Financial risks that may impair smallholders' ability to continue farming

An agricultural risk profiling methodology

World Agroforestry

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Introduction

The idea behind this document is to provide a quick overview of some of the details that might be important for World Agroforestry (ICRAF) when devising new projects in which agricultural risk management[1] is a desired component.

The document is intended to serve as an addendum to training sessions for ICRAF on agricultural insurance. Please refer to the documentation of the sessions for further information.

As learned during the training sessions, in the insurance/reinsurance industry and, in particular, for types of property insurance[2], the usual way of gathering information about a certain agricultural risk or farm holding is through a proposal form (also known as questionnaire or risk assessment form).

Underwriting agricultural risk, necessary information and means to obtain it

Underwriters of agricultural insurance/reinsurance and, more broadly, of property insurance base their assessments of a risk (for example, an individual farm or a group of farmers) on materially relevant facts. These are objective pieces of information that may be important for the insurance/reinsurance underwriter to make as close as a realistic evaluation as possible of the insurance/reinsurance company's risk exposure, according to the insurance company's criteria ('underwriting guidelines').

The underwriter has what is called 'underwriting authority' on behalf of the insurance/reinsurance company to accept risk at a profit for the company[3] and puts the insurance company's equity on the line to respond to any upcoming loss the insurance policy may suffer. It is a big responsibility, so they take great care to follow the insurance company's underwriting guidelines (which vary from insurer to insurer or reinsurer to reinsurer), within the limits that their underwriting authority confers them.

In developed countries, where indemnity basis agricultural insurance is more widespread[4], the proposal form or questionnaire provides the underwriter with the material facts to analyze, price, define terms and conditions and, ultimately, accept or not a risk. It is a legally binding, formal way to check on, amongst other elements:

1 Agricultural risk management can be defined as identifying, assessing 'qualitatively and quantitively', and adopting preventive or mitigating measures against risks that affect agricultural production.

2 Such as indemnity basis agricultural insurance, which is the opposite of index insurance. Indemnity basis insurance relies on field assessments of risk exposure and losses.

3 An 'underwriting profit' is achieved when the 'combined ratio' for a given year 'n' — or the ratio between incurred losses + incurred expenses over the earned premium — is below 100%.

4 Index insurance is usually used in developing countries to offset the 'asymmetry of information' and lack of infrastructure required for loss adjusters to visit affected farms in a timely fashion and reduce operational costs.

- a farmer’s experience
- the farmer’s farming techniques
- where the farm is located
- if there is an insurable interest[5]
- which crops and/or commodities are produced
- the husbandry system
- the surface area occupied by the crops
- the loss record (what kinds of losses occurred during the years and their costs)

Information registered in the proposal form sometimes is adapted to the type of risk in question because, for example, a fish farm does not operate the same way as a crop farm or a forestry plantation or a livestock farm. Hence, usually insurance and reinsurance companies and their underwriters develop specialized proposal forms for different types of agricultural activities (crops, forestry, livestock, aquaculture) though some information is common (for example, questions on the farmer’s identity, farm location, loss record).

The information provided by the farmer needs to be accurate because it´s on this basis that an acceptance of cover by the insurer or reinsurer may be granted or not. Usually the farmer stamps and signs the document to take responsibility for the information. In the case of a farmer intentionally giving wrong information to obtain a financial advantage from the insurance cover through fraudulent means (known as a ‘moral hazard’) and incurs a loss, the insurance company may deem the cover void (no indemnity will be paid).

Remember that insurance pays losses derived from covered perils (some typical covered perils for property insurance are fire, flood, explosion, lightning, typhoon, earthquake, theft): events that are ***sudden, accidental and unforeseen***. An outcome that is already known will create a loss/indemnity that is outside of the insurance cover mechanism. It’s not a ‘pure risk’.

If it’s a group of farmers or an organization (also known as an ‘aggregator’) applying for insurance, such materially relevant information to assess a risk can be collected for all of the farmers belonging to the organization and be signed and stamped by its managing director or other person with power to sign off and pay the insurance premium.

