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MICRO-INSURANCE FOR COCOA FARMERS

Basic Concepts of Insurance | Economic Viability and Main Cost Drivers of an Insurance Product | Design Characteristics Related to Cocoa | Delivery Channels | Payments: Premium vs. Freemium | Claims | Conclusion





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Micro-insurance for Cocoa Farmers

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BASIC CONCEPTS OF INSURANCE

Micro-insurance provides various options to mitigate a range of possible risks for smallholder farmers in Indonesia.

Risks such as death of livestock, crop failure, theft, fire or natural disasters could lead to financial losses that would leave the smallholder unable to recover. The smallholder may be forced to sell household and productive assets, take their children out of school, or default on loans. This could then result in the farmer spiraling into a cycle of poverty and debt. Common insurance products are available to insure motorbikes and cars, and credit life insurance is also available to cover outstanding loans in case of death. This brochure describes micro-insurance to protect income and assets in the context of cocoa farming.

Definition: “Microinsurance is the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of risk involved.”¹

The risk of possible financial losses is shared through guaranteed compensation.²

Historically there are a number of informal insurance concepts that function as a safety net, including informal assistance between

¹ Churchill, Craig (ed.): Protecting the Poor – A microinsurance compendium (2006)

² Roth/McCord/Liber (2007)



neighbors, group membership insurance, or self-insurance. Micro-insurance in various areas is a relatively new market for formal insurers. Individual margins are low and the only way to generate profits would be a highly scalable model combined with the exclusion of high-risk clients. In recent years, the Indonesian Government experimented with agricultural insurance products on cattle and rice, both with subsidized premiums. Private insurance companies developed insurance products to cover the risk of floods or dengue as well as crop failures due to weather events. The concept of agricultural insurance is not commonly known amongst cocoa smallholders. Only five out of more than 17,000 cocoa farmers knew about flood insurance.³

EXAMPLES OF INSURANCE PRODUCTS

Commercial insurance providers offer life insurance that can be long or short-term.

When linked to borrowing from banks, usually the insured period is the maturity of the loan and the insurance is mandatory in such a case. A similar insurance product, but without naming them as such, is sometimes offered by cooperatives that pay a certain amount to the family of members who have passed away. To allow for such 'insurance', the funds are built from the profits of

Inherent challenges in offering insurance products include moral hazard, adverse selection, fraud or over-use. Moral hazard is related to riskier behavior or using the services more frequently, since the insured person knows he/she is insured. For instance, a person with public health insurance might see a medical doctor more often than a person without insurance because a person without insurance would have to pay for every single visit. Adverse selection results in riskier clients using the product. For example, if someone intends to buy flood insurance, it's likely because they live in an area very susceptible to flooding, which presents a high risk to the insurers.

the cooperative. That's a classical life insurance concept, although there is usually no premium to be paid by the member.

Bank Rakyat Indonesia offers a transport insurance product through BRINS. By paying a small premium, cocoa beans are insured against loss for when beans are transported to off-takers. Asuransi Kosmik Stop Usaha offers policies against business interruption and Asuransi Central Asia (ACA) offers an insurance product against dengue that is distributed through Indomaret stores.

³ SCPP: Access to Finance for Cocoa Farmers in Indonesia – Updated AFF Baseline Report (2016)

INSURANCE TYPES AND SUITABILITY FOR COCOA FARMERS

Insuring Life and Health

Life Insurance/Credit Life Insurance

The two most important concepts for life insurance are risk life insurance and capital life insurance. The latter bundles life insurance with savings that are paid at the end of the contract. The risk life insurance has much lower premiums (since there is no saving component) and is basically mandatory when borrowing from a bank. That means that the effective interest rate is increased. Credit life insurance can come in two major types: one that insures the outstanding loan amount, thus the insured amount is reduced through repayments, and the other model that insures the original loan amount, where the heirs would receive the difference between payout and outstanding loan amount.



Health Insurance

There are a number of health related topics to be taken care of on the farmer level. The need to maintain health for being able to work and reduce expenses for health is a key concern. Besides diseases caused by viruses and bacteria (like a simple infection or cold), the need to see a doctor could arise because of an injury, maternity or dental problems. However, the cost of the health service and medication might not all be covered by public health insurance. Injuries might lead to income loss and might even cause disabilities. Funeral costs could be high due to the expected cultural expenses related to it.



