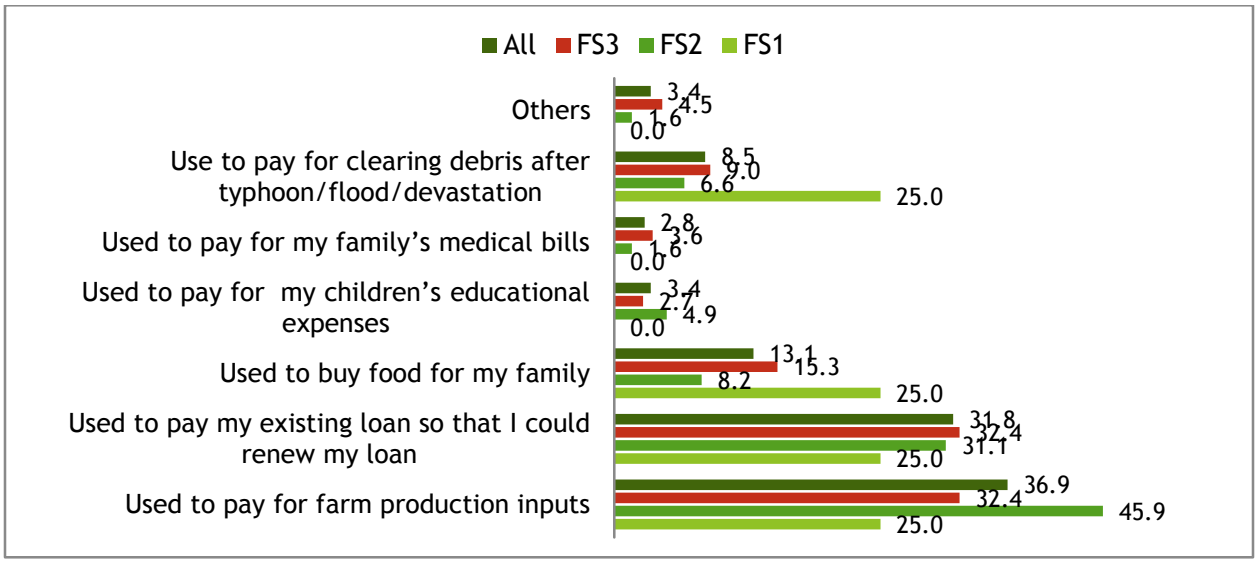

Figure 64. Percentage of Farmers' Utilization of Indemnity Claims.

Average amount of indemnity claims by farm size is shown in Table 10. Two (2) types of cause of loss are captured during the reference period of the survey. These are claims due to flood and drought. On the average, claims due to flood is estimated to be around PhP198,244.00 (considering an average farms size of 1.7ha), average indemnity claim is estimated to be at PhP116, 614.11/ha. Lower indemnity claim of PhP22,390.00 for drought is observed. According to interviews, flood is a more severe calamity experience in banana plantation in Region XI compared to drought.

Table 10. Average Amount of Indemnity Claim Received By Cause of Loss, Type of Crop, Region and Treatment Group

Cause of Loss	With Insurance			
	With Claims			
	FS1	*FS2*	*FS3*	*All*
Banana				
Region XI-Davao				
Typhoon, flood	15, 000	77, 780	299,536	198,244
Drought, not enough water	0	23, 484	20, 750	22, 390

WILLINGNESS TO PAY FOR AGRICULTURAL INSURANCE

Willingness to pay of banana farmers were elicited. Assumptions used include (1) that farmers were capital borrowers from lending institutions which requires farm insurance coverage, (2) a per hectare maximum insurance of phP150,000 in case of complete damage/loss and (3) with coinsurance deductible of 10% from the indemnity amount thus generating a net indemnity of PhP 135,000/ha if crop 100% damage. Willingness to pay at a per hectare premium rate of PhP10,500 were elicited, results shows that among the 500 farmers interviewed, only 73 (15%) are willing to pay. It is surprising that among those already insured (with or without indemnity claims) only 25 (10%) are willing to pay at that premium level. Among those who are not insured, 48 (19%) are willing to pay.

Improvement of the frequency of farmers willing to pay were observed when premium rate is lowered to PhP3,000/ha per year at the same maximum level of indemnity claim. Among 500 farmers, 213 (46%) are willing to pay the premium rate and be covered by the PCIC insurance. Among those who were not insured, 105 (42%) are willing to pay at that premium price, while 43% of those already insured are willing to pay the premium amount (Figure 65).

Only a few are interested to avail of crop insurance because of the low compensation. It is a fact that when you invest in banana it will cost you around 1.7 million pesos and a 300,000 insurance coverage will not compensate the cost they have incurred. At present, they are still entertaining different proposals from banks and insurance companies and they are still in the process of analyzing the costs and benefits of availing their insurance coverage given their premium rates. They are not yet satisfied on the current market offering.[3]

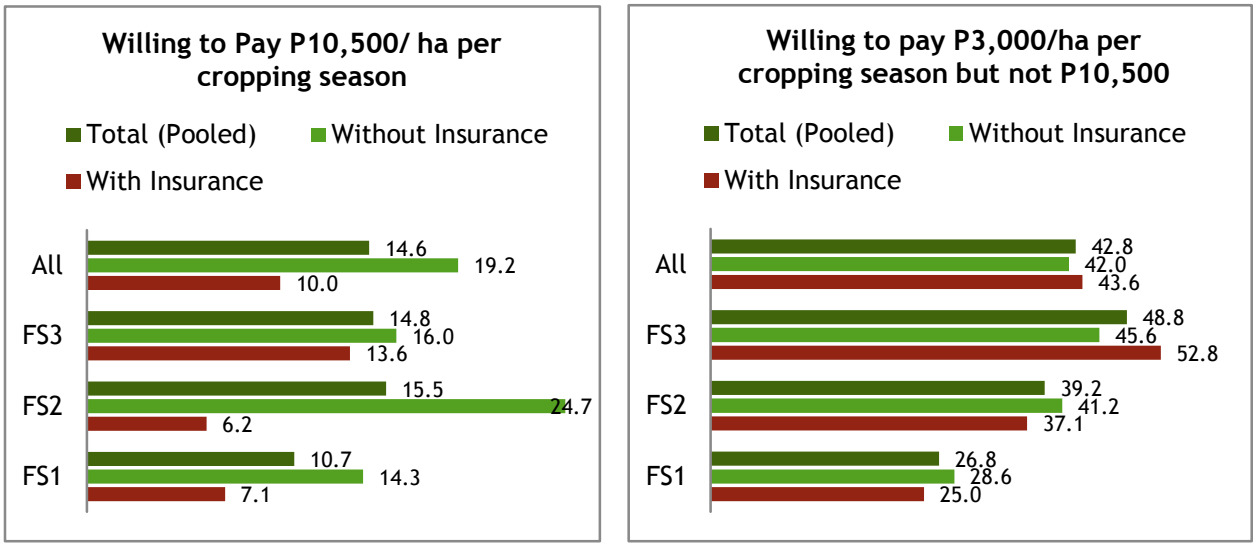

Figure 65. Percentage of Farmers' Willingness to Pay for HVCC Insurance.

[3] KII with Pilipino Banana Growers and Exporters Association, Inc.

Among the sample respondents, 279 (56%) are not willing to pay both level of premium rates. Among those who are not willing to pay both premium rates, 98 (35%) thinks that agricultural insurance is not useful. It is worth noting, that 53 (54%) of those responded that crop insurance is not useful are those who were insured (Figure 66).

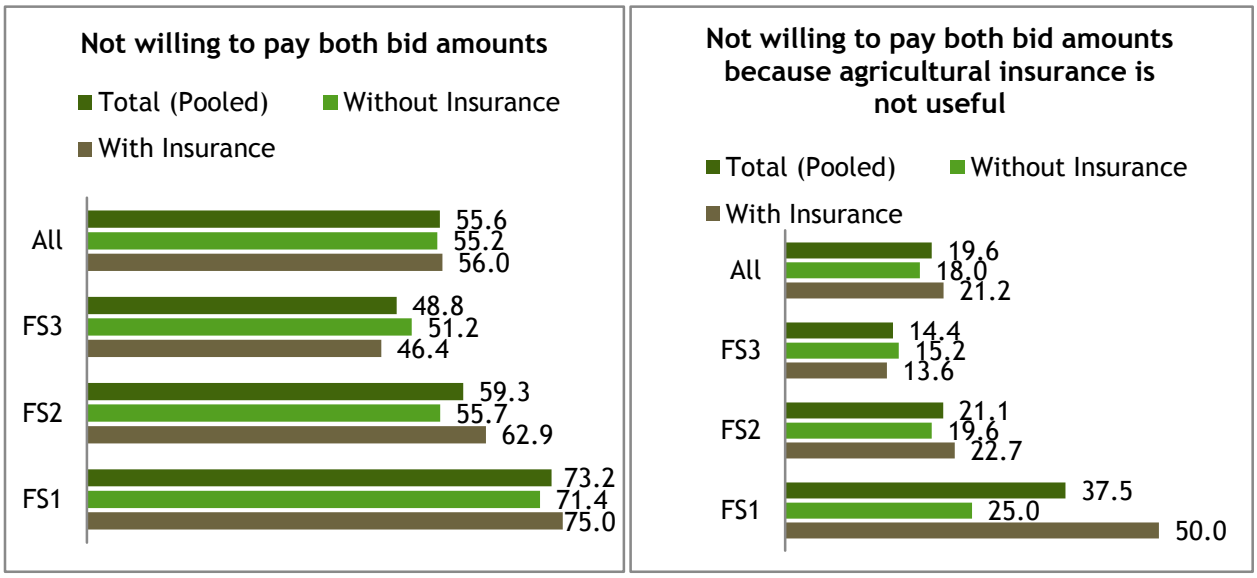

Figure 66. Percentage of Farmers' who are not willing to Pay for HVCC Insurance.

Table 11. Willingness to pay for premium for farmers not willing to pay quoted prices, in PhP.

Range of WTP (PhP)	Among farmers not willing to pay PhP10,500/Ha./Year		Among farmers not willing to pay PhP3,000/Ha./Year	
	Freq. (426)	*%*	*Freq. (269)*	*%*
5,001-6,000	2	0.5		
4,001-5,000	18	4.2		
3,001-4,000	8	1.9		
2,001-3000	88	20.7	3	1.1
1,001-2,000	52	12.2	31	11.5
501-1,000	49	11.5	38	14.1
101-500	46	10.8	41	15.2
1-100	5	1.2	5	1.9
0	158	37.1	151	56.1
Mean	***1,278.87***		***421.19***	

Contingent valuation approach were applied to those who were not willing to pay the quoted premium prices. Results are shown in Table 11. Among farmers not willing to pay PhP 10,500 premium for maximum indemnity of PhP135,00 for 100% damage are willing to pay an average premium of PhP 1,278.87. Those who were not willing to pay PhP3,000 are willing to pay an average premium of PhP 421.19 per hectare per year.

Results for the Mean Differences of Income

Table 22 presents the results for the two-sample t test of the average net income between farmers who did not avail insurance and who availed insurance in 2014 and 2015 according to farm size category. It can be seen that, except for FS1 category, the average net income of those farmers who did not avail insurance is greater than those farmers with insurance both in 2014 and 2015. The results in two-sample t test, however, reveal that only the mean differences of net income in all farm sizes and in FS3 (farmers with greater than 1 ha) are statistically significant. This result is actually consistent during the two periods. The higher net income of uninsured farmers as compared to insured ones is attributed to (1) the price differences per box, where on the average, the uninsured farmers sell their banana for Php. 197.10 per box in 2014 and Php. 194.94 per box in 2015, while the insured farmers sell their banana for only Php. 170.91 per box in 2014 and Php. 171.45 in 2015; (2) farmers with insurance are usually tied-up to plantation companies with higher input cost due to input price mark up; and (3) farmers without insurance are seen to have better technologies in their farming activities. They are the ones who seek alternatives to boost their productivity unlike the insured farmer who seem to be content with what the plantation company is offering to them.

Table 22. Two-sample t test results for the differences of average net income between farmers without insurance and with insurance, 2014-2015.

Year	Farm Size	Without Insurance	With Insurance	Mean Difference	t Stat	P-value
2014	ALL	41341.82	37257.28	4084.54*	1.6328	0.0516
	FS1 (0.5 ha & below)	41543.88	43254.80	-1710.92^{NS}	-0.2062	0.4189
	FS2 (> 0.5 to 1 ha.)	43186.36	40488.86	2697.50^{NS}	0.5501	0.2915
	FS3 (> 1 ha.)	39940.82	33280.14	6660.68*	2.5864	0.0051
2015	ALL	41113.66	36777.92	4335.74*	1.7673	0.0390
	FS1 (0.5 ha & below)	42078.58	44004.9	-1926.32^{NS}	-0.2485	0.4023
	FS2 (> 0.5 to 1 ha)	42148.86	39679.58	2469.29^{NS}	0.5144	0.3038
	FS3 (> 1 ha)	40102.42	32945.49	7156.931*	2.7694	0.0030

*significant at 10% alpha, NS – not significant

Table 23 shows the t test results for the differences of average net income between insured farmers with claims and without claims separately for 2014 and 2015. The results reveal that, except for farmers who cultivate greater than 0.5 ha to 1 ha in 2015, the average net income for insured farmers without indemnity is greater than those with indemnity claims. The t test results, however, show that only the 2014 mean differences are significant. Insured farmers who received indemnity experienced shocks, which is the main reason why their production level is low, hence, their net income is also lower as compared to those insured farmers who did not experience any shock. It should be noted that there are no t test results for FS1 category due to limited number of samples who received indemnity.

Table 23. Two-sample t test results for the differences of average net income between farmers without indemnity claims and with indemnity claims, 2014-2015.

Year	Farm Size	Without Indemnity	With Indemnity	Mean Difference	t Stat	P-value
2014	ALL	40797.10	28491.99	12305.11*	3.2948	0.0006
	FS1 (0.5 ha & below)	44935.12	6287.8	38647.32	-	-
	FS2 (> 0.5 to 1 ha.)	45053.57	30006.93	15046.65*	1.9675	0.0266
	FS3 (> 1 ha.)	35867.42	27957.74	7909.678*	2.3372	0.0107
2015	ALL	37069.63	34846.59	2223.03^{NS}	0.3761	0.3536
	FS1 (0.5 ha & below)	45623.92	8386.47	37237.45	-	-
	FS2 (> 0.5 to 1 ha)	39238.56	42010.65	-2772.09 ^{NS}	-0.2549	0.3997
	FS3 (> 1 ha)	33437.38	29572.54	3864.837 ^{NS}	0.9956	0.1641

First-stage Regression: Insurance Demand

The demand for insurance was examined using Probit analysis and the results are presented in Table 24. The results show that if the farmer completes secondary education (hgc_sec), it increases the predicted probability of availing crop insurance. Similarly, if the farmer completes post-secondary or tertiary education (hgc_ter), it also increases the predicted probability of availing crop insurance. Initial results of the coefficients also suggest that completing a post-secondary or tertiary education increases the probability of availing crop insurance more as compared to just completing secondary education. The number of years of farming experience (exp) is also siginificant relative to availing crop insurance. Specifically, an increase in years of farming experience, increases the predicted probability of availing crop insurance. If the number of household members (hsize) increases, the predicted probability of availing crop insurance also increases.

Moreover, membership to any farmers' organization/credit cooperative (org) increases the predicted probability of availing crop insurance. The awareness of farmers on programs such as crop insurance, to some extent, is achieved from information dissemination being done by the authorities through different organizations and cooperatives. Previous records of availment by farmers on crop insurance, also has a positive effect on the predicted probability on the farmer's reavailment. The results show that if the farmer was able to receive indemnity claim from the PCIC, it increases the predicted probability of availing crop insurance. In terms of variety of crops, if the farmer cultivates *saba* banana, the predicted probability of availing crop insurance decreases. The awareness of farmers to the resiliency of *saba* to adverse weather condition such as drought, somewhat contributed to this result. The more parcels of land owned by the farmer (pct_owned), likewise increases the predicted probability of availing crop insurance. In addition, if the total area plated to banana increases, the predicted probability of availing crop insurance also increases.

On the other hand, if the farm is situated in a flood-prone area (topog_flood), the predicted probability of availing crop insurance decreases. Interestingly, a negative significant coefficient is seen for PCIC priority variable. This means that the farther the farms from the regional or provincial office of PCIC, the greater is the predicted probability of availing crop insurance. Regional PCIC office is currently situated in Koronadal City, South Cotabato and most of the farmers who availed crop insurance for banana were from the provinces of Davao del Norte, Compostela Valley and Davao Oriental. Other variables listed in Table 24 are observed to have no significant effect on availing crop insurance in Region XI.

Table 24. Probit estimates on factors of availing crop insurance.

insured_pcic	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
year	0.096^{NS}	0.255	0.380	0.706	-0.404	0.597
shock	0.035 ^{NS}	0.225	0.160	0.875	-0.406	0.477
age	0.041 ^{NS}	0.205	0.200	0.842	-0.361	0.443
age^2	0.000 ^{NS}	0.002	0.150	0.878	-0.003	0.004
sex	-0.299 ^{NS}	1.060	-0.280	0.778	-2.376	1.777
hgc_sec	1.507*	0.831	1.810	0.070	-0.122	3.136
hgc_ter	2.036**	0.936	2.180	0.030	0.202	3.869
exp	0.073**	0.035	2.110	0.035	0.005	0.141
org	7.482***	0.828	9.030	0.000	5.858	9.105
hsize	0.552***	0.211	2.620	0.009	0.138	0.966
dratio	0.019 ^{NS}	0.021	0.910	0.362	-0.022	0.061
hhasset	0.190 ^{NS}	0.186	1.020	0.307	-0.175	0.555
agriasset	-0.159 ^{NS}	0.196	-0.810	0.417	-0.543	0.225
avail	-0.133*	0.080	-1.660	0.097	-0.289	0.024
latundan	-1.527 ^{NS}	1.074	-1.420	0.155	-3.632	0.578
saba	-5.138***	1.177	-4.360	0.000	-7.445	-2.830
pct_owned	2.151*	1.256	1.710	0.087	-0.310	4.613
topog_flood	-4.358***	0.918	-4.750	0.000	-6.158	-2.559
ln_nfarm_inc	-0.001 ^{NS}	0.031	-0.030	0.979	-0.061	0.060
tot_banana_area	0.727***	0.252	2.890	0.004	0.233	1.221
pcic_prio	-2.191**	0.931	-2.350	0.019	-4.015	-0.366
_cons	-13.929*	7.230	-1.930	0.054	-28.100	0.243

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Second-stage regression: Income

Panel regression analysis for two periods covered by the study (2014 and 2015) were conducted to identify significant factors of income among banana farmers. First, it should be noted that separate models were utilized to determine the significant factors. These models include (1) all samples from all treatment groups, (2) matched samples for insured (T1 and T2) and uninsured farmers (T3), (3) matched samples for insured with claims (T1) and uninsured (T3), and (4) matched samples for insured without claims (T2) and uninsured (T3).

Table 25 shows the results of the estimation for each farm size category and considering all samples in all treatment groups. Basically, the study highlights the significant variables relative to the net income. It can be seen that the amount of insurance coverage negatively affects the average net income specifically for all farm size category and for farm size 3. Higher insurance coverage entails higher amount of premium being paid by the farmer to avail insurance. Since the amount of premium is part of the total production cost, it somehow lessens the net income received by the farmer. Demographic factors such as age, sex and civil status of the farmer are only significant for farm size 1 category. For this farm size category, relatively older farmers tend to have lesser net income since as they age their ability to handle farming activities well is affected, which somehow affects their productivity. Also, male farmers tend to have lesser net income than the female farmers while married ones have higher net income. Households with higher dependency ratio likewise increases net income of the farmers. These results can be attributed to the situation wherein the head of the family needs to increase their earnings to support their dependents. The farming experience also positively affects net income on the part of farmers in farm size 2 category only.

Further, the results reveal that if the variety planted is latundan, this results to a higher net income for the farmers in all farm size categories. Planting *saba* variety also has a positive effect on net income for all farm size and farm size 1 categories. The results also show that for farm size 1, farms that are situated near a river tend to have greater net income. In terms of other sources of income, the increase of non-farm wages decreases the net income from banana production while the increase of government transfer received by the farmer, increases the net income from banana production.

With respect to the other models, generally the signs of the relationships between the significant factors and net income are similar to the results presented in Table 25. For instance, the amount covered by insurance also negatively affects net income for the same farm size categories. In addition, if the farmer completes secondary education, it tends to increase the net income on the part of farmers with farm size 2. Also, as the household size increases and the more parcel of land they own, the greater is there net income for banana production. In terms of matched samples for insured with claims and uninsured farmers (T1 and T3), male farmers tend to have greater net income especially for those who maintain greater than 1 ha farm. Also for farm size 3 category, if the household asset index increases, the net income also increases.

Table 25. Panel data estimation results for the factors affecting average net income (all samples).

ln_net_inc_cr~c	ALL FS Coef.	FS1 Coef.	FS2 Coef.	FS3 Coef.
pr_insured_pcic	-0.013 NS	0.028 NS	-0.043 NS	-0.004 NS
Year	-0.005 NS	0.017 NS	-0.010 NS	-0.009 NS
amt_cov_std2	-4.70E-07***	-5.87E-08 NS	-2.24E-07 NS	-5.01E-07**
shock_index_HH	0.000 NS	0.023 NS	0.011 NS	-0.002 NS
farmer_age	-0.012 NS	0.030 NS	-0.022 NS	-0.011 NS
farmer_age2	0.000 NS	-0.0004*	0.000 NS	0.000 NS
farmer_sex	0.120 NS	-0.323**	0.131 NS	0.128 NS
farmer_hgc				
20	0.089 NS	-0.005 NS	0.153 NS	0.013 NS
30	0.010 NS	-0.121 NS	0.143 NS	-0.096 NS
farmer_cvstat	0.019 NS	0.292**	-0.043 NS	0.064 NS
farmer_exp2	0.003 NS	0.001 NS	0.014***	-0.002 NS
farmer_org	0.012 NS	-0.071 NS	0.119 NS	0.028 NS
hh_size	0.014 NS	-0.040 NS	0.048 NS	-0.005 NS
dep_ratio	0.000 NS	0.004*	0.000 NS	0.001 NS
hhasset_ind	0.016 NS	0.059 NS	0.033 NS	0.006 NS
agriasset_ind	-0.015 NS	-0.023 NS	-0.005 NS	-0.052*
availment_ind	-0.013**	-0.013 NS	-0.013 NS	-0.015 NS
Farmsize	0.053 NS	-	-	-
variety_lat	0.797***	1.395***	0.928***	0.466***
variety_sab	0.162**	0.779***	0.163 NS	0.093 NS
pct_owned	0.079 NS	0.181 NS	0.219 NS	-0.003 NS
topog_flood	-0.067 NS	0.575***	-0.218 NS	-0.108 NS
ln_nfarm_wage	-0.003 NS	-0.019***	-0.007 NS	0.002 NS
ln_nfarm_entrep	-0.002 NS	-0.008 NS	-0.002 NS	-0.001 NS
ln_govt_transf	0.004 NS	0.025**	0.015 NS	0.001 NS
_cons	10.380***	9.410***	10.436***	10.790***
R^2 Overall	0.2717	0.8058	0.3879	0.1415

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Table 26. Panel data estimation results for the factors affecting average net income (matched samples, T1 & T2 and T3).

ln_net_inc_cropint_HHstddef13sc	ALL FS Coeff.	FS1 Coeff.	FS2 Coeff.	FS3 Coeff.
pr_insured_pcic	-0.009 NS	0.035 NS	-0.038 NS	-0.001 NS
year	-0.006 NS	0.016 NS	-0.010 NS	-0.010 NS
amt_cov_std2	-4.77E-07 ***	-2.32E-08 NS	-2.88E-07 NS	-4.77E-07**
shock_index_HH	0.000 NS	0.016 NS	0.014 NS	-0.003 NS
farmer_age	-0.014 NS	0.040 NS	-0.027 NS	-0.011 NS
farmer_age2	0.000 NS	-0.001**	0.000 NS	0.000 NS
farmer_sex	0.117 NS	-0.311**	0.132 NS	0.133 NS
farmer_hgc				
20	0.099*	-0.025 NS	0.180*	0.019 NS
30	0.028 NS	-0.134 NS	0.161 NS	-0.084 NS
farmer_cvstat	0.004 NS	0.298**	-0.090 NS	0.066 NS
farmer_exp2	0.003 NS	0.001 NS	0.014***	-0.003 NS
farmer_org	-0.024 NS	-0.171 NS	0.074 NS	-0.006 NS
hh_size	0.017 NS	-0.043 NS	0.060*	-0.007 NS
dep_ratio	0.000 NS	0.004 NS	0.000 NS	0.001 NS
hhasset_ind	0.014 NS	0.059 NS	0.020 NS	0.007 NS
agriasset_ind	-0.013 NS	-0.012 NS	-0.002 NS	-0.051*
availment_ind	-0.015**	-0.011 NS	-0.015 NS	-0.016 NS
farmsize	0.041 NS	-	-	-
variety_lat	0.761***	1.398***	0.833***	0.474***
variety_sab	0.177**	0.769***	0.156 NS	0.132 NS
pct_owned	0.091 NS	0.190 NS	0.281**	-0.021 NS
topog_flood	-0.050 NS	0.610***	-0.194 NS	-0.094 NS
ln_nfarm_wage	-0.004 NS	-0.020***	-0.008 NS	0.002 NS
ln_nfarm_entrep	-0.002 NS	-0.008 NS	0.000 NS	-0.001 NS
ln_govt_transf	0.004 NS	0.025**	0.015 NS	0.001 NS
_cons	10.474***	9.259***	10.516***	10.804***
R^2 Overall	0.2667	0.8061	0.3863	0.1471