One particular piece of information that is extremely important for underwriters and actuaries (specialized insurance statisticians) to assess the insurer’s own risk exposure, calculate an actuarily sound and fair rate and determine if they should accept or not a certain risk is the ‘loss record’. For indemnity basis insurance, this is usually required for the last 5 years. Hence, emphasis should be put on this particular type of information. It affects not only the underwriter’s perception of the risk as a whole but also particulars, such as the farmer’s ability to manage their farm when compared to specific events and security measures put in place to minimize risks.

Whether the information is gathered through a formal, specific document (proposal form/questionnaire), mobile app or through any other means, it is important for ICRAF operators to understand the key questions that those who analyze agricultural risks usually look at to make their assessments.

5 For example, if a possible loss to insured items would leave the insured on a lesser financial position compared to their initial position at policy inception. For instance, understanding if the farmer owns the land or rents it but the insured crops are the farmer’s.

Agroforestry, in particular, when considered as an ecosystem-based adaptation solution, can benefit a lot from more data gathered about its risk reduction idiosyncrasies to certain perils *versus* yield performance when compared to more intensive or less holistic and comprehensive farming alternatives.

When applying for project funding that has an insurance focus or repercussions, it is important to consider how insurance works as an activity. This will guide you on what outcomes can and can't be achieved.

If you are planning to develop an index insurance solution, its main advantage when compared to an indemnity basis option is the ability to make transparent, objective remote assessments — thereby reducing the underwriter's 'asymmetry of information' — of data that validate a loss occurrence and corresponding indemnity or not (this is usually done for collective insurance policies with aggregators and not for individual farmers). The required data for aggregators (for example, yields and weather data) is also more extensive (30 years or more time series, on a regional level) than for individual farmers, on an indemnity basis insurance option. Still, if the project focuses on such a solution, the basic understanding of how insurance in general works, how agricultural insurance specifically works and all the related nuances, is still valid and should guide your rationale for the funding request and the expected outcomes.

If your project has a banking component, which is another type of financial service, the breadth of information mentioned above is as important. Insurance can be used as 'collateral' (sometimes it needs to be recognized as such in a country's legislation) for a loan, for instance. Even so, banks also rely on their clients' information to give them a 'credit score', which confers the client the potential or not to be granted a loan. It can also be a means for an insurance premium to be paid through a direct debit or to attach other interesting services, such as mobile banking or insurance premium and indemnity payments.

The context of low-income smallholders: some considerations on their typical characteristics

- Usually lack organization in the collection of data
- However, understand well climate patterns and through oral traditions may recollect past events of when their losses occurred
- Irregular and volatile cash flow (for example, no regular income and susceptibility to unexpected losses)
- Loss of income owing to loss of harvests or assets may lead to different scenarios (search for other sources of income, some of which may be detrimental to human dignity or impair future social mobility)
- Insurance may be an alien concept that needs to be explained, usually graphically
- Beyond questions of the risk to be insured, some questions should be asked about knowledge of banking and insurance (it is normal to ask on a proposal form if the farmer is already insured and with which company) and items such as mobile phone ownership to understand if farmers have ways to transact premiums and claims and if they are already embedded in the financial system

Sum insured (also known as 'liability') in agricultural insurance can be based on

- Loss of yield (covers most risk exposures — also known as 'perils' — except those that are specifically excluded; it can also be on an 'all risks' basis, which attracts a higher premium (more expensive) and is thus not common in low-income communities)
- Loss of revenue (more used in developed markets), associated with changes in price and yield that are monitored on independent, non-manipulable 'exchange' markets
- Production costs (usually aggregated direct costs of production that can be verified through a bill and are aligned with local market practices, such as seeds, fertilizers and labour costs)

Most common perils affecting crops and forests

- Fire, explosion, lightning and aircraft (often abbreviated to FLEXA)
- Drought
- Typhoon
- Flood
- Landslide
- Extreme rain
- Salvage costs (some species of trees, even if affected by fire, may not be totally destroyed and can be salvaged and sold or used for some purpose even after the event; the farmer doesn't lose everything and underwriters will always look for this possibility to reduce their own exposure to loss)
- Fire-fighting costs
- Pests and diseases

