
The Fallacy of No-Claim Bonus & Sustainable Crop Insurance Model for Developing World, A Success Story in Punjab-Pakistan

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Abstract: Attaining food security and zero hunger under the UN's Sustainable Development Goals (SDGs) by 2030 are challenging tasks since more than 730.0 million of the world's population earn less than \$2 a day according to the World Bank report in 2018. The success of achieving these stated goals largely depends on the uplifting of small and subsistence farmers as 90% of the cultivated land for food is owned by these farmers across the world. Safeguarding farmers from the vagaries of nature, crop insurance is one of the effective risk management tools for the agriculture sector. However, for developing countries, affordable crop insurance is a challenging task because of their dilapidated economic outlook and at the same time providing premium subsidy is also essential. In this context, the developing economies have to find out some innovative solutions to cater to this challenge. The Government of Punjab-Pakistan initiated a crop insurance program in Punjab during 2017-18 by providing a 100% premium in the form of subsidy for small farmers (having less than 5 acres of landholding) to provide compensation against their yield losses due to climate change and other uncontrollable factors. The burden of the premium subsidy was immense and the Department of Agriculture Punjab introduced the concept of No Claim Bonus (NCB) or profit-sharing arrangements with insurance companies in Pakistan. The concept was implemented in 2020 through a competitive bidding process and it is a success story for Pakistan that under the NCB, part of the premium subsidy is returned back to the Government by the insurance company after deducting claims and administrative expenses. Developing countries can also experiment the crop insurance based on NCB as per their local circumstances and applicable rules.

Keywords: Crop Insurance, developing countries, No-Claim Bonus (NCB), natural calamities and disaster, Punjab, premium refund, agriculture insurance, digital inclusion, Branchless Banking Operators (BBO), claims disbursement

INTRODUCTION

The United Nation has put forward seventeen (17) Sustainable Development Goals (SDGs) during the Rio+20 conference on sustainable development (UN General Assembly, 2012). These are the goals that will shape up our world in next few decades. Of these SDGs, most critical goals are to achieve No Poverty, Zero Hunger, Reduced Inequality and Climate Action by 2030 that are very much directly or indirectly linked with Agriculture and Livestock Sector (Dhahri & Omri, 2020). The member states of United Nations agreed to reduce hunger by ensuring food security by sustainable agriculture (Jones & Ejeta, 2016).

Agriculture sector is one of the most important factor in providing food to more than seven (7) billion heads in the world. Majority of the world population is poor and in developing countries the dependence is very high on agriculture (Shultz, 1979). There is significant evidence from the developed and developing world regarding the importance of agriculture as engine of sustainable economic growth (Abraham & Pingali, 2017). Improvement in small farmland productivity is one of the primary factors towards the agriculture sector uplift and in this regard glaring examples are sub-Saharan Agriculture in Africa and Green Revolution in Asia (Abraham & Pingali, 2017). The SGD-2, that primarily focuses on Zero Hunger is directly linked to improvement and uplifting of Agriculture sector across the globe to feed the ever growing population. The importance of small farm land agriculture increased manifold when the focus to end the hunger from the world. It is achievable by providing necessary support to small and subsistence farmers and protecting their incomes as around 90% of the total farmlands are cultivated by small farmers across the globe (Rapsomanikis 2015).

The importance of the agriculture sector can be fathom by the fact that in order to reduce the poverty, the government shall boost the agriculture growth and improving agriculture economics (Cervantes-Godoy &

Dewbre, 2010). Substantial investment in high yield producing varieties has significantly helped in reducing hunger in Latin America and Asia (Jones & Ejeta, 2016).

As a strategy for climate change adoption, crop insurance is a recommended tool for developing nations facing vagaries of abrupt climate (Binswanger-Mkhize 2012).

Despite the potential to reduce risks, farmers' demand for insurance has however been considerably lower than expected (Akter et al. 2009; Giné et al. 2008). Previous studies identified a range of issues influencing farmers' low insurance uptake, including financial constraints, unfamiliarity with insurance, low financial literacy, and lack of trust in insurance providers, among others (Akter 2012; Binswanger-Mkhize 2012; Clarke and Grenham 2013; Akter et al. 2016).