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant\

Table 27. Panel data estimation results for the factors affecting average net income (matched samples, T1 and T3).

ln_net_inc_cropint_HHstddef13sc	ALL FS	FS1	FS2	FS3
pr_insured_pcic	-0.006 NS	0.088 NS	-0.003 NS	-0.004 NS
year	-0.007 NS	0.000 NS	-0.022 NS	-0.008 NS
amt_cov_std2	-7.54E-07**	2.62E-07 NS	-5.15E-07 NS	-3.57E-07 NS
shock_index_HH	-0.010 NS	-0.013 NS	0.003 NS	-0.016 NS
farmer_age	-0.005 NS	0.081 NS	-0.053 NS	0.008 NS
farmer_age2	0.000 NS	-0.001 NS	0.000 NS	0.000 NS
farmer_sex	0.158*	-0.269 NS	0.142 NS	0.218*
farmer_hgc				
20	0.082 NS	-0.116 NS	0.120 NS	-0.028 NS
30	0.026 NS	-0.338 NS	0.071 NS	-0.111 NS
farmer_cvstat	0.030 NS	0.184 NS	-0.031 NS	0.024 NS
farmer_exp2	0.001 NS	-0.007 NS	0.007 NS	-0.006 NS
farmer_org	-0.057 NS	-0.684 NS	-0.251 NS	0.043 NS
hh_size	0.012 NS	-0.013 NS	0.032 NS	-0.017 NS
dep_ratio	0.001 NS	0.002 NS	-0.002 NS	0.002 NS
hhasset_ind	0.019 NS	0.025 NS	0.015 NS	0.026*
agriasset_ind	-0.015 NS	0.016 NS	0.030 NS	-0.048*
availment_ind	-0.018**	-0.001 NS	-0.006 NS	-0.038***
farmsize	0.065 NS			
variety_lat	0.605***	1.202***	0.883***	0.206 NS
variety_sab	0.141 NS	0.909***	0.327 NS	-0.029 NS
pct_owned	-0.078 NS	-0.046 NS	0.383 NS	-0.210 NS
topog_flood	-0.007 NS	0.711**	-0.047 NS	-0.024 NS
ln_nfarm_wage	-0.006 NS	-0.025***	-0.011 NS	0.003 NS
ln_nfarm_entrep	-0.001 NS	-0.004 NS	0.020**	-0.006 NS
ln_govt_transf	0.005 NS	0.019 NS	0.017 NS	0.003 NS
_cons	10.361***	9.248***	11.887***	10.406***
R^2 Overall	0.2015	0.8534	0.3443	0.1645

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Table 28. Panel data estimation results for the factors affecting average net income (matched samples, T2 and T3).

ln_net_inc_cr~c		ALL FS	FS1	FS2	FS3
pr_insured_pcic		-0.012 NS	0.033 NS	-0.042 NS	-0.006 NS
year		-0.008 NS	0.012 NS	-0.026 NS	-0.006 NS
amt_cov_std2		-4.61E-07***	3.56E-09 NS	-2.90E-07 NS	-4.80E-07*
shock_causeloss		-0.018 NS	-0.011 NS	-0.060 NS	-0.006 NS
farmer_age		-0.019 NS	0.023 NS	-0.031 NS	-0.012 NS
farmer_age2		0.000 NS	0.000 NS	0.000 NS	0.000 NS
farmer_sex		0.123 NS	-0.297**	0.086 NS	0.154 NS
farmer_hgc					
	20	0.105*	-0.019 NS	0.196*	0.039 NS
	30	0.012 NS	-0.128 NS	0.133 NS	-0.080 NS
farmer_cvstat		-0.017 NS	0.321**	-0.107 NS	0.041 NS
farmer_exp2		0.003 NS	0.000 NS	0.014**	-0.002 NS
farmer_org		-0.028 NS	-0.164 NS	0.109 NS	-0.030 NS
hh_size		0.023 NS	-0.041 NS	0.071**	-0.002 NS
dep_ratio		0.000 NS	0.003 NS	0.000 NS	0.001 NS
hhasset_ind		0.016 NS	0.050 NS	0.038 NS	0.010 NS
agriasset_ind		-0.014 NS	-0.014 NS	0.006 NS	-0.055**
availment_ind		-0.013*	-0.013 NS	-0.008 NS	-0.014 NS
farmsize		0.032 NS			
variety_lat		0.760***	1.368***	0.840***	0.487***
variety_sab		0.159**	0.731***	0.147 NS	0.114 NS
pct_owned		0.097 NS	0.179 NS	0.287**	-0.010 NS
topog_flood		-0.050 NS	0.597***	-0.202 NS	-0.097 NS
ln_nfarm_wage		-0.005 NS	-0.018***	-0.009*	0.001 NS
ln_nfarm_entrep		-0.002 NS	-0.007 NS	0.001 NS	-0.001 NS
ln_govt_transf		0.000 NS	0.023**	-0.007 NS	0.001 NS
_cons		10.572***	9.691***	10.605***	10.725***
R^2 Overall		0.2778	0.7868	0.3778	0.1552

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

SUMMARY OF MAJOR FINDINGS

At least 80% of the farmer respondents in each treatment group are male and at least 3 out of 4 farmers are married. In terms of their highest educational attainment, around 3 out of 10 farmers are high school graduates. It appears that there are more college graduates (24%) from the respondents with insurance and with claims compared to the other groups.

Nine out of 10 respondents said that farming is their primary occupation, which includes fishing and livestock raising while less than 5% of the respondents do other types of occupation. Nearly half of the respondents are employers in own family related farm/business while 20% of them also said that they work without pay on own family farm/business. Government employees only accounted for just less than 5% while 6% of the respondents are working for private firms or businesses. Almost all of them (95%) are working as permanent/business/unpaid family worker. Further, over 80% of the respondents said that they do not have secondary occupation. Most of these respondents are actually employers in own family related farm or business.

On the average, only 1 of the 10 members of the household is a salaried worker. The average dependency ratio of the households is 19% during the two periods. On the average, households have 5 members. There are more (60%) insured farmers with claims who are members of associations or cooperatives as compared to the other treatment groups. Also, the penetration rate of private insurance membership is low which is only seen from 2% to 4% of the respondents.

In terms of the penetration of some government insurance programs, 60% to 70% of the respondents are already members of PhilHealth while 50% to 70% are members of GSIS and/or SSS. Aside from the Conditional Cash Transfers (CCT) program, which has a penetration rate of 7% to 15%, other programs such as supplemental feeding, cash for work, health, scholarship, and livelihood/training/skills only accounted for less than 5% of the total number of respondents in 2014 and 2015. In terms of the agricultural support assistance received by the households, less than 5% said that they received assistance such as seeds, fertilizers, and pesticides subsidies, livestock dispersal program, and farm management program during the said period.

Around 60% to 75% of the farmer respondents are living in a non-makeshift housing and majority (96%) of them are living in a single house structure. Most of them are using permanent materials for the outer wall and roofing of their houses and almost all of the respondents (99%) are non-squatters. The average floor area of housing units is 177 square meters. Around 90% of the respondents claimed that they own the house or have owner like position of the house and lot. About 93% to 98% of the farmers said that electricity is available in their houses and 88% to

94% of them also claimed that there water sources for drinking are safe. The average of drinking water source to household is 225 meters. Majority of them (30%) are relying from the services of tanker/truck/peddler and another 30% from other sources such as rain water. In terms of the toilet facility, at least 80% of the farmer respondents said that they have sanitary toilet facility. Majority of them are using owned flush toilet.

Generally, there are mixed results in terms of wealth ownership of the banana farmers. For insured farmers with claims, they tend to have more agricultural assets and household consumer durables than livestock ownership. Insured farmers but without claims on the other hand have more livestock than agricultural assets and consumer durables. Also uninsured farmers tend to have more agricultural assets than consumer durables and livestock.

In terms of the awareness of farmers on agricultural and economic services in the community, it appears that 60% to 90% of the farmers are aware of some economic services from financial institutions (such as credit associations, microfinance, cooperatives, and banks), agriculture and enterprise development/trainings, dealers of feeds, seeds, fertilizers, and pesticides, and agricultural market. Although the results show that there are several farmers who are aware of the agricultural services, there is less number of farmers who avail the said services. For instance, less than 20% of them avail services from credit associations and microfinance institutions. Only insured farmers with claims (44% to 48%) show considerable percentage in terms of their availment on cooperative and bank's services. Around 50% of the farmers avail the goods of fertilizer dealers in the community, however, the agricultural produce market is only used by less than 20% of the farmers.

The average physical area planted with Banana is 1.7 hectare per farmer. Specifically, the average physical area planted per farmer is around 2.5 hectares for those with insurance and claims, 1.4 hectares for those without claims and 1.5 hectares for farmers without insurance. 22% of parcels owned by farmers without claims (insured) are not covered with insurance and only 2.56% are not covered for farmers with insurance and claims. Some parcels of insured farmers are not yet covered with insurance and this can be attributed to their multi-cropping practice because only certain crops are insured and not all that are planted. In terms of farm topography, 71% of the parcels are located in broad plain areas, 17% are situated in river/flood plain and only 13% parcels are located in hilly/rolling areas in 2014 and 2015. For farmers who situated their parcels in broad plain areas, 46% do not have insurance, 27% are insured without claims and 27% have claims in 2014 and 2015. For those who are located in river/flood plain, 62% do not have insurance, 26% are insured with claims and 12% don't have claims in 2014 and 2015. Lastly in hilly/rolling places, 55% do not have insurance, 44% are insured without claims and only 2% have claims in 2014 and 2015.

In 2014, 96% of farmers' income are sourced from their banana production and it has decreased to 84% in 2015. The proportional decrease of the income derived from banana is due

to other relevant sources essential to their daily living expenses. Majority of the farmers seek other sources of income so they would not be totally affected if banana production will fail (less than expected revenues). Moreover, these other sources still has a minimal contribution to the income of banana farmers and these are: farm wage (3.2% & 4%), other crops (1.3% & 0%), non-agricultural commodities (1.3% & 2.5%), non-farm entrepreneurial activities (1.1% & 1.2%) , non-farm wage (0.30% & 5.3%) , remittance (0.37% & 0.61%), government transfers (0.038% & 0.082%) and other farm income (0% & 2.4%), in 2014 and 2015, respectively.

Credit availment is higher among farmers with insurance with claims to formal lending institutions like bank and cooperatives. Those availing loans are farmers with larger farm size. It was noted that there was a reduction in the number of farmers availed loans in 2015. Amount of loan availed from the formal sector is six (6) times higher than the amount of loan availed from informal lending. Interest rate rage from 3% to 11% in the formal sector, while 1% to 11% in the informal sector. It was noted that loans of banana farmers tied-up to plantations and those under the DAR/ARBOs through cooperative loans requires insurance as "surrogate collateral". This could show that availment of insurance increases access to credit among banana farmers. However, result of the survey and verified through FGDs that amount of credit availed is much higher compared to their insurance coverage. In cases of shock causing loss of crop, farmers will be burden to additional credit to plantations who finances rehabilitation of the farm, in addition to credit balances from loan in the bank. In most cases, farmers will not receive indemnity proceeds. Indemnity claims will automatically be remitted to the bank (LBP).

First availment of insurance among insured respondents was about three years ago in between Typhoon Pablo and Agaton in 2013 and 2014. There are very few (9/71) who first availed insurance more than five years ago, these are individual banana farmers with more than 1 hectare farm. There are insured farmers who don't avail insurance regularly, reason for no regular availment include lack of awareness and know-how on insurance and its application process and procedures. Some perceived that insurance is not helpful to them and lack of money to pay the premium. Among those who were insured, 72% claimed that they avail insurance on a regular basis, while 28% are not aware of the existence of their crop insurance as a reason of not availing it regularly. Crop insurance as requirement to avail loan in the banks is perceive to be the top reason for availing crop insurance. They also availed as beneficiary of free insurance. Survey shows that premium payments are sourced as part of the loan from creditor and similarly from free insurance of the government. Very few responded out of pocket as source of premium. FGD with PCIC revealed that out of pocket is minimal due to the existence of free insurance.

Banana farmers in Region XI responded that the most severe natural disaster they have experienced are typhoon (1st), flood (2nd) and drought (3rd). For typhoon, 48% of the farmers who have experienced this shock do not have insurance. Among them, 29% have insurance with claims and 23% have insurance without claims. The distribution and spending of household income is greatly affected by unexpected shocks experienced by banana farmers in the last two

years. Given that the most severe shock experienced by the farmers are typhoon, flood and drought, these are also the main reasons that triggered the average decline of household incomes (including job loss). Farmers who experienced shock tends to have longer time to recover. Most of the farmers' recovery status is only partial (covering 59% of the total farmers) in which 47% of them do not have insurance.

In terms of managing risk, farmers were not into risk mitigation. Among surveyed farmers, very few practice risk management pre and post shock. The use of high resilience varieties is the most popular since high resilience varieties are already available and required to be planted by the plantation. Most farms by banana farmers are monocrop, risk mitigation strategies handled both by farmers and the plantation.

Flood and drought are the shocks encountered by insured farmers leading to crop loss in 2014. On the average, claims due to flood is estimated to be around PhP198,244.00 (considering an average farms size of 1.7ha), average indemnity claim is estimated to be at PhP116, 614.11/ha. Lower indemnity claim of PhP22,390.00 for drought is observed. Banana farmers' perceived that indemnity claim processing is too long, not in time for the rehabilitation of the farm during shocks. Among those with claims, indemnity was used to pay for farm inputs, to pay existing loans and used it to buy food for the family.

In terms of the value of insurance to the farmer, it shows that willingness to pay is very low. Around 15% of the surveyed farmers are willing to pay PhP10, 500 annual premium for a maximum coverage of PhP300,000 per hectare. Decreasing the annual premium rate to PhP3,000 for the same amount of coverage, increases the number of those willing to pay to 46%. Those who are not willing to pay annual premium rate of phP10,500 are willing to pay an average premium of of PhP1,278.87, while those not willing to pay PhP3,000 are only willing to pay on the average of PhP421.19. Very low willingness to pay among farmers both insured and not insured are due to lack of information of farmers to importance of insurance and most did not feel the need to have it even after the experience from Pablo and Agaton. It can also be noted, that lower WTP is also recorded among those already insured since most of them are beneficiaries of free premium from DAR, APCP and PPP programs.

Overall satisfaction with PCIC's products and services is unsatisfactory. All product and services provided by PCIC were all rated as unsatisfactory. Common reasons of the low rating is lack of visibility of the PCIC personnel, and inaccessibility of their services. There were also misinformation in the field about crop insurance due to lack of information campaign of PCIC. It can be recalled that no respondent ever heard or seen PCIC from radio, TV or posters.

Results of the impact analysis using t-test of income from banana production between matched farmers with insurance and without insurance revealed that those without insurance has greater income compared to those with insurance. This could be attributable to differences in prices among those tied-up to plantation (which are insured farmers) and those non-insured

which are independent farmers who can benefit from rising market price of Banana (plantation farmers has constant price of produce within the contract period). Cost of production among non-insured is lower compared to those who are insured. Most of the insured are tied-up to plantation which source their inputs from the company with 10% price mark-up. The insignificant results from income comparisons in 2014 and 2015, and the higher productivity of farmers with no insurance in 2014 and 2015 compared to the insured farmers, suggests that the insurance does not have much of an effect in terms of increasing the annual income of the banana farmers.

CONCLUSIONS AND RECOMMENDATIONS

Given the results of the Survey and FGDs, several conclusions were made:

1. Crop insurance was able to increase access to credit by farmers, Banana farmers were linked to credit institutions through cooperatives operating under the Banana plantation. Crop insurance is used as repayment assurance instrument "surrogate collateral" in loan availment. PCIC insurance helps to mobilize funds for Banana production. In general, PCIC insurance encourages lending institutions to extend credit to the agricultural sector.

2. PCIC insurance has low penetration rate due to lack of information to banana farmers. Some of the farmers interviewed even those with insurance are not aware of the agricultural insurance packages of PCIC (not even heard PCIC). This could be attributed to lack of PCIC presence in the municipality level. PCIC only have eleven (11) regular personnel and 25 job orders covering 7 provinces in Davao Region including South Cotabato and Sarangani. PCIC should create satellite offices at least at the municipality level to be more accessible to farmers. It is encourage to improve information and education campaign to encourage more farmers to avail the insurance packages. Tarpaulin containing PCIC packages should be posted in strategic location in every MAO/FITS Centers.

3. Farmers seeking for insurance information including application process and indemnity claim application commonly approach the Municipal Agriculture Office (MAO). Surveyed farmers reported that MAO technicians are not responsive to this issues especially on the processing applications. The role of MAO and the guidelines for incentives should be cleared out on the implementation of the insurance scheme to support few manpower of PCIC.

4. When calamity strikes, farmers were able to receive indemnity claims. Most however, were not aware that they able to received indemnity due to the "tripartite" agreement signed among Banana corporations, growers and the Land Bank of the Philippines. Most of the farmers are aware but did not understand the nature of this arrangement. In some cases, loaned availed by cooperatives are used for non-production purposes.

5. Farmers may not receive proceed residuals from the indemnity, since insurance coverage is way below the amount of loan. Loan balance are usually paid from the fraction of income per

boxes produce by farms, it is automatically deducted by the growers organization. Indemnity payments are used to pay credit/loans to the bank.

6. Indemnity payment in the case of Banana farmers has no impact to smoothing household consumption during calamities. It is only an assurance for loan repayment. It will only have impact on smoothing household consumption after farm rehabilitation and normalization of production. Recovery can be fast-track with the assistance of Plantation Company which manages the rehabilitation of the plantation farms with the trade-off of more credit/loan shouldered by the farmers due to renewal of loans. At the farmers' perspective, this makes them more expose to risk from recoil of markets for Cavendish Banana. Market shocks causing reduction of demand for Cavendish Banana may hamper the payment of their loans to the credit institutions.

7. Non-insured farmers do not availed insurance because they do not feel the need for it, some want it but they were not listed in RSBSA thus do not qualify them to avail free crop insurance premium. Lack of capacity to pay for the premium rate perceived to be high among farmers. Most of them are relying on subsidized insurance from the government.

8. Willingness to pay of crop insurance premium for a maximum coverage of PhP300, 000 per hectare is very low among Banana farmers. On the average those who are not willing to pay PhP10, 500 annual premium are only willing to pay PhP1, 278.87. Those who are not willing to pay PhP3, 000 for the same maximum coverage are only willing to pay PhP 421.19 annual premium. The reliance of farmers to government subsidy entails a future problem on the sustainability of PCIC.

9. Processes of products and services provided by PCIC are rated unsatisfactory by farmers. It can be attributed to misinformation about insurance process, benefits and low level of awareness and understanding on the nature of insurance among Banana farmers. Some farmers thought that they will receive "cash" when crops will be damaged due to calamity.

10. A uniform rates of premium and coverage level for Banana as a whole is unrealistic. It should be fixed scientifically for at least the district level considering variations in agro climatic factors, cost of cultivation and yield across areas even within the same district. Alternative methods of calculation based on some inclusion criteria should be attempted to reduce the burden of the premium rates to the farmers (in the absence of subsidy) to motivate them to produce more without the fear of possible loss or risk.

11. The amount of indemnity should be assessed considering the dispersion of actual yield from the threshold yield (Manojkumar, et al., 2003). Perhaps, a much more intuitive scheme such as an index-based insurance product should be attempted for incorporating pests and diseases in an insurance package. The index-based insurance has been found as an innovative insurance instrument for tackling the traditional problems with agricultural insurance and to address the traditional insurance scheme's operational weaknesses (Roberts, 2005). The index based insurance makes use of an index or proxy as the trigger for indemnity payments, instead of an adjuster.

12. According to PCIC, they are setting a pilot test for weather based-index insurance. This index based insurance scheme was successfully adopted in some countries (i.e., Banladesh, Kenya, India, Colombia, etc,), this requires establishment of localize weather stations and improved meteorological information system.

13. Finally, PCIC insurance at its present coverage level is not sufficient to create impact on stabilizing income of banana farmers hit by shocks. This could be attributed to low insurance coverage which is only 55% of the production cost of Banana. Without the subsidy of the government, and status quo on coverage and premium rate, crop insurance in the country will not be sustained specially in the case of Banana.

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ANNEXES

ANNEXES

Annex 1. Detailed Regression Results

Set 1.1

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.013 NS	0.011	0.256	0.028 NS	0.044	0.526	-0.043 NS	0.037	0.253	-0.004 NS	0.013	0.732
year	-0.005 NS	0.010	0.648	0.017 NS	0.038	0.649	-0.010 NS	0.021	0.630	-0.009 NS	0.008	0.301
amt_cov_std2	-4.70E-07***	1.38e-07	0.001	-5.87E-0 NS 8	2.00E-07	0.769	-2.24E-07 NS	2.28E-07	0.326	-5.01E-07**	2.39E-07	0.036
shock_index_HH	0.000 NS	0.011	0.993	0.023 NS	0.045	0.602	0.011 NS	0.030	0.716	-0.002 NS	0.008	0.760
farmer_age	-0.012 NS	0.013	0.372	0.030 NS	0.024	0.195	-0.022 NS	0.026	0.389	-0.011 NS	0.017	0.495
farmer_age2	0.000 NS	0.000	0.527	0.000*	0.000	0.078	0.000 NS	0.000	0.563	0.000 NS	0.000	0.461
farmer_sex	0.120 NS	0.074	0.104	-0.323**	0.147	0.028	0.131 NS	0.119	0.272	0.128 NS	0.099	0.198
farmer_hgc												
20	0.089 NS	0.056	0.112	-0.005 NS	0.100	0.963	0.153 NS	0.108	0.154	0.013 NS	0.078	0.870
30	0.010 NS	0.061	0.866	-0.121 NS	0.162	0.456	0.143 NS	0.127	0.261	-0.096 NS	0.087	0.273
farmer_cvstat	0.019 NS	0.061	0.755	0.292**	0.130	0.025	-0.043 NS	0.098	0.660	0.064 NS	0.087	0.463
farmer_exp2	0.003 NS	0.002	0.139	0.001 NS	0.004	0.857	0.014***	0.005	0.006	-0.002 NS	0.003	0.526
farmer_org	0.012 NS	0.094	0.896	-0.071 NS	0.342	0.835	0.119 NS	0.287	0.680	0.028 NS	0.118	0.811
hh_size	0.014 NS	0.015	0.359	-0.040 NS	0.036	0.261	0.048 NS	0.030	0.111	-0.005 NS	0.020	0.813
dep_ratio	0.000 NS	0.001	0.903	0.004*	0.002	0.075	0.000 NS	0.002	0.948	0.001 NS	0.001	0.412
hhasset_ind	0.016 NS	0.012	0.179	0.059 NS	0.040	0.147	0.033 NS	0.030	0.261	0.006 NS	0.012	0.583
agriasset_ind	-0.015 NS	0.021	0.490	-0.023 NS	0.036	0.523	-0.005 NS	0.021	0.804	-0.052*	0.027	0.055
availment_ind	-0.013**	0.007	0.042	-0.013 NS	0.010	0.210	-0.013 NS	0.010	0.209	-0.015 NS	0.011	0.194
farmsize	0.053 NS	0.035	0.129									
variety_lat	0.797***	0.102	0.000	1.395***	0.115	0.000	0.928***	0.176	0.000	0.466***	0.157	0.003
variety_sab	0.162**	0.076	0.035	0.779***	0.229	0.001	0.163 NS	0.166	0.325	0.093 NS	0.122	0.444