Protecting Farm Assets and Income

Farmer income directly relates to production and prices. Crop failure could be caused by various reasons: pests and diseases, weather related events, natural disasters, etc. Production could decline for other reasons too, such as the age of trees, quality of the planting material or the soil condition. However, those latter factors are in the hands of the farmer and don't come unexpected without the opportunity to prepare and mitigate those factors. Prices depend on world market prices,

exchange rates, quality of the produce and local factors such as distance and competition. The most important assets a cocoa farmer has are the trees that ensure future production and the land to grow the trees. Other assets might be used for production or transport, but these are additional or optional assets and not necessarily needed for basic cocoa bean production. To protect income and assets, a number of options are available.

Weather Index Based Insurance

Weather is often deemed a risk in agriculture, but what is actually meant by weather? Is it too much sun, too much rain, too much wind or something else? How does it impact the production of cocoa? In regards to cocoa farming, it is all related to rain: too much, too little or just the right amount can affect how much is produced. Therefore, insurance can be related to rainfall patterns.

Cacao trees need adequate rain and sunshine to develop pods. A lack of rain may prevent flowering. Periods without sufficient rain could result in production losses between 20-40%, because very few flowers can grow. Only 1-5% of the flowers develop into pods, therefore less flowers mean less pods. On the opposite side, excessive moisture or rain can support the spread of pests and diseases and negatively affect the bean size, which would then reduce the farmer's production.

Measuring rainfall is rather easy and can be done through weather stations or satellites. The disadvantage of weather stations is that there is no historical data available to analyze the risk. When measuring rainfall through weather stations, it needs to be ensured that geographical conditions are accurately reflected, such as recognizing that different sides of the same mountain can have different rainfall patterns.

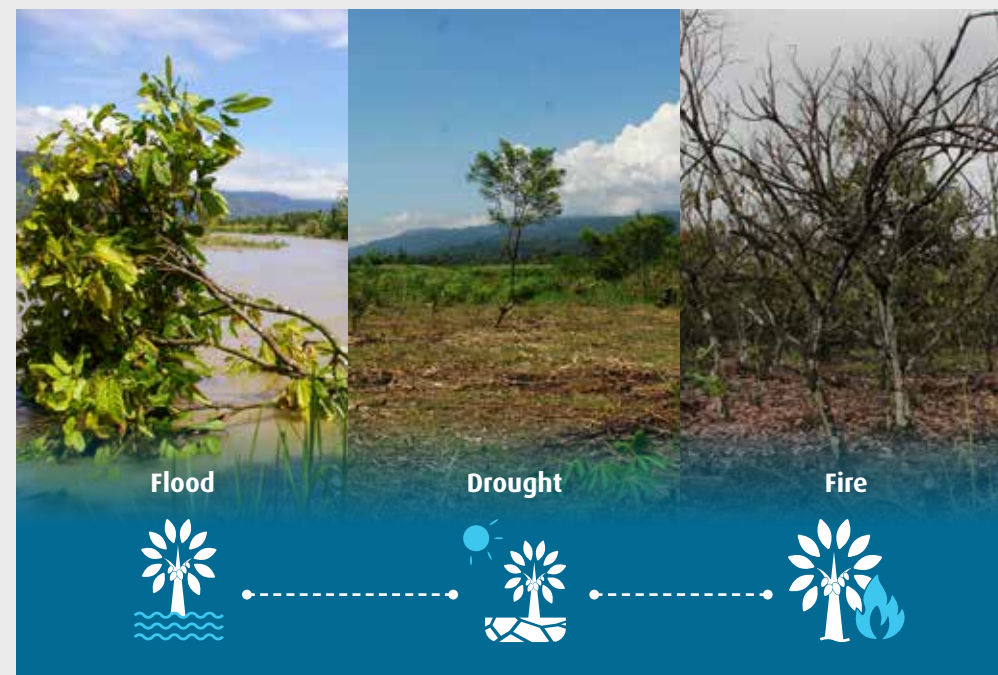
Other possible indices are of minor importance, but could still potentially present a risk. For example, wind could damage the leaves of the trees or uproot the trees, so measuring wind speeds might be an option too.

Crop Insurance

Protection against crop failures in cocoa is challenging. Weather as one factor is addressed on this page. The remaining main factor relates to pests and diseases. Possible harvest loss can be avoided by actively managing the pests and diseases, e.g. with appropriate pesticides. In other words, if insured, moral hazard might be a challenge since less production would result in higher claims. Therefore, there wouldn't be a need for the farmer to apply proper agricultural techniques, thus the farmer saves time as well. Another challenge would be the accurate measurement of yield before and after harvest: a nearly impossible mission.

Flood/Drought/Fire Insurance

Droughts increase the risk of wildfires and are hence a risk to consider in agriculture. Cocoa farms are also at risk of fires caused by the frequent, illegal land clearing that occurs in Indonesia. Irrigation systems are not common for cocoa farms. Through the root system, cacao trees can "survive" dry periods. In that case, some biological functions are reduced to save water, which has an effect on the production. Floods can also seriously damage the trees, especially if the water is standing. This could actually kill the trees.