Crop Insurance in developing world

The role of developing countries towards achieving SGD-1 and 2 becomes significant since a large number of population resides in this sphere of the world and they suffer acute poverty. More than 730 million people live on less than a two dollars a day (World Bank, 2018). Moreover, one out of every nine people in the world remain hungry (Food & Agriculture Organization, 2019). Therefore, to achieve zero hunger by 2030, the role of agriculture in developing world becomes more important. More efforts and actions are required if the aim is to end the hunger and malnutrition of all forms from the world by 2030 (World Health Organization, 2018).

Crop Insurance is one of the most important risk management tool for the agriculture sector. Its significance increased manifolds for the farmers with small landholding and their sustenance is all dependent on the good cropping year. Climactic conditions play a very crucial role towards the failure of crop and good cropping year (Abbas, 2020). Rapidly changing climate is the most tenacious problems faced by the farmers and has direct adverse impact of crop's productivity (Akter, Krupnik, & Khanam, 2017). From the last couple of decades, farmers have experienced drastic changes in climate manifested in the form of increased pest attack, intermittent rains, precipitation, humidity, variation in Monsoon rains and thermal stress (Abbas, 2020; Knutson et al. 2010). Similarly, natural calamities are immensely disruptive to small farmers especially those whose incomes and livelihood depends solely on agricultural produce (Skees, Hazell, & Miranda, 1999). Diseases, excessive rains, abrupt fluctuation in temperature, pollution are some of the environmental factor that significantly impact agriculture (Drollette, 2009).

To protect farmers from the vagaries of nature and uncertain weather conditions, many interventions have been initiated by the governments in developed and developing countries focusing on crop insurance as viable option (Valdés, Hazell, P. B. R. & Pomareda, 1986). In developing countries most of the risks are associated with credit provision, weather conditions, water issues, quality of inputs and market prices. Further, the small landholding farmers are the most vulnerable in developing countries because of unsustainable income patterns and virtually no support in case of crop or market failure (Hazell, 1992).

Crop insurance in developing world is critically important because not only it ensures compensation in case of calamities but it also encourages farmers to reallocate precious resources towards more profitable crops even though they are risky. Further it also reduces the risk of loan default (Pomareda, 1986).

For agriculture sector, another problem the governments in the developing countries face is the affordability of the crop insurance since there are so many risks associated with the crops and the extent of loss is too high. The crop insurance programs have been the integral part of the government policy as a risk mitigation strategy for the agriculture (Hazell & Varangis, 2020).

Therefore, subsidized crop insurance for the farmers to make it affordable for the farmers is the prime focus for the governments because the public governments cannot sustain the burden of subsidies to insure crops for poor farmers. But at the same time protecting these subsistence farmers are also essentials. There is a trade-off that governments face while launching subsidized crop insurance programs for the poor farmers. Public agriculture programs performed poor because of their huge administrative and operational cost of implementing crop insurance. The performance of Comprehensive Crop Insurance Scheme of India, in Philippine, Brazil, Japan and Mexico have not been so good as the administrative cost and loss-ratio were not satisfactory (Hazell, 1992).

Crop Insurance Scheme in Punjab-Pakistan

Punjab, a province considered as a food basket for Pakistan. It is inhabited by more than 120 million people in thirty-six (36) districts (administrative units) that are comprised of 144 tehsils (administrative unit lower than district). Punjab province is vulnerable to flooding as it has witnessed one of the massive floods exactly a decade ago in 2010. The 2010 flood killed around two thousand people and plunged about 8 million people into food insecure. The economic loss was also huge that resulted into US\$ 16 billion. In Punjab alone, 1.9 million acres of cropped area was affected and 3,572 cattle heads were lost. Similarly, in 2014, due to floods 745,655 acres of cropped land was also affected (PDMA, 2010). In 2014, Monsoon rains again engulfed large area and resulted into massive losses to life as well as to economy (Abbas, 2020). Very recently, in 2020 Punjab province

has also witnessed minor flooding during Monsson season and affected significant number of people and damaged standing crops in some areas.