pct_owned	0.079 NS	0.095	0.408	0.181 NS	0.136	0.183	0.219 NS	0.149	0.144	-0.003 NS	0.174	0.987
topog_flood	-0.067 NS	0.068	0.327	0.575***	0.219	0.009	-0.218 NS	0.180	0.225	-0.108 NS	0.081	0.185
ln_nfarm_wage	-0.003NS	0.003	0.309	-0.019***	0.005	0.000	-0.007 NS	0.005	0.200	0.002 NS	0.001	0.117
ln_nfarm_entrep	-0.002 NS	0.003	0.420	-0.008 NS	0.005	0.133	-0.002 NS	0.015	0.876	-0.001 NS	0.003	0.635
ln_govt_transf	0.004 NS	0.004	0.283	0.025**	0.010	0.014	0.015 NS	0.013	0.251	0.001 NS	0.001	0.518
_cons	10.380***	0.457	0.000	9.410***	0.980	0.000	10.436***	0.903	0.000	10.790***	0.497	0.000
R^2 Overall		0.2717			0.8058			0.3879			0.1415	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.009 NS	0.012	0.418	0.035 NS	0.044	0.427	-0.038 NS	0.036	0.294	-0.001 NS	0.014	0.951
year	-0.006 NS	0.010	0.591	0.016 NS	0.038	0.671	-0.010 NS	0.021	0.626	-0.010 NS	0.008	0.247
amt_cov_std2	-4.77E-07 ***	1.38E-07	0.001	-2.32E-08 NS	1.98E-07	0.907	-2.88E-07 NS	2.36E-07	0.222	-4.77E-07**	2.38E-07	0.046
shock_index_HH	0.000 NS	0.011	0.982	0.016 NS	0.048	0.739	0.014 NS	0.031	0.646	-0.003 NS	0.008	0.672
farmer_age	-0.014 NS	0.013	0.292	0.040 NS	0.024	0.100	-0.027 NS	0.025	0.291	-0.011 NS	0.017	0.520
farmer_age2	0.000 NS	0.000	0.417	-0.001**	0.000	0.039	0.000 NS	0.000	0.440	0.000 NS	0.000	0.470
farmer_sex	0.117 NS	0.074	0.113	-0.311**	0.143	0.029	0.132 NS	0.117	0.262	0.133 NS	0.100	0.182
farmer_hgc												
20	0.099*	0.057	0.082	-0.025 NS	0.104	0.812	0.180*	0.109	0.098	0.019 NS	0.080	0.812
30	0.028 NS	0.062	0.653	-0.134 NS	0.163	0.411	0.161 NS	0.125	0.199	-0.084 NS	0.089	0.345
farmer_cvstat	0.004 NS	0.062	0.943	0.298**	0.130	0.022	-0.090 NS	0.094	0.337	0.066 NS	0.088	0.456
farmer_exp2	0.003 NS	0.002	0.177	0.001 NS	0.004	0.826	0.014***	0.005	0.007	-0.003 NS	0.003	0.417
farmer_org	-0.024 NS	0.097	0.803	-0.171 NS	0.361	0.635	0.074 NS	0.285	0.796	-0.006 NS	0.125	0.963
hh_size	0.017 NS	0.016	0.276	-0.043 NS	0.036	0.221	0.060*	0.031	0.049	-0.007 NS	0.020	0.711
dep_ratio	0.000 NS	0.001	0.969	0.004 NS	0.003	0.125	0.000 NS	0.002	0.866	0.001 NS	0.001	0.404
hhasset_ind	0.014 NS	0.013	0.282	0.059 NS	0.041	0.155	0.020 NS	0.029	0.494	0.007 NS	0.013	0.601
agriasset_ind	-0.013 NS	0.022	0.550	-0.012 NS	0.042	0.781	-0.002 NS	0.019	0.932	-0.051*	0.028	0.068
availment_ind	-0.015**	0.007	0.024	-0.011 NS	0.012	0.375	-0.015 NS	0.011	0.141	-0.016 NS	0.011	0.172
farmsize	0.041 NS	0.036	0.251									
variety_lat	0.761***	0.103	0.000	1.398***	0.119	0.000	0.833***	0.174	0.000	0.474***	0.158	0.003
variety_sab	0.177**	0.078	0.024	0.769***	0.229	0.001	0.156 NS	0.165	0.344	0.132 NS	0.124	0.288
pct_owned	0.091 NS	0.101	0.368	0.190 NS	0.134	0.157	0.281**	0.141	0.046	-0.021 NS	0.198	0.915
topog_flood	-0.050 NS	0.069	0.468	0.610***	0.218	0.005	-0.194 NS	0.177	0.275	-0.094 NS	0.085	0.266
ln_nfarm_wage	-0.004 NS	0.003	0.175	-0.020***	0.006	0.000	-0.008 NS	0.005	0.103	0.002 NS	0.001	0.171

ln_nfarm_entrep	-0.002 NS	0.003	0.492	-0.008 NS	0.006	0.162	0.000 NS	0.015	0.986	-0.001 NS	0.003	0.625
ln_govt_transf	0.004 NS	0.004	0.298	0.025**	0.010	0.014	0.015 NS	0.014	0.290	0.001 NS	0.001	0.516
_cons	10.474***	0.464	0.000	9.259***	0.958	0.000	10.516***	0.900	0.000	10.804***	0.499	0.000
R^2 Overall	0.2667			0.8061			0.3863			0.1471		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coeff.	Std. Err.	P-Value	Coeff.	Std. Err.	P-Value	Coeff.	Std. Err.	P-Value	Coeff.	Std. Err.	P-Value
pr_insured_pcic	-0.006 NS	0.013	0.631	0.088 NS	0.055	0.107	-0.003 NS	0.049	0.959	-0.004 NS	0.015	0.792
year	-0.007 NS	0.013	0.563	0.000 NS	0.040	0.994	-0.022 NS	0.030	0.463	-0.008 NS	0.012	0.505
amt_cov_std2	-7.54E-07**	3.43E-07	0.028	2.62E-07 NS	2.83E-06	0.926	-5.15E-07 NS	4.58E-07	0.26	-3.57E-07 NS	4.88E-07	0.465
shock_index_HH	-0.010 NS	0.013	0.464	-0.013 NS	0.054	0.802	0.003 NS	0.034	0.927	-0.016 NS	0.013	0.201
farmer_age	-0.005 NS	0.017	0.756	0.081 NS	0.069	0.240	-0.053 NS	0.036	0.136	0.008 NS	0.020	0.669
farmer_age2	0.000 NS	0.000	0.831	-0.001 NS	0.001	0.169	0.000 NS	0.000	0.209	0.000 NS	0.000	0.882
farmer_sex	0.158*	0.090	0.079	-0.269 NS	0.239	0.261	0.142 NS	0.142	0.316	0.218*	0.115	0.058
farmer_hgc												
20	0.082 NS	0.067	0.218	-0.116 NS	0.198	0.559	0.120 NS	0.131	0.363	-0.028 NS	0.082	0.735
30	0.026 NS	0.075	0.725	-0.338 NS	0.272	0.214	0.071 NS	0.151	0.639	-0.111 NS	0.093	0.231
farmer_cvstat	0.030 NS	0.076	0.697	0.184 NS	0.264	0.486	-0.031 NS	0.110	0.775	0.024 NS	0.106	0.819
farmer_exp2	0.001 NS	0.003	0.686	-0.007 NS	0.010	0.497	0.007 NS	0.006	0.210	-0.006 NS	0.004	0.152
farmer_org	-0.057 NS	0.114	0.618	-0.684 NS	0.492	0.164	-0.251 NS	0.370	0.497	0.043 NS	0.154	0.780
hh_size	0.012 NS	0.017	0.504	-0.013 NS	0.069	0.849	0.032 NS	0.041	0.426	-0.017 NS	0.021	0.428
dep_ratio	0.001 NS	0.001	0.582	0.002 NS	0.004	0.639	-0.002 NS	0.002	0.383	0.002 NS	0.001	0.161
hhasset_ind	0.019 NS	0.014	0.192	0.025 NS	0.054	0.643	0.015 NS	0.032	0.636	0.026*	0.015	0.092
agriasset_ind	-0.015 NS	0.029	0.611	0.016 NS	0.047	0.734	0.030 NS	0.026	0.250	-0.048*	0.026	0.067
availment_ind	-0.018**	0.009	0.037	-0.001 NS	0.021	0.947	-0.006 NS	0.014	0.651	-0.038***	0.013	0.004
farmsize	0.065 NS	0.042	0.127									
variety_lat	0.605***	0.134	0.000	1.202***	0.224	0.000	0.883***	0.284	0.002	0.206 NS	0.151	0.172
variety_sab	0.141 NS	0.096	0.141	0.909***	0.332	0.006	0.327 NS	0.219	0.135	-0.029 NS	0.138	0.832
pct_owned	-0.078 NS	0.100	0.437	-0.046 NS	0.213	0.829	0.383 NS	0.254	0.131	-0.210 NS	0.151	0.166
topog_flood	-0.007 NS	0.073	0.924	0.711**	0.359	0.048	-0.047 NS	0.206	0.820	-0.024 NS	0.089	0.786
ln_nfarm_wage	-0.006 NS	0.004	0.184	-0.025***	0.009	0.005	-0.011 NS	0.007	0.124	0.003 NS	0.003	0.268
ln_nfarm_entrep	-0.001 NS	0.003	0.591	-0.004 NS	0.005	0.405	0.020**	0.009	0.028	-0.006 NS	0.004	0.192

ln_govt_transf	0.005 NS	0.004	0.167	0.019 NS	0.013	0.152	0.017 NS	0.019	0.371	0.003 NS	0.002	0.161
_cons	10.361***	0.578	0.000	9.248***	1.695	0.000	11.887***	1.324	0.000	10.406***	0.576	0.000
R^2 Overall		0.2015			0.8534			0.3443			0.1645	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 1.2

Xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##c.shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
year	-0.003 NS	0.010	0.764	0.020 NS	0.043	0.639	-0.011 NS	0.020	0.576	-0.005 NS	0.008	0.559
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.368	0.001 NS	0.008	0.939	0.003 NS	0.003	0.401	0.001 NS	0.002	0.618
amt_cov_std2	-4.69E-07***	1.37E-07	0.001	-6.91E-08 NS	2.06E-07	0.737	-2.15E-07 NS	2.28E-07	0.346	-5.07E-07**	2.37E-07	0.032
shock_index_HH	0.001 NS	0.012	0.950	0.034 NS	0.042	0.415	0.007 NS	0.030	0.822	0.002 NS	0.009	0.843
c.pr_insured_pcic#c.shock_index_HH	-0.001 NS	0.002	0.525	0.004 NS	0.009	0.678	-0.009 NS	0.006	0.118	0.002 NS	0.001	0.243
farmer_age	-0.012 NS	0.013	0.374	0.030 NS	0.023	0.200	-0.021 NS	0.026	0.407	-0.012 NS	0.017	0.485
farmer_age2	0.000 NS	0.000	0.528	0.000*	0.000	0.080	0.000 NS	0.000	0.580	0.000 NS	0.000	0.454
farmer_sex	0.119 NS	0.074	0.104	-0.322**	0.148	0.030	0.132 NS	0.120	0.268	0.127 NS	0.100	0.203
farmer_hgc												
20	0.089 NS	0.056	0.112	-0.004 NS	0.102	0.971	0.155 NS	0.107	0.149	0.013 NS	0.079	0.873
30	0.010 NS	0.061	0.865	-0.121 NS	0.163	0.460	0.146 NS	0.126	0.248	-0.096 NS	0.088	0.271
farmer_cvstat	0.019 NS	0.061	0.759	0.290**	0.132	0.028	-0.045 NS	0.098	0.642	0.064 NS	0.087	0.463
farmer_exp2	0.003 NS	0.002	0.141	0.001 NS	0.004	0.840	0.014***	0.005	0.006	-0.002 NS	0.003	0.535
farmer_org	0.012 NS	0.094	0.898	-0.076 NS	0.346	0.825	0.129 NS	0.287	0.654	0.030 NS	0.118	0.800
hh_size	0.014 NS	0.015	0.360	-0.040 NS	0.036	0.263	0.050 NS	0.030	0.102	-0.004 NS	0.020	0.837
dep_ratio	0.000 NS	0.001	0.899	0.004*	0.002	0.078	0.000 NS	0.002	0.918	0.001 NS	0.001	0.480
hhasset_ind	0.016 NS	0.012	0.178	0.057 NS	0.041	0.164	0.034 NS	0.029	0.250	0.006 NS	0.012	0.580
agriasset_ind	-0.014 NS	0.022	0.504	-0.024 NS	0.037	0.509	-0.007 NS	0.022	0.734	-0.053*	0.027	0.051
availment_ind	-0.013**	0.007	0.043	-0.013 NS	0.010	0.200	-0.012 NS	0.010	0.229	-0.015 NS	0.011	0.193
farmsize	0.053 NS	0.035	0.132									
variety_lat	0.797***	0.102	0.000	1.393***	0.117	0.000	0.926***	0.176	0.000	0.463***	0.157	0.003

variety_sab	0.162**	0.077	0.034	0.778***	0.233	0.001	0.160 NS	0.165	0.333	0.093 NS	0.122	0.449
pct_owned	0.079 NS	0.095	0.409	0.181 NS	0.137	0.186	0.219 NS	0.149	0.143	-0.003 NS	0.175	0.985
topog_flood	-0.067 NS	0.068	0.325	0.577***	0.222	0.009	-0.222 NS	0.180	0.218	-0.108 NS	0.082	0.185
ln_nfarm_wage	-0.003 NS	0.003	0.302	-0.019***	0.005	0.000	-0.007 NS	0.005	0.199	0.002 NS	0.001	0.102
ln_nfarm_entrep	-0.002 NS	0.003	0.410	-0.008 NS	0.006	0.186	-0.003 NS	0.015	0.833	-0.001 NS	0.003	0.736
ln_govt_transf	0.004 NS	0.004	0.333	0.025**	0.010	0.013	0.016 NS	0.014	0.248	0.001 NS	0.001	0.445
_cons	10.351***	0.452	0.000	9.396***	1.061	0.000	10.399***	0.894	0.000	10.753***	0.498	0.000
R^2 Overall	0.2724			0.8062			0.3928			0.1441		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##c.shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

note: pr_insured_pcic omitted because of collinearity

	ALL			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.035 NS	0.029	0.223	0.028 NS	0.116	0.811	-0.084 NS	0.062	0.175	-0.013 NS	0.026	0.610
year	-0.004 NS	0.010	0.697	0.019 NS	0.044	0.661	-0.012 NS	0.020	0.558	-0.006 NS	0.008	0.455
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.341	0.001 NS	0.008	0.933	0.003 NS	0.004	0.404	0.001 NS	0.002	0.603
amt_cov_std2	-4.76E-07***	1.38E-07	0.001	-3.40E-08 NS	2.05E-07	0.869	-2.79E-07 NS	2.36E-07	0.237	-4.82E-07**	2.37E-07	0.042
shock_index_HH	0.000 NS	0.012	0.983	0.028 NS	0.044	0.523	0.010	0.031	0.741	0.001 NS	0.009	0.940
c.pr_insured_pcic#c.shock_index_HH	-0.001 NS	0.002	0.476	0.004 NS	0.009	0.664	-0.009 NS	0.006	0.107	0.001 NS	0.001	0.296
farmer_age	-0.014 NS	0.013	0.293	0.039 NS	0.024	0.104	-0.026 NS	0.025	0.305	-0.011 NS	0.017	0.509
farmer_age2	0.000 NS	0.000	0.417	0.000**	0.000	0.040	0.000 NS	0.000	0.454	0.000 NS	0.000	0.463
farmer_sex	0.117 NS	0.074	0.114	-0.309**	0.144	0.032	0.133 NS	0.117	0.258	0.132 NS	0.100	0.186
farmer_hgc												
20	0.099*	0.057	0.082	-0.024 NS	0.106	0.821	0.182*	0.108	0.093	0.019 NS	0.080	0.815
30	0.028 NS	0.062	0.654	-0.134 NS	0.164	0.416	0.165 NS	0.125	0.187	-0.085 NS	0.089	0.343
farmer_cvstat	0.004 NS	0.062	0.949	0.296**	0.132	0.025	-0.093 NS	0.094	0.322	0.066 NS	0.088	0.456
farmer_exp2	0.003 NS	0.002	0.180	0.001 NS	0.004	0.809	0.014***	0.005	0.007	-0.002 NS	0.003	0.425
farmer_org	-0.025 NS	0.098	0.801	-0.177 NS	0.365	0.629	0.084 NS	0.285	0.768	-0.004 NS	0.125	0.973
hh_size	0.017 NS	0.016	0.277	-0.044 NS	0.036	0.224	0.061**	0.031	0.045	-0.007 NS	0.020	0.734
dep_ratio	0.000 NS	0.001	0.968	0.004 NS	0.003	0.130	0.000 NS	0.002	0.897	0.001 NS	0.001	0.469
hhasset_ind	0.014 NS	0.013	0.266	0.058 NS	0.042	0.173	0.021 NS	0.029	0.480	0.006 NS	0.013	0.614
agriasset_ind	-0.013 NS	0.022	0.566	-0.013 NS	0.043	0.768	-0.004 NS	0.020	0.830	-0.051*	0.028	0.063
availment_ind	-0.015**	0.007	0.025	-0.011 NS	0.012	0.362	-0.015 NS	0.010	0.157	-0.016 NS	0.011	0.172
farmsize	0.041 NS	0.036	0.259									
variety_lat	0.762***	0.103	0.000	1.396***	0.121	0.000	0.830***	0.173	0.000	0.471***	0.158	0.003

variety_sab	0.178**	0.078	0.023	0.768***	0.232	0.001	0.153 NS	0.164	0.351	0.131 NS	0.124	0.291
pct_owned	0.091 NS	0.101	0.368	0.191 NS	0.136	0.160	0.282**	0.140	0.044	-0.022 NS	0.198	0.911
topog_flood	-0.050 NS	0.069	0.464	0.612***	0.221	0.006	-0.198 NS	0.177	0.264	-0.094 NS	0.085	0.268
ln_nfarm_wage	-0.004 NS	0.003	0.168	-0.019***	0.006	0.001	-0.008 NS	0.005	0.103	0.002 NS	0.001	0.154
ln_nfarm_entrep	-0.002 NS	0.003	0.477	-0.008 NS	0.006	0.214	-0.001 NS	0.015	0.969	-0.001 NS	0.003	0.727
ln_govt_transf	0.004 NS	0.004	0.352	0.025**	0.010	0.013	0.015 NS	0.014	0.286	0.001 NS	0.001	0.476
_cons	10.445***	0.459	0.000	9.249***	1.038	0.000	10.482***	0.888	0.000	10.770***	0.500	0.000
R^2 Overall	0.2675			0.8066			0.3923			0.1462		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##c.shock_index_HH farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.043 NS	0.030	0.157	0.153 NS	0.147	0.298	-0.066 NS	0.076	0.386	-0.042 NS	0.031	0.173
year	-0.001 NS	0.011	0.910	-0.022 NS	0.048	0.641	-0.010 NS	0.025	0.693	-0.004 NS	0.011	0.704
c.pr_insured_pcic#c.year	0.003 NS	0.002	0.187	-0.004 NS	0.008	0.589	0.004 NS	0.004	0.325	0.003 NS	0.002	0.177
amt_cov_std2	-7.36E-07**	3.42E-07	0.031	1.81E-07 NS	2.93E-06	0.951	-4.80E-07 NS	4.54E-07	0.29	-3.32E-07 NS	4.88E-07	0.496
shock_index_HH	-0.013 NS	0.014	0.365	-0.026 NS	0.089	0.773	-0.001 NS	0.028	0.972	-0.020 NS	0.014	0.153
c.pr_insured_pcic#c.shock_index_HH	-0.001 NS	0.001	0.226	-0.003 NS	0.015	0.837	-0.004 NS	0.006	0.483	-0.001 NS	0.001	0.271
farmer_age	-0.005 NS	0.017	0.762	0.082 NS	0.072	0.253	-0.052 NS	0.036	0.143	0.009 NS	0.020	0.664
farmer_age2	0.000 NS	0.000	0.839	-0.001 NS	0.001	0.186	0.000 NS	0.000	0.218	0.000 NS	0.000	0.876
farmer_sex	0.158*	0.090	0.080	-0.265 NS	0.250	0.290	0.145 NS	0.142	0.306	0.217*	0.115	0.059
farmer_hgc												
20	0.081 NS	0.067	0.229	-0.109 NS	0.205	0.595	0.118 NS	0.132	0.371	-0.030 NS	0.082	0.715
30	0.024 NS	0.075	0.751	-0.339 NS	0.281	0.227	0.071 NS	0.152	0.637	-0.115 NS	0.093	0.219
farmer_cvstat	0.028 NS	0.076	0.708	0.193 NS	0.274	0.482	-0.036 NS	0.110	0.743	0.023 NS	0.106	0.828
farmer_exp2	0.001 NS	0.003	0.707	-0.008 NS	0.011	0.473	0.007 NS	0.006	0.217	-0.006 NS	0.004	0.148
farmer_org	-0.065 NS	0.114	0.564	-0.681 NS	0.508	0.180	-0.246 NS	0.371	0.507	0.035 NS	0.154	0.818
hh_size	0.011 NS	0.018	0.527	-0.014 NS	0.071	0.846	0.033 NS	0.041	0.418	-0.018 NS	0.021	0.403
dep_ratio	0.001 NS	0.001	0.622	0.002 NS	0.004	0.624	-0.002 NS	0.002	0.370	0.002 NS	0.001	0.183
hhasset_ind	0.019 NS	0.015	0.190	0.025 NS	0.056	0.661	0.013 NS	0.032	0.674	0.027*	0.016	0.086
agriasset_ind	-0.014 NS	0.029	0.632	0.012 NS	0.047	0.801	0.030 NS	0.027	0.263	-0.048*	0.026	0.068
availment_ind	-0.018**	0.009	0.040	-0.002 NS	0.021	0.932	-0.006 NS	0.014	0.656	-0.037***	0.013	0.004
farmsize	0.063 NS	0.043	0.137									

variety_lat	0.606***	0.134	0.000	1.201***	0.230	0.000	0.878***	0.285	0.002	0.209 NS	0.152	0.169
variety_sab	0.147 NS	0.096	0.125	0.915***	0.343	0.008	0.323 NS	0.219	0.141	-0.023 NS	0.139	0.871
pct_owned	-0.081 NS	0.100	0.418	-0.054 NS	0.220	0.805	0.381 NS	0.254	0.135	-0.212 NS	0.152	0.164
topog_flood	-0.003 NS	0.073	0.973	0.717*	0.372	0.054	-0.048 NS	0.206	0.815	-0.020 NS	0.089	0.819
ln_nfarm_wage	-0.006 NS	0.004	0.186	-0.025***	0.009	0.008	-0.011 NS	0.007	0.134	0.003 NS	0.003	0.264
ln_nfarm_entrep	-0.001 NS	0.003	0.591	-0.004 NS	0.005	0.397	0.019**	0.009	0.035	-0.006 NS	0.005	0.216
ln_govt_transf	0.005 NS	0.004	0.214	0.018 NS	0.014	0.175	0.017 NS	0.019	0.371	0.003 NS	0.002	0.279
_cons	10.283***	0.567	0.000	9.539***	1.994	0.000	11.690***	1.295	0.000	10.353***	0.572	0.000
R^2 Overall	0.2027			0.8515			0.3479			0.1659		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 1.3

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmsize, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.008 NS	0.005	0.119	-0.001 NS	0.014	0.913	-0.023***	0.009	0.009	0.001 NS	0.008	0.882
year	-0.004 NS	0.010	0.679	0.021 NS	0.034	0.538	-0.012 NS	0.020	0.561	-0.007 NS	0.008	0.418
amt_cov_std2	-6.99E-07***	1.53E-07	0.000	-5.42E-07 NS	3.55E-07	0.127	-7.18E-07***	2.48E-07	0.004	-5.73E-07**	2.35E-07	0.015
shock_index_HH	0.004 NS	0.011	0.708	0.036 NS	0.034	0.288	0.016 NS	0.030	0.587	-0.007 NS	0.008	0.398
farmsize	-0.021 NS	0.036	0.563									
_cons	10.621***	0.176	0.000	10.278***	0.500	0.000	10.658***	0.302	0.000	10.594***	0.118	0.000
R^2 *Overall*	0.0690			0.0543			0.1024			0.0504		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmsize if match!=2, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.007 NS	0.005	0.182	0.000 NS	0.014	0.997	-0.020**	0.008	0.016	0.002 NS	0.008	0.824
year	-0.005 NS	0.010	0.639	0.020 NS	0.034	0.558	-0.012 NS	0.021	0.554	-0.007 NS	0.008	0.357
amt_cov_std2	-7.23E-07***	1.56E-07	0.00	-5.06E-07 NS	3.49E-07	0.147	-8.08E-07***	2.52E-07	0.001	-5.62E-07**	2.36E-07	0.017
shock_index_HH	0.005 NS	0.011	0.679	0.040 NS	0.036	0.272	0.020 NS	0.031	0.509	-0.00 NS 7	0.008	0.362
farmsize	-0.025 NS	0.037	0.504									
_cons	10.643***	0.181	0.000	10.306***	0.502	0.000	10.680***	0.316	0.000	10.607***	0.119	0.000
R^2 *Overall*	0.0714			0.0471			0.1117			0.0478		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_index_HH farmsize if match!=2 & ((insured_pcic==0 & indem_claim==.) |insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.006 NS	0.006	0.302	-0.007 NS	0.015	0.625	-0.021*	0.010	0.050	0.002 NS	0.009	0.800
year	-0.008 NS	0.013	0.546	0.009 NS	0.031	0.761	-0.012 NS	0.029	0.671	-0.008 NS	0.012	0.480
amt_cov_std2	-1.18E-06***	3.49E-07	0.001	-4.75E-06***	3.61E-07	0.000	-1.19E-06**	5.25E-07	0.023	-5.02E-07 NS	4.14E-07	0.226
shock_index_HH	-0.007 NS	0.014	0.612	0.012 NS	0.039	0.761	0.010 NS	0.033	0.760	-0.019 NS	0.014	0.156
farmsize	0.017 NS	0.042	0.679									
_cons	10.565***	0.218	0.000	10.375***	0.444	0.000	10.632***	0.418	0.000	10.617***	0.173	0.000
R^2 Overall	0.0386			0.2021			0.0872			0.0023		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 2.1