If you want to develop a project that has a financial agricultural risk management component, such as insurance, besides being aware of these different agricultural insurance concepts and needs of information, you should also try to gather insights on the Needs, Wants, Aspirations, Preferences and Obstacles (often abbreviated to NWAPO) of farmers. The success of an insurance program is ultimately linked to a valid value proposition (see next section). Insurance companies recruit clients and then need to maintain them so that they renew their policies year after year. In that way, the premiums received by the insurance company will be more than the claims and expenses paid to compensate any losses.

‘Client value proposition’ explained

According to the International Labour Organization’s Impact Insurance Facility (http://www.impactinsurance.org/sites/default/files/cvbrief2_en-final.pdf), ‘providers care about client value because it drives business viability. In fact, in the long term there is no trade-off between value and viability and building customer loyalty should be a goal of any long-term business plan…”.

Value is considered multidimensional, holistic and interacting across different axes. In simple terms, ‘client value is the difference between what the customer gets from a product and what s/he gives’.

First developed by ILO’s Microinsurance Innovation Facility and its partners, a framework for a microinsurance client value creation model runs along the following four points (adapted from ILO’s Microinsurance Innovation Facility and partners).

1. Product and process design: How do products meet client needs in relation to other alternatives, similar in process/function (for example, another insurance product) or completely different in process/function (for example, finding other sources of income, saving money by withdrawing kids from school)?
2. Demand: Which factors influence the choices of low-income households? Why, when, how are the choices made?
3. Product use: What is client satisfaction, loyalty and feedback’s weight in a product’s improvement? How can a product be kept in a self-sustaining, circular mode of use?
4. Impact: To what extent and how does microinsurance improve risk management and reduce vulnerability? How does the impact represent itself? In what tangible ways?

A heuristic (rule of thumb) way to build a strong value proposition in microinsurance and, generally, in any insurance, can be summarized in answering the four concepts represented in the acronym, PACE: Product, Access, Cost, Experience. This was developed by the ILO Impact Insurance Facility (http://www.impactinsurance.org/tools/PACEhttp://www.impactinsurance.org/tools/PACE).

At the centre of this concept is that the product needs to be simple; appropriate to the clients’ needs; accessible and easy to understand and enroll; affordable and aligned with the client’s ability to pay; and responsive because it needs to deliver on promises and address the identified risks.

Taking PACE as a guide, we can see that this is a holistic, comprehensive approach on how an insurance product’s value is perceived by clients. Client-centrism is at its core. Insurance’s success depends on the number of clients recruited and retained, year after year. A company needs enough premium-paying clients, with more premiums than losses, accumulated into the pool.