In the backdrop of these vulnerabilities, the Government of the Punjab introduced, subsidized crop insurance for subsistence farmers (having less than 5 acres of landholding) for the very first time in Pakistan (Abbas, 2020). Starting from four (4) districts, the crop insurance was launched on pilot basis to envisage the impact and effectiveness of the program. The purpose was to compensate farmers in vulnerable areas of Punjab in case of yield losses due to natural calamity or risks including weather or biological. This was a right step in the right direction because before the launch of this programme, there was no formal way of providing financial support to the farmers in case of losses even due to disasters (Abbas, 2020). Through this program, a formal mechanism was developed to support farming community in the Punjab through digital inclusion. The crop insurance scheme was built on the crop's yield data that is collected by the Crop Reporting Service (CRS) of Agriculture Department Punjab. The data is normally collected through field work force known as Crop Reporter. Yield is estimated through Crop Cut Experiments (CCEs) in each of the sample unit across Punjab and following other operational guidelines that are scientifically approved and in vogue in developed and developing countries alike. The crop insurance scheme in Punjab-Pakistan is based on Area Yield Index Model. For this the average yield data of last ten years are taken as the benchmark and depending on the vulnerability and risk exposure, insured yield index is decided that is 80% of the benchmark in case of cotton crop and 90% for wheat, rice, sunflower and canola crops (CRS, 2021). The CRS was entrusted to implement the scheme in the Punjab and requisite resources were allocated by the Government of the Punjab.

The Government of the Punjab is providing 100% subsidy on the premium amount for the subsistence farmers in Punjab and 50% subsidy on premium to the farmers having more than 5 acres of landholding and maximum of 25 acres of land. The scheme was started back in 2017-18 from Kharif season by insuring Cotton & Rice crops in four pilot districts. Based on the significance of the scheme and anticipated outcomes, the scheme kept on extending its outreach to many other districts with the support of Government of the Punjab covering Kharif and Rabi seasons insuring five important crops (cotton, rice, wheat, canola and sunflower). The purpose to include Rice and Wheat crops were to ensure food security and to motivate farmers to cultivate more area under these crops and to adopt new technologies. The following table encompass the summary of progress made till early 2020.

Table 1: Summary of the compensation paid to the affected farmers in insured districts

Crop Season	Districts Insured	Subsidy Details		Claims Details			Cumulative Ratio (Total Premium/ Total Claims)
		No. of Farmers Insured	Premium Amount Paid by Govt. of Punjab (mln)	No. of Farmers Compensated	Compensation Amount (mln)	Claim to Premium Ratio	
Kharif 2018	4	16,750	41.6	1,986	32	76.9	20.43
Rabi 2018	9	41,375	54.5	No Yield Loss Occurred			
Kharif 2019	18	226,832	400.5	4,958	98.2	24.5	

Source: Crop Reporting Service, Agriculture Department Punjab

From the above table, a total of 6,944 were compensated with Rs. 130.2 million while the Government of the Punjab paid Rs. 496.6 million to insure 284,957 farmers during 2018 to early 2020. This revealed another side important aspect regarding value for money spent to attain the stated objectives. There is a dilemma associated with the utilization of funds regarding insurance of crops. The insurance market here in Pakistan is generally under developed due to socio-cultural and religious perspectives. Therefore, many questions were raised regarding the value for money on different forums since loss to premium ratio was quiet low i.e. 20.43 %.

No-Claim Bonus Regime; A Success Story for Pakistan

Unfortunately, like other developing countries, Pakistan's economy remained in doldrums since its inception in 1947 except during 1955-60. The struggling economy that is overridden by the burden of heavy loans. For a country like Pakistan, it is difficult to financially support the farmers through huge subsidized programs due to shabby economic conditions. Further, the value for money in subsidized programs is generally ignored and resultantly, the operational cost is usually higher than the desired outcome in many of the public welfare programs. Same was the case with crop insurance scheme and it is evident from the table 01 above. The compensation to the farmers is roughly 21 % of the premium amount paid to insure the farmers. This bad

economics compelled the policy makers to redefine the scheme's features and new models for crop insurance shall be formulized to optimize the scheme. To improve the loss to premium ratio different consultative sessions were held with the insurance companies. Resultantly, No Claim Bonus (NCB) was introduced for the first time in the domain of agriculture insurance. The purpose was to save the public money where possible and effective utilization of the available resources.

The NCB was incorporated into the bidding document for competitive bidding amongst the insurance companies operating in Pakistan. Under NCB, the insurance companies were required to deposit the unspent premium into government treasury after deducting administrative cost for the specific insured season. In other words, if there is no claim occurred in any of the insured districts for any insured crop, then the insurance company(s) has to refund 95% the unutilized premium amount given by the Government of the Punjab at the start of every season. In case, if the claim amount is higher than the premium paid, then it would be the sole responsibility of the insurance company to pay the complete compensation to the affected insured farmers.