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstatfarmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.013 NS	0.011	0.256	0.030 NS	0.044	0.493	-0.041 NS	0.037	0.267	-0.004 NS	0.013	0.731
year	-0.005 NS	0.010	0.657	0.015 NS	0.035	0.665	-0.013 NS	0.023	0.576	-0.008 NS	0.009	0.400
amt_cov_std2	-4.69E-07***	1.37E-07	0.001	-5.00E-08 NS	1.94E-07	0.796	-2.19E-07 NS	2.23E-07	0.327	-5.01E-07**	2.38E-07	0.035
farmer_age	-0.012 NS	0.013	0.372	0.031 NS	0.023	0.187	-0.023 NS	0.026	0.382	-0.011 NS	0.017	0.497
farmer_age2	0.000 NS	0.000	0.527	0.000*	0.000	0.072	0.000 NS	0.000	0.557	0.000 NS	0.000	0.462
farmer_sex	0.120 NS	0.074	0.104	-0.323**	0.146	0.027	0.131 NS	0.119	0.271	0.128 NS	0.099	0.197
farmer_hgc												
20	0.089 NS	0.056	0.112	-0.004 NS	0.100	0.965	0.151 NS	0.107	0.160	0.013 NS	0.078	0.866
30	0.010 NS	0.061	0.866	-0.123 NS	0.160	0.441	0.140 NS	0.127	0.272	-0.095 NS	0.087	0.273
farmer_cvstat	0.019 NS	0.061	0.754	0.285**	0.125	0.023	-0.044 NS	0.097	0.653	0.064 NS	0.087	0.460
farmer_exp2	0.003 NS	0.002	0.139	0.001 NS	0.004	0.858	0.014***	0.005	0.006	-0.002 NS	0.003	0.526
farmer_org	0.012 NS	0.094	0.897	-0.090 NS	0.336	0.788	0.110 NS	0.287	0.702	0.028 NS	0.118	0.810
hh_size	0.014 NS	0.015	0.359	-0.040 NS	0.035	0.253	0.048 NS	0.030	0.115	-0.005 NS	0.020	0.811
dep_ratio	0.000 NS	0.001	0.903	0.004*	0.002	0.079	0.000 NS	0.002	0.973	0.001 NS	0.001	0.394
hhasset_ind	0.016 NS	0.012	0.178	0.059 NS	0.040	0.144	0.033 NS	0.030	0.260	0.006 NS	0.011	0.589
agriasset_ind	-0.015 NS	0.021	0.486	-0.024 NS	0.035	0.493	-0.003 NS	0.020	0.881	-0.052*	0.027	0.050
availment_ind	-0.013**	0.007	0.041	-0.013 NS	0.010	0.199	-0.013 NS	0.010	0.211	-0.015 NS	0.011	0.195
farmsize	0.053 NS	0.035	0.129									
variety_lat	0.797***	0.102	0.000	1.396***	0.114	0.000	0.929***	0.177	0.000	0.465***	0.156	0.003
variety_sab	0.162**	0.076	0.034	0.786***	0.229	0.001	0.167 NS	0.166	0.316	0.093 NS	0.122	0.444

pct_owned	0.079 NS	0.095	0.408	0.177 NS	0.133	0.184	0.218 NS	0.150	0.145	-0.003 NS	0.174	0.988
topog_flood	-0.066 NS	0.068	0.327	0.581***	0.218	0.008	-0.213 NS	0.181	0.239	-0.108 NS	0.081	0.183
ln_nfarm_wage	-0.003 NS	0.003	0.309	-0.019***	0.005	0.000	-0.007 NS	0.005	0.198	0.002 NS	0.001	0.114
ln_nfarm_entrep	-0.002 NS	0.003	0.419	-0.008 NS	0.005	0.132	-0.002 NS	0.015	0.889	-0.001 NS	0.003	0.604
ln_govt_transf	0.004 NS	0.004	0.281	0.025**	0.010	0.012	0.015 NS	0.014	0.254	0.001 NS	0.001	0.538
_cons	10.381***	0.458	0.000	9.468***	0.939	0.000	10.501***	0.927	0.000	10.771***	0.495	0.000
R^2 Overall	0.2716			0.8062			0.3863			0.1449		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pic	-0.009 NS	0.012	0.418	0.037 NS	0.044	0.402	-0.036 NS	0.036	0.315	-0.001 NS	0.014	0.950
year	-0.005 NS	0.011	0.611	0.016 NS	0.037	0.672	-0.014 NS	0.024	0.551	-0.008 NS	0.009	0.364
amt_cov_std2	-4.77E-07***	1.38E-07	0.001	-1.85E-08 NS	1.91E-07	0.923	-2.82E-07 NS	2.31E-07	0.223	-4.77E-07**	2.38E-07	0.045
farmer_age	-0.014 NS	0.013	0.292	0.040*	0.024	0.088	-0.027 NS	0.025	0.286	-0.011 NS	0.017	0.522
farmer_age2	0.000 NS	0.000	0.416	-0.001**	0.000	0.033	0.000 NS	0.000	0.437	0.000 NS	0.000	0.472
farmer_sex	0.117 NS	0.074	0.113	-0.311**	0.142	0.029	0.131 NS	0.117	0.262	0.133 NS	0.100	0.181
farmer_hgc												
20	0.099*	0.057	0.082	-0.025 NS	0.104	0.809	0.177 NS	0.108	0.103	0.020 NS	0.080	0.807
30	0.028 NS	0.062	0.653	-0.136 NS	0.161	0.399	0.158 NS	0.126	0.210	-0.084 NS	0.089	0.347
farmer_cvstat	0.004 NS	0.062	0.943	0.294**	0.126	0.019	-0.091 NS	0.094	0.330	0.066 NS	0.088	0.451
farmer_exp2	0.003 NS	0.002	0.177	0.001 NS	0.004	0.828	0.014***	0.005	0.008	-0.003 NS	0.003	0.417
farmer_org	-0.024 NS	0.098	0.803	-0.186 NS	0.355	0.601	0.062 NS	0.285	0.828	-0.005 NS	0.125	0.966
hh_size	0.017 NS	0.016	0.276	-0.044 NS	0.035	0.213	0.060*	0.031	0.052	-0.008 NS	0.020	0.709
dep_ratio	0.000 NS	0.001	0.969	0.004 NS	0.003	0.124	0.000 NS	0.002	0.835	0.001 NS	0.001	0.387
hhasset_ind	0.014 NS	0.013	0.282	0.059 NS	0.041	0.153	0.020 NS	0.029	0.489	0.006 NS	0.012	0.613
agriasset_ind	-0.013 NS	0.022	0.545	-0.014 NS	0.042	0.746	0.001 NS	0.018	0.957	-0.051*	0.027	0.061
availment_ind	-0.015**	0.007	0.024	-0.011 NS	0.012	0.365	-0.015 NS	0.011	0.144	-0.016 NS	0.011	0.173
farmsize	0.041 NS	0.036	0.251									
variety_lat	0.761***	0.103	0.000	1.399***	0.118	0.000	0.835***	0.175	0.000	0.472***	0.157	0.003
variety_sab	0.177**	0.078	0.024	0.774**	0.229	0.001	0.161 NS	0.165	0.329	0.131 NS	0.124	0.288
pct_owned	0.091 NS	0.101	0.368	0.188 NS	0.132	0.155	0.281**	0.142	0.048	-0.021 NS	0.198	0.916
topog_flood	-0.050 NS	0.069	0.468	0.614***	0.218	0.005	-0.186 NS	0.178	0.296	-0.095 NS	0.085	0.263

ln_nfarm_wage	-0.004 NS	0.003	0.175	-0.019***	0.005	0.000	-0.008 NS	0.005	0.102	0.002 NS	0.001	0.167
ln_nfarm_entrep	-0.002 NS	0.003	0.489	-0.007 NS	0.005	0.143	0.001 NS	0.015	0.970	-0.002 NS	0.003	0.586
ln_govt_transf	0.004 NS	0.004	0.297	0.025**	0.010	0.013	0.015 NS	0.014	0.293	0.001 NS	0.001	0.556
_cons	10.472***	0.466	0.000	9.279***	0.931	0.000	10.600***	0.925	0.000	10.777***	0.498	0.000
R^2 Overall		0.2666			0.8065			0.3841			0.1470	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.006 NS	0.013	0.620	0.090 NS	0.056	0.108	-0.002 NS	0.049	0.969	-0.004 NS	0.015	0.788
year	-0.004 NS	0.013	0.735	0.000 NS	0.039	0.999	-0.023 NS	0.028	0.419	-0.002 NS	0.013	0.888
amt_cov_std2	-7.66E-07**	3.43E-07	0.025	-1.33E-09 NS	2.85E-06	1	-5.14E-07 NS	4.55E-07	0.258	-3.85E-07 NS	4.87E-07	0.429
farmer_age	-0.005 NS	0.017	0.761	0.077 NS	0.071	0.278	-0.053 NS	0.036	0.136	0.009 NS	0.020	0.656
farmer_age2	0.000 NS	0.000	0.836	-0.001 NS	0.001	0.205	0.000 NS	0.000	0.209	0.000 NS	0.000	0.871
farmer_sex	0.158*	0.090	0.079	-0.255 NS	0.237	0.281	0.142 NS	0.142	0.317	0.217*	0.115	0.058
farmer_hgc												
20	0.084 NS	0.067	0.211	-0.088 NS	0.202	0.664	0.119 NS	0.132	0.368	-0.026 NS	0.082	0.752
30	0.028 NS	0.075	0.711	-0.345 NS	0.272	0.204	0.070 NS	0.152	0.644	-0.109 NS	0.093	0.239
farmer_cvstat	0.030 NS	0.076	0.689	0.201 NS	0.268	0.452	-0.030 NS	0.110	0.781	0.027 NS	0.106	0.797
farmer_exp2	0.001 NS	0.003	0.678	-0.008 NS	0.011	0.433	0.007 NS	0.006	0.213	-0.006 NS	0.004	0.154
farmer_org	-0.054 NS	0.114	0.634	-0.670 NS	0.495	0.176	-0.256 NS	0.368	0.487	0.045 NS	0.155	0.771
hh_size	0.012 NS	0.017	0.492	-0.015 NS	0.066	0.815	0.032 NS	0.040	0.429	-0.016 NS	0.021	0.437
dep_ratio	0.001 NS	0.001	0.568	0.002 NS	0.004	0.642	-0.002 NS	0.002	0.378	0.002 NS	0.001	0.136
hhasset_ind	0.018 NS	0.014	0.202	0.030 NS	0.060	0.618	0.015 NS	0.032	0.630	0.024 NS	0.015	0.109
agriasset_ind	-0.016 NS	0.029	0.579	-0.001 NS	0.043	0.980	0.030 NS	0.024	0.213	-0.050*	0.026	0.052
availment_ind	-0.018**	0.009	0.037	-0.003 NS	0.021	0.869	-0.006 NS	0.014	0.655	-0.038***	0.013	0.003
farmsize	0.064 NS	0.042	0.128									
variety_lat	0.602***	0.133	0.000	1.200***	0.231	0.000	0.884***	0.284	0.002	0.199 NS	0.150	0.186
variety_sab	0.140 NS	0.096	0.142	0.929***	0.342	0.007	0.329 NS	0.219	0.132	-0.031 NS	0.139	0.826
pct_owned	-0.078 NS	0.100	0.434	-0.076 NS	0.210	0.715	0.380 NS	0.253	0.133	-0.209 NS	0.152	0.168
topog_flood	-0.008 NS	0.074	0.909	0.718**	0.358	0.045	-0.044 NS	0.206	0.833	-0.026 NS	0.089	0.770
ln_nfarm_wage	-0.006 NS	0.004	0.181	-0.023***	0.009	0.009	-0.012 NS	0.007	0.118	0.003 NS	0.003	0.295

ln_nfarm_entre p	-0.002 NS	0.002	0.487	-0.004 NS	0.003	0.290	0.020**	0.009	0.026	-0.007 NS	0.004	0.119
ln_govt_transf	0.005 NS	0.004	0.196	0.017 NS	0.013	0.182	0.017 NS	0.019	0.372	0.003 NS	0.002	0.247
_cons	10.301***	0.575	0.000	9.365***	1.768	0.000	11.907***	1.304	0.000	10.282***	0.570	0.000
R^2 Overall		0.2015			0.8475			0.3434			0.1631	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 2.2

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

note: pr_insured_pcic omitted because of collinearity

note: 0.shock_croploss omitted because of collinearity

note: 0.shock_croploss#c.pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.041 NS	0.030	0.175	0.035 NS	0.104	0.739	-0.127*	0.075	0.090	-0.003 NS	0.026	0.905
year	-0.002 NS	0.011	0.858	0.014 NS	0.038	0.707	-0.003 NS	0.025	0.890	-0.008 NS	0.009	0.401
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.313	0.000 NS	0.006	0.962	0.006 NS	0.004	0.187	0.000 NS	0.002	0.957
amt_cov_std2	-4.68E-07***	1.37E-07	0.001	-5.02E-08 NS	1.95E-07	0.797	-2.14E-07 NS	2.23E-07	0.336	-5.01E-07**	2.38E-07	0.036
farmer_age	-0.012 NS	0.013	0.368	0.031 NS	0.023	0.188	-0.023 NS	0.026	0.383	-0.011 NS	0.017	0.498
farmer_age2	0.000 NS	0.000	0.521	0.000*	0.000	0.073	0.000 NS	0.000	0.558	0.000 NS	0.000	0.463
farmer_sex	0.119 NS	0.074	0.105	-0.322**	0.147	0.028	0.132 NS	0.120	0.269	0.128 NS	0.099	0.197
farmer_hgc												
20	0.089 NS	0.056	0.113	-0.004 NS	0.100	0.966	0.151 NS	0.107	0.160	0.013 NS	0.078	0.867
30	0.010 NS	0.061	0.867	-0.123 NS	0.160	0.443	0.140 NS	0.127	0.271	-0.095 NS	0.087	0.274
farmer_cvstat	0.019 NS	0.061	0.759	0.285**	0.126	0.024	-0.045 NS	0.098	0.644	0.064 NS	0.087	0.460
farmer_exp2	0.003 NS	0.002	0.139	0.001 NS	0.004	0.859	0.014***	0.005	0.007	-0.002 NS	0.003	0.526
farmer_org	0.013 NS	0.094	0.894	-0.090 NS	0.337	0.789	0.110 NS	0.288	0.701	0.028 NS	0.118	0.811
hh_size	0.014 NS	0.015	0.355	-0.040 NS	0.036	0.256	0.048 NS	0.031	0.114	-0.005 NS	0.020	0.810
dep_ratio	0.000 NS	0.001	0.923	0.004*	0.002	0.080	0.000 NS	0.002	0.980	0.001 NS	0.001	0.394
hhasset_ind	0.016 NS	0.012	0.174	0.059 NS	0.040	0.144	0.033 NS	0.030	0.264	0.006 NS	0.012	0.591
agriasset_ind	-0.014 NS	0.022	0.513	-0.025 NS	0.036	0.490	0.000 NS	0.020	0.991	-0.053*	0.027	0.050
availment_ind	-0.013**	0.007	0.041	-0.013 NS	0.010	0.202	-0.013 NS	0.010	0.210	-0.015 NS	0.011	0.196

farmsize	0.053 NS	0.035	0.130									
variety_lat	0.797***	0.102	0.000	1.396***	0.115	0.000	0.926***	0.177	0.000	0.465***	0.157	0.003
variety_sab	0.161**	0.077	0.035	0.786**	0.230	0.001	0.164 NS	0.167	0.325	0.093 NS	0.122	0.444
pct_owned	0.079 NS	0.095	0.407	0.177 NS	0.134	0.187	0.220 NS	0.150	0.142	-0.003 NS	0.174	0.988
topog_flood	-0.067 NS	0.068	0.327	0.581***	0.220	0.008	-0.212 NS	0.181	0.242	-0.108 NS	0.081	0.183
ln_nfarm_wage	-0.003 NS	0.003	0.304	-0.019***	0.005	0.000	-0.007 NS	0.005	0.187	0.002 NS	0.001	0.115
ln_nfarm_entrep	-0.002 NS	0.003	0.459	-0.008 NS	0.005	0.135	-0.002 NS	0.015	0.899	-0.002 NS	0.003	0.603
ln_govt_transf	0.004 NS	0.004	0.309	0.025**	0.010	0.013	0.015 NS	0.014	0.257	0.001 NS	0.001	0.542
_cons	10.345***	0.458	0.000	9.483***	1.006	0.000	10.361***	0.933	0.000	10.771***	0.495	0.000
R^2 Overall	0.2718			0.8062			0.3861			0.1449		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

note: pr_insured_pcic omitted because of collinearity

note: 0.shock_croploss omitted because of collinearity

note: 0.shock_croploss#c.pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.041 NS	0.031	0.186	0.038 NS	0.106	0.720	-0.127*	0.076	0.095	-0.003 NS	0.027	0.922
year	-0.002 NS	0.011	0.822	0.015 NS	0.040	0.701	-0.005 NS	0.026	0.849	-0.008 NS	0.009	0.374
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.276	0.000 NS	0.007	0.991	0.006 NS	0.005	0.174	0.000 NS	0.002	0.942
amt_cov_std2	-4.76E-07***	1.37E-07	0.001	-1.89E-08 NS	1.92E-07	0.922	-2.77E-07 NS	2.31E-07	0.229	-4.77E-07**	2.38E-07	0.045
farmer_age	-0.014 NS	0.013	0.288	0.040*	0.024	0.090	-0.027 NS	0.026	0.289	-0.011 NS	0.017	0.522
farmer_age2	0.000 NS	0.000	0.412	-0.001**	0.000	0.034	0.000 NS	0.000	0.440	0.000 NS	0.000	0.472
farmer_sex	0.116 NS	0.074	0.114	-0.311**	0.143	0.030	0.132 NS	0.118	0.260	0.133 NS	0.100	0.181
farmer_hgc												
20	0.099*	0.057	0.082	-0.025 NS	0.104	0.810	0.177 NS	0.109	0.103	0.020 NS	0.080	0.807
30	0.027 NS	0.062	0.656	-0.136 NS	0.161	0.401	0.158 NS	0.126	0.210	-0.084 NS	0.089	0.347
farmer_cvstat	0.004 NS	0.062	0.949	0.294**	0.127	0.020	-0.093 NS	0.094	0.322	0.066 NS	0.088	0.452
farmer_exp2	0.003 NS	0.002	0.177	0.001 NS	0.004	0.830	0.014***	0.005	0.008	-0.003 NS	0.003	0.418
farmer_org	-0.024 NS	0.098	0.806	-0.186 NS	0.357	0.603	0.062 NS	0.286	0.827	-0.005 NS	0.125	0.966
hh_size	0.017 NS	0.016	0.273	-0.044 NS	0.036	0.215	0.060*	0.031	0.052	-0.007 NS	0.020	0.710
dep_ratio	0.000 NS	0.001	0.989	0.004 NS	0.003	0.126	0.000 NS	0.002	0.834	0.001 NS	0.001	0.393
hhasset_ind	0.014 NS	0.013	0.264	0.059 NS	0.041	0.154	0.020 NS	0.029	0.494	0.006 NS	0.013	0.614
agriasset_ind	-0.012 NS	0.022	0.574	-0.014 NS	0.042	0.743	0.004 NS	0.019	0.842	-0.051*	0.027	0.061
availment_ind	-0.015**	0.007	0.023	-0.011 NS	0.012	0.368	-0.015 NS	0.011	0.144	-0.016 NS	0.011	0.173
farmsize	0.041 NS	0.036	0.254									
variety_lat	0.761***	0.103	0.000	1.399***	0.119	0.000	0.831***	0.175	0.000	0.472***	0.158	0.003

variety_sab	0.177**	0.078	0.024	0.774***	0.230	0.001	0.159 NS	0.165	0.338	0.131 NS	0.124	0.289
pct_owned	0.091 NS	0.101	0.367	0.188 NS	0.133	0.158	0.284**	0.142	0.046	-0.021 NS	0.198	0.916
topog_flood	-0.050 NS	0.069	0.466	0.614***	0.219	0.005	-0.185 NS	0.179	0.299	-0.095 NS	0.085	0.263
ln_nfarm_wage	-0.004 NS	0.003	0.170	-0.019***	0.006	0.000	-0.008*	0.005	0.095	0.002 NS	0.001	0.169
ln_nfarm_entrep	-0.002 NS	0.003	0.534	-0.007 NS	0.005	0.148	0.001 NS	0.015	0.959	-0.002 NS	0.003	0.594
ln_govt_transf	0.004 NS	0.004	0.328	0.025**	0.010	0.015	0.015 NS	0.014	0.297	0.001 NS	0.001	0.582
_cons	10.433***	0.465	0.000	9.282***	1.003	0.000	10.458***	0.929	0.000	10.776***	0.498	0.000
R^2 Overall	0.2669			0.8064			0.3841			0.1470		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_croploss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

note: pr_insured_pcic omitted because of collinearity

note: 0.shock_croploss omitted because of collinearity

note: 0.shock_croploss#c.pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.056*	0.030	0.063	0.161 NS	0.142	0.256	-0.093 NS	0.070	0.179	-0.060*	0.031	0.055
year	0.005 NS	0.011	0.653	-0.025 NS	0.045	0.580	-0.006 NS	0.024	0.809	0.006 NS	0.012	0.619
c.pr_insured_pcic#c.year	0.004*	0.002	0.078	-0.005 NS	0.008	0.545	0.006*	0.004	0.088	0.004*	0.002	0.056
amt_cov_std2	-7.50E-07**	3.42E-07	0.028	-2.31E-08 NS	2.90E-06	0.994	-4.85E-07 NS	4.52E-07	0.284	-3.64E-07 NS	4.86E-07	0.454
farmer_age	-0.005 NS	0.017	0.757	0.078 NS	0.071	0.275	-0.052 NS	0.036	0.141	0.009 NS	0.020	0.665
farmer_age2	0.000 NS	0.000	0.835	-0.001 NS	0.001	0.207	0.000 NS	0.000	0.215	0.000 NS	0.000	0.875
farmer_sex	0.157*	0.090	0.080	-0.253 NS	0.242	0.295	0.145 NS	0.142	0.307	0.216*	0.115	0.061
farmer_hgc												
20	0.082 NS	0.067	0.219	-0.083 NS	0.206	0.686	0.119 NS	0.132	0.369	-0.028 NS	0.082	0.733
30	0.026 NS	0.075	0.731	-0.343 NS	0.275	0.211	0.070 NS	0.152	0.646	-0.112 NS	0.093	0.226
farmer_cvstat	0.030 NS	0.076	0.697	0.204 NS	0.272	0.455	-0.033 NS	0.110	0.764	0.026 NS	0.106	0.807
farmer_exp2	0.001 NS	0.003	0.688	-0.009 NS	0.011	0.423	0.007 NS	0.006	0.219	-0.006 NS	0.004	0.153
farmer_org	-0.060 NS	0.113	0.598	-0.667 NS	0.506	0.187	-0.250 NS	0.369	0.498	0.040 NS	0.154	0.798
hh_size	0.012 NS	0.017	0.498	-0.016 NS	0.066	0.816	0.032 NS	0.041	0.425	-0.017 NS	0.021	0.433
dep_ratio	0.001 NS	0.001	0.636	0.002 NS	0.003	0.617	-0.002 NS	0.002	0.365	0.002 NS	0.001	0.193
hhasset_ind	0.018 NS	0.014	0.196	0.030 NS	0.061	0.629	0.013 NS	0.031	0.676	0.025 NS	0.015	0.100
agriasset_ind	-0.015 NS	0.029	0.603	-0.003 NS	0.043	0.950	0.034 NS	0.025	0.182	-0.050*	0.026	0.051
availment_ind	-0.018**	0.009	0.037	-0.003 NS	0.021	0.874	-0.006 NS	0.014	0.636	-0.037***	0.013	0.004

farmsize	0.064 NS	0.042	0.133									
variety_lat	0.603***	0.134	0.000	1.203***	0.233	0.000	0.873***	0.285	0.002	0.201 NS	0.151	0.184
variety_sab	0.144 NS	0.096	0.132	0.934***	0.345	0.007	0.320 NS	0.219	0.145	-0.025 NS	0.139	0.860
pct_owned	-0.081 NS	0.100	0.419	-0.080 NS	0.213	0.708	0.379 NS	0.254	0.135	-0.213 NS	0.152	0.161
topog_flood	-0.005 NS	0.074	0.946	0.719*	0.367	0.050	-0.045 NS	0.207	0.828	-0.022 NS	0.089	0.803
ln_nfarm_wage	-0.006 NS	0.004	0.181	-0.023**	0.009	0.011	-0.011 NS	0.007	0.124	0.003 NS	0.003	0.305
ln_nfarm_entrep	-0.001 NS	0.003	0.589	-0.004 NS	0.003	0.266	0.020**	0.009	0.024	-0.006 NS	0.005	0.192
ln_govt_transf	0.005 NS	0.004	0.232	0.017 NS	0.013	0.184	0.017 NS	0.019	0.375	0.002 NS	0.002	0.375
_cons	10.184***	0.565	0.000	9.698***	1.983	0.000	11.646***	1.278	0.000	10.192***	0.565	0.000
R^2 Overall	0.2027			0.8468			0.3448			0.1641		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 2.3

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmsize, re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.008 NS	0.005	0.116	-0.001 NS	0.014	0.923	-0.023***	0.009	0.009	0.001 NS	0.008	0.870
year	-0.005 NS	0.010	0.599	0.018 NS	0.032	0.573	-0.016 NS	0.022	0.481	-0.004 NS	0.009	0.700
amt_cov_std2	-6.90E-07***	1.52E-07	0.000	-5.32E-07 NS	3.54E-07	0.133	-7.04E-07***	2.44E-07	0.004	-5.71E-07**	2.35E-07	0.015
farmsize	-0.020 NS	0.036	0.570									
_cons	10.639***	0.182	0.000	10.310***	0.479	0.000	10.711***	0.334	0.000	10.552***	0.135	0.000
R^2 Overall		0.0678			0.0503			0.0987			0.0532	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmsize if match!=2, re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.007 NS	0.005	0.178	0.000 NS	0.014	0.990	-0.020**	0.008	0.014	0.002 NS	0.008	0.813
year	-0.006 NS	0.011	0.558	0.019 NS	0.033	0.577	-0.017 NS	0.023	0.452	-0.004 NS	0.009	0.646
amt_cov_std2	-7.13E-07***	1.55E-07	0.000	-4.94E-07 NS	3.48E-07	0.156	-7.91E-07***	2.49E-07	0.001	-5.60E-07**	2.36E-07	0.018
farmsize	-0.024 NS	0.037	0.512									
_cons	10.661***	0.187	0.000	10.316***	0.496	0.000	10.747***	0.349	0.000	10.562***	0.137	0.000
R^2 Overall		0.0700			0.0421			0.1063			0.0509	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_croploss farmsize if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

note: shock_croploss omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.006 NS	0.006	0.305	-0.007 NS	0.015	0.629	-0.021*	0.010	0.050	0.002 NS	0.009	0.795
year	-0.006 NS	0.013	0.661	0.009 NS	0.031	0.757	-0.015 NS	0.027	0.572	0.000 NS	0.013	0.981
amt_cov_std2	-1.19E-06***	3.50E-07	0.001	-4.76E-06***	3.50E-07	0.000	-1.18E-06**	5.22E-07	0.024	-5.28E-07 NS	4.18E-07	0.206
farmsize	0.017 NS	0.042	0.688									
_cons	10.537***	0.216	0.000	10.372***	0.441	0.000	10.677***	0.403	0.000	10.503***	0.193	0.000
R^2 Overall	0.0400			0.2003			0.0852			0.0055		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 3.1