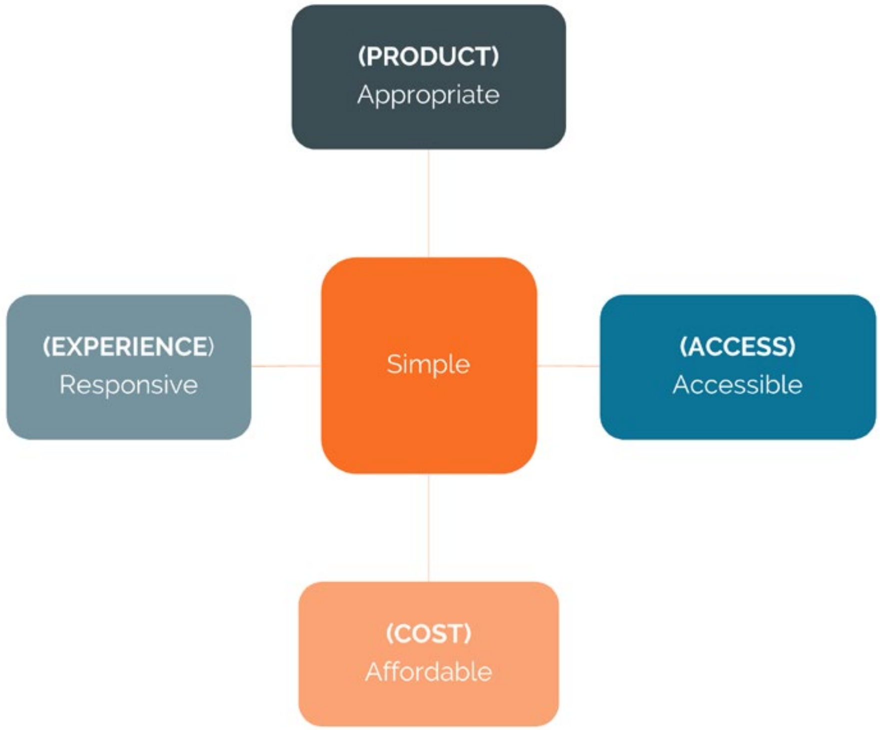

Figure 1. PACE added value analysis framework
Source: ILO's Impact Insurance Facility

- **PRODUCT** focuses on the product's
  1. Coverage, service quality, exclusions, waiting periods
  2. Sum insured to cost of risk (risk financing costs, direct and indirect loss costs, administrative costs, taxes and fees)
  3. Eligibility criteria
  4. Value-added services

  The fundamental questions are: 1) Does the product answer my needs as a client in terms of coverage? Am I okay with what the product excludes in terms of perils and the product's terms and conditions? Does the sum insured/liability represent a large part of my costs of risk that I want to protect through this financial instrument? Do I fit with the eligibility criteria to participate in the product as a client? Are there any value-added services that may be useful to me, for example, bundled health insurance or other types of services?

  Overall, this first part of the acronym asks, 'Does it solve and address my NWAPO?'

  Consider that farmers' NWAPO needs to be understood. Usually this is done by doing a preparatory study using quantitative and qualitative techniques (both pre-essential or non-pre-essential).

- **ACCESS** focuses on the product's
  1. Choice and enrollment
  2. Proximity

3. Information and understanding

4. Premium payment method

The fundamental questions are: 1) Am I given different choices to enroll in this product? 2) Are they easy to access? 3) How can I enroll with this product? 4) Do I need to travel long distances to enroll or there are partners of the insurer through which the product is distributed, closer to me? 5) Is the product's functioning simple, straightforward and easy to understand? 6) Through which entity/ies can I enroll with this product? 7) Is the premium payment method and indemnity reception reliable and straightforward?

- **COST** focuses on the product's

1. Premium to received benefit
2. Premium to client income
3. Other fees & costs
4. Cost structure and controls

The fundamental questions are: 1) Is the insurance premium I'm paying for this product reasonable considering the benefit the product gives me, such as reducing my exposure to certain perils and preventing me from losing my livelihood etc? 2) Is the premium I'm paying reasonable considering my income? 3) Are other fees and costs included in the insurance cost reasonable or too high? (This question can be put by the insurance company itself not only the insured client) 4) Do the cost structure and cost controls of the product allow for its long-term feasibility? (This question is raised mostly by the insurance company itself).

The first three parameters (PAC) constitute the function of why a client is RECRUITED. It will be easier to recruit clients to sustain the system long-term if:

- PRODUCT: The product addresses present and future Needs, Wants, Aspirations, Preferences and there are Obstacles for the farmer (for example, exposure to climate risk) that the product surmounts or mitigates
- ACCESS: The product is easy to be understood and enrolled into
- COST: The product is aligned with what the client is willing and able to pay (If there is a subsidized premium by a government this may make the product more accessible)

- **EXPERIENCE** focuses on the product's

1. Claims procedures
2. Claims processing time and quality of service
3. Policy administration and tangibility
4. Customer care

The fundamental questions are: 1) Are the claims procedures are cumbersome and difficult to follow-through or they are easy and straightforward? 2) Does it take a long time to process the claims so that I can receive my indemnity, in case I'm due one? 3) Are the administrative services of the insurer responsive to clients' requests for information, results etc? 4) Is the policy administration fluid and client-centric? 5) Does the client see tangible results of their trust deposited in such a — sometimes — abstract concept as insurance (for example, receiving an indemnity in a timely fashion for a loss covered by the policy's terms and conditions)? 6) Does the insurer provide a way for me to manifest my grievances and help improve the system, such as a quality control mechanism, a grievance committee or an SOS telephone number?