Falling Prices

Price risks can be hedged, either through off-taker contracts with fixed prices at the time of buying the beans or through futures. Off-taker contracts can provide price certainty, but the downside is that farmers cannot benefit from increasing prices.

The Jakarta Future Exchange provides the option of buying and selling futures on cocoa. Thus, there is an option to hedge cocoa. In the case of farmers and financial institutions, it means cocoa

should be bought and sold at a fixed date for a fixed price. Unfortunately, this doesn't seem to work out in practice. The contracts bought can be settled one month before termination, making it a paper-based speculation and not a crop-hedging tool.

Commodity price hedges don't cover all price risks, especially not low prices due to low quality or lack of competition between traders. On top of that, exchange rate risks are also not covered.



Transport Insurance

There are a lot of issues that could affect cocoa beans during transport from when they leave the hard working cocoa farmers and arrive at the off-takers' place. Effective and cheap transport

insurance can cover losses (e.g. theft or accidents), degraded quality (e.g. through rain), or inability to deliver (e.g. due to road conditions).

Protecting Other Assets

Many farmers are used to the concept of insurance through having motorbike insurance that covers liability against Third Parties in case of accidents, but they are not familiar with the concept of agricultural insurance. Other farmer assets such as livestock could be insured against death, disappearance, and/or theft so that the farmers can claim the insurance in the event they lose their most or all of their livestock. Housing insurance might also be another option.



Credit Default Insurance

For financial institutions there are credit default insurances available. However, this topic will be covered in a brochure about credit guarantees, since the function of the insurance is more related to that field. In short, the

financial institution can insure against the credit risk, meaning they pay a premium and are covered in case of default of individual borrowers or a portfolio. Portfolio insurance would be an option too.



ECONOMIC VIABILITY AND MAIN COST DRIVERS OF AN INSURANCE PRODUCT

Micro-insurance usually comes with small margins per policy, thus scale is required to operate profitably.

An estimation from a commercial insurance company indicates they need about 50,000 ha of land to be insured in order for the insurance product to be commercially viable.

Main cost drivers are delivery costs including policy cost, risk coverage itself and the claim handling cost, while product development cost should play only a minor role. To achieve scale, the product price must be attractive enough for the farmers to buy it and the product must be so simple that everybody can understand it. Not all risks must be insured, but it must be clear to the farmers what is excluded and why. At launch or before, group training might be needed to educate farmers about the concept of agricultural insurance and about the added value of a particular insurance product.

Then it is a mathematical exercise to calculate the premium to be paid by the client.

The government pilot for rice works with 3% premiums of the insured amount, based on income per hectare. 80% of the premium is subsidized.

DESIGN CHARACTERISTICS RELATED TO COCOA

There are a number of considerations that need to be thought about carefully. Shall the insurance product be bundled or a stand-alone? Should it be a group product or an individual one? Is the use mandatory or voluntary? Is it long-term or short-term?

What exactly should be insured? What data information is needed and how can it be collected? Is it possible for insurance to cover weather events and pest and disease outbreaks? How is the product delivered and how are claims handled? How is risk measured? Are there other mitigation instruments? All those questions need an answer.

For weather index based insurance (or better referred to as rainfall insurance), the right rainfall patterns must be defined, based on the regional characteristics, where crop cycles can differ significantly. Data can be collected through satellites (including availability of historical data) or through official weather stations. Satellite data costs money, but can be readily available. Weather stations are most likely cheaper, but someone has to report the rainfall, it needs to be fraud proof and it must be ensured that the micro-climate is not specific for the place where the weather stations is based. Thus a certain density is needed. Pests and diseases, if insured, need to be mapped.

Rainfall patterns could be laid-over a map, together with individual farm locations, based on GPS. This would require banks to at least get the GPS data of the farms. Diversification across Indonesia is needed, to reduce the risk for the insurance company.

DELIVERY CHANNELS

One of the main driving costs is the chosen delivery channel. Low cost distribution channels which can reach a large number of clients remains a challenge. The most promising are:

- Banks, where the micro-insurance product is stand-alone or bundled with a loan. If stand-alone, the distribution could be done through a branchless banking agent network. ATMs would be an option too, especially since the ATMs already offer similar functionalities, e.g. buying phone credit or paying electricity bills
- Agri-input providers, where the product could also be stand-alone or bundled together with some agri-inputs
- Mobile channels, e.g. through an app or the internet
- Other agent networks, like supermarkets or gas station chains
- Certification policy, e.g. risk life insurance through group policy becoming an integral benefit for certified farmers.