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.013 NS	0.011	0.256	0.030 NS	0.044	0.493	-0.042 NS	0.037	0.266	-0.004 NS	0.013	0.735
year	-0.005 NS	0.010	0.662	0.015 NS	0.036	0.670	-0.013 NS	0.023	0.569	-0.007 NS	0.009	0.418
amt_cov_std2	-4.71E-07***	1.39E-07	0.001	-4.95E-08 NS	2.02E-07	0.806	-2.09E-07 NS	2.30E-07	0.365	-5.03E-07**	2.38E-07	0.035
shock_causeloss	0.002 NS	0.028	0.947	-0.001 NS	0.086	0.987	-0.015 NS	0.056	0.791	0.012 NS	0.024	0.632
farmer_age	-0.012 NS	0.013	0.373	0.031 NS	0.023	0.189	-0.023 NS	0.026	0.379	-0.012 NS	0.017	0.492
farmer_age2	7.79E-05 NS	0.000	0.527	0.000*	0.000	0.073	0.000 NS	0.000	0.552	0.000 NS	0.000	0.457
farmer_sex	0.120 NS	0.074	0.105	-0.323**	0.143	0.024	0.130 NS	0.121	0.280	0.129 NS	0.099	0.195
farmer_hgc												
20	0.089 NS	0.056	0.112	-0.005 NS	0.103	0.965	0.150 NS	0.108	0.163	0.013 NS	0.078	0.869
30	0.010 NS	0.061	0.867	-0.123 NS	0.164	0.455	0.139 NS	0.127	0.274	-0.097 NS	0.087	0.268
farmer_cvstat	0.019 NS	0.061	0.753	0.284**	0.131	0.030	-0.045 NS	0.098	0.647	0.065 NS	0.087	0.455
farmer_exp2	0.003 NS	0.002	0.139	0.001 NS	0.004	0.861	0.014***	0.005	0.007	-0.002 NS	0.003	0.525
farmer_org	0.012 NS	0.094	0.898	-0.091 NS	0.338	0.788	0.112 NS	0.288	0.697	0.028 NS	0.119	0.815
hh_size	0.014 NS	0.015	0.359	-0.041 NS	0.036	0.265	0.048 NS	0.031	0.116	-0.005 NS	0.020	0.817
dep_ratio	0.000 NS	0.001	0.908	0.004*	0.002	0.090	0.000 NS	0.002	0.955	0.001 NS	0.001	0.415
hhasset_ind	0.016 NS	0.012	0.178	0.059 NS	0.041	0.156	0.034 NS	0.030	0.253	0.006 NS	0.012	0.584
agriasset_ind	-0.015 NS	0.021	0.487	-0.025 NS	0.037	0.503	-0.003 NS	0.020	0.887	-0.052*	0.027	0.051
availment_ind	-0.013**	0.007	0.044	-0.013 NS	0.011	0.211	-0.012 NS	0.010	0.225	-0.015 NS	0.011	0.194
farmsize	0.053	0.035	0.130									
variety_lat	0.798***	0.102	0.000	1.396***	0.116	0.000	0.927***	0.177	0.000	0.468***	0.155	0.003
variety_sab	0.162**	0.076	0.033	0.786***	0.230	0.001	0.163 NS	0.167	0.331	0.098 NS	0.121	0.417

pct_owned	0.079 NS	0.095	0.407	0.177 NS	0.137	0.198	0.216 NS	0.149	0.147	-0.002 NS	0.174	0.990
topog_flood	-0.066 NS	0.068	0.329	0.581***	0.220	0.008	-0.214 NS	0.182	0.238	-0.108 NS	0.082	0.186
ln_nfarm_wage	-0.003 NS	0.003	0.308	-0.019***	0.005	0.000	-0.007 NS	0.005	0.203	0.002 NS	0.001	0.114
ln_nfarm_entrep	-0.002 NS	0.003	0.418	-0.008 NS	0.005	0.135	-0.002 NS	0.015	0.898	-0.002 NS	0.003	0.597
ln_govt_transf	0.004 NS	0.004	0.281	0.025**	0.010	0.013	0.016 NS	0.014	0.249	0.001 NS	0.001	0.517
_cons	10.379***	0.458	0.000	9.469***	0.943	0.000	10.528***	0.927	0.000	10.763***	0.495	0.000
R^2 Overall	0.2715			0.8062			0.3870			0.1442		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.010 NS	0.012	0.412	0.037 NS	0.045	0.403	-0.037 NS	0.036	0.308	-0.001 NS	0.014	0.955
year	-0.006 NS	0.011	0.596	0.015 NS	0.037	0.685	-0.016 NS	0.024	0.519	-0.008 NS	0.009	0.379
amt_cov_std2	-4.70E-07***	1.40E-07	0.001	-1.01E-08 NS	1.99E-07	0.96	-2.51E-07 NS	2.39E-07	0.294	-4.79E-07**	2.38E-07	0.044
shock_causeloss	-0.010 NS	0.029	0.724	-0.013 NS	0.090	0.888	-0.045 NS	0.062	0.461	0.010 NS	0.024	0.692
farmer_age	-0.014 NS	0.013	0.298	0.041*	0.024	0.088	-0.028 NS	0.026	0.285	-0.011 NS	0.017	0.519
farmer_age2	0.000 NS	0.000	0.422	-0.001**	0.000	0.034	0.000 NS	0.000	0.429	0.000 NS	0.000	0.469
farmer_sex	0.116 NS	0.074	0.116	-0.311**	0.140	0.027	0.128 NS	0.119	0.280	0.134 NS	0.100	0.180
farmer_hgc												
20	0.099*	0.057	0.083	-0.028 NS	0.109	0.797	0.174 NS	0.109	0.111	0.019 NS	0.080	0.809
30	0.028 NS	0.062	0.646	-0.132 NS	0.166	0.424	0.155 NS	0.126	0.219	-0.085 NS	0.089	0.341
farmer_cvstat	0.004 NS	0.062	0.951	0.291**	0.133	0.028	-0.096 NS	0.094	0.306	0.067 NS	0.088	0.448
farmer_exp2	0.003 NS	0.002	0.178	0.001 NS	0.004	0.838	0.014***	0.005	0.008	-0.003 NS	0.003	0.416
farmer_org	-0.023 NS	0.097	0.810	-0.189 NS	0.363	0.601	0.069 NS	0.285	0.810	-0.006 NS	0.125	0.961
hh_size	0.017 NS	0.016	0.279	-0.045 NS	0.037	0.213	0.060*	0.031	0.051	-0.007 NS	0.020	0.714
dep_ratio	0.000 NS	0.001	0.946	0.004 NS	0.003	0.116	0.000 NS	0.002	0.892	0.001 NS	0.001	0.406
hhasset_ind	0.014 NS	0.013	0.280	0.058 NS	0.043	0.177	0.022 NS	0.029	0.461	0.006 NS	0.012	0.608
agriasset_ind	-0.013 NS	0.022	0.545	-0.015 NS	0.043	0.727	0.002 NS	0.018	0.928	-0.051*	0.027	0.062
availment_ind	-0.015**	0.007	0.028	-0.011 NS	0.013	0.401	-0.014 NS	0.010	0.184	-0.016 NS	0.012	0.173
farmsize	0.042 NS	0.036	0.247									
variety_lat	0.759***	0.103	0.000	1.398***	0.121	0.000	0.827***	0.176	0.000	0.475***	0.156	0.002
variety_sab	0.174**	0.078	0.025	0.775***	0.229	0.001	0.147 NS	0.167	0.376	0.135 NS	0.123	0.271
pct_owned	0.090 NS	0.101	0.370	0.190 NS	0.136	0.160	0.275*	0.140	0.050	-0.020 NS	0.198	0.918
topog_flood	-0.050 NS	0.069	0.463	0.618***	0.224	0.006	-0.191 NS	0.179	0.287	-0.094 NS	0.085	0.267
ln_nfarm_wage	-0.004 NS	0.003	0.176	-0.020***	0.005	0.000	-0.008 NS	0.005	0.116	0.002 NS	0.001	0.166

ln_nfarm_entrep	-0.002 NS	0.003	0.501	-0.007 NS	0.005	0.148	0.001 NS	0.015	0.942	-0.002 NS	0.003	0.580
ln_govt_transf	0.004 NS	0.004	0.305	0.025**	0.010	0.014	0.015 NS	0.014	0.272	0.001 NS	0.001	0.538
_cons	10.480***	0.466	0.000	9.283***	0.936	0.000	10.682***	0.937	0.000	10.770***	0.497	0.000
R^2 Overall		0.2674			0.8067			0.3873			0.1463	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.006 NS	0.013	0.605	0.083 NS	0.069	0.229	-0.004 NS	0.049	0.943	-0.004 NS	0.015	0.771
year	-0.006 NS	0.013	0.654	0.003 NS	0.037	0.927	-0.025 NS	0.029	0.384	-0.002 NS	0.013	0.854
amt_cov_std2	-7.15E-07**	3.43E-07	0.037	1.79E-07 NS	3.06E-06	0.953	-4.45E-07 NS	4.65E-07	0.339	-3.42E-07 NS	4.84E-07	0.480
shock_causeloss	-0.048 NS	0.041	0.245	0.042 NS	0.198	0.834	-0.075 NS	0.073	0.308	-0.039 NS	0.041	0.344
farmer_age	-0.006 NS	0.017	0.749	0.080 NS	0.075	0.286	-0.055 NS	0.036	0.124	0.009 NS	0.020	0.657
farmer_age2	0.000 NS	0.000	0.824	-0.001 NS	0.001	0.214	0.000 NS	0.000	0.191	0.000 NS	0.000	0.871
farmer_sex	0.157*	0.090	0.081	-0.267 NS	0.256	0.297	0.138 NS	0.143	0.334	0.218*	0.115	0.058
farmer_hgc												
20	0.081 NS	0.067	0.226	-0.069 NS	0.217	0.750	0.118 NS	0.132	0.372	-0.028 NS	0.082	0.736
30	0.030 NS	0.075	0.694	-0.347 NS	0.276	0.210	0.067 NS	0.152	0.661	-0.106 NS	0.092	0.252
farmer_cvstat	0.026 NS	0.076	0.732	0.192 NS	0.275	0.485	-0.032 NS	0.110	0.769	0.021 NS	0.105	0.844
farmer_exp2	0.001 NS	0.003	0.695	-0.007 NS	0.012	0.546	0.007 NS	0.006	0.208	-0.006 NS	0.004	0.145
farmer_org	-0.051 NS	0.112	0.653	-0.608 NS	0.593	0.305	-0.240 NS	0.367	0.514	0.049 NS	0.152	0.747
hh_size	0.011 NS	0.017	0.535	-0.012 NS	0.069	0.859	0.033 NS	0.041	0.424	-0.018 NS	0.021	0.408
dep_ratio	0.001 NS	0.001	0.482	0.001 NS	0.003	0.683	-0.002 NS	0.002	0.478	0.002 NS	0.001	0.120
hhasset_ind	0.018 NS	0.014	0.192	0.039 NS	0.069	0.568	0.016 NS	0.031	0.621	0.024*	0.015	0.094
agriasset_ind	-0.017 NS	0.029	0.564	0.002 NS	0.037	0.963	0.031 NS	0.025	0.209	-0.050*	0.026	0.052
availment_ind	-0.017*	0.009	0.050	-0.004 NS	0.022	0.843	-0.005 NS	0.014	0.722	-0.037***	0.013	0.005
farmsize	0.068 NS	0.042	0.110									
variety_lat	0.587***	0.133	0.000	1.224***	0.252	0.000	0.854***	0.276	0.002	0.190 NS	0.151	0.208
variety_sab	0.123 NS	0.094	0.191	0.923**	0.356	0.010	0.295 NS	0.223	0.187	-0.047 NS	0.136	0.728
pct_owned	-0.085 NS	0.099	0.394	-0.057 NS	0.231	0.805	0.365 NS	0.247	0.140	-0.212 NS	0.151	0.159
topog_flood	-0.010 NS	0.073	0.891	0.667 NS	0.451	0.140	-0.054 NS	0.209	0.796	-0.028 NS	0.088	0.753
ln_nfarm_wage	-0.006 NS	0.004	0.185	-0.022**	0.009	0.016	-0.011 NS	0.007	0.142	0.003 NS	0.003	0.311

ln_nfarm_entrep	-0.001 NS	0.002	0.546	-0.004 NS	0.003	0.257	0.021**	0.009	0.017	-0.006 NS	0.004	0.116
ln_govt_transf	0.005 NS	0.004	0.221	0.018 NS	0.014	0.191	0.018 NS	0.019	0.344	0.002 NS	0.002	0.264
_cons	10.368***	0.575	0.000	9.164***	2.047	0.000	12.070***	1.296	0.000	10.331***	0.569	0.000
R^2 Overall	0.2059			0.8468			0.3490			0.1689		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.012 NS	0.012	0.305	0.033 NS	0.044	0.460	-0.042 NS	0.038	0.277	-0.006 NS	0.014	0.669
year	-0.008 NS	0.011	0.474	0.012 NS	0.038	0.743	-0.026 NS	0.026	0.304	-0.006 NS	0.010	0.558
amt_cov_std2	-4.61E-07***	1.49E-07	0.002	3.56E-09 NS	2.00E-07	0.986	-2.90E-07 NS	2.79E-07	0.3	-4.80E-07*	2.46E-07	0.051
shock_causeloss	-0.018 NS	0.032	0.561	-0.011 NS	0.088	0.900	-0.060 NS	0.065	0.359	-0.006 NS	0.027	0.821
farmer_age	-0.019 NS	0.014	0.172	0.023 NS	0.026	0.382	-0.031 NS	0.027	0.251	-0.012 NS	0.018	0.520
farmer_age2	0.000 NS	0.000	0.234	0.000 NS	0.000	0.218	0.000 NS	0.000	0.369	0.000 NS	0.000	0.487
farmer_sex	0.123 NS	0.077	0.109	-0.297**	0.139	0.032	0.086 NS	0.132	0.512	0.154 NS	0.103	0.138
farmer_hgc												
20	0.105*	0.058	0.069	-0.019 NS	0.112	0.863	0.196*	0.117	0.095	0.039 NS	0.080	0.626
30	0.012 NS	0.063	0.852	-0.128 NS	0.167	0.445	0.133 NS	0.135	0.324	-0.080 NS	0.089	0.369
farmer_cvstat	-0.017 NS	0.062	0.790	0.321**	0.133	0.016	-0.107 NS	0.099	0.280	0.041 NS	0.089	0.647
farmer_exp2	0.003 NS	0.002	0.211	0.000 NS	0.004	0.990	0.014**	0.006	0.014	-0.002 NS	0.003	0.577
farmer_org	-0.028 NS	0.102	0.784	-0.164 NS	0.358	0.647	0.109 NS	0.307	0.722	-0.030 NS	0.131	0.816
hh_size	0.023 NS	0.016	0.145	-0.041 NS	0.036	0.252	0.071**	0.033	0.032	-0.002 NS	0.021	0.926
dep_ratio	0.000 NS	0.001	0.918	0.003 NS	0.003	0.205	0.000 NS	0.002	0.980	0.001 NS	0.001	0.328
hhasset_ind	0.016 NS	0.013	0.230	0.050 NS	0.041	0.217	0.038 NS	0.031	0.225	0.010 NS	0.012	0.393
agriasset_ind	-0.014 NS	0.022	0.536	-0.014 NS	0.043	0.747	0.006 NS	0.018	0.727	-0.055**	0.027	0.044
availment_ind	-0.013*	0.007	0.051	-0.013 NS	0.012	0.297	-0.008 NS	0.011	0.481	-0.014 NS	0.011	0.210
farmsize	0.032 NS	0.036	0.365									
variety_lat	0.760***	0.101	0.000	1.368***	0.122	0.000	0.840***	0.174	0.000	0.487***	0.152	0.001
variety_sab	0.159**	0.079	0.046	0.731***	0.227	0.001	0.147 NS	0.176	0.404	0.114 NS	0.123	0.353
pct_owned	0.097 NS	0.106	0.361	0.179 NS	0.134	0.182	0.287**	0.144	0.046	-0.010 NS	0.220	0.962
topog_flood	-0.050 NS	0.072	0.487	0.597***	0.213	0.005	-0.202 NS	0.184	0.273	-0.097 NS	0.091	0.284
ln_nfarm_wage	-0.005 NS	0.003	0.106	-0.018***	0.005	0.001	-0.009*	0.006	0.098	0.001 NS	0.001	0.298
ln_nfarm_entrep	-0.002 NS	0.003	0.595	-0.007 NS	0.005	0.150	0.001 NS	0.015	0.929	-0.001 NS	0.003	0.642

ln_govt_transf	0.000 NS	0.002	0.934	0.023**	0.011	0.031	-0.007 NS	0.007	0.339	0.001 NS	0.001	0.515
_cons	10.572***	0.473	0.000	9.691***	0.970	0.000	10.605***	0.937	0.000	10.725***	0.542	0.000
R^2 Overall		0.2778			0.7868			0.3778			0.1552	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc indem_claim year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==1 & indem_claim==0) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
indem_claim	0.045 NS	0.049	0.359	-0.501***	0.157	0.001	-0.015 NS	0.103	0.887	0.108***	0.033	0.001
year	0.003 NS	0.017	0.847	0.050 NS	0.097	0.608	-0.010 NS	0.039	0.802	0.010	0.012	0.398
amt_cov_std2	-2.77E-08 NS	3.08E-07	0.928	-2.20E-07 NS	4.76E-07	0.644	-4.33E-08 NS	5.44E-07	0.937	-1.06E-07 NS	4.39E-07	0.809
shock_causeloss	0.007 NS	0.048	0.888	-0.225 NS	0.144	0.118	0.100 NS	0.119	0.402	-0.018 NS	0.035	0.600
farmer_age	-0.012 NS	0.019	0.515	0.036 NS	0.027	0.173	-0.012 NS	0.031	0.694	-0.010 NS	0.027	0.708
farmer_age2	0.000 NS	0.000	0.727	0.000 NS	0.000	0.117	0.000 NS	0.000	0.930	0.000 NS	0.000	0.695
farmer_sex	0.057 NS	0.108	0.595	-0.046 NS	0.281	0.869	0.306 NS	0.217	0.158	-0.039 NS	0.140	0.782
farmer_hgc												
20	0.119 NS	0.095	0.213	0.000 NS	0.149	0.999	0.241 NS	0.161	0.135	-0.014 NS	0.156	0.931
30	0.001 NS	0.097	0.991	0.180 NS	0.160	0.260	0.138 NS	0.151	0.361	-0.144 NS	0.167	0.388
farmer_cvstat	0.001 NS	0.102	0.988	0.436***	0.168	0.009	-0.361*	0.202	0.074	0.172 NS	0.127	0.176
farmer_exp2	0.005 NS	0.004	0.159	-0.001 NS	0.005	0.836	0.022**	0.009	0.013	-0.002 NS	0.006	0.731
farmer_org	-0.005 NS	0.064	0.939	0.106 NS	0.369	0.774	-0.054 NS	0.116	0.644	0.054 NS	0.092	0.556
hh_size	-0.004 NS	0.020	0.830	-0.079***	0.028	0.005	0.031 NS	0.029	0.286	-0.013 NS	0.026	0.627
dep_ratio	0.000 NS	0.002	0.971	0.007 NS	0.005	0.170	0.002 NS	0.003	0.597	0.001 NS	0.002	0.749
hhasset_ind	0.000 NS	0.022	0.994	-0.062 NS	0.143	0.667	-0.014 NS	0.053	0.790	-0.008 NS	0.022	0.704
agriasset_ind	-0.017 NS	0.021	0.427	-0.212 NS	0.144	0.140	-0.046 NS	0.034	0.169	-0.020 NS	0.030	0.494
availment_ind	-0.013 NS	0.009	0.168	-0.038**	0.019	0.044	-0.022 NS	0.016	0.152	0.009 NS	0.016	0.593
farmsize	0.078 NS	0.055	0.162									
variety_lat	1.089***	0.180	0.000	1.481***	0.361	0.000	0.992***	0.337	0.003	0.952***	0.302	0.002
variety_sab	0.424***	0.127	0.001	0.682***	0.202	0.001	0.275 NS	0.213	0.197	0.548**	0.260	0.035
pct_owned	0.227 NS	0.213	0.287	1.250***	0.427	0.003	-0.021 NS	0.207	0.918	0.378 NS	0.409	0.355
topog_flood	-0.180 NS	0.120	0.135	0.402 NS	0.363	0.268	-0.381*	0.230	0.098	-0.198 NS	0.139	0.155
ln_nfarm_wage	0.001 NS	0.002	0.713	-0.010 NS	0.007	0.158	0.000 NS	0.006	0.959	0.001 NS	0.001	0.200
ln_nfarm_entrep	0.001 NS	0.009	0.887	-0.623***	0.137	0.000	-0.032***	0.010	0.001	0.008 NS	0.006	0.174

ln_govt_transf	0.026***	0.006	0.000		0.015*	0.009	0.090	-0.886*	-0.886	0.075
_cons	10.412***	0.729	0.000		10.263***	1.082	0.000			
R^2 Overall		0.3744		0.9208		0.5593			0.3243	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 3.2