This last parameter (E), we can say constitutes the function of why a client is RETAINED and returns to insurance company as the provider of a valued service or item, helping to keep the system viable in the long-term. It will be easier to retain clients to sustain the system long-term if:

- EXPERIENCE: The client's overall experience with the product is positive enough to make them return and continue as a client.

Some guiding questions for individual farmers or farmer-aggregators to assess their NWAPO and gather facts on their risk exposure

- Do you have agricultural insurance or any other type of insurance? If the answer is YES, please name the company:
- If YES, are you satisfied with the service according to the following:
  - PRODUCT: does this insurance product address your NWAPO?
  - ACCESS: Is it easy to enroll and access this product?
  - COST: is this product's cost within your financial possibilities and yearly income?
  - EXPERIENCE: Does this product give you an overall good experience and would you renew your policy again?
- Can you name an insurance company that you know?
- Do you have a bank account? If answer is YES, please name the bank:
- Can you read and write?
- Do you have a smartphone? With which company?
- How many years have you been a farmer?
- Who owns the land you farm? Do you lease the land from someone?
- What kind of crops are you growing in your fields? Please name them including their occupied surface area (hectarage):
- Are the crops yours (are you the one incurring the costs of their production)?
- How many times per year do you harvest the crops?
- Can you describe how many kilograms you produced per crop in the last few years (yield)?
- Do you know how much it costs for you to produce a certain crop?
- Are these crops for your own consumption or also to sell?
- Where do you sell the crops? Local market?
- Do you regularly or ever burn your fields to clear them and be able to replant specific crops?
- Please describe the species of trees you have in your fields.
- Do these trees have any specific functions (timber, fruit, windbreak, soil anchor against landslides, shade)?
- Please describe any loss events you may have had in the last 5 years that affected your crops (describe them per crop and try to give an indication of the loss amount. If it's difficult to give a loss amount in cash figures, just try to describe in percentages, for example, 'I lost half — 50% — of my field because of…).

Questions for farmers' organizations whose members lease their land from a third party)

- Can you name an insurance company that you know?

- Do you have agricultural insurance or any other type of insurance? If answer is YES, please name the company:
- Do you have a bank account? If answer is YES, please name the bank?
- What kind of organization is it? Describe your operations (for example, 'Farmers deliver their products to us for $XX per kg and then we sell them). What kind of services do you provide?
- How many years has the organization been operating?
- How many farmers does your organization have as members?
- Do you have organized accountancy and auditing?
- What kind of crops are your members growing and forwarding to the organization? Please list them, including their occupied surface area (hectarage) on a spreadsheet, if possible.
- How many times per year does your organization receive those crops (for example, one harvest season)?
- Can you provide a spreadsheet with how many kilogram you produced per crop in the last few years (yield)?
- Where do you sell the crops? Local market?
- Please describe any loss events your members may have had in the last 5 years that affected their crops and that may have impaired the organization's overall production (describe per crop and give an indication of the loss amount).

When natural sciences meet finance: ICRAF developing its own value proposition

Finally, whenever ICRAF wishes to include financial services such as insurance in a project or look for funding where insurance may play a part in its research, it would be useful for ICRAF to thoroughly define its own value proposition from a business and financial services perspective.

Recent webinars organized by ICRAF SEA on EBA and insurance organized by ICRAF on ecosystem-based adaptation and insurance showed how offerings of these solutions are still meagre but demand is increasing. ICRAF has installed capacity and know-how that may be useful to develop ecosystem-based adaptation solutions or to make the case for agroforestry as a viable, more natural and balanced, risk reduced, alternative to intensive farming.

All in all, for this merger between natural sciences and finance to be more tangible, ICRAF should also define a vision statement that guides its actions towards a desired future where that reality can be achieved.