The tender document was floated in April 2020 after fulfilling all the codal formalities. Through competitive bidding process, three insurance companies qualified for the Kharif 2020 season under the NCB regime. One of the three shortlisted companies was again knocked out due to higher premium rates quoted and ultimately two insurance companies jointly underwrite the crop insurance program in compliance to NCB for the very first time in agriculture insurance domain. Both insurance companies agreed to refund the unspent premium amount if claim amount is less than the premium paid after deducting their administrative expenses i.e. 20% of the premium amount.

For the Kharif 2020 season, Cotton & Rice crops of **254,832** farmers were insured in the 18 selected districts. The Crop Reporting Service field staff conducted the Crop Cut Experiments (CCEs) as per the set procedures. The final results of the yield estimation for both crops i.e. Cotton & Rice revealed that the Cotton crop has suffered significant losses due to climatic conditions along with other important factors. The decline in Cotton yield crop has triggered the claims in 12 (Twelve) Tehsils of the insured districts under Area Yield Index (AYI) Methodology. The details of claims are as follows:

Source: CRS, Agriculture Department Punjab

Table 2: Summary of the Kharif 2020 season under No-Claim Bonus Regime

Sr. No.	Insurance Company	Total Farmers Insured	Total Premium Paid (Rs. Mil)	Farmers Insured In Affected Tehsils	Total Claims (Rs. Mil)	Refund of Public Money (Rs. Mil)	Absolute Premium (Rs. Mil)
1	The United Insurance Company	164,886	306.89	35,224	368.6	0.00	476.0
2	The Askari Insurance Company Ltd.	89,596	176.08	7,713	133.6	6.90	
Total		254,832	482.97	42,937	502.18	6.90	

From the table above it is evident that No Claim Bonus Regime introduced by the Agriculture Department of Punjab-Pakistan is surely a success story. Through NCB, the true value for money was optimized by refunding of unspent premium from the insurance companies and at the same time compensating the affected farmers that suffered huge blow due to climatic conditions. The claims were 104% of the total premium paid to the insurance companies with a refund of Rs. 6.90 million back to the Government treasury. From the above mentioned instance, the Askari Insurance Company saved money from the premium amount as its claim amount was Rs. 133 million that was less than the premium amount paid i.e. Rs. 176 million. While, the United Insurance Company of Pakistan faced losses not very significant though.

Future Implications

For the developing countries, providing financial support to farmers to ensure food security and economic development, public crop insurance programs are essential at times when climate change and weather conditions becoming more unpredictable and ruthless. But at the same time, affordable crop insurance for farmers and for the governments is also a big challenge. The governments have to strike a balance between affordable subsidized crop insurance programs and obtaining the desired output. No claim bonus might be a best possible solution where governments can negotiate terms with the insurance companies to create a level playing field and win-win situation for all. However, the No Claim Bonus Regime may be rationalized as per the economic conditions and financial capabilities of the insurance companies and their reinsurance arrangements. Further, the Crop Reporting Service Agriculture Department of Punjab-Pakistan has designed individual farmer centric crop

insurance based on No Claim Bonus where the premium of the subsistence farmers will be returned back to them if there is no claim in their owned farmland.

RECOMMENDATIONS

The findings and outcome of the intervention are encouraging and opened new avenue of possibilities to optimize the crop insurance model for the developing countries. For Pakistan it has saved precious tax payers money through No Claim Bonus and at the same time compensation to the affected farmers in the Punjab Province. Based on these evidences and outcomes, it can be recommended that developing countries may opt for crop insurance programs by agreeing with insurance companies to refund the unspent premium or profit sharing with the government in case of no loss to crops or claims less than premium amount paid. Further, the loss limit or maximum indemnity cover can also be agreed with the insurance companies to give them enough room to operate and do business and to create a win-win situation for all the stakeholders involved.

CONCLUSION

Through profit sharing arrangement with the insurance companies under No Claim Bonus in crop insurance program, the Punjab Government saved Rs. 6.9 million. This amount, though not very huge, but it is has opened a window of opportunity where initiatives like these can actually work.

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