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_causeloss farmer_age farmer_age2 farmer_sexi.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.045 NS	0.032	0.153	0.030 NS	0.104	0.776	-0.126*	0.076	0.099	-0.007 NS	0.028	0.807
year	-0.002 NS	0.011	0.871	0.012 NS	0.039	0.748	-0.004 NS	0.025	0.879	-0.007 NS	0.009	0.435
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.290	0.000 NS	0.007	0.992	0.006 NS	0.005	0.191	0.000 NS	0.002	0.980
amt_cov_std2	-4.74E-07***	1.39E-07	0.001	-8.59E-08 NS	2.20E-07	0.696	-1.99E-07 NS	2.32E-07	0.389	-5.05E-07**	2.39E-07	0.035
1.shock_causeloss	0.006 NS	0.029	0.831	0.030 NS	0.085	0.727	-0.022 NS	0.069	0.746	0.013 NS	0.024	0.597
shock_causeloss#c.pr_insured_pcic												
1	0.003 NS	0.006	0.650	0.008 NS	0.012	0.519	-0.002 NS	0.012	0.891	0.002 NS	0.005	0.631
farmer_age	-0.012 NS	0.013	0.361	0.028 NS	0.024	0.248	-0.023 NS	0.026	0.377	-0.012 NS	0.017	0.487
farmer_age2	0.000 NS	0.000	0.510	0.000*	0.000	0.098	0.000 NS	0.000	0.549	0.000 NS	0.000	0.452
farmer_sex	0.119 NS	0.074	0.108	-0.333**	0.138	0.016	0.131 NS	0.121	0.278	0.128 NS	0.100	0.198
farmer_hgc												
20	0.089 NS	0.056	0.114	-0.005 NS	0.106	0.964	0.150 NS	0.108	0.164	0.013 NS	0.079	0.865
30	0.009 NS	0.061	0.878	-0.134 NS	0.166	0.418	0.139 NS	0.128	0.274	-0.097 NS	0.088	0.271
farmer_cvstat	0.020 NS	0.061	0.741	0.295**	0.127	0.020	-0.047 NS	0.098	0.633	0.066 NS	0.087	0.450
farmer_exp2	0.003 NS	0.002	0.140	0.000 NS	0.004	0.905	0.014***	0.005	0.007	-0.002 NS	0.003	0.522
farmer_org	0.014 NS	0.095	0.882	-0.104 NS	0.345	0.763	0.112 NS	0.289	0.698	0.029 NS	0.119	0.806
hh_size	0.014 NS	0.015	0.358	-0.039 NS	0.036	0.282	0.048 NS	0.031	0.115	-0.005 NS	0.020	0.813
dep_ratio	0.000 NS	0.001	0.918	0.004 NS	0.002	0.105	0.000 NS	0.002	0.979	0.001 NS	0.001	0.427
hhasset_ind	0.016 NS	0.012	0.176	0.060 NS	0.042	0.155	0.033 NS	0.030	0.258	0.006 NS	0.012	0.588
agriasset_ind	-0.014 NS	0.022	0.513	-0.023 NS	0.036	0.529	0.000 NS	0.020	0.999	-0.053*	0.027	0.051
availment_ind	-0.014**	0.007	0.040	-0.014 NS	0.011	0.187	-0.012 NS	0.010	0.233	-0.015 NS	0.012	0.193

farmsize	0.054 NS	0.035	0.127									
variety_lat	0.797***	0.102	0.000	1.396***	0.117	0.000	0.923***	0.178	0.000	0.470***	0.155	0.002
variety_sab	0.157**	0.077	0.041	0.801***	0.235	0.001	0.161 NS	0.167	0.335	0.091 NS	0.122	0.452
pct_owned	0.080 NS	0.095	0.402	0.171 NS	0.135	0.204	0.217 NS	0.150	0.146	-0.001 NS	0.175	0.995
topog_flood	-0.068 NS	0.069	0.322	0.604 NS	0.231	0.009	-0.212 NS	0.181	0.242	-0.110 NS	0.083	0.183
ln_nfarm_wage	-0.003 NS	0.003	0.305	-0.020***	0.005	0.000	-0.007 NS	0.005	0.194	0.002 NS	0.001	0.116
ln_nfarm_entrep	-0.002 NS	0.003	0.442	-0.008 NS	0.005	0.117	-0.002 NS	0.015	0.913	-0.002 NS	0.003	0.595
ln_govt_transf	0.004 NS	0.004	0.311	0.025**	0.010	0.014	0.016 NS	0.014	0.252	0.001 NS	0.001	0.541
_cons	10.339***	0.457	0.000	9.591***	1.049	0.000	10.405***	0.932	0.000	10.763***	0.494	0.000
R^2 Overall	0.2715			0.8076			0.3872			0.1443		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2, re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.049 NS	0.032	0.132	0.032 NS	0.105	0.760	-0.133*	0.078	0.087	-0.009 NS	0.030	0.768
year	-0.002 NS	0.011	0.825	0.014 NS	0.041	0.725	-0.006 NS	0.026	0.818	-0.008 NS	0.010	0.414
c.pr_insured_pcic#c.year	0.002 NS	0.002	0.231	0.000 NS	0.007	0.974	0.006 NS	0.005	0.164	0.000 NS	0.002	0.853
amt_cov_std2	-4.76E-07***	1.40E-07	0.001	-4.25E-08 NS	2.19E-07	0.846	-2.50E-07 NS	2.42E-07	0.301	-4.81E-07**	2.38E-07	0.043
1.shock_causeloss	-0.002 NS	0.030	0.954	0.011 NS	0.090	0.899	-0.040 NS	0.077	0.603	0.012 NS	0.024	0.628
shock_causeloss#c.pr_insured_pcic												
1	0.005 NS	0.006	0.395	0.006 NS	0.013	0.645	0.003 NS	0.012	0.796	0.004 NS	0.005	0.426
farmer_age	-0.015 NS	0.014	0.281	0.038 NS	0.025	0.129	-0.027 NS	0.026	0.293	-0.011 NS	0.017	0.506
farmer_age2	0.000 NS	0.000	0.398	0.000*	0.000	0.051	0.000 NS	0.000	0.437	0.000 NS	0.000	0.455
farmer_sex	0.114 NS	0.074	0.123	-0.321**	0.138	0.020	0.128 NS	0.119	0.284	0.133 NS	0.100	0.183
farmer_hgc												
20	0.098*	0.057	0.086	-0.025 NS	0.112	0.820	0.174 NS	0.110	0.113	0.020 NS	0.080	0.806
30	0.026 NS	0.062	0.669	-0.140 NS	0.169	0.406	0.155 NS	0.127	0.221	-0.085 NS	0.090	0.342
farmer_cvstat	0.006 NS	0.062	0.925	0.299**	0.129	0.021	-0.098 NS	0.094	0.302	0.068 NS	0.088	0.439
farmer_exp2	0.003 NS	0.002	0.179	0.001 NS	0.004	0.876	0.014***	0.005	0.008	-0.003 NS	0.003	0.411
farmer_org	-0.020 NS	0.099	0.839	-0.186 NS	0.364	0.609	0.072 NS	0.286	0.800	-0.004 NS	0.126	0.974
hh_size	0.017 NS	0.016	0.282	-0.044 NS	0.036	0.222	0.061*	0.031	0.052	-0.008 NS	0.020	0.707
dep_ratio	0.000 NS	0.001	0.948	0.004 NS	0.003	0.126	0.000 NS	0.002	0.933	0.001 NS	0.001	0.430
hhasset_ind	0.014 NS	0.013	0.263	0.059 NS	0.043	0.171	0.022 NS	0.029	0.455	0.007 NS	0.013	0.605
agriasset_ind	-0.012 NS	0.022	0.572	-0.015 NS	0.043	0.717	0.005 NS	0.019	0.807	-0.051*	0.028	0.062
availment_ind	-0.015**	0.007	0.024	-0.012 NS	0.013	0.366	-0.014 NS	0.010	0.177	-0.016 NS	0.012	0.172
farmsize	0.043	0.036	0.235									

variety_lat	0.759***	0.102	0.000	1.398***	0.122	0.000	0.822***	0.177	0.000	0.479***	0.156	0.002
variety_sab	0.166**	0.079	0.035	0.787***	0.238	0.001	0.140 NS	0.166	0.398	0.126 NS	0.124	0.309
pct_owned	0.092 NS	0.101	0.362	0.186 NS	0.135	0.170	0.279**	0.142	0.049	-0.021 NS	0.198	0.916
topog_flood	-0.053 NS	0.070	0.450	0.630***	0.233	0.007	-0.192 NS	0.180	0.284	-0.097 NS	0.086	0.259
ln_nfarm_wage	-0.004 NS	0.003	0.172	-0.020***	0.006	0.000	-0.008 NS	0.005	0.111	0.002 NS	0.001	0.173
ln_nfarm_entrep	-0.002 NS	0.003	0.508	-0.008 NS	0.005	0.132	0.001 NS	0.015	0.933	-0.002 NS	0.003	0.584
ln_govt_transf	0.004 NS	0.004	0.341	0.025**	0.010	0.015	0.015 NS	0.014	0.279	0.001 NS	0.001	0.590
_cons	10.432***	0.464	0.000	9.369***	1.053	0.000	10.516***	0.935	0.000	10.773***	0.496	0.000
R^2 Overall	0.2677			0.8071			0.3873			0.1469		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_causeloss farmer_age farmer_age2 farmer_sexi.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1) , re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value	Coef.	Std. Err.	P-Value
pr_insured_pcic	-0.064*	0.033	0.050	0.099 NS	0.130	0.447	-0.092 NS	0.074	0.218	-0.056 NS	0.037	0.129
year	0.004 NS	0.011	0.694	-0.015 NS	0.045	0.740	-0.007 NS	0.024	0.759	0.005 NS	0.013	0.682
c.pr_insured_pcic#c.year	0.004*	0.002	0.051	-0.003 NS	0.007	0.675	0.006 NS	0.004	0.102	0.004*	0.002	0.093
amt_cov_std2	-7.16E-07**	3.46E-07	0.038	-1.12E-06 NS	3.27E-06	0.733	-3.42E-07 NS	4.92E-07	0.487	-3.12E-07 NS	4.86E-07	0.52
1.shock_causeloss	-0.042 NS	0.046	0.360	0.377 NS	0.252	0.134	-0.113 NS	0.102	0.270	-0.041 NS	0.044	0.357
shock_causeloss#c.pr_insured_pcic												
1	0.003 NS	0.007	0.719	0.043 NS	0.034	0.210	-0.007 NS	0.013	0.584	-0.002 NS	0.006	0.758
farmer_age	-0.006 NS	0.017	0.738	0.031 NS	0.087	0.719	-0.056 NS	0.035	0.112	0.009 NS	0.020	0.663
farmer_age2	0.000 NS	0.000	0.815	0.000 NS	0.001	0.564	0.000 NS	0.000	0.177	0.000 NS	0.000	0.870
farmer_sex	0.157*	0.090	0.082	-0.277 NS	0.257	0.281	0.139 NS	0.144	0.334	0.216*	0.115	0.061
farmer_hgc												
20	0.080 NS	0.067	0.234	-0.023 NS	0.220	0.916	0.119 NS	0.133	0.369	-0.030 NS	0.082	0.712
30	0.027 NS	0.076	0.716	-0.438 NS	0.337	0.194	0.068 NS	0.152	0.655	-0.109 NS	0.092	0.237
farmer_cvstat	0.026 NS	0.076	0.733	0.324 NS	0.325	0.319	-0.034 NS	0.110	0.755	0.019 NS	0.105	0.855
farmer_exp2	0.001 NS	0.003	0.698	-0.009 NS	0.013	0.490	0.007 NS	0.006	0.210	-0.006 NS	0.004	0.144
farmer_org	-0.053 NS	0.114	0.645	-0.469 NS	0.586	0.423	-0.233 NS	0.370	0.529	0.042 NS	0.153	0.783
hh_size	0.011 NS	0.017	0.539	-0.002 NS	0.072	0.978	0.034 NS	0.041	0.418	-0.018 NS	0.021	0.404
dep_ratio	0.001 NS	0.001	0.545	0.000 NS	0.003	0.985	-0.002 NS	0.002	0.441	0.002 NS	0.001	0.169
hhasset_ind	0.018 NS	0.014	0.187	0.065 NS	0.078	0.406	0.013 NS	0.031	0.678	0.026*	0.015	0.084
agriasset_ind	-0.016 NS	0.029	0.585	0.013 NS	0.019	0.487	0.034 NS	0.026	0.184	-0.050*	0.026	0.051
availment_ind	-0.017**	0.009	0.049	-0.021 NS	0.029	0.469	-0.005 NS	0.014	0.730	-0.037***	0.013	0.005

farmsize	0.068 NS	0.042	0.111									
variety_lat	0.585***	0.134	0.000	1.215***	0.251	0.000	0.842***	0.276	0.002	0.191 NS	0.152	0.209
variety_sab	0.119 NS	0.098	0.224	0.968**	0.405	0.017	0.284 NS	0.224	0.204	-0.034 NS	0.140	0.806
pct_owned	-0.087 NS	0.099	0.378	-0.129 NS	0.241	0.592	0.364 NS	0.247	0.141	-0.216 NS	0.151	0.153
topog_flood	-0.008 NS	0.074	0.913	0.691 NS	0.484	0.154	-0.058 NS	0.212	0.783	-0.022 NS	0.089	0.804
ln_nfarm_wage	-0.006 NS	0.004	0.187	-0.022**	0.011	0.037	-0.011 NS	0.008	0.150	0.003 NS	0.003	0.318
ln_nfarm_entrep	-0.001 NS	0.003	0.646	-0.005 NS	0.004	0.167	0.021**	0.009	0.015	-0.006 NS	0.004	0.186
ln_govt_transf	0.004 NS	0.004	0.266	0.018 NS	0.016	0.261	0.018 NS	0.019	0.336	0.002 NS	0.002	0.391
_cons	10.232***	0.565	0.000	10.451***	2.569	0.000	11.875***	1.256	0.000	10.245***	0.562	0.000
R^2 Overall	0.2071			0.8234			0.3518			0.1701		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc c.pr_insured_pcic##c.year amt_cov_std2 c.pr_insured_pcic##i.shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0), re robust

note: pr_insured_pcic omitted because of collinearity

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.056 NS	0.038	0.140	0.028 NS	0.105	0.791	-0.100 NS	0.090	0.269	-0.047 NS	0.034	0.165
year	-0.002 NS	0.012	0.864	0.011 NS	0.041	0.795	-0.017 NS	0.031	0.578	-0.001 NS	0.010	0.891
c.pr_insured_pcic#c.year	0.003 NS	0.002	0.227	0.000 NS	0.007	0.988	0.004 NS	0.006	0.482	0.003 NS	0.002	0.161
amt_cov_std2	-4.63E-07***	1.50E-07	0.002	-3.67E-08 NS	2.21E-07	0.868	-2.88E- NS 07	2.85E-07	0.312	-4.79E-07**	2.41E-07	0.047
1.shock_causeloss	-0.017 NS	0.034	0.626	0.021 NS	0.089	0.818	-0.060 NS	0.085	0.482	-0.006 NS	0.029	0.826
shock_causeloss#c.pr_insured_pcic												
1	0.002 NS	0.006	0.791	0.008 NS	0.012	0.547	0.001 NS	0.013	0.946	0.000 NS	0.005	0.966
farmer_age	-0.019 NS	0.014	0.166	0.018 NS	0.027	0.508	-0.030 NS	0.027	0.251	-0.012 NS	0.019	0.506
farmer_age2	0.000 NS	0.000	0.226	0.000 NS	0.000	0.302	0.000 NS	0.000	0.369	0.000 NS	0.000	0.475
farmer_sex	0.122 NS	0.077	0.111	-0.310**	0.136	0.023	0.088 NS	0.133	0.506	0.153 NS	0.104	0.140
farmer_hgc												
20	0.106*	0.058	0.068	-0.016 NS	0.115	0.893	0.196*	0.118	0.096	0.040 NS	0.081	0.617
30	0.012 NS	0.063	0.850	-0.138 NS	0.170	0.419	0.133 NS	0.136	0.328	-0.080 NS	0.090	0.371
farmer_cvstat	-0.016 NS	0.062	0.791	0.333***	0.128	0.009	-0.109 NS	0.100	0.276	0.039 NS	0.089	0.661
farmer_exp2	0.003 NS	0.002	0.208	0.000 NS	0.004	0.933	0.014**	0.006	0.015	-0.002 NS	0.003	0.587
farmer_org	-0.023 NS	0.103	0.824	-0.158 NS	0.358	0.660	0.111 NS	0.308	0.718	-0.027 NS	0.131	0.834
hh_size	0.023 NS	0.016	0.140	-0.039 NS	0.036	0.270	0.071**	0.033	0.033	-0.001 NS	0.021	0.965
dep_ratio	0.000 NS	0.001	0.928	0.003 NS	0.003	0.223	0.000 NS	0.002	0.956	0.001 NS	0.001	0.408
hhasset_ind	0.016 NS	0.013	0.223	0.051 NS	0.041	0.210	0.037 NS	0.032	0.245	0.011 NS	0.012	0.370
agriasset_ind	-0.013 NS	0.023	0.565	-0.014 NS	0.043	0.739	0.008 NS	0.018	0.682	-0.054**	0.027	0.048
availment_ind	-0.014**	0.007	0.045	-0.014 NS	0.013	0.260	-0.008 NS	0.011	0.476	-0.014 NS	0.011	0.205

farmsize	0.033 NS	0.036	0.352									
variety_lat	0.759***	0.101	0.000	1.367***	0.123	0.000	0.837***	0.176	0.000	0.489***	0.153	0.001
variety_sab	0.153*	0.081	0.058	0.745***	0.234	0.001	0.142 NS	0.176	0.420	0.113 NS	0.124	0.362
pct_owned	0.099 NS	0.107	0.353	0.172 NS	0.133	0.195	0.289**	0.145	0.045	-0.011 NS	0.221	0.959
topog_flood	-0.054 NS	0.073	0.461	0.611***	0.219	0.005	-0.203 NS	0.185	0.271	-0.100 NS	0.092	0.278
ln_nfarm_wage	-0.005 NS	0.003	0.105	-0.018***	0.006	0.001	-0.009*	0.006	0.099	0.001 NS	0.001	0.342
ln_nfarm_entrep	-0.001 NS	0.003	0.644	-0.008 NS	0.005	0.130	0.001 NS	0.015	0.924	-0.001 NS	0.003	0.807
ln_govt_transf	0.000 NS	0.002	0.849	0.023**	0.011	0.033	-0.006 NS	0.007	0.352	0.000 NS	0.001	0.842
_cons	10.483***	0.477	0.000	9.829***	1.072	0.000	10.466***	0.962	0.000	10.675***	0.541	0.000
R^2 Overall	0.2778			0.7879			0.3778			0.1552		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc i.indem_claim##c.year amt_cov_std2 i.indem_claim##i.shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat variety_sab pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==1 & indem_claim==0) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
indem_claim												
Received indemnity claims in 2015	-0.820 NS	0.498	0.100	-3.345 NS	1.545	0.030	-0.810 NS	0.946	0.392	-0.905 NS	0.687	0.188
year	-0.007 NS	0.021	0.729	0.041 NS	0.104	0.693	-0.021 NS	0.049	0.671	-0.003 NS	0.010	0.772
indem_claim#c.year												
Received indemnity claims in 2015	0.061*	0.034	0.071	0.196*	0.106	0.065	0.056 NS	0.062	0.371	0.071 NS	0.048	0.141
amt_cov_std2	-1.92E-08 NS	3.07E-07	0.95	-2.23E-07 NS	4.84E-07	0.645	-2.83E-08 NS	5.45E-07	0.959	-8.48E-08 NS	4.37E-07	0.846
1.shock_causeloss	0.003 NS	0.048	0.956	-0.225 NS	0.145	0.121	0.095 NS	0.118	0.422	-0.024 NS	0.038	0.521
farmer_age	-0.012 NS	0.019	0.527	0.036 NS	0.027	0.180	-0.012 NS	0.030	0.700	-0.009 NS	0.027	0.739
farmer_age2	0.000 NS	0.000	0.740	0.000 NS	0.000	0.124	0.000 NS	0.000	0.922	0.000 NS	0.000	0.723
farmer_sex	0.055 NS	0.108	0.610	-0.046 NS	0.286	0.872	0.305 NS	0.217	0.159	-0.045 NS	0.141	0.752
farmer_hgc												
20	0.119 NS	0.096	0.214	-0.001 NS	0.151	0.994	0.241 NS	0.162	0.136	-0.014 NS	0.156	0.929
30	0.000 NS	0.097	1.000	0.180 NS	0.163	0.269	0.138 NS	0.151	0.361	-0.149 NS	0.167	0.375
farmer_cvstat	0.002 NS	0.102	0.984	0.436**	0.170	0.010	-0.363*	0.202	0.072	0.177 NS	0.128	0.166
farmer_exp2	0.005 NS	0.004	0.159	-0.001 NS	0.006	0.840	0.022**	0.009	0.014	-0.002 NS	0.006	0.725
farmer_org	-0.004 NS	0.064	0.947	0.107 NS	0.375	0.776	-0.054 NS	0.116	0.644	0.055 NS	0.092	0.553
hh_size	-0.004 NS	0.020	0.827	-0.079***	0.029	0.006	0.031 NS	0.029	0.283	-0.014 NS	0.026	0.594
dep_ratio	0.000 NS	0.002	0.955	0.007 NS	0.005	0.178	0.002 NS	0.003	0.615	0.001 NS	0.002	0.725
hhasset_ind	0.002 NS	0.023	0.943	-0.062 NS	0.146	0.672	-0.013 NS	0.053	0.813	-0.004 NS	0.023	0.864
agriasset_ind	-0.017 NS	0.021	0.436	-0.212 NS	0.147	0.148	-0.046 NS	0.034	0.177	-0.029 NS	0.031	0.350
availment_ind	-0.013 NS	0.009	0.173	-0.038**	0.019	0.048	-0.022 NS	0.015	0.154	0.010 NS	0.016	0.547
farmsize	0.078 NS	0.055	0.162									

variety_lat	1.092***	0.181	0.000	1.479***	0.366	0.000	0.995***	0.337	0.003	0.971***	0.305	0.001
variety_sab	0.427***	0.128	0.001	0.681***	0.205	0.001	0.279 NS	0.214	0.192	0.566**	0.264	0.032
pct_owned	0.227 NS	0.213	0.286	1.251***	0.430	0.004	-0.023 NS	0.207	0.913	0.380 NS	0.410	0.355
topog_flood	-0.180 NS	0.120	0.133	0.404 NS	0.369	0.273	-0.378 NS	0.231	0.102	-0.202 NS	0.139	0.147
ln_nfarm_wage	0.001 NS	0.002	0.713	-0.010 NS	0.007	0.168	0.000 NS	0.006	0.956	0.001 NS	0.001	0.200
ln_nfarm_entrep	0.001 NS	0.009	0.902	-0.634***	0.145	0.000	-0.032***	0.010	0.001	0.008 NS	0.006	0.213
ln_govt_transf	0.025***	0.006	0.000				0.014*	0.009	0.091	-0.898***	0.075	0.000
_cons	10.546***	0.744	0.000				10.416***	1.162	0.000			
R^2 Overall	0.3761			0.9219			0.5613			0.3244		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Set 3.3

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmsize, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	P-Value
pr_insured_pcic	-0.008 NS	0.005	0.127	-0.002 NS	0.014	0.899	-0.022**	0.009	0.011	0.001 NS	0.008	0.864
year	-0.007 NS	0.010	0.515	0.015 NS	0.032	0.638	-0.018 NS	0.022	0.432	-0.004 NS	0.009	0.679
amt_cov_std2	-6.48E-07***	1.54E-07	0.000	-4.83E-07 NS	3.78E-07	0.201	-6.09E-07**	2.59E-07	0.019	-5.68E-07**	2.34E-07	0.015
shock_causeloss	-0.057*	0.030	0.060	-0.055 NS	0.103	0.591	-0.098 NS	0.064	0.126	-0.017 NS	0.024	0.479
farmsize	-0.017 NS	0.036	0.644									
_cons	10.682***	0.184	0.000	10.372***	0.486	0.000	10.797***	0.342	0.000	10.568***	0.138	0.000
R^2 Overall		0.0821			0.0776			0.1163			0.0589	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmsize if match!=2, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	P-Value
pr_insured_pcic	-0.007 NS	0.005	0.191	0.000 NS	0.014	0.982	-0.019**	0.008	0.018	0.002 NS	0.008	0.810
year	-0.008 NS	0.011	0.447	0.015 NS	0.034	0.655	-0.021 NS	0.024	0.371	-0.005 NS	0.009	0.623
amt_cov_std2	-6.57E-07***	1.57E-07	0.000	-4.29E-07 NS	3.73E-07	0.249	-6.60E-07**	2.65E-07	0.013	-5.57E-07**	2.36E-07	0.018
shock_causeloss	-0.074**	0.032	0.021	-0.066 NS	0.106	0.532	-0.139	0.069	0.044	-0.019 NS	0.025	0.432
farmsize	-0.019 NS	0.036	0.602									
_cons	10.720***	0.190	0.000	10.391***	0.504	0.000	10.883***	0.360	0.000	10.579***	0.141	0.000
R^2 Overall		0.0904			0.0781			0.1355			0.0577	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmsize if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.006 NS	0.006	0.321	-0.007 NS	0.015	0.617	-0.020*	0.010	0.056	0.002 NS	0.008	0.781
year	-0.009 NS	0.013	0.507	0.006 NS	0.028	0.843	-0.020 NS	0.028	0.477	-0.001 NS	0.013	0.930
amt_cov_std2	-1.03E-06**	3.52E-07	0.003	-4.66E-06***	5.39E-07	0.000	-9.90E-07*	5.33E-07	0.063	-4.36E-07 NS	4.16E-07	0.295
shock_causeloss	-0.104**	0.043	0.017	-0.043 NS	0.169	0.799	-0.156*	0.082	0.056	-0.059 NS	0.042	0.161
farmsize	0.029 NS	0.041	0.482									
_cons	10.611***	0.219	0.000	10.441***	0.403	0.000	10.833***	0.421	0.000	10.552***	0.200	0.000
R^2 *Overall*		0.0664			0.2218			0.1102			0.0274	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmsize if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.010*	0.005	0.077	-0.001 NS	0.014	0.966	-0.019***\	0.009	0.026	-0.003 NS	0.008	0.743
year	-0.011 NS	0.011	0.346	0.011 NS	0.034	0.741	-0.031 NS	0.025	0.207	-0.002 NS	0.010	0.880
amt_cov_std2	-6.36E-07***	1.65E-07	0.000	-2.87E-07 NS	3.09E-07	0.352	-7.03E-07**	2.93E-07	0.016	-5.55E-07**	2.42E-07	0.022
shock_causeloss	-0.081**	0.035	0.019	-0.061 NS	0.103	0.556	-0.142*	0.073	0.051	-0.033 NS	0.028	0.230
farmsize	-0.025 NS	0.037	0.488									
_cons	10.772***	0.196	0.000	10.457***	0.508	0.000	11.032 NS	0.377	0.000	10.538***	0.148	0.000
R^2 *Overall*		0.0871			0.0518			0.1211			0.0748	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc indem_claim year amt_cov_std2 shock_causeloss farmsize if match!=2 & ((insured_pcic==1 & indem_claim==0) | insured_pcic==1 & indem_claim==1), re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cropint_HHstddef13sc	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
indem_claim	0.022 NS	0.050	0.656	-1.300***	0.138	0.000	-0.063 NS	0.104	0.543	0.101****	0.031	0.001
year	-0.001 NS	0.017	0.940	0.039 NS	0.079	0.621	-0.025 NS	0.035	0.486	0.009 NS	0.011	0.380
amt_cov_std2	-1.41E-06***	3.37E-07	0.000	-1.42E-06 NS	9.20E-07	0.122	-1.69E-06***	5.66E-07	0.003	-9.36E-07**	4.74E-07	0.048
shock_causeloss	-0.088*	0.053	0.096	-0.158 NS	0.172	0.356	-0.211 NS	0.151	0.161	-0.030 NS	0.029	0.299
farmsize	-0.080 NS	0.056	0.154									
_cons	10.926***	0.305	0.000	10.418***	1.262	0.000	11.270***	0.552	0.000	10.392***	0.202	0.000
R^2 Overall	0.1161			0.3711			0.2001			0.0389		