A full service model through staff of the insurer might not be a cost efficient solution, since the farmers usually live in rural areas and individual sales and claim handling might be too costly.

There are advantages, but also some challenges for each of the models. Bundling it with loans is possible, but should not be the only channel, since only 1.91% of the farmers have a bank loan outstanding. Mobile phone channels, especially through smart phones, could be used to record the GPS location. However, not all farmers may be adept at using a mobile phone to purchase the product and knowledge of the product still needs to be socialized. Agri-input providers might not be eager to sell the product, since it contributes only little to their core business. Selling through other agent networks would require that the farmer knows about the product. Staff motivation to sell the product actively might be rather limited, even though this could be an advantage for the bank and agri-input providers. Through all channels there is the opportunity for cross-selling other products.

The channel with the highest outreach would be to use agri-input providers. While about 70% of the farmers use fertilizer, only a small portion has loans. Developing a mobile application or other option would be beneficial and easy to do if the sales process is done through branchless banking agents.



PAYMENTS: PREMIUM VS. FREEMIUM

Besides the fact that the product must have an attractive pricing and be easily understood by the farmers, there might be options to present the premium as a so-called “freemium,” meaning that the premium is incorporated into the price of a product.

This could be used in the case of fertilizer, where a certain amount is insured per bag purchased as part of the regular agri-input purchases. However, since the insurance would bring added value to the farmers, it should be pointed out as beneficial. Another option is a premium payment through a farmer organization for all of their members. However, it must be ensured that the premiums are in accordance with the potential policyholder's cash flow and in accordance with the agricultural calendar.



CLAIMS: CHALLENGES AND PAYOUT MECHANISMS

Challenges

What event triggers the payout of a claim needs to be defined. Challenges are manifold, e.g. the production in a given year is 20% lower than in the previous year.

But what is the reason for that? Was it caused by the farmer's agricultural practices, by a weather event, or by something else? Does it affect an individual farmer or farmers in an entire region? Is it specific for one crop or does it affect various crops? Those kinds of questions illustrate the difficulties in designing an insurance product for farmers that is objectively measured/assessed and also low cost.

Documentation for claims is often challenging, especially if it requires staff to do individual visits to distant cocoa farms or other places. That increases costs significantly. However, an excellent claim-handling process is a selling argument for an insurance product.

Payout

For payouts there are several options too. The payouts should be fast and maybe even automatic (without an individual claim submitted), e.g. as soon as the weather index triggers a claim.

Or perhaps it can be paid out over time to “simulate” a monthly income. Before venturing into agricultural insurance, insurance providers need to consider multiple scenarios to determine what method is the best fit for their company.

CONCLUSION

Full-coverage insurance is a matter of affordability. In terms of cost, it seems to be too expensive for the cocoa farmers to have insurance that covers all possible problems such as pests and diseases, low production, low prices, mammals, fire, natural disasters, etc.

To develop commercially attractive insurance products, the insurance companies have to look at the customers and their needs, especially in the areas of health and education, as these are important issues that are likely high priority for the farmers and their family. As soon as those are off the priority list, e.g. through public health insurance and/or sufficient savings, the issue of agricultural insurance can be raised. However, it is still not clear if farmers are interested in voluntary micro-insurance and if they are willing to allocate a part of their income to it. If an easily accessible channel such as agri-input providers is used, the farmers may be more willing to pay for insurance considering the insurance product would be brought directly to them and they need agri-inputs anyway. Specifically, for cocoa, the most promising insurance products at this early stage are life insurance and weather index based insurance. Both insurances can be offered at scale.

Life insurance, in combination with credit or not, is an existent standard

product that can be offered and distributed at low costs. It would relieve the family of financial pressure so they would not have to bare the burden of the outstanding loan amount in the event that something unpredictable happens. This is usually already a requirement when borrowing from a financial institution. Other life insurance products that are not tied to credit could cover funeral expenses and loss of income.

A proper weather-index based insurance product for cocoa in Indonesia needs to be developed. It would ideally be developed as a stand-alone product, where too little and too much rainfall is covered. Satellite data should be used to capture micro-climate data based on exact GPS location and then matched with the rainfall patterns for that location. The product should be sold through a freemium model as part of the fertilizer purchases of the farmer, because many more farmers use fertilizer compared to the use of other channels. Whether this is done through a code on the bag, a sticker, or something else is just a minor detail. However, more than one channel could be chosen. The payout should happen automatically at harvest time, as soon as an insured weather event is triggered, e.g. rainfall levels in a certain month are below the pre-defined minimum.



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