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

Additional Runs

Cavendish

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if variety_cav==1, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.008 NS	0.012	0.487	0.071 NS	0.143	0.621	-0.028 NS	0.038	0.473	0.005 NS	0.013	0.712
year	-0.012 NS	0.013	0.351	0.038 NS	0.057	0.509	-0.021 NS	0.029	0.471	-0.015 NS	0.011	0.162
amt_cov_std2	-5.12E-07***	1.53E-07	0.001	8.85E-08 NS	4.70E-07	0.851	-1.53E-07 NS	2.55E-07	0.549	-5.08E-07**	2.45E-07	0.038
shock_causeloss	-0.036 NS	0.034	0.294	-0.087 NS	0.131	0.505	-0.068 NS	0.073	0.351	0.010 NS	0.030	0.742
farmer_age	-0.006 NS	0.018	0.727	0.114***	0.035	0.001	-0.012 NS	0.029	0.689	0.000 NS	0.020	0.998
farmer_age2	1.36E-05 NS	1.64E-04	0.934	-1.33E-03***	3.28E-04	0.000	-8.83E-08 NS	2.82E-04	1.000	2.19E-05 NS	1.83E-04	0.905
farmer_sex	0.038 NS	0.076	0.617	-0.403 NS	0.303	0.183	0.161 NS	0.118	0.174	0.046 NS	0.098	0.639
farmer_hgc												
20	0.023 NS	0.067	0.732	-0.331 NS	0.237	0.162	0.049 NS	0.123	0.693	0.047 NS	0.090	0.601
30	-0.027 NS	0.071	0.699	-0.453 NS	0.291	0.120	0.073 NS	0.146	0.617	-0.075 NS	0.099	0.451
farmer_cvstat	0.112 NS	0.073	0.125	0.521*	0.266	0.050	-0.050 NS	0.104	0.628	0.213**	0.099	0.031
farmer_exp2	0.002 NS	0.003	0.483	-0.011 NS	0.007	0.140	0.015**	0.006	0.011	-0.007**	0.003	0.023
farmer_org	0.006 NS	0.104	0.953	-0.481 NS	1.150	0.675	-0.031 NS	0.298	0.917	0.017 NS	0.124	0.892
hh_size	0.005 NS	0.019	0.792	-0.114 NS	0.109	0.297	0.028 NS	0.035	0.424	-0.015 NS	0.023	0.515
dep_ratio	0.000 NS	0.001	0.936	-0.003 NS	0.005	0.633	0.000 NS	0.002	0.859	0.000 NS	0.001	0.717
hhasset_ind	0.012 NS	0.013	0.356	-0.011 NS	0.075	0.881	0.019 NS	0.031	0.547	0.006 NS	0.014	0.659
agriasset_ind	-0.043**	0.016	0.010	-0.019 NS	0.072	0.796	-0.058 NS	0.072	0.422	-0.065***	0.018	0.000
availment_ind	-0.011 NS	0.009	0.208	-0.024 NS	0.022	0.275	0.000 NS	0.013	0.992	0.002 NS	0.014	0.887
farmsize	0.114**	0.045	0.012									
pct_owned	0.044 NS	0.144	0.759				0.203 NS	0.169	0.231	-0.035 NS	0.193	0.854
topog_flood	-0.074 NS	0.073	0.311	0.803 NS	0.907	0.376	-0.133 NS	0.179	0.458	-0.097 NS	0.090	0.280
ln_nfarm_wage	-0.004 NS	0.004	0.327	-0.741***	0.169	0.000	-0.009 NS	0.006	0.109	0.002 NS	0.002	0.267

ln_nfarm_entrep	-0.005 NS	0.006	0.416		0.001 NS	0.018	0.949	-0.005 NS	0.005	0.310
ln_govt_transf	0.006 NS	0.005	0.173		0.016 NS	0.012	0.176	0.001 NS	0.002	0.489
_cons	10.388***	0.593	0.000		10.705***	1.070	0.000	10.585***	0.577	0.000
R^2 Overall		0.0929		0.7431		0.2073			0.0739	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & variety_cav==1, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.006 NS	0.013	0.644	0.148 NS	0.132	0.262	-0.032 NS	0.039	0.414	0.010 NS	0.014	0.472
year	-0.013 NS	0.013	0.324	0.034 NS	0.062	0.590	-0.023 NS	0.030	0.446	-0.016 NS	0.011	0.147
amt_cov_std2	-5.04E-07***	1.54E-07	0.001	2.13E-07 NS	5.26E-07	0.686	-1.89E-07 NS	2.67E-07	0.479	-4.90E-07**	2.44E-07	0.045
shock_causeloss	-0.047 NS	0.036	0.194	-0.144 NS	0.145	0.323	-0.101 NS	0.079	0.200	0.009 NS	0.031	0.759
farmer_age	-0.009 NS	0.018	0.611	0.092**	0.040	0.022	-0.025 NS	0.030	0.400	0.002 NS	0.020	0.927
farmer_age2	4.73E-05 NS	1.66E-04	0.776	-1.20E-03***	3.73E-04	0.001	1.39E-04 NS	2.91E-04	0.633	1.30E-05 NS	1.86E-04	0.944
farmer_sex	0.032 NS	0.076	0.675	-0.185 NS	0.328	0.572	0.133 NS	0.118	0.262	0.055 NS	0.100	0.585
farmer_hgc												
20	0.026 NS	0.068	0.706	-0.229 NS	0.287	0.425	0.031 NS	0.125	0.803	0.061 NS	0.092	0.508
30	-0.012 NS	0.072	0.874	-0.287 NS	0.322	0.373	0.093 NS	0.146	0.523	-0.053 NS	0.101	0.597
farmer_cvstat	0.105 NS	0.073	0.153	0.276 NS	0.323	0.393	-0.064 NS	0.104	0.539	0.216**	0.100	0.031
farmer_exp2	0.001 NS	0.003	0.627	-0.007 NS	0.008	0.388	0.014**	0.006	0.017	-0.008**	0.003	0.014
farmer_org	-0.020 NS	0.109	0.853	-1.217 NS	1.129	0.281	0.006 NS	0.304	0.985	-0.021 NS	0.129	0.873
hh_size	0.005 NS	0.019	0.778	-0.118 NS	0.107	0.271	0.037 NS	0.035	0.289	-0.019 NS	0.023	0.421
dep_ratio	9.93E-05 NS	0.001323	0.94	-3.60E-03 NS	5.30E-03	0.497	3.52E-04 NS	2.28E-03	0.877	4.27E-04 NS	1.33E-03	0.749
hhasset_ind	0.011 NS	0.014	0.426	-0.043 NS	0.079	0.590	0.013 NS	0.032	0.678	0.006 NS	0.015	0.673
agriasset_ind	-0.040**	0.017	0.018	0.040 NS	0.103	0.699	-0.065 NS	0.071	0.364	-0.063***	0.019	0.001
availment_ind	-0.012 NS	0.009	0.171	-0.018 NS	0.027	0.502	-0.002 NS	0.013	0.880	0.001 NS	0.014	0.945
farmsize	0.099**	0.046	0.033									
pct_owned	0.007 NS	0.153	0.965				0.090 NS	0.153	0.557	-0.044 NS	0.208	0.831
topog_flood	-0.055 NS	0.074	0.457	1.261 NS	0.849	0.138	-0.096 NS	0.179	0.594	-0.085 NS	0.093	0.359
ln_nfarm_wage	-0.004 NS	0.004	0.253	-0.841***	0.170	0.000	-0.009 NS	0.006	0.117	0.002 NS	0.002	0.349
ln_nfarm_entrep	-0.004 NS	0.006	0.474				4.61E-04 NS	0.016	0.978	-0.005 NS	0.005	0.296
ln_govt_transf	0.007 NS	0.005	0.162				0.018 NS	0.011	0.109	0.002 NS	0.002	0.477
_cons	10.562***	0.592	0.000				11.180***	1.086	0.000	10.542***	0.583	0.000
R^2 Overall		0.0897			0.7586			0.2120			0.0741	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1) & variety_cav==1, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.001 NS	0.014	0.948	-12.786 NS	9.020	0.156	0.005 NS	0.051	0.915	0.006 NS	0.016	0.691
year	-0.014 NS	0.016	0.367	1.309 NS	0.964	0.175	-0.035 NS	0.036	0.327	-0.009 NS	0.015	0.566
amt_cov_std2	-7.82E-07**	3.64E-07	0.032	8.59E-05 NS	0.00012	0.475	-3.74E-07 NS	4.73E-07	0.429	-5.23E-07 NS	4.95E-07	0.291
shock_causeloss	-0.062 NS	0.051	0.224	7.843*	4.522	0.083	-0.067 NS	0.101	0.502	-0.038 NS	0.052	0.468
farmer_age	-0.005 NS	0.024	0.827	6.291 NS	4.302	0.144	-0.088**	0.035	0.012	0.023 NS	0.024	0.344
farmer_age2	2.51E-05 NS	0.00022	0.909	-0.04594 NS	0.0333	0.168	0.000726**	0.000352	0.039	-0.00015 NS	0.000225	0.504
farmer_sex	0.072 NS	0.098	0.462	-23.624 NS	17.398	0.175	0.178 NS	0.149	0.232	0.111 NS	0.125	0.377
farmer_hgc												
20	-0.005 NS	0.080	0.946	6.583 NS	9.762	0.500	0.006 NS	0.150	0.969	-0.027 NS	0.097	0.777
30	-0.026 NS	0.090	0.770	12.249 NS	13.200	0.353	0.044 NS	0.167	0.793	-0.096 NS	0.107	0.368
farmer_cvstat	0.096 NS	0.093	0.302	6.892 NS	12.579	0.584	-0.043 NS	0.118	0.717	0.164 NS	0.124	0.185
farmer_exp2	-0.003 NS	0.004	0.402	0.506 NS	0.537	0.346	0.008 NS	0.007	0.239	-0.012***	0.004	0.005
farmer_org	-0.063 NS	0.130	0.628	87.184 NS	63.337	0.169	-0.354 NS	0.393	0.367	0.030 NS	0.156	0.850
hh_size	0.006 NS	0.022	0.803	6.639 NS	4.603	0.149	0.016 NS	0.044	0.719	-0.035 NS	0.024	0.151
dep_ratio	-3.67E-06 NS	0.001504	0.998	2.44E-01 NS	1.70E-01	0.151	-2.89E-03 NS	2.65E-03	0.276	1.65E-03 NS	1.58E-03	0.296
hhasset_ind	0.015 NS	0.015	0.313	2.432 NS	1.625	0.134	0.020 NS	0.035	0.570	0.026 NS	0.017	0.133
agriasset_ind	-0.051***	0.015	0.001	-2.249 NS	1.793	0.210	-0.099 NS	0.088	0.258	-0.063***	0.016	0.000
availment_ind	-0.018 NS	0.011	0.110	-2.094 NS	1.530	0.171	0.006 NS	0.017	0.730	-0.030*	0.016	0.054
farmsize	0.130**	0.059	0.027									
pct_owned	-0.205 NS	0.151	0.176				0.082 NS	0.218	0.706	-0.207 NS	0.161	0.199
topog_flood	0.013 NS	0.083	0.876	-61.385 NS	48.423	0.205	0.039 NS	0.213	0.857	-0.006 NS	0.100	0.950
ln_nfarm_wage	-0.007 NS	0.006	0.181	25.557 NS	17.571	0.146	-0.015*	0.008	0.065	0.002 NS	0.003	0.532
ln_nfarm_entrep	-0.005 NS	0.007	0.456				0.024**	0.010	0.013	-0.016***	0.005	0.001
ln_govt_transf	0.007 NS	0.005	0.189				0.020 NS	0.016	0.195	0.003 NS	0.003	0.364
_cons	10.627***	0.787	0.000				13.574***	1.292	0.000	10.077***	0.706	0.000

R^2 Overall	0.1065	0.9753	0.2444	0.1682

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0) & variety_cav==1, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.009 NS	0.013	0.491	0.162 NS	0.130	0.211	-0.043 NS	0.042	0.313	0.004 NS	0.014	0.756
year	-0.017 NS	0.014	0.214	0.020 NS	0.064	0.756	-0.034 NS	0.033	0.292	-0.014 NS	0.011	0.210
amt_cov_std2	-4.71E-07***	1.65E-07	0.004	4.07E-07 NS	6.00E-07	0.498	-1.58E-07 NS	3.25E-07	0.626	-4.93E-07*	2.55E-07	0.053
shock_causeloss	-0.067 NS	0.041	0.102	-0.163 NS	0.158	0.303	-0.154*	0.085	0.070	-0.016 NS	0.039	0.687
farmer_age	-0.014 NS	0.019	0.453	0.146**	0.058	0.012	-0.030 NS	0.031	0.321	0.004 NS	0.023	0.846
farmer_age2	9.79E-05 NS	1.73E-04	0.571	-1.77E-03***	5.42E-04	0.001	1.95E-04 NS	2.98E-04	0.513	-1.5E-05 NS	2.08E-04	0.944
farmer_sex	0.038 NS	0.079	0.632	-0.324 NS	0.368	0.377	0.111 NS	0.138	0.420	0.062 NS	0.104	0.553
farmer_hgc												
20	0.034 NS	0.069	0.621	-0.391 NS	0.330	0.235	0.062 NS	0.136	0.647	0.084 NS	0.090	0.349
30	-0.030 NS	0.075	0.686	-0.438 NS	0.302	0.148	0.083 NS	0.159	0.603	-0.061 NS	0.102	0.553
farmer_cvstat	0.082 NS	0.073	0.259	0.099 NS	0.291	0.733	-0.098 NS	0.115	0.395	0.195*	0.102	0.056
farmer_exp2	0.001 NS	0.003	0.677	-0.011 NS	0.008	0.187	0.015**	0.006	0.021	-0.007**	0.003	0.023
farmer_org	-0.036 NS	0.114	0.754	-1.232 NS	1.117	0.270	0.073 NS	0.337	0.828	-0.050 NS	0.134	0.707
hh_size	0.013 NS	0.020	0.504	-0.117 NS	0.107	0.276	0.052 NS	0.038	0.170	-0.011 NS	0.024	0.659
dep_ratio	0.000 NS	0.001	0.885	-0.003 NS	0.006	0.639	0.001 NS	0.002	0.646	0.001 NS	0.001	0.677
hhasset_ind	0.015 NS	0.014	0.292	-0.030 NS	0.072	0.681	0.034 NS	0.033	0.303	0.014 NS	0.015	0.357
agriasset_ind	-0.044***	0.016	0.007	0.073 NS	0.107	0.497	-0.059 NS	0.071	0.405	-0.068***	0.018	0.000
availment_ind	-0.007 NS	0.009	0.419	-0.008 NS	0.030	0.785	0.011 NS	0.015	0.474	0.006 NS	0.014	0.643
farmsize	0.081*	0.046	0.081									
pct_owned	0.009 NS	0.166	0.956				0.129 NS	0.163	0.428	-0.049 NS	0.235	0.834
topog_flood	-0.047 NS	0.077	0.544	1.121 NS	0.895	0.210	-0.111 NS	0.186	0.549	-0.076 NS	0.098	0.441
ln_nfarm_wage	-0.006 NS	0.004	0.153	-0.796***	0.182	0.000	-0.011 NS	0.006	0.102	0.001 NS	0.002	0.617
ln_nfarm_entrep	-0.003 NS	0.006	0.561				-0.001 NS	0.015	0.972	-0.004 NS	0.006	0.473
ln_govt_transf	0.002 NS	0.001	0.194				0.001 NS	0.009	0.937	0.001 NS	0.002	0.449
_cons	10.722***	0.606	0.000				11.136***	1.101	0.000	10.435***	0.658	0.000

R^2 *Overall*	0.0852	0.6933	0.2010	0.0725

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc indem_claim year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==1 & indem_claim==0) | insured_pcic==1 & indem_claim==1) & variety_cav==1, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
indem_claim	0.060 NS	0.052	0.249				-0.006 NS	0.099	0.949	0.113***	0.035	0.001
year	0.008 NS	0.019	0.675	0.158 NS	0.167	0.343	-0.025 NS	0.048	0.609	0.013 NS	0.014	0.340
amt_cov_std2	2.73E-09 NS	3.51E-07	0.994	3.98E-05**	1.57E-05	0.012	-7.16E-07 NS	5.77E-07	0.215	7.92E-08 NS	4.26E-07	0.852
shock_causeloss	-0.087 NS	0.063	0.169	-12.558 NS	10.884	0.249	-0.201 NS	0.215	0.348	-0.044 NS	0.051	0.390
farmer_age	-0.003 NS	0.019	0.871	-0.077 NS	0.341	0.820	0.051 NS	0.034	0.128	-0.011 NS	0.031	0.720
farmer_age2	-1.7E-05 NS	1.79E-04	0.925	2.05E-03 NS	4.15E-03	0.621	-6.02E-04*	3.14E-04	0.055	1.34E-04 NS	2.88E-04	0.642
farmer_sex	-0.044 NS	0.112	0.696	-0.835 NS	2.017	0.679	0.181 NS	0.153	0.236	-0.115 NS	0.136	0.398
farmer_hgc												
20	0.093 NS	0.101	0.357	-11.933 NS	10.144	0.239	0.138 NS	0.132	0.295	0.167 NS	0.165	0.312
30	-0.008 NS	0.102	0.934	3.470 NS	4.387	0.429	0.098 NS	0.152	0.521	-0.001 NS	0.174	0.995
farmer_cvstat	0.146 NS	0.118	0.216				-0.138 NS	0.172	0.421	0.287**	0.124	0.021
farmer_exp2	0.006 NS	0.004	0.118	0.191 NS	0.195	0.325	0.023***	0.008	0.003	-0.003 NS	0.005	0.627
farmer_org	0.076 NS	0.075	0.311	5.451 NS	4.661	0.242	-0.043 NS	0.105	0.683	0.152 NS	0.102	0.136
hh_size	-0.025 NS	0.022	0.267	-0.527 NS	0.494	0.286	-0.030 NS	0.030	0.316	-0.013 NS	0.028	0.632
dep_ratio	0.002 NS	0.002	0.349	0.187 NS	0.158	0.239	0.009**	0.004	0.021	0.000 NS	0.002	0.865
hhasset_ind	-0.001 NS	0.024	0.966	-0.164 NS	0.193	0.394	-0.053 NS	0.051	0.291	-0.004 NS	0.023	0.865
agriasset_ind	-0.010 NS	0.046	0.822	-0.517 NS	0.506	0.307	-0.160 NS	0.116	0.167	-0.015 NS	0.035	0.660
availment_ind	-0.010 NS	0.012	0.415	0.565 NS	0.503	0.262	-0.006 NS	0.018	0.750	0.016 NS	0.018	0.393
farmsize	0.153**	0.065	0.019									
pct_owned	0.126 NS	0.226	0.576				0.014 NS	0.172	0.935	0.391 NS	0.383	0.307
topog_flood	-0.243*	0.128	0.058				-0.280 NS	0.209	0.180	-0.189 NS	0.139	0.171
ln_nfarm_wage	0.003 NS	0.003	0.304				0.003 NS	0.006	0.566	0.002 NS	0.002	0.271
ln_nfarm_entrep	3.15E-04 NS	0.010	0.974				-0.039***	0.013	0.002	0.007 NS	0.007	0.327
ln_govt_transf	0.022***	0.007	0.003				0.002 NS	0.010	0.879	-0.856***	0.082	0.000
_cons	10.001***	0.763	0.000				9.057***	1.255	0.000			

R^2 Overall	0.1623	0.9769	0.4280	0.1972

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if (farmsize==1 | farmsize==2) & variety_cav==1, re robust

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		-0.024 NS	0.035	-0.660	0.506	-0.093	0.046
year		-0.012 NS	0.026	-0.470	0.638	-0.062	0.038
amt_cov_std2		-2.09E-07 NS	2.15E-07	-0.97	0.332	-6.31E-07	2.13E-07
shock_causeloss		-0.046 NS	0.064	-0.720	0.472	-0.172	0.080
farmer_age		0.008 NS	0.028	0.280	0.779	-0.046	0.062
farmer_age2		0.000 NS	0.000	-0.740	0.458	-0.001	0.000
farmer_sex		0.055 NS	0.107	0.520	0.606	-0.155	0.265
farmer_hgc							
	20	0.071 NS	0.111	0.640	0.524	-0.147	0.289
	30	0.096 NS	0.135	0.710	0.477	-0.169	0.361
farmer_cvstat		0.025 NS	0.100	0.250	0.805	-0.172	0.222
farmer_exp2		0.015***	0.005	2.940	0.003	0.005	0.025
farmer_org		-0.025 NS	0.272	-0.090	0.927	-0.557	0.507
hh_size		0.024 NS	0.033	0.730	0.465	-0.041	0.089
dep_ratio		0.000 NS	0.002	0.080	0.936	-0.004	0.004
hhasset_ind		0.014 NS	0.028	0.510	0.612	-0.040	0.068
agriasset_ind		-0.046 NS	0.056	-0.820	0.413	-0.157	0.064
availment_ind		-0.006 NS	0.010	-0.580	0.565	-0.026	0.014
pct_owned		0.138 NS	0.152	0.910	0.365	-0.160	0.435
topog_flood		-0.089 NS	0.172	-0.520	0.604	-0.427	0.248

ln_nfarm_wage	-0.009 NS	0.006	-1.620	0.104	-0.020	0.002
ln_nfarm_entrep	-0.001 NS	0.016	-0.080	0.938	-0.033	0.031
ln_govt_transf	0.015 NS	0.011	1.410	0.158	-0.006	0.037
_cons	10.146***	0.958	10.590	0.000	8.267	12.024
R^2 Overall		**0.1980**				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & (farmsize==1 | farmsize==2) & variety_cav==1, re robust

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		-0.025	0.036	-0.710	0.480	-0.095	0.045
year		-0.013	0.026	-0.490	0.624	-0.065	0.039
amt_cov_std2		-1.81E-07	2.23E-07	-0.81	0.418	-6.18E-07	2.57E-07
shock_causeloss		-0.086	0.068	-1.260	0.209	-0.220	0.048
farmer_age		0.003	0.028	0.120	0.901	-0.051	0.058
farmer_age2		0.000	0.000	-0.560	0.574	-0.001	0.000
farmer_sex		0.034	0.106	0.320	0.748	-0.173	0.241
farmer_hgc							
	20	0.061	0.112	0.540	0.587	-0.159	0.280
	30	0.134	0.134	1.000	0.316	-0.128	0.396
farmer_cvstat		0.001	0.099	0.010	0.992	-0.193	0.195
farmer_exp2		0.015	0.005	2.890	0.004	0.005	0.025
farmer_org		-0.024	0.275	-0.090	0.930	-0.564	0.515
hh_size		0.034	0.033	1.050	0.295	-0.030	0.099
dep_ratio		0.000	0.002	0.110	0.915	-0.004	0.004
hhasset_ind		0.006	0.029	0.220	0.824	-0.050	0.063
agriasset_ind		-0.029	0.059	-0.490	0.623	-0.144	0.086
availment_ind		-0.006	0.011	-0.590	0.555	-0.027	0.015
pct_owned		0.065	0.143	0.460	0.648	-0.215	0.346
topog_flood		-0.047	0.170	-0.270	0.784	-0.380	0.286

ln_nfarm_wage	-0.009	0.006	-1.700	0.090	-0.020	0.001
ln_nfarm_entrep	-0.002	0.015	-0.150	0.881	-0.031	0.027
ln_govt_transf	0.016	0.011	1.490	0.136	-0.005	0.037
_cons	10.339	0.974	10.610	0.000	8.430	12.248
R^2 Overall		**0.2056**				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1) & (farmsize==1 | farmsize==2) & variety_cav==1, re robust

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		0.013	0.046	0.280	0.781	-0.078	0.104
year		-0.025	0.032	-0.780	0.436	-0.088	0.038
amt_cov_std2		-6.16E-07	4.65E-07	-1.33	0.185	-1.53E-06	2.95E-07
shock_causeloss		-0.070	0.100	-0.700	0.483	-0.266	0.126
farmer_age		-0.032	0.041	-0.780	0.435	-0.113	0.049
farmer_age2		0.000	0.000	0.390	0.697	-0.001	0.001
farmer_sex		0.070	0.136	0.510	0.608	-0.198	0.338
farmer_hgc							
	20	0.039	0.143	0.270	0.787	-0.242	0.320
	30	0.089	0.164	0.550	0.585	-0.231	0.410
farmer_cvstat		0.024	0.111	0.210	0.831	-0.194	0.241
farmer_exp2		0.010	0.007	1.430	0.152	-0.004	0.023
farmer_org		-0.341	0.349	-0.980	0.328	-1.025	0.342
hh_size		0.019	0.040	0.470	0.641	-0.060	0.098
dep_ratio		-0.002	0.003	-0.710	0.480	-0.007	0.003
hhasset_ind		0.006	0.033	0.180	0.861	-0.058	0.069
agriasset_ind		-0.024	0.076	-0.310	0.754	-0.173	0.125
availment_ind		0.007	0.016	0.430	0.671	-0.025	0.038
pct_owned		0.143	0.217	0.660	0.511	-0.283	0.568

topog_flood	0.090	0.204	0.440	0.658	-0.310	0.490
ln_nfarm_wage	-0.015	0.008	-1.890	0.059	-0.030	0.001
ln_nfarm_entrep	0.016	0.010	1.670	0.094	-0.003	0.035
ln_govt_transf	0.018	0.017	1.040	0.300	-0.016	0.051
_cons	11.900	1.368	8.700	0.000	9.220	14.581
R^2 Overall		**0.2074**				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0) & (farmsize==1 | farmsize==2) & variety_cav==1, re robust

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		-0.033	0.038	-0.870	0.386	-0.107	0.042
year		-0.023	0.028	-0.820	0.411	-0.079	0.032
amt_cov_std2		-1.47E-07	2.63E-07	-0.56	0.577	-6.61E-07	3.68E-07
shock_causeloss		-0.109	0.073	-1.480	0.138	-0.253	0.035
farmer_age		-0.014	0.029	-0.480	0.629	-0.071	0.043
farmer_age2		0.000	0.000	0.130	0.895	-0.001	0.001
farmer_sex		0.008	0.116	0.070	0.947	-0.220	0.235
farmer_hgc							
	20	0.077	0.119	0.640	0.520	-0.157	0.311
	30	0.113	0.145	0.780	0.437	-0.171	0.396
farmer_cvstat		-0.006	0.102	-0.060	0.954	-0.205	0.194
farmer_exp2		0.015	0.006	2.650	0.008	0.004	0.025
farmer_org		0.033	0.297	0.110	0.913	-0.550	0.615
hh_size		0.045	0.035	1.290	0.199	-0.024	0.114
dep_ratio		0.001	0.002	0.260	0.794	-0.004	0.005
hhasset_ind		0.020	0.031	0.640	0.520	-0.040	0.080
agriasset_ind		-0.021	0.059	-0.370	0.714	-0.136	0.093
availment_ind		-0.001	0.012	-0.050	0.959	-0.023	0.022
pct_owned		0.106	0.152	0.700	0.487	-0.192	0.404

topog_flood	-0.050	0.176	-0.280	0.778	-0.394	0.295
ln_nfarm_wage	-0.011	0.006	-1.780	0.075	-0.024	0.001
ln_nfarm_entrep	-0.003	0.014	-0.230	0.816	-0.030	0.024
ln_govt_transf	0.001	0.008	0.100	0.921	-0.015	0.017
_cons	10.589	0.989	10.710	0.000	8.651	12.527
R^2 Overall		**0.1745**				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

/*non-cavendish*/

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if variety_cav==0, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.024 NS	0.042	0.574	0.071**	0.035	0.042	0.022 NS	0.128	0.863	-0.128*	0.067	0.056
year	0.002 NS	0.018	0.911	-0.010 NS	0.050	0.841	-0.012 NS	0.025	0.628	0.010 NS	0.022	0.646
amt_cov_std2	-2.97E-08 NS	4.81E-07	0.951	6.17E-07***	2.02E-07	0.002	1.58E-06 NS	4.91E-06	0.748	6.62E-06*	3.86E-06	0.086
shock_causeloss	0.068 NS	0.058	0.235	-0.049 NS	0.089	0.581	0.083 NS	0.100	0.407	0.040 NS	0.040	0.325
farmer_age	-0.029 NS	0.018	0.112	-0.039 NS	0.025	0.116	-0.031 NS	0.065	0.637	-0.023 NS	0.036	0.532
farmer_age2	2.58E-04 NS	1.71E-04	0.132	3.34E-04 NS	2.17E-04	0.124	1.81E-04 NS	6.87E-04	0.792	2.89E-04 NS	3.14E-04	0.358
farmer_sex	0.341 NS	0.213	0.109	0.051 NS	0.098	0.602	1.035 NS	0.790	0.190	0.091 NS	0.346	0.793
farmer_hgc												
20	0.273**	0.114	0.017	-0.011 NS	0.150	0.939	0.387 NS	0.313	0.215	0.198 NS	0.219	0.365
30	0.021 NS	0.127	0.868	-0.330**	0.132	0.012	0.261 NS	0.270	0.335	0.057 NS	0.260	0.827
farmer_cvstat	-0.154 NS	0.115	0.178	0.308***	0.077	0.000	-0.218 NS	0.227	0.336	-0.213 NS	0.178	0.232
farmer_exp2	0.005 NS	0.005	0.354	-0.014***	0.005	0.003	0.016 NS	0.016	0.316	0.011 NS	0.011	0.343
farmer_org	0.062 NS	0.332	0.853	-0.206 NS	0.326	0.528	-0.293 NS	0.905	0.746	0.785 NS	0.483	0.104
hh_size	0.027 NS	0.028	0.342	-0.102***	0.029	0.001	0.033 NS	0.079	0.681	0.057*	0.034	0.098
dep_ratio	1.26E-04 NS	0.002	0.945	0.003 NS	0.003	0.308	-0.001 NS	0.004	0.789	0.005 NS	0.003	0.117
hhasset_ind	0.033 NS	0.029	0.263	0.041 NS	0.102	0.690	0.031 NS	0.065	0.636	0.016 NS	0.022	0.477
agriasset_ind	0.018 NS	0.018	0.325	-0.028 NS	0.058	0.628	0.038 NS	0.032	0.236	0.076*	0.042	0.068
availment_ind	-0.028**	0.011	0.010	-0.008 NS	0.012	0.518	-0.028 NS	0.026	0.279	-0.046**	0.019	0.018
farmsize	-0.061 NS	0.057	0.284									
variety_lat	0.656***	0.167	0.000	0.431***	0.136	0.002	0.527 NS	0.381	0.167	0.765**	0.322	0.017
pct_owned	0.191 NS	0.140	0.174	-0.012 NS	0.121	0.921	-0.032 NS	0.499	0.950	0.344 NS	0.287	0.230
topog_flood	-0.013 NS	0.238	0.958	0.348 NS	0.224	0.121	0.151 NS	0.542	0.781	-0.632 NS	0.388	0.103
ln_nfarm_wage	-0.001 NS	0.003	0.732	-0.004 NS	0.007	0.549	0.015 NS	0.014	0.292	0.004 NS	0.003	0.122
ln_nfarm_entrep	-0.001 NS	0.002	0.437	-0.004 NS	0.005	0.420	-0.018 NS	0.020	0.383	-0.003 NS	0.004	0.370

ln_govt_transf	-0.014 NS	0.012	0.245	0.011 NS	0.010	0.285	-0.913***	0.312	0.003	-0.007 NS	0.021	0.748
_cons	10.419***	0.951	0.000	12.917***	1.156	0.000				8.971***	1.364	0.000
R^2 Overall		0.4498			0.8715			0.4464			0.5971	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & variety_cav==0, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.011 NS	0.038	0.771	0.068**	0.034	0.046	-0.013 NS	0.094	0.893	-0.137*	0.070	0.050
year	0.003 NS	0.019	0.894	-0.002 NS	0.053	0.967	-0.012 NS	0.026	0.639	0.011 NS	0.023	0.645
amt_cov_std2	-4.68E-07 NS	3.79E-07	0.218	6.52E-07***	1.99E-07	0.001	-7.25E-06**	3.51E-06	0.039	7.10E-06*	3.88E-06	0.067
shock_causeloss	0.062 NS	0.058	0.282	-0.049 NS	0.089	0.583	0.057 NS	0.103	0.584	0.035 NS	0.040	0.375
farmer_age	-0.025 NS	0.019	0.193	-0.045 NS	0.027	0.101	-0.039 NS	0.051	0.448	-0.027 NS	0.038	0.483
farmer_age2	2.11E-04 NS	1.78E-04	0.237	3.91E-04 NS	2.42E-04	0.107	4.00E-04 NS	4.94E-04	0.419	3.23E-04 NS	3.29E-04	0.326
farmer_sex	0.358 NS	0.226	0.114	0.072 NS	0.097	0.461	0.132 NS	0.612	0.829	0.076 NS	0.342	0.825
farmer_hgc												
20	0.335***	0.117	0.004	0.015 NS	0.144	0.916	0.656**	0.271	0.016	0.199 NS	0.224	0.376
30	0.043 NS	0.125	0.730	-0.321**	0.125	0.010	0.369 NS	0.236	0.117	0.089 NS	0.269	0.741
farmer_cvstat	-0.197*	0.117	0.092	0.312***	0.076	0.000	-0.151 NS	0.188	0.424	-0.200 NS	0.179	0.265
farmer_exp2	0.006 NS	0.005	0.274	-0.014***	0.005	0.002	0.017 NS	0.012	0.143	0.012 NS	0.012	0.295
farmer_org	-0.059 NS	0.307	0.848	-0.117 NS	0.350	0.738	-0.253 NS	0.688	0.713	0.860*	0.504	0.088
hh_size	0.036 NS	0.027	0.188	-0.104***	0.029	0.000	0.121*	0.066	0.068	0.061 NS	0.037	0.100
dep_ratio	-2.51E-04 NS	0.002	0.894	0.003 NS	0.003	0.233	0.000 NS	0.004	0.998	0.006*	0.003	0.092
hhasset_ind	0.021 NS	0.027	0.426	0.020 NS	0.106	0.848	0.050 NS	0.065	0.443	0.018 NS	0.023	0.431
agriasset_ind	0.021 NS	0.017	0.219	-0.035 NS	0.062	0.576	0.030 NS	0.028	0.294	0.073*	0.043	0.091
availment_ind	-0.029***	0.011	0.007	-0.009 NS	0.012	0.456	-0.042**	0.020	0.035	-0.047**	0.020	0.018
farmsize	-0.085 NS	0.057	0.134									
variety_lat	0.586***	0.152	0.000	0.397***	0.136	0.003	0.574*	0.316	0.069	0.775**	0.333	0.020
pct_owned	0.269*	0.139	0.054	-0.020 NS	0.123	0.874	0.351 NS	0.319	0.271	0.103 NS	0.215	0.631
topog_flood	-0.012 NS	0.223	0.958	0.317 NS	0.227	0.162	-0.279 NS	0.476	0.558	-0.610 NS	0.382	0.110
ln_nfarm_wage	-0.003 NS	0.003	0.366	-0.005 NS	0.007	0.514	-0.001 NS	0.014	0.937	0.004 NS	0.003	0.127
ln_nfarm_entrep	-0.001 NS	0.002	0.776	-0.004 NS	0.005	0.410	0.007 NS	0.023	0.768	-0.004 NS	0.004	0.287
ln_govt_transf	-0.013 NS	0.013	0.301	0.013 NS	0.010	0.224	-0.905***	0.240	0.000	-0.005 NS	0.021	0.806

_cons	10.408***	0.967	0.000	12.893 NS	1.189	0.000			9.195***	1.429	0.000
R^2 Overall		0.4857			0.8724			0.6917		0.5990	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==1) & variety_cav==0, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.067 NS	0.051	0.187	-0.083 NS	0.106	0.436	-0.079 NS	0.131	0.547	-0.131*	0.077	0.087
year	0.005 NS	0.018	0.757	-0.023 NS	0.044	0.603	0.010 NS	0.030	0.737	0.002 NS	0.031	0.946
shock_causeloss	0.017 NS	0.079	0.834	-0.088 NS	0.206	0.668	-0.039 NS	0.056	0.481	-0.015 NS	0.038	0.686
farmer_age	0.014 NS	0.020	0.497	-0.114 NS	0.167	0.495	0.004 NS	0.070	0.954	-0.059 NS	0.039	0.129
farmer_age2	-1.28E-04 NS	2.24E-04	0.568	1.11E-03 NS	1.74E-03	0.523	-2.1E-05 NS	6.46E-04	0.974	6.03E-04 NS	4.01E-04	0.132
farmer_sex	0.466*	0.280	0.096	0.489*	0.263	0.064				0.962***	0.169	0.000
farmer_hgc												
20	0.454***	0.124	0.000	-0.035 NS	0.075	0.640	0.705*	0.416	0.090	0.270 NS	0.170	0.112
30	0.131 NS	0.124	0.290	0.188 NS	0.258	0.467	0.349 NS	0.290	0.229	0.281 NS	0.190	0.140
farmer_cvstat	-0.097 NS	0.118	0.413	0.519*	0.296	0.079	-0.019 NS	0.193	0.923	-0.427***	0.160	0.008
farmer_exp2	0.017***	0.006	0.006	0.009 NS	0.019	0.623	0.028**	0.013	0.028	0.016*	0.009	0.064
farmer_org	0.390 NS	0.419	0.353	1.820 NS	1.116	0.103	0.246 NS	0.927	0.791	1.383**	0.582	0.018
hh_size	0.035 NS	0.029	0.229	-0.260***	0.058	0.000	0.122 NS	0.098	0.210	0.155***	0.042	0.000
dep_ratio	0.003*	0.002	0.088	0.009***	0.003	0.000	0.005 NS	0.005	0.343	0.001 NS	0.003	0.671
hhasset_ind	0.024 NS	0.020	0.216	0.187 NS	0.244	0.444	0.032 NS	0.141	0.821	0.014 NS	0.023	0.556
agriasset_ind	0.029 NS	0.023	0.205	-0.079 NS	0.074	0.283	0.028 NS	0.039	0.474	0.073 NS	0.045	0.105
availment_ind	-0.026**	0.013	0.044	-0.006 NS	0.026	0.807	-0.050 NS	0.032	0.121	-0.062***	0.018	0.001
farmsize	-0.025 NS	0.062	0.681									
variety_lat	0.704***	0.217	0.001	1.104**	0.502	0.028	0.734*	0.436	0.092	0.958**	0.391	0.014
pct_owned	0.248*	0.146	0.090	0.541 NS	0.337	0.109	0.311 NS	0.442	0.482	-0.286 NS	0.175	0.102
topog_flood	-0.227 NS	0.252	0.368	-2.477**	1.001	0.013	-0.471 NS	0.500	0.346	-0.249 NS	0.386	0.518
ln_nfarm_wage	0.000 NS	0.004	0.911	0.043*	0.025	0.085	0.003 NS	0.023	0.881	0.010***	0.003	0.005
ln_nfarm_entrep	-0.002 NS	0.002	0.389	-0.002 NS	0.004	0.585	-0.007 NS	0.028	0.794	0.002 NS	0.004	0.556
ln_govt_transf	0.006 NS	0.013	0.635	0.043***	0.006	0.000	-0.709 NS	0.282	0.012	-0.019 NS	0.025	0.451
_cons	8.492***	1.057	0.000	13.489***	3.337	0.000				9.172***	1.417	0.000

R^2 Overall	0.5801	0.9680	0.6683	0.8636

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==0 & indem_claim==.) | insured_pcic==1 & indem_claim==0)& variety_cav==0, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
pr_insured_pcic	-0.011 NS	0.038	0.771	0.068**	0.034	0.046	-0.013 NS	0.094	0.893	-0.137*	0.070	0.050
year	0.003 NS	0.019	0.894	-0.002 NS	0.053	0.967	-0.012 NS	0.026	0.639	0.011 NS	0.023	0.645
amt_cov_std2	-4.68E-07 NS	3.79E-07	0.218	6.52E-07***	1.99E-07	0.001	-7.25E-06**	3.51E-06	0.039	7.10E-06*	3.88E-06	0.067
shock_causeloss	0.062 NS	0.058	0.282	-0.049 NS	0.089	0.583	0.057 NS	0.103	0.584	0.035 NS	0.040	0.375
farmer_age	-0.025 NS	0.019	0.193	-0.045 NS	0.027	0.101	-0.039 NS	0.051	0.448	-0.027 NS	0.038	0.483
farmer_age2	2.11E-04 NS	1.78E-04	0.237	3.91E-04 NS	2.42E-04	0.107	4.00E-04 NS	4.94E-04	0.419	3.23E-04 NS	3.29E-04	0.326
farmer_sex	0.358 NS	0.226	0.114	0.072 NS	0.097	0.461	0.132 NS	0.612	0.829	0.076 NS	0.342	0.825
farmer_hgc												
20	0.335***	0.117	0.004	0.015 NS	0.144	0.916	0.656**	0.271	0.016	0.199 NS	0.224	0.376
30	0.043 NS	0.125	0.730	-0.321**	0.125	0.010	0.369 NS	0.236	0.117	0.089 NS	0.269	0.741
farmer_cvstat	-0.197*	0.117	0.092	0.312***	0.076	0.000	-0.151 NS	0.188	0.424	-0.200 NS	0.179	0.265
farmer_exp2	0.006 NS	0.005	0.274	-0.014***	0.005	0.002	0.017 NS	0.012	0.143	0.012 NS	0.012	0.295
farmer_org	-0.059 NS	0.307	0.848	-0.117 NS	0.350	0.738	-0.253 NS	0.688	0.713	0.860*	0.504	0.088
hh_size	0.036 NS	0.027	0.188	-0.104***	0.029	0.000	0.121*	0.066	0.068	0.061 NS	0.037	0.100
dep_ratio	-2.51E-04 NS	0.002	0.894	0.003 NS	0.003	0.233	-1.08E-05 NS	0.004	0.998	0.006*	0.003	0.092
hhasset_ind	0.021 NS	0.027	0.426	0.020 NS	0.106	0.848	0.050 NS	0.065	0.443	0.018 NS	0.023	0.431
agriasset_ind	0.021 NS	0.017	0.219	-0.035 NS	0.062	0.576	0.030 NS	0.028	0.294	0.073*	0.043	0.091
availment_ind	-0.029***	0.011	0.007	-0.009 NS	0.012	0.456	-0.042**	0.020	0.035	-0.047**	0.020	0.018
farmsize	-0.085 NS	0.057	0.134									
variety_lat	0.586***	0.152	0.000	0.397***	0.136	0.003	0.574*	0.316	0.069	0.775**	0.333	0.020
pct_owned	0.269*	0.139	0.054	-0.020 NS	0.123	0.874	0.351 NS	0.319	0.271	0.103 NS	0.215	0.631
topog_flood	-0.012 NS	0.223	0.958	0.317 NS	0.227	0.162	-0.279 NS	0.476	0.558	-0.610 NS	0.382	0.110
ln_nfarm_wage	-0.003 NS	0.003	0.366	-0.005 NS	0.007	0.514	-0.001 NS	0.014	0.937	0.004 NS	0.003	0.127
ln_nfarm_entrep	-0.001 NS	0.002	0.776	-0.004 NS	0.005	0.410	0.007 NS	0.023	0.768	-0.004 NS	0.004	0.287
ln_govt_transf	-0.013 NS	0.013	0.301	0.013 NS	0.010	0.224	-0.905***	0.240	0.000	-0.005 NS	0.021	0.806

_cons	10.408***	0.967	0.000	12.893***	1.189	0.000				9.195***	1.429	0.000
R^2 Overall		0.4857			0.8724			0.6917			0.5990	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc indem_claim year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize variety_lat pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf if match!=2 & ((insured_pcic==1 & indem_claim==0) | insured_pcic==1 & indem_claim==1)& variety_cav==0, re robust

	ALL FS			FS1			FS2			FS3		
ln_net_inc_cr~c	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**	**Coef.**	**Std. Err.**	**P-Value**
year	0.006 NS	0.047	0.896	0.027 NS	0.157	0.863	-0.074 NS	0.081	0.365	-0.001 NS	0.030	0.983
amt_cov_std2	-4.39E-07 NS	6.99E-07	0.529	1.09E-05 NS	1.39E-05	0.431	-7.57E-06 NS	0.000181	0.967	-1.5E-05 NS	9.69E-06	0.123
shock_causeloss	0.132 NS	0.092	0.151	0.444 NS	0.621	0.475	0.243 NS	0.352	0.490	-0.014 NS	0.033	0.665
farmer_age	-0.067*	0.036	0.068	0.235 NS	0.104	0.025	-0.154 NS	1.301	0.906	0.708**	0.339	0.037
farmer_age2	6.09E-04*	3.45E-04	0.077	-1.15E-03 NS	1.49E-03	0.442	1.82E-03 NS	5.86E-03	0.756	-7.79E-03*	4.16E-03	0.061
farmer_sex	0.322 NS	0.253	0.202				-1.655 NS	5.115	0.746	-1.261 NS	1.746	0.470
farmer_hgc												
20	0.279 NS	0.216	0.197	0.960 NS	2.642	0.716	0.335 NS	4.827	0.945	-8.845 NS	5.635	0.116
30	-0.019 NS	0.219	0.931	0.192 NS	0.556	0.730	0.371 NS	15.362	0.981	-4.198 NS	3.591	0.242
farmer_cvstat	-0.339 NS	0.237	0.152	-1.785 NS	2.543	0.483	-0.786 NS	34.654	0.982	9.542 NS	6.756	0.158
farmer_exp2	-0.003 NS	0.007	0.697	-0.003 NS	0.016	0.826	-0.018 NS	1.436	0.990	0.266 NS	0.197	0.177
farmer_org	-0.267 NS	0.184	0.145	1.744**	0.695	0.012	0.256 NS	8.511	0.976	4.849 NS	3.495	0.165
hh_size	0.061 NS	0.040	0.127	0.242 NS	0.304	0.427	0.195 NS	2.016	0.923	-2.217*	1.208	0.066
dep_ratio	-0.004 NS	0.004	0.321	-0.028 NS	0.053	0.594	-0.005 NS	0.370	0.989	0.208*	0.122	0.089
hhasset_ind	0.044 NS	0.080	0.579	1.139 NS	1.639	0.487	0.025 NS	0.146	0.864	-0.016 NS	0.076	0.835
agriasset_ind	-0.019 NS	0.037	0.602	0.038 NS	0.488	0.938	0.100 NS	0.079	0.207	0.002 NS	0.053	0.972
availment_ind	-0.031*	0.019	0.098	0.539 NS	0.635	0.396	-0.048 NS	0.536	0.928	0.076 NS	0.141	0.590
farmsize	-0.021 NS	0.134	0.874									
variety_lat	0.578***	0.213	0.007	2.897 NS	3.111	0.352	0.324 NS	14.153	0.982	-4.820 NS	3.245	0.137
pct_owned	0.361 NS	0.340	0.289				1.109 NS	47.464	0.981			
topog_flood	0.039 NS	0.419	0.926	-2.913 NS	4.782	0.542	0.062 NS	21.783	0.998			
ln_nfarm_wage	-0.003 NS	0.005	0.493	-6.50E-05 NS	0.032	0.998	-0.050 NS	0.764	0.948	0.001 NS	0.004	0.814
ln_nfarm_entrep	-1.025***	0.113	0.000				-1.259 NS	2.020	0.533	0.495 NS	0.689	0.472
R^2 Overall		0.5651			0.9358			0.9958			0.9991	

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		-0.001 NS	0.014	-0.070	0.948	-0.029	0.027
year		-0.014 NS	0.016	-0.900	0.367	-0.045	0.017
amt_cov_std2		-7.82E-07**	3.64E-07	-2.14	0.032	-1.50E-06	-6.74E-08
shock_causeloss		-0.062 NS	0.051	-1.220	0.224	-0.162	0.038
farmer_age		-0.005 NS	0.024	-0.220	0.827	-0.052	0.042
farmer_age2		2.51E-05 NS	2.20E-04	0.11	0.909	-4.05E-04	4.55E-04
farmer_sex		0.072 NS	0.098	0.740	0.462	-0.120	0.264
farmer_hgc							
	20	-0.005 NS	0.080	-0.070	0.946	-0.162	0.151
	30	-0.026 NS	0.090	-0.290	0.770	-0.203	0.150
farmer_cvstat		0.096 NS	0.093	1.030	0.302	-0.086	0.277
farmer_exp2		-0.003 NS	0.004	-0.840	0.402	-0.010	0.004
farmer_org		-0.063 NS	0.130	-0.480	0.628	-0.318	0.192
hh_size		0.006 NS	0.022	0.250	0.803	-0.038	0.049
dep_ratio		-3.67E-06 NS	0.002	0.000	0.998	-0.003	0.003
hhasset_ind		0.015 NS	0.015	1.010	0.313	-0.014	0.045
agriasset_ind		-0.051***	0.015	-3.410	0.001	-0.081	-0.022
availment_ind		-0.018 NS	0.011	-1.600	0.110	-0.039	0.004
farmsize		0.130**	0.059	2.210	0.027	0.015	0.246
pct_owned		-0.205 NS	0.151	-1.350	0.176	-0.501	0.092
topog_flood		0.013 NS	0.083	0.160	0.876	-0.150	0.176
ln_nfarm_wage		-0.007 NS	0.006	-1.340	0.181	-0.018	0.003
ln_nfarm_entrep		-0.005 NS	0.007	-0.750	0.456	-0.019	0.008
ln_govt_transf		0.007 NS	0.005	1.310	0.189	-0.003	0.017

_cons	10.627***	0.787	13.500	0.000	9.084	12.169
R^2 Overall		0.1065				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant

xtreg ln_net_inc_cropint_HHstddef13sc pr_insured_pcic year amt_cov_std2 shock_causeloss farmer_age farmer_age2 farmer_sex i.farmer_hgc farmer_cvstat farmer_exp2 farmer_org hh_size dep_ratio hhasset_ind agriasset_ind availment_ind farmsize pct_owned topog_flood ln_nfarm_wage ln_nfarm_entrep ln_govt_transf, re robust

note: farmsize omitted because of collinearity

note: pct_owned omitted because of collinearity

note: ln_nfarm_wage omitted because of collinearity

note: ln_nfarm_entrep omitted because of collinearity

note: ln_govt_transf omitted because of collinearity

ln_net_inc_cr~c		Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pr_insured_pcic		-12.786 NS	9.020	-1.420	0.156	-30.465	4.894
year		1.309 NS	0.964	1.360	0.175	-0.581	3.198
amt_cov_std2		8.59E-05 NS	0.000	0.71	0.475	0.000	0.000
shock_causeloss		7.843*	4.522	1.730	0.083	-1.020	16.705
farmer_age		6.291 NS	4.302	1.460	0.144	-2.140	14.723
farmer_age2		-0.046 NS	0.033	-1.380	0.168	-0.111	0.019
farmer_sex		-23.624 NS	17.398	-1.360	0.175	-57.724	10.476
farmer_hgc							
	20	6.583 NS	9.762	0.670	0.500	-12.550	25.716
	30	12.249 NS	13.200	0.930	0.353	-13.623	38.121
farmer_cvstat		6.892 NS	12.579	0.550	0.584	-17.762	31.547
farmer_exp2		0.506 NS	0.537	0.940	0.346	-0.546	1.557
farmer_org		87.184 NS	63.337	1.380	0.169	-36.954	211.322
hh_size		6.639 NS	4.603	1.440	0.149	-2.383	15.661
dep_ratio		0.244 NS	0.170	1.430	0.151	-0.090	0.578
hhasset_ind		2.432 NS	1.625	1.500	0.134	-0.753	5.616
agriasset_ind		-2.249 NS	1.793	-1.250	0.210	-5.763	1.266
availment_ind		-2.094 NS	1.530	-1.370	0.171	-5.092	0.904
topog_flood		-61.385 NS	48.423	-1.270	0.205	-156.293	33.523

_cons	-294.236 [NS]	202.299	-1.450	0.146	-690.734	102.263
R^2 Overall		0.9753				

***significant at 1% alpha, **significant at 5% alpha, *significant at 10% alpha, NS-not significant